

2014



INLAND WATERWAYS AUTHORITY OF INDIA
(Ministry of Shipping, Govt. of India)

**INTEGRATED NATIONAL WATERWAYS
TRANSPORTATION GRID STUDY**
(Stage 1 of Phase II)

Volume-II

*PRESENTATION MADE BEFORE THE
SENIOR OFFICIALS OF MINISTRY OF SHIPPING AND IWAI*



(A Govt. of India Enterprise)
Plot-1, Sector-29, GURGAON-122 001





**Development of
Integrated National Waterways
Transportation Grid**

**Ministry of Shipping
Inland Waterways Authority of India**

New Delhi- 10. 2. 2014

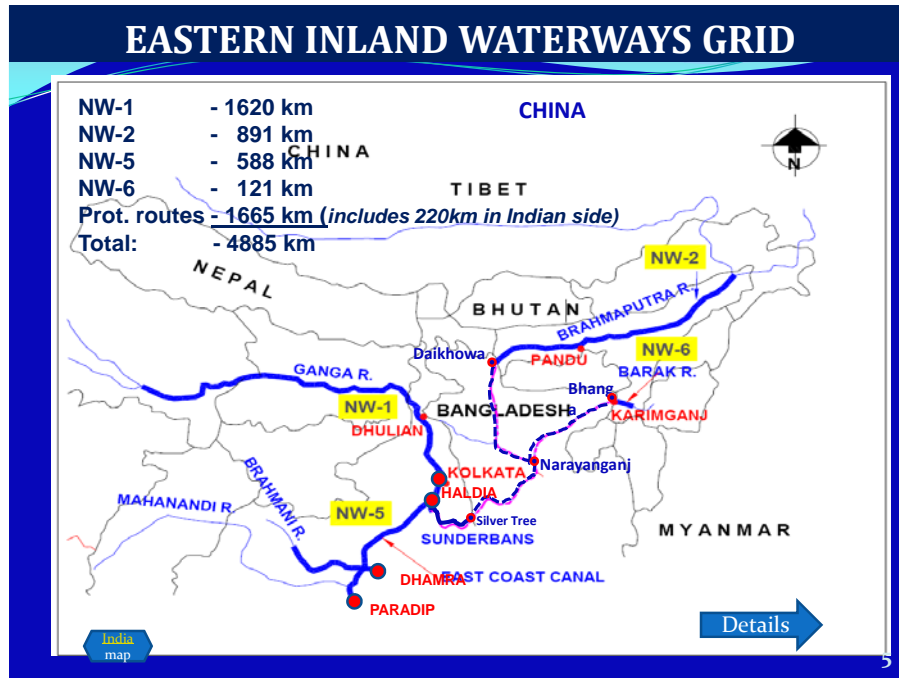


**NATIONAL WATERWAYS
SYSTEM**

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NATIONAL WATERWAYS		
WATERWAY	LENGTH (KM)	STATES SERVED
NW-1: Ganga (HALDIA TO ALLAHABAD)	1620	4 (UP, Bihar, Jharkhand and WB)
NW-2: Brahmaputra (DHUBRI TO SADIYA)	891	4 (Assam, WB, Arunachal, Meghalaya)
NW-3: West Coast Canal (KOLLAM TO KOTTAPURAM)	205	1 (Kerala)
NW-4: Godavari, Krishna & Canals (KAKINADA TO PUDUCHERY)	1078	3 (AP, Tamil Nadu, UT of Puducherry)
NW-5: Brahmani, Delta Canals, ECC (GOENKHALI TO TALCHER)	588	2 (Odisha, WB)
NW-6: Barak (LAKHIPUR TO BHANGA – in process)	121	4 (Assam, Mizoram, Manipur, Tripura)
TOTAL LENGTH	4503	15





BENEFITS OF INLAND WATERWAYS

BENEFITS OF IWT MODE

Cost savings:

- 1 HP moves 150 kg on road, 500 kg on rail & 4000 kg on water
- 1 litre of fuel moves 24 t-km on road, 85 on rail & 105 on IWT
- Cost of developing waterways much lower than rail & road
- Reduces transportation losses

Environment friendly:

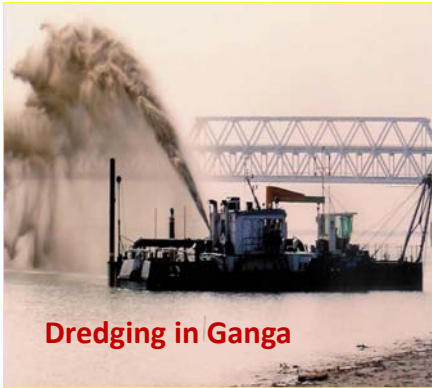
- Least fuel consumption per tonne- km
- CO₂ emission is 50% of trucks
- Negligible land requirement
- Safe mode for hazardous and over dimensional cargo

Supplementary mode:

- Reduces pressure on road and rail
- Reduces congestion and accidents on road

PROGRESS MADE IN LAST TWO YEARS

- ### PROGRESS MADE IN LAST TWO YEARS
- 30-lakh tonnes per annum of coal being transported by NTPC from Sandheads to Farakka TPS (640 km)
 - Transportation of another 30 lakh tonnes per annum for Barh TPS (1040 km) being finalised before 8th March 2014
 - Fly Ash transportation on Indo- Bangladesh Protocol Routes
 - Pilot movement of fertilisers on NW-1 by IFFCO & TATA Chemicals
 - Pilot Project for movement of foodgrains to North East via Protocol route finalised by FCI
 - Frequent ODC Movement on NW-1 and NW-2
 - Liquefied Ammonia transportation by FACT on NW-3
 - Substantial container movement on Ro-Ro Jetties at Kochi
 - Project to develop South Buckingham Canal on NW-4 approved and work to start in March 2014
 - Kaladan Multimodal Transit Transport Project being implemented in Myanmar



Dredging in Ganga



ODC Movement on Brahmaputra



PROPOSED NATIONAL WATERWAYS GRID



- ## UNDERLYING ASSUMPTIONS
- National Waterways and Protocol routes in Bangladesh would be developed with a minimum depth of 2.5 m
 - Projected traffic is of primary hinterland along the banks of NWs
 - All terminals to have road connectivity and, wherever feasible, rail connectivity also
 - National Waterways to have port connectivity
 - Base year of traffic data: 2011-12
 - Project implementation period **Ph-I : 3 years**
Ph-II: 5 years

HIGHLIGHTS OF NW GRID

National Waterways	6
Total No. of terminals	70
No. of States covered	15
Total Traffic-2011-12 (MnT) (All modes)	287
Actual IWT Traffic (MnT) (in NW-1, 2 & 3 only)	5
Divertible Traffic of 31 priority terminals (MnT)	
2021-22	159 (15% of total cargo)
2031-32	333
Terminals identified for development based on traffic potential	31
Road connectivity (Strengthening)	31
Rail connectivity (Feasible)	7
Port connectivity (Feasible)	7

[Priority Terminals](#)

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DIVERTIBLE TRAFFIC TO INLAND WATERWAYS FROM ROAD & RAIL

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Traffic divertible from Rail & Road to NWs (2021-22)

in million tonnes

S. No.	Within each National Waterway		From Rail	From Road	Total
1	NW1		25.90	17.44	43.34
2	NW2		2.31	19.48	21.79
3	NW3		0.91	11.18	12.09
4	NW4		14.96	27.09	42.05
5	NW5		14.64	8.61	23.25
6	NW6		0.36	3.71	4.07
	TOTAL		59.08	87.51	146.59
S. No.	Between National Waterways		From Rail	From Road	Total
	From	To			
1	NW1	NW2	1.00	1.13	2.13
2	NW1	NW5	5.02	2.77	7.79
3	NW1	NW6	0.02	0.94	0.96
4	NW2	NW5	0.13	0.47	0.60
5	NW2	NW6	0.04	0.89	0.93
	Total		6.21	6.20	12.41
TOTAL OF I & II:			65.29	93.71	159.00

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INVESTMENT NEEDED

PROJECT PHASING

PROJECT PHASE	NUMBER OF TERMINALS	TRAFFIC (MnT)	INVESTMENT REQUIRED (Rs Cr)	PRIVATE INVESTMENT (Rs Cr)	SAVINGS IN TPT. COST (Cr Rs/Yr)
Phase 1 (2014-17)	14 (NW 1: 7, NW 2: 2, NW 3: 2, NW 6: 3)	35	1981	10391	<u>342</u>
Phase 2 (2017-22)	17 (NW 1: 5, NW 2: 3, NW 3: 2, NW 4: 3, NW 5: 4)	159*	20782	55208	2406
Total Investment (up to 2021-22)			22763	65599	

* Cumulative traffic of Phase 1 & 2

BREAKUP OF PROPOSED INVESTMENTS

Phase	Investment required (Rs. crore)					Total (Rs Cr)
	Waterway Develmt.	Terminal Develmt.	Port Conn.	Road Conn.	Rail Conn.	
PHASE: 1 2014-17	887	658	344	88	4	<u>1981</u>
PHASE: 2 2017-22	17965	1389	809	232	387	<u>20782</u>
TOTAL	18852	2047	1153	320	391	22763

SUMMARY OF TOTAL INVESTMENT IN PHASE- 1 (2014 -2017)

S. N.	National Waterway	INVESTMENT REQUIRED (Rs crore)					TOTAL
		WATERWAY	TERMINAL	PORT CON.	ROAD CON.	RAIL CON.	
1	NW-1	150	446	234	66	2	<u>898</u>
2	NW-2	138	135	-	11	-	<u>284</u>
3	NW-3	110	13	106	7	-	<u>236</u>
4	NW-4	138	4	2	2	2	<u>148</u>
5	NW-5	303	10	2	-	-	<u>315</u>
6	NW-6	48	50	-	2	-	<u>100</u>
TOTAL PHASE-1		887	658	344	88	4	1981

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SUMMARY OF TOTAL INVESTMENT IN PHASE- 2 (2017 -2022)

S. N.	National Waterway	INVESTMENT REQUIRED (Rs crore)					TOTAL
		WATERWAY	TERMINAL	PORT CON.	ROAD CON.	RAIL CON.	
1	NW-1	6677	766	-	42	238	<u>7723</u>
2	NW-2	1370	182	-	149	-	<u>1701</u>
3	NW-3	100	33	-	5	35	<u>173</u>
4	NW-4	2640	121	392	11	114	<u>3278</u>
5	NW-5	6400	270	417	19	-	<u>7106</u>
6	NW-6	778	17	-	6	-	<u>801</u>
TOTAL PHASE-2		17965	1389	809	232	387	20782

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SOURCES OF FUNDING

- **WATERWAY DEVELOPMENT:** GBS, WB, ADB
- **TERMINALS:** GBS, Beneficiary users, PPP
- **PORT CONNECTIVITY:** Concerned ports, GBS, PPP
- **ROAD CONNECTIVITY:** State Govt, NHAI, GBS
- **RAIL CONNECTIVITY:** Railways, GBS

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WAY FORWARD

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WAY FORWARD

A: PROJECTS (in principle approval)

- Projects of Rs 1981 crore in Phase 1 (2014-17) and projects of Rs 20782 crore in Phase 2 (2017-22)

Major Components

1. Buxar- Varanasi & Varanasi- Allahabad stretches of NW-1 with 3.0 m depth by constructing 4 barrages at Rs 6300 crore
2. Talcher- Paradip/ Dhamra stretches of NW-5 with 3.0 m depth by constructing 5 barrages at Rs 4400 crore
3. East Coast Canal of NW-5 with 2.5 m depth with dredging and river training works at Rs 2000 crore
4. Buckingham canal and other stretches of NW-4 at Rs. 2640 crore

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WAY FORWARD (Contd...)

Major Components (Contd..)

5. Dibrugarh-Sadiya stretch of NW-2 and Indo-B'desh Protocol route with 2.5 m depth at Rs.1200 crore
6. Port- IWT connectivity by respective ports at Haldia, Kolkata, Kochi, Kakinada, Krishnapatnam, Paradip and Dhamra as part of the port system at Rs.1153 crore

B: POLICY GUIDELINES (in principle approval)

1. Development and maintenance of fairways through public funding
2. Development of components other than fairway through non GBS funding, wherever feasible
3. Port-IWT connectivity projects by respective ports/ PPP

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WAY FORWARD (Contd...)

B: POLICY GUIDELINES (in principle approval)

4. Banks and FIs to support private investment in barges and ship building yards/ facilities
5. Incentives to barge owners for construction of barges (capital subsidy)
6. Regulations for compulsory movement of hazardous cargo and certain percentage of bulk cargo by IWT mode, wherever feasible, to be in-built in MoEF guidelines
7. Scheme for increasing inland dredging capacity
8. Strengthening of IWAI

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WAY FORWARD (Contd...)

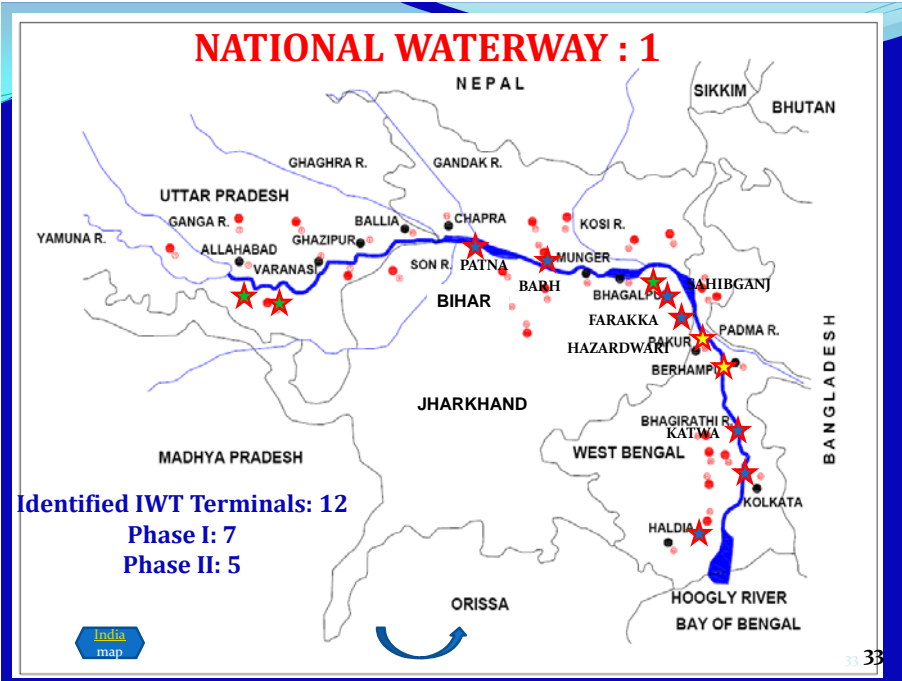
B: POLICY GUIDELINES (in principle approval)

9. State Govts to incentivize setting up of new industries along NWs/ waterways, wherever feasible
10. IWT, specially ferry operation within urban area to be covered under JNNURM where available
11. Financial and technical assistance to States for developing and maintaining their waterways and also provide assistance to strengthen their IWT set- ups
12. IWAI/ MoS to collaborate with State Govts for making regulation for construction of new structures (bridges etc) without hampering the future IWT prospects of the State waterways

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HYPERLINKED SLIDES



- ### By 2017
- **FAIRWAY:** LAD of 3 m in Haldia- Farakka (560 km), 2.5 m in Farakka- Buxar (635 km); DPR for Buxar- Varanasi (188 km) & Varanasi- Allahabad (237 km)
 - **TERMINALS:** Upgradation of Haldia & Kolkata terminals; new terminals at Katwa, Sahebganj & Patna
 - **ROAD CONNECTIVITY:** 2 lane road connectivity to Haldia, Kolkata, Katwa, Sahebganj & Patna(Alt) terminals
 - **RAIL CONNECTIVITY:** Preliminary works for Haldia, Katwa & Sahebganj terminals
 - **PORT CONNECTIVITY:** Finger jetties with conveyor system at Haldia & Kolkata ports

SUMMARY OF PROPOSED PHASE- 1 IN NW-1

	Planned Activity	Year wise Investment (Rs crore)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
1	FAIRWAY	35	55	60	150	GBS, WB/ ADB
2	TERMINAL DEVELOPMENT	40	90	316	446	GBS, Beneficiary users, PPP
3	PORT CONNECTIVITY	40	60	134	234	KoPT, GBS
4	ROAD/ RAIL CONNECTIVITY	23	23	22	68	State Govt./ NHAI/ GBS/Railways
	TOTAL	138	228	532	898	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-1

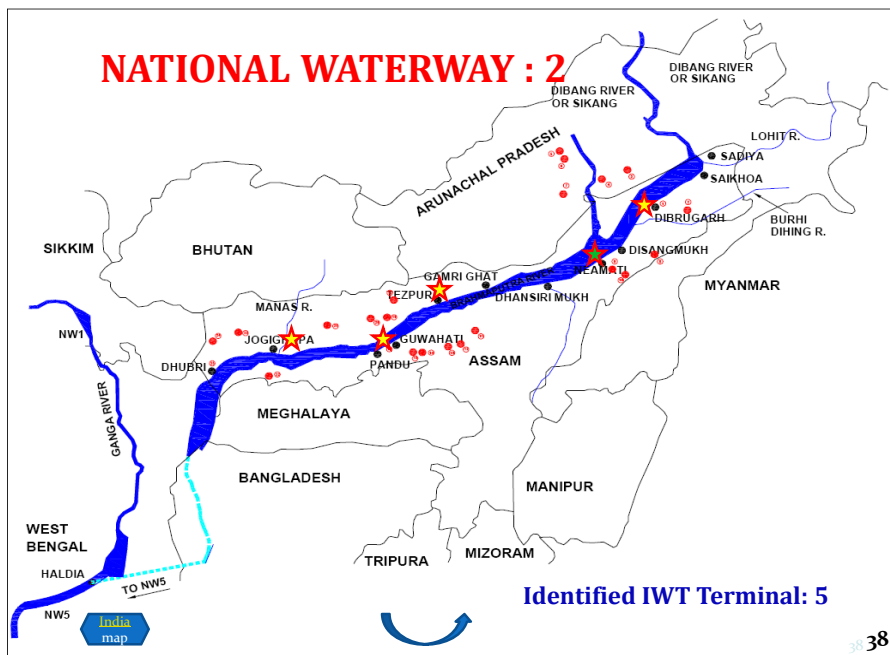
	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:						
1	Haldia- Farakka: 3m	10	15	15	40	GBS
2	Farakka- Buxar: 2.5m	20	35	40	95	GBS
3	DPRs for Buxar-Varanasi & Varanasi-Allahabad, land acquisition, tie-up source of funding	5	5	5	15	GBS, WB/ ADB
	TOTAL	35	55	60	150	
TERMINAL DEVELOPMENT						
1	Existing terminals at Haldia & Kolkata	20	40	58	118	GBS, PPP
2	New terminals at Katwa, Sahebganj, Patna (Alt.)	20	50	258	328	GBS, Beneficiary users, PPP
	TOTAL	40	90	316	446	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-1

Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
PORT CONNECTIVITY					
1 Haldia: Finger jetties & connecting conveyor system	20	30	67	117	KoPT, GBS
2 Kolkata: Finger jetties & connecting conveyor system	20	30	67	117	KoPT, GBS
TOTAL	40	60	134	234	
ROAD/ RAIL CONNECTIVITY					
1 ROAD: Upgradation to 2 lane and linking to nearest NH/ SH for terminals at Haldia, Kolkata, Katwa, Sahebganj and Patna (alt.)	22	22	22	66	State Govt./ NHAI/ GBS
2 RAIL: Preliminary works like DPR, identification of land etc for Haldia, Katwa, Sahebganj and Patna (alt.)	1	1	-	2	GBS
TOTAL	23	23	22	68	

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By 2017

- **FAIRWAY:** LAD of 2.5 m in Dhubri- Neamati (630 km), 2 m in Neamati- Dibrugarh (138 km) and 1.5 m in Dibrugarh- Sadiya (123 km)
- **TERMINALS:** Completion of Pandu & new terminal at Jogighopa
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Pandu & Jogighopa terminals

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SUMMARY OF PROPOSED PHASE- 1 IN NW-2

	Planned Activity	Year wise Investment (Rs crore)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
1	FAIRWAY	30	70	38	138	GBS
2	TERMINAL DEVELOPMENT	20	60	55	135	GBS, Beneficiary users, PPP
3	ROAD/ RAIL CONNECTIVITY	5	6	0	11	State Govt./ NHAI/ GBS/Railways
	TOTAL	55	136	93	284	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-2

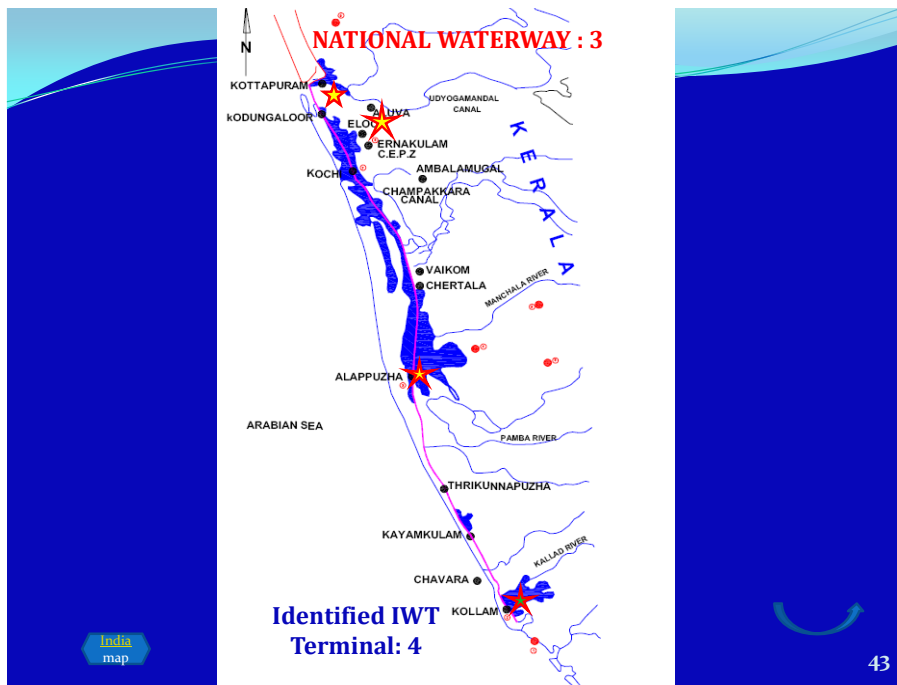
Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:					
1 Dhubri-Neamati: 2.5m (Augmenting Dredging capacity)	10	20	10	40	GBS
2 Neamati-Dibrugarh: 2 m (Augmenting dredging capacity to achieve 2.50m)	10	20	10	40	GBS
3 Dibrugarh-Sadiya: 1.5 m (Augmenting dredging capacity)	10	30	18	58	GBS
TOTAL	30	70	38	138	
TERMINAL DEVELOPMENT					
1 Completion of Pandu Terminal	10	10	-	20	GBS
2 New Terminal at Jogighopa, along with Multimodal logistic hub of CRWC	10	50	55	115	GBS, CRWC, NTPC, PPP
TOTAL	20	60	55	135	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-2

Planned Activity	Year wise Investment (in Rs. Crores)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
ROAD/ RAIL CONNECTIVITY					
1 ROAD: Upgradation of existing road to 2 lane with nearest NH/ SH for terminals at Jogighopa and Pandu	5	6	-	11	State Govt./ NHA/ GBS
TOTAL	5	6	-	11	

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By 2017

- **FAIRWAY:** LAD of 2m in the entire waterway (205 km)
- **TERMINALS:** Upgradation of Aluva & Kottapuram; DPR for upgradation of Kollam & Allapuzha terminals
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Kottapuram & Aluva terminals
- **PORT CONNECTIVITY:** Finger jetties with conveyor system at Kochi port

SUMMARY OF PROPOSED PHASE- 1 IN NW-3

Planned Activity	Year wise Investment (Rs crore)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
1 FAIRWAY	20	30	60	110	GBS
2 TERMINAL DEVELOPMENT	3	10	0	13	GBS, Beneficiary users, PPP
3 PORT CONNECTIVITY	20	30	56	106	CoPT
4 ROAD CONNECTIVITY	2	3	2	7	State Govt./ NHA/ GBS
TOTAL	45	73	118	236	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-3

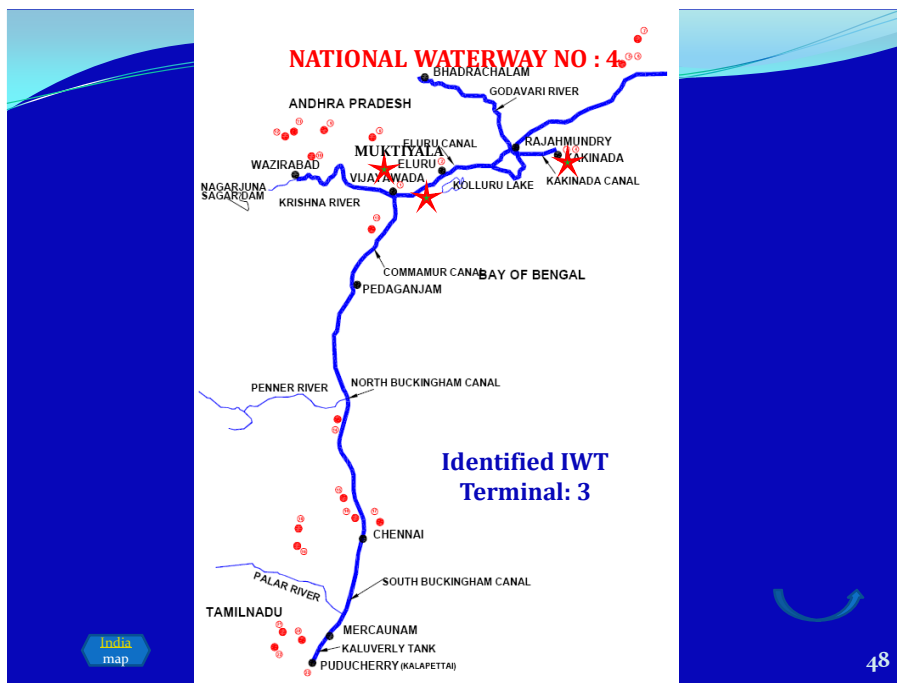
Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:					
1 2 m in entire NW-3 including modification of locks, bridges etc	20	30	60	110	GBS
TOTAL	20	30	60	110	
TERMINAL DEVELOPMENT					
1 Terminals at Aluva and Kottapuram	2	8		10	GBS, PPP
2 DPR for above two terminals and Kollam and Allapuzha terminals	1	2		3	GBS, PPP
TOTAL	3	10		13	
PORT CONNECTIVITY					
1 Kochi: Finger jetties and connecting conveyor system	20	30	56	106	Cochin Port Trust/ GBS
TOTAL	20	30	56	106	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-3

Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
ROAD/ RAIL CONNECTIVITY					
1 ROAD: Upgradation of existing road to 2 lane with nearest NH or SH for terminals at Kottapuram and Aluva	2	3	2	7	State Govt./ NHA/ GBS
TOTAL	2	3	2	7	

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By 2017

- **FAIRWAY:** LAD of 1.8 m in Sholinganallur- Kalpakkam (37 km) & DPR for Kakinada- Eluru (124 km)
- **TERMINALS:** New jetties at Kalpakkam & Sholinganallur, DPR for new terminals at Muktiyala, Vijayawada, Kakinada
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Kakinada terminal
- **RAIL CONNECTIVITY:** Preliminary works including DPR for Kakinada terminal
- **PORT CONNECTIVITY:** DPR for Finger jetties with conveyor system at Krishnapatnam and Kakinada with reconstruction of road bridge at Kakinada port

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SUMMARY OF PROPOSED PHASE - 1 IN NW-4

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
1	<u>FAIRWAY</u>	34	34	70	138	GBS
2	<u>TERMINAL DEVELOPMENT</u>	2	2	0	4	GBS, Beneficiary users, PPP
3	<u>PORT CONNECTIVITY</u>	2	0	0	2	Kakinada port& Krishnapatnam Port/ GBS
4	<u>ROAD/ RAIL CONNECTIVITY</u>	2	2	0	4	State Govt./ NHAI/ GBS
	TOTAL	40	38	70	148	

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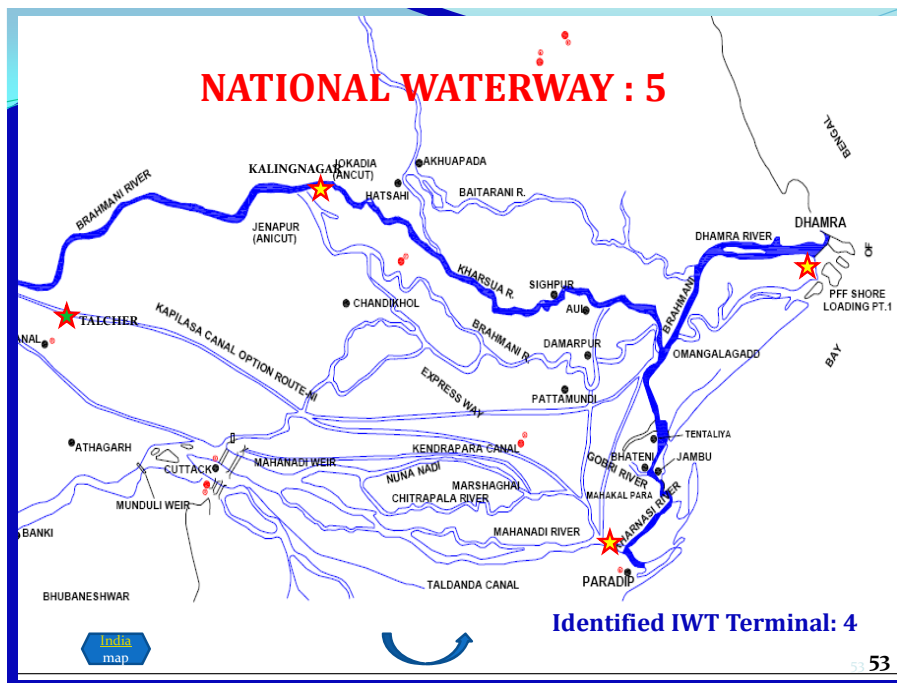
DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE-1 IN NW-4

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:						
1	Sholinganallur- Kalpakkam: 1.8m LAD	30	30	70	130	GBS
2	DPR preparation for Kakinada-Eluru stretch .	4	4		8	GBS
TOTAL		34	34	70	138	
TERMINAL DEVELOPMENT						
1	Development of 2 jetties each at Kalpakkam and Sholinganallur	*	*	*	*	*- GBS. Cost included in fairway
2	DPR for terminals at Muktiyala, Vijayawada & Kakinada	2	2		4	GBS, PPP
TOTAL		2	2		4	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-4

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
PORT CONNECTIVITY						
1	DPR for finger jetties and connecting conveyor system (a) at Krishnapatnam & (b) at Kakinada port with reconstruction of road bridge at Kakinada Port	2	-	-	2	Krishnapatnam Port/ Kakinada Port /GBS
TOTAL		2			2	
ROAD/ RAIL CONNECTIVITY						
1	ROAD: DPR preparation for Improvement/ Upgradation of existing road to 2 lane with nearest NH or SH for terminal at Kakinada	1	1		2	By State Govt./ NHAI/ GBS
2	RAIL: Preliminary works like DPR, identification of land, land acquisition for Kakinada terminal	1	1		2	GBS
TOTAL		2	2		4	



By 2017

- **FAIRWAY:** LAD of 2 m in Jokadia - Dhamra (201 km), DPR for Talcher- Jokadia
- **TERMINALS:** DPR for terminals at Kalinganagar, Paradip & Dhamra
- **ROAD CONNECTIVITY:** DPR for 2 lane road connectivity to Kalinganagar, Paradip & Dhamra terminals
- **PORT CONNECTIVITY:** DPR for Finger jetties with conveyor system at Paradip & Dhamra ports (By respective ports)

SUMMARY OF PROPOSED PHASE- 1 IN NW-5

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
1	<u>FAIRWAY</u>	35	55	213	303	GBS, State Govt, Paradip and Dhamra ports & Beneficiary PSUs + WB/ ADB
2	<u>TERMINAL DEVELOPMENT</u>	3	3	4	10	GBS, Beneficiary users, PPP
3	<u>PORT CONNECTIVITY</u>	1	1	0	2	Paradip & Dhamra ports
4	<u>ROAD/ RAIL CONNECTIVITY</u>	-	-	-	-	State Govt./ NHAI/ GBS
	TOTAL	39	59	217	315	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-5

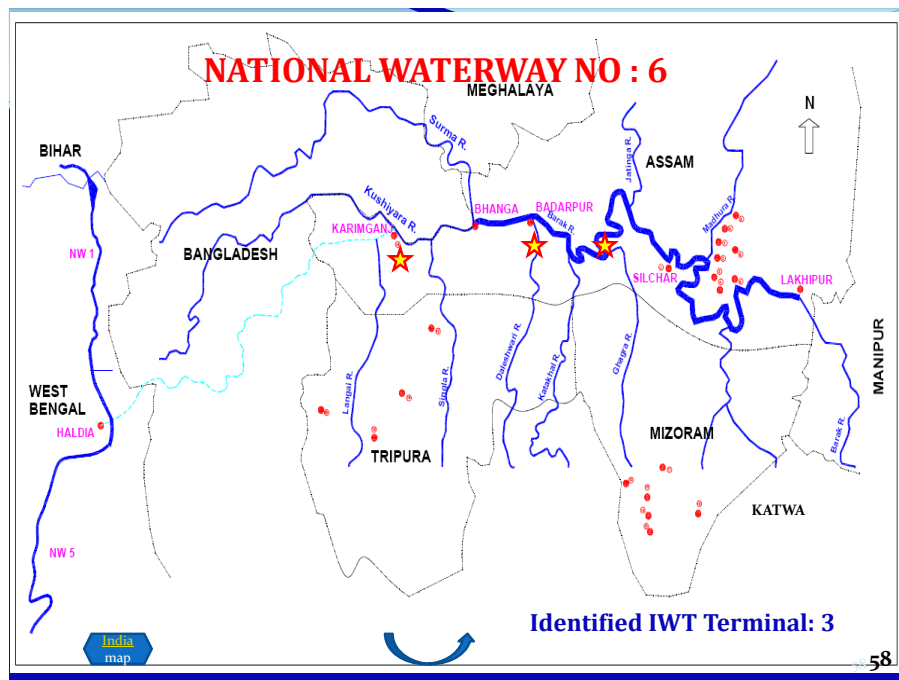
	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:						
1	Jokadia- Dhamra: Dredging and augmenting to 2 m LAD including DPR preparation	30	50	205	285	GBS, State Govt, Paradip and Dhamra ports & Beneficiary PSUs
2	DPR preparation for Talcher-Jokadia stretch including identifying source of funding	5	5	8	18	GBS/WB/ ADB
	TOTAL	35	55	213	303	
TERMINAL DEVELOPMENT						
1	DPR only for setting up terminals at Kalinganagar, Paradip and Dhamra	3	3	4	10	
	TOTAL	3	3	4	10	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-5

Planned Activity	Investment Required in Financial Year				Funding Mechanism
	14-15	15-16	16-17	TOTAL	
PORT CONNECTIVITY					
1 Dhamra and Paradip Ports : Finger jetties and connecting conveyor system –DPR Studies only	1	1		2	Concerned Ports
TOTAL	1	1		2	
ROAD CONNECTIVITY					
1 ROAD: DPR Studies for Strengthening of existing road to 2 lane with nearest NH or SH for terminals at Kalinganagar, Paradip and Dhamra	*	*	*	*	*- Cost included in DPR for Terminals
TOTAL	*	*	*	*	

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By 2017

- **FAIRWAY:** LAD of 1.6 m in Silchar- Bhangra (70 km)
- **TERMINALS:** Upgradation of Badarpur & Karimganj terminals; new floating terminal at Silchar
- **ROAD CONNECTIVITY:** DPR for 2 lane road connectivity to Badarpur & Karimganj terminals

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SUMMARY OF PROPOSED PHASE- 1 IN NW-6

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
1	<u>FAIRWAY</u>	8	20	20	48	GBS, WB/ ADB
2	<u>TERMINAL DEVELOPMENT</u>	10	10	30	50	GBS, Beneficiary users, PPP
3	<u>ROAD/ RAIL CONNECTIVITY</u>	1	1	-	2	State Govt./ NHAI/ GBS
	TOTAL	19	31	50	100	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 1 IN NW-6

	Planned Activity	Year wise Investment (Rs. in crores)				Funding Mechanism
		14-15	15-16	16-17	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:						
1	Silchar-Bhanga: 1.60m LAD (Capital dredging and creating Dredging capacity)	8	20	20	48	
	TOTAL	8	20	20	48	
TERMINAL DEVELOPMENT						
1	Upgradation of existing terminals at Badarpur and Karimganj & new floating terminal at Silchar	10	10	30	50	
	TOTAL	10	10	30	50	
ROAD/ RAIL CONNECTIVITY						
1	ROAD: DPR for Strengthening of existing road to 2 lane with nearest NH or SH for terminals at Badarpur, Karimganj & Silchar	1	1		2	State Govt./ NHAI/ GBS
	TOTAL	1	1		2	

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Phase- 2

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National Waterway-1

63

By 2022

- **FAIRWAY:** LAD of 3 m in Haldia- Sahebganj (642 km), 2.5 m in Sahebganj- Buxar (553 km); 3m in Buxar-Varanasi-Allahabad (425 km)
- **TERMINALS:** New terminals at Hazardwari, Behrampur, Bhagalpur, Varanasi & Allahabad
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Hazardwari, Behrampur, Bhagalpur, Varanasi & Allahabad
- **RAIL CONNECTIVITY:** For terminals at Haldia, Katwa, Sahebganj, Bhagalpur and Patna (Alt.)

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SUMMARY OF PROPOSED PHASE-2 IN NW-1 (2017-22)

	Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
1	<u>FAIRWAY</u>	575	1075	1675	1675	1677	6677	GBS, WB/ ADB
2	<u>TERMINAL DEVELOPMENT</u>	100	100	180	180	206	766	GBS, Beneficiary users, PPP
3	<u>ROAD/ RAIL CONNECTIVITY</u>	48	48	48	48	88	280	State Govt./ NHAI/ GBS
	TOTAL	723	1223	1903	1903	1971	7723	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-1

	Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
FAIRWAY DEVELOPMENT/ MAINTENANCE:								
1	Haldia- Sahebganj: 3m LAD	30	30	30	30	30	150	GBS
2	Sahebganj- Buxar: 2.5m LAD	45	45	45	45	47	227	GBS
3	Buxar-Varanasi –Allahabad: 3 m LAD with 4 barrages	500	1000	1600	1600	1600	6300	GBS, WB/ ADB
	TOTAL	575	1075	1675	1675	1677	6677	
TERMINAL DEVELOPMENT								
1	Development of terminals at Hazaradwari, Behrampur, Bhagalpur, Varanasi, Allahabad,	100	100	180	180	206	766	GBS, PPP, Private funding, user agencies
	TOTAL	100	100	180	180	206	766	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-1

Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
ROAD/ RAIL CONNECTIVITY							
1 ROAD: Strengthening of existing road to 2 lane with nearest NH or SH for terminals at Hazaradwari, Behrampur, Bhagalpur, Varanasi & Allahabad	8	8	8	8	10	42	By State Govt./ NHA/GBS
2 RAIL: Connectivity to Bhagalpur, Haldia, Sahebganj, Katwa & Patna (alt.)	40	40	40	40	78	238	GBS/ Railways/ User agencies
TOTAL	48	48	48	48	88	280	

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National Waterway-2

68

By 2022

- **FAIRWAY:** LAD of 2.5 m in Dhubri- Dibrugarh (768 km), 2 m in Dibrugarh- Sadiya (123 km)
- **TERMINALS:** New terminals at Tezpur, Neamati & Dibrugarh
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Tezpur, Neamati & Dibrugarh terminals

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SUMMARY OF PROPOSED PHASE- 2 IN NW-2 (2017-22)

	Planned Activity	Year wise Investment					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
1	<u>FAIRWAY</u>	150	210	280	340	390	1370	GBS, WB/ ADB
2	<u>TERMINAL DEVELOPMENT</u>	18	36	36	46	46	182	GBS, Beneficiary users, PPP
3	<u>ROAD/ RAIL CONNECTIVITY</u>	15	30	30	37	37	149	State Govt./ NHAI/ IWAI/ Other Existing schemes
	TOTAL	169	338	338	427	429	1701	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-2

	Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
FAIRWAY DEVELOPMENT/ MAINTENANCE:								
1	Dhubri- Dibrugarh: 2.5m *	100	150	200	250	300	1000	GBS/WB/ADB
2	Dibrugarh- Sadiya: 2 m	50	60	80	90	90	370	GBS/ WB/ADB
	TOTAL	150	210	280	340	390	1370	
* Including development of Protocol routes in Bangladesh								
TERMINAL DEVELOPMENT								
1	Development of terminals at Tezpur, Neamati, Dibrugarh	18	36	36	46	46	182	GBS, PPP, Private investment, PSUs
	TOTAL	18	36	36	46	46	182	
ROAD/ RAIL /PORT CONNECTIVITY								
1	ROAD: Strengthening of existing road to 2 lane with nearest NH or SH for terminals at Tezpur, Neamati and Dibrugarh	15	30	30	37	37	149	By State Govt./ NHAI/ GBS
	TOTAL	15	30	30	37	37	149	

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National Waterway-3

72

By 2022

- **FAIRWAY:** LAD of 2.5 to 3 m in the entire stretch (205 km)
- **TERMINALS:** Upgradation of Kollam, & Allapuzha terminals
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Kollam & Allapuzha terminals
- **RAIL CONNECTIVITY:** For Kollam terminal

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SUMMARY OF PROPOSED PHASE- 2 IN NW-3 (2017-22)

	Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
1	<u>FAIRWAY</u>	20	20	20	20	20	100	GBS, WB/ ADB
2	<u>TERMINAL DEVELOPMENT</u>	5	5	5	9	9	33	GBS, Beneficiary users, PPP
3	<u>ROAD/ RAIL CONNECTIVITY</u>	4	8	8	10	10	40	State Govt./ NHAI/ GSB
	TOTAL	29	33	33	39	39	173	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-3

	Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
		17-18	18-19	19-20	20-21	21-22		
FAIRWAY DEVELOPMENT/ MAINTENANCE:								
1	Entire stretch: maintaining 2.5-3.0m	20	20	20	20	20	100	GBS
	TOTAL	20	20	20	20	20	100	
TERMINAL DEVELOPMENT								
1	Development of terminals at Kollam and Allapuzha	5	5	5	9	9	33	GBS, Beneficiary users, PPP
	TOTAL	5	5	5	9	9	33	
ROAD/ RAIL /PORT CONNECTIVITY								
1	ROAD: Strengthening of existing road to 2 lane with nearest NH for terminal at Kollam & Allapuzha	1	1	1	1	1	5	By State Govt./ NHAI/ GBS
2	RAIL: Rail connectivity from Kollam Terminal to Kollam Railway Station	3	7	7	9	9	35	
	TOTAL	4	8	8	10	10	40	

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National Waterway-4

76

By 2022

- **FAIRWAY:** LAD of 2 m in entire stretch (1078 km)
- **TERMINALS:** New terminals at Kakinada, Muktiyala & Vijayawada
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Kakinada, Muktiyala & Vijayawada terminals
- **RAIL CONNECTIVITY:** For Vijayawada & Kakinada terminals
- **PORT CONNECTIVITY:** Finger jetties with conveyor system at Krishnapatnam and Kakinada port

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SUMMARY OF PROPOSED PHASE- 2 IN NW-4 (2017-22)

Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
1 <u>FAIRWAY</u>	264	528	528	660	660	2640	GBS, WB/ ADB
2 <u>TERMINAL DEVELOPMENT</u>	13	24	24	30	30	121	GBS, Beneficiary users, PPP
3 <u>PORT CONNECTIVITY</u>	40	79	79	97	97	392	By respective ports/ GBS
4 <u>ROAD/ RAIL CONNECTIVITY</u>	13	25	25	31	31	125	State Govt./ NHAI/ GBS
TOTAL	330	656	656	818	818	3278	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-4

Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:							
1 Entire stretch: Maintaining 2m LAD in NW-4 including DPR	264	528	528	660	660	2640	GBS, WB/ ADB
TOTAL	264	528	528	660	660	2640	
TERMINAL DEVELOPMENT							
1 Development of terminals at Kakinada, Muktiyala and Vijayawada	13	24	24	30	30	121	GBS, Beneficiary users, PPP
TOTAL	13	24	24	30	30	121	
ROAD/ RAIL /PORT CONNECTIVITY							
1 ROAD: Improvement/ Upgradation of existing road to 2 lane with nearest NH for terminal at Kakinada, Muktiyala & Vijayawada	3	2	2	2	2	11	By State Govt./ NHAI/ GBS
2 RAIL: Rail connectivity from Vijayawada and Kakinada	10	23	23	29	29	114	GBS
3 PORT: Kakinada & Krishnapatnam Terminal finger jetty and conveyor connectivity	40	79	79	97	97	392	Respective ports
TOTAL	53	104	104	128	128	517	

National Waterway-5

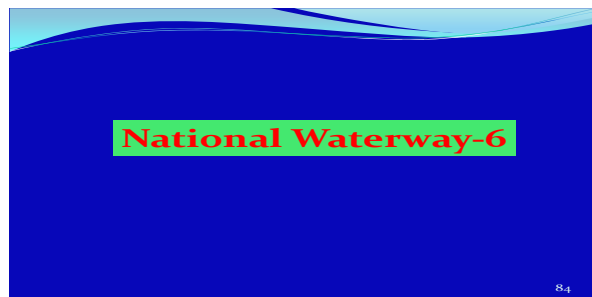
By 2022

- **FAIRWAY:** LAD of 2.5 m in the river portion (371 km) and 2 m in East Coast Canal
- **TERMINALS:** New terminals at Talcher, Paradip, Dhamra & Kalinganagar
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Talcher & Kalinganagar terminals
- **PORT CONNECTIVITY:** Finger jetties with conveyor system at Paradip & Dhamra ports

SUMMARY OF PROPOSED PHASE- 2 IN NW-5 (2017-22)

Planned Activity	Year wise Investment (Rs. in crores)					TOTAL	Funding Mechanism
	17-18	18-19	19-20	20-21	21-22		
1 FAIRWAY	640	1180	1280	1600	1700	6400	GBS, WB/ ADB
2 TERMINAL DEVELOPMENT	26	54	54	68	68	270	GBS, Beneficiary users, PPP
3 PORT CONNECTIVITY	41	84	84	104	104	417	Dhamra/ Paradip Port/ GBS
4 ROAD/ RAIL CONNECTIVITY	2	4	4	4	5	19	State Govt./ NHAI/ GBS
TOTAL	709	1322	1422	1776	1877	7106	

DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-5							
Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE							
1 Development of Talcher-Jokadia stretch with 2.5 m (5 barrages)	440	880	880	1100	1100	4400	GBS/ WB/ADB
2 Development of East Coast canal with 2 m depth including DPR	200	300	400	500	600	2000	
TOTAL	640	1180	1280	1600	1700	6400	
TERMINAL DEVELOPMENT							
1 Development of terminals at Talcher, Paradip, Dhamra and Kalinganagar	26	54	54	68	68	270	GBS, Beneficiary users, PPP
TOTAL	26	54	54	68	68	270	
ROAD/ RAIL /PORT CONNECTIVITY							
1 ROAD: Strengthening of existing road to 2 lane with nearest NH for terminal at Talcher & Kalingnagar	2	4	4	4	5	19	By State Govt./ NHAI/ GBS
2 PORT: Port terminals at Paradip and Dhamra with conveyor connectivity	41	84	84	104	104	417	
TOTAL	43	88	88	108	109	436	



By 2022

- **FAIRWAY:** LAD of 2 m for the entire waterway (121 km)
- **TERMINALS:** Setting up of terminal at Silchar
- **ROAD CONNECTIVITY:** 2 lane road connectivity to Silchar

SUMMARY OF PROPOSED PHASE- 2 IN NW-6 (2017-22)

Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
1 <u>FAIRWAY</u>	78	155	155	195	195	778	GBS, WB/ ADB
2 <u>TERMINAL DEVELOPMENT</u>	3	3	3	4	4	17	GBS, Beneficiary users, PPP
3 <u>ROAD/ RAIL CONNECTIVITY</u>	1	1	1	1	2	6	State Govt./ NHAI/ GBS
TOTAL	82	159	159	200	201	801	

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DEVELOPMENT ACTIVITIES PROPOSED UNDER PHASE- 2 IN NW-6

Planned Activity	Year wise Investment (Rs. in crores)						Funding Mechanism
	17-18	18-19	19-20	20-21	21-22	TOTAL	
FAIRWAY DEVELOPMENT/ MAINTENANCE:							
1 Entire stretch: Development of 2m LAD in Lakhipur- Silchar-Karimganj stretch *	78	155	155	195	195	778	GBS/ WB/ ADB
TOTAL	78	155	155	195	195	778	
* Including development of Protocol routes in Bangladesh							
TERMINAL DEVELOPMENT							
1 Setting up of new terminal at Silchar	3	3	3	4	4	17	GBS, Beneficiary users, PPP
TOTAL	3	3	3	4	4	17	
ROAD/ RAIL /PORT CONNECTIVITY							
1 ROAD: Strengthening of existing road to 2 lane with nearest NH for terminal at Silchar	1	1	1	1	2	6	By State Govt./ NHAI/ GBS
TOTAL	1	1	1	1	2	6	

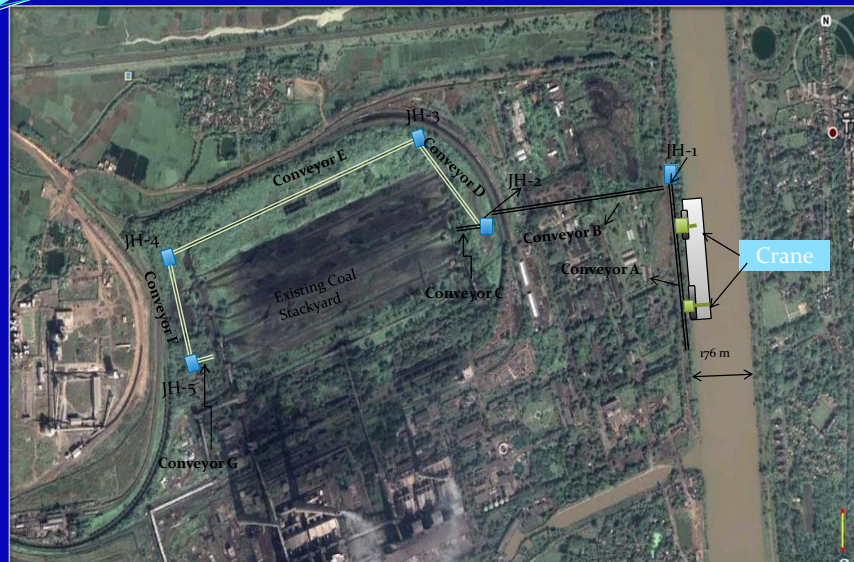
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**FLAG OFF OF COAL BARGES BY HON'BLE MINISTER OF SHIPPING
AT KOLKATA ON 25.11.12**



88

SCHEMATIC LAYOUT – FARAKKA



89

LOADED BARGE ALONGSIDE TRANSSHIPPER AT SANDHEADS



9
0

LOADED BARGES ON WAY TO FARAKKA



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PROJECT CHARACTERISTICS

Source of Traffic Data:	Railways 2011-12 (Inter- Regional Flows)
	Road -Total Transport System Study (2007-08)

Inter Modal Comparative Operating Costs (Rs/Tkm)

Mode	Freight (Rs/Tkm)	Taxes	Total Rs/Tkm
Railways *	1.36	3.71%	1.41
Highways**	2.50	3.09%	2.58
IWT	1.00	Nil	1.00

* Service Tax on rail transport is 12.36% abatement is 70%. Effective 3.71

** Service Tax on Road transport is 12.36% abatement is 75%. Effective 3.09

Rail Connectivity Cost (Single Line BG)	Rs. 5.00 Crores/Km
Road Connectivity Cost (4 Lane dual Carriageway)	Rs. 11.28 Crores/Km

EASTERN INLAND WATERWAYS GRID

Total IWT Grid Length: 4885 km (Including protocol route 1665 km)

States served: Uttar Pradesh, Bihar, Jharkhand, West Bengal, Assam, Arunachal Pradesh, Tripura, Mizoram, Manipur, Odisha

Civil districts covered: 108

Important Commodities: Coal, Iron & Steel, Ores, Food Grains, Fertilizers, Jute & Cotton, Cement & Over Dimensional Cargo

Longest Route: Allahabad to Sadiya
(Nearly 3800 km including Protocol Route)

PLANNED DEVELOPMENT OF POTENTIAL IWT TERMINALS

National Waterways	SI No	Name of IWT Terminal
NW1	1	Haldia
NW1	2	Kolkata
NW1	3	Katwa
NW1	4	Hazardwari
NW1	5	Behrampur
NW1	6	Farakka
NW1	7	Sahebganj
NW1	8	Bhagalpur
NW1	9	Barh
NW1	10	Patna
NW1	11	Varanasi
NW1	12	Allahabad
NW 2	1	Jogighopa
NW 2	2	Pandu
NW 2	3	Tezpur
NW 2	4	Neamati
NW 2	5	Saikhoaghat

National Waterways	SI No	Name of IWT Terminal
NW 3	1	Kottapuram
NW 3	2	Aluva
NW 3	3	Kollam
NW 3	4	Allappuzha
NW 4	1	Kakinada
NW 4	2	Muktiyala
NW 4	3	Vijayawada
NW 5	1	Talcher
NW 5	2	Paradip
NW 5	3	Kalinganagar
NW 5	4	Dhamra
NW 6	1	Silchar
NW 6	2	Badarpur
NW 6	3	Karimganj

14 Planned under Phase-I (DPR for others)

17 Planned under Phase-II

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Low level jetty at Pandu



[Next](#)

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COAL DELIVERY AT NTPC'S COAL STOCK YARD AT FARAKKA



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HIGHLIGHTS OF EASTERN GRID

BASIC FEATURES	EASTERN GRID
National Waterways	4
Total Length (km)	3220 + 1665 km of Protocol Route in Bangladesh
No. of States covered	11
Base Year Total Traffic-2011-12 (MnT) (All modes)	203
Divertible Traffic of 31 terminals (MnT)	
Base Year (2011-12)	66
2021-22	97
2031-32	192
Terminals identified for development based on traffic potential	24
Road connectivity (Strengthening)	24
Rail connectivity (Feasible)	6
Port connectivity (Feasible)	4

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