



CANAL ISTANBUL IN 50 QUESTIONS



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Today, the global volume of maritime trade has reached 30 trillion dollars. This includes the shipment by 54 thousand commercial vessels of millions of tons of cargo to 150 countries. With the developments in the energy sector, the number of tankers carrying fuel oil and hazardous substances is increasing with each passing day. Security and environmental risks have now become the countries' most important issue.

Such developments in international maritime trade have inevitably urged countries to pursue maritime routes that are faster, safer and lower in cost. Canals that contribute to the economies of countries, disburden the global trade networks and thus strengthen their home country's integration with the international system currently hold much more strategic significance.

Considering that the Mediterranean Basin, including Turkey, has a share of 25 percent in the world maritime transportation, it is unthinkable for Turkey to remain oblivious to such developments. Turkey will reduce security risks, contribute to its economy, integrate itself with the international trade system and make proper use of the strategic advantages of its geographical position by building alternative trade routes, as many other countries have done in the past and continue to do now.

Here exactly at this point; Canal Istanbul Project will eliminate all the maritime risks of Istanbul with an investment totalling 11 billion dollars, ensure the safety of life and property, create 10,000 new jobs and provide our country with an annual revenue of 1 billion dollars.

All the vessel transportation that pose a danger to Canal Istanbul and the Bosphorus will become safer, the historical texture of the Bosphorus will be protected, accidents will be prevented, the load of the city lines will be relieved and navigational safety will be ensured. Once the commercial vessel traffic is transferred to Canal Istanbul, the Bosphorus will become an important centre for various events and activities in fields of sports, culture and arts. As a result, all of our citizens

will obviously be the biggest winner of a more peaceful, calmer and more natural Bosphorus. Canal Istanbul Project will add value into economy like other similar projects implemented worldwide, create new employment opportunities and reinforce Istanbul's position as a historical maritime trade hub. Turkey will sustain this breakthrough with substantial projects across all sectors.

On this occasion, I would like to recall once again that approximately 200 academics and experts from 7 universities, especially Boğaziçi University, Istanbul Technical University (ITU) and the Middle East Technical University (METU), worked for this project and reports were prepared separately in 33 disciplines.

The principal philosophy of these lands, where dozens of deep-rooted civilizations flourished, has always been its reformist dimension. With each passing day, the Republic of Turkey has also moved forward with this perspective. To this day, many works have been produced worldwide with the vision of 2023 to fulfil the dream of all those who worked, assumed responsibility and showed an effort to bring Turkey, which fought the War of Independence and founded the Republic that lives on today, to the place it deserves internationally. Canal Istanbul will undoubtedly be both a product of those ideals and one of the steps taken as an integral part of our country's interests. Canal Istanbul is the product of a mentality that not only understands today's world and addresses the needs accordingly, but also provides a visionary perspective on the world of the future. Likewise, it would be contrary to the progressive course of Turkey's history to create systems focused solely on the present day, making investments in infrastructure and superstructure based solely on the needs of the day. Canal Istanbul is such a project, which is definitely needed today but will also be bridge to the future.

I hope you will find in this booklet comprehensive technical, scientific and objective answers to questions about Canal Istanbul that the national and international public opinion have in mind but have not yet dwelt on.

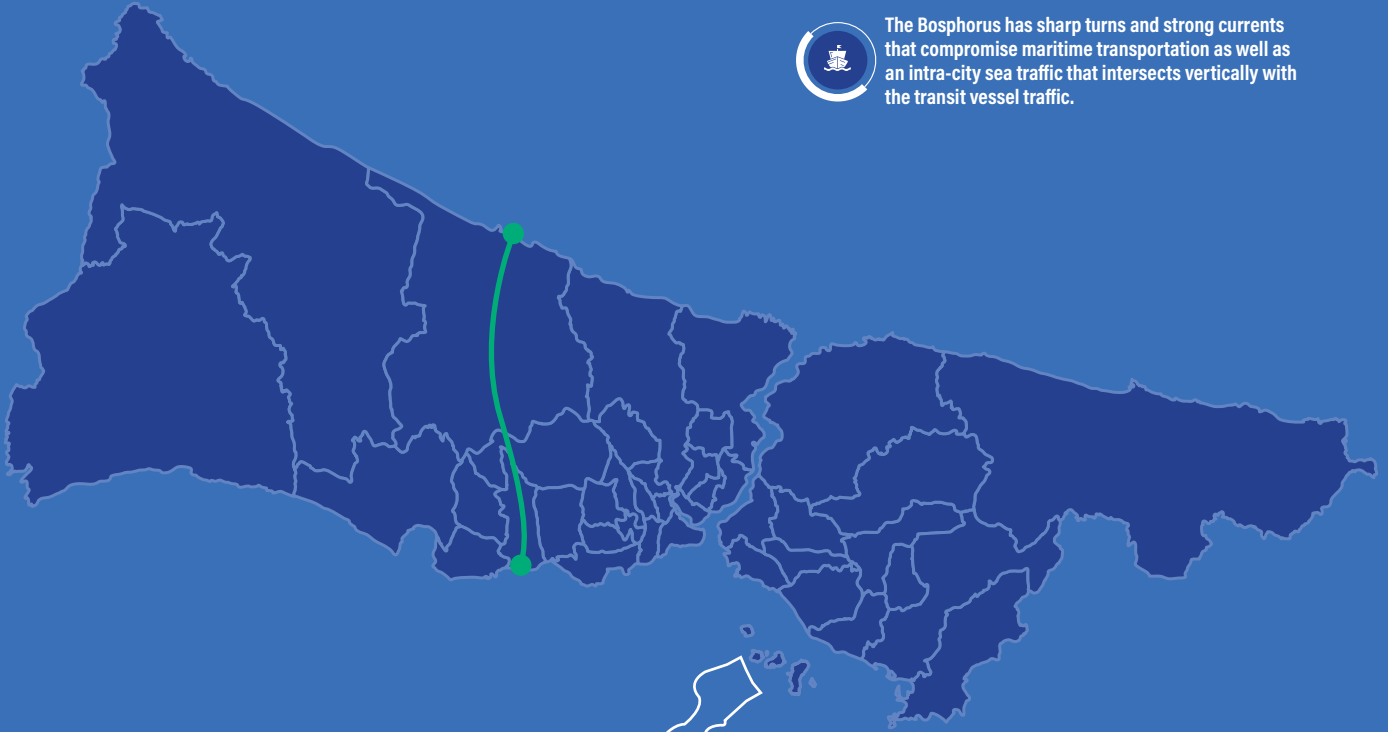
Fahrettin Altun, PhD

Communications Director, Turkish Presidency

1 WHAT IS THE PURPOSE OF THE CANAL ISTANBUL PROJECT?



The Bosphorus has sharp turns and strong currents that compromise maritime transportation as well as an intra-city sea traffic that intersects vertically with the transit vessel traffic.



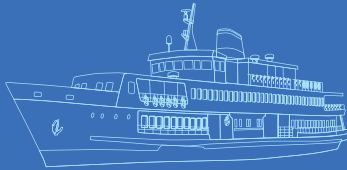
Approximately 43,000 vessels pass through the Bosphorus annually.



THE NARROWEST CURVE OF THE BOSPHORUS IS **698 METERS**, WHICH MAKES THE VESSELS' MANOEUVRES DIFFICULT.

The Bosphorus, where approximately 43,000 vessels pass annually, is a natural waterway with the narrowest point of 698 meters. The increase in the vessel traffic, the expansion of vessel sizes as a result of technological developments and especially the rise in vessel (tanker) transit carrying fuel and other dangerous/poisonous substances create great pressure and threat on Istanbul.

The Bosphorus has sharp turns and strong currents that compromise maritime transportation as well as an intracity sea traffic that intersects vertically with the transit vessel traffic. Hundreds of thousands of inhabitants live on the two shores of the Bosphorus. During the day, Bosphorus serves as a trade, living and transit route for millions of Istanbulites. Each year, the Bosphorus is becoming more



CANAL ISTANBUL PROJECT WILL PREVENT THE 90-DEGREE INTERSECTION OF THE INTRACITY LINES - THAT CARRY 500 THOUSAND PASSENGERS ON A DAILY BASIS - WITH TRANSIT VESSELS, THUS PROVIDING A SAFE JOURNEY.

and more dangerous for transit vessel traffic. The annual number of vessel transits rose from 3-4 thousand 100 years ago to 45-50 thousand today. The average waiting time for large vessels in the Bosphorus is 14.5 hours. The waiting time may sometimes reach 3-4 days.

Within this framework, it has been required to plan an alternative passage corridor to the Bosphorus. Canal Istanbul will prevent the 90-degree intersection of the intracity lines that carry 500 thousand passengers on a daily basis with transit vessels, thus providing a safe journey. Moreover, it will be ensured that the share of sea route in intracity transportation will be increased.

In this context, the purpose of the Canal Istanbul Project is to:

- ◆ Preserve the historical texture and safety along the Bosphorus,
- ◆ Decrease the traffic burden of the Bosphorus,
- ◆ Ensure the traffic safety of the Bosphorus,
- ◆ Provide the navigation safety,
- ◆ Establish a modern settlement based on a new international waterway and horizontal architecture.



The annual number of vessel transits rose from 3-4 thousand 100 years ago to over 40 thousand today.



2 WHAT IS THE EXACT LOCATION OF CANAL ISTANBUL?

Approximately 6,149 meters of the Canal Istanbul corridor is within the borders of Küçükçekmece district, a portion of approximately 3,189 meters is within the borders of Avcılar district, 6,061 meters of it is within the borders of Başakşehir district and the remaining 27,383 meters of it is within the borders of Arnavutköy district.

3 HOW WAS THE ROUTE OF CANAL ISTANBUL PROJECT DETERMINED?

5 different corridor alternatives have been studied for determining the route of Canal Istanbul. These alternative routes have been analysed for their environmental impacts on surface water and soil resources, groundwater resources, transportation networks, cultural and natural properties; and compared for their

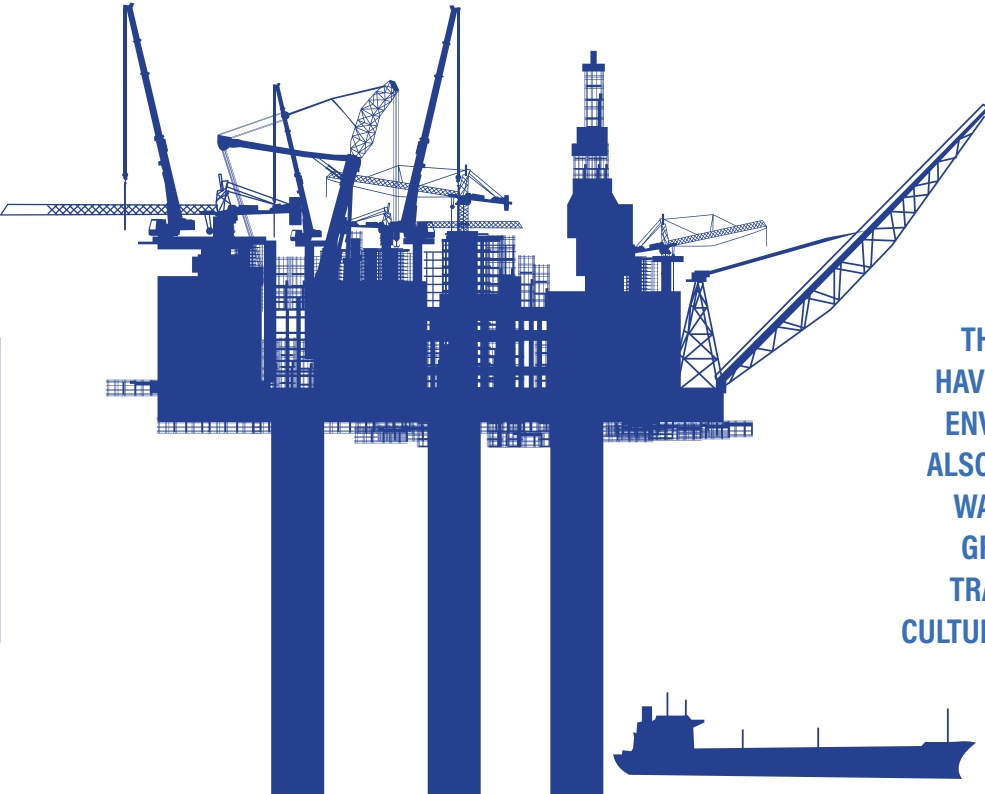
construction cost and duration. The largest tankers navigating on the world's seas have been taken as the basis to compare the corridors,

and the route along Lake Küçükçekmece -Sazlıdere Dam- east of Lake Terkos has been chosen as **the most convenient corridor.**



SCIENTIFIC STUDY

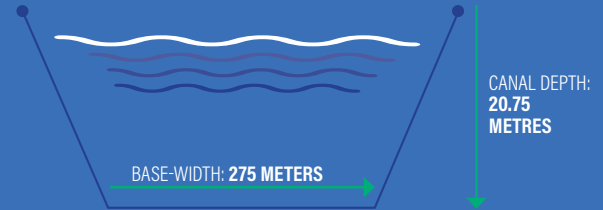
THESE ALTERNATIVE ROUTES HAVE BEEN ANALYSED FOR THEIR ENVIRONMENTAL IMPACTS AND ALSO THEIR IMPACTS ON SURFACE WATER AND SOIL RESOURCES, GROUNDWATER RESOURCES, TRANSPORTATION NETWORKS, CULTURAL AND NATURAL PROPERTIES.



4 WHAT ARE THE CROSS SECTIONS AND DIMENSIONS OF CANAL ISTANBUL PROJECT?

Canal Istanbul will have a length of around **45 km**, a base-width of **275 metres** and a depth of **20.75 metres**.

TOTAL LENGTH OF THE CANAL
45 KILOMETRES



5 WHICH UNITS AND FACILITIES OTHER THAN THE CANAL ARE PLANNED TO BE CONSTRUCTED UNDER THE CANAL ISTANBUL PROJECT?

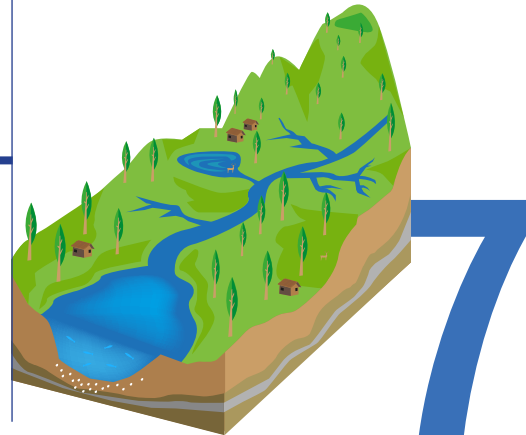
In addition to Canal Istanbul, 2 ports, 1 marina, 1 recreation area and 1 logistics centre are planned to be built under the Project. These additional structures are aimed to contribute to the economy and enhance the natural environment.

2 Ports

1 Marina
Recreation Area*
Logistics Centre

6 HOW MANY YEARS WILL IT TAKE FOR CANAL ISTANBUL PROJECT TO BE REALIZED?

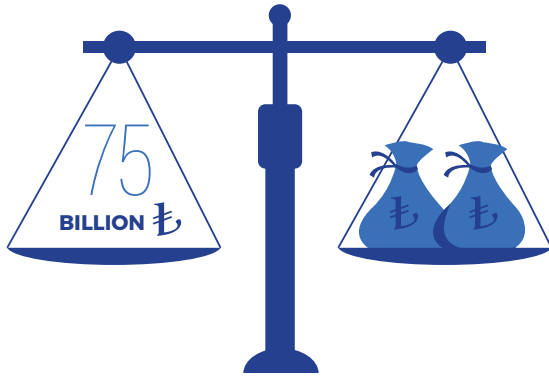
After the tendering process, the preparation stage prior to the construction of the canal is estimated to take 1.5 years and the construction is projected to last 5.5 years. The Project is planned to be completed in 7 years.



* **Recreation area**; defines the area allocated for people to rest and have fun not less than a certain size per person. Green areas are the sum of playgrounds, children's parks, relaxation, pleasure trip, picnics, entertainment, recreation and coastal areas reserved for the benefit of the society. The metropolitan-scale fairs, botanical gardens and zoos and regional parks are the areas that are closed to settlement.

7 WHAT IS THE CONSTRUCTION COST OF CANAL ISTANBUL?

The construction cost of Canal Istanbul is estimated to be **75 billion TL**.



8 WILL THE CONSTRUCTION OF CANAL ISTANBUL IMPOSE ANY ADDITIONAL TAX BURDEN ON OUR CITIZENS?

The Canal Istanbul Project will not impose any additional tax burden on our citizens. The project is planned to be implemented within the framework of the **Public-Private Cooperation**.

9 WHAT COULD BE SAID ABOUT THE FINANCIAL BURDEN AND BENEFIT TO BE CREATED BY CANAL ISTANBUL?

The project is for the safety and security of Istanbulites and the benefit of our country. This is too valuable to measure on a monetary scale. Once implemented, the international trade volume that we will achieve and also the increase in the strategic importance of our country cannot be evaluated in monetary terms.

Canal Istanbul Project will be completed by using public resources effectively, productively and conveniently. The added value created by such fields as logistics centres, ports, industrial zones, research centres, etc. will provide an economic contribution that cannot be compared with the cost of construction. There are different solution alternatives for the financing model.



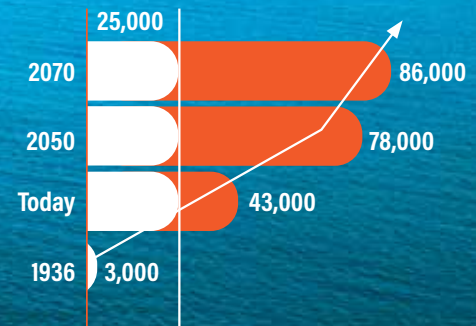
ONCE IMPLEMENTED, THE INTERNATIONAL TRADE VOLUME THAT WE WILL ACHIEVE AND ALSO THE INCREASE IN THE STRATEGIC IMPORTANCE OF OUR COUNTRY CANNOT BE EVALUATED IN MONETARY TERMS.

10 HOW MANY VESSELS WILL PASS THROUGH THE BOSPHORUS IN THE UPCOMING YEARS?

While the average number of vessels passing through the Bosphorus was 3000 in the 1930s and 43,000 in 2019, the number of vessels passing through the Bosphorus is expected to be 78,000 annually in 2050 and 86,000 in 2070. Considering the number of vessel transits, it is

seen that the Bosphorus has a density of sea traffic four times the Panama Canal and three times the Suez Canal.

Nevertheless, the Bosphorus has an annual safe transit capacity of 25,000 vessels.



ANNUAL SAFE TRANSIT CAPACITY

25,000

CURRENTLY ANNUAL TRANSIT

43,000

11

DO THE ACCIDENTS OCCURRING IN THE BOSPHORUS CREATE ANY IMPACT ON THE LIFE SAFETY AND ENVIRONMENT?



There have been many accidents in the Bosphorus. The vessels carrying fuel and dangerous substances have been a major threat to Istanbul from past to present. A total of 108 thousand tons of oil has leaked into the Bosphorus and 73 people have lost their lives especially in 6 major accidents that occurred since the 1960s. Today, 8 accidents, on average, occur annually in the Bosphorus.

12

IN TERMS OF VESSEL COLLISION AND GROUNDING, WHICH ONE IS SAFER: BOSPHORUS OR CANAL ISTANBUL?

The sharpest turning point of the Bosphorus is 80 degrees and the narrowest turning point is 698 meters. According to the data of recent years, the vessels in the Bosphorus wait about 14.5 hours with each pass. Under some circumstances, this waiting period can reach 3-4 days. While the traffic of the Bosphorus was comprised of 50-meter-long vessels in the 1930s, vessels up to 350 meters pass through the Bosphorus at present. This reduces both the manoeuvrability of the vessels and significantly increases the risk of accidents.

While 672 million gross tons of cargo passed through the Bosphorus in 2010, this amount increased to 849 million gross tons in 2018.

While the average number of vessels passing through the Bosphorus in the 1930s was 3,000 and 43,000 in 2019, the number of vessels passing through the Bosphorus in 2050 is expected to be 78,000 per year and 86,000 in 2070. **In the context of these figures, Canal Istanbul is 13 times safer than the Bosphorus in the most difficult parts in terms of collision scenarios. In terms of grounding scenarios, Canal Istanbul is 2 times safer than the Bosphorus, even in the most difficult parts.**



The comparison of results between Canal Istanbul and the Bosphorus reveals that Canal Istanbul is safer than the Bosphorus.



IN TERMS OF
COLLISION
SCENARIOS

13
TIMES SAFER



IN TERMS OF
GROUNDING
SCENARIOS

2
TIMES SAFER

13 WHAT PRECAUTIONS HAVE BEEN TAKEN TO ELIMINATE THE RISK OF ACCIDENTS WITHIN THE CANAL?

Along the Canal, 7 emergency binding areas, 2 tugboats and 2 mooring basins have been allocated for emergencies. In addition, 30 tugboats will always be ready along the Canal.



7 emergency binding areas for emergencies.



30 tugboats will always be ready along the Canal.

14 WILL CANAL ISTANBUL ALLOW FOR ONE-WAY OR TWO-WAY PASSAGE?

As a result of operation (traffic) simulation studies and efforts to determine the operation principle of the canal, Canal Istanbul was determined to have a one-way operation principle like the Bosphorus (Direction of 12 hours North, 12 hours South)



15 WHEN CANAL ISTANBUL OPENS, WHAT PERCENTAGE OF VESSELS CURRENTLY PASSING THROUGH THE BOSPHORUS WILL BE ABLE TO PASS THROUGH THE CANAL?

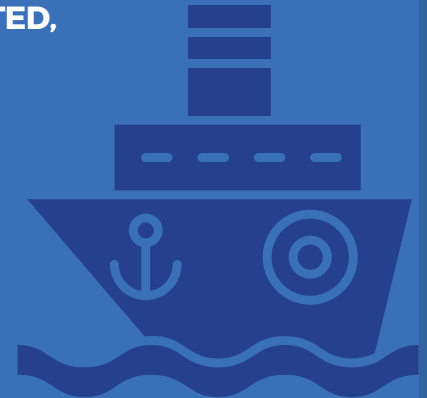
99% of the vessels passing through the Bosphorus will be able to pass through Canal Istanbul.

99%

16 WHEN CANAL ISTANBUL PROJECT IS COMPLETED, WHICH VESSELS WILL BE ALLOWED TO PASS THROUGH THE CANAL?

Vessels eligible to transit Canal Istanbul are as follows:

- ♦ Vessels in tanker vessel class with a maximum length of 275 m, width of 48 m and draft of 17 m,
- ♦ Vessels in container vessel class with a maximum length of 350 m, width of 49 m and draft of 16 m.

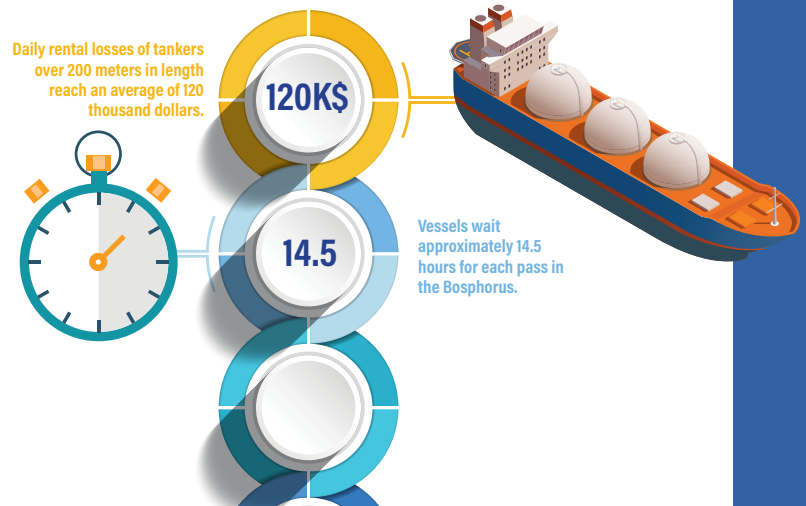


17 WILL VESSELS PREFER TO PAY A CHARGE TO PASS THROUGH CANAL ISTANBUL WHILE THEY CAN PASS THROUGH THE BOSPHORUS FOR FREE?

Currently, vessels transiting the Bosphorus are required to pay certain dues for lighthouses and rescue services, sanitary dues as well as towage and pilotage fees. There is no free transit.

In addition, the vessels wait approximately **14.5 hours** for each pass in the Bosphorus. For vessels carrying dangerous cargo such as tankers, the average waiting time reaches 30 hours. They may sometimes even have to wait for 3-4 days. According to the data of 2017, the tankers suffer from millions of dollars of economic loss due to the waits they are exposed to. Daily rental losses of tankers over **200 meters** in length reach an average of

120 thousand dollars. Taking into account the costs of waiting for vessels, transits through Canal Istanbul will be very advantageous for them.





18 WILL CANAL ISTANBUL ALLOW FOR A SAFE PASSAGE OF VESSELS?

Water modelling and vessel traffic simulation studies have been carried out in the world's leading laboratories.

In these studies, the developments in the world vessel industry and the logistics sector, port volumes of countries neighbouring the Black Sea as well as OECD data were taken into account. In addition, changes in the vessel traffic of the Bosphorus during the last 13 years have been taken into consideration. Vessel traffic forecast studies were carried out with the world leader Maritime & Transport Business Solutions Development (MTBS). Along the Canal, 7 emergency binding areas, 2 tugboats and 2 mooring basins have been allocated for emergencies. In addition, 30 tugboats will always be ready along the Canal.



SCIENTIFIC STUDY

Changes in the vessel traffic of the Bosphorus during the last 13 years have been taken into consideration.



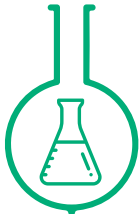
Along the Canal, 7 emergency binding areas, 2 tugboats and 2 mooring basins have been allocated for emergencies.

19 IS CANAL ISTANBUL PROJECT A LOCAL PROJECT IN TERMS OF ITS CONCEPT AND ENGINEERING PROJECTS?

It is an entirely local and national project.



20 HOW MANY SCIENTISTS AND EXPERTS HAVE WORKED FOR THE CANAL ISTANBUL PROJECT?



SCIENTIFIC STUDY

A total of **204 academicians and experts** from various universities and institutions have worked for the Canal Istanbul Project.

21 HAVE THE VIEWS AND SUGGESTIONS OF THE PUBLIC BEEN TAKEN WITHIN THE SCOPE OF THE PROJECT?

Within the scope of the EIA studies of the Canal Istanbul Project, the public participation meeting was held on 27.03.2018 at Arnavutköy New Municipality Building Cultural Centre. Furthermore, all opinions and criticisms were evaluated within the EIA process. The studies were brought to maturity in line with the opinions of 57 institutions and organizations.

EIA STUDIES

The public participation meeting was held at Arnavutköy New Municipality Building Cultural Centre.

57

57 INSTITUTIONS AND ORGANIZATIONS

The studies were brought to maturity in line with the opinions of.

22 WILL THE CANAL ISTANBUL PROJECT MAKE A CONTRIBUTION TO EMPLOYMENT?

Together with the Canal Istanbul project and other integrated facilities to be constructed, it is estimated that approximately 10,000 individuals will be employed at the preparation and construction phase of the project. At the operation phase, nearly 10,000 personnel are planned to be employed for the canal and other enterprises (ports, logistics centres, marina port etc.).

PREPARATION AND CONSTRUCTION

10,000 INDIVIDUALS

+

OPERATION

10,000 INDIVIDUALS



23 HAS CANAL ISTANBUL PROJECT BEEN INCLUDED IN THE CONSTRUCTION PLAN?

Canal Istanbul Project has been included in the construction plan. It was stipulated as waterway in Istanbul Province's 1/100000 scale European Side Environmental Plan approved on 23.12.2019. Under the cooperation protocol, Ministry of Environment and Urbanization continues to work on the small scale construction plan.





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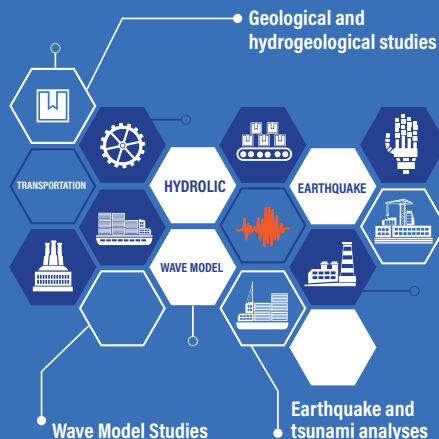
WILL CANAL ISTANBUL PROJECT VIOLATE THE MONTREUX CONVENTION AND OTHER INTERNATIONAL AGREEMENTS TO WHICH OUR COUNTRY IS A PARTY?

The commissioning of Canal Istanbul will not make any amendments to the legal status of the Bosphorus and Turkey's rights and liabilities arising from the international law and the Montreux Convention Regarding the Regime of the Straits. There will be no impact on other conventions, to which our country is a party, due to marine and terrestrial effects. Montreux

Convention mainly acknowledges the sovereignty of our country in the Straits and designates the passage of ships into the Black Sea and also the duration and conditions of their stay in the Black Sea. On the other hand, Canal Istanbul provides vessels with an optional additional facility that makes passage into the Black Sea easier and safer.

25 WHICH TECHNICAL STUDIES HAVE BEEN CONDUCTED UNDER CANAL ISTANBUL PROJECT?

Under the Canal Istanbul Project, following studies have been conducted: Geological, geotechnical and hydrogeological studies, hydraulic and hydrodynamic modelling studies, wave model studies, earthquake and tsunami analyses, landslide researches, water quality and sediment researches, vessel traffic analyses and navigation simulation studies, transportation management plan, environmental impact assessment studies, sociological impact studies, and studies on protection of historical sites and cultural heritage.



26 WILL A NEW POPULATION OF 1.2 MILLION COME TO ISTANBUL WITH CANAL ISTANBUL? WILL NEW SETTLEMENT AREAS BE ESTABLISHED AROUND CANAL ISTANBUL?

Two exemplary smart cities with horizontal architecture will be constructed under the Canal Istanbul project to give Istanbul a breathing room that includes traffic, social facilities and green spaces. The maximum population envisaged for the region is 500,000 people.

The new settlement areas to be built based on the neighbourhood concept will have low-intensity housing areas with low-rise buildings (maximum 4-5 floors) as well as commercial and public institutions, coastal facilities, urban regional social facilities, urban regional green spaces and playfields, university area, technology development zone, tourism zone, eco-tourism zone, health tourism zone, congress and fair area and logistic areas.

These settlement areas are not expected to result in an increase in the population of Istanbul. Settlement into these areas is expected to come from among the resident population of Istanbul.



THE AMOUNT OF EXCAVATION FROM THE CONSTRUCTION OF CANAL ISTANBUL WILL BE 1.17 BILLION CUBIC METERS. THE LOCATIONS WHERE THIS EXCAVATION WILL BE STORED HAVE BEEN DETERMINED INDEPENDENTLY OF ISTANBUL'S CURRENT EXCAVATION DUMP SITES.

27 WILL CANAL ISTANBUL HAVE A NEGATIVE IMPACT ON THE LOCAL COMMUNITY?

Social Impact Assessment studies have been carried out regarding the Canal Istanbul Project and there will be no negative impact on or any unjust treatment to the local community.

28 WILL 2 BILLION CUBIC METERS OF EXCAVATION COME OUT OF CANAL ISTANBUL? WILL THIS EXCAVATION FILL UP THE EXCAVATION SITES OF ISTANBUL FOR THE NEXT 50 YEARS?

The amount of excavation from the construction of Canal Istanbul will be 1.17 billion cubic meters. The locations where this excavation will be stored have been determined independently of Istanbul's current excavation dump sites and will not have any relation with other excavation sites within the city.



29 WHERE WILL THE EXCAVATION FROM CANAL ISTANBUL PROJECT'S EXCAVATION SITE BE DUMPED?

Following coastal fortifications, most of the excavated land will be primarily used as coastal fillings in the Black Sea and a recreation area will be created.

Moreover, with the coastal filling at the Black Sea exit on the western side of the Canal, the interaction of Lake Terkos with

the Black Sea will be minimized and this will contribute to its permanent sealing. The filling on the eastern part will ensure that the Logistics Centre, which is an important requirement for Istanbul, will be set up at the most convenient point of all transportation networks and will also contribute to the economy.

30 WILL THE EXCAVATION OF CANAL ISTANBUL AFFECT ISTANBUL TRAFFIC?

The excavation of Canal Istanbul will not affect Istanbul traffic. Within the scope of Canal Istanbul Project, the highest volume of excavation along the 45-km route is the part that is 17 km away from Black Sea entrance/exit. The material from the excavation will be transported to designated filling sites in the Black Sea through the roads that will be constructed along the Canal within its working corridor. Neither urban roads nor belt highways will be used.



The excavation of Canal Istanbul will not affect Istanbul traffic.



Neither urban roads nor belt highways will be used.

31 WILL THE EXISTING TEM AND D100 (E-5) ROADS BE CLOSED TO TRAFFIC WHEN THE CONSTRUCTION OF CANAL ISTANBUL BEGINS?

TEM and E-5 will not be closed to traffic during the construction of Canal Istanbul. Before the construction of the canal begins, bridges and tunnels will be built for the existing road and railway connections and all necessary

measures will be taken to prevent any disruption to transportation. The projects of these transportation corridors have been prepared in collaboration with relevant institutions and required agreement has been reached with them.



TEM and E-5 will not be closed to traffic during the construction of Canal Istanbul.



SCIENTIFIC STUDY

NONETHELESS, THE 2,475-YEAR REPETITIVE EARTHQUAKE PERIOD WAS EXAMINED UNDER THE EARTHQUAKE CONTINGENCY ANALYSIS; EARTHQUAKE ACCELERATION WAS CALCULATED IN ACCORDANCE WITH THE BIGGEST EARTHQUAKE LIKELY TO OCCUR, AND THE CANAL WAS DESIGNED ACCORDING TO THIS ACCELERATION SCORE.

32 WOULD CANAL ISTANBUL INCREASE THE EARTHQUAKE RISK?

Earthquakes occur as a result of the tectonic movements of hundreds-of-km-thick plates that make up the earth's crust. It is not possible for a shallow construction with a depth of 20.75 meters to trigger these masses, which are hundreds of kilometres thick. No human-made project is any different (subways, bridges, shopping centres with deep basements, etc.). Moreover, there is also no active fault line on the route of Canal Istanbul Project. North Anatolian Fault is 11 km away and Çınarcık fault is 30 km away from Canal Istanbul. Canal Istanbul will not cause any seismic movement in terms of both excavation/filling volume and water volume in the Canal.

33 WILL 8 MILLION PEOPLE OF ISTANBUL BE IMPRISONED ON AN ISLAND WITH CANAL ISTANBUL? HOW WILL THE SAFETY OF THIS POPULATION BE ENSURED IN CASE OF AN EARTHQUAKE?

The first action in an earthquake is to evacuate people from buildings and to transfer them to the nearest meeting area. This is planned separately for each district or neighbourhood. There is no action plan for 8 million people to flee to the West of the Küçükçekmece-Durusu line in an earthquake. This is beyond reason and science. On the contrary, it is essential for the protection of life and property that citizens not use their private vehicles after an

earthquake that the main arteries only be used by rescue teams and that civilian vehicle traffic be reduced. The perception of deprivation intended to be created with the term "island" is the product of a malevolent approach.

This approach is as meaningless as the issue of how, in the event of an earthquake, Japan, the land of islands and earthquakes, would escape from the island.

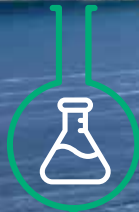


34 HAVE MEASURES BEEN TAKEN AGAINST THE RISK OF EARTHQUAKE-RELATED SOIL LIQUEFACTION IN THE PROJECT AREA?

Liquefaction analyses have been carried out along the project route. The highest level of measures offered by the technological opportunities of the day has been taken in areas where liquefaction potential has been identified, and the risk has been eliminated.



THE HIGHEST LEVEL OF MEASURES OFFERED BY THE TECHNOLOGICAL OPPORTUNITIES OF THE DAY HAVE BEEN TAKEN



SCIENTIFIC STUDY

LIQUEFACTION ANALYSES HAVE BEEN CARRIED OUT ALONG THE PROJECT ROUTE.



35 WHICH STUDIES HAVE BEEN CONDUCTED WITHIN THE SCOPE OF THE CANAL ISTANBUL PROJECT REGARDING THE POSSIBLE TSUNAMI IN THE MARMARA SEA AND THE BLACK SEA?

Tsunami modelling studies have been carried out to evaluate the tsunami risk that may occur in the Marmara Sea and the Black Sea. As a result of the studies carried out, it has been determined that the maximum wave height to be created by the landslides and seismic movements in the region at the same

time will not exceed,

- ◆ 117 cm at the Marmara Sea entrance,
- ◆ 68 cm at the Black Sea entrance.

This, therefore, indicates a limited value.



36 IS THERE ANY POTENTIAL LANDSLIDE AREA ALONG THE ROUTE OF CANAL ISTANBUL PROJECT?

As a result of an evaluation carried out on 1/25,000-scale Landslide Inventory Maps of the General Directorate of Mineral Research and Exploration (MTA), no active

or new landslide areas that may create potential hazards during and after the canal construction in and around the project route have been identified.

37 IS IT TRUE THAT THE CANAL ISTANBUL PROJECT WILL DESTROY ISTANBUL'S DRINKING WATER RESOURCES AND CONDEMN ISTANBUL TO THIRST?

The allegation that Canal Istanbul Project will condemn Istanbul to thirst is not true. Istanbul's annual water consumption is approximately 1 billion 60 million cubic meters.

The current efficiency of Lake Terkos is 133.9 million cubic meters per year. With Canal Istanbul, the efficiency of the lake will decrease by 2.7 million cubic meters per year. Its effect on Istanbul in general is almost non-existent and it is only 2.5 per thousand.

The current efficiency of Sazlıdere Dam is 49 million cubic meters per year. 61 per cent of Sazlıdere Dam will remain within the Canal area, but the remaining 39 per cent will be preserved. With Canal Istanbul, the efficiency of the dam will be 19 million cubic meters. In terms of efficiency, the difference will be 30 million cubic meters per year. The effect of water loss here will be 2.8 per cent in total for Istanbul.

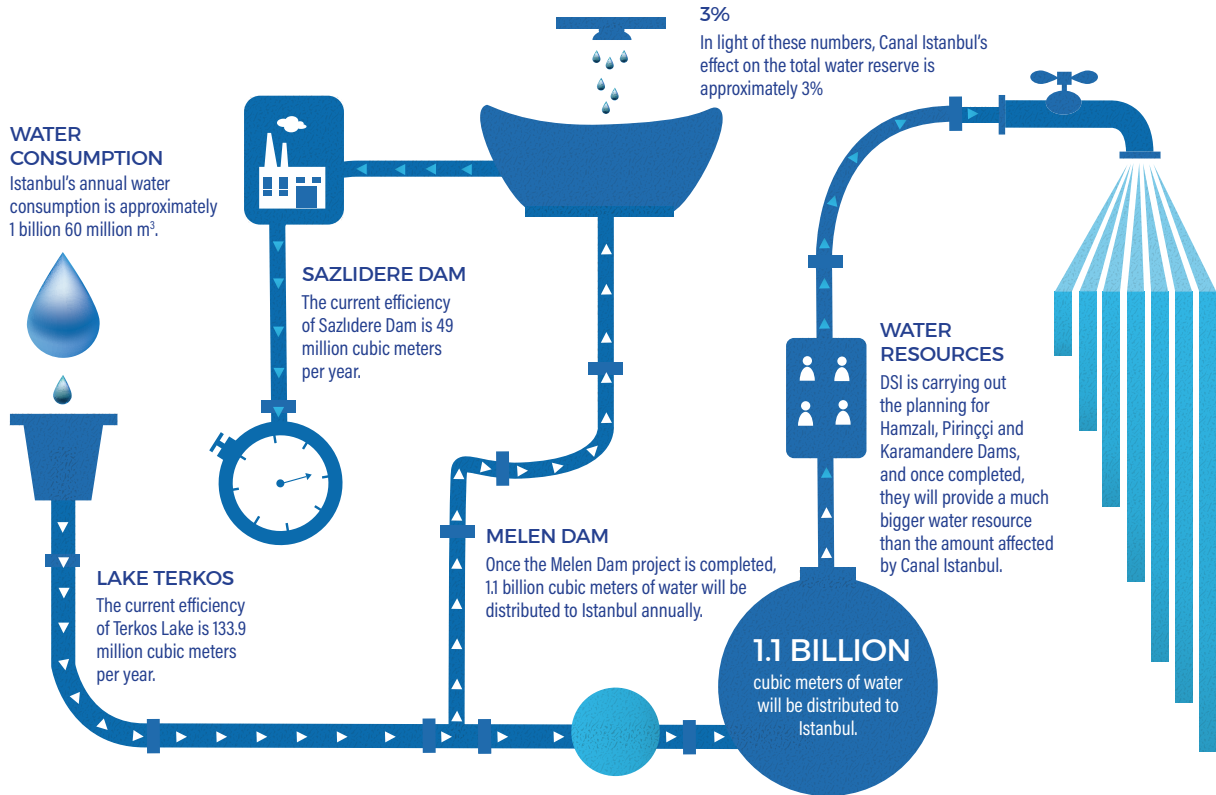
In light of these figures, Canal Istanbul's effect on the total water reserve is approximately 3%.

In addition, once the Melen Dam project, which is the main resource that will carry Istanbul to the future, is completed, 1.1 billion cubic meters of water will be distributed to Istanbul annually. The benefit provided by Melen Dam is 34 times the loss to derive from Canal Istanbul. The Melen Project will double Istanbul's water resources.

Furthermore, the General Directorate of State Hydraulic Works (DSI) is carrying out the planning for Hamzalı, Piriñçi and Karamandere Dams in order to increase the water reserve of Istanbul, and once completed, they will provide a much bigger water resource than the amount affected by Canal Istanbul. Our state acts by planning the present and the future of Istanbul and secures its water needs, just like it did in the past.



OUR STATE ACTS BY PLANNING THE PRESENT AND THE FUTURE OF ISTANBUL AND SECURES ITS WATER NEEDS, JUST LIKE IT DID IN THE PAST.





38 WILL SALT WATER LEAK INTO LAKE TERKOS (DURUSU) WITH THE CONSTRUCTION OF CANAL ISTANBUL?

The water level of Lake Terkos is higher than that of the Canal and the movement of salt water upstream is not possible. As a result of the Groundwater Model and Hydrogeological studies, it is understood that Canal Istanbul will not lead to salinization in Lake Terkos or any other area.

A leak or groundwater swelling is not expected due to the elevation difference. In addition, in order to prevent the underground water reserves and Lake Terkos from being affected by sea water, the surface of Canal Istanbul will be covered with a special impermeable material and special screens, barriers and elastic walls will be built on the lateral surfaces.

39 WHAT WILL BECOME OF SAZLIDERE DAM?

Sazlıdere Dam will be included in the Canal Istanbul route. Some of the loss will be recovered by the construction of the Yeni Şamlar Dam. The overall fall on the Istanbul scale is 2.8 per cent. On the other hand, the on-going Melen Project will provide Istanbul with more than its entire reserve.

40 WILL CANAL ISTANBUL PROJECT CREATE A NEGATIVE IMPACT ON THE HISTORICAL SITES OF ISTANBUL?

An "Archaeology Report" has been prepared in order to determine the current status of the archaeological and immovable cultural heritage in the area of the Canal Istanbul Project and the possible effects of the project construction activities on the archaeological and immovable cultural assets in the project impact area.

The natural site areas, which reflect the historical, natural, cultural identity and bring the past to the present, will be preserved as archaeological park areas by adopting the principle of protection-utilisation balance. These are:

- ◆ Küçükçekmece Inner Outer Beach Archaeological and Natural Site Area (Avcılar Küçükçekmece)
- ◆ Lake Küçükçekmece and Surroundings Grade 1 and 3 Archaeological Site Areas (Avcılar-Başakşehir)
- ◆ Resneli Farm Archaeological and Historical Site Area (Başakşehir)
- ◆ Filiboz Desolation Grade 1 Archaeological Site Area (Arnavutköy)
- ◆ Spradon Grade 1 and 3 Archaeological Site Areas (Avcılar)
- ◆ Region Grade 1 and 2 Archaeological Site Areas (Küçükçekmece)
- ◆ Yarımburgaz Cave Grade 1 Archaeological Site Area (Başakşehir)

The nearest historical sites around the route of Canal Istanbul consist of Ancient City of Bathenoa and Yarımburgaz Caves. Canal Istanbul Project does not have any negative interaction with these two sites.

- ◆ Ancient city of Bathenoa is outside the Canal work site.
- ◆ Yarımburgaz Caves are outside the Canal work site.

Furthermore, in case of possible archaeological finds, studies will be conducted within the scope of Law on the Protection of Cultural Properties numbered 2863 and they will be added into our culture inventory. For example, Marmaray Project has provided thousands of cultural assets to the cultural inventory of our country.



SCIENTIFIC STUDY

CANAL ISTANBUL DOES NOT HAVE ANY NEGATIVE INTERACTION WITH ANCIENT CITY OF BATHENOA AND YARIMBURGAZ CAVES.



SCIENTIFIC STUDY

UNDER THE STUDIES, CRITICAL REGIONS ALONG THE PROJECT ROUTE AND THE FLORA, FAUNA TYPES AND HABITATS IN THESE REGIONS HAVE BEEN ASSESSED. NECESSARY MEASURES TO PRESERVE THE ENDEMIC AND RARE SPECIES HAVE BEEN OUTLINED IN THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT.



47 WHAT HAS BEEN DONE TO PRESERVE THE FLORA AND FAUNA UNDER CANAL ISTANBUL?

Under the Project, 18 experts have worked on the flora and fauna throughout the 4 seasons. They include;

- ◆ 2 Flora Experts (Expert who studies plant species)
- ◆ 1 Invertebrate Expert
- ◆ 1 Herpetologist (Expert who studies reptiles)
- ◆ 1 Ornithologist (Expert who studies bird species)
- ◆ 2 Mammalogists (Expert who studies mammals)
- ◆ 2 Experts on Inland Water Fish
- ◆ 9 Marine Biologists

Under the studies, critical regions along the project route and the flora, fauna types and habitats in these regions have been assessed. Necessary measures to preserve the endemic and rare species have been outlined in the environmental impact assessment report.

42

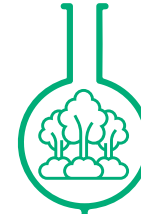
WHAT HAS BEEN DONE TO PROTECT THE NATURE OF ISTANBUL WITHIN THE SCOPE OF CANAL ISTANBUL?

Within the scope of Canal Istanbul Project, sensitive areas located on the Project route have been examined in detail. These studies have been reviewed in the EIA Report and recommendations have been made for their protection.

- ◆ Actions were and will be taken in accordance with the relevant articles of Forest Law numbered 6831 for the protection of forest areas.
- ◆ There is no construction on the shores of Lake Küçükçekmece due to the Canal section, and this area will continue to be protected with the status of Natural Protected Area. The master plan of the region with a scale of 1/100,000 has been prepared and announced.
- ◆ Canal works have been planned in a way not to affect the water quality of Lake Terkos.
- ◆ The permanence of habitats and natural life will be maintained on both sides of the Canal and the land will be continuously monitored throughout the process of land preparation, construction and operation.
- ◆ Monitoring activities will be implemented in the form of species-based actions and activities with the "Biological Diversity Action Plan" indicated in the EIA Report.

Environmental impact models have been developed by using both the existing measurements and field measurements in the technical studies carried out under Canal Istanbul Project.

Considering the marine pollution caused by vessels passing through the Bosphorus and also the accidents that occurred in the Bosphorus until today, the primary objective of Canal Istanbul Project is to protect the nature, history and, most importantly, the security of people's lives and property in Istanbul.



SCIENTIFIC STUDY

ENVIRONMENTAL IMPACT MODELS HAVE BEEN DEVELOPED BY USING BOTH THE EXISTING MEASUREMENTS AND FIELD MEASUREMENTS IN THE TECHNICAL STUDIES CARRIED OUT UNDER CANAL ISTANBUL PROJECT.

43 WILL CANAL ISTANBUL PROJECT LEAD TO A REDUCTION IN FOREST AND GREEN SPACES?

The region will be provided with a total area of 91.24 million m², including a new forest area of 4.67 million m² and a regional green space and playfields of 86.5 million m².



THE REGION WILL BE PROVIDED WITH A NEW FOREST AREA OF 4.67 MILLION M².

44 WILL THERE BE ANY RISK OF LOSING GROUNDWATER DUE TO CANAL İSTANBUL?

Within the scope of groundwater modelling, 8 pumping and 17 observation wells have been drilled along the Canal Istanbul and the input to serve as data for the groundwater flow model has been obtained from the field. The groundwater has been modelled with three-dimensional models, and thus engineering solutions have been planned to provide sealing in permeable ground sections for the protection of underground water resources. There will be no leakage in the groundwater.

45 WHAT IMPACT WILL CANAL ISTANBUL HAVE ON HABITATS OF THE FISH?

Simulations and calculations have been made for before and after Canal Istanbul by taking seasonal changes into consideration. As a result of these analyses, it has been found that the amount of dissolved oxygen required for the life of sea creatures has neither changed nor decreased due to the Canal in any time of the year. In other words, the natural living conditions in Marmara and Black Sea will be sustained.

In addition, monitoring action plans have been established for the construction and operation phases for ecology and water quality.



46 WILL CANAL ISTANBUL HAVE ANY IMPACT ON AGRICULTURAL LANDS?

In the EIA Report, specific solutions are provided on agricultural lands along the Canal Istanbul route. A larger and wider recreation area is planned with the fertile agricultural soil excavated from the Canal.

Moreover, it can be seen that a total of 91.2 million square meters of special area, including 4.7 million square meters of forest area and 86.5 million square meters of regional green space with playfields, will be created in the 1/100,000 scale Environmental Plan announced by the Ministry of Environment and Urbanization.

47 WILL CANAL ISTANBUL PROJECT LEAD TO CLIMATE CHANGE?

All meteorological studies have been carried out within the framework of the Canal Istanbul project. There will be no climate change in the region after the construction of the Canal.

48 IS IT POSSIBLE FOR CANAL ISTANBUL PROJECT TO TRIGGER FLOODS AND INUNDATIONS?

Many factors cause floods. Among these factors are climate, vegetation, human activities, geological structure and soil properties, disruption of natural equilibrium in basins, heavy and sudden downpour.



WHEN THESE FACTORS ARE TAKEN INTO CONSIDERATION, FLOODS AND INUNDATIONS ARE NOT EXPECTED AS SHOWN IN THE TURKISH FLOOD INUNDATION MAP, WHICH ALSO COVERS THE CANAL ISTANBUL PROJECT.



SCIENTIFIC STUDY

THERE WILL BE NO CLIMATE CHANGE IN THE REGION AFTER THE CONSTRUCTION OF THE CANAL.

49 WILL MARMARA BE POLLUTED AS THE TWO-WAY CURRENT SYSTEM IN THE BOSPHORUS WILL BE ELIMINATED BY CANAL ISTANBUL?

Pollution will not increase in the Marmara Sea with Canal Istanbul Project. Seasonal measurements have been made within the scope of studies and modelling. Simulations and calculations have been made for before and after Canal Istanbul.

Flow rate changes and current velocities have been determined with the measurements made in the field as well as hydrodynamic model drafted using current data, and the results obtained have been reflected in the water quality model. Migrations of dissolved oxygen and other substances have been observed in the water quality model and no negative impact has been found. Natural living conditions in Marmara and Black Sea will be sustained.

AS A RESULT OF THE ANALYSES, IT HAS BEEN SEEN THAT DISSOLVED OXYGEN HAS NOT FALLEN BELOW THE REQUIRED LEVEL FOR THE LIFE OF SEA CREATURES DUE TO THE CANAL IN ANY TIME OF THE YEAR.

50 WOULD THE MARMARA SEA START SMELLING WITH THE OPENING OF THE CANAL?

Opening of the Canal Istanbul will not lead the Marmara Sea to start smelling. Scientific studies on the effects of the Canal on the Straits and Marmara Sea (hydrodynamics, water quality and sediment model studies) have been conducted and it has been determined that there will not be any negative impact on the Marmara Sea. In the hydrodynamic model, the whole system of straits is modelled using existing perennial data and field measurements. At present, there is an existing flow from the Black Sea to the Marmara Sea and vice versa. The communication between the existing situation and the Canal following the construction of the Canal has been analysed. The results of analyses have shown that the Canal has no effect that reduces the oxygen amount and has no negative impact on marine life.



At present, there is an existing flow from the Black Sea to the Marmara Sea and vice versa.



It has been found that the Canal will not have any negative impact on Marmara Sea.

CANAL ISTANBUL IN 50 QUESTIONS

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