

APPENDIX 6D

**Profile of the Inland Waterway Master Plan
Projects**

ANNEX 6D

Profile of the Inland Waterway Master Plan Projects

A. Ongoing/Committed Project Profile

Project Name: Upgrading of Northern Trans Mekong corridor (to Class III) (253km)	Sector: CW01
Project Background & Objective: None of the corridors provide good transport continuity at present , and improvements will help improve region – wide accessibility relieve congestion on the main corridors, reduce transportation costs and supports economic development in the provinces.	
Project Description: (i) To improve the standard (up to Class III/300DWT vessels) and connectivity of the canal network in Northern Trans Mekong corridor(253km):Dredging, bank protection, ship lock, bridge improvements, navigation aids for 24-hour navigation, as one of the components of Development of transport infrastructure of Mekong River Delta. (ii) Main Project Components is Dredging, Bank protection, Improving and building bridges, Enhancing alarming system, Building Rach Chanh Dock and Building Tan Chau Port:	
Estimated Cost (2009): US 99.3 million (including CW02)	Original Schedule: 2009–2015
Financial Source: World Bank , Vietnam	Implementation Agency VIWA

Project Name: Updating of Southern coastal corridor (to Class III) (153km)	Sector: CW02
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Project Background & Objective:

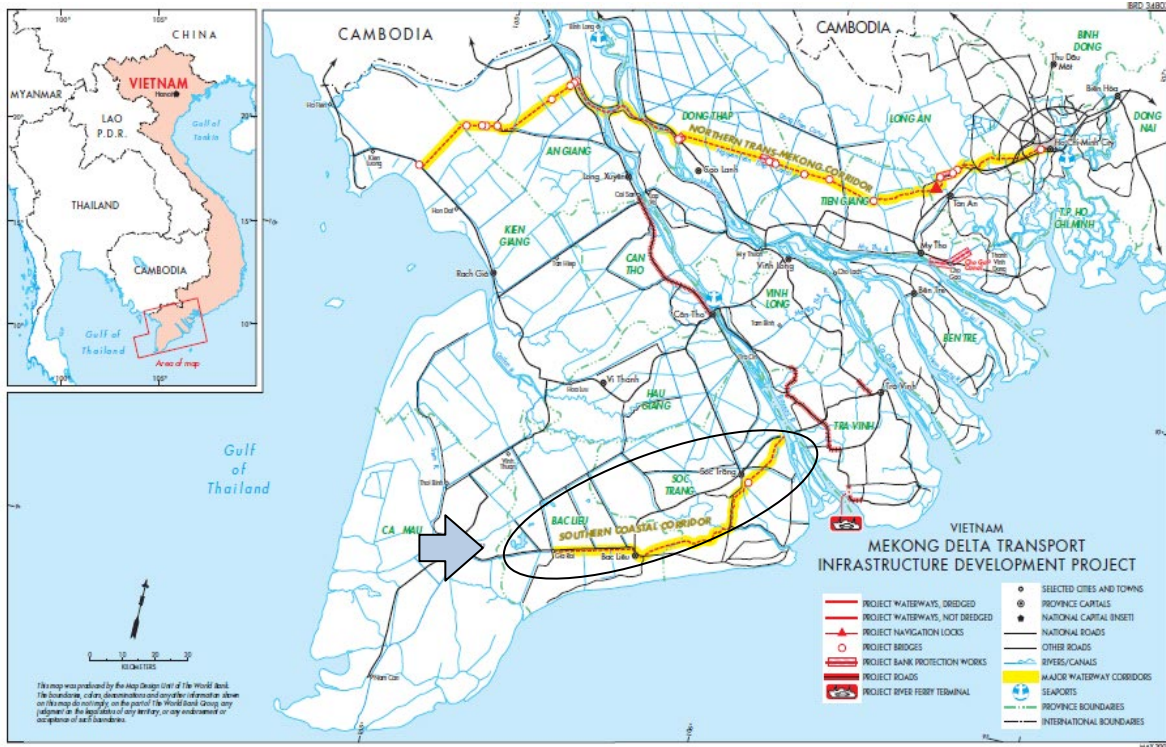
This improvements will help improve region –wide accessibility, relieve congestion on the main corridors, reduce transportation costs and support economic development in the province.

Project Description:

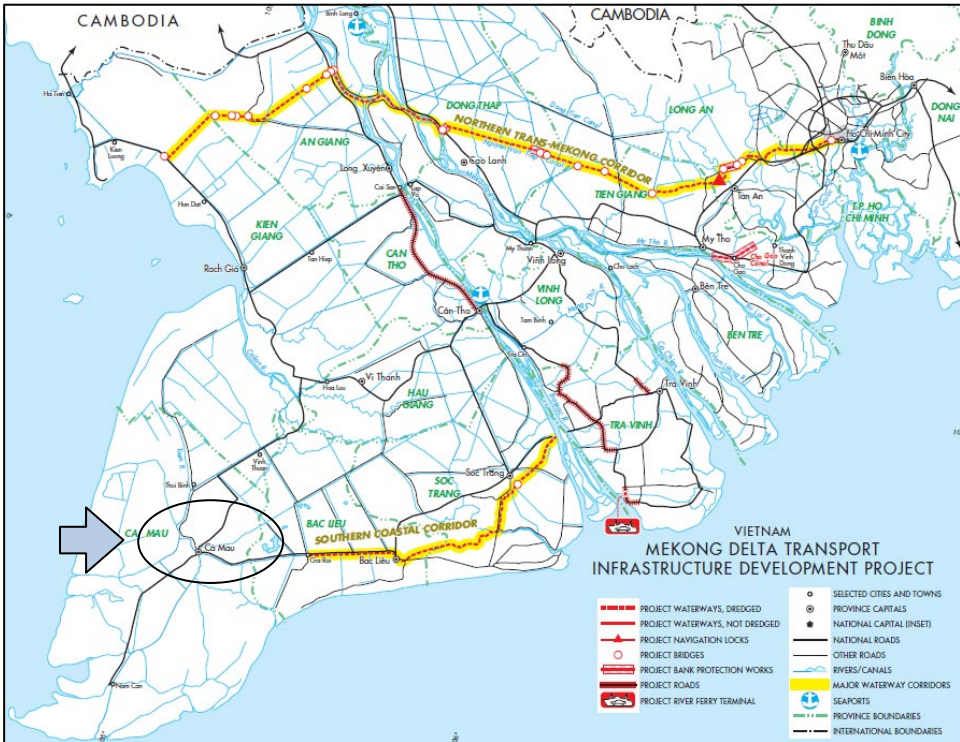
- (i) To improve the standard (up to Class III/300DWT vessels) and connectivity of the canal network in the southern coastal corridor(153km)
- (ii) Location is Gia Rai–Bac Liec–Dai Ngai (103km) and Cho Gao Canal (50km)
- (iii) Main components are as follows: Dredging, bank protections, ship lock, bridge improvements, navigation aids for 24-hour navigation .These are one of the components of Development of transport infrastructure of Mekong River Delta.

Targeted Channel Grade: Class III

Accommodated Vessels: 300DWT



Estimated Cost (2009): US\$ 99.3 million (including CW01)	Original Schedule: 2009–2015
Financial Source: World Bank , Vietnam	Implementation Agency VIWA

Project Name: Upgrading of the feeder canals in Mekong Delta region (to Class IV) (58km)	Sector: CW03
Project Background & Objective: Development of transport infrastructure of Mekong River Delta	
Project Description: (i) To upgrade two feeder canals of 58km of total length in An Giang and Ca Mau to class IV with widening and deepening, bank protection, raising bridges and navigation aids, as one of the components of Development of transport infrastructure of Mekong River Delta	
	
Estimated Cost (2009): US\$ 8.5 million	Original Schedule: 2009–2015
Financial Source: World Bank , Australia	Implementation Agency VIWA

Project Name: Upgrading of the east-west northern corridor in the northern delta region (to Class II)(Viet Tri - Quang Ninh) (280km)	Sector: CW04
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Project Background & Objective:
To improve the standard and connectivity of the canal network

Project Description:

- (i) To improve the standard (up to class II, 4X400DWT barge convoy) and connectivity of the canal network, East-west northern corridor between Viet Tri and Quang Ninh (280km): Dredging, bend corrections, bank protection, shoal regulation, air clearance, navigation aids, as one of the components of Development of transport in the northern delta region.
- (ii) Main components are new wharfs, storage facilities, and Rice drying facilities.



Estimated Cost (2009): US\$ 59.8 million	Original Schedule: 2010–2015
Financial Source: World bank , Vietnam	Implementation Agency VIWA

Project Name: Upgrading of the north-south western corridor in the northern delta region (to Class I) (295km)	Sector: CW05
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Project Background & Objective:
Improvement of inland waterway to transport good, to transport raw material of shipbuilding

- Project Description:
- (i) To improve the standard (class I) and connection of North-south western corridor between Hanoi and Ninh Co River (259km):
Dredging, bend corrections, bank protection, shoal regulation, air clearance, navigation aids. as one of the components of Development of transport in the northern delta region
Targeted Channel Grade: Class I
 - (ii) Accommodated Vessels: Sea-going Vessels of 1000DWT up to Hanoi and 3000DWT vessels up to Ninh Phuc and Nam Dinh ports
 - (iii) Main Project Components is as follows: Dredging, Bending cut and expanding radius, Bank protection, Shoal regulation, Navigational aid, Air Clearance.



Estimated Cost (2009): US\$ 6.5 million	Original Schedule: -2015 Stage I project is under the construction Stage II project is authorized by the Government and preparing tendering
Financial Source: World bank , Vietnam	Implementation Agency VIWA

Project Name: Improvement to Ninh Co River Estuary	Sector: CW06
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Project Background & Objective:
To connect Northeast provinces which transport coal from Quang Ninh.

Project Description:
(i) To improve channel by-passing the mouth of the Ninh Co river estuary to accommodate 3000DWT : dredging, breakwaters, ship lock, bank protection, river training work / Ninh Co River Estuary, as one of the components of Development of transport in the northern delta region.



Estimated Cost (2009): US\$ 63.7 million (including CW07)	Original Schedule: 2008–2015
Financial Source: World Bank , Vietnam	Implementation Agency VIWA

Project Name: Inter-connecting canal between the Day and Ninh Co River	Sector: CW07
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Project Background & Objective:
To bypass the bar at the mouth of the Ninh Co River Estuary

Project Description:

- (i) To improve canal connecting the Ninh Co and Day Rivers: dredging, breakwaters, ship lock, bank protection, river training work / between the Day and Ninh Co River, as one of the components of Development of transport in the northern delta region. Targeted Channel Grade is Accommodated Vessels: 3000DWT.
- (ii) Main Project Components is Dredging , Construction of protection breakwaters , Excavating: to connect canal Rock:188 meters long and 15 meters wide and Bank protection

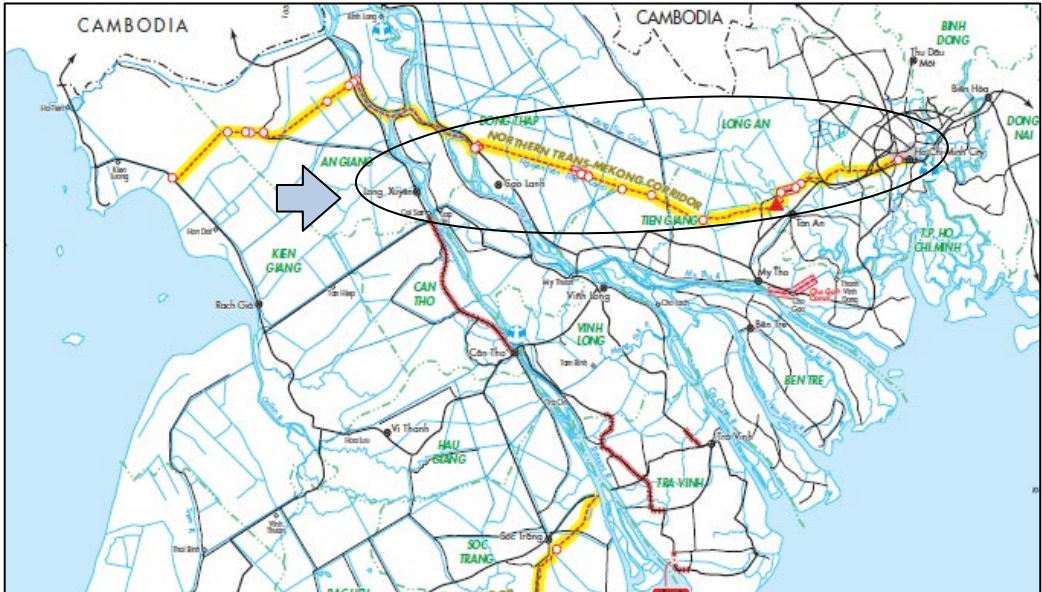


Estimated Cost (2009): US\$ 63.7 million (including CW06)	Original Schedule: 2008-2015
Financial Source: World Bank , Vietnam	Implementation Agency VIWA

Project Name: Improvement of Sai Gon-DongThap-Long Xuyen Route	Sector: CW08
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Project Background & Objective:
To improve the waterway

Project Description:
 (i) To improve the waterway in Sai Gon–DongThap–Long Xuyen section
 Targeted Channel Grade is class III.
 (ii) Main Project Components are Dredging, Installation of navigation aids system, and Modernization of navigation aids system.



Estimated Cost (2009): US\$ 4.4 million	Original Schedule: N/A
Financial Source: Vietnam	Implementation Agency VIWA

Project Name: Improvement of Thi-Vai-Nuoc Man Canal Route	Sector: CW09
Project Background & Objective: To improve the waterway	
Project Description: (i) To improve the waterway in Thi-Vai-Nuoc Man section Targeted Channel Grade is class III. (ii) Main Project Components are dredging, Installation of navigation aids system, Modernization of navigation aids system.	
Estimated Cost (2009): US\$ 3.1 million	Original Schedule: N/A
Financial Source: Vietnam	Implementation Agency VIWA

Project Name: Improvement of Viet Tri Port	Sector: CW10
Project Background & Objective: Viet Tri Port is situated on the Lo River near its confluence with the Red river. It is well situated as a nodal point for intermodal transport with good railroad connections. The president port facilities are in a poor state. The new facilities will be used to pilot new institutional and management arrangements and to support a range of improvements designed to increase capacity and demonstrate improved cargo handling methods to acceptable environmental standards.	
Project Description: (i) To introduce new facilities (wharf, storage areas, warehouses, road access, elwaste disposal facilities) at Viet Tri Port for connection to the sea ports in the north as well as the central and south / Viet Tri Port, as one of the components of Development of transport in the northern delta region.	
<p>The map displays the northern region of Vietnam, highlighting several provinces: Tuyen Quang, Phu Tho, Vinh Phuc, Thai Nguyen, Lang Son, Bac Giang, Quang Ninh, Hanoi, Bac Ninh, Hung Yen, Hai Duong, Hai Phong, Ha Tay, Ha Nam, Thai Binh, Thanh Hoa, Nam Dinh, and Ninh Binh. The Viet Tri Port is marked with a red star and a blue arrow pointing to it on the Lo River. A scale bar and an inset map of Vietnam are also present.</p>	
Estimated Cost (2009): US\$ 4.3 million	Original Schedule: 2008–2015
Financial Source: Vietnam	Implementation Agency VIWA

Project Name: Improvement of Ninh Phuc Port	Sector: CW11
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Project Background & Objective:
 Ninh Phuc Port was built in 1992 to replace the old Binh Port that is that is too close to the city for the handling of large volumes of bulk cargo along the narrow city streets.
 The port is well served by road (National highway 1) and rail to act as an intermodal node in the delta transport system. It is close to several cement factories and a major power station.
 The new facilities of Ninh Phuc Port will be used to pilot new institutional and management arrangements and to support a range of improvements designed to increase capacity and demonstrate improved cargo handling methods to acceptable environmental standards.

Project Description:
 (i) To introduce new facilities (wharf, storage areas, warehouses, road access, e/waste disposal facilities) at Ninh Phuc Port for connection to the sea ports in the north as well as the central and south / Ninh Phuc Port, as one of the components of Development of transport in the northern delta region

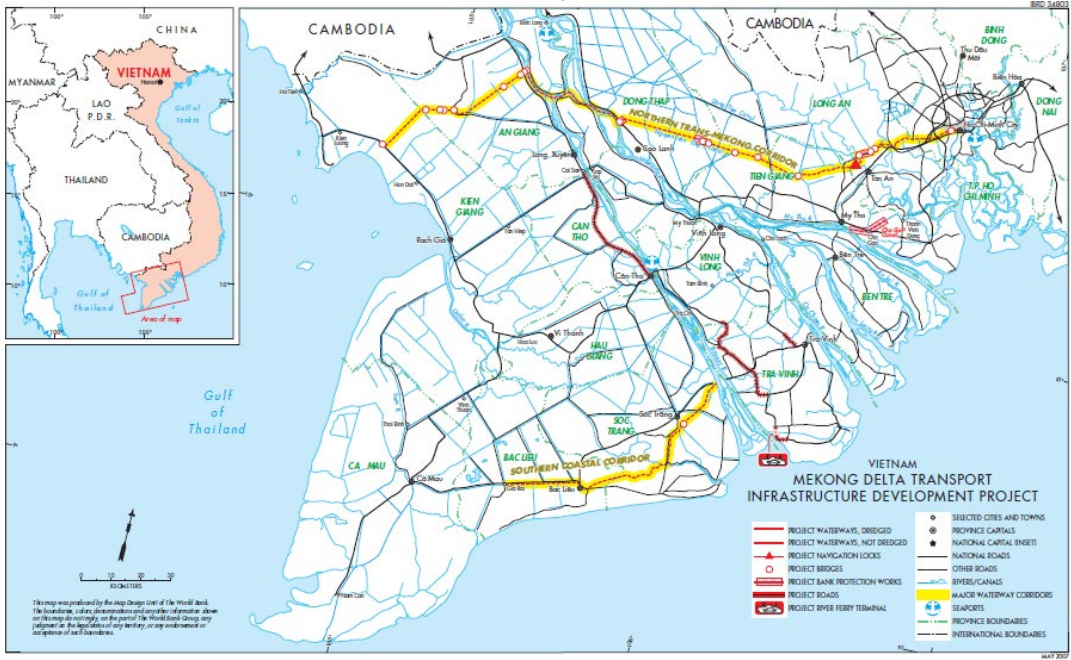


Estimated Cost (2009): US\$ 2.8 million	Original Schedule: 2010–2015
Financial Source: Vietnam	Implementation Agency VIWA

Project Name: Demonstration investment for provincial port facilities in Mekong Delta region	Sector: CW12
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Project Background & Objective:
To pilot new institutional and management arrangements and to support a range of physical improvements designed to demonstrate improved inter-modal linkages.

Project Description:
(i) To implement demonstration investment in provincial port facilities and rural landing stages as well as access roads, as one of the components of Development of transport infrastructure of Mekong River Delta



Estimated Cost (2009): N/A	Original Schedule: -2015
Financial Source: N/A	Implementation Agency VIWA

Project Name: Investment of small ferry boats stages	Sector: CW13
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Project Background & Objective:
Access to ferries from roads is often dangerous and has resulted in accidents and fatalities. This Project will support the implementation and introduction of standard framework for the planning, design and operations of different size ferry boat stages.

Project Description:
To improve 15-30 pilot ferry boats stages with supporting implementation and operation, as one of the components of Development of transport in the northern delta region

Estimated Cost (2009): US\$ 4.6 million	Original Schedule: -2015
Financial Source: World Bank ,Vietnam	Implementation Agency VIWA

Project Name: Institutional development concerned with Mekong Delta Inland waterways		Sector: CW14
Project Background & Objective: To support the various agencies within MoT to enhance the efficiency of multi-modal transport.		
Project Description: (i) Support the development of national policies and planning for multi-modal transport (ii) Review the recommendations of the Multi-modal Transport Regulatory Review completed in 2006 and support implementation of agreed actions. (iii) Support the capacity development policymakers and operators involved with multi-modal transportation.		
Estimated Cost (2009): US\$ 1.6 million	Original Schedule: 2008–2015	
Financial Source: World Bank	Implementation Agency VIWA	

Project Name: Institutional development concerned with Northern delta Region Inland waterways		Sector: CW15
Project Background & Objective: This Project will support VIWA and MOT to operate frameworks developed under MDTIDP for planning and management of ports and waterways.		
Project Description: Institutional development concerned with Northern delta Region Inland waterways (i) Support for the improved management of ported , landing stages and ferry boat crossing based on frameworks developed under MDTIDP (ii) Support for maintenance through the piloting of new maintenance arrangements such as performance-based contracts. (iii) Support for the role of community participation and supervision in project activities.		
Estimated Cost (2009): US\$ 5.1 million	Original Schedule: –2015	
Financial Source: World Bank	Implementation Agency VIWA	

Project Name: Pilot maintenance project		Sector: CW16
Project Background & Objective: To improve overall channel maintenance practices and to implement various maintenance contract		
Project Description: (i) To improve overall channel maintenance practices to ensure corridor improvements are sustained in the future. (ii) To implement various maintenance contract as "pilot", as one of the components of Development of transport in the northern delta region		
Estimated Cost (2009): US\$ 1.0 million	Original Schedule: 2008–2015	
Financial Source: World Bank	Implementation Agency VIWA	

B. Proposed Project Profiles

Project Name: Upgrading of Quang Ninh/Hai Phong - Ha Noi Route (to ClassII) (166km)						Sector: W01			
Project Background & Objective: Improvement of the east-west northern corridor between Quang Ninh to Hanoi									
Project Description: This route is from Hai Phong to Ha Noi goes along Kinh Thay River or Kinh Mon River. Roll of route is as follows. (i) To connect of Thai Binh river system with Hong river system via Duong river and Luoc river (ii) To transport sand, rock, gravel for flatten province, fuel for Hay Phong, Hoang Thach cement factory. Targeted Channel Grade is Class II , Width 70m , Depth more than 2.0m and accommodated Vessels which is Loaded 4 x 400DWT.									
No	Route	Length (km)	Grade		Width		Depth		Project
			Present	Target	Present	Plan	Present	Plan	
N1-1	Quang Ninh-Hai Phong-Ha Noi	166	III, Partially I	II	40-50	70	2.0-2.5	2	Upgrading
Estimated Cost (2009): US\$ 38.2million					Assumed Schedule (VIT2): -2014				
Financial Source: N/A					Implementation Agency VIWA				

Project Name: Upgrading of Quang Ninh - Pha Lai Route (to Class II) (128km)	Sector: W06
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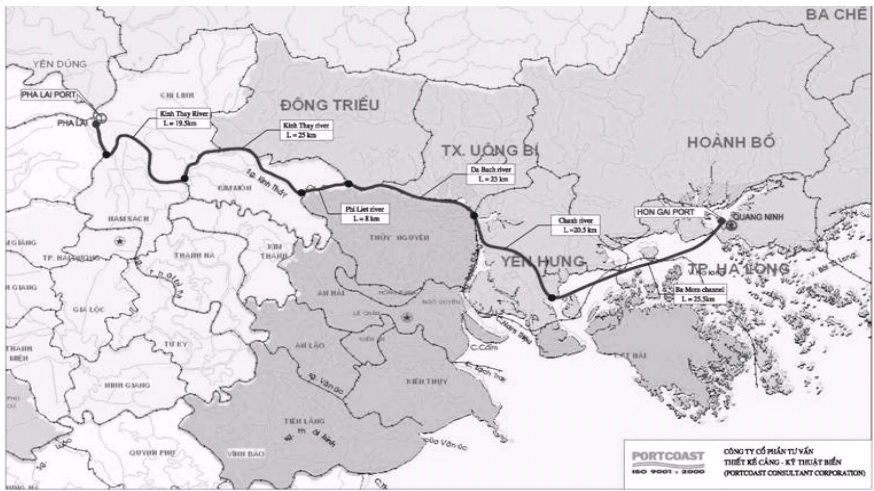
Project Background & Objective:
Upgrading the channel for transporting the industrial material and other goods

Project Description:
This route from Hon Gai port to Pha Lai port is 128 km long. Section from Hon Gai port to Chanh river mouth goes along Ba Mom channel. Other sections go through rivers of Chanh, Da Bach, Phi Liet, Kinh Thay and Thai Binh.

Main roll is as follows:

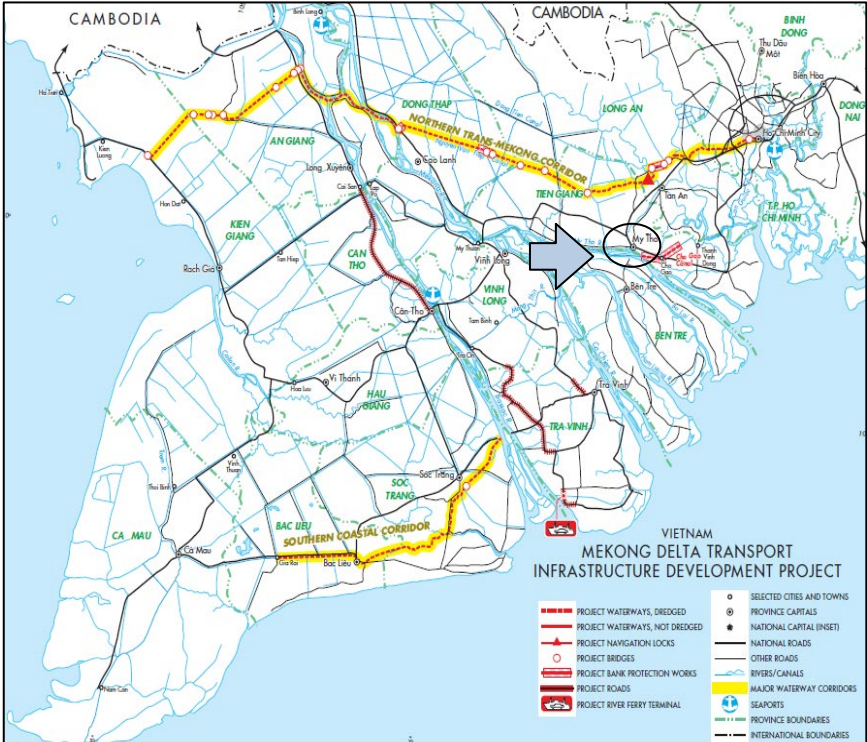
- (i) Exchange of goods between Quang Ninh Province and Northern provinces
- (ii) Transportation of coal for factories such as Pha Lai thermo-electricity, Bac Giang nitrogenous fertilizer, Dap Cau Glass, Hoang Thanh, Phuc Son cement and –
- (iii) Transportation of imported goods through Cai Lan port to Bac Ninh and Bac Giang provinces.

Targeted Channel Grade is Grade II, Width 70 m ,Depth more than 2m



No	Route	Length (km)	Grade		Width		Depth		Project
			Present	Target	Present	Plan	Present	Plan	
N3-1	Quang Ninh-Pha Lai	128.0	Mainly III, some I	II	30-60	70	2.3-2.5	2	Upgrading

Estimated Cost (2009): US\$ 29.4million	Assumed Schedule (VIT2): -2014
Financial Source: N/A	Implementation Agency VIWA

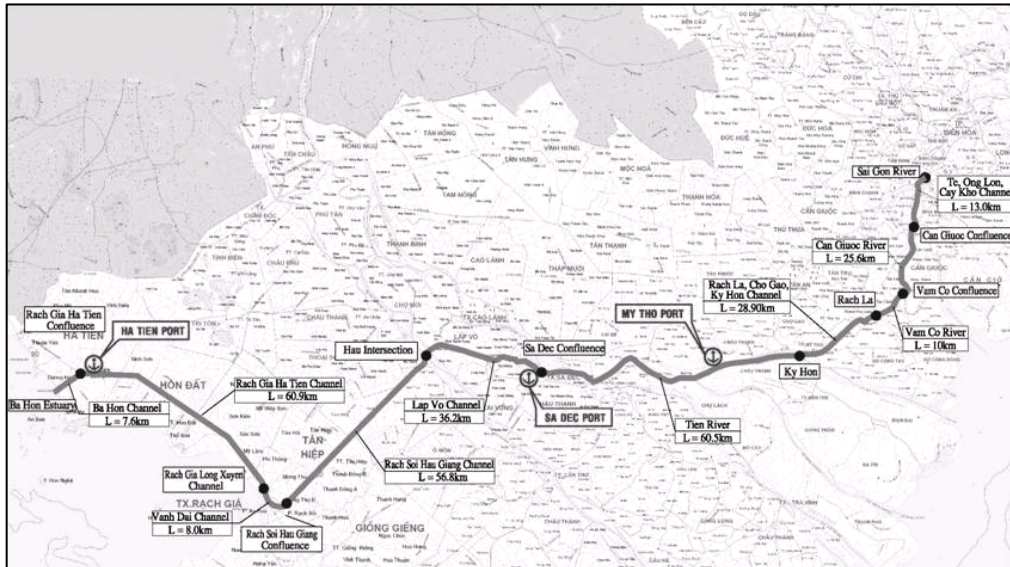
Project Name: Upgrading Cho Gao Canal Route	Sector: W13
Project Background & Objective: Improvement the canal in function	
Project Description: (i) Cho Gao Canal is located in Mekong Delta. (ii) Improvement of section of 11km among 28km for connecting the north and south routes (dredging, widening, bench cutting, bank protection, up shifting bridges)	
 <p>The map displays the Mekong Delta region in Vietnam, showing the Northern Trans-Mekong Corridor and the Southern Coastal Corridor. The Cho Gao Canal is highlighted in yellow. The map includes a legend for project waterways, locks, bridges, roads, and other infrastructure.</p>	
Estimated Cost (2009): US\$ 138.0 million	Assumed Schedule (VIT2): -2015
Financial Source: N/A	Implementation Agency VIWA or BOT Contractor

Project Name: Improvement of Sai Gon - Kien Luong/Lap Vo canal Route (315km)	Sector: W14
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Project Background & Objective:
Improvement the canal in function

Project Description:

- (i) This route connects Ho Chi Minh city with Western sea at Ba Hoan and Ha Tien via provinces of Tien Giang, Dong Thap; Hau Giang, Kien Giang. This route is 315 km long via Cho Gao canal to Tien river; Lap Vo - Sa Dec canal to Hau river; Rach Soi - Hau Giang and Rach Gia - Ha Tien to Ha Tien, Ba Hon canal to Ba Hon mouth.
- (ii) Targeted Channel Grade is as follows: Class is Grade III, Width 30 - 40 m ,Depth more than 2.5m,Accommodated Vessels is 300DWT



No	Route	Length (km)	Grade		Width		Depth		Project
			Present	Target	Present	Plan	Present	Plan	
S1-1	Sai Gon-Kien Luong (Lap Vo canal)	315	I and II	III	16-300	30-40	1.5-1	2.5	Improvement: widening and deepening, removal of obstacles

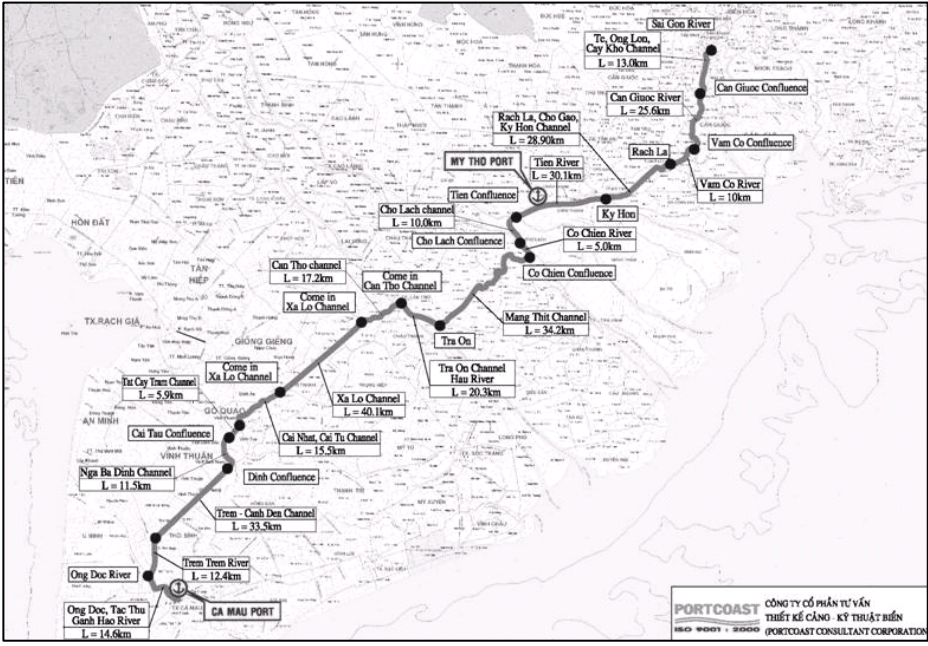
Estimated Cost (2009): US\$ 72.5million	Assumed Schedule (VIT2): -2015
Financial Source: N/A	Implementation Agency VIWA

Project Name: Improvement of Sai Gon-Ca Mau/Xa No canal Route (336km)	Sector: W16
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Project Background & Objective:
Improvement canal in function

Project Description:

- (i) This route connects Ho Chi Minh city with Ca Mau area of the western coastal area via provinces of Tien Giang, Vinh Long, Hau Giang, Can Tho, Ca Mau and South of Kien Gian.
- (ii) This route is 335.8 km long and first section via Cho Gio canal to Tien river coincide with longitudinal center 1 section connecting Tien river with Hau river via Cho Lach, Mang Thit Tra On canal; section from Hau river to western coastal area via Can Tho, Xa No, Trem - Canh Den canal, Genh Hao river to Ca Mau; Luong The Tran canal, Bay Hip canal, Nam Can town to Bay Hap mouth.
- (iii) Targeted Channel Grade is as follows. Grade III, Width 30 - 40 m, Depth more than 2.5m.



No	Route	Length (km)	Grade		Width		Depth		Obstacle	Project
			Present	Target	Present	Plan	Present	Plan		
S2-1	Sai Gon-Ca Mau (through Xa No canal)	336	I and II	III	22-300	30-40	2.7-6.5	2.5	Bridge	Improvement: widening, removal of obstacles

Estimated Cost (2009): US\$ 77.3 million	Assumed Schedule (VIT2): -2015
Financial Source: N/A	Implementation Agency VIWA

Project Name: Improvement of Sai Gon - Ca Mau/coastal Route (367km)	Sector: W17
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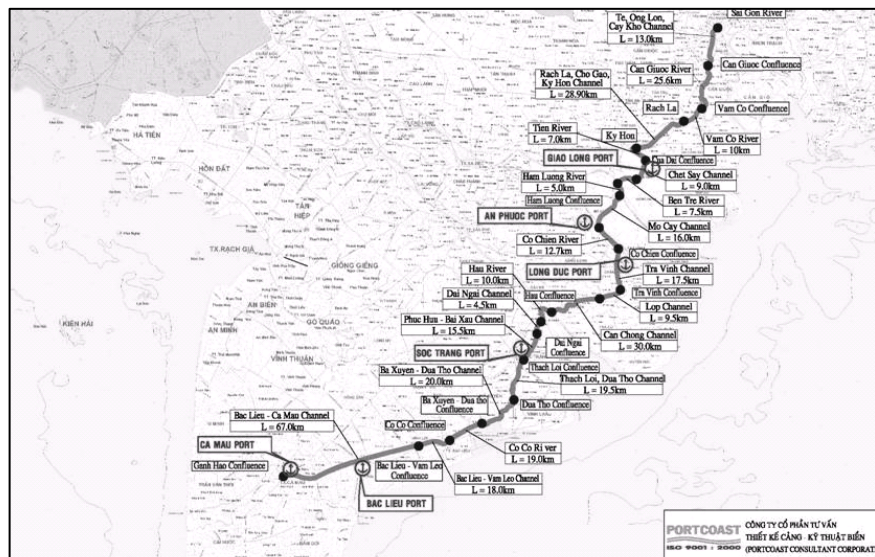
Project Background & Objective:

To connect, through the secondary road and waterway network, areas of economic activity and areas with concentration of poverty to the main transport corridors.

Project Description:

This is longitudinal axle connecting Ho Chi Minh city with provinces within Tien River, Hau river and the southern east area of Ca Mau. The longest route from Ho Chi Minh city to Ca Mau running through populous towns such as Soc Trang, Bac Lieu. Main route is 368 km long; beginning section from Ho Chi Minh city to Tien river coincides with longitudinal center 2; middle section of Tien and Hau river belonging to Ben Tre, Tra Vinh area is 142 km long via canal of Chet Say, Mo Cay, Tra Vinh, Lop, Cau Chong and some sections of natural rivers; ending section from Hau River to Ca Mau via canal of Dai Ngai, Phu Huu - Bai Sau, Bac Lieu - Ca Mau.

Targeted Channel Grade, Grade III, Width 30 to 40 m , Depth more than 2.5m



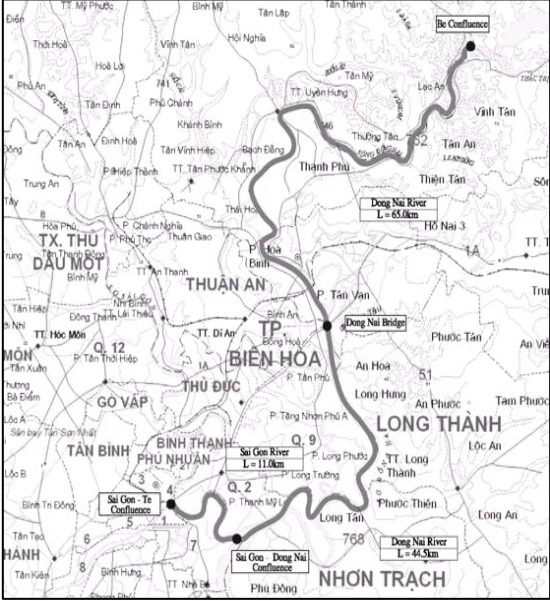
No	Route	Length (km)	Grade		Width		Depth		Obstacle	Project
			Present	Target	Present	Plan	Present	Plan		
S2-2	Sai Gon-Ca Mau (coastal)	367	I, III and IV	III	16-450	30-40	1.0-9.0	2.5	Bridge	Improvement: widening and deepening, removal of obstacles

Estimated Cost (2009): US\$ 84.4million	Assumed Schedule (VIT2): -2020
Financial Source: Australian Agency for International Development	Implementation Agency VIWA

Project Name: Improvement of Sai Gon–Hieu Liem Route (88km)	Sector: W21
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Project Background & Objective:
To transport goods to Sai Gon port and Dong Nai industrial area

Project Description:
Dong Nai river transport route improvement to Improve waterway through Dong Nai industrial Zone to Ho Chi Minh Area
Targeted Channel Grade:
(i) Grade III
(ii) Width 50 - 70 m
(iii) Depth more than 1.5m
Main Project Components is widening and deepening



Estimated Cost (2009): US\$ 15.0 million	Assumed Schedule (VIT2): -2020
Financial Source: N/A	Implementation Agency VIWA

Project Name: Maintenance Dredging to reduce backlogs		Sector: W38												
Project Background & Objective: Due to inadequate allocation, the periodic delisting of the 130 river channels that are vital to navigation has fallen behind – at the rate of 40% per annum. There is therefore a need to undertake a program to re-claim the LAD technical standards applicable to their respective classifications.														
Project Description: <table style="margin-left: 40px;"> <tr> <td>Project cost breakdown</td> <td>USD million</td> </tr> <tr> <td>1/ Current dredging</td> <td>80</td> </tr> <tr> <td>2/ Embankment maintenance</td> <td>20</td> </tr> <tr> <td>3/ Lifting of obstacle objects</td> <td>15</td> </tr> <tr> <td>4/ Others</td> <td>05</td> </tr> <tr> <td>Total cost</td> <td>120</td> </tr> </table> <p>Section: multi Channel (river) length: over 6,600km</p>			Project cost breakdown	USD million	1/ Current dredging	80	2/ Embankment maintenance	20	3/ Lifting of obstacle objects	15	4/ Others	05	Total cost	120
Project cost breakdown	USD million													
1/ Current dredging	80													
2/ Embankment maintenance	20													
3/ Lifting of obstacle objects	15													
4/ Others	05													
Total cost	120													
Estimated Cost (2009): US\$ 120.0 million	Assumed Schedule (VIT2): –2020													
Financial Source: N/A	Implementation Agency VIWA													

Project Name: Search and rescue		Sector: W47
Project Background & Objective: All vessels can navigate waterways safely and smoothly according to regulations supported by navigation aids in every hours and seasons. Ports and landing stages provide modern facilities for users including passengers to use safely and easily.		
Project Description: Enhancement of organization, installment of equipment and system etc... <ul style="list-style-type: none"> (1) Waterways <ul style="list-style-type: none"> (i) Securing required dimensions of channels throughout a respective route (ii) Measures for safe navigation in crowded water area (iii) Installment of necessary navigation aids and appropriate maintenance (2) Port <ul style="list-style-type: none"> (i) Construction of port facilities satisfying the structural standards and appropriate maintenance (ii) Enhancement of safety of port facilities for passenger (iii) Improvement of landing stage enhancing safety (3) Vessels <ul style="list-style-type: none"> (i) Operation of vessels of satisfying standards (ii) Fostering necessary numbers of crew (4) Organizations <ul style="list-style-type: none"> (i) Research and rescue system (ii) Fostering necessary numbers of administrators 		
Estimated Cost (2009): US\$ 5.0 million	Assumed Schedule (VIT2): -2013	
Financial Source: N/A	Implementation Agency VIWA	

Project Name: Database: River Surveys and Vessel Registry	Sector: W52
Project Background & Objective: It is presently difficult to know the number of IWT vessels operating in Vietnam due to weak registration and enforcement system.	
Project Description: (i) The ownership status and consequent liability becomes outdated – when the asset is sold or transferred. (ii) This makes it difficult to enforce standards in safety and navigation. The vessel registry system could also be used to generate funds for channel maintenance, where the annual fees form part of the registration process. (iii) A tedious but necessary effort is the conduct of periodic surveys of rivers and ports <ul style="list-style-type: none"> • to establish a current database of information • to guide the issuance of navigation charts or restrictions • to identify and quantify maintenance and repair works • to plan future projects. Unlike roads, the state of a river section cannot be visually ascertained. Without updated information on river conditions, determination of required level of maintenance and remedial measures is not possible.	
Estimated Cost (2009): US\$ 20.0 million	Assumed Schedule (VIT2): –2020
Financial Source: Technical Assistance grant for project Scoping; ODA for systems acquisition, installation and training	Implementation Agency N/A