MAJOR INFRASTRUCTURE PROJECTS IN MEXICO

A Resource Guide for U.S. Industry

Sponsored by the U.S. Trade and Development Agency

Prepared under contract by:

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About This Guide

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies. USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

This guide has been developed to provide U.S. companies and exporters with an overview of Mexico's infrastructure sectors, the sector development plans in place through 2018, and to provide profiles of a sample of specific, upcoming projects of potential interest.

Currency amounts converted from Mexican Pesos (MXN) to United States dollars (USD) have been done so using a rate of 13.12 pesos to one dollar. Due to fluctuations in currency values, different levels of engineering and cost estimation completion for different projects, and differing timing of cost information publication, the monetary values within this report should only be considered approximate. Unless explicitly indicated otherwise, all currency values are in United States Dollars (USD).

All exhibits and images are sourced from Mexican government publications, unless otherwise indicated.

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3.1.3 Ports

Sector Background

Mexico has 117 ports and terminals across its 11,122 kilometers of coastline. Of these, 71 are concessioned through 25 Administraciones Portuarias Integrales (APIs). Of these APIs, 16 are managed by SCT, 2 are managed by the Fondo Nacional de Fomento al Turismo (FONATUR), 6 are state-operated and 1 is private. Four cargo ports are considered by the government to be strategic for Mexico: Altamira and Veracruz on the east coast; and Manzanillo and Lázaro Cárdenas on the west coast. These four ports together account for 96 percent of container movements, 65 percent of bulk agricultural goods, 40 percent of bulk mineral movements and 38 percent of general cargo. In 2012, the Mexican port system transported 283 million tons of cargo and 67 percent was handled by ports managed under API concessions.

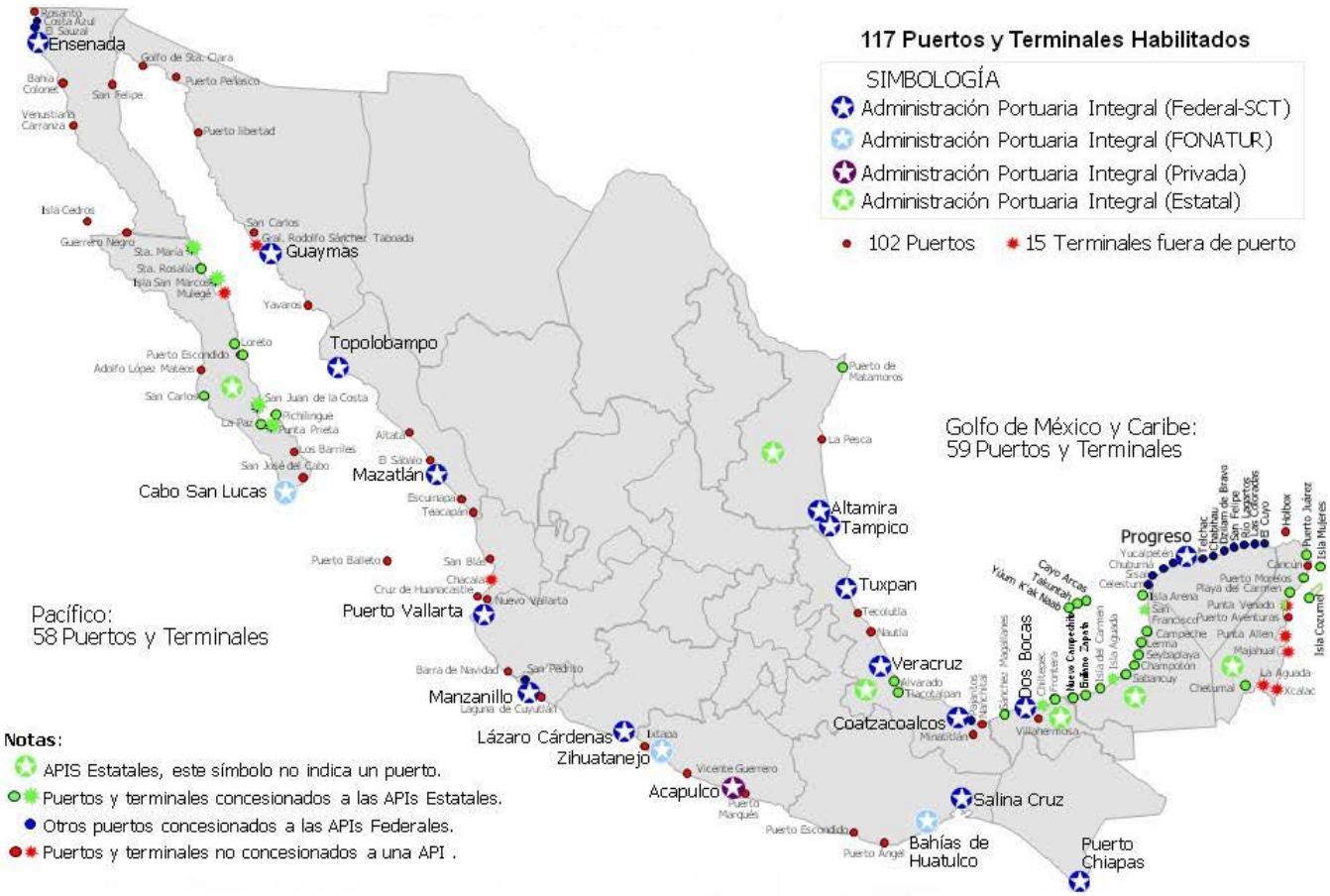

Figure 10: Mexico's Port System

The following charts provide an illustration of the relative concentration of freight and passenger activity at a small number of Mexico's ports. Cayo Arcas, the largest by volume, is a special case. It is a major terminal dedicated to petroleum, capable of exporting approximately one million barrels per day.

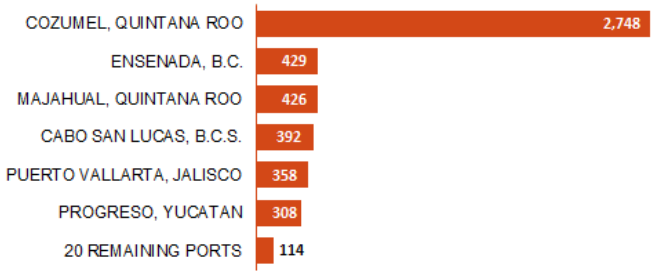

Figure 11: 2012 Passengers by Port, Thousands

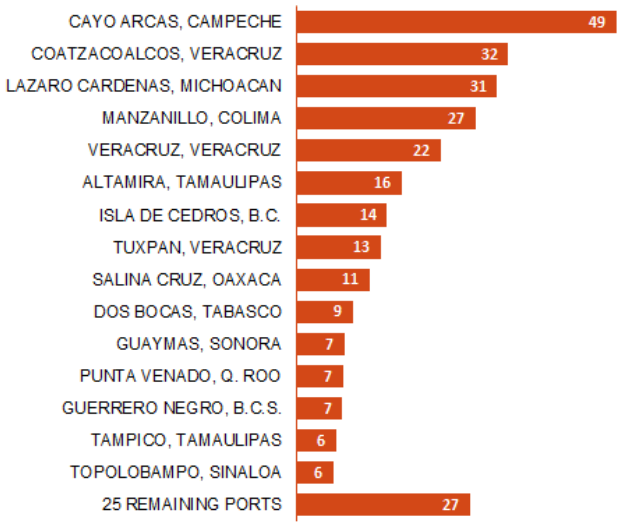

Figure 12: 2012 Cargo by Port, Millions of Tons

Mexico's port sector faces a range of challenges that the government has identified for resolution.

- **Limited Multimodal Connectivity:** A number of ports face particular constraints in their connections to freight rail service. Only 11 of the 15 APIs have rail connections. Of these, many face bottlenecks in terms of the rail infrastructure of the ports and the equipment and capacity to transload cargo efficiently between the two modes. This has caused a disproportionate amount of the terrestrial traffic to and from the ports to move by truck, relative to other industrialized countries. Accordingly, costs are higher for shippers. This truck traffic causes significant negative externalities as these heavy road freight flows move through adjacent urban areas, such as road damage, pollution and congestion. For those ports with rail service links, many of the connecting rail lines route directly through dense urban areas. Rail freight impacts on neighboring communities have also risen as the volume of rail freight has increased.
- **Efficiency of Operations:** Despite significant efforts in the area of quality of service and organizational improvements, many ports have levels of service and efficiency well below international standard. Customers face bureaucracy, limited intermodal integration, outdated customs procedures, lack of coordination between government authorities and operators, and limited implementation of modern technologies.
- **Capacity Falling Behind Demand:** As trade has grown dramatically, several categories of maritime cargo have grown at double digit rates for the past decade. Many ports in Mexico are approaching capacity limits. The ports of Veracruz and Manzanillo are at full capacity given their facilities, equipment and technology.

- **Short-Sea Shipping (Cabotage):** Mexico's extensive coastlines create great potential for shifting freight flows onto the short sea shipping mode. Due to port constraints, particularly terminal capacity for multimodal transfer, freight movements are dominated by trucks followed by rail.
- **Small Port Infrastructure:** The economies of many small riverine and coastal communities depend upon small port infrastructure to sustain the livelihoods of the people, particularly in the fishing industry. There is a significant need to address deferred maintenance and capital investments in many of these small facilities.
- **Cruise Passenger Traffic:** Cruise line passenger traffic has declined by 6 percent between 2007 and 2012. 98 percent of cruise liner traffic accrues to only six ports. Some of these main ports have outdated facilities and poor connectivity for visiting cruise passengers. There is significant potential to develop additional ports of call with great potential to draw more tourism.

Mexico has set several strategic, quantified goals to achieve relative to ports by 2018. The country's score on the World Bank's Logistics Development Index is targeted to be raised from 3.06 to 3.35 out of 5. Mexico's grade for transport infrastructure as judged by the World Economic Forum should be raised from 4.45 to 4.56 out of a possible 7 points. Authorities intend to increase the volume of cargo transported by short-sea shipping from a 2012 base of 39 million to 45 million tons per year by 2018, and they plan to reduce per container port costs from USD $18.10 in 2012 to USD $17.60 by 2018.

In order to achieve these goals the PNI includes an array of significant port investments, totaling USD $5.46 billion in total investment spread across 23 discrete projects. These projects include improvement to existing freight and passenger facilities; basic infrastructure improvements such as fills, breakwaters, and dredging; and development of completely new terminals. Many include improved multimodal connections to road and rail networks.

Northern Expansion of the Port of Veracruz: This megaproject began in 2013 and will not be completed until 2025. Through 2018 alone, investments are estimated at USD $1.8 billion. This involves the building of an additional, completely new, port facility with multiple terminals. The capacity of the entire port will be tripled, and portions of the legacy area of the port will be repurposed for integration back into the city's historic zone.

Expansion of the Port of Altamira: This project will be carried out between 2013 and 2018 and is expected to entail total investment in the amount of USD $816 million. There are several major components. Road and rail connections to the port will be improved. The port will be dredged especially to create capacity for marine oil and gas platforms. A natural gas compression station will be built at the port to take advantage of production increases expected to result from the energy reform activities.

Modernization of the Port of Mazatlán: This project will be carried out between 2013 and 2018 and is expected to entail a total investment of USD $813 million. The passenger cruise terminal will be rehabilitated, and a connection will be constructed to the Durango – Mazatlan highway. The overall configuration of the port will be reorganized and the RO-RO terminal will be relocated. Basic infrastructure works will include construction of a new breakwater and channel and turning basin dredging.

Expansion of the Port of Lázaro Cardenas: This program of four projects will add up to a total investment of USD $593 million. The largest project will be the basic infrastructure for a second container terminal which will take place between 2013 and 2019. This investment of USD $442 million will expand the Port's container capacity from 250,000 to 3 million containers annually. The equipment for this new container facility is expected to add

an additional USD $62 million in investment. A third new general cargo terminal will be added to the port, covering 21 hectares and providing 286 meters of berth space, for a total investment of USD $44 million. A new specialized auto terminal will be constructed for USD $40 million, and a new bulk grain terminal will be constructed for an estimated investment of USD $4.6 million.

Expansion of the Port of Tuxpan: Occurring between 2013 and 2018 this project will construct a new public terminal for containers and general cargo. This facility will complement the connection to the new Mexico – Tuxpan highway and enable the port to provide a capacity relief option for the congestion at the Port of Veracruz. This project is intended to stimulate merchant marine activity by serving as a base for short-sea shipping growth. The total investment is projected at USD $377 million.

Isthmus Region Logistics Platform: This program will include total investments of USD $244 million to develop a regional logistics platform.

Expansion of the Port of Manzanillo: This project will construct two new freight terminals for a total investment of USD $263 million. A new state-of-the-art container terminal will be built at the port, for which an investment of USD $197 million is envisioned. Facilities for general cargo will be expanded for an investment of USD $66 million. These projects will be completed by 2018.

Expansion of the Port of Altura en Progreso (Compromiso Gubernamental [CG]-247): This project will entail a total investment of USD $126 million for works to modernize and expand the port, including development of a logistics platform.

Expansion of the Port of Matamoros (CG-182): For a total investment of USD $81 million the port operations will be reconfigured and consolidated at this facility.

Modernization of the Port of Ciudad del Carmen (CG-063): Total investment of USD $75 million is projected.

Expansion of the Port of Tampico: This project will increase the port's capacity for bulk cargo, in particular steel and ore. The total anticipated investment is USD $70 million.

Expansion of the Port of Puerto Vallarta (CG-024): This project will construct a new cruise ship passenger terminal for a total investment of USD $54 million.

Modernization of the Port of Guaymas (CG-193): This project will entail a total projected investment of USD $33 million.

Expansion of the Port of Topolobampo: This investment of USD $37 million will develop two new terminals. A new terminal will be built to enable exports of copper concentrate, estimated to reach 360,000 tons per year within three years, a total investment of USD $32 million. A new bulk grain terminal will be built to support up to 500,000 tons per year of grain movements to and from Mexican short-sea shipping destinations and for export to other Latin American countries, a total investment of USD $4.6 million is projected.

Bulk Fluid Terminal at Laguna de Pajaritos: This project will support petrochemical movements with a total projected investment of USD $23 million.

New General Cargo Berth at Salina Cruz: Total investment of USD $18 million.

Modernization of the Port of Seybaplaya (CG-068): Total investment of USD $14 million.

Projects

Expansion of the Port of Altamira

	Project Type:	Port
	State(s):	Tamaulipas
	Projected Investment:	USD $816 million
	Timeline:	2013 – 2018
	Project Sponsor(s):	SCT, Port Authority of Altamira

Project Background and Scope

The Port of Altamira, located on Mexico's northeastern Gulf Coast, is an industrial port that handles over 15 million tons of commercial cargo per year. Nearly all the traffic handled is international and growth has been steady over time since the port was opened for operations in 1996. Import traffic accounts for approximately 69 percent of tons transported and includes liquefied natural gas, steel, coke, and chemical feedstock for polymer manufacturing (such as paraxylene and styrene). Major exports include fluorine, teraphthalic acid (TPA), polyethylene terephthalate, refined sugar, cement and steel products. Other commodities handled by this port include automobile exports and 572,000 TEU's of container traffic in 2013.

Figure 13: General Layout of the Port of Altamira

The navigable waterways of the port consist of three primary channels. A 2.2 mile east-west ocean access channel is dredged to 45' MLW and joins the other channels in a turning basin of 2,460' diameter. The northern channel is approximately 4,300' long and dredged to 28'. The southern channel is approximately one mile in length and dredged to 40'. The port features on-dock rail with direct access to major corridors of both major freight rail providers, Ferromex and Kansas City Southern de Mexico.

This port covers more than 23,000 acres. It has ample space available for future expansion and development. Unlike many other ports in Mexico this facility was constructed relatively recently and deliberately located outside of the associated urban area of Tampico-Altamira. This reduces to a degree the port-city land use and transportation conflicts that plague many historical ports. The Port currently has five petrochemical fluid terminals, two multi-purpose terminals, one agricultural and mineral bulk terminal, one ore bulk and general cargo terminal, one terminal for construction of offshore platforms, one liquid natural gas terminal, and one general cargo terminal. The Port has a robust inventory of equipment including, 94 storage tanks of different capabilities, 23 loaders, 20 clamshell bucket cranes, and 17 forklifts. Facilities include 34,720 m^2 of storage, 1,152 m^2 of sheds, 1,062,400 m^2 of yards, and 13,688 m^2 of warehouses. The port area includes an industrial park with well-known companies such as POSCO, Iberdrola, Royal Group, Mexichem and BASF among the tenants.

The strategic investments in this port are expected to total USD $816 million. There are several major components.

- **Breakwaters:** The northern and southern breakwaters will be rehabilitated and extended by a total of 4,100 feet.
- **Dredging:** Marine infrastructure will be expanded. Ultimately the second port channel will run 3.7 miles north from the ocean access channel turning basin and feature two 2,066' diameter turning basins, all of this infrastructure to be dredged to 45'. The third channel will be extended to run south for 3.1 miles, beginning at a depth of 42' decreasing to 38' at the southernmost point. This channel will be equipped with two turning basins, the first of 1,476' diameter and dredged to 42'. The southernmost turning basin will be 1,542' in diameter and be dredged to 38'.
- **Gas Pipeline Relocation:** The Cactus-Reynosa 48" gas pipeline will be relocated from its present path within the port facility to pass instead through the bordering undeveloped preserve area.
- **Road and Rail enhancements:** Road and rail connections to and from, and within, the port will be improved.
    - The intersections of Boulevard de los Rios with the Altamira Bypass and the Rio Tamesi will be grade separated.
    - A new rail line will be constructed to bypass the current route, which runs through the center of the city of Tampico, and to improve connectivity to the serving railroads.
    - The present tracks within the terminal serving the bulk minerals traffic will have their capacity expanded by constructing new lines to provide more space for loading and unloading and storage of freight railcars.
- **Gas Terminal:** A natural gas compression station will be built at the port to take advantage of production increases expected to result from the energy reform activities.
- **PEMEX Platform Shipyard and Terminal:** The port will be dredged with a specific objective to create capacity for the transit of marine oil and gas platforms used for exploration and production. PEMEX is planning to construct a new terminal at Altamira for the fabrication and service of these platforms.

- **Rail Ferry and Ro-Ro Terminal:** A new terminal to provide freight rail ferry service and handle roll-on/roll-off cargo ships will be built at the southeast corner of the central turning basin. At peak operations this terminal is expected to handle 787 rail ferry calls and 826 Ro-Ro calls per year. Mobile, Alabama is expected to be a major traffic partner.
- **Electrical Infrastructure:** Investments will include a new electrical transmission line and substation to support expansion of the port facilities.

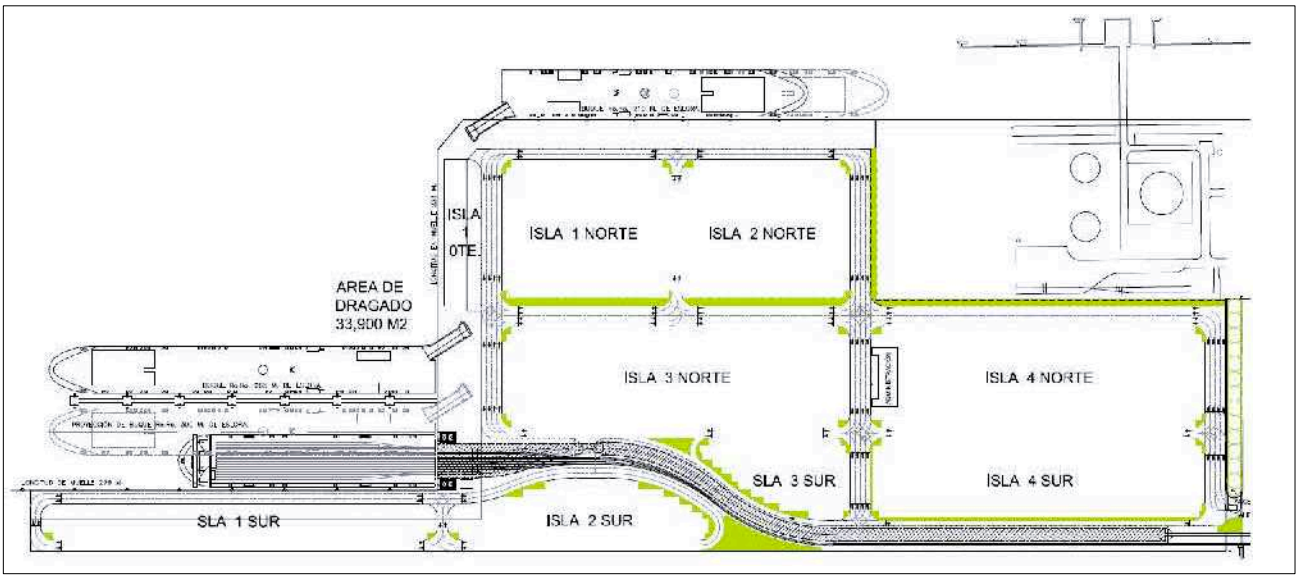

Figure 14: Plan of the New Rail Ferry Terminal at the Port of Altamira

Project Status and Implementation Timeline

This suite of multiple projects will be carried out between 2013 and 2018.

Project Cost, Financing and Procurement

The following table identifies components that have been formally budgeted by the API in consultation with SCT.

Project	Total Spent	2014	2015	2016	Total Pending	Total
Rehabilitation and extension of breakwaters	81,685,120	5,358,429	-	-	5,358,429	87,043,549
Gas pipeline relocation	49,145,496	2,008,460	-	-	2,008,460	51,153,957
Expansion of bulk minerals terminal rail infrastructure	7,639,005	2,452,040	-	-	2,452,040	10,091,044
Dredging operations	30,118,449	23,739,150	11,995,141	-	35,734,291	65,852,740
Cistern relocation	-	144,271	673,267	144,271	961,810	961,810
Gamma ray inspection equipment	-	2,104,278	-	-	2,104,278	2,104,278
Grade separation Blvd. de Los Rios/Libramiento Altamira	-	2,287,300	7,624,334	762,433	10,674,067	10,674,067
Grade separation Blvd. de Los Rios/Rio Tamesi	1,186,958	7,913,050	3,165,220	437,365	11,515,635	12,702,593
Rail Ferry and Ro-Ro Terminal	791,305	10,916,532	12,895,318	2,297,254	26,109,104	26,900,409
Totals	170,566,333	56,923,510	36,353,280	3,641,324	96,918,114	267,484,447

Table 4: Federal Funds Approved for Capital Investments at the Port of Altamira

Some of the outstanding balance will be a mix of API and federal resources to be allocated in future budget cycles, based on outcomes of feasibility and planning activities. The natural gas compression station, the

electrical infrastructure, and the marine oil and gas platform shipyard and terminal, will be developed in whole or in part by other entities, such as CFE and PEMEX.

Within the budget for the new Rail Ferry and Ro-Ro terminal the investments will include the following approximate amounts by category: dredging, USD $4.6m; docking infrastructure, USD $18.6m; rail infrastructure, USD $1.3m; equipment including a railcar puller, USD $844,000.

U.S. Export Opportunities

U.S. firms should encounter a range of export opportunities associated with this port investment program. Basic infrastructure construction will create demand for goods and services associated with significant works in infrastructure areas including dredging of marine channels; construction of breakwaters, roads, rail, electrical lines and substations, buildings, natural gas pipelines and compression stations; terminals, docks, shipyards; and acquisition of various associated systems. Loading and unloading equipment including racks and service vehicles will be an opportunity for U.S. suppliers, and a gamma ray container inspection machine will be among specialty technology to be acquired in 2014.

Project Contacts

Project Sponsor	U.S. Trade and Development Agency	U.S. Commercial Service Mexico
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Expansion of the Port of Lázaro Cárdenas

Project Type:	Port
State(s):	Michoacan
Projected Investment:	USD $592 million
Timeline:	2013 - 2019
Project Sponsor(s):	SCT, Port Authority of Lazaro Cardenas (APILAC)

Project Background and Scope

The Port of Lázaro Cárdenas is the third largest port in Mexico and the largest in terms of transportation of non-hydrocarbon products. It is located in the state of Michoacán on Mexico's Pacific coast, approximately 400 miles west of Mexico City. The port is located at the mouth of the Rio Balsas and is in a hub and spoke formation with three main channels radiating from a central turning basin and ocean access channel. The northeastern "commercial" channel further splits into northern and eastern branches at the second turning basin. The turning basins at the termination of these two channels are yet to be constructed.

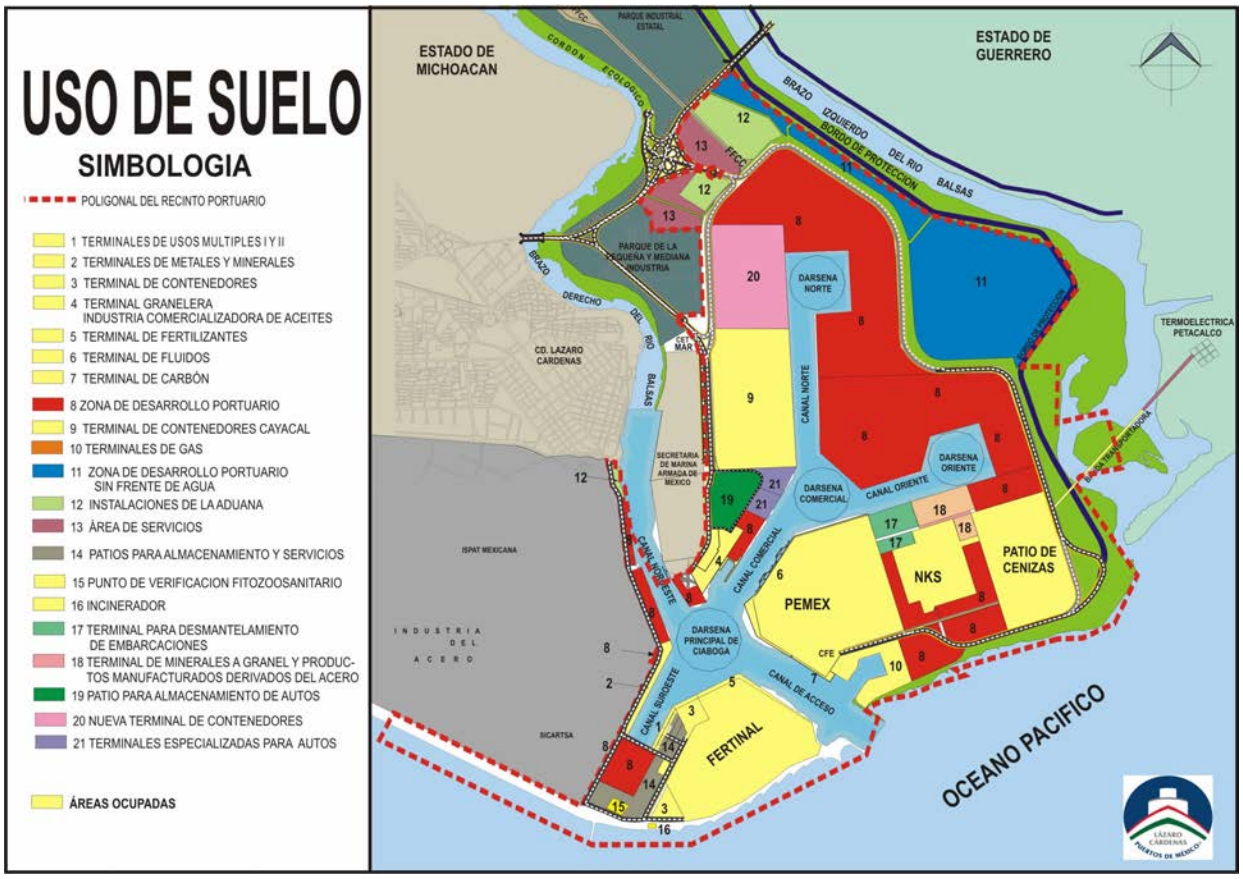

Figure 15: Layout of the Port of Lázaro Cárdenas

The port's main access channel is dredged to a depth of 59 feet, and the primary turning basin, 2,297' in diameter, is dredged to 54 feet, the deepest of any port in Mexico. The port can receive ships of up to 165,000 tons displacement. The secondary "commercial" turning basin measures 1,739 feet in diameter and is dredged to 54'. Secondary canal depths range from 47 to 54 feet. The port facility has over 13.5 miles of shoreline of which 2.4 miles is operating berth space dredged to depths ranging from 20 to 54 feet. Freight rail service is provided on the docks by Kansas City Southern de Mexico.

This port currently operates terminals specialized in handling of general cargo, metals, minerals, containers, bulk agricultural products including oils, fertilizer, fluid bulk products, coal, natural gas, steel products, and automobiles. There is also an active terminal for commercial fishing activities. In 2013, the port saw throughput of 34.9 million tons of cargo, composed of 14.1m international import (40 percent), 13.1m international export (38 percent), and 7.7m cabotage (22 percent). 10.5 million tons consisted of containerized cargo, representing 1.1 million TEU's. The largest movements by type were in the form of bulk minerals (19.4m, 55 percent) and containers (10.5m, 30 percent).

Project Status and Implementation Timeline

Multiple projects are underway or planned for this port. The largest is to be the development of a second specialized container port. It is expected to increase capacity from 250,000 TEU's to 3 million TEU's. Construction began in 2013 and will complete in 2019. A third general cargo terminal will be constructed, covering an area of 21 hectares with 286 meters of docking space. The investments will also include addition of new specialized terminals for automobiles and grain. The automobile terminal will be the most highly automated terminal of its type in Latin America.

Project Cost, Financing and Procurement

The expected investment amounts are:

Project		USD, Millions
Container Terminal II and Associated Equipment	$	504
General Cargo Terminal	$	44
Specialized Automobile Terminal	$	40
New Grain Terminal	$	5
Total	**$**	**593**

Table 5: Investments in the Port of Lázaro Cárdenas

U.S. Export Opportunities

Some export opportunities associated with these investments my include material handling systems, lighting, communication, security, access, and control systems. The investment structure will involve PPP structures, accordingly many purchases of capital goods will not necessarily occur through the API, but rather private terminal operators and subcontractors.

Project Contacts

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Expansion of the Port of Manzanillo

	Project Type:	Port
	State(s):	Colima
	Projected Investment:	USD $350 million
	Timeline:	2013 – 2018
	Project Sponsor(s):	SCT, CFE, APIMAN, IDB

Project Background and Scope

The Port of Manzanillo is the main Pacific gateway for international trade with access to Mexico's most important industrial and commercial corridor in the country's western and central regions. In 2011 the port handled a total of 26 million tons of cargo. This included 18.4 million tons of containerized traffic (1.1 million containers/1.8 million TEUs), 5.3 million tons of bulk mineral traffic, and 1.4 million tons of general cargo. The port saw 1,819 freight vessel calls and 36 cruise ships.

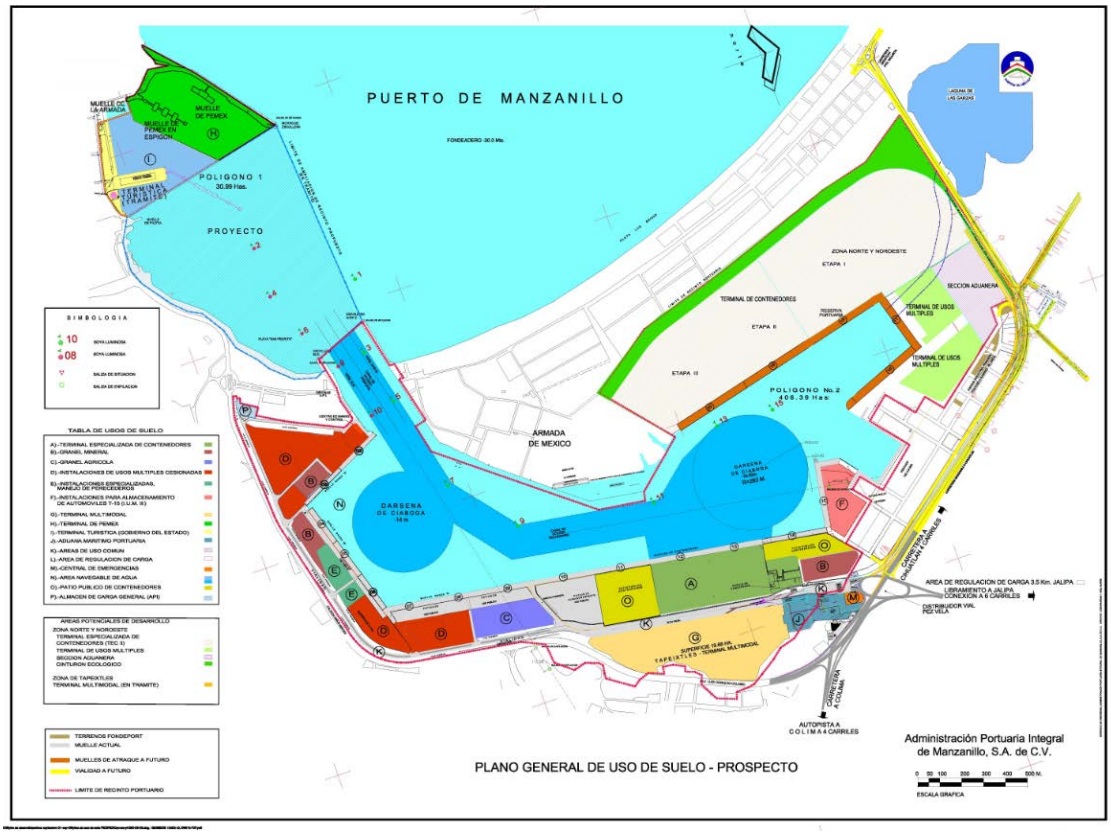

Figure 16: Port of Manzanillo Development Overview

The port covers 437 hectares, including water, docks and storage areas. The port has 19 docks, 34 acres of storage areas, over fifteen miles of railways and nearly four miles of roads. Within the port there are 19 berths in total: 14 for commercial traffic, 3 for hydrocarbons (operated by PEMEX) and 2 for cruise traffic. Private

operators run the 14 commercial terminals including dedicated facilities for commercial fishing traffic, cement, fertilizer, containers, general cargo, automobiles, bulk agricultural and mineral products, and general cargo. Berth maximum vessel drafts vary significantly: from 10 to 20' for small fishing boats; 40 to 50' for hydrocarbons tankers; 30 to 43' for passenger cruise ships; and 41 to 44' for the different types of cargo. This port has direct connections for double-stack train service.

The port will see substantial capital investments in the period through 2018 across 3 major development initiatives.

1. Construction of a New Container Terminal: This project is expected to generate at least USD $350 million in total investment. The expansion project consists of the design, construction, operation and maintenance of a new container and logistics facility at the Port of Manzanillo, including supporting infrastructure investments. The first phase of the project involves the construction of a two-berth 720 meter-long deep water quay deck to accommodate a wide range of vessels, including super post-Panamax ships (175,000 deadweight tons up to 390 meters in length), a paved container stacking area, truck entrance/exits, a rail intermodal yard, approximately 3.3 kilometers of roads, and associated facilities. Equipment to be installed includes four super post-Panamax quay cranes, ten rubber-tired gantry cranes, three reach stackers, and five empty handlers. The project will allow the terminal a yearly handling capacity of 650,000 twenty-foot equivalents (TEUs). Additional works will mostly be comprised of a new customs facility in the northern expansion zone, to be built specifically to service the new traffic generated by this terminal; an internal road network, currently under construction, to facilitate movement between the new terminal and the rest of the port; the nearly completed construction of new access roads to the port; a rail intermodal yard and associated access spurs to be built to service the Terminal; the planned digging of a railway tunnel underpass through the city of Manzanillo and harbor dredging to establish and maintain a depth of 52.5 feet.

Figure 17: Port of Manzanillo Development Phases

2. New General Cargo Terminal: This new terminal is identified in the PNI as responsible for a total investment of USD $65 million.

Project Status and Implementation Timeline

This first phase of the container terminal project began construction in late-2013. Miscellaneous capital works on the port will continue through 2018.

Project Cost, Financing and Procurement

Total project cost of the container terminal project is estimated by the IDB at USD $350 million. Of this IDB is preparing a borrowing package to refinance the developer's bridge loans in the amount of USD $172.5 million. The Government of Mexico has identified a cost of USD $192.7 million in the PNI, which appears to represent the basic and connecting infrastructure works associated with the new terminal. The newly-created China Infrastructure Fund will be providing an additional USD $50 million in financing. The remaining spending on major capital items is provided below:

Activity (USD Millions)	2012	2013	2014	2015	2016	2017	Total
Port Terminal Infrastructure	80.2	72.0	19.1	-	-	-	**171.4**
Quay Crane	14.5	14.5	9.5	-	7.0	-	**45.4**
Rubber Tired Gantry Cranes	6.7	6.7	10.4	-	3.9	-	**27.7**
Loading Equipment	2.9	2.9	0.3	-	2.8	-	**8.9**
Safety and Security Equipment	0.0	-	7.7	-	-	-	**7.7**
Multimodal Zone	-	-	2.7	-	-	-	**2.7**
Service Vehicles	0.0	0.0	0.3	-	-	-	**0.4**
Totals	**104.3**	**96.1**	**50.1**	-	**13.7**	-	**264.1**

Table 6: CONTECON Investments in the New Intermodal Terminal at Manzanillo

The port's general capital plan offers an additional USD $371.9 million in spending on a range of infrastructure through 2018, illustrated in the table below, including the "Northern Zone" general cargo terminal investments.

Activity (USD Millions)	2012	2013	2014	2015	2016	2017	Total
Northern Zone infrastructure development	26.0	25.4	4.4	6.2	-	-	**62.0**
Construction of a retaining wall to enable works on the berths at Piers C and D	-	11.6	18.2	11.6	15.4	-	**56.7**
Expansion of the access road to the Jalipa Yard	-	-	-	10.4	7.7	20.4	**38.5**
Extension of the breakwater	-	-	-	-	23.1	4.7	**27.8**
Construction of a pier for docking position #16	-	-	-	10.8	10.8	-	**21.6**
Construction of a supporting yard for dock 16	-	-	-	7.7	7.7	-	**15.4**
Constuction of a pier at docking station no. 17	-	-	-	3.9	11.6	-	**15.4**
Application of corrosion protection to the Pier A retaining wall and a drain at San Pedrito	-	-	3.5	8.1	3.9	-	**15.4**
Maintenance dredging services	-	1.5	6.5	1.5	1.5	1.5	**12.6**
Extension of the berth at docking point no. 15	-	2.3	5.7	3.9	-	-	**11.9**
Reconfiguration of the customs area and fiscal route	-	-	2.8	9.0	-	-	**11.8**
Construction of a supporting yard for pier no. 17	-	-	-	3.9	7.7	-	**11.6**
New API headquarters building	-	-	-	3.8	4.1	3.7	**11.6**
Compensating works related to the rail tunnel	-	-	11.6	-	-	-	**11.6**
Repaving of service roads in San Pedrito	-	2.3	-	5.4	-	-	**7.7**
Construction of an overpass to the Jalipa logistics yard at km 3,500 of the Manzanillo-Minatitlan highway	-	-	-	1.5	5.0	-	**6.5**
Maritime navigational signals, polygon 2	-	-	-	5.4	-	-	**5.4**
Dredging to deepen the berths at piers B, C, and D	-	-	3.7	0.8	-	-	**4.5**
Safety and security equipment	-	-	3.9	-	-	-	**3.9**
Feasibility studies for capital projects	0.3	1.0	2.3	-	-	-	**3.6**
Rehabilitation of two berths at the fishing pier	-	0.5	1.9	0.8	0.3	-	**3.5**
Modernization of the port lighting system	-	-	1.5	1.6	-	-	**3.2**
Resurfacing of the fiscal route	-	-	-	2.3	-	-	**2.3**
New rail spur construction off the east side rail line	-	-	1.5	-	-	-	**1.5**
Reinforcement of Pier A with carbon fiber	-	-	1.5	-	-	-	**1.5**
Expansion of the drainage system at the port access areas	-	-	1.5	-	-	-	**1.5**
CONTECON interchange route	-	-	1.2	-	-	-	**1.2**
Modernization of the port water system	-	-	1.1	-	-	-	**1.1**
Piers B and C potable water lines	-	-	-	0.5	-	-	**0.5**
Construction of three gatehouses for pedestrian access	-	-	-	0.4	-	-	**0.4**
Totals	**26**	**45**	**73**	**99**	**99**	**30**	**371.9**

Table 7: Port of Manzanillo General Capital Budget Forecast

U.S. Export Opportunities

Although significant spending will occur in 2014-15, opportunities associated with the new container terminal are likely to be limited for U.S. companies. The concession has been awarded to International Container Services of the Philippines (CONTECON). China Harbour Engineering Company, Ltd. is performing much of the civil construction and the major container handling equipment is being procured from CargoTec of Finland.

Opportunities are more likely to exist in the range of general investments being performed by the API in basic infrastructure, including the general cargo facility, and including marine works and dredging, road and rail line improvements, buildings and systems.

Project Contacts

Project Sponsor	U.S. Trade and Development Agency	U.S. Commercial Service Mexico
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Expansion of the Port of Guaymas

Project Type:	Port
State(s):	Sonora
Projected Investment:	USD $184 million
Timeline:	2013 –2016
Project Sponsor(s):	SCT, Port Authority of Guaymas

Project Background and Scope

The Port of Guaymas is located on the Pacific Coast approximately midway up the eastern shore of the Gulf of California. It covers 355 acres, 46 percent of which is land and 54 percent water. The port has two harbors with six berths between two piers. The navigation channel has a length of 2.6 miles and a turning basin 1,640 feet in diameter, both dredged to 50 feet. The eastern pier features 1,237 feet of berth space dredged to fifty feet for docks 3 and 4, and 656 feet of berth space dredged to 42 feet for dock 2. The southern pier has 1,178 feet of berth space dredged to 43 feet for docks 5 and 6. The port has on-dock freight rail service provided by Ferromex.

The Pacific coast of North America is a region that has experienced increased growth in world seaborne trade over the past few years. This increase is driven by the influx in demand for raw materials, especially mineral bulk for the energy sector and manufacturing in Asian countries. Bulk ore operations at the Port of Guaymas have increased by 113.8 percent annually for the past two years. The port has benefitted from the overall increase in maritime traffic of goods between Asia and the main consumer market in the United States. Total port freight throughput more than doubled from 3,794,000 tons of cargo in 2009 to 8,021,000 tons in 2013. In addition to bulk minerals, the port handles agricultural bulk, general cargo, fluids, containerized cargo, and oil. The rapid growth has brought the port to the limits of its capacity, resulting in congestion and limiting the ability of the port to meet growing demand. A range of clients in the port's hinterland and foreland in the United States have expressed interest in utilizing Guaymas for yet more traffic flows. Notably, Guaymas is the terminus for an important fiscal route (approved customs corridor for transit of goods) with southern Arizona, including the cities of Tucson and Benson. Guaymas has the potential to provide a cost effective gateway for additional international freight flows to and from U.S. industry in Arizona. Capturing such new traffic flows is contingent upon the port undertaking significant infrastructure investments, in particular for bulk agricultural movements.

Recognizing both the challenges and the opportunity, the port has planned a major capacity expansion project and they are embarking on the first phase. Support for this project includes a specific presidential commitment, number 193, with an estimated total investment amount of over USD $33 million. The new bulk terminals will be constructed along the Isla Barra Morro Ingles, a spit of land which runs east to west across the mouth of the Bay of Empalme.

Figure 18: Overview of the Long Term Expansion Areas of the Port of Guaymas

This project will be performed in two phases. The first phase includes dredging works to establish the channels, turning basins and berths. There will be a 2,297' diameter turning basin at the entrance to the Bay of Empalme and a smaller turning basin of 1,148' in diameter located at the end of the bulk materials pier. Dredged material will be used as fill to create the foundations of the new terminal area measuring approximately 180 acres. Retaining walls, piers and docks, and connections to utilities, road and rail infrastructure will be built with public funds.

It is expected that the operating infrastructure of the bulk terminals – including specific dock components, buildings and loading/unloading equipment, and the works to prepare the bulk materials storage yards - will be purchased by the operators of the terminals.

Figure 19: Diagram Illustrating Channel Works and New Bulk Agricultural Terminal

In the longer term the strategic plan for the port includes the relocation of all the present operating terminals to new facilities to be built on the western shore of the Bay of Empalme, northwest of the new bulk terminal.

Project Status and Implementation Timeline

Operations of the new bulk mineral terminals will begin progressively based on the status of the terminal construction. The project is expected to be fully completed in three years.

Project Cost, Financing and Procurement

The feasibility study for this project estimated the total cost at USD $238.9 million including both public and private investment. The components of this estimate are provided below:

Activity	Cost in USD
Public Activity	
Phase 0: Studies, Projects and Planning	**1,752,856**
Phase 1: Construction	**169,391,420**
Dredging	117,522,513
Transfer of Fill	1,296,137
Bulk Agricultural Goods Terminal	50,572,771
Retaining Wall	*19,232,175*
Pilings	-
Agricultural Terminal Equipment and Facilities	*144,100*
Yards and Paving	*31,196,496*
Total, Public Activity	**171,144,276**
+ Private Investment	67,771,935
GRAND TOTAL	**$ 238,916,211**

Table 8: Sources and Uses of Funds for the Port of Guaymas Bulk Terminals Project

The project flow of funds for the public investment portion of this project, as currently presented on the federal budget authority's website is as follows. The difference in values is due to a combination of inflation, exchange rate calculations, and the different timing of the presentations.

Year	2012	2013	2014	2015	2016
Annual	-	7,121,745	127,644,031	24,559,968	24,530,455
Total	$183,856,198				

Table 9: Projected Flow of Public Funds for the Port of Guaymas Bulk Terminals Project

This bulk terminal is only a component of a greater strategic plan for the port that ultimately involves relocation of current operating terminals to an expanded new facility along the western coast of the Bay of Empalme. This new facility would consist of two major terminal platforms linked by a connecting causeway.

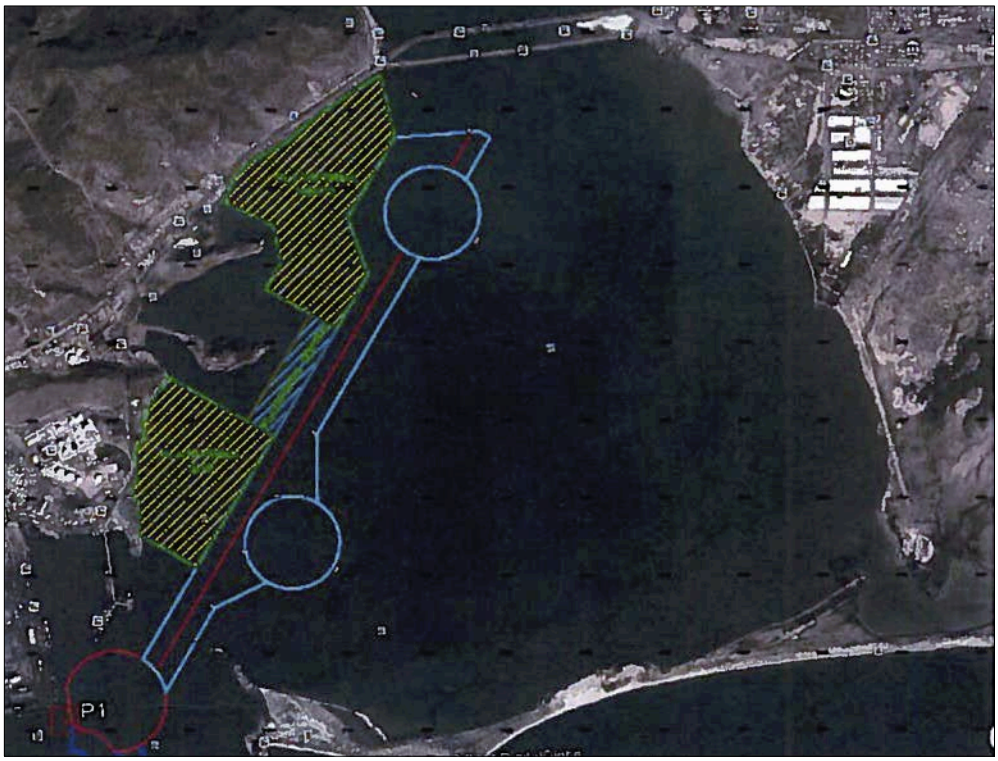

Figure 20: Concept view of the Long-Range Expansion Plan for the Port of Guaymas

Planning and budget documents for the full scope of these future investments are still in study phase.

U.S. Export Opportunities

Commercial opportunities associated with this new bulk terminal will include provision of dredging and marine and land construction works, including road and rail infrastructure, utilities and buildings, provision of loading and unloading equipment. The basic infrastructure works will be procured with public funds while the terminal plant and equipment is expected to be procured discretely by several concessionaires.