

6.4 Indicative Costs and Benefits by Alternative

The bridge costs for the alternatives are considered, at this level of the study, to be in proportion to the crossing length. The costs of approach roads are also considered to be in proportion to the total approach road length.

6.5 Screening of Alternatives

6.5.1 Initial Screening of Crossing Location

There are a number of possible alternative alignments for the approach roads on the Raichak side as well as on the Kukurahati side. The selection of the alignment, itself, for approach roads will be discussed later. For the initial screening of crossing locations, the same alternative routes of approach roads are taken for comparative purposes. For example, the road length around Sarisha village and the bypass in the eastside is used so that the comparative lengths and conditions are similar for all crossing locations. However, it does not imply that the bypass alternative in the east of Sarisha village has been selected for that section. Similarly, on the Kukurahati side, the alternative using the existing road from Kukurahati to Brajalalchowk on NH41 is used in all alternatives for comparison purposes.

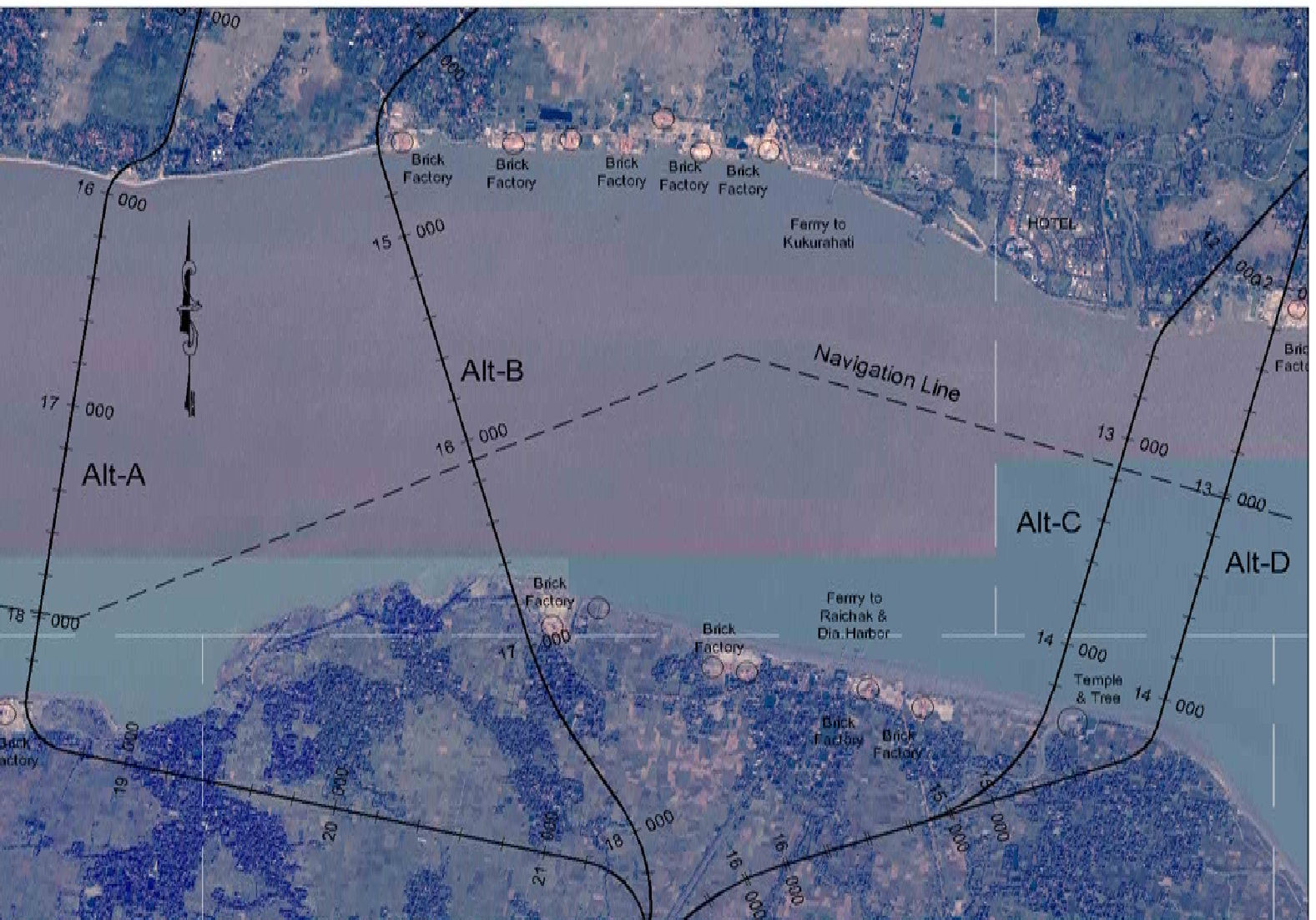


Figure 6.5.1 Alternatives for Crossing Locations

The comparison of alternatives for the crossing location is done in view of the following, which reflect different aspects of the project. The initial screening of the crossing locations is given in **Table 6.5.1**.

Table 6.5.1 Initial Screening of Crossing Alternatives

SN	Comparative Items	Alternative-A	Alternative-B	Alternative-C	Alternative-D
1	Total length in waterway (Indicative cost of bridge)	2.4 km (High cost)	2.1 km (High cost)	1.9 km (Low cost)	2.0 km (Low cost)
2	Navigation channel	Very close to turning point	Near middle of two opposite turnings	Perpendicular and straight section	Perpendicular and straight section
3	River engineering aspect	Poor	Poor	Good	Good
4	Total road length including crossing (Indicative cost of bridge)	33.7 km (High cost)	30.6 km (High cost)	28.6 km (Low cost)	28.8 km (Low cost)
5	Connectivity to approach road	Poor	Fair	Good	Good
6	Road Geometry	Poor	Good	Good	Good
	Deflection Angle	17.4 deg/km	11.4 deg/km	12.9 deg/km	12.8 deg/km
	Total Degree of Curve	203.5 deg	92.8 deg	116.3 deg	133.9 deg
7	Relative effect to built-up areas (Number of houses affected based on Satellite Map)				
	Raichak Bridge approach	About 10	About 25	Less than 10	About 10
	Kukrahati Bridge approach	About 20	About 15	Less than 5	Less than 10
RESULT		Screened out	Screened out	Remains	Remains

Based on above table, Alternative-A has a poor performance in all items compared to other three alternatives and hence is screened out.

Similarly, Alternative-B also performs poor in almost all items, except road geometry compared to Alternative-C and Alternative-D, but is not significantly different. Hence this alternative is also screened out.

Comparison between Alternative-C and Alternative-D does not show significantly different results on most of the comparative items. More detailed comparison may therefore be recommended for these two alternatives.

6.5.2 Identification of Alternatives for Approach Roads

A number of alternative routes for approach roads are identified for different crossing locations.

From the results of the initial screening of crossing locations, Alternative-A and Alternative-B are screened out. Based on this screening, the alternative approach roads that solely apply to these crossing alternatives are also screened out.

Six alternative alignments are identified for the Raichak side, whereas four different alternatives are identified for Kukurahati side.

Raichak Side

After the connection of Raichak and Kukurahati, a large volume of traffic between Kolkata and Haldia will use this link. Although the scope of this Project is to connect Raichak and Kukurahati, the traffic volume that will use this link will be such that the existing NH117 passing through various densely populated areas will not be able to cope with the situation. Improvement of the road from Kolkata to Sarisha is beyond the scope of this Project, although it is understood that some conceptual study has already started for the same. Since Sarisha is in the close vicinity of this Project, this Project recommends that a solution be found for smooth traffic operation through the Sarisha village area after the connection of Raichak and Kukurahati. Therefore, alternative routes between Sarisha and Raichak are identified in order to bypass the Sarisha village area.

On the Raichak side, a total of six alternative routes for approach roads were identified from N1 through N6 as shown in **Figure 6.5.2**.

Alternative N1

This alternative bypasses Sarisha village from the westward direction. The takeoff point of the bypass in the north is at about 2.9 km from the intersection at the beginning point and meets the narrow existing road near Haridevpur village.

Alternative N2

This alternative utilizes the existing Diamond Harbour Road passing through Salisha village and then passes along the narrow existing road through Mallikapara village. The widening of the existing Diamond Harbour road inside Sarisha village will be difficult since there are many houses on both sides of the road.

Alternative N3

This alternative bypasses Sarisha village from the eastward direction but utilizes the narrow existing road passing through Mallikapara village to the bridge. This alternative crosses Diamond Harbour Road at the south of Sarisha village.

Alternative N4

This alternative uses the same bypass for Sarisha as Alternative N3, but diverts towards East and is a completely new alignment up to the bridge location. The alignment is defined to avoid built-up areas and to avoid passing through communities. It crosses Diamond Harbour Road at the south of Sarisha village and also crosses ONGC road around the same location. The bridge approach at Raichak passes parallel to the river for a length of about 1.5km.

Alternative N5

The first half of this alignment bypasses Sarisha village from more towards the East, but uses the same alignment as Alternative N4 for the remaining half of the bypass. The alignment crosses ONGC road and Diamond Harbour Road at two different locations, but close to each other.

Alternative N6

The initial section of this alternative is the same as that of Alternate N5, but diverts more towards the East. The alignment is defined to avoid built-up areas and to utilize open space as far as possible. This alternative is defined in view of the conceptual future planned Chakberia-Raichak Road via Usti, also referred to as the Eastern Bypass. However, this road is still in conceptual form and there is no officially accepted definitive alignment so far.

Kukrahati Side

In the Kukrahati side, a total of four alternative routes have been identified as shown in **Figure 6.5.3**.

Alternative S1

This alternative utilizes the existing road from Kukurahati via Chaitanyapur and meets NH41 at Barajalchak. Although the right-of-way of this road is 40 m, widening of this road will be very difficult at Chaitanyapur and Barajalchak because they are densely populated areas.

Alternative S2, S3, S4

All these alternatives are completely new alignments and are defined to minimize built-up areas as much as possible. The main point in selecting between these alternatives solely depends on the available opening space at NH41.

6.5.3 Preliminary Screening of Alternatives for Approach Road

Based on the alignment study and site visit, it is envisaged that Alternatives N1 and N3 are more competitive for the Raichak side and shall be further reviewed in detail. However, considering the future connectivity to the NH117 bypass, of which construction is a prerequisite for the implementation of the bridge, Alternative N3 looks more preferable at this stage. In Kukurahati side, Alternatives S2 and S4 seem to be more competitive because the connection point of Alternative S3 at NH41 passes through an industrial zone.

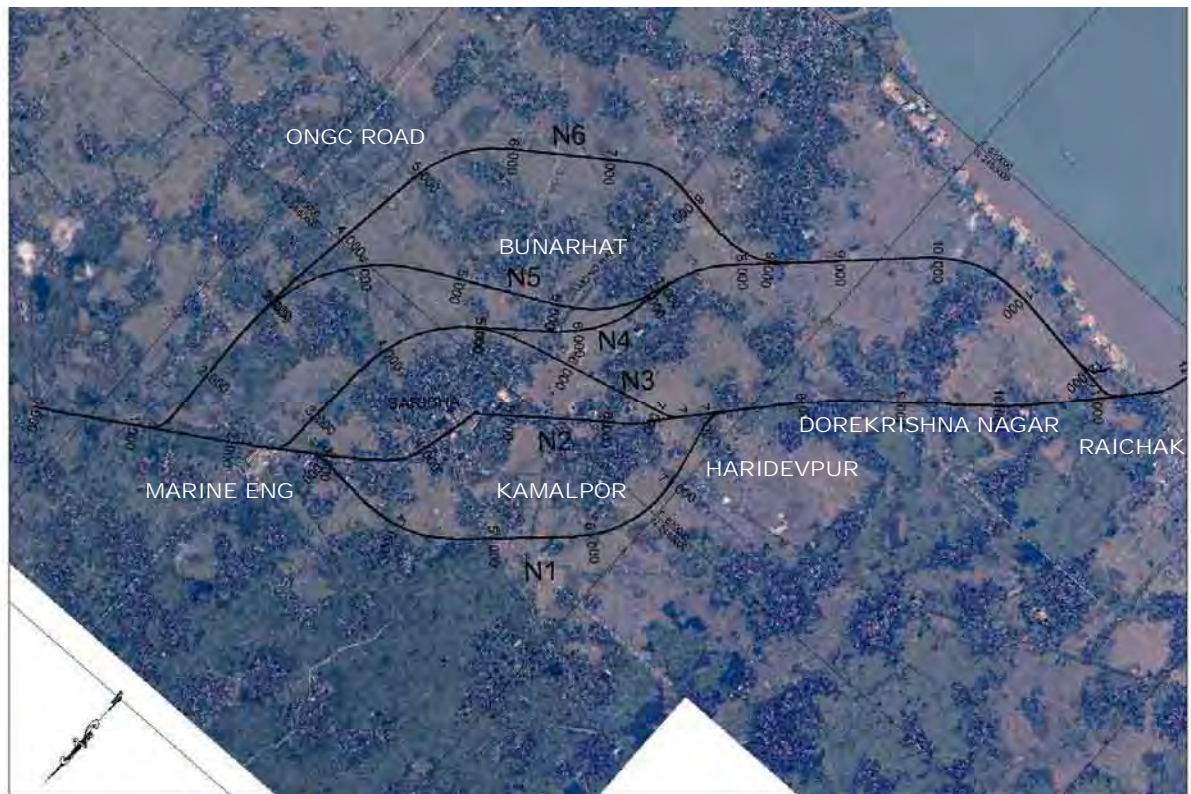


Figure 6.5.2 Alternative Routes for Raichak Side

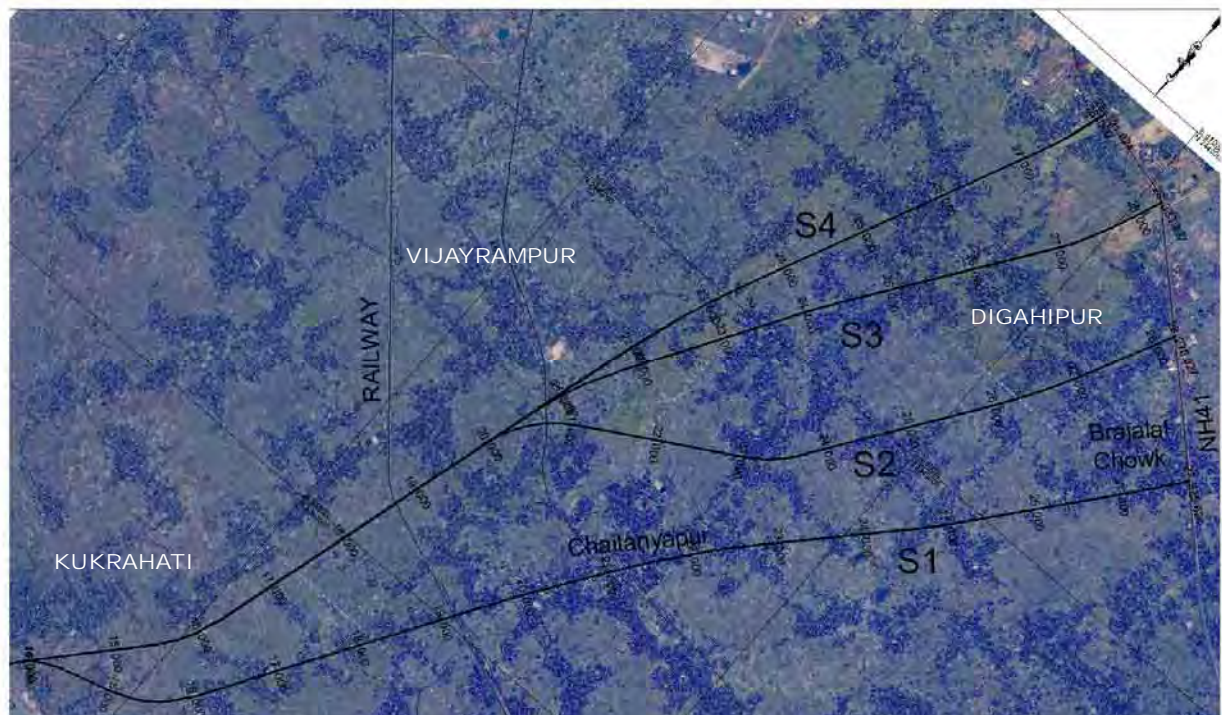


Figure 6.5.3 Alternative Routes for Kukurahati Side

CHAPTER 7

PRECONDITIONS FOR BRIDGE PLANNING

CHAPTER 7 PRECONDITIONS FOR BRIDGE PLANNING

One of the dominant factors to consider in planning the bridge is navigational requirements. The Study Team conducted a study on navigational requirements from June to early August, 2006 by exchanging views with the Kolkata Port Trust and the outcomes of this study were discussed in the second Technical Committee Meeting dated August 9, 2006. The material discussed in the meeting is considered in this chapter.

7.1. Methodology of the Navigational Requirement Study

7.1.1 General

The bridge has to be designed to allow smooth passage of various types of vessels to Kidderpore Dock (KPD), Netaji Subhas Dock (NSD) and Budge Budge Oil Berths, which are under the control of the Kolkata Port Trust (KoPT: Port Management Body). The bridge's vertical clearance height and a navigation channel width between the piers near the project site are the most critical elements to lay out the bridge design in the feasibility study phase. This is also the major concern of KoPT and the actual ship navigators.

The Study Team has adopted the following approaches to determine the bridge's vertical design height and the required channel width in the Hugli River near the project site.

a) Approach 1

To estimate the allowable maximum ship size of various types calling at KPD, NSD and Budge Budge Oil Berths taking account of berthing/docking restrictions authorized by KoPT. (Ship Size: Tonnage, Length Overall (LOA), Beam, Draft)

b) Approach 2

To survey the actual vessel traffic situation and vessel characteristics of ships navigating the Hugli River.

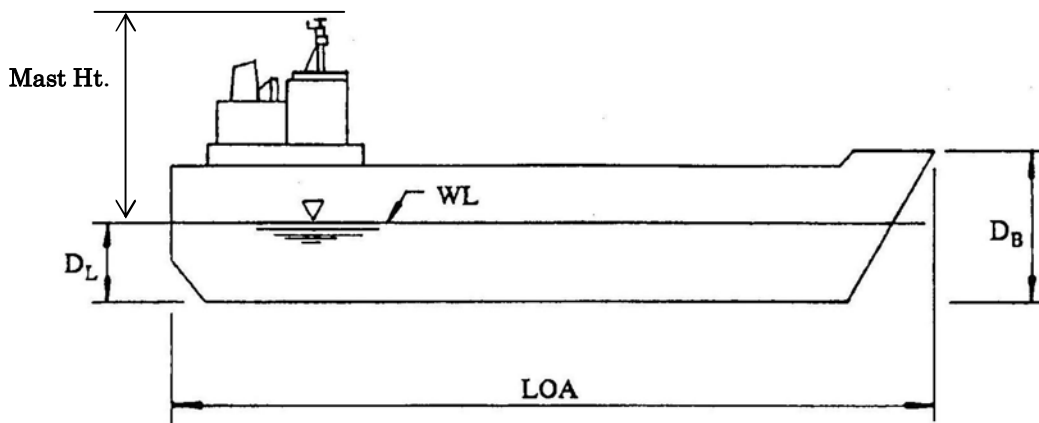


Figure 7.1.1 Loaded Ship Profile

(Source: Guide Specification and Commentary for Vessel Collision Design of Highway Bridges, ASTM)

7.1.2 Dominant Vessels for Navigational Requirements

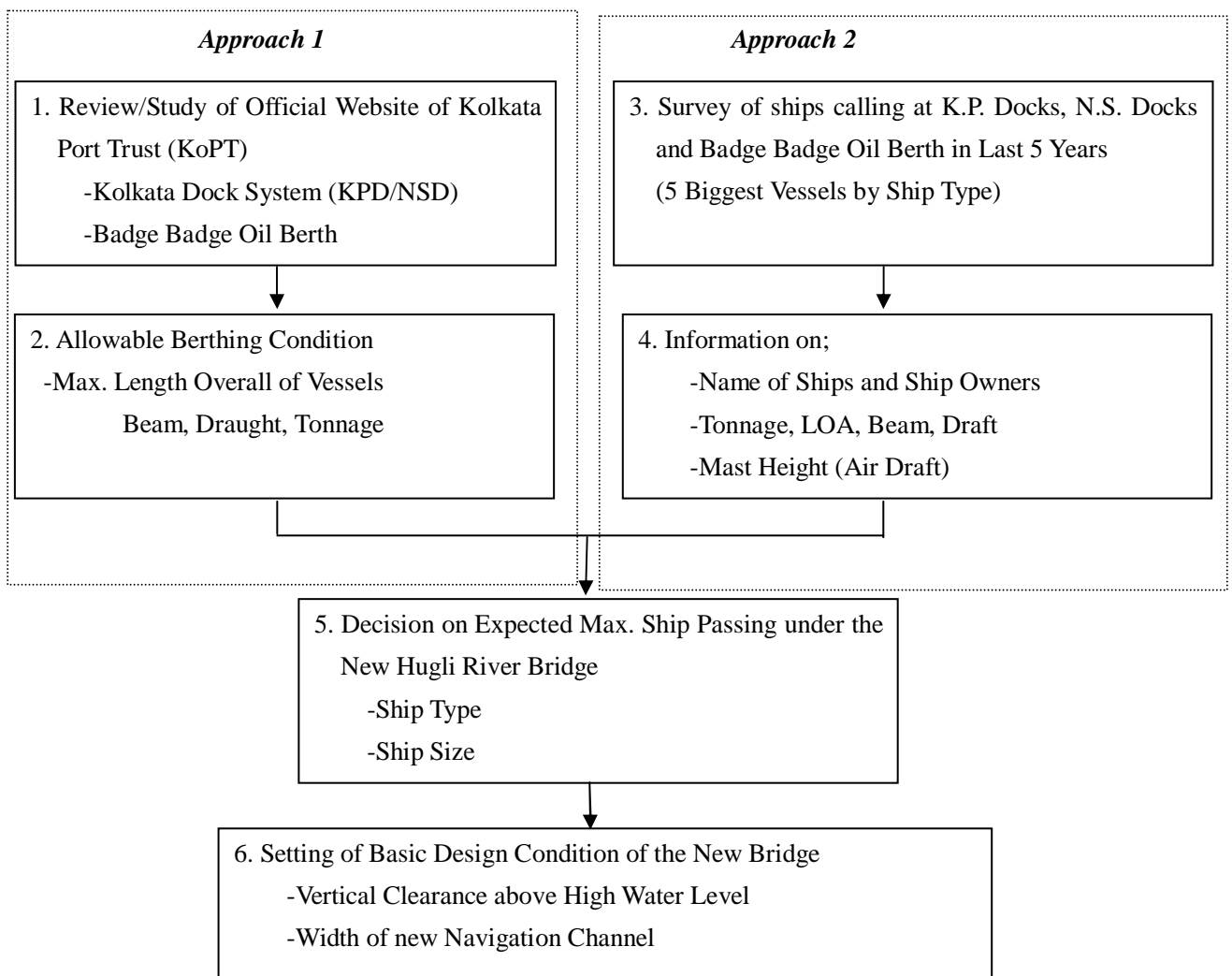


Figure 7.1.2 Approach for determining the Navigation Requirement

(1) Approach 1

a) Present Physical Berthing Condition of the KDS

According to “Kolkata Port, An Overview,” the Kolkata Port has a 7.5m draft available at the KDS. From the following information, KoPT has applied a navigation control regulation (LOA: 172m, Draft: 7.5m) to all vessels visiting KPD and NSD existing port facilities (Source: Salient Physical Features, KoPT’s Official Website). The following are the main docking/berthing facilities of the KDS.

- Kidderpore Docks (KPD)
 18 Berths, 6 Buoys/Mooring, 3 Dry Docks
- Netaji Subhas Docks (NSD)
 10 Berths, 2 Buoys/Mooring, 2 Dry Docks
 Max. LOA (Length Overall): 172m, Beam Width: 24.3m or LOA: 162m × Beam Width 25m
- Petroleum Wharves at Budge Budge
 6 Petroleum Wharves
 LOA: 189m

Taking account of the above information, no vessels with a draft of more than 7.5m can visit the KDS to berth at any of the above facilities and therefore the following are the maximum allowable ship dimensions that can be accommodated at the KDS except for the anchorages at Diamond Harbour, Saugor Road and Sandheads.

Table 7.1.1 Allowable Max. Ship Size

Ship Type	Deadweight Tonnage	Length Overall	Beam	Full Load Draught
Passenger	6,000 GT	138 m	17.8 m	7.4 m
General Cargo	7,000 DWT	129 m	17.6 m	7.5 m
Oil Tanker	8,000 DWT	120 m	19.0 m	7.5 m
Ore Carrier	Less than 10,000 DWT	140 m	18.7 m	8.1 m
Container	10,000 DWT	153 m	23.4 m	7.4 m
Products & Chemical Tanker	8,000 DWT	140 m	17.0 m	7.5 m

b) Ship Types

Calculation of radar mast height:

The air draft (radar mast height) above sea level is estimated by the following equation derived from Statistical Analysis. (Number of samplings: approx. 1600)

Source: Analysis on Mast Heights and Ships' Dimensions Relative to External Forces Acting on Ships
 Bulletin of Institute of Port/Harbor Technology, Ministry of Transport Japan

$$Y = \alpha \cdot X^\beta + E \quad \text{-----} \quad (7.1)$$

Y: mast height, X: tonnage in DWT (GT for passenger ship)

α and β : coefficients, E: constant

Table 7.1.2 Air draft in meter above sea level

Ship Type	Data Sampling Year	α	β	E (constant)	Y (height in meter)	
Container	1990	4.258	0.224	4.642	10,000 DWT	38.2 m
Oil Tanker	1990	3.721	0.214	12.776	8,000 DWT	38.2 m
Passenger	1990	4.790	0.209	7.883	6,000 GT	37.4 m
General Cargo	1990	3.762	0.234	3.332	7,000 DWT	33.2 m
					Max.	38.2 m

(2) Approach 2 -Survey of the actual vessel traffic situation along the Hugli River

The Study Team had some technical discussions with the KoPT management concerned in connection with the vessel traffic situation at KPD, NSD and Badje Badje Oil Berths. The following are the Study Team's interpretation about the present vessel traffic:

Some vessels with a full-load draft deeper than 7.5m may discharge part of their cargos at HDC (Haldia Dock Complex) or the anchorages at Saugor or Sandheads and then visit KPD with an allowable draft within KoPT's navigation control regulation. (LOA: 172m, Draft: 7.5m)

As a result, the following were obtained.

Max. Ship Size

- i) Passenger ship (Liner ship between Kolkata and Port Blair, Andaman and Nicobar Islands)
 - Tonnage: 14,239 GT
 - Draft (in ballast condition): 6.5m

- LOA: 157 m
 - Beam: Approx. 21 m
 - Mast Height: 48.05 m (From keel bottom line)
 - Mast Height above sea level: $48.05 - 6.5 = 41.55$ m
- (Ref. $H=43.0$ m for trial computation by the equation in (7.1))

ii) Container

- Tonnage: 14,021 DWT
- Draft (in ballast condition): not known
- LOA: 159 m
- Beam: 23 m
- Mast Height: not known ($H=40.8$ m by the equation in (7.1))

Note: The vessel could have a deeper draft than that regulated by KoPT, if it carried the full capacity cargo of 580 TEU containers. But the vessel visited KPT with 60% of the loading capacity to reduce the sailing draft.

With regard to the size of other ship types (general cargo, oil tanker, oil products tanker, bulk carrier), LOA and Beam Width are within KoPT's limitations for vessels. (LOA: 172m, Draft: 7.5m)

7.2. Horizontal Clearance for Ocean-going Vessels

No specific information on the existing channel alignment/width near the project site, both of which are subject to seasonal change, has been supplied by KoPT. Therefore, the Consultants need to calculate the required channel width by following internationally accepted methods. The Admiralty Chart published by the Hydrographer of the Navy, England, is used to help determine the channel alignment. In this section, the calculation is made only for large ocean-going vessels.

7.2.1 Channel Width according to Beam Width

Based on Approaches 1 and 2, the extreme breadth and length of a vessel used for the calculation of the navigation channel are as follows:

- Max. vessel's LOA and beam width for calculation of navigation channel
- LOA: 172m and Beam Width: 25 m (Based on Present KoPT restrictions)

Several calculation methods for determining the channel width are proposed by the

following researchers and marine associations based on the empirical maneuver practice:

Table.7.2.1 Calculation Method of Channel Width

(B: Beam width of vessel)

Author's Name	Double Lanes	Single Lane	Name of Report
Keinosuke HONDA, Professor Emeritus Kobe Marine University	7.2~8.2B	4.6~5.1B	Theory of Ship Maneuvering (Sosen Tsuron in Japanese)
Capt. Satoshi Iwai	8~10B	5 ~6B	Basic Theory of Ship Maneuver in Bay and Port/Harbor -Maneuverability and Approach to Anchorage-
UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT	7B+30 m	5B	Port Development A handbook for planners in developing countries
The Joint Working Group PIANC and IAPH, cooperation with IMPA and IAIA	4.2~14.2B	1.9~7.2B	APPROACH CHANNELS A GUIDE FOR DESIGN
Gregory P. Tsinker	6.2~9.0B	3.6~6.0B	HANDBOOK of PORT AND HARBOR ENGINEERING

(Source: Design Standard of Port/Harbour Facilities, Ministry of Transport, Japan)

The Study Team adopts the equation that gives the widest strip of navigation channel (for a two-way sea-lane):

Standard width of navigation channel = $14.2 \times 25(B) = 355$ m (Source: PIANC)

7.2.2 Channel Width according to Ship Length (L: Ship length in meter)

Standard width of navigation channel (for a two-way sea-lane)

$$1.5L \text{ to } 2.0L = 1.5 \times 172 \text{ to } 2 \times 172 = \underline{253 \text{ m to } 344 \text{ m}}$$

Where, L: Ship length in meter

In case of a one-way sea-lane, the navigation channel width will be as follows:

$$7.2 B = 7.2 \times 25 = \underline{180 \text{ m}}$$

(Source: Design Standard of Port/Harbor Facilities, Ministry of Transport, Japan)

7.2.3 Horizontal Clearance from Navigation

From the previous subsections 7.2.1 and 7.2.2 the required navigational channel widths are 355 m for two-way sea-lanes and 180 m for a single lane.

Considering the vessel speed, strong and indefinite current characteristics (a tidal river, 4 to 5 knot upstream and downstream) and the complex bending and meandering configuration of the river (S-shaped), the channel has to be equipped with an additional strip of water called “sight clearance” (min. width: 100m) on both sides.

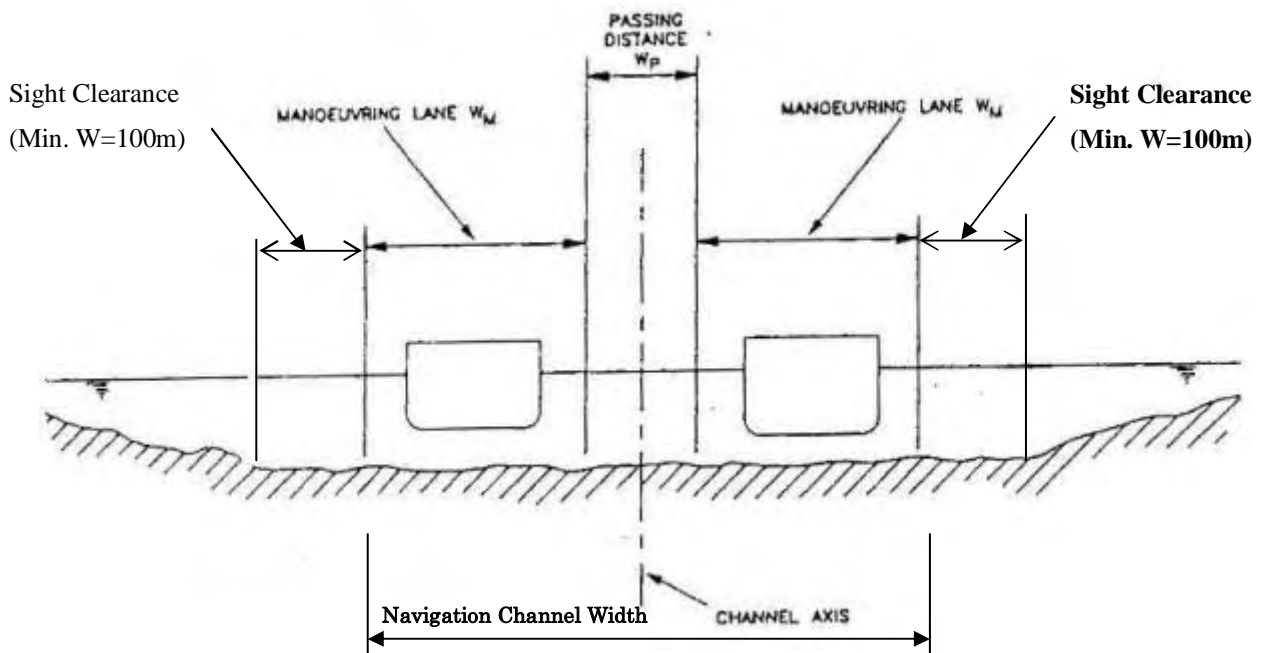


Figure 7.2.1 Elements of Channel Width

(Source: APPROACH CHANNELS, PIANC)

A two-way channel should allow for a central strip or a passing distance, which must ensure that ship-ship interaction is reduced to an acceptable minimum. The passing distance (WP) is equal to a multiple of the beam of the larger passing ship and subject to the traffic density in the two lanes. A maneuvering lane will be arranged on both sides of the passing lane. The basic maneuvering lane (WM) is in a range of a width from 1.3B to 1.8B with additional widths to allow for the effects of wind, current, etc.

A horizontal clearance of 550m ($= 355 + 100 \times 2$) for double lanes and 380 m ($= 180 + 100 \times 2$) for a single lane include all the allowances required for the safe navigation of vessels.

7.3. Vertical Clearance for Ocean-going Vessels

7.3.1 Present Situation related to Vertical Navigation

The width of the river at the projected location of the Bridge is about 2.0 km or less and the river is meandering here and there. The river is deeper on the Kukurahati side and the depth gets gradually shallower towards the Raichak side. The water depth then becomes deeper again on the Raichak side. The water depth is generally about 9 m and the deepest part is about 14 to 15m below Chart Datum Line (CDL).

A container ship of 10,000 DWT has approximately 7.5 m of full-load draught and the water depth of the Hugli River near the new bridge site should have, therefore, at least 0.6m to 0.75m allowance of water depth in addition as under- keel clearance.

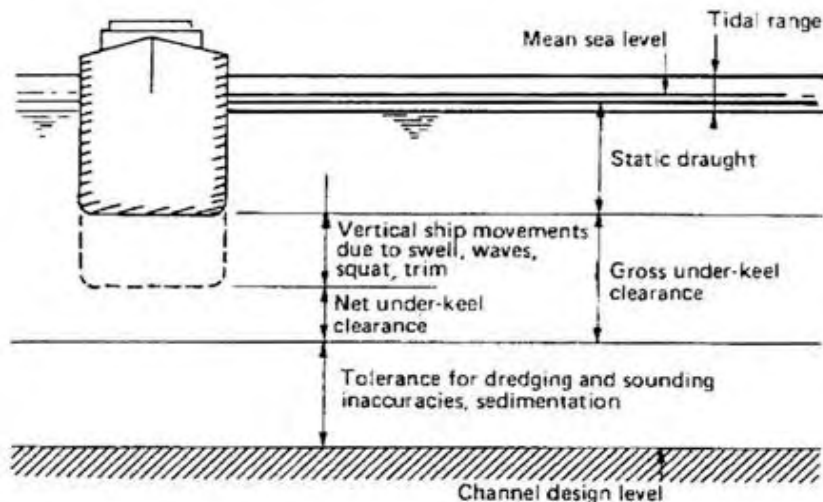


Figure 7.3.1 Definition of Under-keel Clearance (Source: Port development, UNCTAD)

KoPT controls all vessels, which navigate the river in a fleet formation at high water slack tide twice a day. The fleet navigates Hugli Point in a single direction; however down stream of Hugli Point the movement can be two-way. The average number of vessels that navigate through this channel is 2 to 3 in each direction i.e. about 6 to 9 in both directions. The speed is limited to about 8 to 10 knots in the channel.

(Source: Evaluation Study of Project Proposals from the Kolkata Port Trust and Public Works Department, Final Report, March 2005, Japan International Cooperation Agency)

7.3.2 Required Vertical Clearance

From the results of Approach 2 already discussed in the previous Subsection 7.1.2, the maximum mast height of existing vessels on the Hugli River is 41.55 m for liner ships between Kolkata and Port Blair, Andaman and Nicobar Islands. Accordingly, the following vertical clearance should be considered as the requirement for ocean-going vessels.

- Vertical clearance above Highest High Water Level ever recorded
 $41.55\text{m} + 2.0\text{m (allowance)} = 43.55\text{m}$, say 44 m above HWL.

7.4. Pre-Conditions related the Navigational Requirement

As a result of the second Technical Committee Meeting as well as a series of discussions with the Kolkata Port Trust regarding the navigational requirements for bridge planning, the following were decided:

Since the reach is very sensitive with oscillating flow predominating in the semi-diurnal tidal hydrodynamic domain, any sort of engineering interference like building bridge piers in the

river will have a direct and governing impact on the river regime. In this regard, a reduction in the tidal flux (discharge) should not be allowed. Further, the obstruction in the form of piers is expected not only to generate afflux but also reduce the flux by a certain amount and the length of the linear waterway.

The obstruction in the river might be detrimental or fatal for the river regime, have an alarming effect in the form of siltation and likely result in a shifting of the navigable channel. Therefore the acceptable sizes and number of piers should be examined through mathematical modeling (simulation) and physical model tests in the course of project preparation work.

CHAPTER 8

Recommendations and Suggestions on Further Study

CHAPTER 8 Recommendations and Suggestions on Further Study

As a result of the Study up to August 2006, the Study Team would like to suggest and recommend the following for further study.

- 1) The Raichak-Kukrahati Bridge will connect NH117 near Sarisha on the Raichak side and NH41 on the Kukrahati side. A heavy traffic is expected to pass the bridge which shortens the traveling distance between Haldia and Kolkata. The NH117 passes through several large villages such as Sarisha, Sirakol, Fatepur, Amtala and Joka. There are a number of houses and shops along NH117 stretching outside those villages, so it is difficult to widen the section between Sarisha and Joka under the current circumstances. Therefore, in order to relieve the future traffic congestion around Kolkata City, the Eastern and Southern Expressway is one of the most vital roads along with the Barasat Bypass among several road development projects identified in the study area.
- 2) The Raichak-Kukrahati Bridge is to be built over the ocean-going navigational channel of the Hugli River. In the navigational requirement study by the Study Team, the horizontal clearance of 550 m as double lane channel and vertical clearance of 44 m above HWL were estimated.
- 3) According to a number of discussions with the Kolkata Port Trust, sand sedimentation is very likely to occur in the river resulting in a change in the navigable channel, which has been approximately 1.0 km wide since 1945. In this regard, consideration should be given to keeping the navigable channel for the main span at 1.0 km or more by adopting a suspension bridge or multi span cable stayed girder bridge. River crossing option studies are crucial with regard to not only the navigation of ocean-going vessels but also probable future change in the navigation channel. Options include a long span bridge, shield tunnel, immersed tube tunnel, car ferries and augmentation of the capacity of the present passenger ferries.
- 4) As the State Government expects the earliest possible implementation for the construction of the Raichak-Kukrahati Bridge, due consideration should be given to procurement by design-build contracting in addition to conventional contracting.
- 5) The PWD (Roads) would like the design appropriateness of the long span bridge to be confirmed by means of a wind tunnel test. In the case of the bridge option, the PWD (Roads) and the Kolkata Port Trust require physical and mathematical modeling to

mitigate the likelihood of sand sedimentation and changes to the course of the river.

- 6) If the PWD adopts the Private Financing Initiative (PFI) method for the Raichak-Kukurahati Bridge project, it should avoid a monopolistic private development. In any case, fairness and transparency are essential for developing public-use infrastructure like the Raichak-Kukurahati Bridge.

APPENDICES

APPENDIX-1

QUESTIONNAIRE SURVEY ON INDUSTRIES AT HALDIA AND FALTA

1. Purpose of Survey

The questionnaire survey has been conducted against the factories located in Haldia Industrial Area and Falta SEZ, where there are many factories likely to take effect of the Rachak-Kukurahati Bridge construction, for the purpose of giving practical data to the industrial development study as well as traffic demand study.

2. Methodology and Schedule of Survey

The survey has been conducted for the duration between 21st June and 21st August, 2006. At the beginning of study, the Study Team prepared the questionnaire and requested Haldia Development Authority and DC Office in Falta SEZ to distribute and collect the questionnaires, in cooperation with PWD(Road). At the same time, the Study Team received the lists of entities located at Haldia and Falta from Haldia Development Authority and Development Commissioner of Falta SEZ, respectively.

The Study Team visited Haldia and Falta several time to receive the collected data and to request factories who had not replied to give answers. With regard to industrial development, all the filled-out questionnaires are analysed in this Annex. Besides, the Study Team will use the filled-out questionnaires as part of reference materials for traffic demand forecast to be conducted in due course.

3. Number of Factories Surveyed

(1) Haldia Industrial Area

The Study Team has received two types of lists: the list of existing industries at Haldia, and list of industries in the pipeline. The ward of industries in the pipeline means the industries being set up at Haldia. The Study Team eliminated the industries in the latter list from the questionnaire survey, as they cannot obtain replies from those pipeline industries based on the operational experience at Haldia.

Out of 29 industries in the list of existing industries, 8 industries are non-manufacturing or factories not in operation at present. Hence, 21 industries are subject of the study. Among, 16 industries replied to the questionnaire.

Table 1 Number of Factories Surveyed

Description	Nos	Ratio
Existing entities in the list	29	-
Non-manufacturing industry and factories not in operation at present	8	-
Factories for the questionnaire survey	21	100%
Replied factories	16	76%

(2) Falta SEZ

The Study Team has received the list of Operating Units in Falta Special Economic Zone (as on 01.07.2006) from the Development Commissioner. This list includes 93 industries, however, among which there are many non-manufacturing industries and industries not in operations. Accordingly, the number of industries to be studied is 40. Among, 5 industries replied to the questionnaire. If the Study Team had enough time and had more frequently visited individual industries to ask their reply in the same manner as they did at Haldia, they could have more replies.

Table 2 Number of Factories Surveyed

Description	Nos	Ratio
Existing entities in the list	93	-
Non-manufacturing industry and factories not in operation at present	53	-
Factories for the questionnaire survey	40	100%
Replied factories	5	13%

4. Analysis of Questionnaire Survey for Industrial Aspect

(1) Haldia Industrial Area

a) Industrial Activity

Table 3 shows the name, number of employees, land area, and industrial activity of the responded industries. Questionnaire survey was also conducted for some industries which are carrying on business related to storage and supply of crude oil or petroleum products. Strictly speaking they are not manufacturers; however, they are actually transporting huge volume of crude oil or petroleum products. As far as transport demand is concerned, it is important to obtain information on the volume, destination, and means of transportation from

such industries.

Table 3 Responded Industries at Haldia

	Name of Company	Employee	Land acres	Current Industrial Activities
1	Tata Chemicals Ltd.	102 Permanent + 2000 Contract	85.0	Manufacturing of 200,000 ton/year fertiliser
2	Bharat Petroleum Corporation Ltd.	22	31.0	Storage and supply of about 170,000 kl/year petroleum products
3	MCC PTA India Corporation Private Ltd.	271 Permanent + 400 contract	54.6	Manufacturing of about 470,000 ton/year PTA
4	RDB Rasayans Ltd.	92 Permanent + Contract	2.5	Manufacturing of PP jumbo bags, PP small bags, PP woven with about 110 ton/year
5	Haldia Petrochemicals Ltd.	703 Permanent + 1,200 Contract	732.0	Manufacturing of polymer and chemicals with about 1,200,000 ton/year in total
6	Marcus Oil & Chemicals Private Ltd.	9 Permanent + 70 Contract	13.2	Manufacturing of about 50,000 ton/year Polyethylene Wax
7	IOC Petronas Private Ltd.	33 Permant + Contract Labours	80.0	Storage and supply of about 600,000 ton/year LPG
8	Adani Wilmar Ltd.	90 Permanent + Contract Labours	9.0	Manufacturing of about 100,000 ton/year Edible Oil
9	South Asian Petrochem Ltd.	143	25.0	Manufacturing of about 170,000 ton/year PET resin
10	Exide Industries Ltd.	1200 Permanent + Contract Labours	75.0	Manufacturing of about 32,000 ton/year Lead Acid Battery
11	Consolidated Fibres and Chemicals Ltd.	246 Permanent + Contract Labours	30.3	Manufacturing of about 12,000 ton/year Acrylic Fibre
12	Reliance Industries Ltd.	20 Permanent + 30 Contract	31.7	Storage and supply of about 50,000 kl/year petroleum products
13	Indian Oil Corporation Ltd. Haldia Barauni Crude Oil Pipeline	55 Permanent + Contract Labours	133.0	Handling of about 7,100,000 ton/year Crude Oil through Pipeline
14	Electrosteel Castings Ltd.	350	65.0	Manufacturing of about 57,000 ton/year Sponge Iron and 150,000 ton/year Lam Coke
15	Indian Oil Corporation Ltd. Haldia Refinery	427 Permanent + 1139 Contract	500.2	Refining of about 5,600,000 ton/year Crude Oil
16	Hindusthan Petroleum Corporation Ltd.	10 Permanent + 14 Contract	62.1	Storage and supply of about 150,000 kl (estimated) petroleum products

b) Expected Impacts by the Bridge Construction

It is expected that the Raichak-Kukurahati Bridge project with adequate roads connectivity would give the replied industries with impacts of the following aspects:

1. to reduce the time and costs of transport by partially changing the existing transport routes for both raw materials and fished products to the transport routes through the proposed bridge,
2. to partially change the commute of factory employees to that through the proposed bridge, which will consequently facilitate the industries' wider recruitment as well as commuters' conveniences, and
3. to improve personnel exchange with Kolkata and everywhere on the eastern bank of River Hugli, which will consequently facilitate the replied industries' business activities as well as boosting residential preferences.

Table 4 shows the expected impacts given to the existing industries at Haldia in the above aspects.

The expected traffic volume through the proposed bridge has been calculated based on the each factory's transportation volume of both raw materials and fished products as well as the expected ratio of traffic to be shifted through the bridge given by the respondents. Expected number of commuters has also calculated by the same way as traffic volume.

Indian Oil Haldia Refinery demands for the largest traffic volume in Haldia. However, it does not expect at all that its traffic routes change to those through the bridge, probably because it has an oil depot at Budge-Budge with a pipeline connection from Haldia, and through which it can transports petroleum products to the eastern bank area including Kolkata. Nor does Bharat Petroleum expect change of its traffic routes. It clearly replied that Kolkata and surrounding areas was being fed by its Budge-Budge Installation near Kolkata. However, it also told there would be huge oil movements from Haldia to Kolakata and surroundings, if its Budge-Budge Installation fails. Transportation route via the proposed bridge would facilitate an alternative supply in case of emergency for the other industries at Haldia as well, although such effects are not counted in Table 4.

It is expected approximately 1.3 million ton /year cargo be shifted to the proposed bridge route in total of 16 respondents. Among, the Haldia Petrochemicals Ltd. will have the largest traffic volume through the proposed bridge route.

Table 4 Expected Impacts by the Bridge Construction

	Name of Company	Expected Cargo Through Bridge		Expected Commuter Through Bridge	Personal Exchange Effects
		Traffic Volume Ton/year	% on Factory's Cargo		
1	Tata Chemicals Limited.	81,600	37%	630	x
2	Bharat Petroleum Corporation Ltd.	0	0%	2	
3	MCC PTA India Corporation Private Ltd.	113,000	4%	336	x
4	RDB Rasayans Ltd.	147	60%	46	x
5	Haldia Petrochemicals Ltd.	590,000	15%	476	x
6	Marcus Oil & Chemicals Private Ltd.	23,000	19%	4	
7	IOC Petronas Private Ltd.	180,000	15%	10	
8	Adani Wilmar Ltd.	90,000	22%	9	
9	South Asian Petrochem Ltd.	7,000	2%	14	
10	Exide Industries Ltd.	25,750	31%	375	
11	Consolidated Fibres and Chemicals Ltd.	1,316	5%	111	
12	Reliance Industries Ltd.	6,000	8%	1	x
13	Indian Oil Corporation Ltd. Haldia Barauni Crude Oil Pipeline	0	0%	40	x
14	Electrosteel Castings Ltd.	197,625	22%	10	x
15	Indian Oil Corporation Ltd. Haldia Refinery	0	0%	157	x
16	Hindusthan Petroleum Corporation Ltd.	21,000	18%	12	x
Total of the above 16 factories		1,315,438	-	2,233	-

Note: 1) All values are based on the production volume after expansion, when industries have expansion plan.
2) Cargo volume is a total of raw materials and finished products.
3) The industries with “x” mark replied that certain personal change effects would be given by the bridge.

The next impact given by the proposed bridge will be the change of commuter. It may be possible that Kolkata and surroundings, especially South 24 Paraganas along the road to be prepared between the bridge and Kolkata, become commutable areas to Haldia. New city construction project may come up in these areas due to shortening access to both Kolkata and Haldia. Certain respondent told that bus service should be started between Kolkata and Haldia via the bridge. It is expected over 2,000 commuters be shifted to the proposed bridge route in total of 16 respondents.

Third impact given by the bridge is to facilitate the personal exchanges. Many respondents at Haldia gave comments on this effect, although it is difficult to make a quantitative evaluation. To cite instances, there are following comments from respondents:

- a) Haldia will become an attractive workplace for the current generation of employees. In some case, the bridge will increase the possibility of employee retention.
- b) Many facilities like educational institutes, entertainment, shopping complexes may

come to Haldia.

- c) New businessmen and industrialists will come and create their business at Haldia.
- d) The bridge project will have a positive impact on employee morale due to better connectivity with Kolkata, leading to faster access of emergency aids, development of other small scale business units and boost residential preferences.
- e) Communication with governmental bodies will be improved.
- f) It will facilitate the plant maintenance requirement from Kolkata.
- g) Visitors from outside West Bengal will easily reach the plant site at Haldia.

(2) Falta SEZ

a) Industrial Activities

Table 5 shows the name, number of employees, land area, and industrial activity of the responded industries. Industries at Falta SEZ are all export-oriented industries, taking advantages of SEZ scheme. Most of manufacturing industries at Falta use raw materials imported via port of Haldia or Kolkata, and export their products via Haldia or Kolkata. Hence, they are very sensitive about transport costs between the port and Falta.

Table 5 Responded Industries at Falta

	Name of Company	Employee	Land acres	Current Industrial Activities
1	Hi-Tech Information Marketing Private Ltd.	40 Permanent + 60 Contract	1.00	Manufacturing of about 2,000 ton/year Mica Chip, Mica blocks etc.
2	Robinson International Private Ltd.	50 Permanent + Contract Labour	0.90	Manufacturing of 60 ton/year brass builder's hardware and 103 ton/year lead pillar.
3	Eco Wheels Private Ltd.	30	0.75	Manufacturing of 200,000 pieces/year PU tubeless tyres, 80,000 pieces/year Nylon Rim
4	Acknit Knuitting Ltd.	250	10.00	Manufacturing of 500 ton/year of knitted and dotted gloves.
5	Krypton Industries Ltd,	65	18.00	Manufacturing of 800,000 year PU tyres, 150,000/year wheels, and 100,000/year castors.

b) Expected Impacts by the Bridge Construction

It is expected that the Raichak-Kukurahati Bridge project with adequate roads connectivity would give impacts of the following aspects to the replied industries:

1. to reduce the time and costs of transportation by partially changing the existing transport routes for both raw materials and fished products to the transport routes through the proposed bridge,
2. to partially change the commute of factory employees to that through the proposed bridge, which will consequently facilitate the industries' wider recruitment as well as commuters' conveniences, and
3. to create new business opportunities at Falta

Table 6 shows the expected impacts given to the existing industries at Falta SEZ in the above aspects. The expected traffic volume through the proposed bridge and expected number of commuters has been calculated by the same way as Haldia.

Table 6 Expected Impacts by the Bridge Construction

	Name of Company	Expected Cargo Through Bridge		Expected Commuter Through Bridge	New Business Opportunity
		Traffic Volume Ton/year	% on Factory's Cargo		
1	Hi-Tech Information Marketing Private Ltd.	4,480	56%	6	
2	Robinson International Private Ltd.	203	60%	10	x
3	Eco Wheels Private Ltd.	132	50%	6	x
4	Acknit Knuitting Ltd.	808	83%	75	x
5	Krypton Industries Ltd,	2,550	75%	20	x
Total of the above 5 factories		8,173	-	117	-

Note: 1) All values are based on the production volume after expansion, when industries have expansion plan.
 2) Cargo volume is a total of raw materials and finished products.
 3) The industries with "x" mark replied that new business opportunities would be created by the bridge.

It is expected approximately 8,000 ton /year cargo be shifted to the proposed bridge route in total of 5 respondents. The scale of cargo shift is very much smaller than the scale of Haldia case. It is largely dependant on difference in the nature and scale of industry between Falta and Haldia.

Industries at Haldia belong mainly to the material production industry and oil refining/distribution industry. Large scale is required for such type of industries from

economic viewpoints. On the other hand, industries at Falta belong to processing material industry to manufacture consumable goods. Not so large scale is required for such type of industries, compared with the type of industries at Haldia.

Special attention should be paid to the percentage of cargo shifted to the bridge route over the each factory's total cargo volume, which is shown on Table 6. Industries at Falta replied they would change their transport routes to through the proposed bridge with quite high percentage, compared with those located at Haldia. They have high fervours to the bridge project.

There are many respondents who expect new business opportunities at Falta. They told that new business opportunities might be increased in Falta area and transportation criteria might be changed through Raichak-Kukurahati Bridge from Falta to Haldia dock.

Falta Export Processing Zone (EPZ) was established in 1984 with a serious handicap for EPZ that is far from the port. It would appear that this handicap has been an obstacle against development, since its establishment. It is believed that Raichak-Kukurahati Bridge should be a leverage to overcome the obstacle and create the practical business environment for export promotion.

APPENDIX-2

ENVIRONMENTAL IMPACT ASSESSMENT NOTIFICATION OF THE GOVERNMENT OF INDIA

**ENVIRONMENT IMPACT ASSESSMENT NOTIFICATION
MINISTRY OF ENVIRONMENT AND FORESTS**

NOTIFICATION

New Delhi, the 27th January, 1994

(Incorporating amendments made on 04/05/1994, 10/04/1997, 27/1/2000, 13/12/2000, 01/08/2001 and 21/11/2001)

1. S.O.60 (E) Whereas a notification under clause (a) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 inviting objections from the public within sixty days from the date of publication of the said notification, against the intention of the Central Government to impose restrictions and prohibitions on the expansion and modernization of any activity or new projects being undertaken in any part of India unless environmental clearance has been accorded by the Central Government or the State Government in accordance with the procedure specified in that notification was published as SO No. 80(E) dated 28th January, 1993;

And whereas all objections received have been duly considered;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby directs that on and from the date of publication of this notification in the Official Gazette, expansion or modernization of any activity (if pollution load is to exceed the existing one, or new project listed in Schedule I to this notification, shall not be undertaken in any part of India unless it has been accorded environmental clearance by the Central Government in accordance with the procedure hereinafter specified in this notification;

2. Requirements and procedure for seeking environmental clearance of projects:

I (a) Any person who desires to undertake any new project in any part of India or the expansion or modernization of any existing industry or project listed in the Schedule-I shall submit an application to the Secretary, Ministry of Environment and Forests, New Delhi.

The application shall be made in the proforma specified in Schedule-II of this notification and shall be accompanied by a project report which shall, inter alia, include an Environmental Impact Assessment Report, an ** Environment Management Plan and details of public hearing as specified in Schedule-IV** prepared in accordance with the guidelines issued by the Central Government in the Ministry of Environment and Forests from time to time. However, Public Hearing is not required in respect of (i) small scale industrial undertakings located in (a) notified/designated industrial areas/industrial estates or (b) areas earmarked for industries under the jurisdiction of industrial development authorities; (ii) widening and strengthening of

highways;(iii) mining projects (major minerals) with lease area up to 25 hectares, (iv) units located in Export Processing Zones, Special Economic Zones and (v) modernisation of existing irrigation projects.

- (b) Cases rejected due to submission of insufficient or inadequate data and *Plans may be reviewed as and when submitted with complete data and *Plans.Submission of incomplete data or plans for the second time would itself be a sufficient reason for the Impact assessment Agency to reject the case summarily.

II In case of the following site specific projects:

- (a) Mining;
- (b) Pit-head thermal power stations;
- (c) Hydro-power, major irrigation projects and/or their combination including flood control;
- (d) Ports and harbours (excluding minor ports); and
- (e) Prospecting and exploration of major minerals in areas above 500 hectares.

The project authorities will intimate the location of the project site to the Central Government in the Ministry of Environment and Forests while initiating any investigation and surveys. The Central Government in the Ministry of Environment and Forests will convey a decision regarding suitability or otherwise of the proposed site within a maximum period of thirty days.*The said site clearance shall be granted for a sanctioned capacity and shall be valid for a period of five years for commencing the construction, operation or mining. *

- III (a) The reports submitted with the application shall be evaluated and assessed by the Impact Assessment Agency, and if deemed necessary it may consult a committee of Experts, having a composition as specified in Schedule-III of this Notification. The Impact Assessment Agency (IAA) would be the Union Ministry of Environment and Forests. The Committee of Experts mentioned above shall be constituted by the Impact Assessment Agency or such other body under the Central Government authorised by the Impact Assessment Agency in this regard.
- (b) The said Committee of Experts shall have full right of entry and inspection of the site or, as the case may be, factory premises at any time prior to, during or after the commencement of the operations relating to the project.
- (c) The Impact Assessment Agency shall prepare a set of recommendations based on technical assessment of documents and data, furnished by the project authorities, supplemented by data collected during visits to sites or factories if undertaken, and details of public hearing. The assessment shall be completed within a period of ninety days from receipt of the requisite documents and data from the project authorities and completion of public hearing and decision conveyed within thirty days thereafter. The clearance granted shall be valid for a period of five years for commencement of the construction or operation of the project.

No construction work, preliminary or otherwise, relating to the setting up of the project may be undertaken till the environmental and site clearance is obtained.

- IV. In order to enable the Impact Assessment Agency to monitor effectively the implementation of the recommendations and conditions subject to which the environmental clearance has been given, the project authorities concerned shall submit a half yearly report to the *Impact Assessment Agency. Subject to the public interest. * the Impact Assessment Agency shall make compliance reports publicly available.
- V. If no comments from the Impact Assessment Agency are received within the time limit, the project would be deemed to have been approved as proposed by project authorities.
3. Nothing contained in this Notification shall apply to:
Basis of the environmental impact assessment is provided in the Notification of the Government of India issued on 27th January, 1994 as per shown in Appendix B.

In the Notification's Schedule I, road construction project involving land acquisition is subject to Environmental Clearance using proforma as per provided in the Schedule II of the above Notification. It licenses the project implementation as a result of screening by a committee of EIA impact assessment that is provided in the Schedule III of the above Notification. Further the Schedule IV provides a way public hearing is held by the State Pollution Control Board in which the Project is implemented.

- (a) Located in the areas covered by the Notifications S.O. No.102 (E) dated 1st February, 1989, S.O. 114 (E) dated 20th February, 1991; *S.O. No. 416 (E) dated 20th June, 1991* and S.O. No.319 (E) dated 7th May, 1992.
- (b) Any item falling under entry Nos.1,2,3,4,5,9,10,13, 16,17,19,*21*,25 and 27 of Schedule-I if the investment is less than Rs.50 crores.
- (c) Any item reserved for Small Scale Industrial Sector with investment less than Rs. 1 crore.
- (d) Defence related road construction projects in border areas.
- (e) Any item falling under entry No. 8 of Schedule I covered by the notification G.S.R. 1037(E) dated 5th December 1989.
4. Concealing factual data or submission of false, misleading data/reports, decisions or recommendations would lead to the project being rejected. Approval, if granted earlier on the basis of false data, would also be revoked. Misleading and wrong information will cover the following:
- False information
 - False data
 - Engineered reports

- Concealing of factual data
- False recommendations or decisions

[No.Z-12013/4/89-IA-I]

SCHEDULE-I

(See paras 1 and 2)

LIST OF PROJECTS REQUIRING ENVIRONMENTAL CLEARANCE FROM THE CENTRAL GOVERNMENT

1. Nuclear Power and related projects such as Heavy Water Plants, nuclear fuel complex, Rare Earths.
2. River Valley projects including hydel power, major Irrigation and their combination including flood control.
3. Ports, Harbours, Airports (except minor ports and harbours).
4. Petroleum Refineries including crude and product pipelines.
5. Chemical Fertilizers (Nitrogenous and Phosphatic other than single superphosphate).
6. Pesticides (Technical).
7. Petrochemical complexes (Both Olefinic and Aromatic) and Petro-chemical intermediates such as DMT, Caprolactam, LAB etc. and production of basic plastics such as LLDPE, HDPE, PP, PVC.
8. Bulk drugs and pharmaceuticals.
9. Exploration for oil and gas and their production, transportation and storage.
10. Synthetic Rubber.
11. Asbestos and Asbestos products.
12. Hydrocyanic acid and its derivatives.
- 13 (a) Primary metallurgical industries (such as production of Iron and Steel, Aluminium, Copper, Zinc, Lead and Ferro Alloys).
(b) Electric arc furnaces (Mini Steel Plants).
14. Chlor alkali industry.
15. Integrated paint complex including manufacture of resins and basic raw materials required in the manufacture of paints.
16. Viscose Staple fibre and filament yarn.
17. Storage batteries integrated with manufacture of oxides of lead and lead antimony alloys.
18. All tourism projects between 200m—500 metres of High Water Line and at locations with an elevation of more than 1000 metres with investment of more than Rs.5 crores.
19. Thermal Power Plants.
20. Mining projects (major minerals) with leases more than 5 hectares.

21. Highway Projects except projects relating to improvement work including widening and strengthening of roads with marginal land acquisition along the existing alignments provided it does not pass through ecologically sensitive areas such as National Parks, Sanctuaries, Tiger Reserves, and Forest Reserves.
22. Tarred Roads in the Himalayas and or Forest areas.
23. Distilleries.
24. Raw Skins and Hides.
25. Pulp, paper and newsprint.
26. Dyes.
27. Cement.
28. Foundries (individual)
29. Electroplating
30. Meta amino phenol

SCHEDULE-II

[See Sub-para I (a) of para 2]

APPLICATION FORM

1. (a) Name and Address of the project proposed:
(b) Location of the project:
Name of the Place:
District, Tehsil:
Latitude/Longitude:
Nearest Airport/Railway Station:
(c) Alternate sites examined and the reasons for selecting the proposed site:
(d) Does the site conform to stipulated land use as per local land use plan:
2. Objectives of the project:
3. (a) Land Requirement:
Agriculture Land:
Forest land and Density of vegetation.
Other (specify):
(b) (i) Land use in the Catchment within 10 kms radius of the proposed site:
(ii) Topography of the area indicating gradient, aspects and altitude:
(iii) Erodibility classification of the proposed land:
(c) Pollution sources existing in 10 km radius and their impact on quality of air, water and land:
(e) Distance of the nearest National Park/Sanctuary/Biosphere Reserve/Monuments/heritage site/Reserve Forest:
(f) Rehabilitation plan for quarries/borrow areas:
(g) Green belt plan:

- (h) Compensatory afforestation plan:
 - 4. Climate and Air Quality:
 - (a) Windrose at site:
 - (b) Max/Min/Mean annual temperature:
 - (c) Frequency of inversion:
 - (d) Frequency of cyclones/tornadoes/cloud burst:
 - (e) Ambient air quality data:
 - (f) Nature & concentration of emission of SPM, Gas (CO, CO₂, NO_x, CH_n etc.) from the project:
 - 5. Water balance:
 - (a) Water balance at site:
 - (b) Lean season water availability;
Water Requirement:
 - (c) Source to be tapped with competing users (River, Lake, Ground, Public supply):
 - (d) Water quality:
 - (e) Changes observed in quality and quantity of groundwater in the last years and present charging and extraction details:
 - (f) (i) Quantum of waste water to be released with treatment details:
(ii) Quantum of quality of water in the receiving body before and after disposal of solid wastes:
(iii) Quantum of waste water to be released on land and type of land:
 - (g) (i) Details of reservoir water quality with necessary Catchment Treatment Plan:
(ii) Command Area Development Plan:
 - 6. Solid wastes:
 - (a) Nature and quantity of solid wastes generated
 - (b) Solid waste disposal method:
 - 7. Noise and Vibrations:
 - (a) Sources of Noise and Vibrations:
 - (b) Ambient noise level:
 - (c) Noise and Vibration control measures proposed:
 - (d) Subsidence problem, if any, with control measures:
 - 8. Power requirement indicating source of supply:
Complete environmental details to be furnished separately, if captive power unit proposed:
 - 9. Peak labour force to be deployed giving details of:
 - Endemic health problems in the area due to waste water/air/soil borne diseases:
 - Health care system existing and proposed:
 - 10. (a) Number of villages and population to be displaced:
(b) Rehabilitation Master Plan:
 - 11. Risk Assessment Report and Disaster Management Plan:
Report prepared as per guidelines issued by the Central Government in the MOEF from time to time:
-

12. (a) Environmental Impact Assessment
 - (b) Environment Management Plan:
 - (c) Detailed Feasibility Report:
 - (d) Duly filled in questionnaire
13. Details of Environmental Management Cell:

I hereby give an undertaking that the data and information given above are due to the best of my knowledge and belief and I am aware that if any part of the data/information submitted is found to be false or misleading at any stage, the project be rejected and the clearance given, if any, to the project is likely to be revoked at our risk and cost.

Signature of the applicant

With name and full address

Given under the seal of

Date:

Place:

Organisation on behalf of
Whom the applicant is signing.

In respect to item for which data are not required or is not available as per the declaration of project proponent, the project would be considered on that basis.

SCHEDULE-III

[See sub-para III (a) of Para 2]

COMPOSITION OF THE EXPERT COMMITTEES FOR ENVIRONMENTAL IMPACT ASSESSMENT

1. The Committees will consist of experts in the following disciplines:
 - (i) Eco-system Management
 - (ii) Air/Water Pollution Control
 - (iii) Water Resource Management
 - (iv) Flora/Fauna conservation and management
 - (v) Land Use Planning
 - (vi) Social Sciences/Rehabilitation
 - (vii) Project Appraisal
 - (viii) Ecology
 - (ix) Environmental Health
 - (x) Subject Area Specialists
 - (xi) Representatives of NGOs/persons concerned with environmental issues.
2. The Chairman will be an outstanding and experienced ecologist or environmentalist or technical professional with wide managerial experience in the relevant development sector.

3. The representative of Impact Assessment Agency will act as a Member-Secretary.
4. Chairman and Members will serve in their individual capacities except those specifically nominated as representatives.
5. The Membership of a Committee shall not exceed 15.

SCHEDULE IV

(See Sub-para 1 of para 2)

Procedure for Public Hearing

(1) **Process of Public Hearing:** - Whoever apply for environmental clearance of projects, shall submit to the concerned State Pollution Control Board twenty sets of the following documents namely: -

- (i) An executive summary containing the salient features of the project both in English as well as local language.
- (ii) Form XIII prescribed under Water (Prevention and Control of Pollution) Rules, 1975 where discharge of sewage, trade effluents, treatment of water in any form, is required.
- (iii) Form I prescribed under Air (Prevention and Control of Pollution) Under Territory Rules, 1983 where discharge of emissions are involved in any process, operation or industry.
- (iv) Any other information or document which is necessary in the opinion of the Board for their final disposal of the application.

(2) **Notice of Public Hearing:** -

- (i) The State Pollution Control Board shall cause a notice for environmental public hearing which shall be published in at least two newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned. State Pollution Control Board shall mention the date, time and place of public hearing. Suggestions, views, comments and objections of the public shall be invited within thirty days from the date of publication of the notification.
- (ii) All persons including bona fide residents, environmental groups and others located at the project site/sites of displacement/sites likely to be affected can participate in the public hearing. They can also make oral/written suggestions to the State Pollution Control Board.

Explanation: - For the purpose of the paragraph person means: -

- (a) Any person who is likely to be affected by the grant of environmental clearance;
- (b) Any person who owns or has control over the project with respect to which an application has been submitted for environmental clearance;
- (c) Any association of persons whether incorporated or not like to be affected by the project and/or functioning in the field of environment;
- (d) Any local authority within any part of whose local limits is within the neighbourhood, wherein the project is proposed to be located.

- (3) **Composition of public hearing panel:** The composition of Public Hearing Panel may consist of the following, namely:
- (i) Representative of State Pollution Control Board;
 - (ii) District Collector or his nominee;
 - (iii) Representative of State Government dealing with the subject;
 - (iv) Representative of Department of the State Government dealing with Environment;
 - (v) Not more than three representatives of the local bodies such as Municipalities or panchayats;
 - (vi) Not more than three senior citizens of the area nominated by the District Collector.
- (4) **Access to the Executive Summary:-** The concerned persons shall be provided access to the Executive Summary of the project at the following places, namely:-
- (i) District Collector Office;
 - (ii) District Industry Centre;
 - (iii) In the Office of the Chief Executive Officers of Zila Praishad or Commissioner of the Municipal Corporation/Local body as the case may be;
 - (iv) In the head office of the concerned State Pollution Control Board and its concerned Regional Office.
 - (v) In the concerned Department of the State Government dealing with the subject of environment.
- (5) **Time period for completion of public hearing:**
The public hearing shall be completed within a period of 60 days from the date of receipt of complete documents as required under paragraph 1.

[No.Z-12013/4/89-IA] **Foot NOTE:** -The Principal Notification was published vide number S.O. 60 (E) dated 27th January 1994 and subsequently amended vide numbers S.O. 356(E) dated 4th may, 1994, S.O. 318 (E) dated 10th April, 1997, S.O. 73 (E) dated 27th January, 2000 a, S.O. 1119 (E) dated 13th December 2000, S.O. 737 (E) dated 1st August 2001 and S.O. 1148 (E) dated 21st November 2001. The portions within asterisks and underlined are amendments.

APPENDIX-3

NATIONAL POLICY ON RESETTLEMENT AND REHABILITATION FOR PROJECT AFFECTED FAMILIES-2003

MINISTRY OF RURAL DEVELOPMENT
(Department of Land Resources)

NATIONAL POLICY ON RESETTLEMENT AND REHABILITATION
FOR PROJECT AFFECTED FAMILIES-2003

(Published in the Gazette of India, Extraordinary Part-I, Section 1,
No- 46, dated 17th February, 2004)

CHAPTER – I: POLICY

PREAMBLE:

1.1 Compulsory acquisition of land for public purpose including infrastructure projects displaces people, forcing them to give up their home, assets and means of livelihood. Apart from depriving them of their lands, livelihoods and resource-base, displacement has other traumatic psychological and socio-cultural consequences. The Government of India recognizes the need to minimize large scale displacement to the extent possible and, where displacement is inevitable, the need to handle with utmost care and forethought issues relating to Resettlement and Rehabilitation of Project Affected Families. Such an approach is especially necessary in respect of tribes, small & marginal farmers and women.

1.2 The system of extending cash compensation does not, by itself, in most cases, enable the affected families to obtain cultivable agricultural land, homestead and other resources which they have to surrender to the State. The difficulties are more acute for persons who are critically dependent on the acquired assets for their subsistence/ livelihoods, such as landless agricultural workers, forest dwellers, tenants and artisans, as their distress and destitution is more severe, and, yet they are not eligible for cash compensation.

1.3 Some States and Central Ministries/Departments have their own Policies and Guidelines for Resettlement and Rehabilitation. However, a National Policy on Resettlement and Rehabilitation of Project Affected Families (PAFs) has not so far been enunciated. This Document aims at laying down basic norms and packages in the shape of a Policy which would, henceforth be referred to as the National Policy on the Resettlement and Rehabilitation of Project Affected Families - 2003 (NPRR-2003).

1.4 The Policy essentially addresses the need to provide succour to the assetless rural poor, support the rehabilitation efforts of the resource poor sections, namely, small and marginal farmers, SCs/STs and women who have been displaced. Besides, it seeks to provide a broad canvas for an effective dialogue between the Project Affected Families and the Administration for Resettlement & Rehabilitation. Such a dialogue is expected to enable timely completion of projects with a sense of definiteness as regards costs and adequate attention to the needs of the displaced persons especially the resource poor sections. The intention is to impart greater flexibility for interaction and negotiation so that the resultant Package gains all-round acceptability in the shape of a workable instrument providing satisfaction to all stakeholders/ Requiring Bodies.

1.5 The National Policy on the Resettlement and Rehabilitation of Project Affected Families will be in the form of broad guidelines and executive instructions for guidance of all concerned and will be applicable to Projects displacing 500 families or more enmasse in plain areas and 250 families enmasse in hilly areas, Desert Development Programme (DDP) blocks, areas mentioned in Schedule V and Schedule VI of the Constitution of India. It is expected that the appropriate Government and Administrator for R&R shall implement this Policy in letter and spirit in order to ensure that the benefits envisaged under the Policy reaches the Project Affected Families, especially resource poor sections including SCs/STs.

1.6 The rehabilitation grants and other monetary benefits proposed in the Policy would be minimum and applicable to all project affected families whether belonging to BPL or non-BPL families. States where R&R packages are higher than proposed in the Policy are free to adopt their own packages.

CHAPTER – II

2. OBJECTIVES OF THE POLICY

2.1 The objectives of the Policy are as follows:-

- a) To minimize displacement and to identify non-displacing or least-displacing alternatives;
- b) To plan the resettlement and rehabilitation of Project Affected Families, (PAFs) including special needs of tribes and vulnerable sections;
- c) To provide better standard of living to PAFs; and
- d) To facilitate harmonious relationship between the Requiring Body and PAFs

through mutual cooperation.

CHAPTER - III

3. DEFINITIONS

3.1 The Definition of various terms used in this Policy Document are as follows:

(a) “Administrator for Resettlement and Rehabilitation” means an officer not below the rank of District Collector of the State Government appointed by it for the purpose of resettlement and rehabilitation of the Project Affected Families of the Project concerned provided that if the appropriate Government in respect of the project is the Central Government, such appointment shall be made in consultation with the Central Govt.

(b) “affected zone”, in relation to a project, means declaration under para 5.1 of this Policy by the appropriate Government area of villages or locality under a project for which the land is being acquired under Land Acquisition Act, 1894 or any other Act in force or an area that comes under submergence due to impounding of water in the reservoir of the project;

(c) “agricultural family” means a family whose primary mode of livelihood is agriculture and includes family of owners as well as sub-tenants of agricultural land, agricultural labourers, occupiers of forest lands and of collectors of minor forest produce;

(d) “agricultural labourer” means a person normally resident in the affected zone for a period of not less than three years immediately before the declaration of the affected zone who does not hold any land in the affected zone but who earns his livelihood principally by manual labour on agricultural land therein immediately before such declaration and who has been deprived of his livelihood;

(e) “agricultural land” includes lands used or capable of being used for the purpose of-

- (i) agriculture or horticulture;
- (ii) dairy farming, poultry farming, pisciculture, breeding or livestock and nursery growing medical herbs;
- (iii) raising of crops, grass or garden produce; and

- (iv) land used by an agriculturist for the grazing of cattle, but does not include land used for the cutting of wood only;
- (f) “appropriate Government” means,-
 - (i) in relation to acquisition of land for the purposes of the Union, the Central Government;
 - (ii) in relation to a project which is executed by Central Government agency/ Central Government undertaking or by any other agency on the orders/directions of Central Government, the Central Government, otherwise the State Government and
 - (iii) in relation to acquisition of land for other purposes, the State Government.
- (g) ‘BPL Family’: The Below Poverty Line Families shall be those as defined by the Planning Commission of India from time to time.
- (h) “Commissioner for Resettlement and Rehabilitation”, in relation to a project, means the Commissioner for Resettlement and Rehabilitation appointed by the State Government not below the rank of Commissioner/Secretary of that Government.
- (i) “Displaced family” means any tenure holder, tenant, Government lessee or owner of other property, who on account of acquisition of his land including plot in the abadi or other property in the affected zone for the purpose of the project, has been displaced from such land or other property;
- (j) “family” means Project Affected Family consisting of such persons, his or her spouse, minor sons, unmarried daughters, minor brothers or unmarried sisters, father, mother and other members residing with him and dependent on him for their livelihood.
- (k) “holding” means the total land held by a person as an occupant or tenant or as both;
- (l) “marginal farmer” means a cultivator with an unirrigated land holding upto one hectare or irrigated land holding upto half hectare;
- (m) “non-agricultural labourer” means a person who is not an agricultural labourer but is normally residing in the affected zone for a period of not less than three years immediately before the declaration of the affected zone and who does not hold any

land under the affected zone but who earns his livelihood principally by manual labour or as a rural artisan immediately before such declaration and who has been deprived of earning his livelihood principally by manual labour or as such artisan in the affected zone;

(n) “notification” means a notification published in the Official Gazette;

(o) “occupiers” means members of Scheduled Tribe community in possession of forest land prior to 25th October, 1980;

(p) “project” means a project displacing 500 families or more enmasse in plain areas and 250 families or more enmasse in hilly areas, DDP blocks, areas mentioned in Schedule V and Schedule VI of the Constitution of India as a result of acquisition of land for any project.

(q) “project affected family” means a family/person whose place of residence or other properties or source of livelihood are substantially affected by the process of acquisition of land for the project and who has been residing continuously for a period of not less than three years preceding the date of declaration of the affected zone or practicing any trade, occupation or vocation continuously for a period of not less than three years in the affected zone, preceding the date of declaration of the affected zone.

(r) “Resettlement zone”, in relation to a project, means the declaration of any area under Para 5.12 of this Policy by the appropriate Government acquired or proposed to be acquired for resettlement and rehabilitation of Project Affected Families as a resettlement zone ;

(s) “Requiring Body” shall mean any company, a body corporate, an institution, or any other organization for whom land is to be acquired by the appropriate Government, and includes the appropriate Government if the acquisition of land is for such Government either for its own use or for subsequent allotment of such land in public interest to a body corporate, institution, or any other organization or to any company under lease, license or through any other system of transfer of land to such company, as the case may be.;

(t) “small farmer” means a cultivator with an unirrigated land holding up to two hectares or with an irrigated land holding up to one hectare.

CHAPTER - IV

4. APPOINTMENT OF ADMINISTRATOR AND COMMISSIONER FOR RESETTLEMENT AND REHABILITATION AND THEIR POWERS & FUNCTIONS

4.1 Where the appropriate Government is satisfied that acquisition of land for any project involves displacement of 500 families or more enmasse in plain areas and 250 families or more enmasse in hilly areas, DDP blocks, areas mentioned in Schedule V and Schedule VI of the Constitution of India as a result of acquisition of land for any project, it shall, by notification, appoint in respect of that project, an officer not below the rank of District Collector of the State Government to be the Administrator for R&R in respect of that project.

Provided that if the appropriate Government in respect of the project is the Central Government, such appointment shall be made in consultation with the Central Government.

4.2 The Administrator for Resettlement & Rehabilitation shall be assisted by such officers and employees as the appropriate Government may provide.

Administrator For Resettlement & Rehabilitation

4.3 Subject to the superintendence, directions and control of the appropriate Government and Commissioner for R&R, the Administrator for Resettlement & Rehabilitation shall take all measures for the rehabilitation and resettlement of all project affected families(PAF) in respect of that project.

4.4. The overall control and superintendence of the formulation of resettlement and rehabilitation plan and execution of the same shall vest in the Administrator, Resettlement & Rehabilitation.

Powers and Functions of Administrator

4.5 Subject to any general or special order of the appropriate Government, the Administrator for Resettlement & Rehabilitation shall perform the following functions/duties:-

- (i) minimize displacement of persons and identify non-displacing or least

- displacing alternatives in consultation with the requiring body ;
- (ii) hold consultation with the project affected families while preparing a resettlement and rehabilitation scheme/ plan;
 - (iii) ensure that interest of the adversely project affected families of Scheduled Tribes and weaker sections are protected.
 - (iv) prepare a draft plan/ scheme of resettlement and rehabilitation as required under Chapter V of this Policy;
 - (v) prepare a budget including estimated expenditure of various components of acquisition of land, resettlement and rehabilitation activities or programmes in consultation with representatives of the project affected families and requiring body for whom the land is acquired;
 - (vi) acquire adequate land for the project and also for settling the project affected families;
 - (vii) allot land and sanction benefits to project affected families;
 - (viii) perform such other functions as the appropriate Government may, from time to time, by order in writing, assign.

Delegation of Powers of Administrator

4.6 Administrator for Resettlement & Rehabilitation may, by order in writing, delegate such of the administrative powers conferred and duties imposed on him by or under this Policy to any officer not below the rank of Tehsildar or equivalent.

4.7 All officers and staff appointed by the appropriate Government under this Policy shall be subordinate to the Administrator for Resettlement & Rehabilitation.

Commissioner for R & R

4.8 The State Government shall appoint an officer of the rank of Commissioner/Secretary of that Government for resettlement and rehabilitation in respect of such projects to which this Policy applies to be called the Commissioner for Resettlement & Rehabilitation.

4.9 For the purposes of this Policy, the Administrator for Resettlement & Rehabilitation and other officers and employees appointed for the purposes of resettlement and rehabilitation of PAF shall be subordinate to the Commissioner for Resettlement and Rehabilitation.

Functions of Commissioner for R & R

4.10 The Commissioner shall be responsible for supervising the formulation of resettlement and rehabilitation plans/schemes, proper implementation of such plans/schemes and redressal of grievances as mentioned in Chapter VII of this Policy.

CHAPTER – V

5. SCHEMES/PLANS FOR RESETTLEMENT AND REHABILITATION:

The procedure mentioned in this Chapter shall be followed for declaration of Affected Zone, carrying out survey & census of Project Affected Families, Assessment of Government land available and land to be acquired for the purpose of Resettlement and Rehabilitation, preparation of draft scheme/ plan for R&R and its final publication.

Declaration of Affected Zone

5.1 The appropriate Government may, if it is of the opinion that acquisition of land for a project is likely to displace 500 families or more enmasse in plain areas and 250 families or more in hilly areas, DDP blocks, areas mentioned in Schedule V and Schedule VI of the Constitution of India declare, by notification in the Official Gazette, area of villages or localities as an affected zone of the project and thereupon the contents of this Policy shall apply to the project involved.

Procedure to be followed for survey and census of PAFS etc.

5.2 Every declaration made under Para 5.1 of the Policy shall be published in at least two daily newspapers one of them should be in the local vernacular having circulation in villages or areas which are likely to be affected and also by affixing a copy of the notification on the Notice Board of the concerned Gram Panchayats and other prominent place or places in the affected zone.

5.3 Once the declaration is made under para 5.1 of the Policy, the Administrator for Resettlement and Rehabilitation shall undertake a survey for identification of the persons and their families likely to be affected by the project.

5.4 Every survey shall contain the following village-wise information of the project affected families:-

- (i) members of families who are permanently residing, practicing any trade, occupation or vocation in the project affected area;
- (ii) Project Affected Families who are likely to lose their house, agricultural land, employment or are alienated wholly or substantially from the main source of their trade occupation or vocation.
- (iii) Agricultural labourers and non-agriculture labourers.
- (iv) Project Affected Families who are having possession of forest lands prior to

25th October, 1980, that is prior to the commencement of the Forest (Conservation) Act, 1980.

5.5 Every survey undertaken under Para 5.4 shall be completed within a period of ninety days from the date of declaration made under para 5.1.

5.6 On the expiry of the period of ninety days as aforesaid, the Administrator for Resettlement and Rehabilitation shall, by notification, and also in such other manner so as to reach all persons likely to be affected, publish a draft of the details of the findings of the survey conducted by him for inviting objections and suggestions from all persons likely to be affected thereby.

5.7 On the expiry of thirty days from the date of publication of the draft of the details of survey and after considering the objections and suggestions received by him in this behalf, the Administrator for Resettlement and Rehabilitation shall submit the final details of survey with his recommendations to the State Government.

5.8 Within forty-five days from the date of receipt of the recommendations of the Administrator for Resettlement & Rehabilitation, the State Government shall publish the final details of survey in the Official Gazette.

5.9 The Administrator for Resettlement & Rehabilitation shall ensure that the Project Affected Families may be settled preferably in group or groups and such sites should form a part of existing gram panchayat as far as possible. However, it has to be ensured that the PAFs may be resettled with the host community on the basis of equality and mutual understanding, consistent with the desire of each group to preserve its own identity and culture.

**Assessment
of land available
for R & R**

5.10 For the purposes of para 5.9 above, the Administrator for Resettlement & Rehabilitation shall draw up a list of lands which may be available in any existing Gram Panchayat for resettlement and rehabilitation of project affected families.

5.11 The lands drawn up under para 5.10 shall consist of :-

(a) Government waste lands and any other land vesting in the Government available for allotment to project affected families.

(b) If sufficient Government land is not available there, then land to be acquired for

the purposes of resettlement and rehabilitation scheme/plan. However, the Administrator for R&R should ensure that such acquisition of land should not lead to another list of affected families.

Declaration of Resettlement Zone 5.12 The appropriate Government shall, by notification, declare any area acquired or proposed to be acquired for resettlement and rehabilitation of project affected families, as a resettlement zone.

Power to Acquire land for R & R 5.13 The Administrator for R&R, on behalf of the the appropriate government, may either compulsorily acquire keeping in view the contents of Para 5.11(b) above any land under the Land Acquisition Act, 1894 or purchase land from any person through consent award and may enter into an agreement for this purpose.

Draft Scheme/Plan for R & R 5.14 After completion of base line survey and census of Project Affected Families and assessment of requirement of land for resettlement as mentioned in Paras 5.3 & 5.11, the Administrator for R&R shall prepare a draft scheme/plan for the Resettlement & Rehabilitation of the Project Affected Families in consultation with representatives of Project Affected Families including women, Chairpersons of elected Panchayati Raj Institutions within which the Project area is situated.

Management of Funds for R & R 5.15 While preparing a draft scheme/Plan, the Administrator for R&R shall ensure that the cost of R&R scheme/Plan should be an integral part of the cost of the Project for which the land is being acquired and the entire expenditure of R&R benefits and other expenditure for resettlement and rehabilitation of PAFs are to be borne by the requiring body for which the area is being acquired.

5.16 It shall be the responsibility of the requiring body to provide sufficient funds to the Administrator for R&R for proper implementation of resettlement & Rehabilitation scheme/plan of Project Affected Families.

5.17 The Administrator for R&R shall keep proper books of accounts and records of the funds placed at his disposal and submit periodical returns to the Appropriate Government in this behalf.

Contents of Draft Scheme/Plan of R & R 5.18 Every draft scheme/Plan of resettlement and rehabilitation prepared shall contain the following particulars, namely:-
(a) the extent of area to be acquired for the project and the name(s) of the corresponding village(s).

(b) a village-wise list of project affected families and likely number of displaced persons, family-wise and the extent and nature of land and immovable property in their possession indicating the survey numbers thereof held by such persons in the affected zone;

(c) a list of agricultural labourers in such area and the names of such persons whose livelihood depend on agricultural activities;

(d) a list of persons who have lost or are likely to lose their employment or livelihood or who have been alienated wholly and substantially from their main sources of occupation or vocation consequent to the acquisition of land for the project;

(e) a list of occupiers, if any,

(f) a list of public utilities and Government buildings which are likely to be affected;

(g) a comprehensive list of benefits and packages which are to be provided to project affected families;

(h) details of the extent of land available which may be acquired in settlement area for resettling and allotting of land to the project affected families;

(i) details of the basic amenities and infrastructure facilities which are to be provided for resettlement;

(j) the time schedule for shifting and resettling the displaced families in resettlement zones;

(k) such other particulars as the Administrator for Resettlement & Rehabilitation may think fit to include for the information of the displaced persons.

**Final
Publication of
Scheme/Plan
of R & R**

5.19 The Administrator for Resettlement & Rehabilitation shall, submit the draft scheme/plan for R&R to the State Government for its approval. It will be the responsibility of the State Government to obtain the consent of requiring body before approving the same. The draft scheme/plan may be published in the Official Gazette to give wide publicity to the same in the affected zone.

5.20 Upon notification of a scheme/plan, the same shall come into force.

CHAPTER - VI

R&R BENEFITS FOR PROJECT AFFECTED FAMILIES

6.1 The resettlement and rehabilitation (R&R) benefits shall be extended to all the Project Affected Families (PAF) whether belonging to below poverty line (BPL) or non-BPL .

6.2 Any Project Affected Family (PAF) owning house and whose house has been acquired may be allotted free of cost house site to the extent of actual loss of area of the acquired house but not more than 150 sq.m. of land in rural areas and 75 sq.meter. of land in urban areas.

6.3 Each PAF of BPL category shall get a one-time financial assistance of Rs. 25000/- for house construction. Non-BPL families shall not be entitled to receive this assistance.

6.4 Each PAF owning agricultural land in the affected zone and whose entire land has been acquired may be allotted agricultural land or cultivable waste land to the extent of actual land loss subject to a maximum of one hectare of irrigated land or two hectares of un-irrigated land/cultivable waste land subject to availability of Government land in the districts.

6.5 Stamp duty and other fees payable for registration shall be borne by the requiring body.

6.6 The Land allotted under para 6.4 shall be free from all encumbrances. The Land allotted may be in the joint names of wife and husband of PAF.

6.7 In case of allotment of wasteland/degraded land in lieu of acquired land, each PAF shall get financial assistance of Rs. 10000/- per hectare for land development. In case of allotment of agricultural land, a one-time financial assistance of Rs. 5000/- per PAF for agricultural production shall be given.

6.8 Each PAF having cattle shall get financial assistance of Rs. 3000/- for

construction of cattle shed.

6.9 Each PAF shall get financial assistance of Rs. 5000/- as transportation cost for shifting of building materials, belongings and cattle etc. from the affected zone to the resettlement zone.

6.10 Each PAF comprising of rural artisan/small trader and self employed person shall get one-time financial assistance of Rs. 10,000/- for construction of working shed/shop.

6.11 Each PAF owning agricultural land in the affected zone and whose entire land has been acquired shall get one-time financial assistance equivalent to 750 days minimum agricultural wages for “loss of livelihood” where neither agricultural land nor regular employment to one member of the PAF has been provided.

6.12 Each PAF owning agricultural land in the affected zone and whose entire land has not been acquired and consequently he becomes a marginal farmer shall get one time financial assistance equivalent to 500 days minimum agricultural wages.

6.13 Each PAF owning agriculture land in the affected zone and who consequently becomes a small farmer shall get one time financial assistance equivalent to 375 days minimum agricultural wages.

6.14 Each PAF belonging to the category of ‘agricultural labourer’, or ‘non-agricultural labourer’ shall be provided a one time financial assistance equivalent to 625 days of the minimum agricultural wages.

6.15 Each displaced PAF shall get a monthly subsistence allowance equivalent to 20 days of minimum agricultural wages per month for a period of one year upto 250 days of MAW.

6.16 In the case of acquisition of land in emergent situation such as under Section 17 of the Land Acquisition Act 1894 or similar provision of other Act in force, each PAF shall be provided with transit accommodation, pending resettlement and rehabilitation scheme. Such families shall also get R&R benefits as mentioned in above paras under the Policy.

6.17 Acquisition of Long Stretches of Land: In case of projects relating to

Railway Lines, Highways, Transmission Lines and laying pipelines wherein only a narrow stretch of land extending over several kilometers is being acquired, the Project Affected Families will be offered an ex-gratia amount of Rs. 10,000/- per family, and no other Resettlement & Rehabilitation benefits shall be available to them.

6.18 The Project Affected Families shall be provided necessary training facilities for development of entrepreneurship to take up self-employment projects at the resettlement zone as part of R&R benefits.

6.19 The Project Affected Families who were in possession of forest lands prior to 25th October, 1980 shall get all the benefits of R & R as given in above paras under the Policy.

6.20 The PAFs of Scheduled Caste category enjoying reservation benefits in the affected zone shall be entitled to get the reservation benefits at the resettlement zone.

6.21 R&R BENEFITS FOR PROJECT AFFECTED FAMILIES OF SCHEDULED TRIBES.

6.21.1 Each Project Affected Family of ST category shall be given preference in allotment of land.

6.21.2 Each tribal PAF shall be entitled to get R&R benefits mentioned in above Paras under the Policy.

6.21.3 Each Tribal PAF shall get additional financial assistance equivalent to 500 days minimum agriculture wages for loss of customary rights/usages of forest produce.

6.21.4 Tribal PAFs will be re-settled close to their natural habitat in a compact block so that they can retain their ethnic ,linguistic and cultural identity.

6.21.5 Tribal PAFs shall get land free of cost for community & religious gathering.

6.21.6 Tribal PAFs resettled out of the district/taluka will get 25% higher R&R benefits in monetary terms.

6.21.7 The Tribal Land Alienated in violation of the laws and regulations in force

on the subject would be treated as null and void and the R&R benefits would be available only to the original tribal land owner.

6.21.8 The Tribals families residing in the Project Affected Areas having fishing rights in the river/pond/dam shall be given fishing rights in the reservoir area.

6.21.9 Tribal PAFs enjoying reservation benefits in the affected zone shall be entitled to get the reservation benefits at the resettlement zone.

6.22 BASIC AMENITIES TO BE PROVIDED AT RESETTLEMENT ZONE:

6.22.1 While shifting the population of the Affected Zone to the Resettlement Zone, the Administrator for R&R may as far as possible, ensure that :

- a) In case the entire population of the village/area to be shifted belongs to a particular community, such population/families may be resettled enmasse in a compact area so that socio-cultural relations (social harmony) amongst shifted families are not disturbed
- b) In case of resettlement of Scheduled Castes PAFs, it may be ensured that they are resettled in sites close to the villages.

6.22.2 The Project Affected Families shall be provided the basic amenities and infrastructural facilities at the resettlement site as per norms specified by the Appropriate Govt. It is desirable that provision of drinking water, electricity, schools, dispensaries and access to the resettlement sites amongst others be included in the resettlement plan formulated by the Administrator for R&R.

CHAPTER - VII

7. DISPUTE REDRESSAL MECHANISM

7.1 R&R COMMITTEE AT PROJECT LEVEL

**Dispute
Redressal
Mechanism**

7.1.1 In respect of every project to which this Policy applies, the State Government shall constitute a Committee under the Chairmanship of the Administrator of that Project to be called the Resettlement and Rehabilitation Committee to monitor and review the progress of implementation of scheme/ plan of

resettlement and rehabilitation of the Project Affected Families.

7.1.2 The Resettlement & Rehabilitation Committee constituted as above shall inter-alia include as one of its members:-

- (i) a representative of women residing in the affected zone;
- (ii) a representative each of the Scheduled Castes and Scheduled Tribes residing in the affected zone;
- (iii) a representative of a voluntary organization;
- (iv) a representative of the lead bank;
- (v) Chairman or his nominee of the PRIs located in the affected zone
- (vi) MPs/MLAs of the area included in the affected zone

7.1.3 Procedure regulating the business of the Resettlement & rehabilitation Committee, its meeting and other matters connected thereto shall be prescribed by the Appropriate Government.

7.2. GRIEVANCE REDRESSAL CELL:

Grievance Redressal Cell

7.2.1 In respect of every project to which this Policy applies, the State Government shall constitute a Grievance Redressal Cell under the Chairmanship of the Commissioner for Resettlement and Rehabilitation for redressal of grievances of the PAFs.

7.2.2 The composition, powers, functions and other matters relating to the functioning of the Grievance Redressal Cell shall be such as may be prescribed by the Appropriate Government.

7.2.3 Any Project Affected Family, if aggrieved, for not being offered the admissible R&R benefits as provided under this Policy, may move an appropriate petition for redressal of his grievances to the Grievance Redressal Cell.

7.2.4 The form and manner in which and the time within which complaints may be made to the Grievance Redressal Cell and disposed of shall be such as may be prescribed by the appropriate Government.

7.2.5 The Grievance Redressal Cell shall have the power to consider and dispose of all complaints relating to resettlement and rehabilitation against the decision of the Administrator/R&R Committee at Project level for Resettlement & Rehabilitation and

issue such directions to the Administrator for Resettlement & Rehabilitation as it may deem proper for the Redressal of such grievances.

**Inter-State
Projects**

7.3 INTER-STATE PROJECTS:

7.3.1 In case a project covers an area in more than one State or States or a Union territory where the project affected families are or had been residing, or proposed to be resettled, the Central Government in the Ministry of Rural Development (Department of Land Resources) shall in consultation with concerned States or Union territory, as the case may be, appoint the Administrator for Resettlement & Rehabilitation and the Commissioner for Resettlement and Rehabilitation for the purposes of this Policy.

7.3.2 The method of implementation of plans/ schemes for resettlement and rehabilitation shall be mutually discussed by the State Governments and the Union territory administration and the common plan/ scheme shall be notified by the Administrator for Resettlement & Rehabilitation in the State or Union territory administration, as agreed to, in accordance with the procedure laid down in this Policy.

7.3.3 If any difficulty arises in the implementation of the schemes/ plans, the matter shall be referred to the Central Government in the Ministry of Rural Development (Department of Land Resources) for its decision and the decision of the Central Government shall be binding on the concerned States and Union territory.

CHAPTER - VIII

MONITORING MECHANISM

**National
Monitoring
Committee**

8. NATIONAL MONITORING COMMITTEE

8.1 The Central Government, Ministry of Rural Development, Department of Land Resources shall constitute a National Monitoring Committee, to be chaired by the Secretary, Department of Land Resources for reviewing and monitoring the progress of implementation of resettlement and rehabilitation scheme/plan relating to all projects to which this Policy applies. The Committee will have the following or his nominee not below the rank of Joint Secretary as its members:

Secretary, Planning Commission

Secretary, M/o Social Justice and Empowerment

Secretary, M/o Water Resources

Secretary, M/o Tribal Affairs
Secretary, M/o Railways
Secretary, M/o Power
Secretary, M/o Coal

Besides, the Secretary of the administrative Ministry/Department of the project for which the land is to be acquired shall be invited as one of the Members. The functions and duties of this Committee shall be prescribed by this Ministry.

8.2 The National Monitoring Committee shall be serviced by the National Monitoring Cell to be constituted by the Department of Land Resources for reviewing and monitoring the progress of implementation of Resettlement and Rehabilitation scheme/plan relating to all projects to which this Policy applies.

APPLICABILITY

Applicability

8.4 The National Policy on the Resettlement and Rehabilitation of Project Affected Families (NPRR – 2003) shall come into effect from the date of its publication in the Gazette of India (Extra-ordinary).

ANNEXURE – I

The Composition of the National Monitoring Cell (See Para 8.3)

Sl. No.	Name of the Post	No. of Post
1.	Joint Secretary, Resettlement and Rehabilitation	1
2.	Zonal Directors/Subject Matter Specialist/ Consultant	4
3.	Deputy Director	4
4.	Statistical Officer	1
5.	Section Officer/Desk Officer	1
6.	Assistant	2
7.	Statistical Assistant	2
8.	L.D.C-cum-Typist	4
9.	Stenographer	9
10.	Peon	4
11.	Sweeper	2
12.	Driver	2

APPENDIX-4

**ORDER OF THE LAND AND LAND REFORM DEPARTMENT
OF THE GOVERNMENT OF WEST BENGAL 6TH JUNE 2006**

**Government of West Bengal
Land & Land Reforms Department
Land Acquisition Branch**

ORDER

G.O. No. 1701-LA-3M-07/06

Kolkata the 6th June, 2006

Whereas it is expedient to amend the existing procedures in the interest of expeditious disposal of land acquisition cases for public purposes and whereas the proposed amendments of various provisions of the West Bengal Land Acquisition Manual-1991 was approved by the Cabinet in its meeting held on 14th February, 2006, the Governor is hereby pleased to order that the following **revised procedures and administrative re-arrangements** for effective and efficient disposal of land acquisition cases under the provisions of the Land Acquisition Act, 1894 in the State of West Bengal shall come into effect from 6th day of June, 2006 in respect of land acquisition cases started on and after the said date.

This Order supersedes anything contained anywhere in the West Bengal Land Acquisition Manual, 1991 or in any existing executive orders including the G.O. No. 701, 702, 703 and 704 all dated 6th March, 2006 issued by this Department, to the extent the said Manual or said orders differ from any provision or procedure introduced by this order. The Land Acquisition Collectors (hereinafter referred as LAC) **shall follow the revised procedures and administrative controls as specified below** for expeditious disposal of land acquisition cases within the framework of the Land Acquisition Act, 1894 in the State of West Bengal with effect from 6th June, 2006 :-

[1] **The Requiring Bodies to submit a LA Proposal complete in all regards** :- The LAC shall not receive and entertain any land acquisition proposal which is not "**complete in all regards**". A land acquisition proposal shall be "**deemed to be complete in all regards**" if such proposal contains such information, documents, certificates, undertakings etc. as specified in Order No.1702-3M-07/06 dated the 6th June, 2006, issued by this department. The LAC may, however, help the Requiring Body (henceforth referred as RB) by supplying them a copy of prescribed application form as well as a copy of the aforesaid G.O. which prescribes the duties and responsibilities of the RB during the entire process of acquisition of land. A copy of **prescribed Application Form, i.e. Form No. LA-01** is enclosed herewith for ready reference and guidance. The prescribed application form duly filled in along with Land Schedule, ownership data, land use data, shall be submitted by the RB both in **hard copy and in soft copy**, as the same is

ordered to be supplied by the office of the concerned BL&LROs on payment of prescribed fees . The LA wing of the Collectorates and Secretariat shall be fully computerised and all the prescribed software shall be used immediately for processing LA cases from the stage of Section 4 notification till handing over possession u/s 16 including award making and cheque printing, for which all works relating to installation of computers and training of officials shall be completed as early as possible taking necessary support from the National Informatics Centre.

(2) LAC may assist the RB in the transitional phase:- In case any RB is not in a position to prepare an appropriate LA proposal "complete in all regards", such RB may submit application to the Collector to help them to prepare an appropriate LA proposal in the prescribed manner with prescribed supporting documents and the Collector may provide such additional service by engaging his own officers and staffs or **such consultancy firm** at such cost which are to be borne directly by the RB. Such application to the Collector shall not be treated as a Land Acquisition Proposal, but shall be treated as an "application for assistance to prepare appropriate land acquisition proposal". Hence, time taken for preparation of LA proposal by **the Collector or by his engaged consultancy firm**, shall not be counted for time prescribed for sending proposal for administrative approval before publishing notification u/s 4 of the said Act. For this purpose, any consultancy firms duly registered under the Companies Act, 1956 specially for such purpose and objective, may be engaged by the Collectors. The RB may also directly engage any such competent consultancy firms to get LA proposals prepared duly in accordance with the guidelines of the Government.

[3] Time-limit for LAC to seek administrative approval:-The LAC, on receipt of a LA proposal "complete in all regards", and after being satisfied that the LA proposal is complete in all regard, shall send, **within 10 working days** from receipt of the complete LA proposal, a **brief summary of the Land Acquisition proposal** containing the name of the Requiring Body, area to be acquired, land schedule, concurrence of the concerned administrative department etc. and in the forwarding note he shall clearly and specifically certify on the following points:-

(a) that the L.A. proposal received and entertained is "**complete in all regards**" [and, if necessary, he may certify that whatever incompleteness is or will be found, could be made up timely with committed assistance and co-operation of the R.B. and LAC's official machineries];

(b) that he is satisfied to the effect that the **land requirement** has been **rationaly assessed**, and the land-use plan shown on the site map or mouza map tallies with the DPR/PPR;

(c) that the **estimated value of LA compensation and RR costs**, amounting to Rs..... appears to be grossly correct, and the final estimate is under preparation;

(d) that he is satisfied that the purpose of acquisition comes under the **specific meaning of "public purpose"** as is legally required for authorising compulsory acquisition of land by application of the "eminent domain" power of the State and specify the type of public purposes to be served;

(e) that the **major or entire flow of fund** for compulsory acquisition of land is from the **public exchequer**, (in case of project taken for a company under part VII of the Act, LAC may specify the financial involvement of the Government in monetary terms; and

(f) The **percentage of LA cost** [including RR and CA cost] as been deposited by the RB, along with the proposal (not being less than 50% in any case);

[4] Manner to seek and obtain administrative approval :-The LAC shall seek and obtain **administrative approval** of the LA proposal along with the draft of the **notification under section 4 of the LA Act, 1894** from the Land & Land Reforms Department by **sending a departmental officer, staff or a messenger peon for causing land delivery taking written receipt thereof from the LA Wing Of the L&LR Department.**

[5] Time-limit for LAC to accord administrative approval by the Government:-The appropriate Government being the State Government in the L & LR Department shall accord **administrative approval** for all such LA proposals within **5 working days** from the date of receipt of the Collector's report, provided that many proposal for acquisition of more than 100 acres are sent with prior approval of the Cabinet.

[6] LA proposals not to be unnecessarily and artificially divided into large number of LA cases:- A land acquisition proposal of a specific LA Project shall not be unnecessarily and artificially divided into large number of LA cases, either by the RB or by the LAC. It shall be ensured that, under all normal circumstances, only one-LA case is sent for each separate mouza, comprising of all the plots covered by a specific LA Project in connection with the concerned mouza, so that it be comes easy to ensure equity and justice in value assessment of each type-class of land within a mouza, for the

purpose of both vetting of the estimate and sanction of awards. In case of any special administrative reason, proposal containing plots of a single mouza cannot be put under one LA case number, the reason thereof shall be mentioned, but, never-the-less, all the splitted LA cases of the same mouza should be sent in one bunch, so that eventual errors for differential value assessment of each type-class of land within a single mouza, without cogent reason, can be duly checked, verified and corrected specially at the time of vetting of the estimate.

[7] Where approval of Local Screening Committee not required :- Any LA Project or LA proposal vetted by the Concerned administrative Department of the State Government or by the Cabinet need not be placed before the Local Screening Committee for further consideration and approval.

[8] Introduction of weekly physical delivery system:- A weekly physical delivery system may be adopted by such Collectors whose on-going LA cases are substantially high to ensure weekly re-collection of the submitted proposals and files concerning the LA cases of the district.

[9] LAC to ensure RB's obligations :- The LAC should, however, check up and make sure that the requiring body has submitted a copy of the full Land Acquisition proposal to the LR Department before issuing notification u/s 4 of the Act.

[10] Dissociation of the office of the Divisional Commissioners in LA matters :- The office of the Divisional Commissioner will no more be associated in any manner in the processing and disposal of the land acquisition cases and hence all paper transactions or correspondence by the LAC to the State Government in the Land & Land Reforms Department shall be direct and not through the office of Divisional Commissioner concerned.

[11] Introduction of basic minimum mandatory RR package:- If for compulsory acquisition of land, any family is required to be evicted from its homestead, such family shall be provided with such re-settlement and rehabilitation support as are prescribed by the appropriate Government from time to time and the cost of such RR package shall be borne by the concerned RB. Until further orders, the RR package shall be strictly implemented in accordance with the G.O. No. 1706-LA-3M-07/06 dated the 6th June, 2006.

[12] Introduction of facility for Consent Award:- All persons owning the land or having interest in the land proposed to be acquired shall henceforth enjoy full rights to

submit **Compensation Claim to the LAC**. Procedures to be followed have been duly prescribed in the G.O. No. 1703-LA-3m-07/06 dated the 6th June, 2006.

[13] Responsibilities of all stake-holders in a LA cases in proper implementation of this pro-people approach:- In this regard, the duties and responsibilities of the LAC, RB and Land-losers shall be as follows:-

[a] To facilitate people to avail of this opportunity, in the revised format of section 4 notification, the LACs will **invite all persons** owning the land or having interest in the land proposed to be acquired, to submit their applications in the **Prescribed Form** and supporting documents for claiming their self-assessed amounts of compensation separately for each plot of land and anything attached to land as **LA cost and also claim RR package as may be due to them**, which may be duly considered for payment as a "**consent Award**" to be processed as per the procedures prescribed for that by the government from time to time. For this purpose, thoroughly revised format for notification u/s 4 shall be used henceforth as prescribed.

[b] All necessary steps, as required, may be taken to publicise this new opportunity in addition to publication of notification u/s 4 of the Act in the official Gazette and daily news papers as prescribed by law. The **application form** prescribed for seeking a consent award and the bunch of supporting papers prescribed to be annexed with such application shall be made available to all persons having interest in land, **free of cost** or at such cost as the Government may prescribe.

[c] The office of the concerned BL&LRO shall, on application, **issue and supply all the text data and map data** relating to any plot of land, on payment of such fees as prescribed by the Government. The office of the concerned Sub-Registrar shall, on application, supply all necessary sale data, as mentioned by the vendor and vendee in their deeds as maintained in the sale-deed registers, on payment of such fees, if any, prescribed by the Government.

[d] A **Public Assistance Cell** may be established in each LAC Office to help and advise the land-losers in the matter of applying and seeking consent awards.

[e] The office of the BL&LROs shall give special attention, priority and, and if so required, organise special camps for expeditious disposal of **pending and fresh mutation** petitions relating to such mouza which are covered by LA Notification u/s 4 of the Act and also give Khatian / mutation certificate on realisation of arrear land revenue and send defaulters' list along with land revenue arrears due till date to LAC for **compulsory recovery of arrear land revenue** from assessed compensation due to the raiyat.

[f] The LAC shall, from the date of notification u/s 4 till hearing u/s 9, accept all mutation certificates directly from any persons having interest in land to be acquired and **secure the detailed list of all vested, khashmahal or departmental land** for which the Collector shall get award of compensation for such State-owned land and such compensation shall be without solatium and interest.

[g] Any **compensation awarded and paid to a bargadar, shall not be by apportionment** of compensation due to a rayyat and hence, all bargadar shall be entitled to apply for consent award directly.

[h] For the purpose of **truth, accuracy and justice** the LAC shall continuously update information relating to land and ownership thereof taking latest facts from official sources at any stage before consent award is made or award is declared u/s 11 of the Act. The LAC may collect latest copies of RORs, and mouza map, not only at the time of preparation of proper LA proposal for RB, but also for preparation of notifications and notices under various sections, on payment of prescribed cost thereof and such cost shall be paid out of the administrative cost relating to the concerned LA case.

[i] On receiving such applications for consent award, entering the same chronologically in a separate Register, in the computers as and when available, will be a mandatory need for efficient and transparent disposal of any case under the provision of the **"Consent Award"** as prescribed in sub-section(2) of Section 11 of the said Act. The LAC may procure sale data from the local registration offices as well as latest mouza map from the concerned BL&LRO office, or DL&LRO office or from office of the DLRS on payment and such maps may be scanned and digitized, which will be extremely helpful for fixing up land price by awarding proportionately additional amount on account of locational advantage and connectivity advantage of each plot of land and such cost of scanning and digitization of cadastral maps shall also be borne out of administrative cost relating to the concerned LA case.

[j] The duties and responsibilities of the persons having titles, rights and interests in land as regard to submit appropriate claim for consent award have been duly prescribed in **G.O. No.1703-3M-07/06 dated the 6th June, 2006** of this Department and the Collector shall give such award following the procedures prescribed in the aforesaid G.O. All necessary help and assistance may be provided through the Public Assistant Cell of the district LA office to persons willing to submit application for consent award.