

Chapter 2

The Conformity of the Project

2.1 The Policy Framework

From the analysis of the conformity of the Project to the National Economic and Social Development Plan and to the Development Plan of Specific Aspects or Specific Area, it can be concluded as follow:

2.1.1 The Conformity of the Project to the National Economic and Social Development Plan

The results of the Study revealed that the Project is conformed to the 11th the National Economic and Social Development Plan (2012-2016) as follow:

1. The DoubleTracks Electric Train Project conforms with the Development Plan Strategies on Strengths in Agricultural Sector, Food and Energy Resources which promotes development and efficiency of logistics of the overall supply chain so tracking of the cargo transport can be assessed to reduce loss and damage of produce caused by poor storage and inefficient transport system. Transport system development focuses on temperature control, reverse monitoring system and also allows the manufacturers and special business organizations to work with the State in the development of logistics system and database network of manufacturing and marketing for agricultural produce.

2. The Double Tracks Electric Train Project conforms with the Development Plan Strategies on Economic Restructuring towards Growth and Sustainability. The infrastructure and logistics development aims to:

- Instill continuously various forms of transportation development toward lower transport cost and higher energy efficiency, effective linkage to other transport modes by road, rail, waterways and air, domestically and internationally. This is aimed to increase efficiency and standard in fast transportation and safety and to improve collecting and delivery of goods to lower overall logistics costs of the country.
- Improve logistics management efficiency by producing professional manpower in logistics, developing transport business network of the supply chain, revising related law and regulations, promoting research on logistic innovations, increasing efficiency and facilities on trading and transport across the border such as NSW and border trading points. Focus should be put on improving transport efficiency and roles of the airports and seaports to reduce transport costs and increase long-term competitiveness of the country

- Improve rail transport system by improving the railroad system and roadway crossing points for service safety, building double tracks on major train routes, allocating locomotive engine and track wheels and installing modern signaling system for higher efficiency of passenger and cargo transport. Focus should also be on development of the high speed trains connecting major regional cities and ASEAN countries and most of all a restructuring of the Rail Transport Authority of Thailand.

3. The Double Tracks Electric Train Project conforms with the Development Plan Strategies on Economic Restructuring towards Growth and Sustainability in relation to the financial management by allowing the private sector to be a part of the State in the development of infrastructure and basic public services, revising related law and regulations to allow private investment partnership in the infrastructure and public services with suitable options for each business endeavor in terms of transparency and risk management on both the private and the public sector.

4. The Double Tracks Electric Train Project conforms with the Development Plan Strategies on Connectivity to the countries in the region to attain economic and social stability by developing linkage of logistics and transport system under the ASEAN Economic Cooperation framework especially the Indonesia-Malaysia-Thailand Growth Triangle Development Project, IMT-GT, Thailand-Malaysia Committee on Joint Development Strategy, JDS.

- 4.1 To develop efficient transport and logistics service with an international standard particularly transport by road, rail, dual tracks train, high speed train and water ways/ coastal transport, to improve border customs points, border economic centers, convenient border passes to save transport energy, to develop networking system of transport and logistics business throughout the supply chain in the region to share resource and knowledge transfer. This will lead to regional economic integration and cooperation among the ASEAN countries toward lower investment cost, higher efficiency in transport system, convenience in travel, trading and across the border transport, regional transport and logistics networking. The State will focus on the overall National Economic Strategies in relation to the economic development framework and the transport and logistics development between the national sub-regions and that in the ASEAN countries. By so doing, the State may initiate a project in any economic zone significant to the Strategies by allowing Public Private partnership: PPP
- 4.2 To develop human resource in the transport and logistics business in foreign language skills and logistics management to assist Thai business entrepreneurs in conducting their transport and logistics business throughout the supply chain, domestically and internationally. To improve business skills among the SMEs entrepreneurs so they can conduct their business with the neighboring countries and to be knowledgeable about the infrastructure linkage along the economic zones and exporting channels in the region. This will build up their business skills so they could compete toward international business. Moreover, as a development partner, Thailand also supports academic cooperation with the ASEAN countries in the development of human resource in transport and logistics business.

- 4.3 To connect the economic development zones along the border and to connect the manufacturing system with the inland area by linking transport network with the manufacturing sources, the manufacturing system, the international supply chain and the international gateways according to the international standard. Moreover, to develop economic networking system with large economic development zones in the neighboring countries with Thai borders and inland economic zones by setting up cooperation centers at the borders between Thailand and the neighboring countries.

2.1.2 The Conformity of the Project to the National Policy

The Consultants have conducted an analysis on the conformity of the Project to the National Policy in the following aspects:

1. The Economic Restructuring Policy

1.1 The Industrial Sector

- 1.1.1 To boost competitiveness among the industrial sector in the country by Increasing production efficiency, effective energy use and lower production cost;
- 1.1.2 To develop new industrial locations by starting new industrial area in the region to accommodate new industrial investment with no pollution and to develop transport route linking between new industrial areas to the deep sea port.

1.2 The Tourism Sector

Development of tourism industry through tourism-oriented infrastructure development and improvement of standards on facilities and safety

1.3 Marketing, Trading and Investment

Moving forward with setting up special economic zones in the highly potential area particularly the border provinces to promote trading, marketing, investment , employment and use of raw materials from the neighboring countries which in turn supporting transport network among the ASEAN countries.

2. The Policy of Mass Rail Transport Development and Cargo Transport and Service management

- 2.1 To develop the Transportation Infrastructure to sufficiently connect the national regions, to save energy and lower transport cost and improve life quality, and moreover, to increase competitiveness and generate income and investment to the rural area with

service fees appropriate to the location, the stakeholders and the consumer protection criteria.

- 2.2 To develop continuously various forms of transport facilities to connect with the manufacturing and export bases and to move forward with the long term restructuring plan of the national rail transport system.
- 2.3 To develop the rail transport system connecting the network with passengers and freight transport management with convenience and safety in the rural areas, urban area and international transport, and to support the expansion of the manufacturing base along the train route such as the development of the doublel tracks train connecting the suburban area with the major cities.
3. The Policy on Security of Life and Society. Reduction of losses from accidents and traffic accidents, promotion of knowledge accessibility on travel and safe transport.
4. The Policy on International Affairs and Economics
 - 4.1 To move forward with developing good relations with the neighboring countries through co-operations from the State, private, public and the media sector in order to promote good understanding and close relation for better economic, trading, investment , tourism, transportation and other co-operations under the regional co-operation framework.
 - 4.2 To benefit from the ASEAN transportation network and the sub-regions in expanding the economic base in manufacturing and investment with an attention to the development of the provinces and their clusters along the economic corridor and border towns.

In sum, this Project conforms with the National Policy in many aspects mainly the Policy on Economic Restructuring which will promote industrial development, tourism, trading, marketing and investment. The Project also conforms with the Policy on the Development of Mass Rail Transit, Logistics Management and Service, Policy on Security of Life and Society, convenience and safety of travel. Moreover, by expanding the transport network and service, the Project conforms with the Policy on International Affairs and Economics in economic expansion and border towns.

2.1.3 The Conformity of the Project with The Special Development Policy or Development Policy in Specific Location.

Reviews of related plans that could affect the Project Study particularly some major development plans of transportation networks under the Ministry of Transportation have been conducted.

1) Road Transport System

Department of Highways is responsible for development and improvement of the highway network system to accommodate transport of people and cargo between cities and regions and to provide efficiency and safety of travel and transport. The related development plans include:

- The Inter-City Motorway Project
- The Expressway Project in Bangkok and its suburb
- The Expansion of 4-Lanes Highway Project (2nd Phase)
- The Construction of Roadway Connecting with the Neighboring Countries

2) Waterway and Coastal Transport System

Department of Harbor is responsible for the development of waterway transport system. The related development plans include:

- The construction of public docks
- The construction of embankment to raise the water level
- The development of the 2nd Songkhla Deep Seaport
- The construction of the Deep Seaport at Pak Bara
- The improvement of the Don Sak multi-purpose pier, Suratthani Province
- The development of a pier at Choornporn Province
- The construction of the multi-purpose pier at Klong Yai, Trad Province

3) The Rail Transport System

The Railway Authority of Thailand is responsible for the development of the infrastructure and service of the rail transport. The related development plans include.

- The construction of the new train route of Denchai-Chiangrai-Chiang Khong
- The construction of the new train route of Bua Yai-Mookdaharn-Nakhon Phanom
- The improvement of the 5th and 6th Phase of Track rehabilitation
- The acquirement of diesel-powered and electrical locomotive engine and of carriages for commercial use
- The construction of the 2nd Inland Container Depot: ICD and Container Yard: CY
- The improvement of the train tracks and signaling system for safety
- The upgrading of the transport capacity

2.2 The Economic and Social Situation

2.2.1 Overview of the Operation and Service

This will look into the present situation and the development plans related to the Project, problems and obstacles and solution measures as follow:

2.2.1.1 The present situation and the development plans related to the Project

The Double Tracks Train Project requires related support factors concerning future passenger activities as follow:

- 1) Trading Business: As the travelling of passengers by train will result on trading business around the station, there must be provisions of business activities for train passengers' needs at and around the stations.
- 2) Industrial Aspect: The Dual Tracks Train can accommodate weight and volume of industrial cargo but with limitation on loading time and accessibility.
- 3) Tourism: In the southern region, there are several locations suitable for setting up train stations to promote tourism and as a transportation option for tourists so they could decide on their travel plan effectively.

2.2.1.2 Problems/Obstacles and Solution Measures

From the Study of Continuous Development Project of Various Transport Modes and Logistics, it was found that the rail transport is deemed high on safety, facilities and service flexibility with some aspects of transport modes that need improvement such as slowness of service and cargo transport time, lack of convenience for service, low accessibility and connection, insufficient capacity to support transport and travel needs.

From the Study, it was found that the rail transport can accommodate up to 85.5 tons-km/liter which will save energy and reduce oil import but the service has not been popular because of its slow service and transport time as the train runs with the highest speed of 60 km/hour for passenger trains and 35 km/hour for freight train (RAT 2009). Moreover, loss of time during train track shifting resulting in unpunctual timetable. The construction of the Double Tracks Train will solve this problem by reducing travel time with no need for track shifting.

Moreover, the rail transport still lacks convenience in service, accessibility and connectivity since most train stations are not located in the economic zones and other forms of transport will be needed for train connection. As in the 11th National Economic and Social Development Plan, the development of the rail transport efficiency has included Multimodal Transportation such as transportation by road, waterway and air so connections with the major train stations can be made for both convenience and

efficiency. The Hat Yai-Padang Bezar Double Tracks Electric Train will therefore provide both convenience, travel time saving and higher efficiency for the rail transport.

2.2.2 The Economic and Social Situation

The indicating factors toward the economic and social situation and the potentials of the location which will be used as crucial data in the projection of passenger volume along the route include the following:

- **Songkhla Gross Provincial Product:** GPP In 2013, the fixed gross rate stood at 144,758 m. baht(1.57% and 19.60% of GDP and GRP respectively) and mostly (46.34%) came from the service industry, secondly from manufacturing and agriculture (41.04% and 12.61% respectively). Songkhla GPP in 2013 has risen to 25,131 m. baht or 21.00% from 2004 with an average growth of 2.14% per year.
- **Population** The population of Songkhla is found at 1,401,303 (2.15% of the national population number or 15.21% of the population in the South) with 497,127 households of an average of 2.81 persons per household. The changing rate of the population and households from 2004-2014 was 0.90% and 3.32% per year.
- **Personal Income** The population of Songkhla has an average income of 146,030 baht/year and from 2004-2014, was found to be increasing at a rate of 4.63%/year.
- **•Employment** The employment rate in Songkhla was found at 855,749m people (61.06% of the Songkhla population). From the employment records (The National Statistics Bureau 2014), it was found that during 2004-2014, the ratio between employment and the population has been fluctuated at a changing rate of 1.79%/year
- **Industrial sector** Songkhla has been a location for the industry especially for the manufacturing factories linked with agricultural produce for export such as seafood canning industry, frozen seafood and refrigeration facilities, rubber-processed products such as rubber gloves, furniture (rubber wood), rubber sheets, rubber sticks and factories treating rubber wood, producing compressed wood product, etc. Most factories are located in Hat Yai and Songkhla, respectively
- **Agriculture** Agriculture has been a major sector in the South with most of the population involved in agriculture and the agricultural produce has been the food source of the people for the region and the country. After consumption, whatever is left has been used as raw materials for agriculturally processed products which have created both Value Added products and employment. Moreover, this has created the national income from exporting and decreased imbalance in international trading. Two major agricultural produce are rubber and palm oil.
- **Vehicle Ownership** In 2014, there were a total of 816,024 registered vehicles, 2.27% of the total number of registration in the country and 17.15% of that in the South and 96.98% of

which are sedan, while 2.29% and 0.72% are trucks and buses respectively. The registration number during 2004-2014 has been increasing continuously at a rate of 4.75/year.

- **Tourism** Songkhla has been the center of tourism in the South. In 2013, there were 5,763,439 visitors or 2.65% and 15.31% of the total number of visitors in the country and the South respectively. The number of visitors during 2009-2013 had been fluctuated due to the social unrest along the southern border. However, the changing rate during that time was found at 21.96%
- **Border Trading between Thailand and Malaysia** Border trading between Thailand and Malaysia (mainly export and import) was 38% of the total value. In 2014, the total value was found at 507,655.46 m baht with 274,992.19 m baht in export and 232,663.27m. baht in import and Thailand was found with 42,328.92 m baht of an imbalance of trading value.

Most export products at Thailand-Malaysia border in 2014 were natural rubber, computer parts and accessories, rubber products and processed wood products, etc. with a total value of 33.21%, 9.40% and 5.39% of the total export respectively at a changing rate during 201-2014 of -23.91%, -4.61%,-14.10% and 6.16% respectively.

Most import products at Thailand-Malaysia border in 2014 were data recording accessories, magnetic tapes and plates for computer, computers and accessories, etc. with a value of 10.13%, 9.69% 8.72% and 7.92% of the total value of export products at a changing rate during 2011-2014 of 0.12%, 9.58%, 0.25% and 1.95% respectively.

1) Collection of Travel and Freight Transport Data

▪ Domestic Passenger Transport

It was found that the number of domestic passenger travel by public transportation during 2009-2013 has decreased from 501.67 m people in 2009 to 474.05 people in 2013 at a reduction rate of 1.41% /year. This has shown that some of the passengers have changed to travel by their personal vehicles. This has corresponded with the increase of personal vehicle registration during 2009-2013 of 6.29%/year. When considering each type of transportation, it was found that the number of passengers traveling between cities by public buses has significantly decreased from 427.31 m. people in 2009 to 395.51 m. people in 2013 as shown in **Table 2.2-1** and **Table 2.2-2** below.

Table 2.2-1
The Number of Domestic Passengers during 2009-2013 (m. people)

Travel Mode	2009	2010	2011	2012	2013	Changing Rate (%)
Public buses	427.31	442.30	413.97	399.90	395.51	-1.91%
Trains	47.94	44.54	44.05	41.76	37.34	-6.05%
Air (planes)	26.42	26.94	31.18	36.33	41.20	11.75%
Total	501.67	513.77	489.21	477.99	474.05	-1.41%

Source: Department of Road Transport, Ministry of Transportation

Table 2.2-2
Records of Vehicle Registration during 2009-2013 (thousand vehicles)

Year	Number of registered vehicles (thousand vehicles)
2009	26,258
2010	27,530
2011	29,205
2012	31,440
2013	33,520
Changing Rate (%)	6.29%

Source: Department of Road Transport

2) Domestic Cargo Transport

The records from Ministry of Transportation during 2009-2013 have shown that the cargo transport by road was the highest. In 2013, the volume of cargo transport via road was 423 m. tons/year or 80.36% of the total cargo transport while waterway transport and coastal transport were 8.99% and 8.39% respectively.

As for the annual growth rate from 2009 to 2013, it was found that coastal transport has increased the most followed by domestic waterway transport, air transport and rail transport respectively. While the rate of road transport has increased the most, the volume of cargo has not increased accordingly. This has shown that cargo transporters have chosen other transport modes besides roadway. The road transport rate has decreased from 83% in 2009 to 80% in 2013 as shown in **Table 2.2-3**.

Table 2.2-3
Records of Domestic Cargo Transport during 2009-2013

Transport Modes	2009	2010	2011	2012	2013	Changing Rate(%)
Road	423,677	420,449	406,538	425,804	423,984	0.02%
Train	11,517	11,288	10,667	11,849	11,817	0.64%
Domestic Waterway	41,561	48,185	46,932	47,423	47,422	3.35%
Coastal	35,692	36,731	41,273	34,968	44,261	5.53%
Air	104	121	131	130	122	4.07%
Total	512,551	516,774	505,541	520,174	527,606	0.73%

Source: Ministry of Transportation

2.3 The Conformity of the Project with other Related Projects

2.3.1 Overview of the Conformity

1) The Development Project of Multi-Modal Transportation and Logistics Toward Activation Plan

To promote multi-modal transportation aimed at lowering domestic logistics costs, it is deemed suitable to move forward first with rail and waterway transport development with road transport as Feeder connecting ICD points with the manufacturing and consumption locations. This is because road transport can access any location on a Door-to-Door service basis as follow:

1.1) Road Transport Network Project should develop the motorway system connecting cities as follow:

- Pattaya-Map Ta Phut
- Bang Pa-In – Nakhon Ratchasima
- Bang Yai- Ban Pong-Kanjanaburi
- Ban Pong-Pak Thor-Cha-am
- Cha-am-Prajuap Khirikhan-Choomporn
- Bang Pa-In- Ang Thong
- An extension of The Motorway between Bangkok-Chonburi-Pattaya into 8 traffic lanes

1.2) Rail Transport Network Project should focus on the development of the dual tracks train system in the South as follow:

- Nakhon Pathom-Nong Pla Dook-Hua Hin
- Prajuapkhirikhan-Choomporn
- Hua Hin=Prajuap Khirikhan
- Choomporn-Suratthani
- Suratthani-Padang Bezar
- Hat Yai- Sungaikolok

- Thoongsong-Katang

1.3) Coastal Transport Network should focus on the development of public docks to support coastal transport particularly the development of the second Songkhla Deep Seaport in Suratthani, the Deep Seaport at Pak Bara and promotion of private investment in the coastal transport service connecting with Laem Chabang Seaport.

1.4) The Multi-Modal Transportation Linkage. The linkage points recommended to be developed are:

- Nakhon Ratchasima: CY at Koot Chik Train Station
- Khon Kaen: CY at Tha Phra Train Station
- Nakhon Sawan, Kamnan Song Rice Station
- Phra Nakhon Sri Ayutthaya and Ang Thong
- Choomporn: CY at Wisai Train Station
- Suratthani: CY at Ban Thoong Pho Depot
- Cargo transport border stations: Mae Sot district, Tak Province, Muang District, Nong Khai Province, Muang District, Mookdaharn Province, Chiang Khong District, Chiangrai Province

2.3.2 The Conformity of the Project with other Related Projects

1) The Development Plan of the Double Tracks Train across the Country

Recommendations are made on the available capacity of the existing train routes and the frequency of use to be applied on the basis of decentralization development. These have been approved by the Economics Committee. The details of the projects are found in **Table 2.3-1**

Table 2.3-1
The Development Plan of the Double Tracks Train System

Phase	Train Routes	Distance (km.)
1st Phase (2010-2014)	Lopburi-Nakhon Swan-Pak NamPho	118
	Map kabao-Thanon Jira Depot	132
	Thanon Jira Depot-Khon Kaen	184
	Nakhon Pathom-Nong Pla Dook-Hua Hin	165
	Prajuap Khirikhan-Choomporn	166
2nd Phase (2015-2519)	Thanon Jira Depot-Ubon Ratchathani	309
	Khon Kaen-Nong Khai	172
	Pak Nam Pho- Tapan Hin	69
	Hua Hin- Prajuap Khirikhan	89
	Choomporn-Suratthani	166
	Kang Khoi-Bua Yai	220
3rd Phase (2520-2524)	Tapan Hin-Chiang Mai	427
	Suratthani-Padang Bezar	339
	Suratthani-Padang Bezar	76
	Hat Yai-Sugnaikolok	214
	Thoongsong-Kantang	93
	Kabinburi-Klong Luek	98

From the 1st Development Phase of the Double Tracks Train System, it was found that the Project has been under the consideration process of the Office of Policy and Planning of Natural Resources and Environment. Therefore, necessary modifications of investment plans should be made for better conformity with the State Policy.

However, an immediate development project of the Double Tracks Train System should be moved forward with the present northern, north-eastern and southern routes to solve the bottle-neck problems on the southern route of 767 km. including Lopburi-pak Nam Pho, Map Kabao-Thanon Jira Depot, Thanon Jira depot-Khon Kaen, Nakhon Pathom-Nong Pladook-Hua Hin and Prajuap Khirikhan-Choomporn. The projects include:

- construction of new reinforced shoulder and effective drainage system
- installing 100 pd. tracks on reinforced concrete planks
- building cross-over bridge
- installing fences along the train routes
- installing/improving automatic barring equipment
- installing the signaling system
- improving train stations
- building new repair shops

2) The Study and the Design of the Nakhon Pathom-Hua Hin Double Tracks Train System by SRT

This Development Project of the Double Tracks Train System covers 170 km. with a construction of a new train route running parallel with the existing one with the width of the tracks at 60 m. The route starts at km.47+700 at Nakhon Pathom station heading west to Nong Pladook Depot covering 16.5 km. before turning left and running southward passing Ratchaburi and Phetburi and ends at km.217+700 , 4 km past Hua Hin station. At the station from km.211+589.900 to km 215+872.900 covering 4.290 km., the 1.00 meter gauge tracks are elevated and surfaced with ballast. The UIC54 tracks are placed on Mono Block Sleepers. Automatic signaling and telecom system are installed at the Nakhon Pathom-Hua Hin section. When the Dual Tracks Train of Nakhon Pathom-Nong Pladdok Depot-Hua Hin is ready for operation in 2015, the capacity of the cargo transport will increase from 1m. tons/year to 1.5 m tons/year, and the number of passengers will increase from 6m people/year to 12 m people/year with an increase of 200 trains/day. This will provide convenience and reduce travelling time from Bangkok to Hua Hin from 3 hours to 2 hours.

3) The Study and Design of the Prajuap Khirikhan- Choomporn Double Tracks Train System

The Development Project is aimed at increasing the train capacity, efficiency and safety of travel to accommodate an increasing demand of transportation for passengers an cargo. The Dual Tracks Train system will reduce travel time by avoiding track shifting and offer punctual operation timetable for higher service satisfaction. This will draw more cargo transport business and reduce transport cost by saving energy. The Dual Tracks Train covers 167 km. with 1.00 Meter Gauge tracks and 21 stations (including Prajuap Khirikhan station and Choomporn station), 5 additional stopping points and dismantling 14 stations. The train route runs through two provinces and six districts. The Project will benefit the local population in terms of travel convenience and the local industry in terms of cargo transport convenience. This will cut logistics costs and increase competitiveness of the country beneficial to the economic and social system and worthy of the investment.

4) The Feasibility Study and Preliminary Design of the Freight Train System Connecting between The Ports along the Gulf of Thailand with those on the Andaman Coastline

The construction of the train system for cargo transport connecting between the ports along the Gulf of Thailand with the Andaman coastline will boost the economic development of the South of Thailand as a land bridge serving as the Gateway of exporting products from other regions of Thailand or even from the south of China outward to the Andaman Sea onward to Europe, Africa, the Middle East and South Asia without passing through the Melaka Strait. This will allow new cargo transportation route, exports and imports, transshipment through Thailand creating our

country's competitiveness with our neighboring country which has been developing its deep seaport on the west (the Andaman Coast) and also on the east (The Gulf of Thailand Coast).

Tran-shipment of cargo through the Land bridge mode will replace transshipment of cargo through the Melaka Strait via the ports in Singapore or Malaysia to the new tran-shipment route at Pak Bara Deep Seaport and Songkhla Deep Seaport via Land bridge mode connecting between the two ports. This route will serve an increase of cargo transport between Europe and Asia.

The location of the Project is shown in Figure 2.3-1

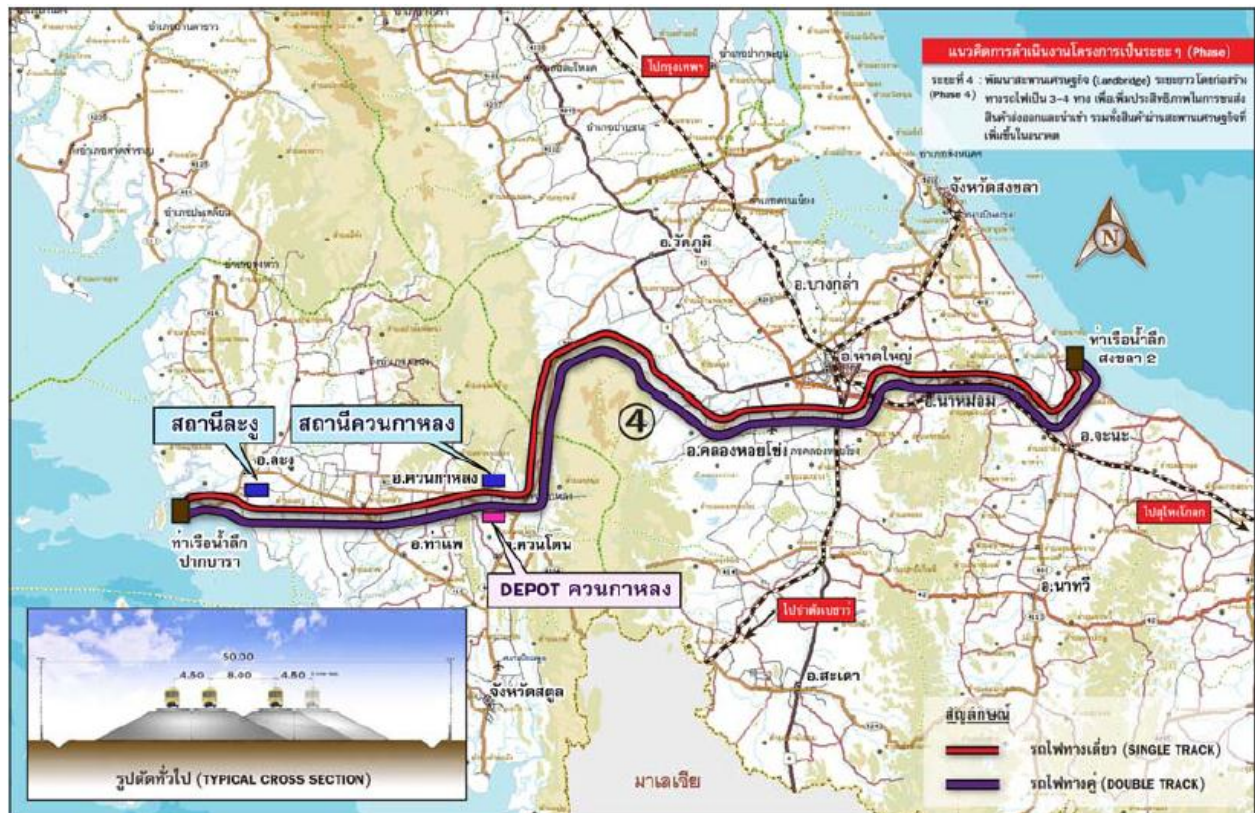


Figure 2.3-1 The Location of the Cargo Transport Train Connecting between The Gulf of Thailand Coast and The Andaman Coast