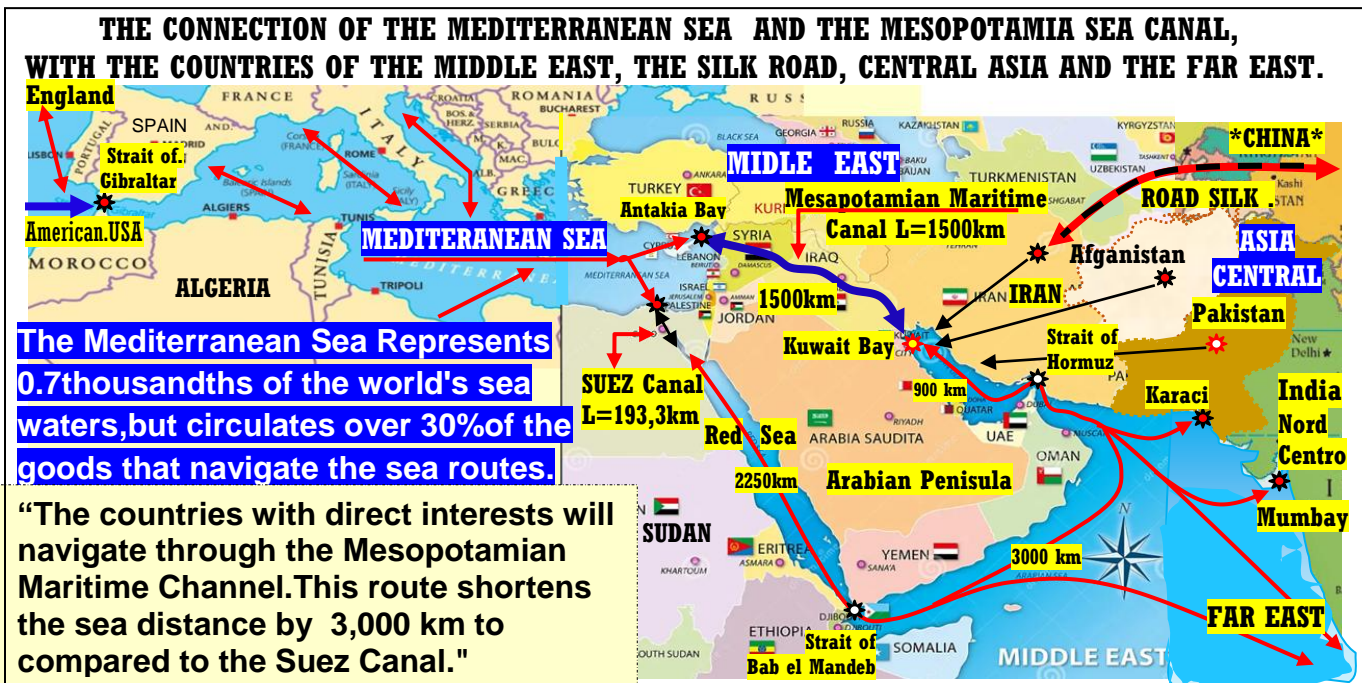


EXPANDED INFORMATION.....

PROJECT*1*. THE MESAPOTAMIAN MARITIME CANAL (Why Should the Mesopotamia Canal Be Built?)



- ❖ Mesopotamia Sea Canal:..... Length = 1500 km (Antakya Bay-Kuwait Bay).
 - ❖ Mediterranean Sea to Persian Gulf:..... Length = 6250 km (via Suez Canal-Kuwait Bay).
 - ❖ The Mesopotamian plain is a natural highway .
 - ❖ From the Mediterranean coast (Antakya Bay) to the Persian Gulf ,It only has one hill with a height of $H=350$ m.
1. The Mediterranean Sea is a maritime bypass connecting the Atlantic Ocean with the Pacific Ocean.
 2. The Mediterranean Sea serves as a bridge linking four continents America,Europe,Africa,and Asia.
 3. The Mediterranean Sea is the cradle of civilization and world cultures. It is and remains the sea of global prosperity. However, it also remains a closed sea with no project for a direct connection to the resource-rich eastern regions.
 4. The Middle East and Central Asia are centers of natural resources and population. The center of gravity of the Middle East and Central Asia is the Persian Gulf. This implies that connecting the Mediterranean Sea with the Persian Gulf and Central Asia is vital for global trade. The current maritime route is excessively long ($L = 6250$ km) and unsafe.
 5. However, maritime routes are still dependent on the Suez Canal,a concept devised by the pharaohs or Cleopatra thousands of years before Christ. In 2025, global trade will transport goods from the Middle East to Europe or other destinations via maritime routes that are 2–3 times longer and less secure. Meanwhile, the cost of securing navigation to the Persian Gulf is higher than the cost of transporting the goods themselves.
 6. The maritime route from the Suez Canal to the Persian Gulf has three choke points: the Suez Canal, Bab el-Mandeb Strait,and Hormuz Strait. Additionally,navigation in the Red Sea, the Arabian Sea, and the Persian Gulf is not secure. Several visuals are provided to conceptualize and highlight maritime navigation from the Mediterranean Sea to the Persian Gulf.The Mesopotamia Sea Canal, integrated with land-based infrastructure, promises to halve the time and costs of global trade.



PROJECT 1. EXPANDED INFORMATION.

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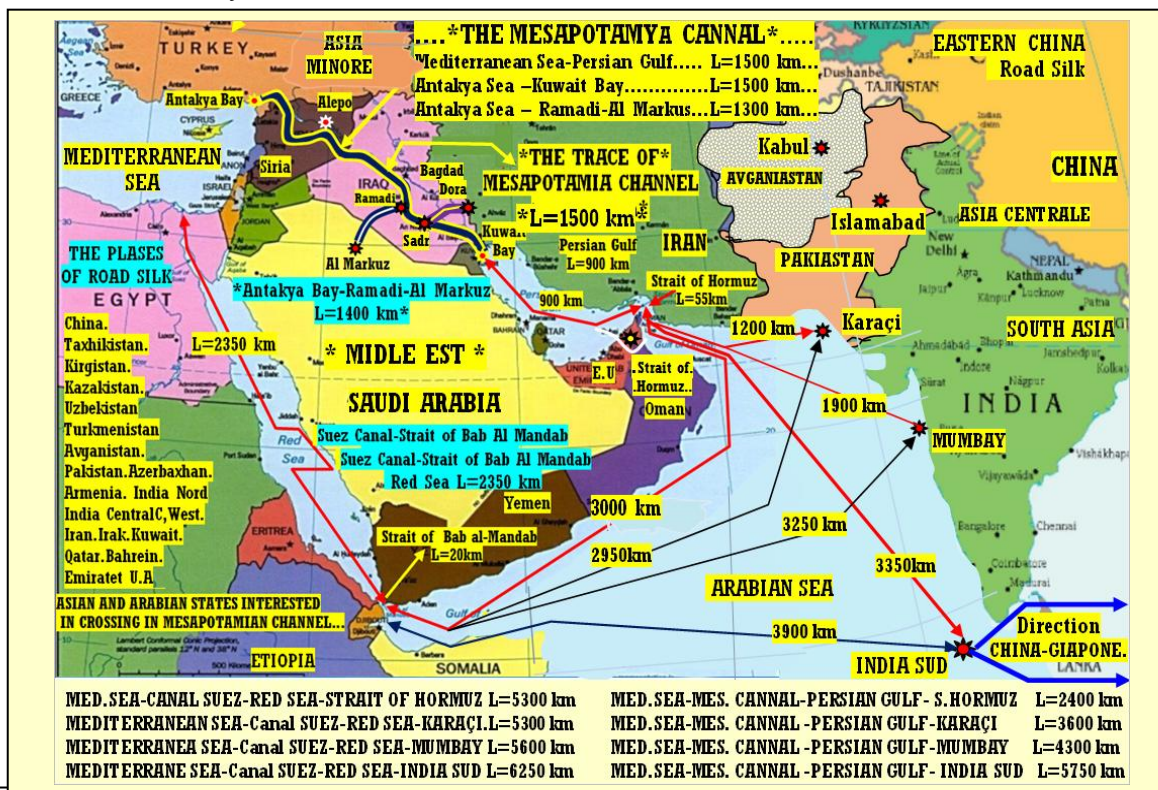


THE MARITIME CANAL OF MESOPOTAMIA.

TECHNICAL INFORMATION ON THE PROJECTS (Why Should the Mesopotamia Canal Be Built?)

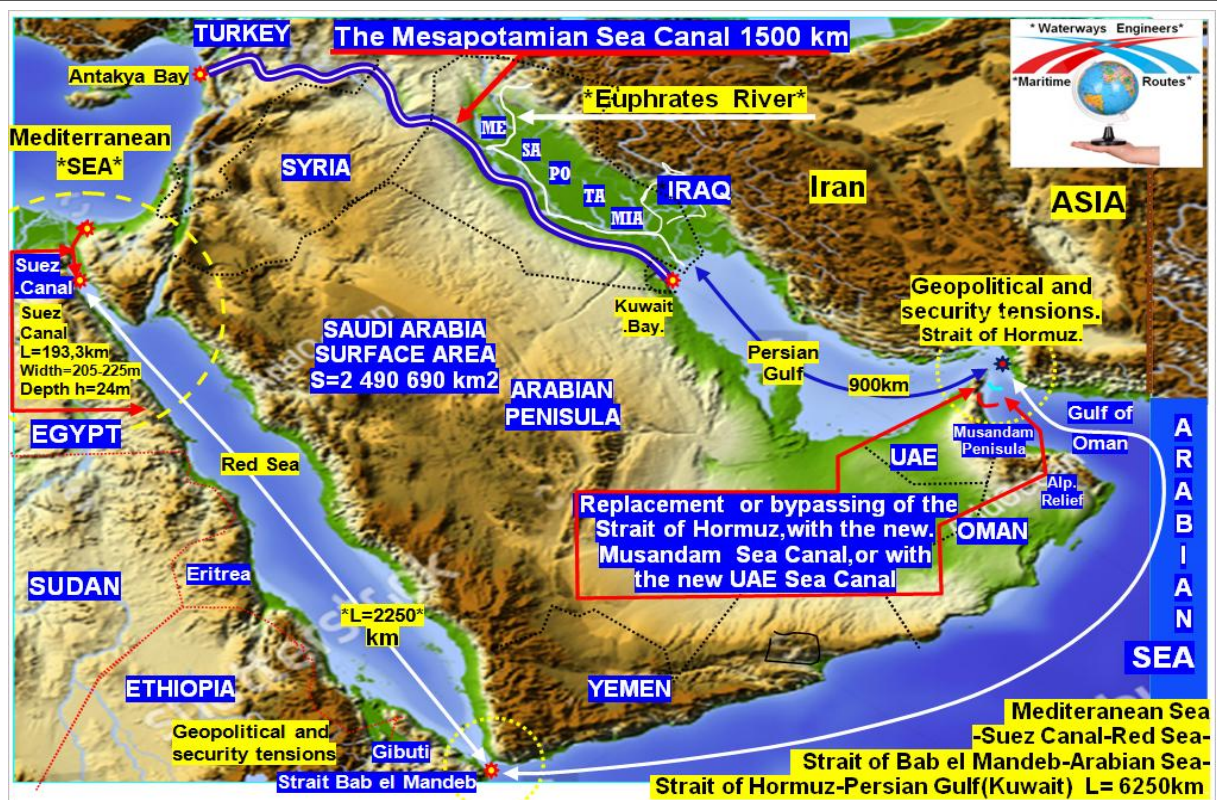
1. The new maritime canal connects the Mediterranean Sea to the Persian Gulf through the shortest route, shortening the maritime distance by 3,000-4500 km compared to the Suez Canal. The canal's route passes approximately 70% through the Euphr River floodplain or the Fertile Crescent of Mesopotamia, thus it is named the Mesopotamia Waterway.
2. The new canal will create an important alternative trade route to the Persian Gulf, the Middle East, and the Far East, faster and safer than the Suez Canal. It will change the cost and travel time, particularly for goods coming from East Asia, including Singapore and China. **It also** provides direct access to the Silk Road in the Mediterranean Sea
3. Global Trade Blockade through the Suez Canal*: The blockade of the Suez Canal on March 23-29, 2021, by the Ever Given container ship highlighted the geo-economic importance of the Suez Canal. According to Lloyd's List Intelligence, daily losses from traffic congestion amounted to \$400 million per hour, or \$9.6 billion per day, since over 12% of global seaborne goods pass through the Suez Canal annually. Navigation in the Suez Canal is safe due to Egypt's protection. In 2022-2023, Egypt benefited \$9.4 billion from ship transit.
4. **Mesopotamia Canal Project.** The canal is a completely new maritime route connecting the Mediterranean Sea to the Persian Gulf, passing through the deserts of Syria and partly through the deserts of Saudi Arabia, Iraq, and Kuwait. This means that the rich waters of the Mediterranean will green and revitalize the dry lands of the Arabian Peninsula.

Fig.5.
The Arabian Peninsula.
The long sea route from the Mediterranean to the Persian Gulf and the trace of the Mesopotamian Canal.



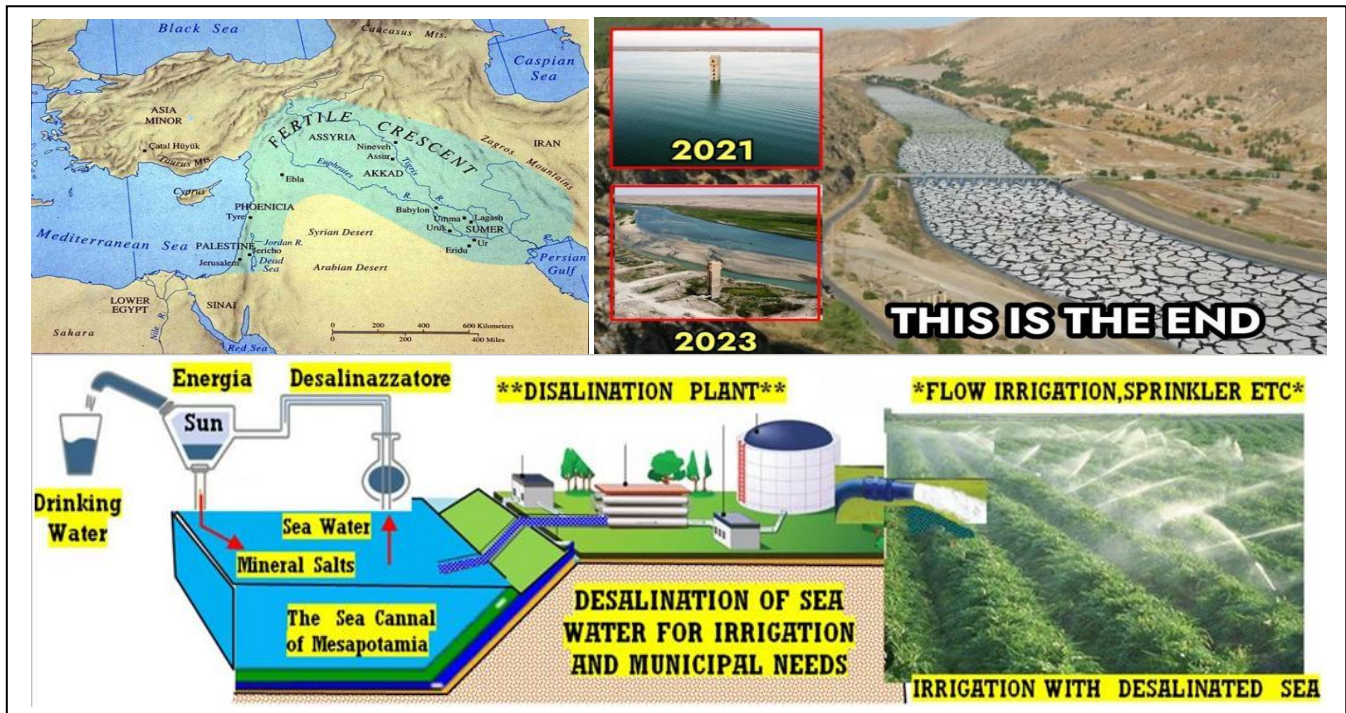
PROJECT*1*

WATERWAYS ENGINEERS AND THE FUTURE OF MARITIME ROUTES (Why Should the Mesopotamia Canal Be Built?)



Problems

5. **Drought of the Euphrates River.** According to the Center for Strategic and Intern. Studies (CSIS) and the Min. of Water Resources of Iraq, the E. River may dry up by 2040. This means that the fertile Mesopotamian valley and urban life will be devastated by climate changes.
6. **Economic Stagnation of the Middle East.** Economic development and the emancipation of the Middle East require direct infrastructure links with the Mediterranean and Europe. Without investment in infrastructure, the Persian Gulf region will continue to be undeveloped for the next 100 years, remaining outside the main global trade networks. Coupled with the drying of the Eu. River, over 60 million people in the Mesopotamian valley are at risk of facing persistent poverty.
7. **Water Resource Shortage:** The Euphrates River flows about 1,000 km through the heart of the Fertile Crescent of Mesopotamia, providing an annual discharge of around 600-800 m³/sec. The Euphrates River has historically met the water needs for drinking, urban, municipal, agricultural, and environmental purposes, which are growing due to urbanization and economic-environmental development.
8. **Silk Road Development:** The Belt and Road Initiative aims to improve trade connections between Asia and Europe. However, existing maritime routes through the Suez Canal do not offer sufficient access to the Mediterranean and Europe for goods coming from Asia.



WHAT THE MESOPOTAMIA CANAL SOLVES AND PROVIDES.

9. **The Mesopotamia Canal:** This new canal will create a critical alternative trade route, connecting the Mediterranean Sea directly to the Persian Gulf and reducing maritime distance by 3,000 km compared to the Suez Canal. This faster and safer route will strengthen global trade, especially for goods from East Asia, including Singapore and China.
10. **Gateway for the Silk Road to the Mediterranean:** The Mesopotamia Canal will offer the shortest exit from the Silk Road to the Mediterranean, making it a key entry point for goods traveling from Asia to Europe. This infrastructure will enhance the efficiency of the Silk Road Initiative, providing a quicker, alternative route.



- ❖ **Economic Empowerment of the Middle East:** The construction of the Mesopotamia Canal will boost the Middle Eastern economy by connecting the region to international trade networks. It will drive economic growth through new opportunities in trade, agriculture, and urban development, saving the Middle East from long-term poverty and stagnation.
- ❖ **Water Supply and Agricultural Support:** The Mesopotamia Canal will supply up to 100 billion cubic meters of desalinated water annually, replacing the Euphrates River for irrigation, agriculture, and urban needs. The canal will be accompanied by highways and railways on both sides. Alongside commercial and tourist port developments, this will encourage urbanization of the Mesopotamian valley.
- ❖ **Long-Term Economic and Environmental Benefits:** The canal will revitalize and energize the Mesopotamian Valley, addressing the water crisis, fostering urbanization, and promoting tourism and environmental sustainability. This transformation will turn the region into a vibrant, prosperous hub.

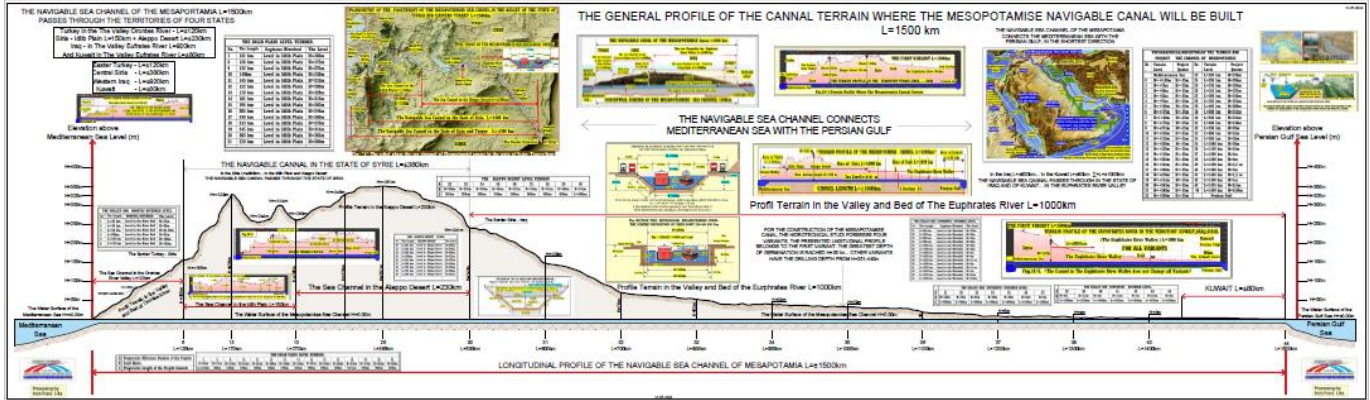
TECHNICAL DETAILS OF THE PROJECT

1. **Canal Route:** The Mesopotamia Canal will stretch over 1,500 km, starting in the Gulf of Antakya (Samandag), Turkey, and ending in the Gulf of Kuwait. The canal route traverses the Orontes River valley (approximately 120 km) in eastern Turkey, 380 km across the Idlib Plain and Syrian desert, 920 km through the Euphrates River lowlands in Iraq, and 80 km through Kuwaiti territory. Geologically, it crosses arid lands and active urban agricultural areas, supporting trade and regional development.
2. **Variants of the Mesopotamian Canal Route** On the Mediterranean coast, several options for the starting point of the sea canal were considered. The project examined the entire coastline from Antakya (Turkey) to Latakia (Syria). Four positions for the canal's starting point from the Mediterranean Sea were mapped in topographic plans. After constructing longitudinal profiles, evaluating heights and excavation volumes, expropriation of agricultural lands, and the displacement of terrains and urban communities, it was determined that the canal route would begin in the Gulf of Antakya, Turkey.
3. **Maximum Excavation Depth** The highest excavation depth reaches 351 meters over a length of approximately 6 km in the Syrian desert (refer to the longitudinal profile). The profile highlights the flat and hilly areas where the canal is planned to be constructed. About 1,000 km of the canal passes through the floodplain valley of Mesopotamia, while the hilly terrain is located in the Syrian desert and the Idlib Plain.
4. From a technical perspective, the large excavation heights generate significant volumes of earth. Specific excavation methods and schemes are detailed in separate projects. The project also plans for the disposal or repurposing of excavated soil by filling depressions or pits or creating new lands or terrains. The excavation volumes for the route and canal exceed *115 billion cubic meters*. At a cost of \$30 per cubic meter, this amounts to **\$3.45 trillion**. The cost is calculated at the maximum level, as preliminary geological studies are not yet available



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The General Longitudinal Profile of the Mesopotamia Canal



Overview of the Mediterranean sea routes with the Persian Gulf and the Middle and Far East.

5. **Water Management** The project aims to draw up to*100 billion cubic meters(or100 km³)*of water annually from the Mediterranean Sea to cover the canal's water, annual evaporation, urban and municipal consumption, and agricultural needs.The canal's flow is expected to be twice the annual flow of theTigris and Euphrates rivers. According to statistics, the long-term average flow of these two rivers has been around *50 km³*..
6. **Water Volume Impact on the Mediterranean:** The expected annual water intake from the Mediterranean is equivalent to 2.55% of the sea's annual evaporation or 3.8% of the water the Atlantic Ocean supplies to the Mediterranean each year.The water volume of the Mesopotamia Canal will have no significant impact on the Mediterranean's hydrological balance or ecosystem.
7. **Canal Cross-Section:**The Mesopotamia Canal may have a trapezoidal or rectangular cross-section,with an average width of 250m and maximum water depth of 24m.It can accommodate ships with a capacity of around 400,000 DWT,allowing for simultaneous navigation of one or two vessels. The canal will be fenced and fully digitalized.
8. **International Administration:**The canal is expected to be managed under international status. Besides direct benefits to global trade, it will generate additional revenue through agriculture, urban development, and tourism.
9. **Infrastructure:** The canal will be accompanied by highways and electrified railway lines on both sides. Along its length, commercial and tourist ports will be built, while filling depressions with water will create tourist and recreational areas.The canal will also have branches.
10. **Investment and Return:** The project cost is estimated at 5 trillion euros, with an investment return period of 55–78 years. Over 65% of the cost is allocated to excavation. The project entails excavation of approximately 115 billion m³, stabilizing excavated volumes, lining the canal with reinforced concrete in various geological zones, constructing side infrastructure, fencing, and expropriation. With modern design technology and excavation and transportation machinery, canal construction can be completed in a relatively short time.
11. **Mesopotamian Maritime Metropolis:** The Mesopotamia Canal connects three regions-Mediterranean,Middle East,and Asia.This transformative project enhances the Mediterranean's connection with the Middle East and Central and South Asia. The Mesopotamia Canal study represents a comprehensive analysis of regional and global maritime route development over the next 100 years.

EXPANDED INFORMATION

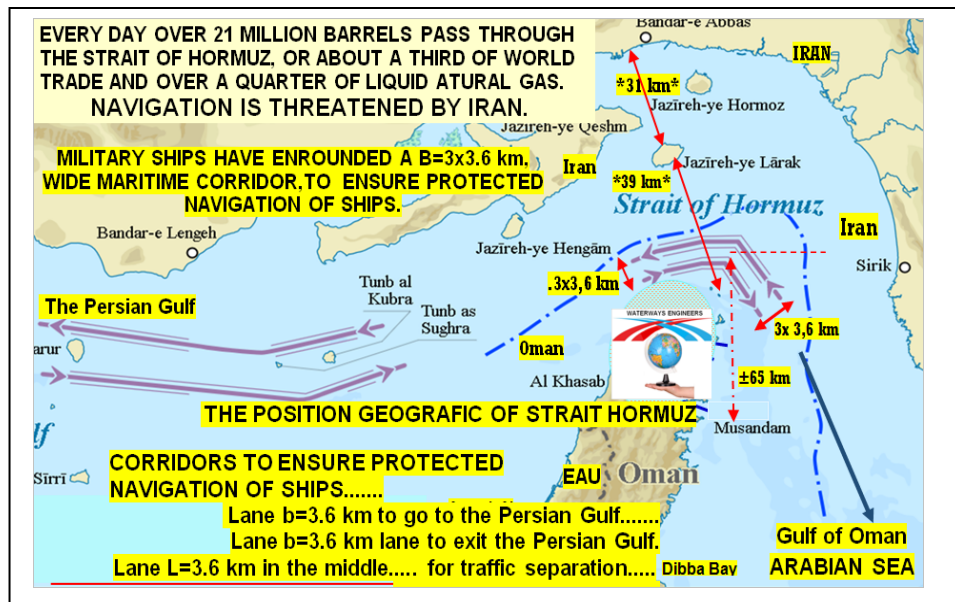
PROJECT-2-



REPLACEMENT OR BYPASS OF THE STRAIT OF HORMUZ.

Geopolitical and Financial Importance :

- ❖ Waterways Engineers have researched and proposed several options to bypass the Strait of Hormuz in the Musandam Peninsula and the United Arab Emirates.
- ❖ Hydromaritime projects aim to create a new alternative sea route.
- ❖ The new routes are located 60-120 km away from the Strait of Hormuz.
- ❖ The new sea canals are located outside **Iran's territorial waters**, avoiding blockades and threats from Iranian geopolitics.
- ❖ To ensure the safe passage of ships through the Strait of Hormuz, three shipping lanes have been designated, each 2 miles wide, or **3(2x3.6)km**. The eastern lane is used for vessels heading into the Persian Gulf while the western lane is for ships leaving the Gulf. In between, there is a separating waterway. These shipping lanes are protected and monitored by military vessels.



- ❖ **High Oil Traffic:** The Strait of Hormuz, located between Oman and Iran, connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. This strait is the world's most important oil transit chokepoint, as large volumes of oil pass through it. In 2022, oil flow through the strait averaged 21 million barrels per day (b/d), accounting for about 21% of global petroleum liquids consumption. In the first half of 2023, the total oil flow through the Strait of Hormuz remained relatively stable compared to 2022, as increased flows of oil products partially offset declines in crude oil and condensates.
- ❖ In 2018, according to the U.S. Energy Information Administration, an average of 50 tankers crossed the Strait daily, each with an average cargo value of \$100 million. According to statistics, approximately \$5 billion worth of fuel passes through the Strait of Hormuz daily, representing around 35% of global oil transported by sea. More than 50% of this oil was directed to Asian markets, including Japan, India, South Korea, and China.

EXPANDED INFORMATION.....Project*2*

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Military and Economic Costs:

1. Between 1976 and 2020, approximately \$8 trillion was spent to secure safe navigation from the Mediterranean to the Persian Gulf through the Strait, averaging \$150 billion annually or \$410 million per day (as noted by Admiral Andrea Mucedola, a prominent figure in maritime strategy). These figures do not include accidents, loss of life, or military conflicts in the region. Despite large financial and military investments, the Strait remains a dangerous and vulnerable transit point.

Solution: A New Maritime canal.

1. Water engineers studied the situation in detail and proposed a strategic alternative to the Strait of Hormuz. The solution involves constructing new sea canals through the Musandam Peninsula or the United Arab Emirates, bypassing or deviating from the Strait of Hormuz by 60-120 km. The construction of the new sea canal would shorten the maritime navigation by 120-200 km. These straightforward hydrotechnical works are designed to create a safer and more efficient passage, reducing risks and ensuring global trade.
2. This innovative canal project is the most suitable solution to replace the current dependency of oil transport on the Strait of Hormuz, ensuring fuel supplies for global markets and industries.
3. **The replacement of the Strait of Hormuz can be achieved through the Overland Journey of Ships. The cost and construction time are halved. Or the Combined Alternative.**
4. **A combined alternative** has also been proposed to bypass the Strait of Hormuz. It involves transporting oil tankers along rail tracks or highways through the Musandam Peninsula or the United Arab Emirates. The proposed project for crossing the Panama Isthmus, Mexico (Tehuantepec), and Thailand can also be implemented for crossing the UAE Isthmus, the length of which does not exceed 70 km.
5. **Conclusion:** The Mesopotamian Sea Canal and the Strait of Hormuz Bypass Project represent critical infrastructure initiatives aimed at addressing urgent geopolitical, environmental, and economic challenges of oil transport. These two projects open a new era for the circulation of goods, people, and economic activity in the world's largest global market, especially in the strategic triangle of the Euro-Middle East-Asian market.

