How it all started

The Suez Canal has symbolized Egypt›s progress and independence since it was built in 1869. It has always been an artery of prosperity and peace to Egypt, its great people, and the whole world as well. Egypt has another rendezvous with destiny with the inauguration of a second waterway for the Suez Canal. It is an exceptional day in Egypt›s modern history when Egypt inaugurates its first mega-project; the New Suez Canal. The new canal has been described as potentially altering the global way of life and the map of the world. The project is important for reasons other than the extension and broadening works that doubled the canal›s capacity as an international maritime route. It is a major contribution to humanity, and will not only promise investors lucrative returns, but will also be a major contribution to the movement of international trade as well as the stability and prosperity of the region. Due to potential increase in volume of world trade and as the New Suez Canal project is linked with Egypt›s national project of the Suez Canal Area Development, the Suez Canal Authority has been very keen on executing and finishing the whole project within the space of a single year. This clearly manifests and explains the increased enthusiasm for the project and the will to complete it in just a short time as opposed to the three years implementation period as suggested by some studies.

President Abd El-Fattah Al-Sisi Signs the digging commencement document of the New Suez Canal in August 2013

Digging a new canal is a must for increasing the accommodation capacity of the Suez Canal.

There are two major issues related to the vessels transiting the Suez Canal:

Ship size capacity:

Ship size capacity means the canal›s capacity concerning the tonnage of transiting vessels. The canal can accommodate up to %62 of world tanker fleet, %92 of bulk ships fleet, %100 of container ships fleet, and all other kinds of ships.

Numerical capacity:

Capacity, here, means the number of ships that can cross the canal within a one-day timeframe.

The numerical capacity of the Suez Canal is affected by many factors such as:

- *Length of doubled parts of the waterway.*
- *The time interval between transiting vessels which is crucial for stopping in case of any emergencies.*
- *Speed of transiting vessels, which ranges from 13 to 16 km/hour depending on the ship size, cargo and type, as well as its location on the waterway.*
- *Variety of vessels transiting the canal as far as size, type, and tonnage are concerned. This affects the eligible number of vessels that can use the canal per day. As speed and time interval vary according to their size, tonnage, and type. The bigger the number of large vessels is, the larger the intervals get, and that eventually leads to decreasing the canal›s capacity and vice versa. The canal can now accommodate up to 78 standard ships every day but it is a maritime economic tendency to make use of economy of scale through increasing the volume of ships and cutting their numbers down.*

A standard containership while transiting the canal

CSCL GLOBE , the worlds largest containership, of 193,000 tons and a maximum capacity of 19,000 containers while transiting the the canal northbound

The numerical capacity of the waterway now is up to 78 standard ships (the time interval between standard ships is 10 minutes). If the real vessel is very large, then the time interval gets up to 30 minutes, consequently, it takes as much time as needed for 3 standard ships to cross the canal. In the same context, if the time interval is 20 minutes, then it takes as much time as needed for 2 standard ships to cross the canal. Thus, the numerical capacity depends on the duration that the convoy takes to cross the canal not on the actual number of vessels within the convoy.

Building a new canal is a must in order to increase the capacity of the Suez Canal, especially for south bound convoy which had to wait till north bound convoy passes through the waterway before the New Suez Canal. That is why the New Suez Canal project was initiated so that the importance and the significance of the Suez Canal as the biggest and the most important waterway in the world can be maintained.

new suez canal

Due to potential increase in volume of world trade, Egypt has been very keen on maximizing the length of doubled parts of the water way to shorten both the transiting and waiting time for vessels, which shall result in minimizing the cost of the trip for transiting vessels, thus attracting a bigger number of ships to use the canal. All this contributes to raise the classification of the Suez Canal and increasing its competitiveness to the disadvantage of other alternative routes.

About %10 of world trade uses the Suez Canal. THE SAVING IN DISTANCE ACHIEVED BY USING THE SUEZ CANAL, RANGING from %23 to %88 is a quite adequate proof of the importance of the Suez Canal.

Domestically, the canal has been contributing to the national income of Egypt of foreign currency with total amount 91.7 billion dollars for the last four decades. This clearly manifests that the Suez Canal Authority saves no effort to develop the waterway to cope with evolutions taking place in the maritime industry.

The first phase of development works started after reopening the canal in 1975 and ended on 16 December, 1980, which made a big move on the way forward concerning the canal revenues which reached 940.2 million dollars in 1982 compared to 339.6 million dollars in 1967. The Suez Canal revenues started to gradually increase thanks to these development projects until it reached 5.46 billion dollars in 2014. Due to potential increase in volume of world trade and as the New Suez Canal project is closely linked with Egypt›s national project of the Suez Canal Area Development, the Suez Canal Authority made the technical designs, plans, and time schedule for the project. As soon as Adm. Mohab Mamish, was privileged to review the project with his Excellency Abdel Fattah El Sisi, President of Egypt, who expressed his admiration of the project, hoping it to be the twenty first century project for the development of Egypt same as were the eighteenth and nineteenth century projects.

The Idea Behind the Project

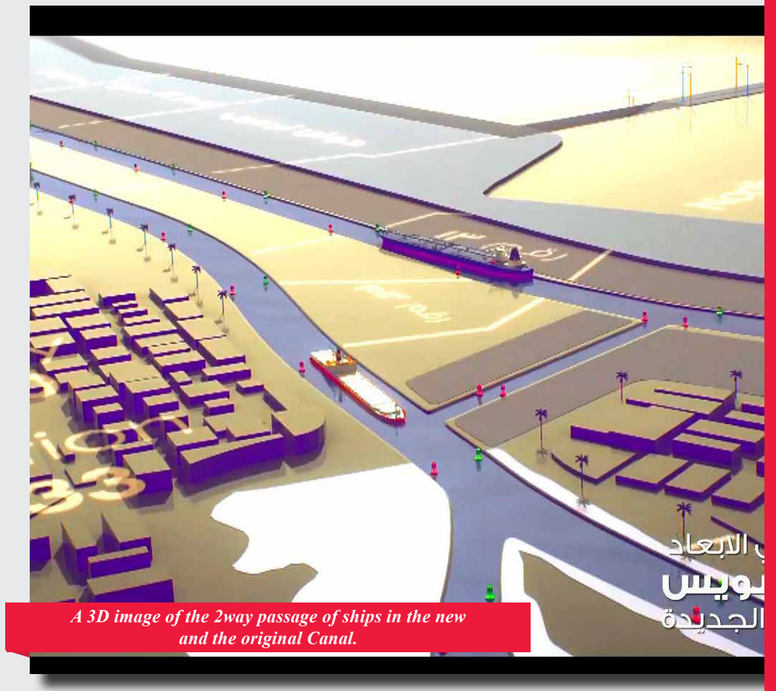
1. Achieving maximum length of the doubled parts of the canal to help reduce the transit time of vessels through it and consequently the total cost of their entire trip.
2. Minimizing the waiting time at the anchorage area of transiting vessels. This will add up to the canal's ranking.
3. Coping with the ever-growing world trade.
4. Eliminating any ideas sought by others to introduce alternative routes.
5. A leap on the way to the success of the Suez Canal Area Development Project.

The giant containership "CMA CGM VASCO DE GAMA" while transiting the Suez Canal Northbound.

Objectives of the Project

1. Increasing the canal's numerical capacity from 49 vessels per day in 2014 up to 97 vessels per day by 2023.
2. Increasing the canal's revenues from 5.3$ billion in 2014 up to 13.2$ billion by 2023.
3. Creating around 1 million job opportunities for residents of the Canal area, Sinai and neighboring governorates, and creating new urban societies.

This project aims to increase the Egyptian national income in foreign currency after maximizing the doubled lengths in the canal, and reduce the transit time of the southbound vessels from 18 to 11 hours, thus, reducing their waiting time and the total cost of their entire trip. This makes the Suez Canal the canal of choice by the ship owners and shipping lines, and raises its ranking in the maritime community.



A 3D image of the 2way passage of ships in the new and the original Canal.

Timeframe and Budget of the Project

The execution of the project was scheduled to end in 36 months, but this duration was tremendously cut short to 12 months as per the instructions of H.E. Abd El-Fattah El-Sisi, the president. That aim was successfully met and the inauguration ceremony took place after exactly one year.

The project's estimated cost of US$ 8.2 billion, equivalent to EGP 60 billion, (US $ 4.2 billion for the digging of the new canal and US $ 4 billion for the constructions of 6 tunnels under the Suez Canal) was raised by the Egyptian people in only 8 days. This record achieving act demonstrated the people's patriotism and an unparalleled ability to conquer any difficulties once there is trust in the political leadership.

H.E. the Prime Minister, Eng. Ibrahim Mehleb, witnessing the signing of the international dredging consortium between H.E. the Chairman of the Suez Canal Authority (SCA), Adm. Mohab Mamish, on behalf of it, and Eng. Yasser Zaghloul on behalf of the consortium.

Execution Steps of the Project

According to plan, the New Canal reaches 72 km. in length. This includes digging 35 km. with a depth of 24 m. and a width of 320 m. so the draught reaches 66 ft., and the deepening and widening of the western bypasses in the Great Bitter Lakes area at a total length of 27 km., and Al-Ballah western bypass at 10 km. in length.

The entire process is divided into two phases; the first is dredging approximately 250 million m3 of soil under the water level with the cost of about EGP 15 billion, and the second is the dry excavation carried out by the Engineering Authority of the Armed Forces of approximately 250 million m3 with the cost of about EGP 4 billion.

The dredgers of the SCA worked side by side with the foreign dredgers, divided into two consortiums, hired to carry out the project. The first consortium was "Challenge Consortium" led by the UAE National Marine Dredging Company (NMDC) and working with two Dutch companies Boskalis and Van Oord, and the Belgian company (Jan De Nul). The second consortium was "Hope Consortium" and it comprised the Belgian company (Dredging International) and the American company (Great Lakes).

H.E. the Prime Minister, Eng. Ibrahim Mehleb, witnessing the signing of the international dredging consortium between H.E. the Chairman of the Suez Canal Authority (SCA), Adm. Mohab Mamish, on behalf of it, and Mr. Bieer catux on behalf of the consortium.

Table of the Development of the Dredging Works in the New Canal

Statistics of Dredging Works and Amounts in the New Canal

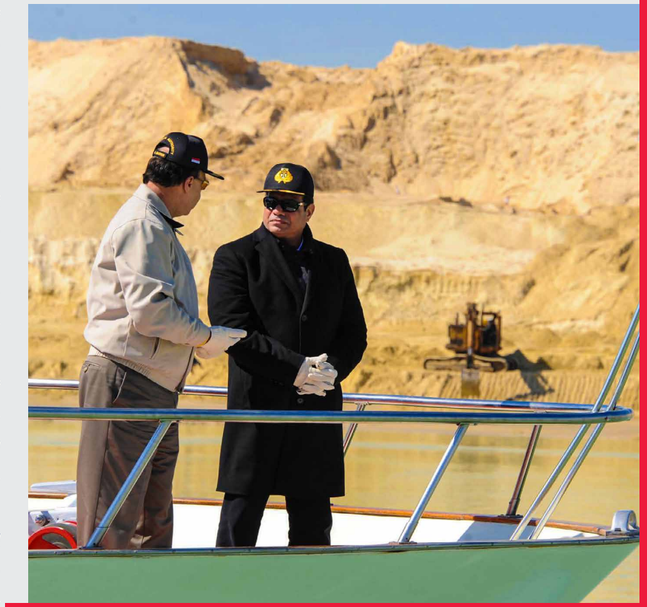
Month	Monthly Amounts (m^3)	Daily Average (m^3)	Total Percentage of Executed Work (%)
August 2014	2,500,000	100,000	0.97%
September 2014	3,250,000	108,333	2.23%
October 2014	3,750,000	120,970	3.68%
November 2014	738,853	29,554	3.97%
December 2014	12,081,896	389,738	8.65%
January 2015	22,792,281	735,234	17.49%
February 2015	32,275,707	1,152,703	30%
March 2015	41,479,281	1,338,041	46.07%
April 2015	39,942,264	1,331,408	61.55%
May 2015	46,289,951	1,493,224	79.50%
June 2015	31,335,837	1,277,861	91.36%
July 2015	22,302,044	719,420	100%
Total	258,000,000		

The role of Suez Canal Authority is not limited to the supervision of dredging works of the new Suez Canal but SCA works in parallel to provide all the necessary elements to ready the waterway through:

- Preparing designs, technical drawings and specifications of the required revetment works to protect the sides and inclinations of the canal.

- 30 km of old revetments and sheet piles were removed and new revetments were established along the canal with a length of 100 km, at an estimate cost of EGP 500 million. The new revetments were established using locally produced natural stones from Sinai quarries to reduce the potential maintenance works in the future.

- The revetments establishment required a concerted effort of 131 task force teams from the public and private sector; starting at a daily progress rate of 100 linear meters



His Excellency Abd Al-Fattah Al-Sisi while inspecting the dredging works at the new Suez Canal.

and reaching a daily progress rate of 1500 linear meters, which demonstrates the ability of the Egyptian to overcome different obstacles and difficulties.

- Designing and executing 24 utility syphons (Water – Electricity – Communication – Signaling – Fuel) with the length of 600 meters and of different diameters by SCA affiliated companies (Canal Mooring and Lighting Company and Nile Shipyard Company)

- Designing and executing the required marine stations to guide and monitor the transiting vessels, in addition to designing and executing quays and scaffolds in front of these marine stations.

- Providing navigational aids like guiding buoys, which mark the waterway and its sides around the clock. It is worth mentioning that along the canal there are 110 advanced buoys; carefully selected to keep pace with the world's most advanced buoys. The floating body is from Italy while the marine lantern is from Spain, and it is all assembled by SCA marine trained labor. Once the buoy is operational, it starts its data transmission immediately to the control stations.

- According to the scheme; a new guiding station was established, navigational maps of the new canal were printed, in addition to configuring electronic maps and designing a complete simulation scenario to train the pilots on navigation through the new canal.

- Amendments were added to SCA navigational regulations in line with the establishment of the new canal.

- SCA represented in one of its affiliated companies (Canal Harbor & Great Projects), established berths for 3 ferries in a period of time that did not exceed 3 months, in prelude of operating the ferries and berths to link between the eastern and western banks of the Suez Canal till the digging completion of the tunnels included in the Suez Canal Area development Project.

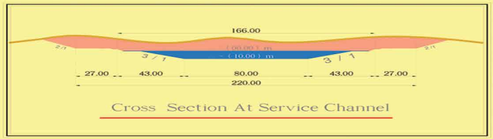
The ferry boat "Tahya Misr" built at Suez Canal Authority shipyards

Side embankments works of the new canal

SCA divers while setting up buoys in the new Canal

The dredger "Tarek Ibn Zyad" during works execution at Al Ballah area.

Present Canal
The New Canal
Lands under Jurisdiction of the Suez Canal Authority
Borders of the Lands under Jurisdiction of the Suez Canal Authority According to Decree No.114
Proposed Tunnels



Serial	Works to be Carried out	Unit	Quantity
1	Dry Excavation	Million m³	
2	Dredging Works	Million m³	
	Total of Dry Excavation and Dredging Works	Million m³	
3	Construction of Dumping Basins' Bunds	Million m³	
4	Stone Revetments	Kilometer	

Length of Western Ballah by - Pass 10 km

Length of New Canal 35 km
Deepening and Widening of by-passes for a Lenght of 37 km
Total Length of New Canal Project 72 km

Length of Western by - Passes in the Great Bitter Lakes 27 km

Sinai Peninsula

Experimental Fish Farming Basins with a Lenght of 9 km
200 m Wide and an Area of 1.8 million m²
that equalls 428 feddans

Experimental Fish Farming Basins with a Lenght of 6 km
200 m Wide and an Area of 1.2 million m²
that equalls 285 feddans

Km 50.00

Km 95.00

Km 122.00

الاتجاه إلى محافظة بورسعيد ← محافظة الإسماعيلية → الاتجاه إلى محافظة السويس

Channel Development Phases up to Year 2010

مراحل التطوير للمجرى الملاحى حتى عام ٢٠١٠

غرب West — شرق East

Total Wetcross - Sectional Area

1200 m2	Upon Nationalisation	(35 feet)	1956
1800 m2	Nasser Project for Development	(38 feet)	1967
3600 m2	First Stage of Development	(53 feet)	1980
4800 m2	Existing Phase	(62 feet)	2001
5200 m2	Under Executing Phase	(66 feet)	2007
6000 m2	Projected Second Stage	(70.9 feet)	2010

مساحة القطاع المائى الكلية للقناة

١٢٠٠ م٢ عند التأميم	(٣٥ قدم)	١٩٥٦
١٨٠٠ م٢ مشروع ناصر للتطوير	(٣٨ قدم)	١٩٦٧
٣٦٠٠ م٢ المرحلة الأولى للتطوير	(٥٣ قدم)	١٩٨٠
٤٨٠٠ م٢ المرحلة الحالية	(٦٢ قدم)	٢٠٠١
٥٢٠٠ م٢ المرحلة الجارى تنفيذها	(٦٦ قدم)	٢٠٠٧
٦٠٠٠ م٢ المرحلة الثانية المستقبلة	(٧٠٫٩ قدم)	٢٠١٠

مسقط أفقى لقناة السويس
PLAN OF THE SUEZ CANAL

شمال North

البحر الابيض المتوسط
MEDITERRANEAN SEA

شبه جزيرة سيناء
SINAI PENINSULA

البحر RED SEA

بورسعيد PORT-SAID

السويس SUEZ

بحيرة المنزلة Manzala Lake

البحيرات المرة الكبرى Great Bitter Lake

البحيرات المرة الصغرى Little Bitter Lake

الإسماعيلية ISMAILIA

فايد Fayed

جبل جنيفة GEBEL GINEIFA

جبل شيرويت GEBEL SHABRAWIT

جبل عتاقة GEBEL ATTAKA

الادارة الهندسية
Engineering Department

Canal 1869 - 1956	القناة ١٨٦٩ - ١٩٥٦	
Canal 1956 - 2006	القناة ١٩٥٦ - ٢٠٠٦	
Watting Area	منطقة انتظار	
Fresh Water Canal	ترع مياه عذبة	
Main Roads	طرق رئيسية	
Railways	سكك حديد	
Signal Station	محطة ارشاد	
Ferry	معدية	

Scale 1: 100000 مقياس ١/١٠٠٠٠٠

suez canal tunnels

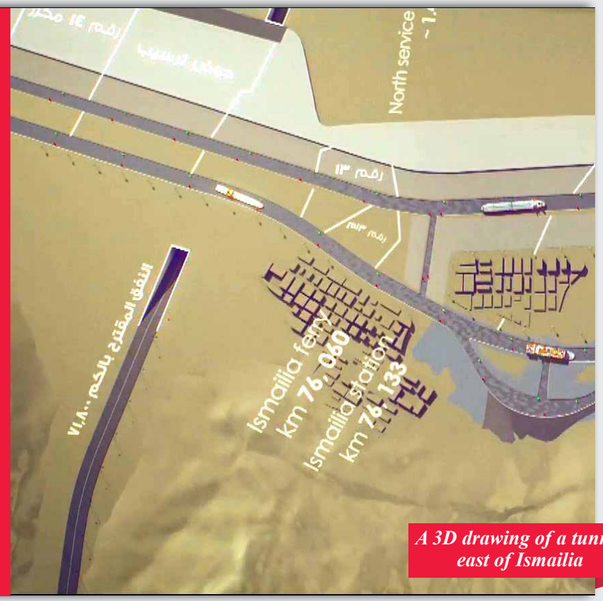
An archived photo for a tunnel digging machine

Ismailia Tunnels:

Building three tunnels at 72 kilometers mark, two of them will be allocated for roads and the third will be for a railway, to help linking Sinai to the western bank of the canal.

Portsaid Tunnels:

Building two tunnels for roads at 17 kilometer mark, each of 3.5 km- long and each will have a diameter of 11m and be built at 48m deep under the water surface. A third tunnel at 52.2 kilometer mark will be allocated for railway, with a length of 7 km and a diameter of 12m allowing a two way train traffic at a depth of 48m. The total cost of all tunnels is estimated at EGP 29billion.

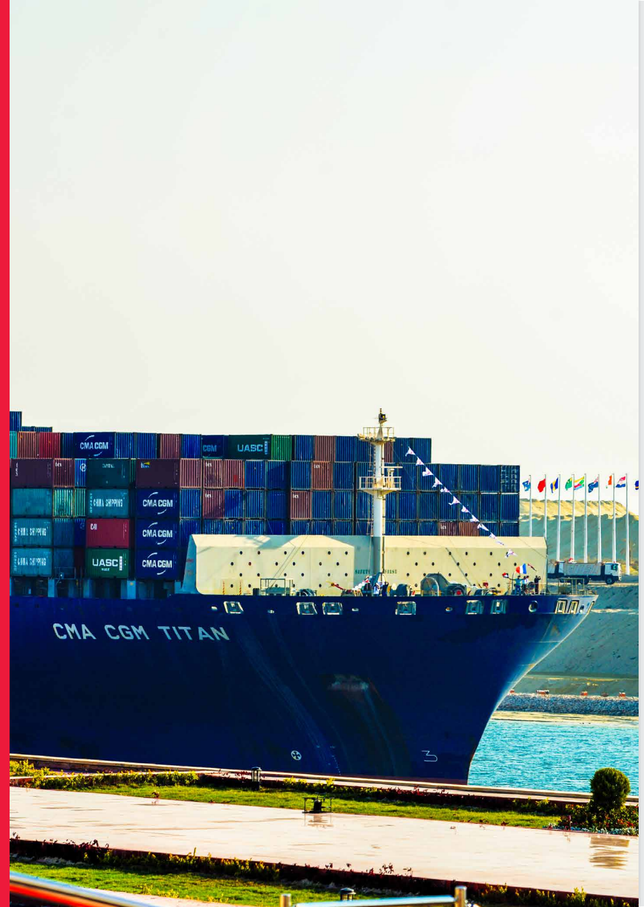


A 3D drawing of a tunnel east of Ismailia

It is a matter of pride that this national project is %100 Egyptian. It is designed by SCA personnel who have always demonstrated noble qualities of courage and merit throughout the ages, and carried out by the hands of Egyptians in full cooperation with the Engineering Authority of the Egyptian Armed Forces, which has done a pivotal role in this exceptional achievement.

This mega project is a model of Arab - International cooperation. 6 foreign companies of the largest international dredging companies all over the world took part in executing the new canal by operating 45 dredgers which represent %75 of the total world dredging power, setting a record time that impressed the whole world.

panoramic air-view of the New Suez Canal after the inauguration



This is a brief look on the epic story of digging the New Suez Canal that embodied the ingenuity and patriotism of the Egyptian people, and their ability to achieve the impossible. Now, the world knows how much effort and determination went into this great national project over the course of one year. It manifested the strong will of those who believed in their wise political leadership hoping to secure a better future for the generation to come. Thanks to those who planned and he who gave the go, he without whom none of this would have been realized. Thanks to all who participated to see this dream come true. Thanks are due to the Egyptians, the greatest of all people, who set the bar too high in loving their country, heroism and selflessness.

SUEZ CANAL
AUTHORITY

Adm. Mohab Mamish, SCA Chairman, onboared APL SOUTHHAMPTON of Singapore, the first of three ships on the trial operation of the New Suez Canal on 25/7/2015

APL SOUTHHAMPTON of Singapore, the first on the trial operation of the New Suez Canal on 25/7/2015

Dredger (Mashhour), on duty dredging the new suez canal. it is the largest cutter suction dredger in the sca dredger fleet.

Head of States attend the new Suez Canal Inauguration Ceremony

The photo shows President Abdel-Fattah El-Sisi of Egypt in the middle, to his left are: President François Hollande of France, King Abdullah of Jordon, President Josef Kabila of DRC, and President Mahmoud Abbas of Palestine.

To his right are:Sheikh Sabah Al-Jaber Al-Sabah Emir of Kuwait, President Omar Al-Bashir of Sudan, and President Robert Mugabe of Zimbabwi.

Dredger (El-mirfaa), one of the largest dredgers of « challenge consortium» le by UAE National Marine Dredging Company (NMDC)