4 Port Elizabeth

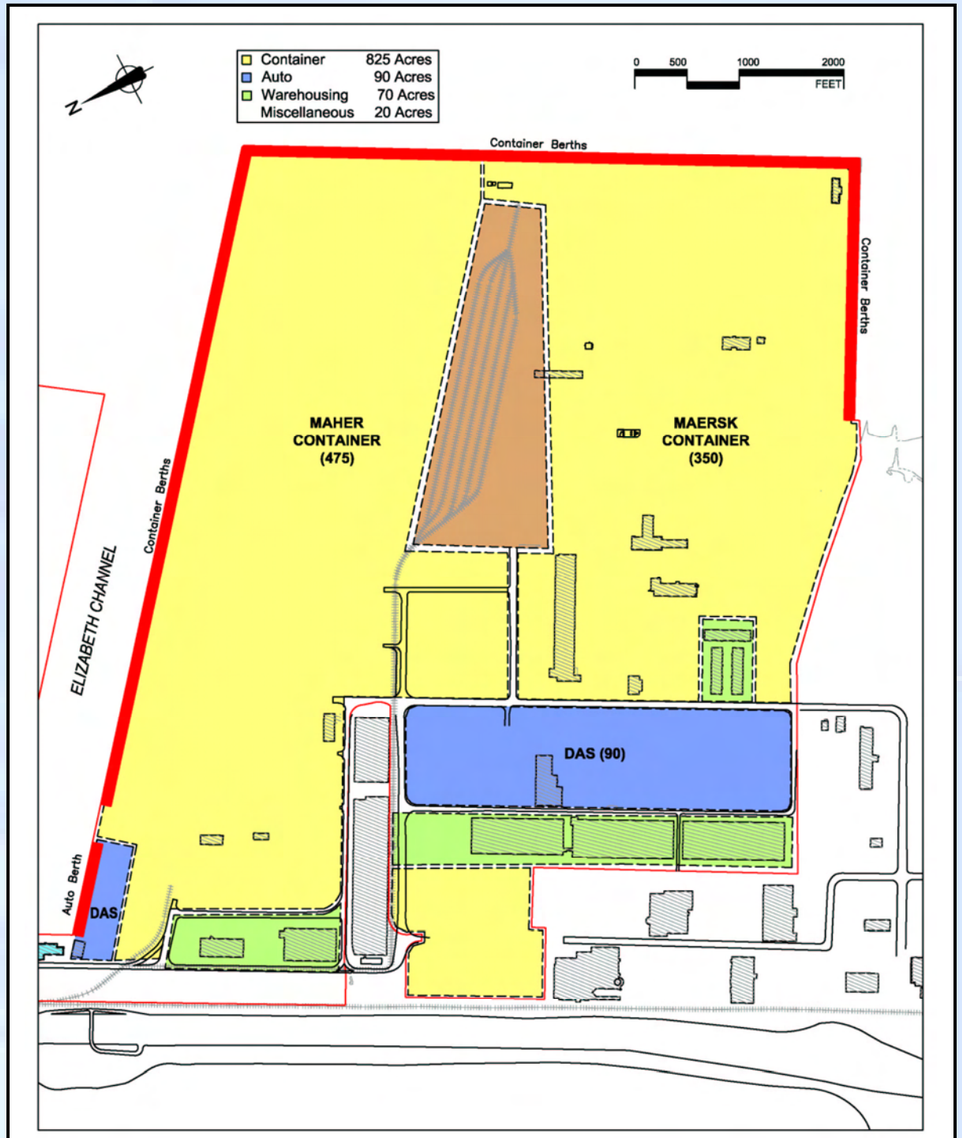

Fig 4.1 - Existing Layout

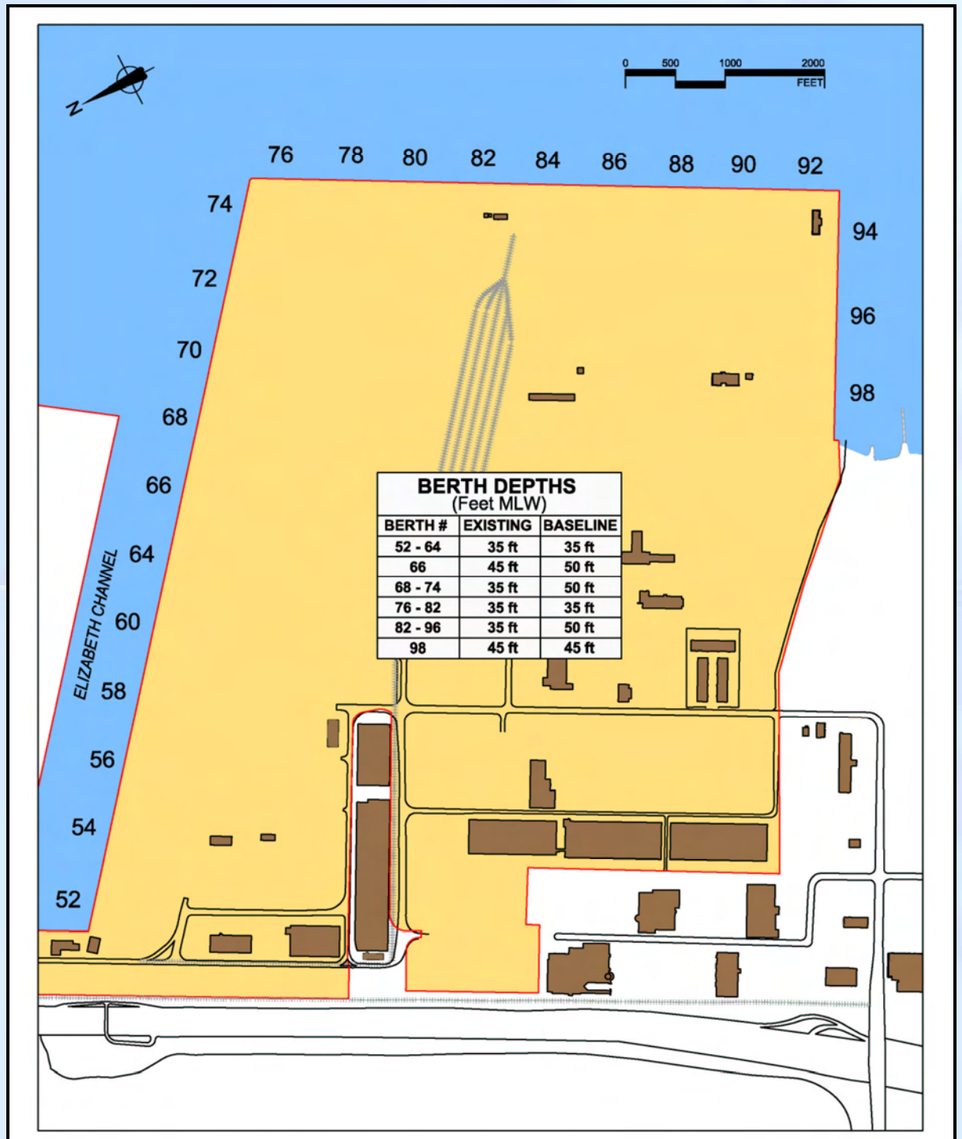

Fig 4.2 - Existing and Baseline Berth Depths

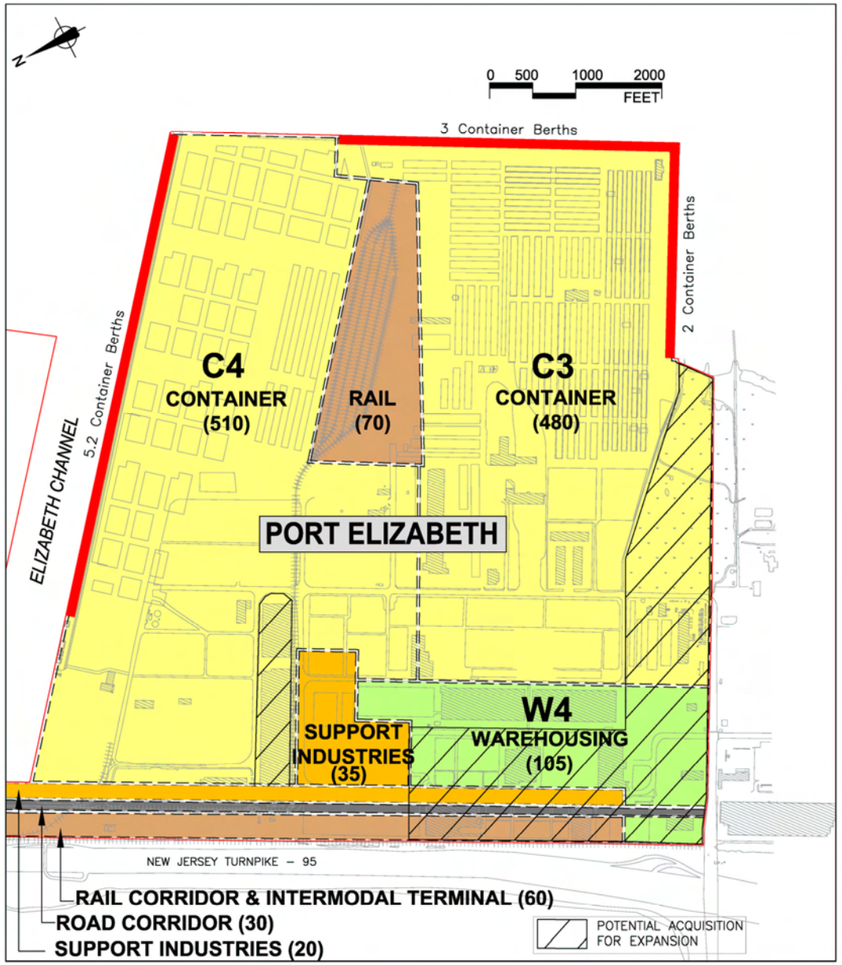

Fig 4.3 - Orange and Red Scenarios

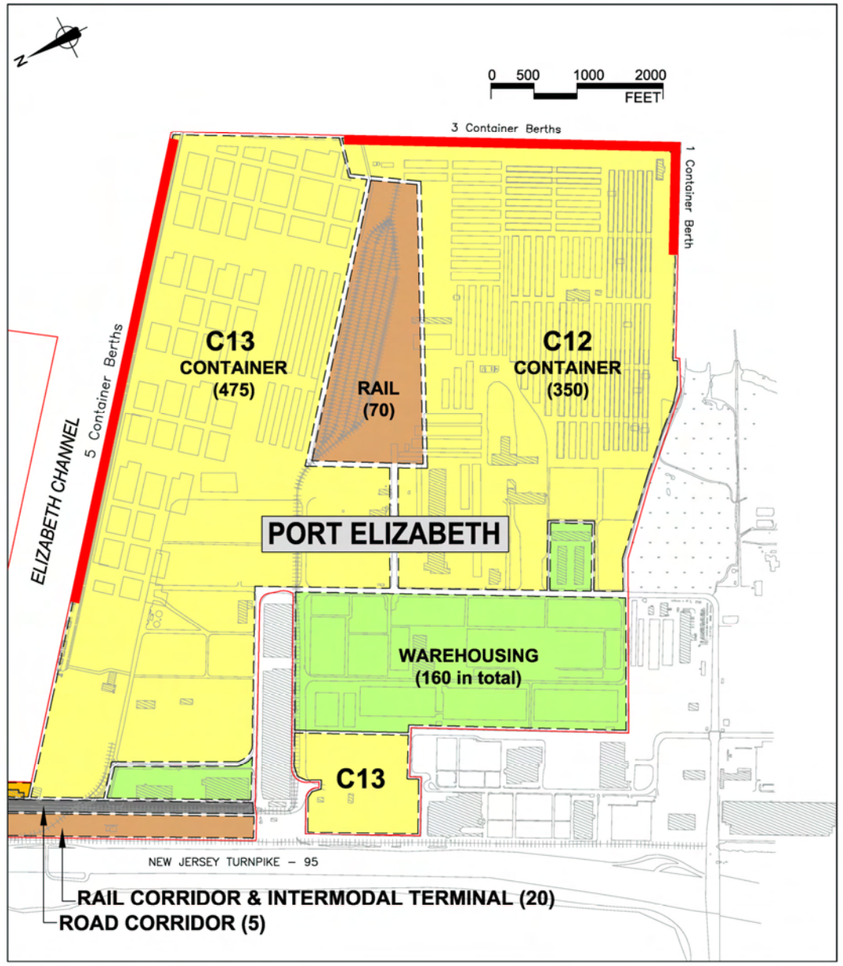

Fig 4.4 - Yellow and Blue Scenarios

Existing site area and berths			
Terminal	**Type**	**Area (acres)**	**# berths**
Maher	Container	475	9.2
Maersk	Container	350	5.9
Das	Auto	90	1

Table 4.1
Ref : Chapter 5, Volume 1, CPIP.

Existing terminal assessed capacity		
Maher	475 acres	3,769,000 TEU/year
Maersk	350 acres	2,011,000 TEU/year
Das	90 acres	108,000 units / year

Table 4.2
Ref : Chapter 5, Volume 1, CPIP.

Land allocation								
Scenario	**Containers**		**Road & Rail**	**Warehousing & terminal support industries**	**Total area**	**Area made from**		
	Option	Area				**Existing**	**Waterfront fill**	**Acquired**
Orange & Red	C3 C4	480 510	200	160	**1350**	1120	0	230
Yellow & Blue	C12 C13	350 475	135	160	**1120**	1120	0	0

Table 4.3
Ref : Chapter 7, Volume 1, CPIP.

2060 Site Options and provisions					
Terminal	**Type**	**Area (acres)**	**# Berths**	**Land capacity**	**Berth capacity**
C12	Container	350	4	2,975,000TEU/year	3,125,000 TEU/year
C13	Container	475	5	4,037,500 TEU/year	4,143,000 TEU/year
C3	Container	480	5	4,080,000 TEU/year	4,143,000 TEU/year
C4	Container	510	5.2	4,335,000 TEU/year	4,370,700 TEU/year

Table 4.4
Ref : Chapter 5, Volume 1, CPIP.

Option evaluation

C12	C13	C4	C3
P1	P1	P2	P2
P2	P2	P5	P5
P5	P5	F1	F1
F2	E4	F2	F2
F3	E5	F3	F3
E4	F2	E4	E4
E5	F3	E5	T1
F1	F1	T1	T4
T1	T1	T4	T5
T4	T4	T5	T6
T5	T5	T6	P1
T6	T6	P1	P4
P4	P4	P4	E1
E1	E1	E1	E2
E2	E2	E2	E3
E3	E3	E3	T2
T2	T2	T2	P3
P3	P3	P3	E5
E6	E6	E6	E6
T3	T3	T3	T3

	Criterion
	Port Planning
P1	Phasing, plan flexibility and relationship to existing land and berth use
P2	Appropriateness of land shape for cargo handling
P3	Ease of navigation to site along the main approach channels
P4	Space in the adjacent waterway for ship manoeuvring to the berth
P5	Effects of operations on neighbouring port operations
	Financial and Economic
F1	Financial analysis – breakeven price
F2	Economic impact – job creation
F3	Economic impact – tax revenue created
	Environmental Issues
E1	Light
E2	Noise
E3	Dust and odors
E4	Traffic
E5	Wildlife habitat
E6	Waterfront access
	Transportation Issues
T1	Highway access
T2	Local highway congestion
T3	Local highway improvement cost
T4	Rail access
T5	Rail terminal on-site availability
T6	Rail terminal on-site cost

Key
F1 Relatively good evaluation under financial criterion F1
E1 Indifferent evaluation under environmental criterion E1
P3 Poor Evaluation under planning criterion P3
Criterion is not applicable

Table 4.5
Ref : Chapter 15, Volume 1, CPIP.

Port Elizabeth

Port Elizabeth is served by three berthing channels – Elizabeth Channel to the north; Elizabeth Pierhead to the east, and South Elizabeth Channel.

All three of Elizabeth's berthing channels are planned to be deepened to 50 ft. The existing and currently planned depths at the berths are shown on page 4.1

1. Access Channels

Access to Port Elizabeth is by the Upper New York Bay stretch of the Anchorage Channel whose present depth of 45 ft is planned to be deepened to 50 ft, and then by the Kill van Kull Channel followed by the Newark Bay Channel, both of whose present depth of 45ft is planned to be deepened to 50 ft.

2. Restrictions

Port Elizabeth is affected by the air draft limitations of Bayonne Bridge which spans the Kill van Kull Channel. This may be problematic in the future when container ships get larger. The air draft at Verrazano Narrows Bridge is more than adequate for the foreseeable future.

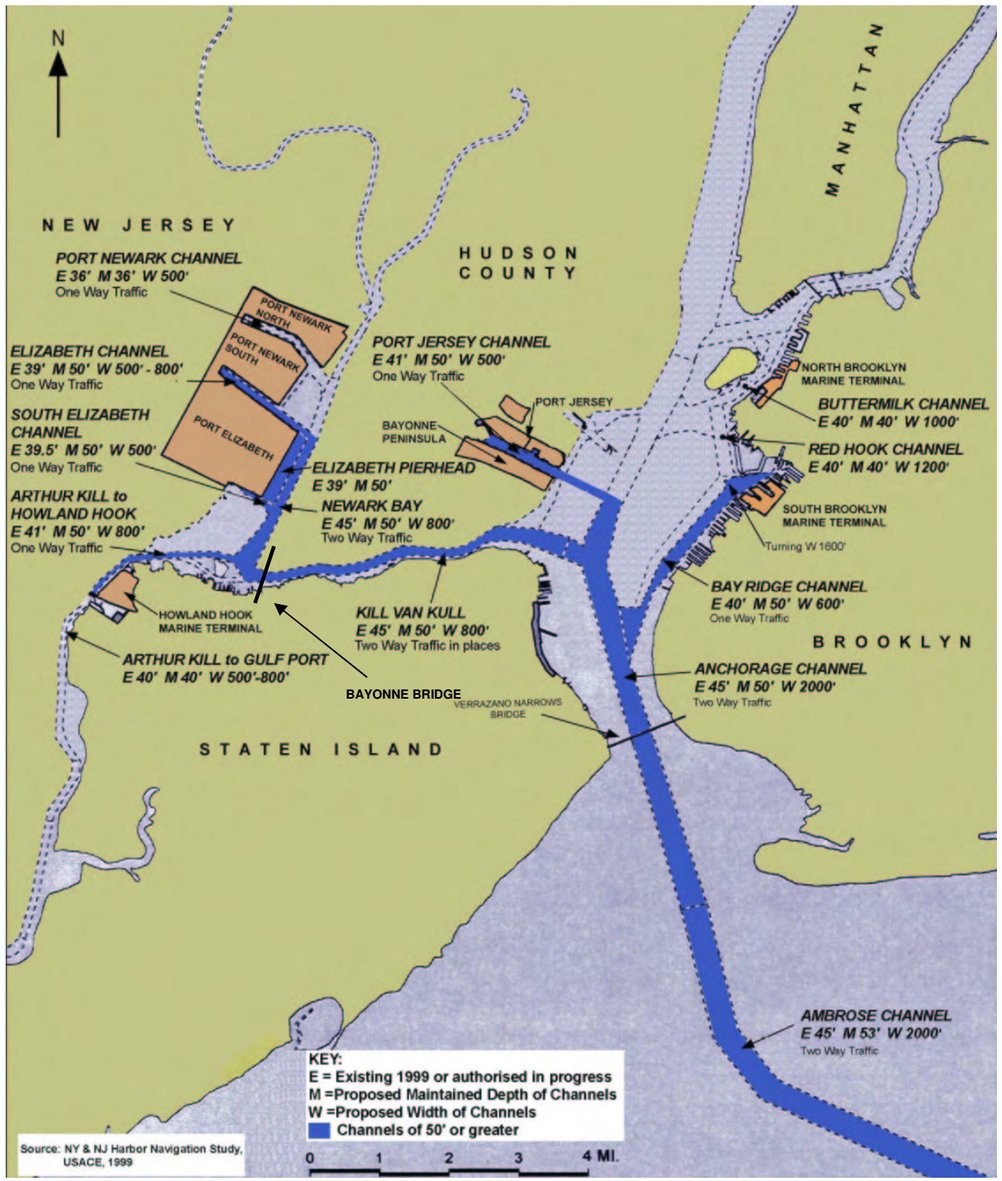

Fig 4.5 - Navigational Channels

Approach channel depths		
Channel name	**Existing, or in progress depth (ft MLW)**	**Future maintained depth (ft MLW)**
Ambrose	45	53
Anchorage	45	50
Kill van Kull	45	50
Newark Bay	45	50
Elizabeth Channel	39	50
Elizabeth Pierhead	35	50
South Elizabeth	39.5	50

Table 4.6
Ref : Chapters 5 & 6, Volume 1, CPIP.

Berthing channel width		
Channel name	**Overall width (ft)**	**Dredged width (ft)**
Elizabeth Channel	790	500
South Elizabeth Channel	One sided	290

Table 4.7
Ref : Chapters 5 & 6, Volume 1, CPIP.

Infrastructure capital cost				
	C12	C13	C3	C4
Site clearance	0.0	0.0	25.2	22.3
Berths	2.2	18.0	8.6	20.3
Paving	0.0	0.0	26.1	13.1
Buildings	4.5	0.0	11.3	0.0
Other	1.3	4.1	17.4	6.8
Contingency & design	4.0	11.0	44.3	31.3
Total $m	12.0	33.1	133.0	93.8

Table 4.8
Ref : Chapter 11, Volume 1, CPIP.
Costs are quoted at 2003 constant US dollars.

Economic impact					
	Unit	C12	C13	C3	C4
Additional units		6,71,775	911,668	1,776,755	1,209,168
Employment					
Direct	jobs	2,382	3,233	6,301	4,288
In other industries	jobs	3,122	4,236	8,255	5,618
Gross State Product	($m)	302.6	410.6	800.2	544.6
Income	($m)	183.2	248.6	484.4	329.7
Federal taxes	($m)	38.6	52.4	102.2	69.5
State taxes	($m)	12.2	16.6	32.4	22.0
Local taxes	($m)	17.8	24.2	47.1	32.1
Rank (from 14 options)		11	7	2	4

Table 4.10
Ref : Chapter 11, Volume 1, CPIP.
Costs are quoted at 2003 constant US dollars.

Financial ranking of container terminal Options				
Rank (from 14 options)	Project		Additional capacity (000 TEU)	Breakeven price per TEU
1	C12	Port Elizabeth	672	139
2	C13	Port Elizabeth	912	143
3	C3	Port Elizabeth	1,777	146
4	C4	Port Elizabeth	1,209	148

Table 4.9
Ref : Chapter 11, Volume 1, CPIP.
Costs are quoted at 2003 constant US dollars.

Overall ranking of container terminal Options			
Terminal Option	Additional capacity	Financial rank	Economic rank
Container Terminals	(000 TEU)		
C3 Port Elizabeth	**1,777**	**3**	**2**
C4 Port Elizabeth	**1,209**	**4**	**4**
C13 Port Elizabeth	**912**	**2**	**7**
C9 Bayonne	1,275	6	3
C2 Port Newark South	1,025	5	5
C12 Port Elizabeth	**672**	**1**	**11**
C14 South Brooklyn	2,210	12	1
C8 Bayonne	850	8	8
C7 Port Jersey	965	11	6
C1 Port Newark South	345	7	12
C6 Port Jersey	765	10	10
C10 Howland Hook	843	13	9
C11 Howland Hook	282	9	13
C5 Port Jersey	200	14	14

Table 4.11
Ref : Chapter 11, Volume 1, CPIP.

Fig 4.6 – CPIP Federal Wetlands
Source: CPIP-EIS Consultant (ESEC)

Estimated wetland usage in Options	
Option	**Estimated wetland area (acres)**
C3	27

Table 4.12
Ref : Chapter 12, Volume 1, CPIP.