

Rebuilding the Panama Canal – Engineering Works [1]

Panama Canal Expansion

Team 1 - The Wrecking Crew

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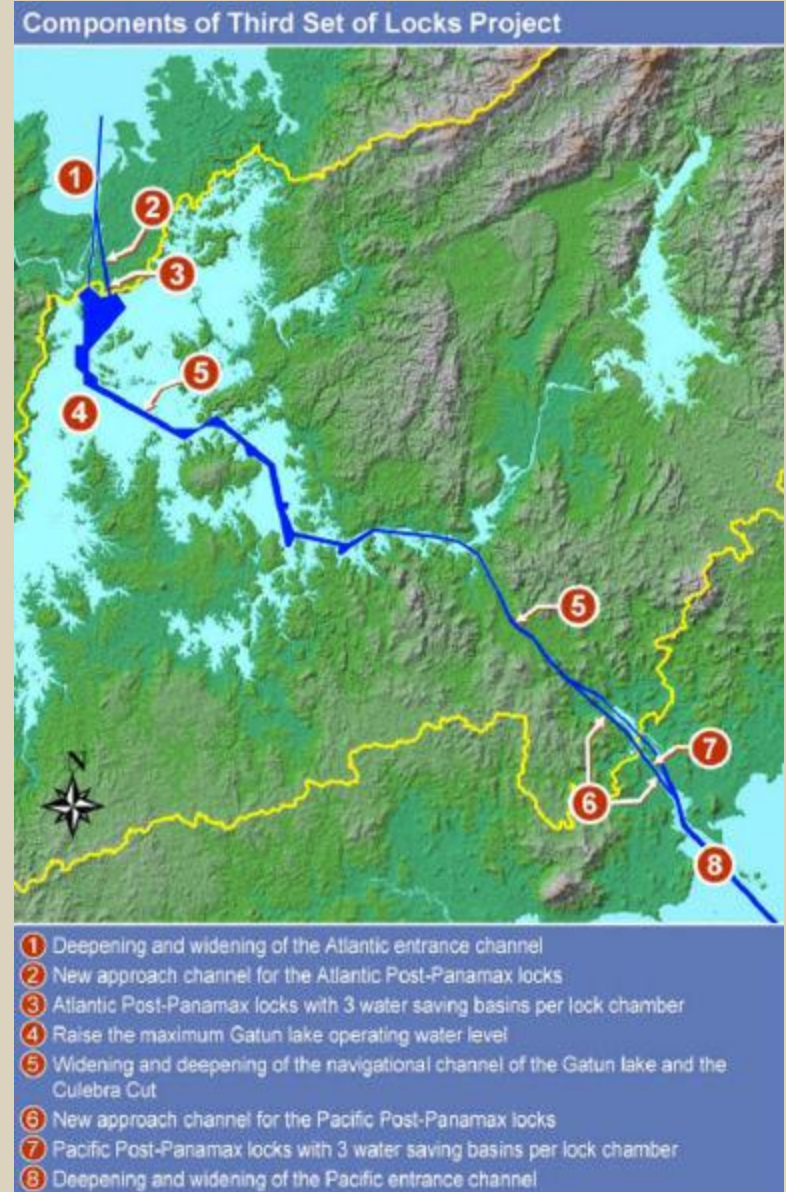
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Overview

- Introduction
- History of the Panama Canal
- Justification for the Expansion
- How it works
- Costs
- Critics
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- Environmental
- Summary
- Going Forward
- References
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Introduction [2]

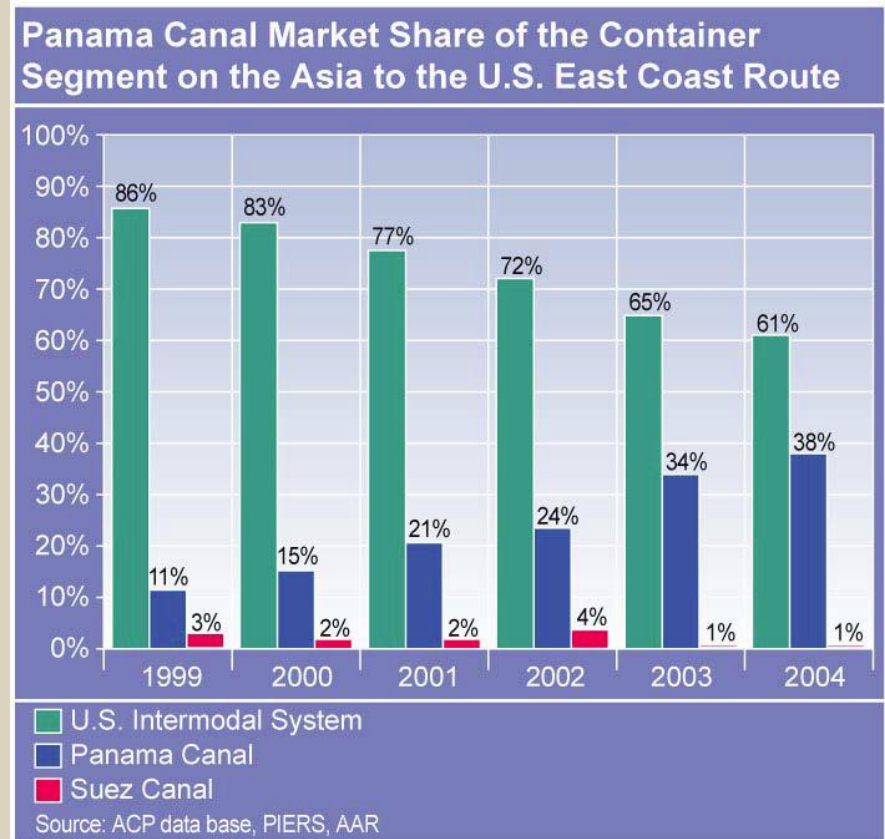
- Originally started by U.S. in 1939, but suspended in 1942
- Restarted by Panama Canal Authority (ACP)
- Composed of Three Components
 - Construction of two lock facilities
 - Excavation of new access channels and widening of existing channels
 - Deepening of navigation channels and raise elevation of Gatun Lake
- 7 to 8 years to Complete
 - Set to open in 2014 or 2015



Introduction (Continued) [2]

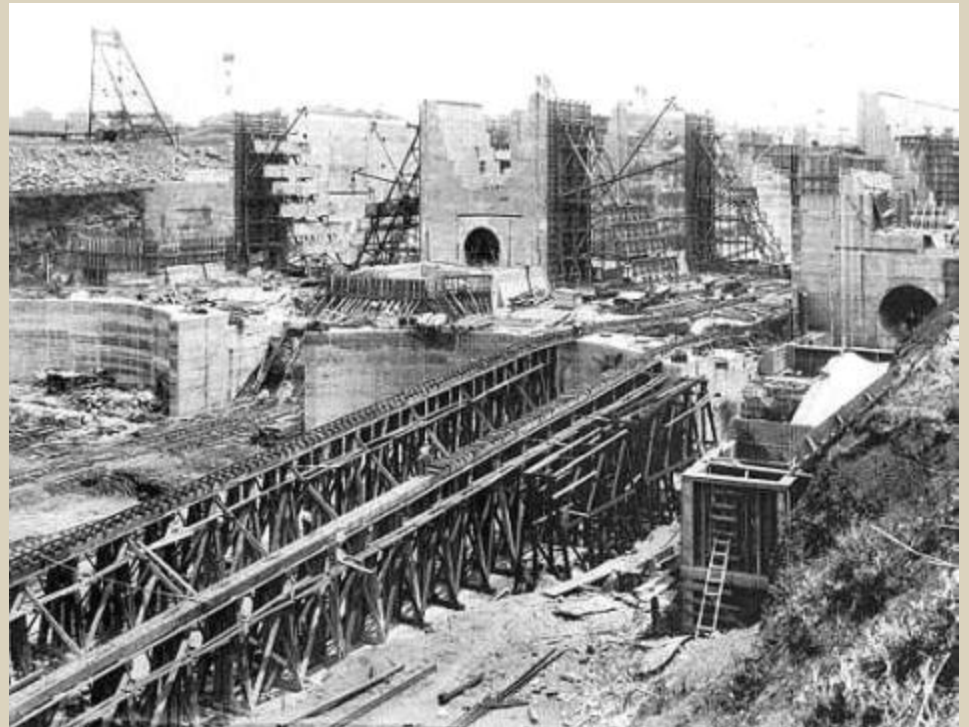
- Built to compete with other trade routes
 - Suez Canal
 - U.S. Intermodal System

- Efficiency of reliability

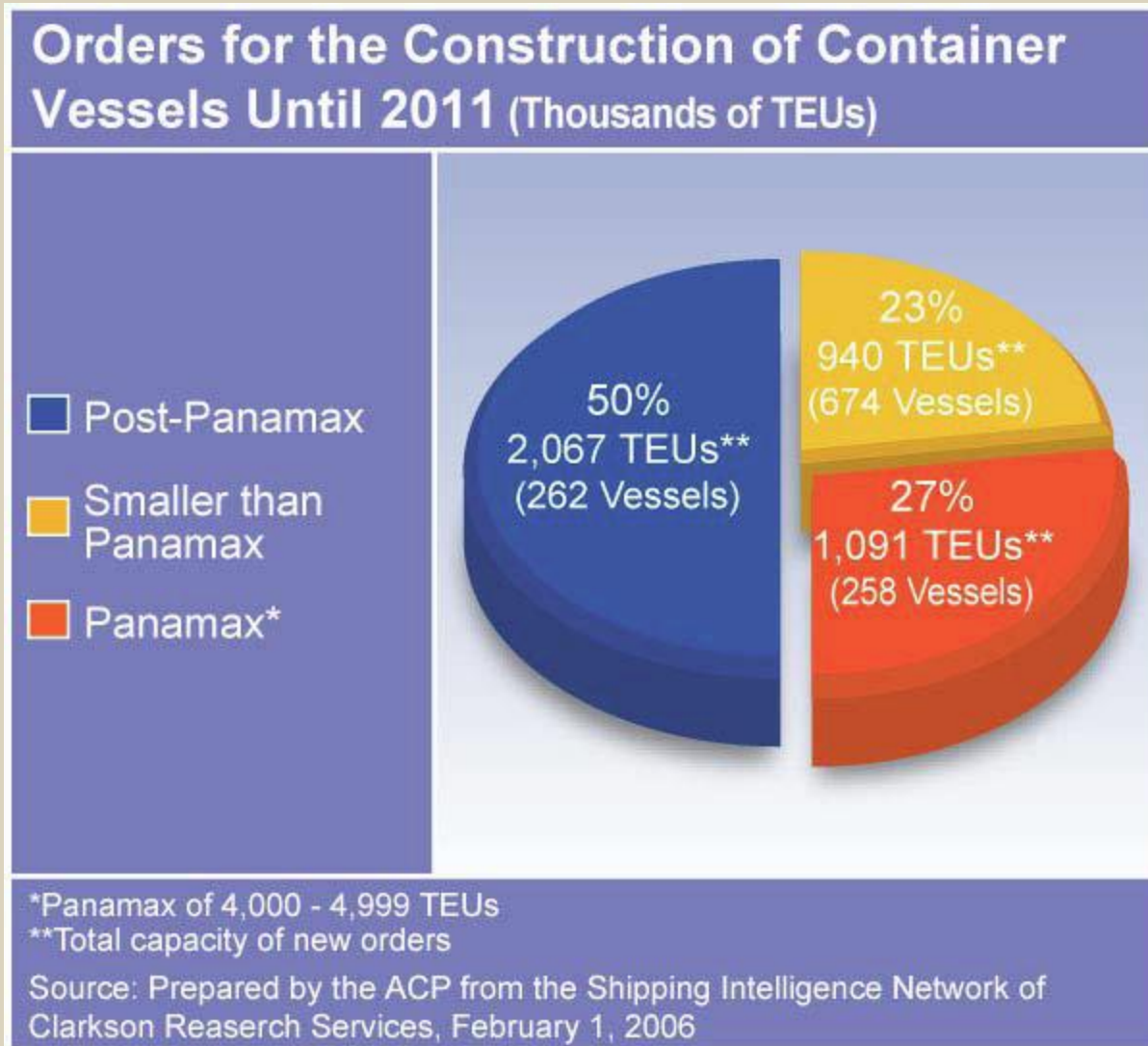


History of the Panama Canal [3,4]

- 1500's
 - Europe realizes importance
- 1800's
 - US realizes importance and French company begins construction
- 1900's
 - US finishes construction



Justification [2]

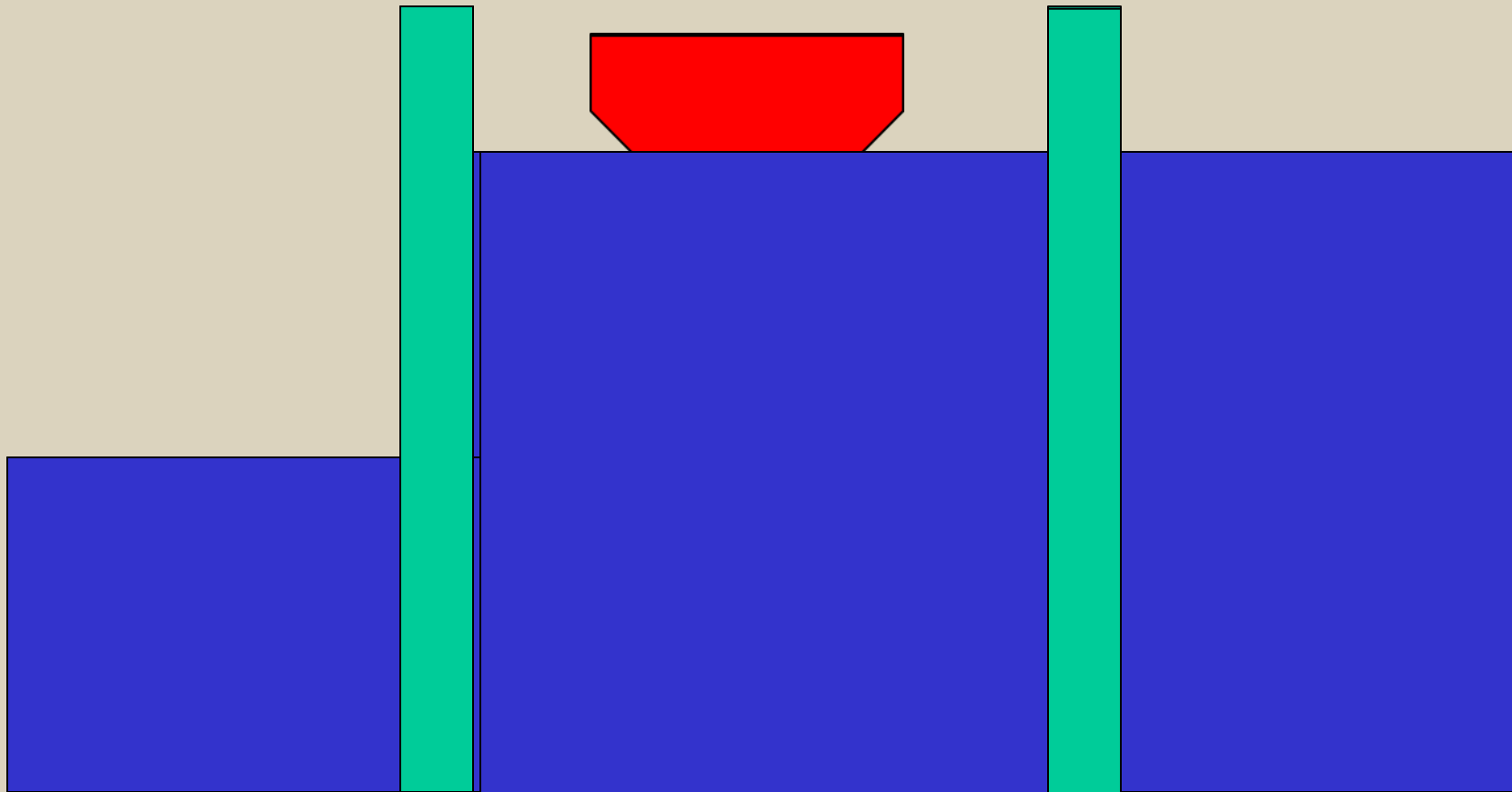


Justification [5]

“This is the biggest change for the global shipping industry since containers replaced breakbulk as the main means of transporting goods in the 1970s.” –FTC



How it works



Costs [2]

- Panama Canal Authority Estimates:
 - Estimated \$20 – \$25 billion cost
 - Annual revenue in 2025 = \$6.2 billion
 - 12% rate of return
 - Payback period – 10 years

Critics [6]

- Payback period
 - Interest on borrowed money not factored in
 - Projections based on expectations of increased canal usage and higher toll acceptance
 - Competitiveness of alternate routes unpredictable
- Cost is too uncertain
 - Involvement of Parsons Brinckerhoffs

Employment [2]

- Panama Canal Authority
 - 35,000 – 40,000 jobs created
- Medium and long term gains will be most important
- Critics
 - Impossible to create that many jobs at once
 - Many positions will be foreign skilled labor

Environmental [2]

- 1 Primary concern
 - Salt water flow into Gatun Lake
 - Source of ½ of Panamas fresh water supply
- National Association for Nature Conservation
 - “Risk is minimal”
- No new land will be bought or altered
 - All is within original jurisdiction of Panama Canal Authority

Summary

- Need for additional lock due to growing demands
- Environmental Factors
- Employment Generation and Economic Benefits
- Controversy of construction

Going Forward

- Emphasis on limiting costs and safety issues throughout project
- Expected completion 2014 – 2015
- Canal will hopefully bring economic prosperity to Panama

References

1. Gene, 2011, “Rebuilding the Panama Canal,” Texas A&M Engineering, <http://engineeringworks.tamu.edu/> (16 March, 2011).
2. Panama Canal Authority, “Proposal for the Expansion of the Panama Canal. Third Set of Locks Project.” <http://www.acp.gob.pa/eng/plan/documentos/propuesta/acp-expansion-proposal.pdf> (21 March, 2011).
3. Panama Canal Authority Historians, “Rebuilding the Panama Canal,” Panama Canal Authority, <http://www.pancanal.com/eng/history/history/index.html> (21 March, 2011).
4. Panama Canal Authority Historians, “Panama Canal History Part 7,” Panama Canal Authority, <http://www.danallen.com/blurb.php?dogNow=720> (21 March, 2011).
5. Wilson, 2006, “Why the panama canal is getting a makeover,” MoneyWeek, <http://engineeringworks.tamu.edu/> (21 March, 2011).
6. Roberto Mendez, “A Bad Business for Panama,” <http://www.nodo50.org/caminoalternativo/canal/43.htm> (21 March, 2011).

Questions or Comments