

91243R



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

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## Level 2 Geography, 2015

### 91243 Apply geography concepts and skills to demonstrate understanding of a given environment

9.30 a.m. Thursday 26 November 2015  
Credits: Four

## RESOURCE BOOKLET

Refer to this booklet to answer the questions for Geography 91243.

Check that this booklet has pages 2–11 in the correct order and that none of these pages is blank.

**YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.**

*For copyright reasons, the resources in this booklet cannot be reproduced here.*

**Resource A: The Panama Canal**

The Panama Canal is located in the country of Panama in Central America, between Costa Rica to the west, and Colombia to the east.

If the delay is too long, a ship captain can decide that it is cheaper to travel around South America, rather than wait in the waters outside of Panama and pay a fee to transit the canal.

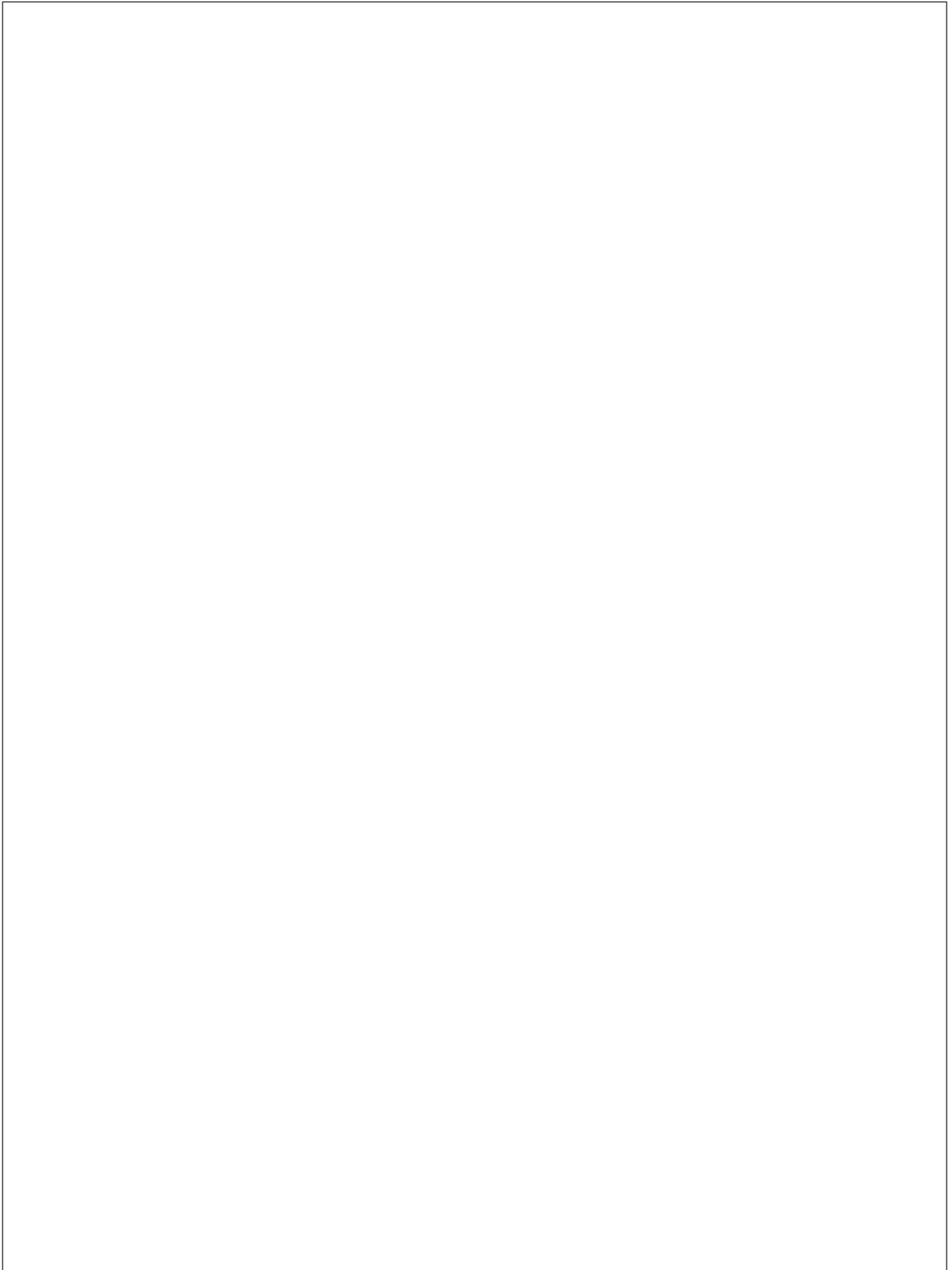
**Resource B: Distances from Western USA to Eastern USA via the Panama Canal and Cape Horn**

**Resource C: The Major Features of the Panama Canal and its Surroundings**

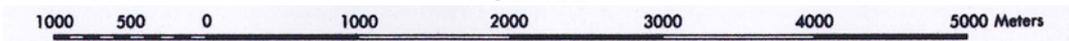
When beginning their journey from the Atlantic Ocean, ships travel through the Panama Canal by passing two large breakwaters that protect the entry to the canal from high seas caused by tropical storms.

The final leg of the canal involves negotiating a 6 km stretch of water that takes ships under the Inter-American Highway Bridge and to the expanse of the Pacific Ocean.

**Resource D: Topographic Map of Gatún Locks and Surrounding Area**



**SCALE**



**Resource D (continued): Topographic Map Key****Key****ROADS**

On this map, a lane is generally considered as being 2.5–3.6 metres in width.

All weather, hard surface, two or more lanes wide

All weather, loose or light surface, two or more lanes wide

All weather, hard surface, one lane wide

All weather, loose or light surface, one lane wide

Fair or dry weather, loose surface

Cart track

Footpath, trail

Route markers: National; Secondary

Military road

**RAILROADS**

Normal gauge, single track, 0.914 m (3 feet)

Normal gauge, multiple track, 0.914 m (3 feet)

Car line, single track; car line in road

Settlement

**BOUNDARIES**

Other

First order administrative division

Second order administrative division

Military reservation

Power transmission line

Building; Structure

Church; Cross or shrine

Area name

Windmill, Wind pump, Water mill; Lighthouse

Horizontal control point; Bench mark

Spot elevation in metres: Checked; Unchecked

Levee

Spring; Well

Depth curves in fathoms

Sounding in fathoms (*Note: 1 fathom = 6 feet = 1.83m*)

Limit of danger; Foreshore flats (Mud, Sand)

Reef

Sunken rocks; Rocks awash

Wharf, Pier; Sea wall

Ship anchorage; Falls; Rapids

Dams: Masonry; Earthen

Wood-brushwood

Orchard

Scrub

Vineyard

Mangrove

Marsh or swamp

Rice

Distorted surface

## Resource E: Changes to Ship Size Over Time

### Key

TEU*	Number of containers on ship
L (m)	Length of ship
D (m)	Draft/depth needed

\*TEU: 20-foot equivalent unit (container) approximately 6 m long × 2.5 m wide × 2.5 m high.

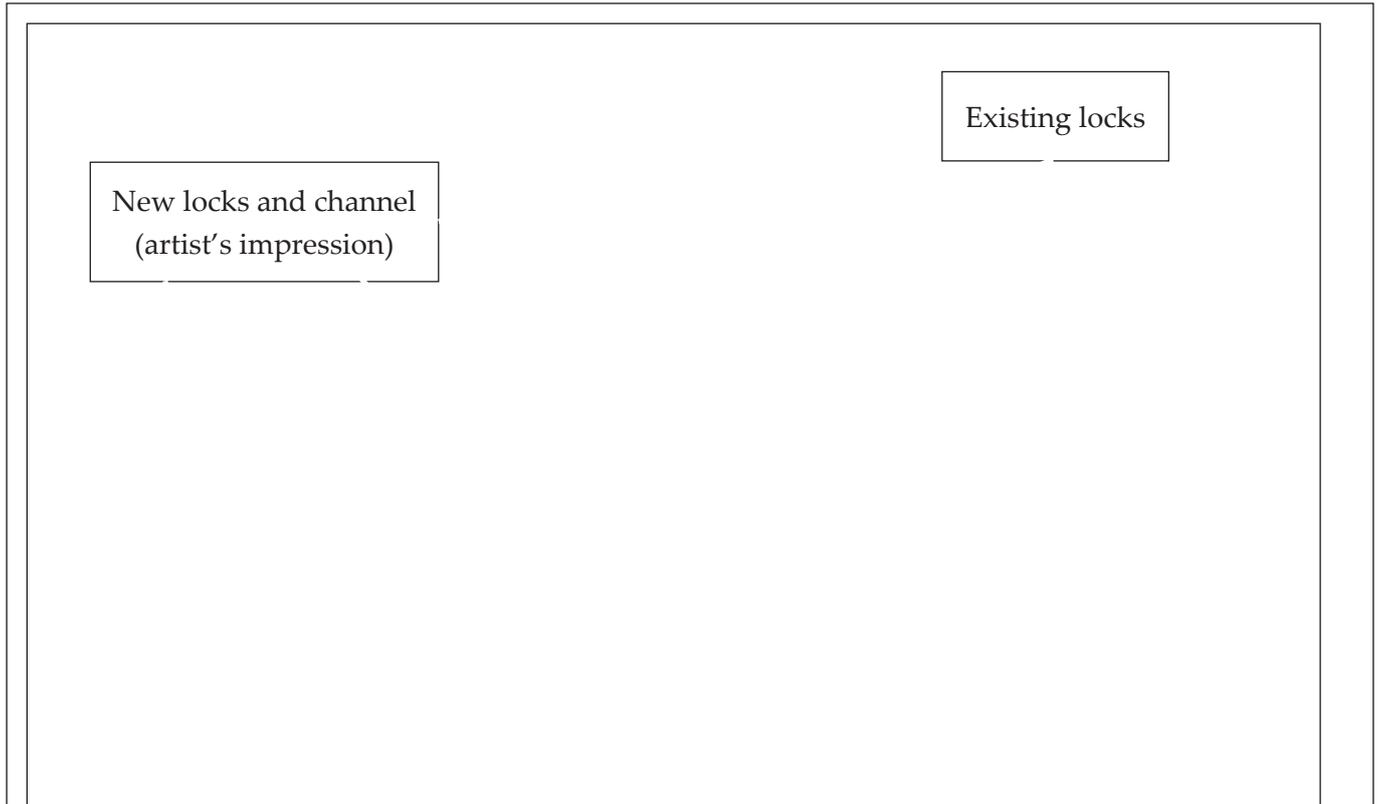
Up to 43 ships use the Panama Canal every day; about 30 % of these are “Panamax” size.

### Ship Size

First and Second Generation	Panamax	Post-Panamax	Super Post-Panamax
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However, the “Super Post-Panamax” ships will be too large to transit the Panama Canal even after it is expanded.



**Resource G: The Miraflores Locks – After Expansion**

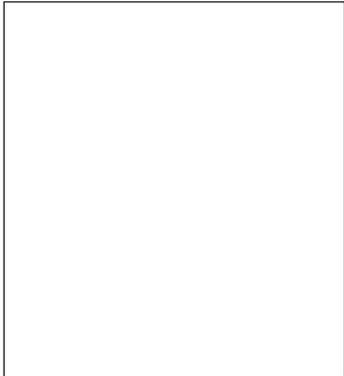
Prior to expansion of the Panama Canal, the existing Miraflores Locks raise ships 16.5 m in two stages over a distance of 640 m.

They will also have nine adjacent water-saving basins that will be used to recycle water when filling and emptying the locks.

**Resource H: Perspectives on the Panama Expansion Project**

By 2025, when the canal is expected to be working at capacity, it should allow for approximately 1 100 additional ship transits every year.

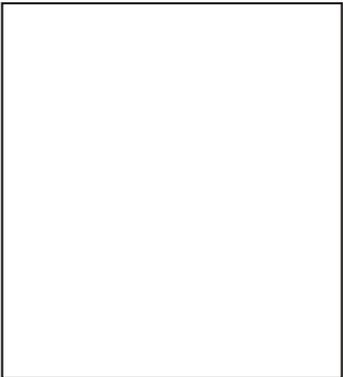
Trade will increase between the West Coast of the US and the East Coast of South America, and employment in Panama is expected to increase by about 15 %.



**Daniel Crawford  
(Shipping Magnate)**

The total cost of the expansion was set at US\$5.2 billion, but by July 2014, the expansion costs had risen to over \$7 billion.

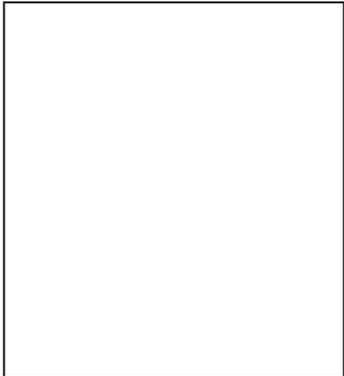
This is a major budget blowout and a waste of money, which could be otherwise spent on improving the living conditions of the people of Panama.



**Selena Contador  
(Opposition Politician)**

There is a high risk of contaminating Gatún Lake (Panama’s main source of drinking water) with salt from the oceans. Sediment from the surrounding deforested land is also washed into the canal, and this affects the flow and volume of water in the canal.

Coupled with this, climate change experts are concerned that Panama’s rainfall may not be sufficient to keep the canal operating.



**Alberto Valverde  
(Local Panamanian)**

## Acknowledgements

Material from the following sources has been adapted for use in this examination.

Page(s)	Source
2	<p>Resource A</p> <p>Text, accessed 16 April 2015, from <a href="http://www.telegraph.co.uk/travel/destinations/centralamericaandcaribbean/panama/11036056/Panama-Canal-in-numbers.html">http://www.telegraph.co.uk/travel/destinations/centralamericaandcaribbean/panama/11036056/Panama-Canal-in-numbers.html</a>, <a href="http://panamacanalfacts.com/category/facts/">http://panamacanalfacts.com/category/facts/</a>, <a href="http://www.softschools.com/facts/wonders_of_the_world/panama_canal_facts/102/">http://www.softschools.com/facts/wonders_of_the_world/panama_canal_facts/102/</a>, and <a href="http://www.pri.org/stories/2014-01-10/after-six-years-and-billions-dollars-panama-canal-expansion-may-grind-halt">http://www.pri.org/stories/2014-01-10/after-six-years-and-billions-dollars-panama-canal-expansion-may-grind-halt</a>.</p> <p>Resource B</p> <p>Image, accessed 7 August 2015, from <a href="http://www.mrcochran.com/grade%208/Imperialism/panama%20canal.jpg">http://www.mrcochran.com/grade%208/Imperialism/panama%20canal.jpg</a></p>
3	<p>Resource C</p> <p>Image, accessed 25 February 2015, from <a href="http://www.lasalle.edu/~mcinneshin/325/wk12/images/panama-canal-map.jpg">http://www.lasalle.edu/~mcinneshin/325/wk12/images/panama-canal-map.jpg</a>.</p> <p>Text, accessed 23 July 2015, from <a href="http://www.alamy.com/stock-photo-cross-section-of-the-panama-canal-showing-elevation-in-meters-24077881.html">http://www.alamy.com/stock-photo-cross-section-of-the-panama-canal-showing-elevation-in-meters-24077881.html</a> and <a href="http://www.globalsecurity.org/military/facility/panama-canal.htm">http://www.globalsecurity.org/military/facility/panama-canal.htm</a>.</p>
4 and 5	<p>Resource D</p> <p>Map and key from Gatún, Panama 1:50000 Map Edition 2–DMATC Series E762, Sheet 4243 IV (Map Information AS of 1977, Defense Mapping Agency Topographic Center Washington D.C.).</p>
6	<p>Resource E</p> <p>First image, accessed 16 April 2015, from <a href="http://xzisu.blogspot.co.nz/2013/04/ocean-container-facts-and-figures.html">http://xzisu.blogspot.co.nz/2013/04/ocean-container-facts-and-figures.html</a>.</p> <p>Second image, accessed 16 April 2015, from <a href="http://bottomliningit.com/uncategorized/1027.html">http://bottomliningit.com/uncategorized/1027.html</a>.</p> <p>Text, accessed 23 July 2015, from <a href="http://www.pancanal.com/eng/op/routes.html">http://www.pancanal.com/eng/op/routes.html</a>.</p>
7	<p>Resource F</p> <p>Image, accessed 25 February 2015, from <a href="http://www.circleofblue.org/waternews/wp-content/uploads/2015/01/panamacanalgraphic1.jpg">http://www.circleofblue.org/waternews/wp-content/uploads/2015/01/panamacanalgraphic1.jpg</a>.</p> <p>Text, accessed 23 July 2015, from <a href="http://micanaldepanama.com/expansion/">http://micanaldepanama.com/expansion/</a>.</p>
8	<p>Resource G</p> <p>Image, accessed 25 February 2015, from <a href="http://www.marineinsight.com/wp-content/uploads/2013/07/Panama-Canal.jpg">http://www.marineinsight.com/wp-content/uploads/2013/07/Panama-Canal.jpg</a>.</p> <p>Text, accessed 23 July 2015, from <a href="https://en.wikipedia.org/wiki/Miraflores_(Panama)">https://en.wikipedia.org/wiki/Miraflores_(Panama)</a> and <a href="https://en.wikipedia.org/wiki/Panama_Canal_expansion_project">https://en.wikipedia.org/wiki/Panama_Canal_expansion_project</a>.</p>

## Resource H

Quotes, accessed 16 April 2015, from <http://micanaldepanama.com/expansion/wp-content/uploads/2014/04/components-2013-marzo.pdf>, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1650393>, <http://www.reuters.com/article/2015/03/26/us-panama-canal-idUSKBN0MM24I20150326>, [http://www.forconstructionpros.com/press\\_release/11585041/further-delays-likely-to-affect-panama-canal-expansion-project](http://www.forconstructionpros.com/press_release/11585041/further-delays-likely-to-affect-panama-canal-expansion-project) and <http://www.pri.org/stories/2014-01-10/after-six-years-and-billions-dollars-panama-canal-expansion-may-grind-halt>.

Images, accessed 21 April 2015, from <http://www.businesscarmanager.co.uk/wp-content/uploads/2013/01/Businessmen-at-computer-600x375.jpg>, <http://www.fgbmfispain.org/resources/Rafael%20Restrepo.jpg?timestamp=1298826259807>, and <http://thebeautifulhumanrace.com/wp-content/uploads/2011/12/brazil-4.jpg>.

