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### **Canal Line consideration for the Thai Canal**

Thoughts of digging a canal to connect the two sides of Thailand, the Andaman coast and the Thai coast have been around for more than 300 years. The objective in digging canals is to shorten the distance of sea transport of the two sides. Time passes by making the cause and effect of plans change with the times, it will remain that way till the canal is created.

300 years ago in the Ayutthaya era, in the reign of King Narai the great, the main reason in creating a canal was to improve the efficiency of the Navy by enabling travel from the Thai coast to the Andaman coast, to withhold power of the Kingdom. Another reason was to help trade with foreigners after opening the country. European ships wouldn't have to waste time sailing around the Malacca strait but cut through from the Andaman coast to the Thai coast heading easily to Ayutthaya. The canal line that was considered at that time was the Kra Isthmus line, the narrowest part of the country and the easiest to dig.

150 years after that, digging a canal was dangerous for national security. European countries were competing in expanding colonies, taking control of Asian counties in those times.

In the present, the reasons and situations have changed dramatically, the reasons of economical security are the most important. In the harsh economical wars of the modern age, national security from militaries can not help the country. In contrary, the thought of creating a canal for economical benefits seems more alluring. In the process of thinking the canal lines to create the canal have been presented and changed all the time, to this time there have been 12 canal lines that have been presented. (Image 1) In considering the best canal line, the aspects of consideration are



Image 1 Canal lines from the past to the present, total of 12 canal lines

1. Freedom in managing the canal
2. National economy
3. Military Strategic reasons
4. Social & Environmental aspects
5. Engineering aspects

## PROPOSED CANAL ROUTE COMPARISON

ROUTE NO.	BEGINNING POINT WEST COAST	FINISHING POINT EAST COAST	LENGTH (Kilometers)
1.	RANONG	CHUMPORN	130
2.	A Little South of RANONG	North of LUNGSUAN CHUMPORN	90
2A	BAN RACHAGROON South of RANONG	LUNGSUAN CHUMPORN	90
3.	TAI MUANG PANG-NGA	PHUNPIN SURATHANEE	160
3C	HUB POOK PANG -GNA	PHUNPIN SURATHANEE	168
3A/4	SIGAU TRANG	North of PAKPANUNG NAKCRN SRI THAMMRAT	156
5	SATOOL	A Little North of SONGKLA	108
5A	30 Kilometers North of SATOOL	North of SONGKLA	102
6	South of SATOOL IN MALAYASIA	JANA SONGKLA	102
7A	A Little South of GUNTANG TRANG	PATTALUNG - SONGKLA	110
9A	SIGNG TRANG	HOU SAI South of NAKORN SRI THAMMARAT	120

Note : Length started in the table refers distance on land

1. Freedom in managing the canal, the freedom that we are talking about is the freedom of the ships passing the canal, the canal line that is chosen might cause sea boundary problems with neighboring countries. To prevent these problems the canal line should be more 200 nautical miles or 400 kilometers away from neighboring territorial waters.
2. National economy, transportation routes whether on land or on water will bring prosperity around the area. When considering international sea routes, the benefits are very large so both sides of the canal should be large enough to support large towns that will be born, the water supply should be abundant enough and capable enough geographically for future towns.



Image 2 the Canal line has to harmonious with Military strategies

3. Military Strategic reasons, If the canal line is to close to either side, it will make military operations difficult to perform. Even though creating a canal will increase the navy's power, a canal line that will create difficulties for military operations must be avoided.
4. Social & Environmental aspects, the canal will be about 4 kilometers wide (with reserved space for future use) with the length of 120 kilometers. It will have impact on civilian farm and business land, converting their lifestyle from rural lifestyles to city lifestyles. The natural environment of the area along with some cultural environments may change, so the canal line should avoid dense community and natural resource areas.

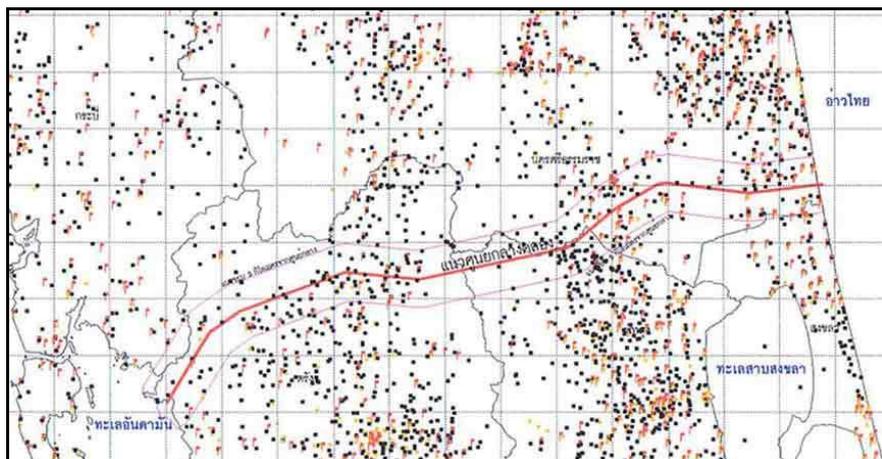


Image 3 The canal line should avoid dense community and natural resource areas

5. Engineering aspects, information in the fields of geography and hydrography must be considered such as areas of reef deposits or underwater rocks to determine the canal line. For preparations there should be a survey ship to survey the rock lines under the

sea. The line has to be large and deep enough for large ships to pass through safely, both in up tide and down tide and both the Andaman coast and the Thai coast.

From the 5 aspects except the engineering aspect that we still lack information,



Image 4 after consideration, the selection from 12 canal lines to 4 canal lines

From the 12 canal lines that were selectable, we select 4 canal lines for comparison.

## Thai Canal line comparison

Route 2A, Route 5A, Route 7A, Route 9A

### Route 2A starts from Baan Ratchagrood – amphur Lungsuan, Chumporn Province

#### *Pros*

1. The original line from 325 years ago, in the reign of King Narai the great
2. Short land distance, only 90 Kilometers
3. The route closest to Bangkok (600 Kilometers far from Bangkok)

#### *Cons*

1. Close to the Burmese border (about 30 Kilometers from the border) may cause political and national security problems.
2. Outside the International Sea Routes, will have to go around the Cape of Vietnam.
3. Burma can easily develop Industries to compete with Thailand, with the advantage going to Burma by reasons of cheaper wage and cheaper investment cost. Foreigners will turn to invest in Burma instead of Thailand.
4. Geographical problems, there are slips in the Earth's shell underneath the area causing frequent earthquakes. It may be dangerous to the canal in the future.
5. Water level of the two sides have 2-3 meters difference, a water gate may be necessary.
6. The canal line passes mountain lines and canyons, not appropriate for ports, industrial and special economic zone development.
7. The canal line passes mountains with granite stratums more than 60 Kilometers long making the canal short but expensive to dig.
8. The objective of the canal isn't for ships to travel to Bangkok but to be an international region joining the Middle East and India to Japan and Korea. The higher the canal line is, the further away the ships have to go around the cape of Vietnam. Making the distance of the route not shorter than the original.

### Route 5A from Satool – Songkla Province

#### *Pros*

1. The least amount of earth to dig up, making the canal dig cost the cheapest.
2. The water level difference of the two sides is only 0.5 meters

3. The canal line doesn't cut any mountain lines, the canal line would be in a canyon.
4. In the International Sea route

#### *Cons*

1. Close to the Malaysian border, making Malaysia able to develop their industries without having to create a canal. Malaysia will receive more benefits because the canal line is close to Alor Setar and the Malaysia's central pier (Port Kelang)
2. In the present the population density is very high, may cause problems in transport and handling.
3. The canal line passes Songkla lake (lower Songkla lake) may create a lot of resistance like the  
Thai-Malaysian gas line case
4. From geographical research, there are about 11 large rock catacombs in Satool province.
5. The area lower of the canal line is a Thai-Muslim area, more than 80% of the population are Muslims if there is interference from outside of Thailand there maybe problems involving separation and national security in the future.
6. The canal line is close to the Strait of Malacca making the canal line route not different from the original route.
7. Not enough area to develop a special economic and industrial zones.

#### **Route 7A from Trang – Songkla Province**

#### *Pros*

1. Short, 60 Kilometers of land to dig, combined with the water channel from Kantang to Trang (30 Kilometers) at amphur Yhan Ta Koaw and dig Songkla lake at the Royal sea between Patalung and Songkla (about 20 kilometers) the total distance is about 110 Kilometers
2. Digging 9 Km into the mountain will get rocks to use in the construction
3. After only 5 Km from Songkla on land will be through to the Thai coast with a deep water pier already at Songkla.
4. Songkla Lake can be used as a port to shelter from monsoons.

### *Cons*

1. The canal line overlaps natural water routes from Kantang to Yhan Ta Kaow, it will affect citizens over 30 Kilometers along the line.
2. Senators and Representatives of Songkla Province along with numerous Songkla Lake reservation clubs and citizens of Songkla object in having the canal pass through Songkla Lake.
3. Songkla Province is a high-density population area; the land cost is very high and causes more social problems because the route has a higher Thai-Muslim population than route 9A.
4. Has environmental impacts, the route passes high population areas, important tourist areas along the route.
5. Closer to the Thai-Malaysian border than route 9A.
6. The route passes a mountain line in Trang Province, the mountain is very high, it is 1,200 meters high and 9-10 kilometers long. The only canyon available is the Pabpa canyon, which is too narrow for a canal.
7. Not enough space to develop special economic and industrial zones.

### **Route 9A from Krabi to Trang to Patalung to Nakorn Sri Tammarat Province**

### *Pros*

1. The area is in the center of the southern region and half from Burma to the Malay Peninsula and Singapore. The route doesn't cause problems in national security (about 700 kilometers away from the Burmese border and about 700 kilometers from Singapore)
2. 95% of the populations in the route and in the area below the route are Thai-Buddhists. Any foreign intervention attempts to cause separation will be hard to do.
3. In the international sea route and capable of building ports to hide from monsoons at both sides of the canal.
4. Fundamental systems are already ready such as the Tungsong cement factory (can produce 8 Mil. Tons/year), Land travel (4 main routes and 2 train routes) and Air travel (close to 3 airports)
5. Has a fresh water source for canal operations and to support industries. Water supply overseen by the Department of Irrigation.

6. Capable of area development, for new towns, special economic zones at three areas, at both canal entrances, and the central area of the canal.
7. Has a low-density population rate, making the cost for transportation and handling cheaper.
8. The water level difference between the two sides is only 25 centimeters.
9. All 23 local district administrations support and cooperate in marking the canal line along the 9A route (there have been 15 meetings held)

*Cons*

1. The route distance is 120 kilometers which is the longest, 2A (92 kilometers), 5A (102 kilometers), 7A (105 kilometers)
2. 10 kilometer of the route passes a mountain range at the Nakorn Sri Tammarat mountain range.
3. A part of the canal line passes Keuan Kreng Pruh, which is a wet land. If there isn't proper management, it might cause environmental problems.

Not able to develop a harbor by the ocean side, will have to develop a part of Keuan Kreng Pruh to be Port of Kreng to avoid monsoons in the Thai coast.

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