CHAPTER 4 MASTER PLAN OF KLAIPEDA PORT

4.1 Basic Concept of Klaipeda Port Development

(1) Approach to the Master Planning

In terms of national economic stability, foreign trade is a key to Lithuania, and Klaipeda Port plays a role as the trade center in the country. The future of Lithuania is largely dependent on the successful development of Klaipeda. As discussed in previous Chapters, the seaborne traffic through the Eastern Baltic ports has been affected by a geopolitical economic climate, including cross-border transport policies in Europe and CIS countries. To respond in a timely manner to the potential traffic demand, Klaipeda Port should elaborate an economic and financially sound port master plan, which should be attractive and beneficial to KSSA and port users.

As discussed in Chapter 2, the Port is burdened with various operational bottlenecks, including: 1) shortage of storage areas within the existing port area, 2) long turnaround times in railway access to the Port, 3) non-existence of deepwater berths for Baltmax-type vessels, and 4) shortage of spacious available land in the port territory. These operational issues should also be solved in the master plan.

In consideration of national and functional port requirements, the master planning for Klaipeda Port has been conducted in the following manner:

1) The existing port capacity has been assessed using a computational model, where the cargo and shipping demand forecasts as well as operational conditions on both sea- and landsides have been incorporated.

2) The port improvement plans within the existing territory have been prepared, taking into account the improvement programs planned and implemented by KSSA and port operators.

3) In the event the existing port runs short of traffic handling capacity, a port expansion plan has been developed, considering the above-mentioned functional port requirements.

4) The comparative site analysis for port expansion has been conducted, covering three potential zones; inner port, middle port and outer port.

(2) Development Scenarios of Klaipeda Port

On the basis of the above master planning approach, the port development of Klaipeda will be implemented in a stepwise manner as proposed below. The detailed procedure leading to these development concepts is explained in the following sections, referring to the assessment of port capacity in the areas of seaside, landside and railway operation.

Step-1: Improvement of the existing port facilities, including expansion of berths, cargo-handling equipment, storages and railway access and siding lines

Step-2: Development of an outer port to the north of the existing port entrance, including the improvement of the sea channel

4.2 Analysis of Port Capacity

4.2.1 Methodology for Port Capacity Analysis

(1) Application of Computer Model

The Port is involved in various cargo/ship handling operations, from receiving ships in the channel entrance through to trucking/railing out cargoes through exit gates or vice versa. These operations are generally classified into two components, namely a seaside operation and a landside operation. The former is further divided into two operational elements, navigation and berthing, and the latter into storage and rail access. The production rate (cargo handling capacity) can be estimated individually. However, the total capacity of the Port should be estimated as an integrated production capacity inclusive of all elements above.

Cargo handling operations are executed simultaneously at several berths of the various terminals. Some ships call at the port almost on schedule, such as ferry services, while other cargo vessels may call in at random. Furthermore, ships when sailing through the channel or basin are controlled from place to place and time to time by navigational rules, which require monitoring of their locations on a timely basis. Once some traffic congestion occurs during the course of the above operations, associated succeeding operations will be constrained. To estimate the future integrated port capacity, all expected procedures of cargo/ship handling should be developed in advance. However, manual calculations covering all port zones and time bands through one year would be extremely difficult.

(2) Construction of Seaside Operation Model

To reproduce realistic cargo handling activities and estimate seaside capacity, a conceptual simulation model has been constructed under the following assumptions:

- Access channel (the sea channel and inner channel)

  The channel conditions as of the year 2004 have been applied as has the current navigation rule stipulated by the Harbour Master Office.

- Berths

  The existing berth conditions have been adopted. It has also been assumed that on-going or planned renovation works for berths have been completed.

- Shore cranes

  Loading/unloading capacities of the existing shore cranes have been applied. The installation of new cranes planned by the terminal operators has also been considered.

- Vessel arrival pattern

  In the case of liners such as container and Ro/Ro ships, regular schedules as defined by the present schedule for shipping routes have been used. For trampers, a random arrival pattern has been applied.

(3) Construction of Landside Operation Model

Unlike the seaside operation model, the landside operation has not been incorporated into a computer simulation. Rather, the landside capacity for storage and railway access has been assumed to be limitless.

In the case of the storage capacity, the resulting figure for maximum storage requirements under peaking conditions in the simulation period (one year) has been compared with the existing capacity in each cargo item. Where the required storage capacity exceeds existing capacity, the expansion of storage capacity needs to be planned at suitable locations within the existing territory, reserved areas or a new port territory.

(4) Evaluation Criteria for Port Capacity

As discussed earlier, the landside capacity would not affect the total cargo/ship movements in the simulation model. Instead, the seaside capacity would control the port capacity as a whole. A guideline in evaluating if the seaside operation reaches its capacity is discussed below.

As in the seaside capacity, there are two categories. One is the capacity to maintain an 'adequate' service level for a calling vessel at a port. This is expressed as the percentage of offshore waiting time to turnaround time from arrival to departure of a vessel at a port (hereinafter referred to as "the adequate seaside capacity"). A figure of 10% is generally used as an adequate service level especially in leading European ports that say "We do not make calling vessels wait", and in the Study this has been used as a criterion to determine the seaside capacity.

The other is the capacity that enables maximisation of the number of vessels receivable at berths during a certain period (one year). In this category, waiting offshore ships are on the verge of unstable conditions, indicating an auspice of a sharp increase in waiting times (hereinafter referred to as "the absolute seaside capacity").

An image of cargo/ship handling in the simulation model is illustrated in Figure 4.1. In this case an incoming vessel travels through the sea channel and inner channel with recognition of safe distance to ships sailing nearby, approaches the designated empty berth and undertakes berthing operations either in the North Existing Port Zone or in the South Existing Port Zone. Once its berth occupation has been noticed in advance, a ship chooses the berthing position in the New Outer Port. Its decision depends on the service level, such as 10 percent. After berthing, loading/unloading operations take place on the basis of commodity format and consuming quayside operation times. These berthing and loading/unloading operations take place repeatedly to reach optimum arrangements of seaside facilities.

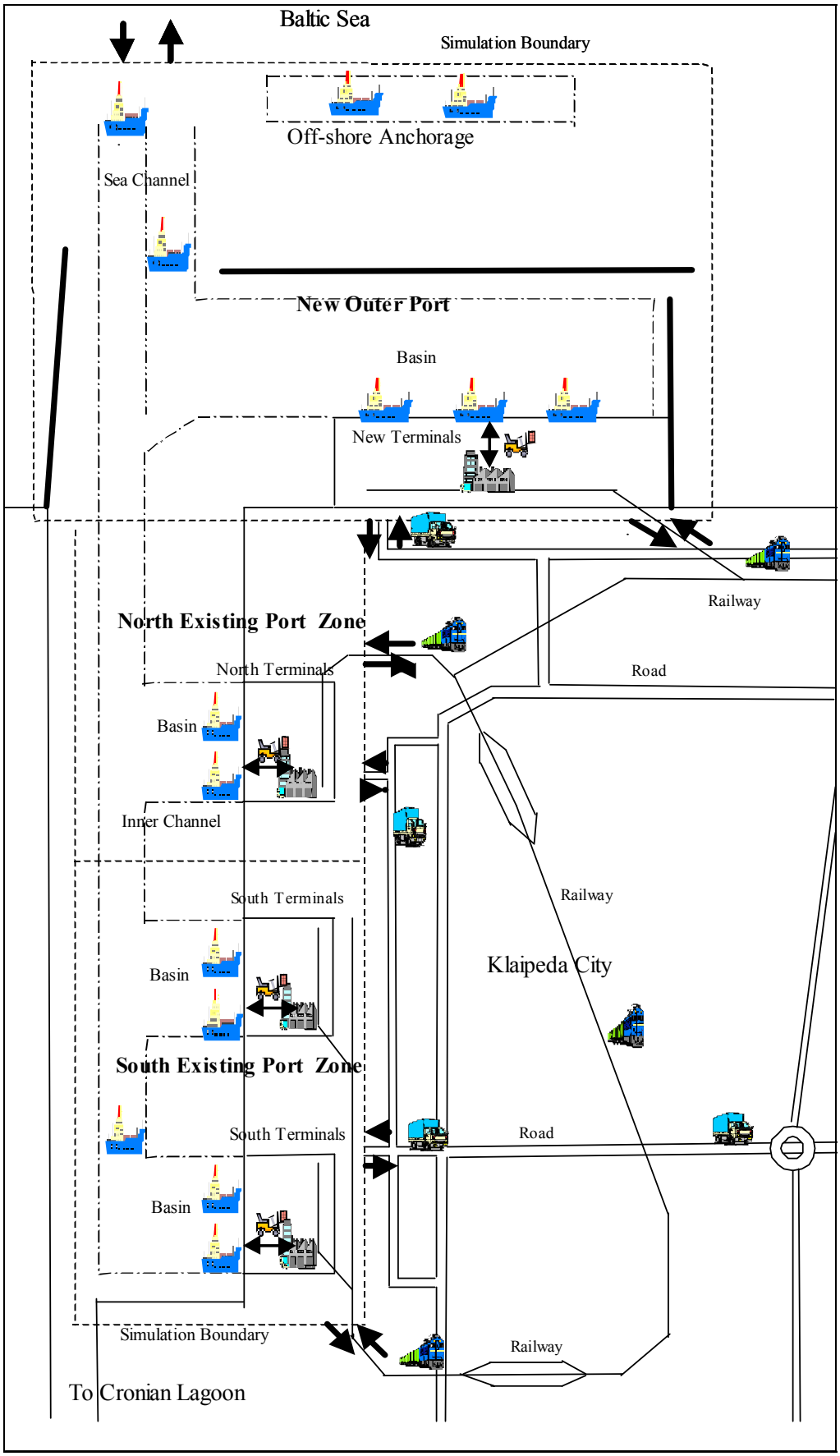


Figure 4.1 Movements of Cargoes Within the Port

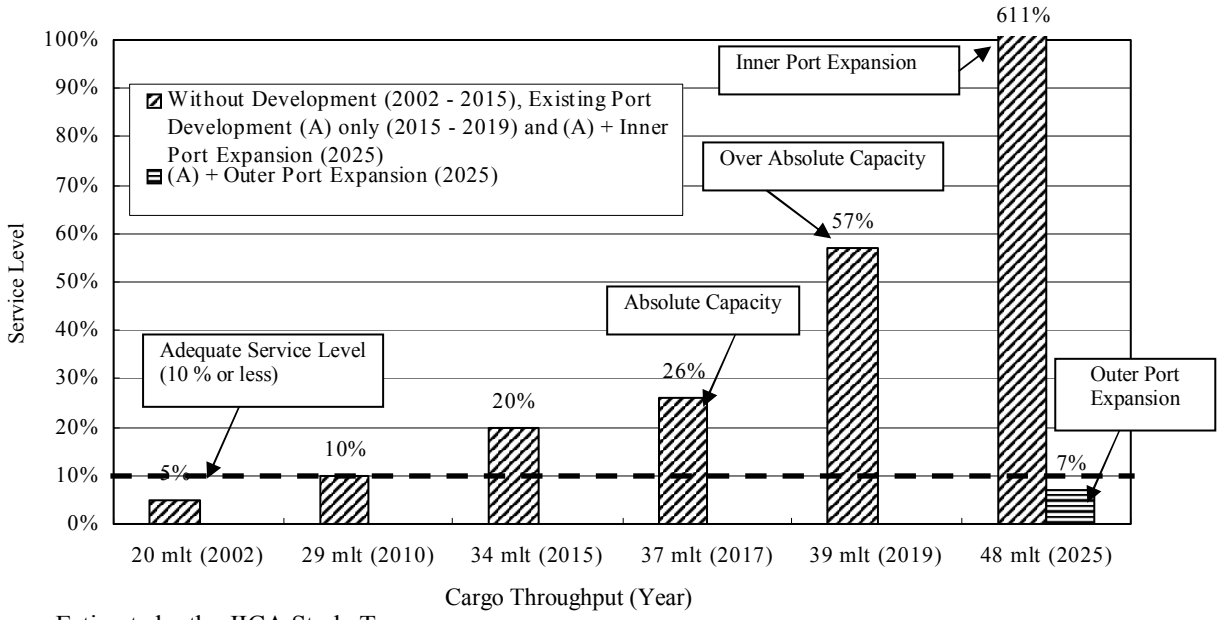
4.2.2 Assessment of Seaside Capacity (Navigation and Berthing)

Based on the results of the simulation, the annual cargo throughput of the Port would reach the adequate capacity (10% service level) in 2010 with a throughput of 27 million tons per annum. The absolute capacity would be reached in 2017 with a throughput of 34 million tons per annum. This absolute saturation would be caused partly by a shortage of berth capacity and partly by a shortage of channel capacity. In the stages of the Master Plan assuming the target year 2025, even if expansion occurs deep within the Port (so as to increase the berthing capacity to receive excess cargo overflowing from saturation of the existing port in 2017), the Port will not be able to meet the overall demand. This reflects limitations in channel capacity, which will become saturated prior to 2025 despite the low berth occupancy rates (see Table 4.1 and Figure 4.2).

Table 4.1 Cargo Throughput and Service Level

Development Case	Year	Cargo throughput (million tons)	Service level at the whole port
Without development case	2002	20	5%
	2010	27	10%
Existing port development (A) only	2015	32	20%
	2017	34	26%
	2019	37	57%
(A) + Inner port expansion	2025	48	611%
(A) + Outer port expansion	2025	48	7%

Source: Estimate by the JICA Study Team



Source: Estimate by the JICA Study Team

Figure 4.2 Port Service Levels in Master Plan

4.2.3 Assessment of Landside Capacity (Storage and Railway Access)

(1) Storage

Based on the results of the simulation, the required storage capacities would exceed existing levels in the year 2015 (the target year of the Short-term Plan) with a 10 ha shortage of storage area for the existing port, irrespective of the outer port expansion. In the year 2025 (the target year of the Master Plan), the shortage of the storage area would increase to a total of 34 ha comprising10 ha within the existing port territory and 24 ha in the Outer Port area.

It has been estimated that within the existing port territory and reserved area behind the berths approximately 19 ha could be converted for port cargo storage use. Thus, in the Study towards the year 2025, it has been planned to gradually convert the area reserved for port use into land used mainly for cargo storage for the existing port (10 ha). The remaining 24 ha storage area required for the Outer Port has been planned to be located just behind its deepwater berths.

(2) Railway Access

The existing railway capacity has been broadly evaluated zone by zone as outlined below. Railway capacities of the main terminals are shown in Figure 4.3.

1) North Zone

The freight volume forecasts for the year 2025 at Klaipeda Nafta and KLASCO are approximately 12.0 million tons (740 wagons per day) and 8.7 million tons (520 wagons per day), respectively. According to the capacity calculation, KLASCO can handle a maximum of 8.8 million tons under current access line conditions. After the railway renovation planned by LG, the maximum capacity will be 9.3 million tons, which can handle the cargo traffic till the year 2025. As the maximum capacity of Klaipeda Nafta is 10.0 million tons, it will be saturated by the year 2021.

2) South Zone

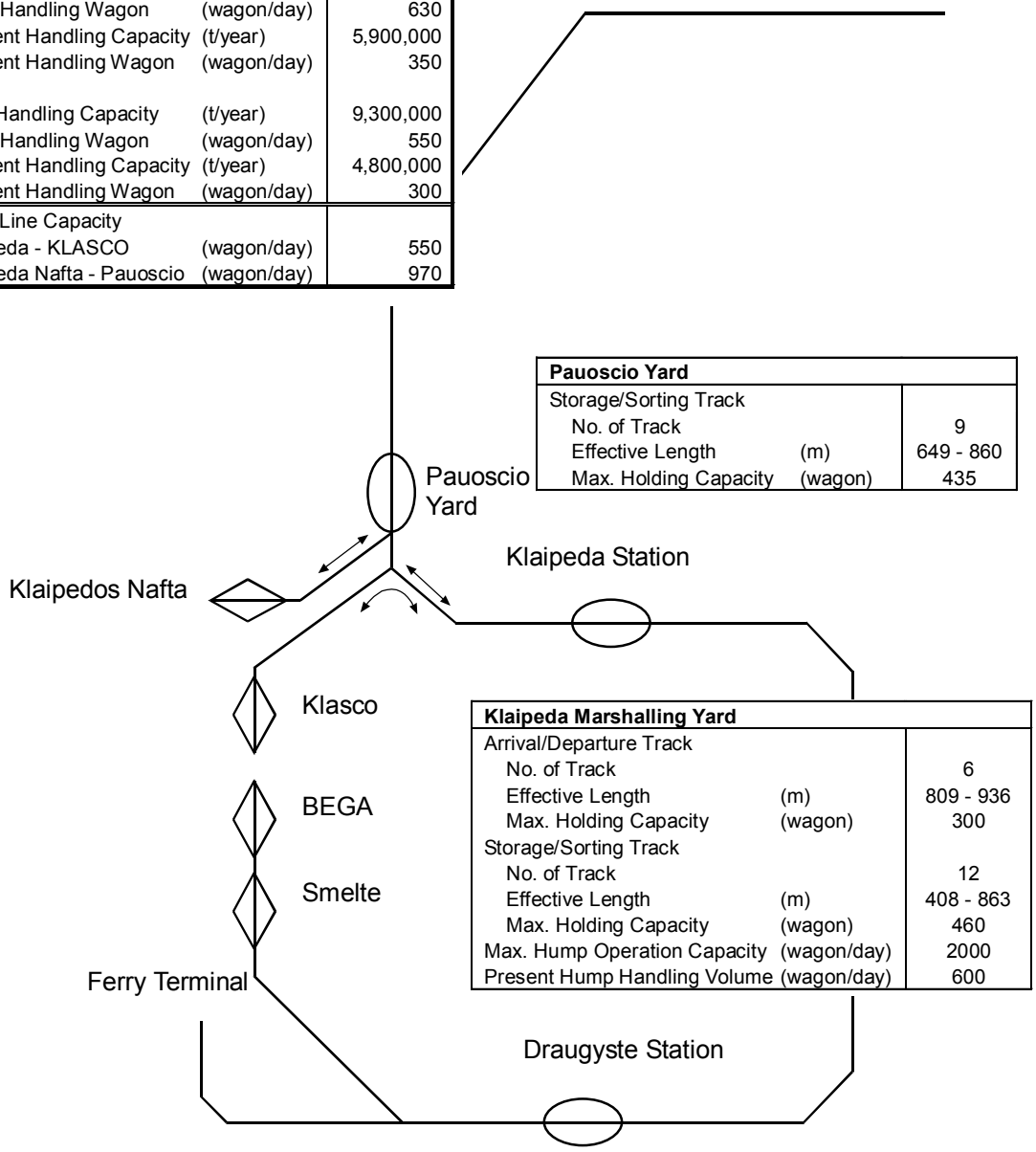
The freight volume forecasts for the year 2025 at BEGA and SMELTE are approximately 5.1 million tons (310 wagons per day) and 3.1 million tons (190 wagons per day), respectively. The transport capacity of this line has been examined. Although transport capacity will increase with improvements in operation and management systems, the handling volume will be exceeded in the year 2012. Therefore, it is necessary to construct the additional access line for the South Zone and new yard for SMELTE.

3) Marshalling Yard

Since Klaipeda and Draugyste Marshalling Yard have sufficient capacity, they can handle the forecast freight volume for the year 2025.

North Zone		
Klaipeda Nafta		
Max Handling Capacity	(t/year)	10,000,000
Max. Handling Wagon	(wagon/day)	630
Present Handling Capacity	(t/year)	5,900,000
Present Handling Wagon	(wagon/day)	350
Klasco		
Max Handling Capacity	(t/year)	9,300,000
Max. Handling Wagon	(wagon/day)	550
Present Handling Capacity	(t/year)	4,800,000
Present Handling Wagon	(wagon/day)	300
Access Line Capacity		
Klaipeda - KLASCO	(wagon/day)	550
Klaipeda Nafta - Pauoscio	(wagon/day)	970

Pauoscio Yard		
Storage/Sorting Track		
No. of Track		9
Effective Length	(m)	649 - 860
Max. Holding Capacity	(wagon)	435



Klaipeda Marshalling Yard		
Arrival/Departure Track		
No. of Track		6
Effective Length	(m)	809 - 936
Max. Holding Capacity	(wagon)	300
Storage/Sorting Track		
No. of Track		12
Effective Length	(m)	408 - 863
Max. Holding Capacity	(wagon)	460
Max. Hump Operation Capacity	(wagon/day)	2000
Present Hump Handling Volume	(wagon/day)	600

South Zone		
BEGA		
Max Handling Capacity	(t/year)	6,200,000
Max. Handling Wagon	(wagon/day)	370
Present Handling Capacity	(t/year)	2,200,000
Present Handling Wagon	(wagon/day)	130
Smelte		
Max Handling Capacity	(t/year)	4,800,000
Max. Handling Wagon	(wagon/day)	290
Present Handling Capacity	(t/year)	1,800,000
Present Handling Wagon	(wagon/day)	100
Access Line Capacity		
Draugyste - BEGA	(wagon/day)	370

Draugyste Marshalling Yard		
Arrival/Departure Track		
No. of Track		6
Effective Length	(m)	867 - 1035
Max. Holding Capacity	(wagon)	310
Storage/Sorting Track		
No. of Track		14
Effective Length	(m)	543 - 1033
Max. Holding Capacity	(wagon)	610
Max. Hump Operation Capacity	(wagon/day)	2600
Present Hump Handling Volume	(wagon/day)	200

Source: Estimate by the JICA Study Team

Figure 4.3 Existing and Maximum Rail Capacity

4.3 Improvement Plans of Existing Port

4.3.1 Quayside Improvement Plans

(1) Berths and Basins

KSSA has renovated the existing berths by deepening quayside water depths at Berths No.5 and No.6 to -14 m (infrastructure was completed in 2003 and superstructures were under construction as of February 2004). In addition, the renovation of Berth Nos. 82 to 100 is planned with deepening up to -12 m. In the Study, it has been assumed that those on-going or planned projects would be completed.

(2) Cargo Handling Equipment

It has been assumed that behind the berths under renovation or those with renovation plans as mentioned above, the following loaders would be installed:

- Berth Nos. 5 to 6: Two units of loaders with a rated capacity of 1,000 tons/hr for shipping dry fertilizer
- Berth No. 82: a unit of loader with a rated capacity of 900 tons/hr for shipping grain
- Berth No. 101: a unit of loader with a rated capacity of 1,000 tons/hr for shipping dry fertilizer

To meet the container traffic demand of 290,000 TEUs in the year 2025, 3 units of RTGs will be installed at the existing container terminal behind Berth Nos. 143 and 144.

4.3.2 Storage Improvement Plans

(1) Conventional Cargo Storage

The total required cargo storage area for conventional cargo is 7 ha at the existing port for the year 2025.

(2) Container Cargo Storage

The required container storage area for stacking containers for the demand in 2025 at Eurogate Terminal has been estimated to total10 ha. The required area will exceed the existing storage area of 6 ha at the container terminal. Hence, the currently reserved area to the south of the terminal needs to be used as an additional container yard, mainly for empty container storage.

4.3.3 Railway Improvement Plan

(1) North Zone

Construction of Additional Track in Klaipeda Nafta

Klaipeda Nafta will reach its marshalling capacity in 2021. By that time, one additional loading/unloading track (600 m) will be provided next to the existing loading/unloading tracks in the port territory.

(2) South Zone

Construction of Additional Access Track in South Zone

To meet the cargo demand for BEGA and SMELTE, additional access track will be provided between Draugyste Station and BEGA. Required railway structures and facilities are listed below:

- Track: 4.1 km
- Turnout: 2 sets
- Embankment section: 2.4 km
- Reinforced concrete bridge: 20 m
- Level crossing facility: 4 locations (automatic crossing control with crossing barrier)
- Signalling facility: 1 unit

Construction of New Yard in SMELTE Territory

A new yard will be provided to enable SMELTE to handle cargoes smoothly under the future demand. Required railway structures and facilities are listed below:

- Track: 3.7 km
- Turnout: 11 sets
- Control centre and signalling facility: 1 unit

4.4 Port Expansion Plan Outside Existing Territory

4.4.1 Necessity of Port Expansion

Even if the existing port has been fully renovated, the traffic demand will exceed the existing port capacity by around 2015 to 2017. To cope with this capacity shortage and to meet the shipping needs associated with the Port being able to receive Baltmax-type vessels and to sustain competitiveness in the Baltic Sea region, the Port should be expanded beyond the existing port territory.

4.4.2 Required Marine Terminals

As a result of the computer simulations, the optimum number, scale and type of required marine terminals have been determined. These include five terminals, namely a Petroleum Jetty, Grain Terminal, Fertilizer Terminal, General Cargo Terminal and Container Terminal.

(1) Petroleum Jetty (Berth No.1 of Outer Port)

A dolphin-type berth with a water depth of 17 m will be built to receive an oil tanker of Baltmax-type (109,000 DWT and 244 m in LOA). This berth will ease congestion in the existing tanker berths and also meet the shippers' need for larger vessels for their shipping economy.

(2) Grain Terminal Behind Berth No.2 of Outer Port

A berth with a water depth of 17 m and a length of 310 m will be built to receive a bulker of Baltmax-type (123,000 DWT and 266 m in LOA). This berth will attract transit grain shipments from CIS countries because of savings in ocean transport. No.2 Berth will also receive a tanker for UAN solution.

(3) Fertilizer Terminal Behind Berths No.3 and No.4 of Outer Port

Two berths with water depths of 15 /17 m will be built with a total length of 520 m. The principal dimensions of the associated design bulker of Panamax-type are 74,000 DWT and 225 m in LOA.

(4) General Cargo Terminal Behind Berth No.5 of Outer Port

A berth with a water depth of 15 m and a length of 260 m will be built to receive a bulker of Panamax-type (74,000 DWT and 225 m in LOA). Two rail-mounted level ruffing cranes will be installed, and an open yard (4 ha) and a warehouse (11,000 sq. m) will be provided.

(5) Container Terminal

A berth with a water depth of 15 m and a length of 330 m will be built to receive a maximum container vessel of 4,800TEU.

4.4.3 Required Dimensions of Sea Channel and Basins

To meet the growing shipping traffic demand for the Port, a two-way sea channel will be provided, following the existing channel orientation (N 92.5 degree). In accordance with the PIANC guideline, the required channel width has been determined to be 300 m, equal to 7.3 B under a deviation angle of 15 degrees, where B is the breadth of the maximum ship.

The water depths of the channel and the basin have been set at 17.5 m and 17 m, respectively. This takes into consideration the maximum draft of the vessels (15.5 m) and squat (0.2 m), pitching (0.9 m) and under keel clearance (0.8 m). The turning basin will have a diameter of 600 m, equal to twice the LOA of the maximum vessel (294 m). In addition, a small boat basin will be provided with a water depth of 6 m to accommodate working boats, including 4,200 HP tugboats.

4.4.4 Required Breakwaters

As the Outer Port is exposed to the waves of the Baltic Sea, breakwaters are required to protect its inner channel, turning basins and berths. The breakwaters will be built to provide port protection against the waves from the south, west and north.

4.4.5 Comparative Analysis of Port Expansion Plan

(1) Location for Port Expansion

In the south of the Port, many physical constraints exist to port expansion, including the existence of the conservation areas for fresh water intakes and shortages in the development areas, both on land and in the water basin. Conversely, the sea basin to the east of the existing sea channel and off the Melnrage beach can provide a large open space for outer port expansion. Furthermore, it has been projected that the existing inner channel will reach its capacity and not be able to handle the growing

shipping demand in future. As a result it is necessary to expand outside the existing port. This expanded port is referred to as the Outer Port.

(2) Optimum Layout of Outer Port Development

As shown in Figure 4.4, four alternative plans have been prepared to satisfy the marine facility requirements. These plans have been compared with each other on the basis of the following screening points:

a) Accessibility to the terminal for freight wagons to the yard in the outer port area

b) Accessibility to the terminals for vehicles from outside the port

c) Attractiveness to port-related industries

d) Efficiency of land use

e) Conservation of the natural sand beach

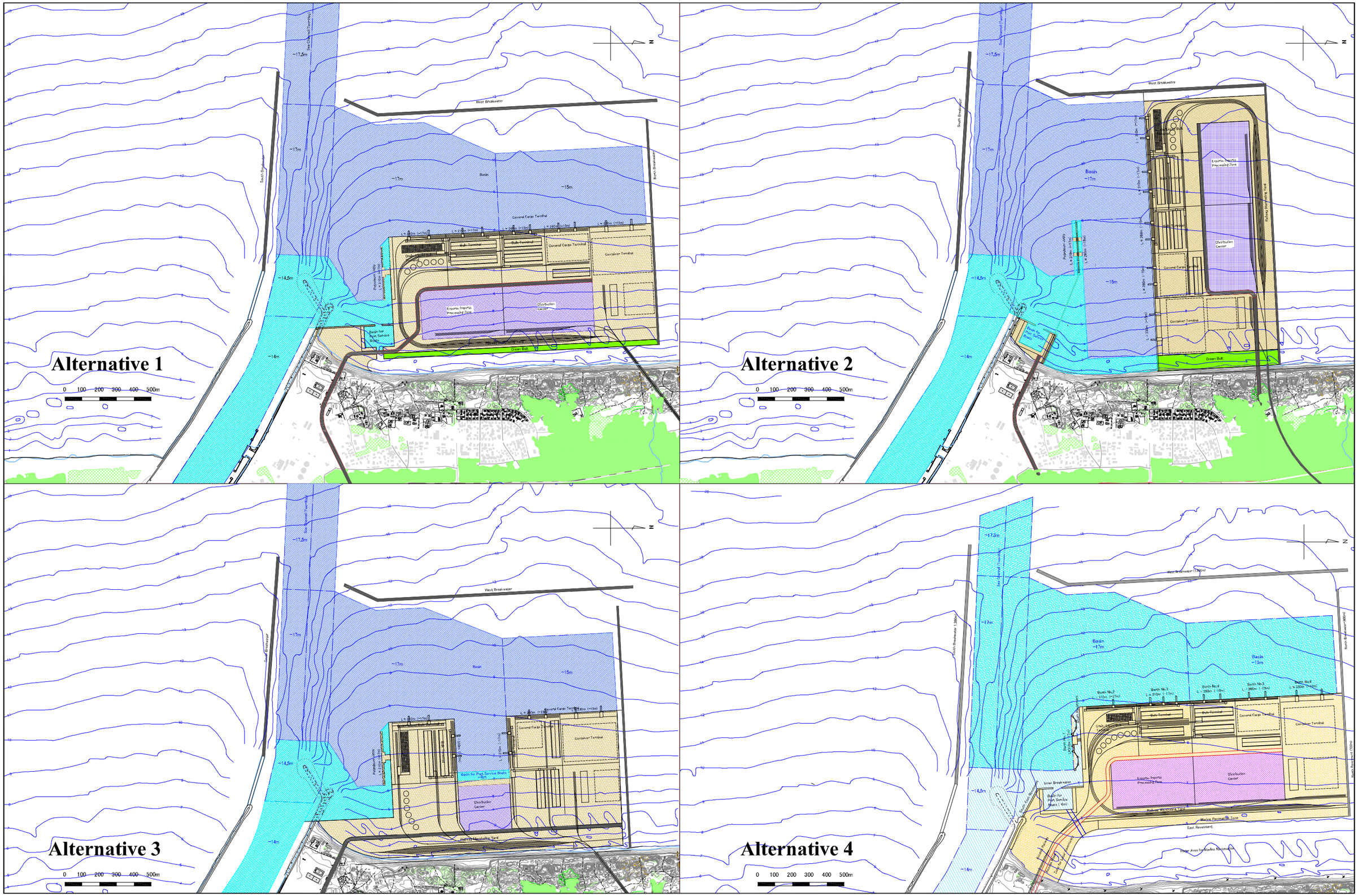


Figure 4.4 Facility Layout Plan of Outer Port (Alternative 1-4)

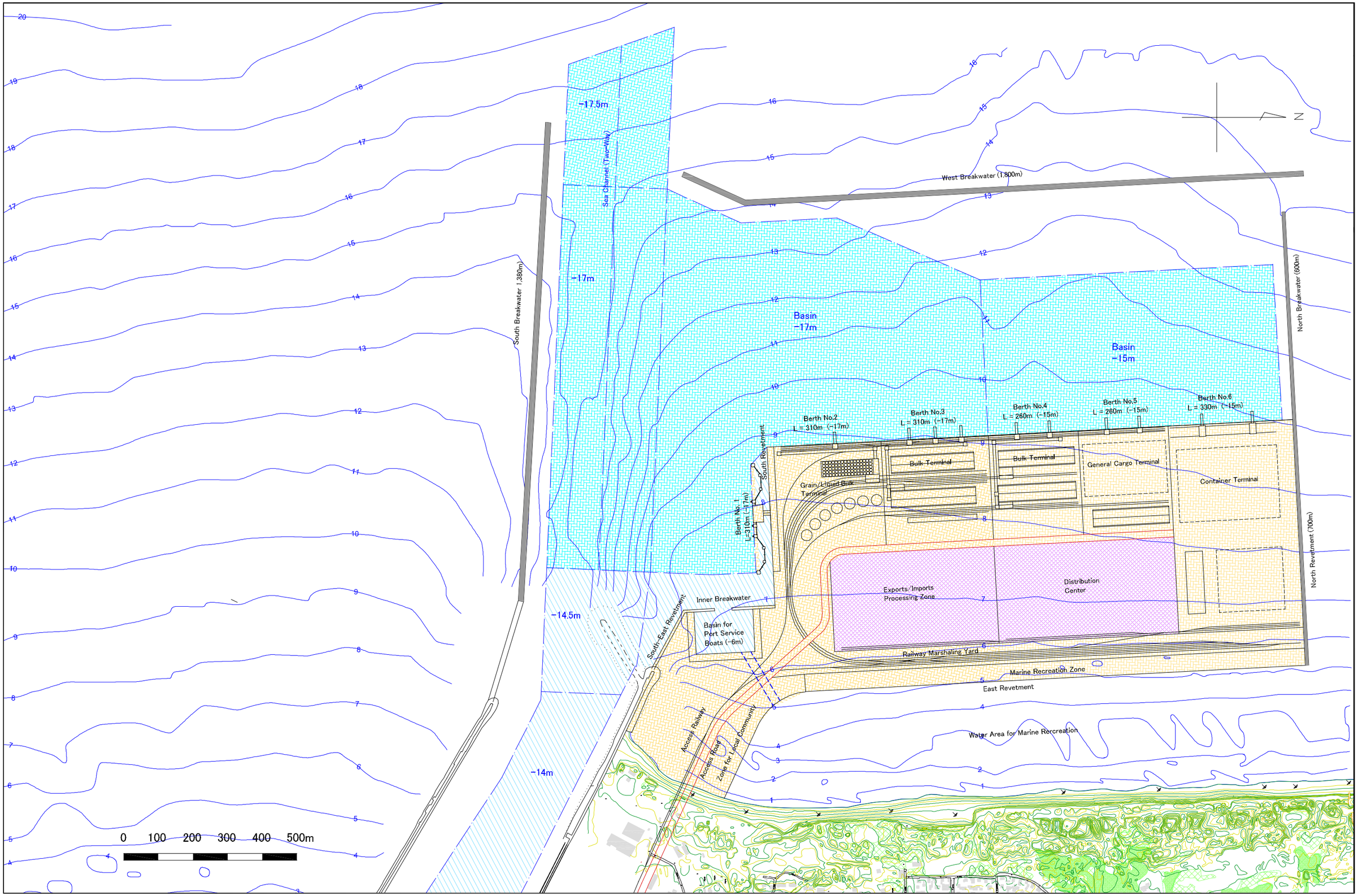


Figure 4.5 Proposed Plan of Outer Port Development

f) Impact of railway access line on the existing residential areas behind the Outer Port area

g) Construction cost

h) Ease of further expansion

i) Accessibility to the marine terminals for calling vessels

j) Competitiveness with other Baltic seaports

k) Storage capacity

l) Efficiency of dockside operations

In terms of accessibility to marine terminals, attractiveness to port-oriented industries and efficiency of land use, Alternative-3 is at a disadvantage to the remaining alternatives. In view of impact from railway access, Alternative-4 has minimum impact on the existing residential areas. From the stance of conservation of the natural beach, Alternatives-1 and -4 would be preferable, while Alternative-4 would result in less impact on distant views from the existing beach. In terms of the remaining screening points, no outstanding pros and cons could be identified. In conclusion, Alternative-4 has been selected as the optimum layout for the Outer Port development.

4.5 Railway and Road Expansion Plans for Outer Port

4.5.1 Marshalling Yard Requirements for Railway to Outer Port

To meet the railway traffic demands in the various stages of the Master Plan, a railway marshalling yard should be provided. LG is planning to receive trains with a maximum gross weight of 6,000 ton, which are some 1,400 m long. This long train will split into two at Giruliu Station or Kretingele Station, with siding track lengths of 2,000 m and 3,000 m, respectively. Thus, required yard length for freight trains from the main line will be a minimum of 800 m. Taking this yard requirement into consideration, four possible locations for yards and access lines to the outer port have been sought as shown in Figure 4.9.

Alternative-1: Construction of Marshalling Yard Inside Outer Port

Alternative-2: Using the Klaipeda Marshalling Yard

Alternative-3: Construction of New Marshalling Yard

Alternative-4: Expansion of Pauoscio Yard

Each plan has advantages and disadvantages. Among those sites considered, Alternative-4 (Expansion of Pauoscio Yard) would be the best solution. This is because it is located close to the planned outer port area, resulting in less investment cost and no obstruction to ongoing railway operation.

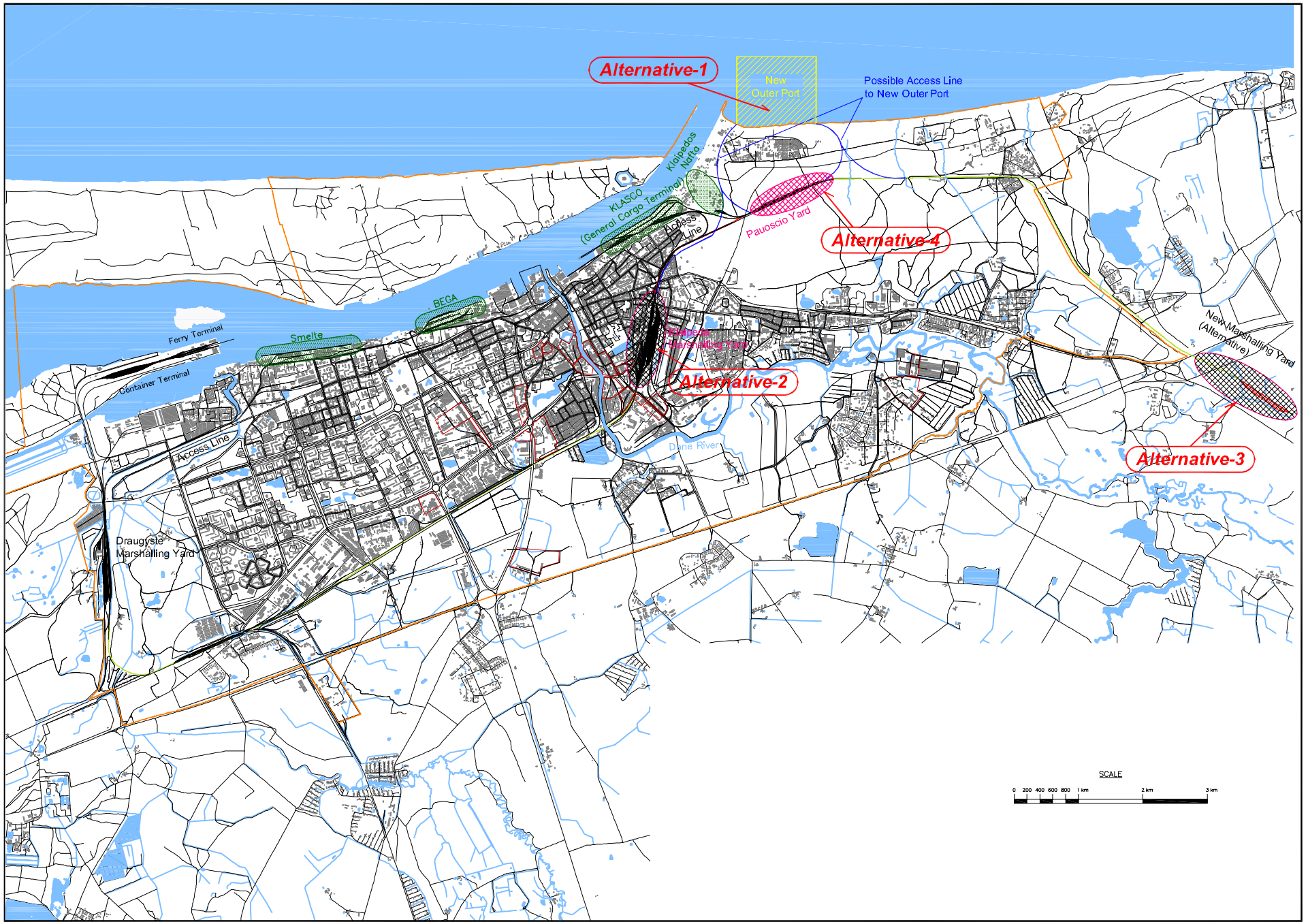


Figure 4.6 Location of Possible Yard and Access Line

4.5.2 Railway Expansion Plans for Outer Port

(1) Expansion Plan of Pauoscio Yard

The yard requirements consist of arrival/departure tracks and storage tracks for the outer port, Klaipeda NAFTA and KLASCO. Required railway structures and facilities are listed below:

- Track: 15.8 km
- Turnout: 28 sets
- Deforestation: 9.6 ha

(2) Access Line Between Pauoscio Yard and Outer Port

The proposed access line comprises a single track with one siding track located near the outer port. It has been planned on the south side of Melnrage I behind the Klaipeda Nafta, as shown in Figure 4.7. The siding track located just behind the outer port is mainly used as a run-round track for locomotives for the train to the quayside. Required railway structures and facilities are listed below:

- Track: 2.5 km
- Turnout: 3 sets
- Level crossing facility: 1 location (automatic crossing control with crossing barrier)
- Deforestation: 0.7 ha

(3) Railway Inside Outer Port

The railway tracks have been planned considering dockside facilities and location of storages. Required railway structures and facilities are listed below:

- Track: 21.5 km
- Turnout: 38 sets
- Loading/unloading facility: bottom discharge facility 3 units, loading facility 1 unit, liquid discharge facility 1 unit
- Control centre and signalling facility: 1unit (electric signalling, interlocking and motorised turnout)

4.5.3 Road Expansion Plan for Outer Port

The location of the proposed road is shown on Figure 4.7. A new north access road from route E272 (A13) through Liepu Street to the P. Lideikio Street is planned. In addition, Liepu Street will be upgraded to four-lanes (two-lanes currently exist) to meet the future traffic demand of public and port-related traffic. In the Study, it has been assumed that the above planned project would be completed, and the access road to the outer port would begin from the junction of P. Lideikio Street and Giruliu Street.

At present Giruliu Street is used as an access road to the Klaipeda Nafta, Cargo Terminal and second gate for KLASCO. As a result, the proposed road would be expanded into four lanes for Giruliu Street from the junction of P. Lideikio Street. An additional length of 0.3 km of four-lane road would be provided to the outer port from the intersection at the existing road. The required length of road inside the outer port area and access road are listed below:

Outer Port Area

- Length: 1.2 km
- Width: 20 m
- Bridge section: 200 m
- Approach section: 200 m

Access Road

- Length (new section): 1.4 km
- Length (expansion section): 0.3 km
- Width: 20 m
- Deforestation: 1.0 ha

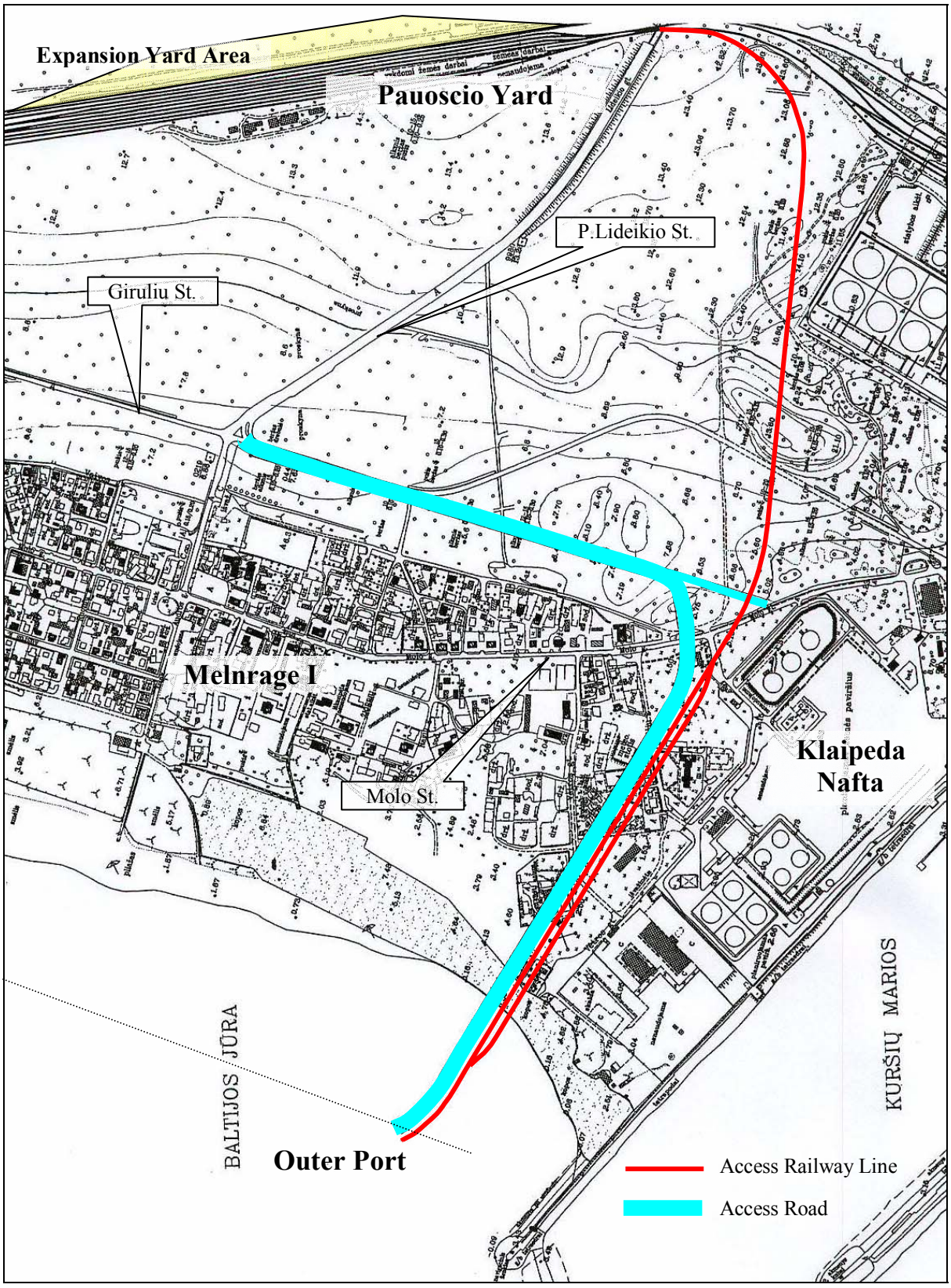


Figure 4.7 Location of Proposed Railway and Road to Outer Port

4.6 Preliminary Economic Analysis

This section briefly evaluates whether the implementation of the Master Plan is economically sound, when compared to other investment opportunities in Lithuania. Though the target of the Master Plan is as far as 2025, and the scope of the Master Plan is still in the study stage, a magnitude of economic viability has been sounded as outlined below.

4.6.1 Premises for Economic Evaluation

(1) Prerequisites of Analysis

Base year : 2004

Project life: 40 years

Foreign exchange rate: 1 Euro = 3.44 Litas = US$ 1.238

(2) "Without Case" and "Without Case"

A cost-benefit analysis was conducted by comparing the difference between the "With Cases" where investments will be made for execution of the Project and the "Without Cases" where no investment will be made for the Project.

The following projects will be implemented for the "With Case" :

- A full-scale development of the outer port
- Construction of an access railway in the south zone

(3) Costs for the Project

The project costs comprise the following:

- Construction costs
- Maintenance costs
- Re-investment costs

The annual maintenance costs for facilities and machinery were calculated in proportion to their initial investments. In this study, the fixed rates were set as follows:

1% for structures made mainly of concrete and stones, 3% for those made of steel stocks and machines, and 5% for transportation machinery.

The re-investment cost for facilities and equipment after their useful lifetime were also considered.

(4) Benefits of the Project

Following items were considerable as direct benefits to be generated with the port development of the Master Plan.

a) Savings in the vessel waiting times (costs) at offshore anchorage

The waiting cost of vessels at offshore anchorage will be decreased by speeding up cargo handling operation at the berths that are equipped with efficient equipment.

b) Savings in the land transportation cost

By expanding cargo handling capacities of the Port and the Southern Access Railway, Lithuanian bulk cargoes will not be forced to take the long inland roundabout routes through neighboring ports. As a result, unnecessary land transportation costs will be saved.

c) Growth in port revenues

Port revenues will increase for "With Case" because the number of calling vessels will increase at the deep-sea berths.

(5) Cargo volumes

It has been assumed that the cargo volumes for "Without Case" will not increase from 2017 onward. Since then the Port will exceed its absolute capacity as projected in this study. From the year 2018, excess volumes of Lithuania-sea transportation cargoes will be handled through ports in neighbouring countries.

4.6.2 Evaluation

The Project has been evaluated in terms of the economic feasibility through an economic internal rate of return (EIRR). The EIRR has been estimated at 12.65%. It is generally said that the opportunity cost of 10% or more makes a project feasible. Therefore, it is judged that the Master Plan is feasible from the view point of the national economy. Furthermore, the Project will produce a number of indirect benefits, both tangible and intangible.

A modernized terminal complex that will be developed in the Outer Port will facilitate efficient transportation services and encourage Lithuania's major industry dependent on seaborne trade such as fertilizers, grain, woods and oil. The construction process will produce positive impacts as local people will be employed in the workforce, and local business will provide goods and services. That will enhance income levels, improve life standards of regional inhabitants and stabilize the people's livelihood. The Outer Port will reserve the waterfront areas for local people to establish public recreation facilities, which will surely contribute to the establishment of harmonized port development between the Port and City.

CHAPTER 5 SHORT-TERM DEVELOPMENT PLAN

5.1 Basic Concept of Short-term Development Plan

The target year for the Short-term Development Plan has been set at 2015. To meet the traffic demands by this year and to maintain an adequate service level, the existing port capacity shall be reinforced in terms of both seaside and landside operations. To avoid reaching "absolute capacity", expected in 2017, and "over absolute capacity" in 2019, the first phase of the outer port development shall be completed before 2015. To maintain the service level at less than 10%, the port capacity simulation runs have been repeatedly exercised with several development/improvement scenarios. As a result, the port service level for the Short-term Plan has been estimated as shown below with the following projects to be implemented for the Short-term Development:

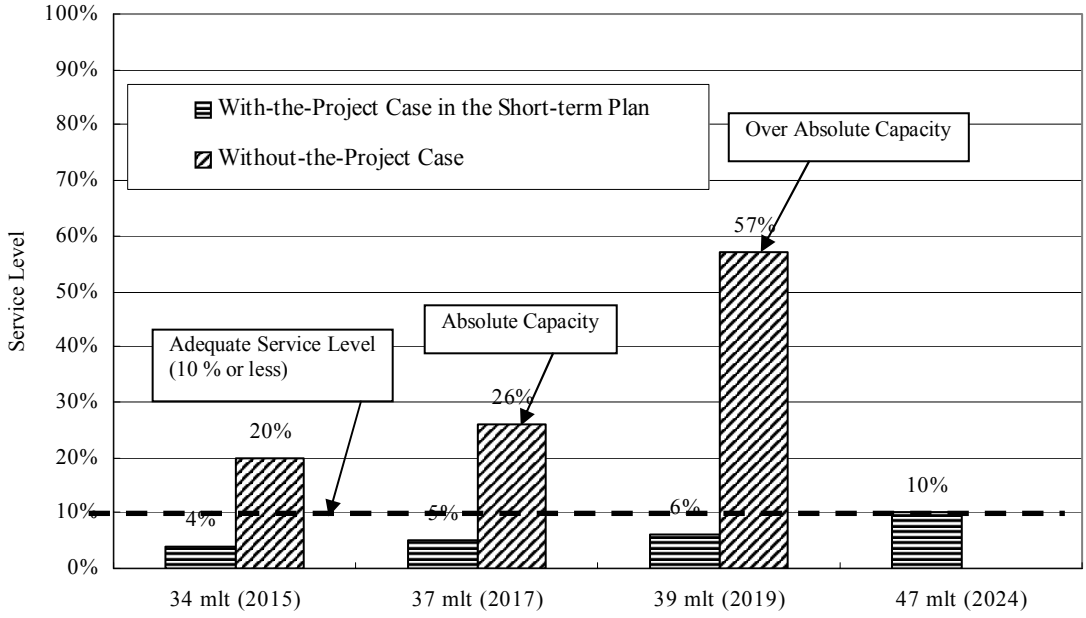


Figure 5.1 Port Service Levels in Short-term Plan

1) Renovation of berths, installation of quayside/yard cargo-handling equipment and expansion of storage facilities in the existing port
2) Improvement of railway access and construction of a yard in the existing port
3) First phase development of the Outer Port in the north of the existing port entrance
4) Development of the railway and road access to the Outer Port
5) Improvement of the sea channel (outer channel)

Prior to construction of the railway access and yard, and expansion of storage facilities, the current status of their land-use should be converted from "reserve" to "port-use". Furthermore, adequate pre-arrangements should proceed between KSSA and the City for the development of the Outer Port and its access.

5.2 Port Development Plan Within Existing Territory

The scope of the Short-term Plan in the existing port is proposed below. This includes the on-going or planned projects by KSSA or terminal operators.

5.2.1 Renovation of Existing Berths

The renovation for the existing berths is underway, including Berths No.5 and No.6 with a water depth of 14 m. In addition, it is planned to deepen Berth Nos. 82 – 100 up to 12 m. Those on-going or planned projects will be completed.

5.2.2 Installation of Cargo Handling Equipment

The following cargo handling equipment will be installed:

- - Berth Nos. 5 – 6: two units of loaders, 1,000 tons/hr for dry fertilizer
- - Berth No. 82: a unit of loader, 900 tons/hr for grain
- - Berth No. 101: a unit of loader, 1,000 tons/hr for dry fertilizer
- - Eurogate Container Terminal: 3 units of RTGs

5.2.3 Expansion of Storage Facilities

The required land for the conventional storage cargo would be available from the reserved area. The required container storage area for the demand in 2015 has been estimated as 12 ha in total for stacking laden and empty containers. The required area will exceed the existing storage area of 8 ha at Eurogate Terminal (KLASCO) and Klaipeda Terminal. Hence, the currently reserved area to the south of the existing container yard within the Eurogate Container Terminal needs to be used as an additional container yard mainly for empty container storage.

Table 5.1 Required Storage Capacities in Stages of Short-term Plan

Year	Port territory	No.	Category	Annual throughput (unit: '000 t, '000 TEUs)	Storage Capacity (unit: '000 t, 000 sq. m)				Additionally required storage area (Unit: ha)
					Type of storage	Existing	Required	Balance	
2015	Existing port	1	Petroleum	9,333	Tank	485	582	-98	1.2
		2	Dry fertilizer	6,568	Warehouse	252	368	-116	2.6
		3	Liquid fertilizer	1,870	Tank	177	139	39	-
		4	Grains	924	Silo	80	99	-19	0.2
		5	General cargo	6,262	Open yard	178	54	124	-
					Warehouse	63	39	24	-
		6	Frozen food	334	Cold storage	25	40	-15	1.5
		7	Containers	350	Stacking yard	82	124	-42	4.2
	Outer port	2	Dry fertilizer	200	Warehouse	-	24	-24	0.5
		3	Liquid fertilizer	620	Tank	-	63	-63	0.5
		4	Grains	361	Silo	-	110	-110	1.2
		5	General cargo	500	Open yard	-	24	-24	2.4
					Warehouse	-	7	-7	0.7

Source: Estimate by the JICA Study Team

5.2.4 Improvement Plan of Railway Access to the Port

To meet the cargo demand for BEGA and SMELTE, an additional access line and new yard will be provided in SMELTE territory to increase railway capacity between Draugyste Station and BEGA. This will have the following specifications:

(1) Construction of Additional Access Track in South Zone

- Track: 4.1 km
- Turnout: 2 sets
- Embankment section: 2.4 km
- Reinforced concrete bridge: 20 m
- Level crossing facility: 4 locations (automatic crossing control with crossing barrier)
- Signalling facility: 1 unit

(2) Construction of New Yard in SMELTE Territory

- Track: 3.7 km
- Turnout: 11 sets

5.3 Outer Port Development

5.3.1 Required Marine Terminals

The optimum cargo allocation to the outer port has been computed through the simulation analysis. On this basis, the following berth requirements have been identified.

(1) Petroleum Jetty (Berth No. 1 of Outer Port)

A jetty with a water depth of 17 m will be required to receive a Baltmax-type tanker (109,000 DWT and 244 m in LOA)

(2) Grain Terminal (Berth No. 2 of Outer Port)

A marine terminal, 17 m deep and 310 m long, will be required to receive a Baltmax-type bulk carrier (123,000 DWT and 266 m in LOA). A loader (1500 tons/hr) and grain silos (110,000 tons in total capacity) will be provided. No.2 Berth is planned to receive a tanker for UAN solution as well. Behind the grain silos, a tank farm for UAN solution with a total capacity of 120,000 tons will be constructed.

(3) Multi-Purpose Terminal (Berth No. 3 of Outer Port)

A berth, 17 m deep and 310 m long, will be required to receive Baltmax-type bulker carriers. Two rail-mounted level-ruffing cranes with a lifting capacity of 40 tons will be installed on the dockside so as to function as a multi-purpose terminal. An open storage yard 3 ha in area will be provided immediately behind Berth No.3. A warehouse with a floor space of 12,000 m^2 will be provided behind the above open yard.

5.3.2 Sea Channel and Basins

The orientation of the existing channel will be maintained, but the channel width will be enlarged to 300 m to allow two-way traffic. The water depths of the sea channel and the turning basins have been determined as 17.5 m and 17 m, respectively, through verification by applying the prevailing guidelines including PIANC and the standard of KSSA. A turning circle of 600 m diameter has been proposed, equal to twice the LOA of the maximum design vessel.

5.3.3 Facility Layout Plan

The site of the outer port has been selected to the north of the existing port entrance as proposed in the Master Plan. The facility plan of the Outer Port in the Short-term Plan is shown in Figure 5.2.

5.3.4 Cargo-Handling Systems, Equipment or Facilities

The cargo-handling systems designed to meet different requirements from different cargoes in terms of material, package type and lot size are summarized in Table 5.2.

Table 5.2 Cargo-Handling System at Outer Port in Short-term Plan (2015-2024)

Berth	Handled Cargo	Dockside Facilities	Storage Facilities		Railway Connection
No.1	Petroleum	Manifold with loading/unloading arms with rated capacity of 2,000 t/hr for orimulsion and 1,500 t/hr for fuel oil (pipelines 24 - 36 in)	Tank Farm of NAFTA		Receiving facility
No.2	Grain	Ship loader: 1 unit with rated capacity of 1,500 t/hr	Silos	Width (45m) x Length (140m)	Receiving facility
	UAN Solution	Manifold with hose connecting joint with rated capacity of 1,500 t/hr	Tanks: 5 units	Radius (15m)	Receiving facility
No.3	General Cargo	Level-ruffing crane: 2 units with 40 tons lifting capacity each	Shed	Width (45m) x Length (240m)	Shifted by using forklifts or truck cranes
			Open Yard	Width (120m) x Length (290m)	

Source: Estimate by the JICA Study Team

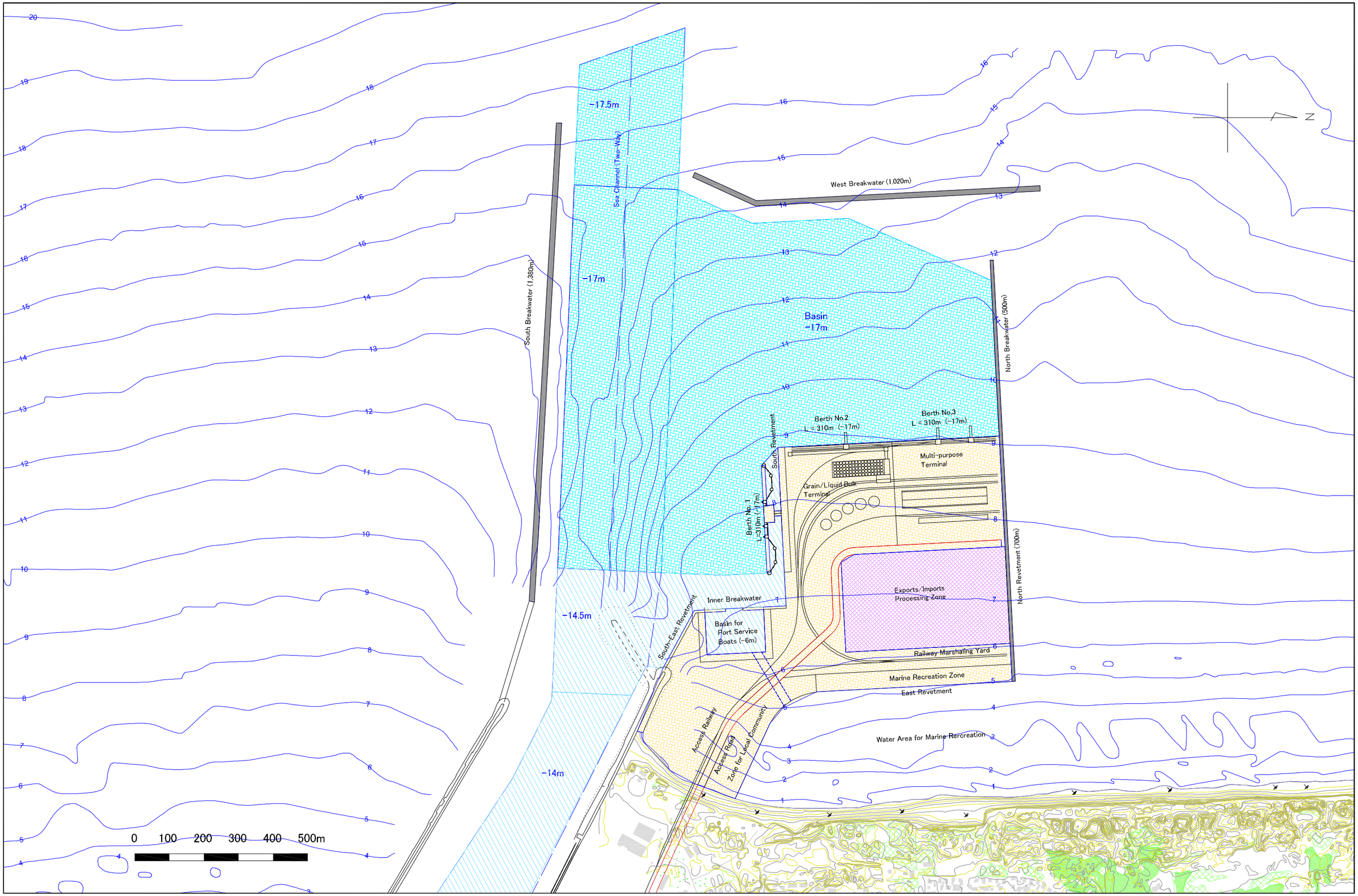


Figure 5.2 Facility Layout Plan of Outer Port in Short-Term Plan

5.4 Railway and Road Expansion Plans for Outer Port

5.4.1 Railway Expansion to Outer Port

(1) Access Line Between Pauoscio Yard and Outer Port

The proposed access line is a single track with one siding track located near the outer port. The entrance point to the outer port has been planned on the south side of Melnrage I behind the Klaipeda Nafta. The siding track located just behind the Outer Port is mainly used as a run-round track for locomotives of trains to the quayside. The required railway structures and facilities are listed below:

- Track: 2.5 km
- Turnout: 3 sets
- Level crossing facility: 1 location (automatic crossing control with crossing barrier)
- Deforestation: 0.7 ha

(2) Railway Plan in Outer Port

The required railway structures and facilities are listed below:

- Track: 8.2 km
- Turnout: 14 sets
- Loading/unloading facility: bottom discharge facility 1 unit, liquid discharge facility 1 unit
- Control centre and signalling facility: 1unit (electric signalling, interlocking and motorised turnout)

5.4.2 Road Access to Outer Port Development

The location of the proposed access road is shown on Figure 4.10. At present, Giruliu Street is used as an access road to the Klaipeda Nafta, Cargo Terminal and the second gate for KLASCO. Therefore, it is proposed Giruliu Street from the junction of P.Lideikio Street would be expanded into four lanes for a length of 0.3 km to the outer port from the intersection at the existing road. The required length of road inside the outer port area and access road are listed below:

Outer Port Area

- Length: 0.7 km
- Width: 20 m
- Bridge section: 200 m
- Approach section: 200 m

Access Road

- Length (new section): 1.4 km
- Length (expansion section): 0.3 km
- Width: 20 m
- Deforestation: 1.0 ha

CHAPTER 6 KEY PROJECTS IN SHORT-TERM PLAN

6.1 Extraction of Key Projects

The Short-term development Plan will comprise various projects, some of which will be implemented by KSSA, but their financial viabilities were not analyzed. These projects have been extracted as the Key Projects. The following are the Key Projects.

- Outer Port Development Project
- Southern Access Railway Improvement Project

The scope of the projects are outlined below.

6.2 Outer Port Development Project

6.2.1 Project Components

(1) Infrastructure

- Construction of breakwaters
  - West Breakwater: 1,000 m
  - South Breakwater: 1,400 m
  - North Breakwater: 500 m
- Widening of existing sea channel
  - Width: 300 m
  - Water depths: 17-17.5 m
- Creation of basins
  - Water depths: 6 - 17 m
  - Diameter of turning circle: 600 m
- Land reclamation
  - Area: 58 ha
  - Revetments: 1,830 m
- Construction of berths
  - No.1 Berth: 310 m, 17 m (water depth)
  - No.2 Berth: 310 m, 17 m (water depth)
  - No.3 Berth: 310 m, 17 m (water depth)
- Construction of railway
  - Inner port tracks: 8,200 m
  - Access line: 2,500 m (with siding track)
- Construction of access road

- Inner port road: 850 m, 4 lanes
- Flyover bridge: 200 m, 4 lanes
- Access road: 1,700 m, 4 lanes

- Preparation of a basin for port service boats
  - Basin: 6 m (water depth)
  - Berth length: 410 m

(2) Super-structures

- Installation of quayside cranes
  - One unit of ship loader with rated capacity of 1,500 tons per hour
  - Two units of level-ruffing crane with lifting capacity of 40 tons each
- Construction of storage facilities
  - Grain silos with storage capacity of 110,000 tons
  - Liquid fertilizer tanks with storage capacity of 120,000 tons in total
  - General cargo warehouse with floor space of 11,000 m^2

6.2.2 Demarcation of Capital Investment

The supposed demarcation of the capital investment in the proposed project is as follows:

- Port infrastructure: KSSA
- Access railway: KSSA
- Access road: KSSA and/or Klaipeda Municipality
- Super-structures: Marine terminal operators as concessionaires

6.2.3 Financial Resources

The potential financial resources required for KSSA to invest in the proposed project are assumed to be available from the Central Government and multi-lateral financial institutions including EIB (European Investment Bank), IBRD (World Bank) and NIB (Nordic Investment Bank).

6.2.4 Implementation Schedule

A preliminary schedule for the proposed project in terms of implementation is outlined below:

1) 2009: Selection of terminal operator
2) 2011: Start of construction works
3) 2014: Completion of construction works
4) 2015: Start of terminal operations

6.3 Southern Access Railway Improvement Project

6.3.1 Project Components

The project site is located on the southern part of the existing port next to the current access track between Draugyste Station and BEGA. The main project components included:

- Track construction
  - Track length: 4.1 km
  - Embankment: 2.4 km (average width 8 m, height 2 m)
  - Turnout: 2 units
- Bridge construction
  - Bridge length: 20 m (single-track bridge)
- Installation of railway facility
  - Level crossing: 4 units (automatic crossing control)
  - Signaling & telecommunication device: 1 unit

6.3.2 Capital Investment

The capital investment in the proposed project is from KSSA.

6.3.3 Financial Resources

The potential financial resources required for KSSA to invest in the proposed project are assumed to be available from the Central Government and multi-lateral financial institutions including EIB (European Investment Bank), IBRD (World Bank) and NIB (Nordic Investment Bank).

6.3.4 Implementation Schedule

A preliminary schedule for the proposed project in terms of implementation is outlined below:

1) 2009: Financial arrangement
2) 2010: Engineering Service
3) 2011: Construction
4) 2012: Start of operation

CHAPTER 7 PORT OPERATION AND MANAGEMENT

7.1 General

The economical climate surrounding Lithuania is now dynamically moving. The EU is expanding their territory and reinforcing their integration more widely and efficiently. In the meantime, the CIS countries are also struggling to develop their economic position linked to the world market, including the western economic circles. Geographically, Lithuania is located between the eastern and the western worlds, so the economic and transport policies in both worlds will significantly affect the economic activities in Lithuania. Under these circumstances, Lithuania should meet international transport policy and timely respond to the Traffic demands in cross-border transport.

In the eastern coast of the Baltic Sea, many commercial ports are in operation, including Tallinn in Estonia, Riga in Latvia, and St. Petersburg and Kaliningrad in Russia. These ports are competing to attract port users and capture more cargo traffic to their own ports. To survive competition of seaborne trade in the eastern Baltic Sea, Klaipeda Port, as a trade center of Lithuania, should play its role. The Port should construct a more market-oriented and efficient system in the area of port management and operation, and timely incorporate these systems into the existing and the outer port development proposed in the Study.

7.2 Coordination of Tariff Policy between EU and CIS Countries

EU and CIS have been developed in different ways, not only in economic systems, but also in political systems. Therefore, the tariff systems of these groups are considerably different. The economic systems of the CIS countries have been progressing towards the free economy, but there are still some gaps in the degree of freedom of economy. The coordination of tariff policies between two economic circles would be quite essential. The Russian tariff lowering policy is possible, because Russia is not a member of WTO. Lithuania, as the most influenced country in the collapse of its cargo turnover at Klaipeda Port, should persuade the Russian Government to join international members with support from EU.

7.3 EU Competition Policy and Klaipeda Port

(1) Public Funding for Port Infrastructure

The EU recommends the transport pricing policy based on “marginal costing” methodology to maintain free and fair transport competition based on market mechanism. In the meantime, the EU recognizes that in the past many ports depend on public funds for development and maintenance of infrastructure, especially for sea defences, entrance channels and other marine facilities essential for the operation of the port as a whole. Under the directive, the Commission would have been required to draw up common guidelines for the use of state and public funds in ports. It is not clear what public financing is acceptable under EU competition law. There is a dilemma, because the EU accepts and encourages the use of public funds to improve certain transport corridors, for regional development, and to encourage short-sea shipping and intermodalism to relieve the pressure on the road systems. Under such

circumstances, KSSA should maintain details of its financial relations with the state and maintain proper accounts.

(2) Cargo Handling and Land Leases

Much of the directives were concerned with provisions of cargo handling services. The EC would like there to be unrestricted access by cargo handling services providers to operate in the port. Klaipeda Port does not restrict the range of port-related commercial activities. And there is a number of cargo handling operators. However, there are less obvious restrictions and hidden limitations that prevent just anybody from operating in the port. KSSA and MOTC need to be aware that one or more of these restrictions may be considered to be anti-competitive.

(3) European Transport Policy

For freight, the Commission is proposing to shift the balance between different modes of transport through a proactive policy to encourage the linking up of the different modes and promote rail, maritime and inland waterway transport. A new program to promote internationality has been created called “Marco Polo”. To encourage railway transport to the hinterland countries, Lithuania should positively join this EU policy. Viking Project would be a good example.

7.4 Implementation Strategy for Outer Port Development

(1) Practical Issues for Major Port Development

The demand for new terminals in Klaipeda Port will arise in one of two ways (or possibly in combination):

- Demand for the terminal itself, either to provide new facilities such as greater water depth, or because an existing terminal is congested, or because a new operator wants the facilities; or
- Because of congestion of the ship movements in the port (as forecast in this study).

Both the oil terminal and the grain exporters already claim that there would be commercial benefits if 17m water depth were available. However, it seems unlikely that the huge cost of even phase one of the outer port can be simply justified by the marginal increase in these cargoes only. If there were a genuine pressing demand, it would be likely to come earlier than 2015; rival ports with 17m facilities may have taken the trade from Klaipeda Port by that date.

(2) Transition Problems

Experience from other ports’ developments leads one to anticipate an initial reluctance by cargo interests to switch to the new port. This is partly a dislike of change of routine, and often there are increases in road haulage or other inland transport costs initially. Terminal operators may even have to adjust their tariffs initially to attract cargo to the new terminal. If however the development is properly conceived and executed, an improvement in service usually becomes apparent, and the cargo interests come to accept the change.

(3) Possible Development Sequence

It seems likely that something will trigger the development. According to the study simulation, ship delays will start to rise, primarily because of ship movement congestion in the channel. Queuing theory suggests that ship delays from this cause would rise from barely noticeable levels to serious congestion rather suddenly as the theoretical capacity limit is approached.

The real situation would not be so close to the theoretical model, and there should be practical ways to ameliorate the situation in the short term (such as by using a convoy system in the channel) to prevent a crisis. Nevertheless, the KSSA will need to be on the alert for signs of ship traffic congestion, and be ready for outer port development if it should start to happen. Even capital dredging of the outer channel to create the planned two-way entrance channel would go a way to relieve the build-up of congestion.

A more likely trigger would seem to be a demand for a deep terminal, for example a new terminal for import of Orimulsion. If it is true that Lithuanian power generation is to switch to Orimulsion as its fuel (an emulsion of bitumen and water that can be pumped and shipped safely, originating in the Orinoco region of Venezuela), then a new deepwater terminal may be needed.

If a demand for a deep terminal is the trigger, the terminal operator for that 'trigger' terminal selects itself. (In the example given, of Orimulsion import for power stations, one would expect an associate or subsidiary or of the Power Generating Board to be the operator, rather than Klaipedos Nafta.) However, the problem remains for the other terminals; it may be difficult to attract operators for those.

(4) Selection for Major Port Development

From the discussions above, it is clear that the selection of terminal operators for major port development will not be a simple matter of building the port and inviting tenders from operators.

It appears likely that there will not be rival operators competing for the terminals. Operators may be reluctant to come to the new port, especially if they have to pay a full economic land lease rate that reflects the cost of construction. This is especially evident if the trigger for port development is shipping movement congestion. In this case at least part of the cost of development should be recovered from all port users, probably through ship or cargo dues.

The further recommendations are therefore as follows:

- All terminal development should be undertaken in close cooperation with the prospective terminal operator. The aim should be to find the overall optimal development solution for the long term.
- Selection of terminal operator(s) will therefore be in advance of development. In many cases it will be self-evident who the operator should be for a particular terminal. But the opportunity to take part in negotiations should be open to all, including overseas companies.
- In principle, costs should be recovered from those for whom it is incurred. This would normally be through the land lease rate, which should therefore not be restricted by the existing formula. In the unusual situation that shipping

movement congestion is the trigger for development, the same principle applies, and some at least of the cost recovery should initially come from all relevant port users, probably through ship or cargo dues, which could justifiably be increased for this purpose if necessary. But the terminal operator should not have a 'free' new terminal for ever;

- If the trigger for Phase 1 development is the demand for one terminal, the demand for the other terminals in Phase 1 may not be there initially. If there is no demand (and no prospective operator), then the development of those other terminals should be postponed. It is appreciated that the breakwaters, channel dredging, access roads and railways, and ancillary services will have to be provided in anticipation of the complete development, but there is no purpose in incurring more than the minimum cost on terminal development until the demand is established.
- The recovery of the cost of the breakwaters, channel dredging, access roads and railways, and ancillary services poses an interesting question. To what extent should these be considered as services to the new terminals only (and therefore should ideally be recovered from them), and to what extent as services to all port users? There is no perfect answer. The most pragmatic argument is that these are common services, such as those provided (in general) throughout the port. On this basis, it is suggested that the cost of these should be recovered through ship and cargo dues. Note that ship dues are related to ship size (GT), so to some extent the cost of deeper access is charged to the larger ships. If however in the financial analysis it is found necessary to raise extra revenue from ship dues for providing the extra water depth of 17m, it would be possible (and there are precedents for this) to adjust the dues so that the very large vessels pay disproportionately more, either by adjusting the scaling against GT, or by a surcharge based on ship draft1.
- Inherent in the above is the need for flexibility. The KSSA should be free to negotiate with prospective terminal operators. Land lease rates should not be constrained to a formula. Ship and cargo dues may need adjustment. Provided it is done openly and honestly, this would be the best way. There should be minimum legal constraints apart from the obligation to be open and even-handed. The involvement of MOTC should be only to ensure the correctness of procedures, including those to ensure the competence and suitability of the negotiators.

7.5 Modifications to Law of Klaipeda Port

More flexibility is required in the fixing of land lease contracts and land lease rates. In general, the Law of Klaipeda Port permits this flexibility if interpreted in the right way, but if changes are to be made in the law, the opportunity should be taken to incorporate this requirement. Some suggestions are made in the table below (Table 7.1). The subsidiary laws (orders) need more amendment, as indicated in the table.

[1] Conceptually, it should be actual ship draft, different for arrival and departure. But it is difficult to check ship draft, and the master should not be tempted to mis-declare his ship's draft, because the draft has navigational safety implications. Although less fair, it is probably better to use summer loadline draft.

Table 7.1 Suggested Changes to Port Law

Law on Klaipeda Port 1996, amended to 2002		
5.4	Interest for using state capital is not taken.	Reconsider. An interest rate should be used in the calculation of equivalent land lease rate.
23.1	Port Authority can lease land … only in competition, except …	OK, provided not taken too literally. There may be only one prospective lessee.
23.2	…rent may be increased or decreased taking into consideration … user's stevedoring extent …	It is hard to understand the purpose of this sentence.
25.2 (1)	Contract must include minimum volumes of cargo handling …	Suggest delete. No attempt is made to monitor or enforce this clause. Clause 4.2 is sufficient.
25.2 (3)	Contract must include terms and conditions of sub-lease.	OK, provided subletting and/or sale of lease are permitted, unless there is good reason otherwise.
25.6	The terms and conditions of the … lease … are as provided for by the government …	Government should not dictate the terms. Suggest change to a more general requirement for openness and fairness (unless covered in more general contract law).
26.1	The improvement or establishment of the port infrastructure is possible only at the permission of the Lessor.	Change this to refer only to hydraulic engineering structures. Lessee should be free to improve paving, railways, etc.
26.2	The lessee willing to improve the port infrastructure … and to acquire the right to recover the costs … shall have to conclude a contract with the Port Authority.	Change this to refer only to hydraulic engineering structures.
26.3	If the port infrastructure is improved … without contract …, the expenditure … is not reimbursed.	Change this to refer only to hydraulic engineering structures.
Typical Klaipeda State Seaport Land Lease Contract (MOTC Order, January 2001)		
General	Whilst a pro-forma contract is useful, it is suggested that it should not have the force of law.	
4	The lessee (may) make use of the side railway … under the right of trust. The procedure is in Annex …	Delete paragraphs 2 and 3 of the Annex. Suggest delete the whole Annex.
8	The lessee … undertakes to handle not less than … tonnes of cargo …	Delete
9	The construction of structures and facilities … can be implemented … only by written consent of the lessor.	Either delete, or add: "which shall not unreasonably be withheld."
11, 12	… repair works of buildings …	Suggest delete. A general requirement to keep the territory and superstructures in good and safe condition is preferred.
21	If the lessee, with the consent of the lessor, builds new infrastructure … on the plot, he has the right to claim for expenses to be reimbursed …	Change this to refer only to hydraulic engineering structures.
26	The lessee shall be forbidden to sublease the leased port land plot.	Delete. Permit subletting, with written consent "which shall not unreasonably be withheld."
35	The port land lease charge can be lowered if … the land use conditions got worse …	Suggest delete. In event of *force majeur,* there should be flexibility for KSSA to renegotiate the contract.
Formula for Calculating Land-Lease Rates (MOTC Order, September 2002)		
General	This order should not apply to new leases. (Rates for existing leases also should be reviewed in accordance with the recommendations given.)	
5.4	If the … land is leased by way of auction or competition (tender), the coefficient is established by dividing the land lease rate offered by the winner of the auction or competition by the land lease rate.	This is the existing exclusion clause. New development may not necessarily be by auction or competition, so the clause needs revision if the Order is to remain in force for new leases.

7.6 Up-grading of Port Communication Systems

(1) KSSA Internal System

The port traffic management system (PTMS) is to become the heart of the KSSA's internal port-specific IT system. The recommendation to the KSSA is this: Maintain the concept of PTMS as a target, and when developing the various elements that make up PTMS, create the information transfer links between them where they are necessary. However, do not prejudice the individual elements for the sake of integration, and do not build elements that are not worthwhile on their own. Collection and integration of historical data can be done at the Data Warehouse.

The Data Warehouse will be an extended data storage and data analysis system. Data from the real-time systems will be transferred to the warehouse, which will be separate, and will not interfere with the operating elements. This is becoming a standard way of both storing data and making it available for later analysis without risk to ongoing operations.

(2) Port Community System

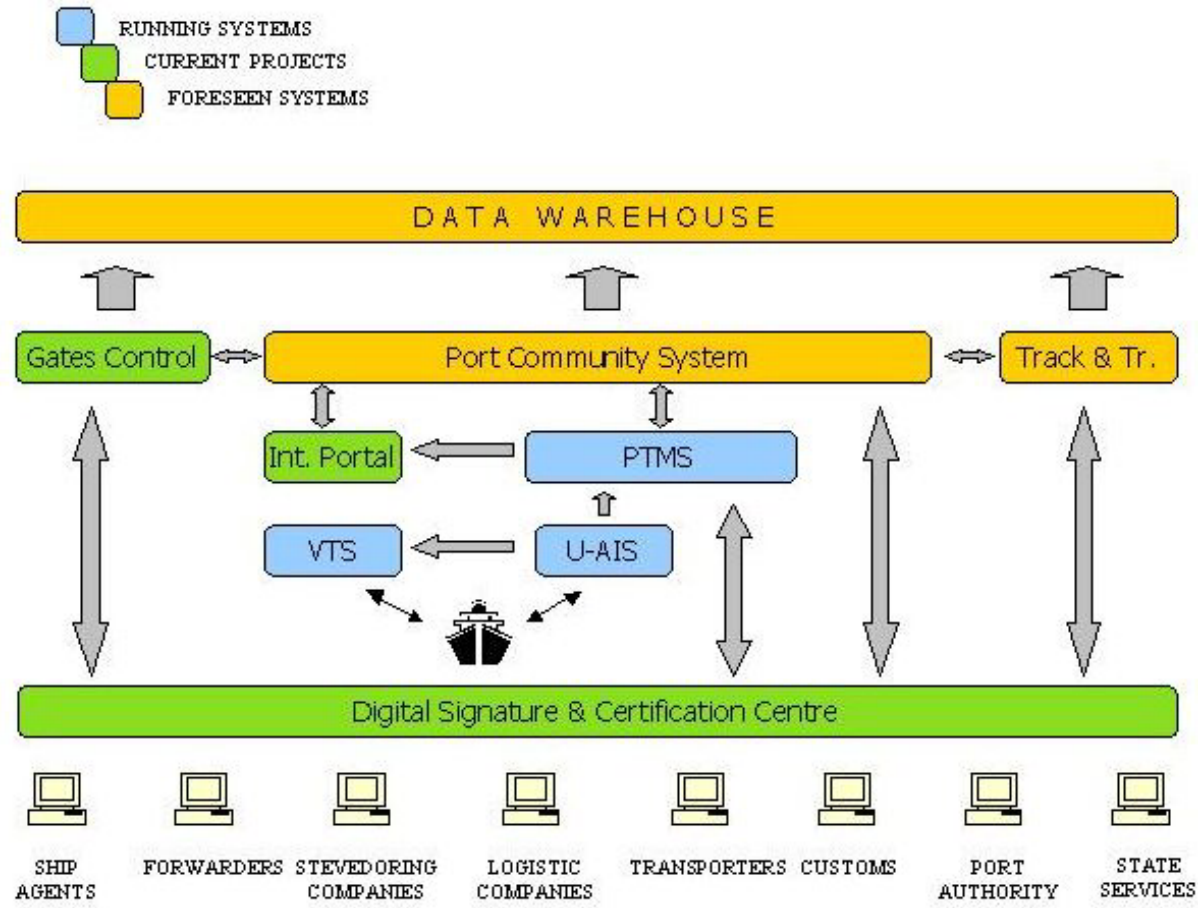
The Port Community System, which as the name implies is a system for the port community, can be distinguished from PTMS, which is a system internal to KSSA. The Klaipeda Port Community Information System (KUBIS, from the initials in Lithuanian) does not yet exist in Klaipeda, although some of the essential elements have been established and an organisation structure for managing it has been arranged. The aim is to simplify and speed up the exchange of information between different members of the port community, as shown at the bottom of Figure 7.1: ship agents, forwarders, stevedoring companies, logistics companies, transporters, customs, KSSA and state services.

(3) Port Security

The remaining box in Figure 7.1 is Gates Control. This is an electronic control system at the port gates for monitoring entrance and exit of pedestrians and vehicles. Combined with security cameras at gates, this will improve port security, helping towards satisfying the IMO ISPS Code.

(4) KSSA Organization for IT

It is interesting to observe that the Information Technology Department is a small two-man unit in the Strategy Division. This allows the IT specialists to concentrate on strategic issues and developments, without getting caught up in day-to-day matters of running a computer department. The computers are managed by the Technical Department. As long as the IT specialists keep in touch with what is happening in the computer department, this appears to be a successful arrangement.



source:KSSA

Figure 7.1 Future Vision of Information Systems in Klaipeda Port

7.7 Marketing Activities in the Port

At the time KSSA was formed, shortly after independence from the Soviet Union, there was no marketing of the port, indeed marketing was disapproved of. That has changed, and marketing is recognised as a necessary activity by KSSA and port users.

In KSSA, the three basic elements of marketing - market information and research; contracting and pricing; and port representation and advertising - have been brought together into one department within the Strategy Division. The plan and budget are approved annually, and within a budget that amounts to approximately 2.5% of KSSA turnover and with a staff of about 6, the department organises advertising and produces brochures, attends two major exhibitions each year (Moscow and one other in W Europe) and three or four lesser ones, and undertakes analytical work. There is a representative in Minsk, and an office in Moscow, currently with only a secretary.

The department also coordinates the statistical work of KSSA, ensuring that the relevant statistics are submitted to the government Statistical Department by the appropriate port bodies. The one element that is not entirely under the department's control is contracting and pricing.

The terminal operators and other port users also have their own marketing activities. In order to rationalise the activities and economise on expenditure, the yearly plan and budget is presented to the Association of Lithuanian Stevedoring Companies. Thus

exhibitions are divided between the bodies, and joint advertisements are sometimes placed, especially in expensive trade papers and periodicals in Western Europe.

Marketing is expensive, and the issues remain: How much should be spent? It is not known what proportion of turnover is spent by other equivalent port authorities, but 2.5% seems about the upper limit.

The question arises: in the event of a major new port development (such as the proposed outer port), how can the marketing function assist in attracting additional port users, particularly to induce more calls of larger–sized vessels up to Baltmax size? The information will need to be widely publicised, initially to ensure that all prospective operators are aware of the intended development.