

## VI. Plan for Port System in Hanoi Segment

### A. Basic Requirements

#### (1) To handle increasing traffic at port groups

- Total cargo throughput in Hanoi segment:
 

6.0 million tons (2001)
10.2 million tons (2010)
17.2 million tons (2020)

(Note) Containers (2010:32,000TEUs, 2020:67,000TEUs) are excluded.

- Potential passenger service route from Hanoi:
  - + for downstream of Red River (Hung Yen, Thai Binh)
  - + for upstream of Red River (Viet Tri, Phu Tho)

(Note) In addition to normal passenger traffic, it is important to promote the river cruise for international and domestic tourists in Hanoi segment.

#### (2) To raise cargo handling efficiency

- Bulk cargo at major ports:
 

2,000 tons/m/year (2001)
4,800 tons/m/year (2020)
- Non-bulk cargo at major ports:
 

900 tons/m/year (2001)
2,400 tons/m/year (2020)
- Mechanization rate: almost 100% (excluding hooking process, 2020)
- Unitization: introduction of the unitization in cargo handling

#### (3) To reduce total vessel staying time at port

- Reduction of waiting and idle time: By constructing adequate numbers of permanent berth, operating ports 24 hours a day and handling cargoes in 3 shift.
- Reduction of handling time: By raising cargo handling efficiency and providing adequate handling equipment.

#### (4) To accommodate larger vessels/barge trains

- Barge train: 2units@600DWT + Pushing Tug@200CV
- Barge train: 4units@400DWT + Pushing Tug@250CV
- Self-propelled vessel: 300DWT (400DWT - 600DWT of shallow draft type)
- Sea-cum-river vessel: 1,000DWT (for Khuyen Luong and Hanoi Ports, 2020)

**(5) To clarify role and function of each port within a port group**

126. When planning several ports within a certain area, it is important to clarify the role and function of each port and to arrange them in rational places. Easing vessel traffic concentration at Duong Bifurcation as well as contributing to the urban and industrial development plans should be taken into account.

## **B. Distribution of Roles and Functions among Ports/Berths**

127. Taking into account the development direction of Hanoi City (see **Figure VI-1**), future road network (see **Figure VI-2**), alignment of navigation channel and land use of flood plane in the Hanoi segment, distribution of roles and functions among ports/Berths is set as follows (see **Table VI-1** and **Figure VI-3**):

- Hanoi Port
  - + To serve mainly for Citadel districts.
  - + To receive SRV from Southern and Middle Vietnam by 2020.
  - + To decrease bulk cargo and increase clean cargo.
  - + To become main passenger gateway.
- Khuyen Luong Port
  - + To serve mainly for whole right bank of Red River (SRV cargo: for whole city).
  - + To receive SRV from Southern and Middle Vietnam by 2020.
- New North Port
  - + To serve mainly for Dong Anh and Soc Son Districts.
  - + To contribute to urban and industrial development.
- New East Port
  - + To serve mainly for Gia Lam District (container: for whole city).
  - + To receive container vessel/barge from northern seaports.
  - + To become the 1st gateway from northern seaports.
- Chem Berths
  - + To serve mainly for Tu Liem District.
  - + To be improved in terms of safe and environmental aspects.
- Other Berths
  - + To prohibit extension of other cargo Berths.
  - + To remove temporary cargo Berths located between Thang Long and Thanh Tri Bridges and transfer to the outside by 2010 in principle.
  - + To construct satellite passenger berths at 4 major tourist spots.



Source) HNPC (Hanoi Authority for Urban Planning and Architecture)

**Figure VI-1 Master Plan of Hanoi City up to 2020**

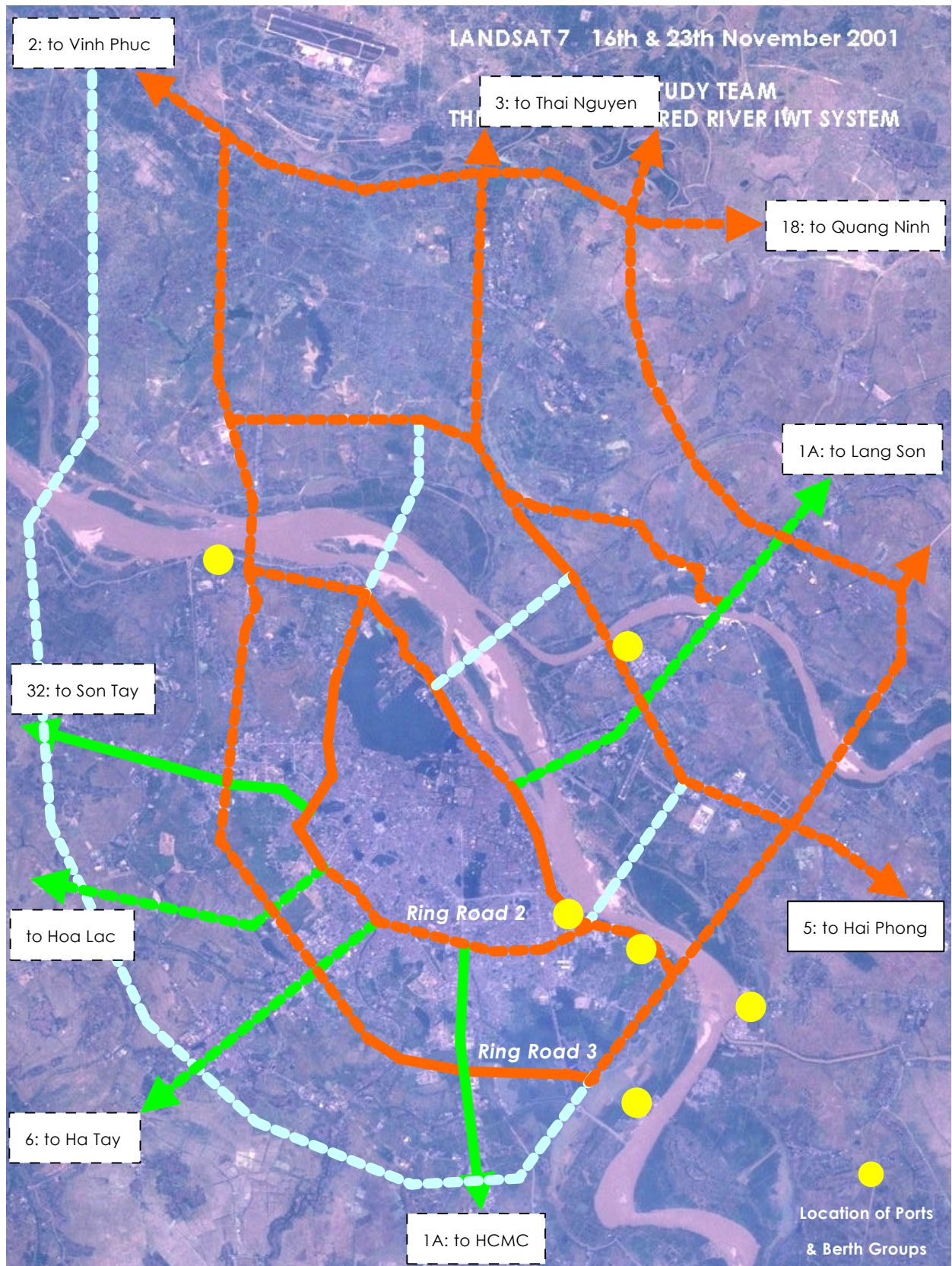


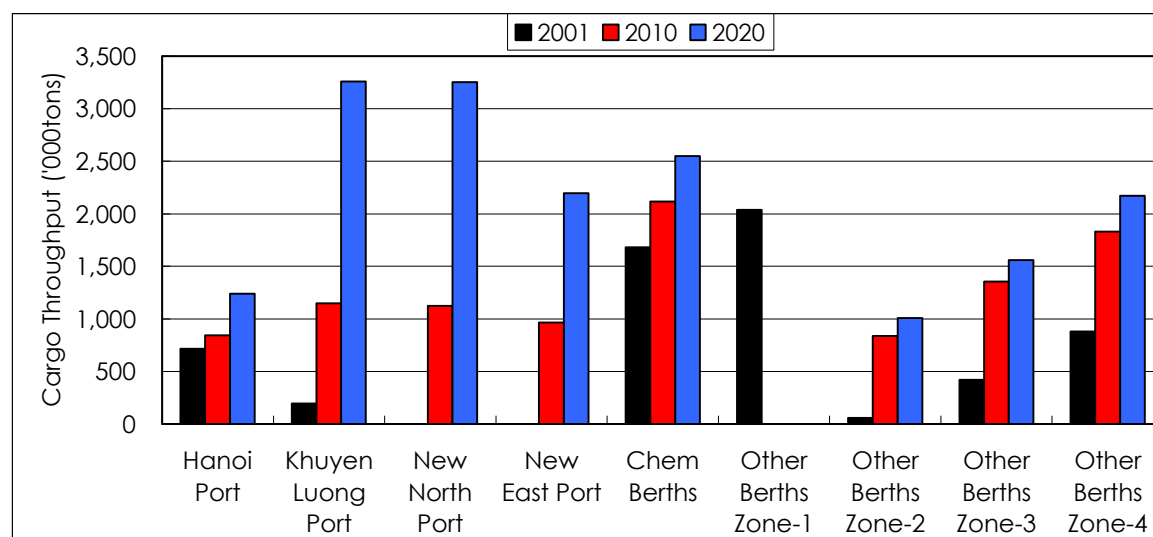
Figure VI-2 Skeleton Roads in Hanoi City

**Table VI-1 Cargo Throughput of Ports/Berths in Hanoi Segment (2001, 2010, 2020)**

Ports/Berths	Throughput (1000 ton)						Total
	C. M.	Cement	Fertilizer	Coal	Paddy/Rice	Others	
Hanoi Port (2001)	439	43	0	227	0	8	717
Hanoi Port (2010)	395	198	0	204	0	47	844
Hanoi Port (2020)	220	415	0	114	307	183	1,238
Khuyen Luong Port (2001)	72	24	0	52	0	47	195
Khuyen Luong Port (2010)	776	198	0	127	0	47	1,148
Khuyen Luong Port (2020)	1,958	415	182	212	307	183	3,257
New North Port (2001)	0	0	0	0	0	0	0
New North Port (2010)	971	99	0	32	0	23	1,125
New North Port (2020)	2,797	311	0	79	0	62	3,250
New East Port (2001)	0	0	0	0	0	0	0
New East Port (2010)	194	495	0	158	0	116	964
New East Port (2020)	839	934	0	238	0	185	2,197
Chem Berths (2001)	1,330	263	0	0	0	88	1,681
Chem Berths (2010)	1,729	289	0	0	0	97	2,115
Chem Berths (2020)	2,128	316	0	0	0	106	2,549
Other Berths (2001)	1,930	847	0	220	0	403	3,400
Other Berths (2010)	2,509	932	0	177	0	409	4,027
Other Berths (2020)	3,088	1,017	0	218	0	416	4,738
Total (2001)	3,771	1,177	0	499	0	546	5,993
Total (2010)	6,574	2,212	0	698	0	739	10,223
Total (2020)	11,030	3,408	182	861	614	1,135	17,229

Note) New East Port will handle another 32,000 TEUs in 2010 and 67,000 TEUs in 2020 of container.

Source) JICA Study Team



Note) Zone-1: Red River between Thang Long and Thanh Tri Bridges

Zone-2: Red River upstream of Thang Long Bridge

Zone-3: Red River downstream of Thanh Tri Bridge

Zone-4: Duong River

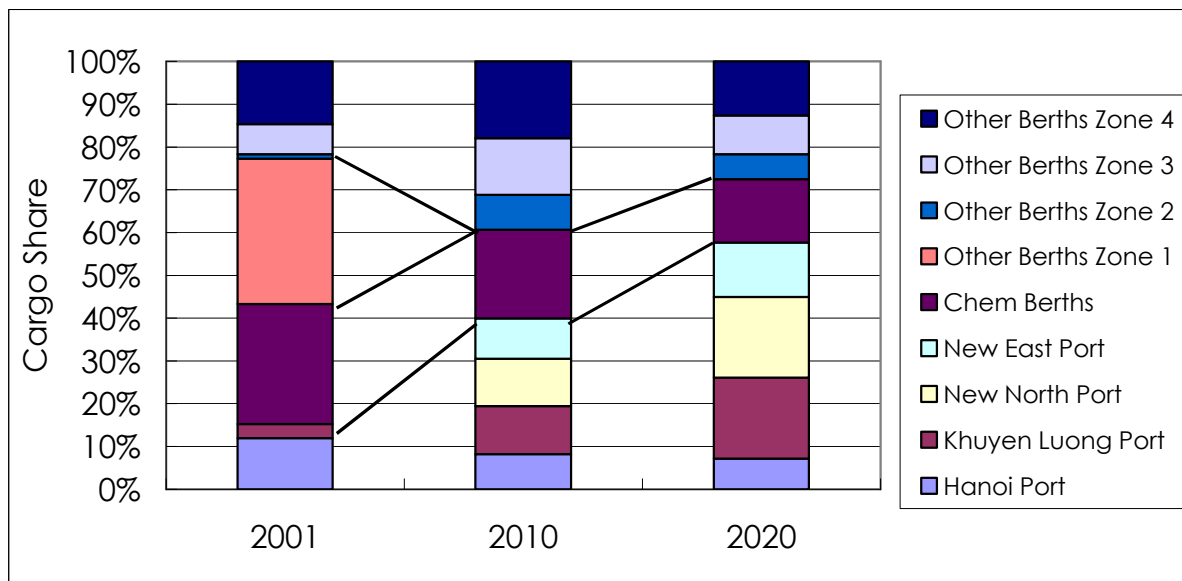
Note) Cargo transfer from Zone-1 (2010): Zone-1(0%), Zone-2(30%), Zone-3(40%), to Zone-4(30%), outside HN(0%).

Cargo transfer from Zone-1 (2020): Zone-1(0%), Zone-2(30%), Zone-3(40%), to Zone-4(30%), outside HN(0%).

Note) New East Port will handle another 32,000 TEUs in 2010 and 67,000 TEUs in 2020 of container.

Source) JICA Study Team

**Figure VI-3 Cargo Throughput of Ports/Berths in Hanoi Segment (2001, 2010, 2020)**



Note) Zone-1: Red River between Thang Long and Thanh Tri Bridges  
 Zone-2: Red River upstream of Thang Long Bridge  
 Zone-3: Red River downstream of Thanh Tri Bridge  
 Zone-4: Duong River

Note) Cargo transfer from Zone-1 (2010): Zone-1(0%), Zone-2(30%), Zone-3(40%), to Zone-4(30%), outside HN(0%).  
 Cargo transfer from Zone-1 (2020): Zone-1(0%), Zone-2(30%), Zone-3(40%), to Zone-4(30%), outside HN(0%).

Note) New East Port will handle another 32,000 TEUs in 2010 and 67,000 TEUs in 2020 of container.

Source) JICA Study Team

**Figure VI-4 Cargo Share of Ports/Berths in Hanoi Segment (2001, 2010, 2020)**

128. Temporary Berth restricted banks and potential areas for transferred temporary Berths are shown in **Figure VI-5**. Potential areas for transferred temporary Berths and preliminary features of each area are summarized as follows:

Potential areas for transferred temporary Berths:

- Thuong Cat (Red km+2 Right Bank)
- Dong Du (Red km+28 Left Bank)
- Yen My (Red km+35 Right Bank)
- Dang Xa (Duong km+16 Right Bank)

Preliminary features of each area:

- Land area: length=about 200m - 300m, width= about 50m.
- The safety in vessel navigation and mooring as well as cargo handling, crane operation in particular, shall be made sure.
- Cargo storage volume in the area in flooding season shall be minimized.
- The distance between the area and populated area shall be long enough in order to avoid any negative environmental impact.

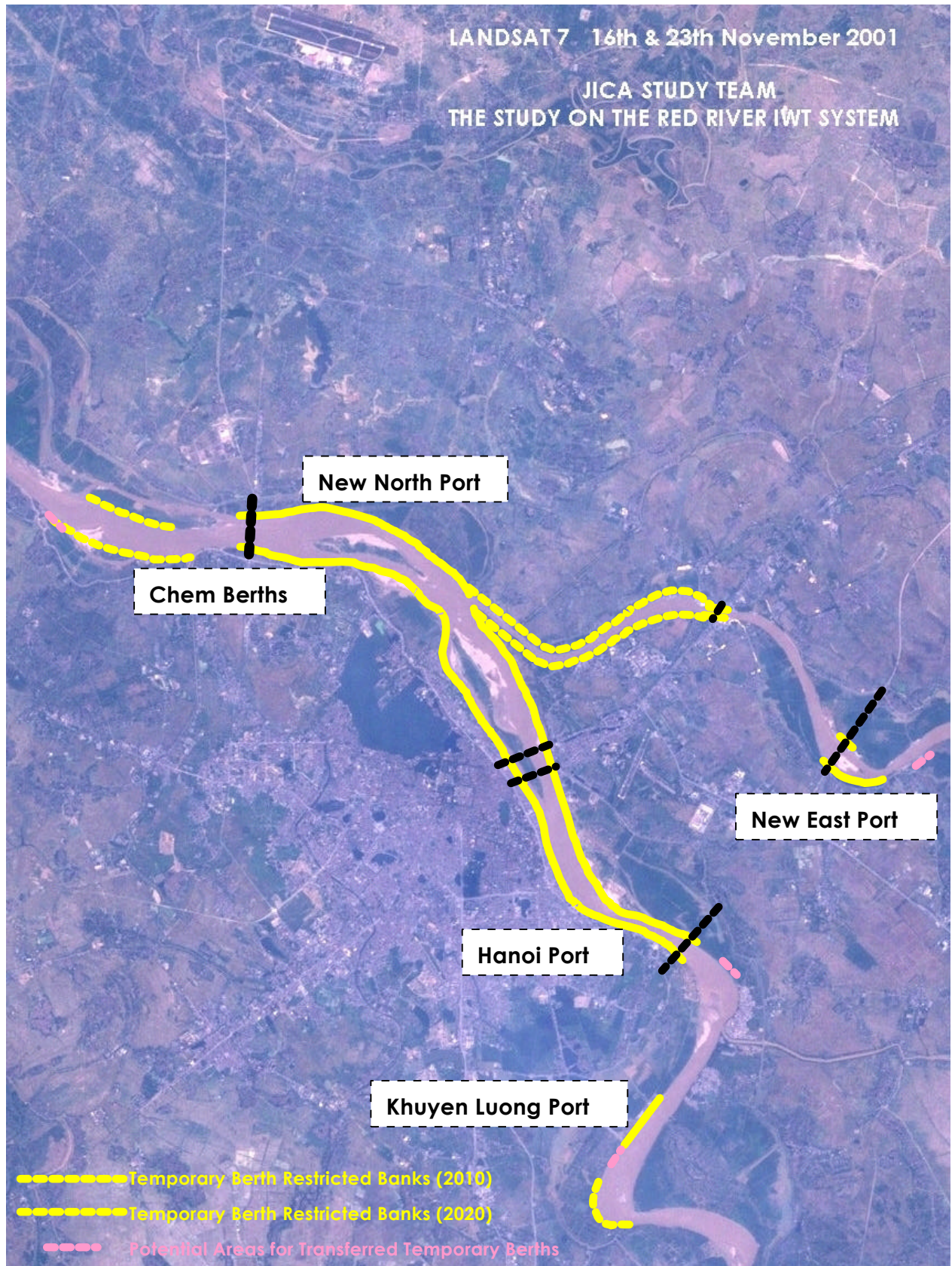


Figure VI-5 Temporary Berth Restricted Banks and Potential Areas for Transferred Temporary Berths