



# ESIA Process, Conclusions & Recommendations

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**HKND** GROUP



Bill Wild  
Chief Project Advisor of HKND

# ESIA PROCESS

- Terms of Reference established by MARENA
  - Project to comply with International Good Practice, specifically the Equator Principles
  - Equator Principles requires compliance with Nicaragua Regulation & Law, International Finance Corporation Performance Standards, World Bank Environmental, Health & Safety Guidelines
- ERM applied a “mitigation hierarchy” in evaluating the Project
  - Emphasizes avoiding and minimizing impacts before considering mitigation or offsets
  - Three categories adopted to measure and manage impacts – embedded controls, mitigation measures and offsets

# MITIGATION HIERARCHY

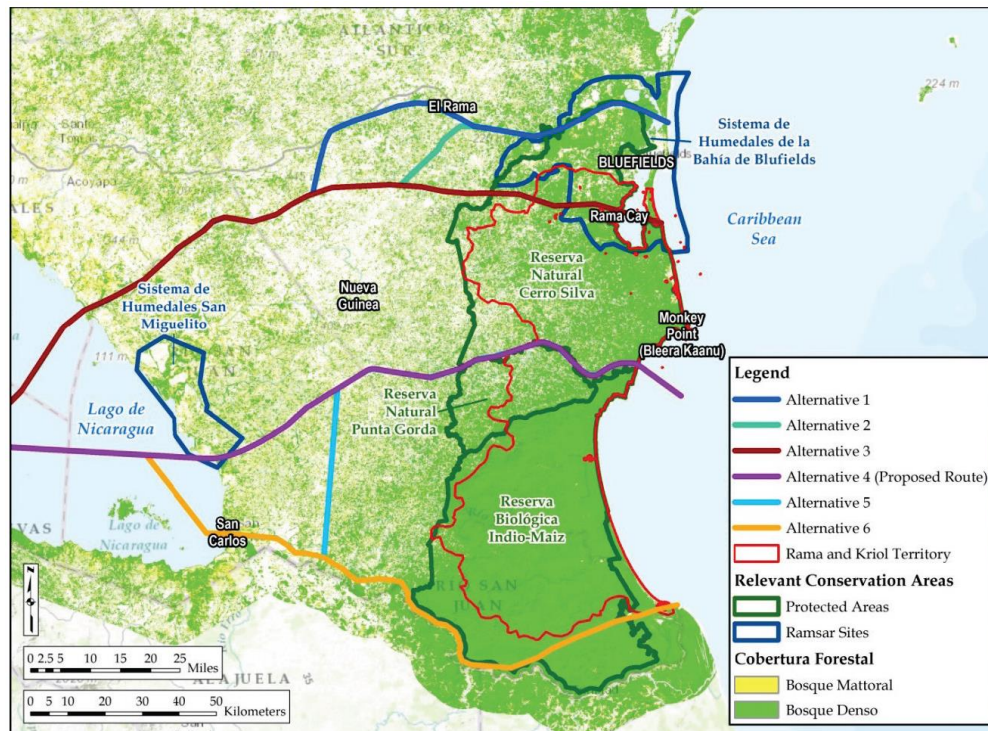
- Embedded controls are incorporated in the design to avoid or minimize impacts
- Mitigation measures adopted to avoid & minimize impacts
- Offsets are a last resort to compensate for residual impacts
- A “HKND Commitment Registry” is included in the ESIA



# MAIN TOPICS

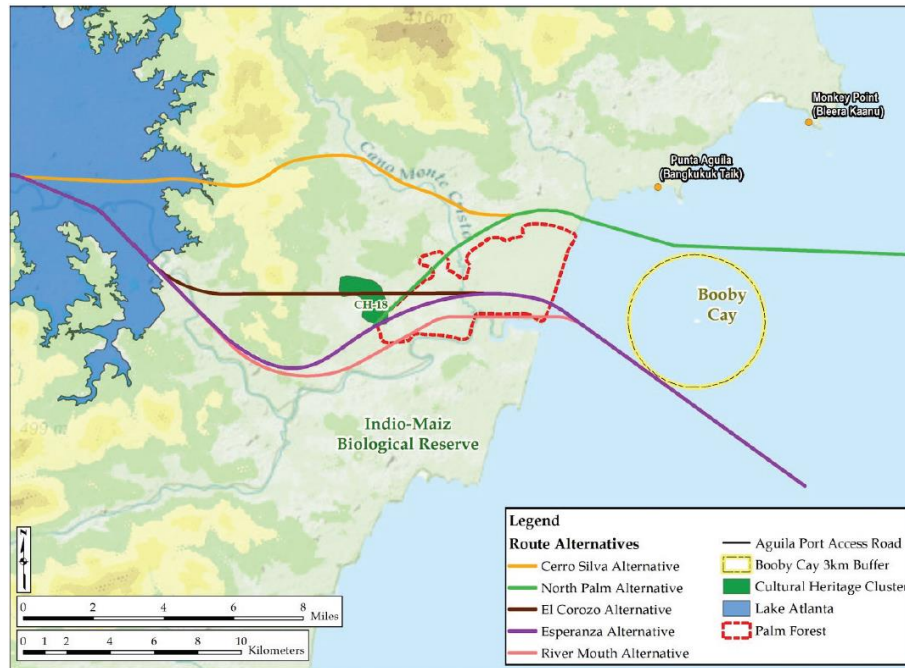
The main conclusions were grouped under 3 headings

- Route Selection
- Conformance with International Standards
- Cost Benefit Comparisons



# ROUTE SELECTION

- After rigorous comparison of the 6 main alternative routes, Route 4 was considered the only one with the potential to adequately mitigate/offset negative impacts and meet International Standards
- Many alternatives within the Route 4 Corridor were considered.



# ROUTE SELECTION (con't)

- A major consideration in the selection of Route 4 was its ability to contribute positively to the protection of the threatened Environmental Reserves, especially those on the Caribbean Coast.
- Funding/coordination required to assure
  - restoration and permanent enforcement of designated protected areas, and
  - agreed environmental and social mitigation and offset measures

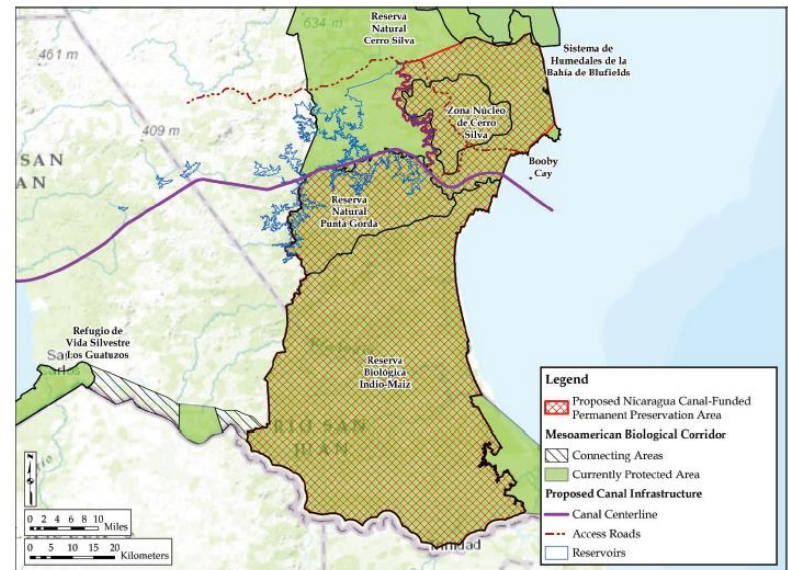
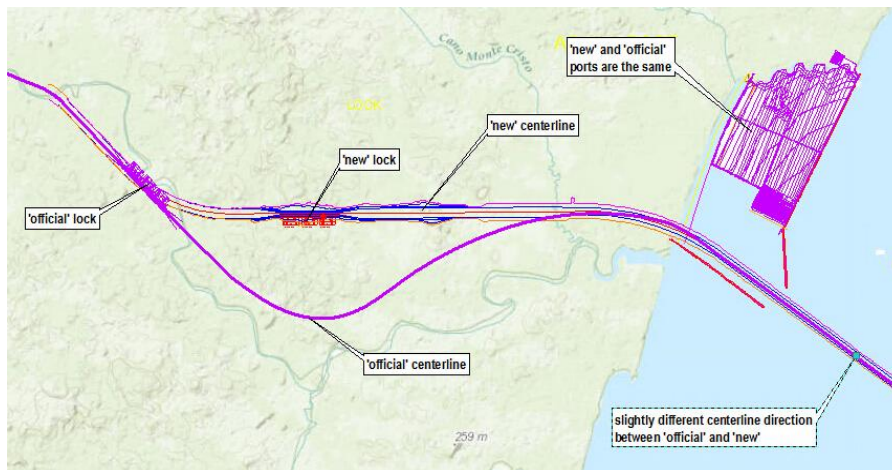


Figure 20: Proposed Designated Preservation Area

# CONFORMANCE WITH INTERNATIONAL STANDARDS

- Many aspects of the Project meet international good practice standards
- Some aspects of the Project require further work to meet International Standards
- These are identified and necessary further studies are listed
- Eg: East Lock and Lake Atlanta options need further study



# COST/BENEFIT COMPARISONS

- Continuation of current environmental trends is “*not positive by any measure*” due to ongoing deforestation & lack of development opportunities
- Many of Nicaragua’s Environmental Reserves are only “Paper Reserves”. Degradation occurring at an ever increasing rate



- Current rates of deforestation and encroachment mean the eventual loss of Indio Maiz and MBC and major implications for biodiversity, natural resources, ecosystem and tourism

# COST/BENEFIT COMPARISONS

- Canal development in accordance with International Standards *“could offer the best future for Nicaragua .... could provide environmental, social and economic benefits to the people”*
- Panama Canal is a good example of the economic and environmental benefits a well-executed canal can deliver



- In the “NO CANAL” scenario, employment opportunities will stay limited.
- Subsistence-style farming and “slash and burn” clearing of forest will continue

# SUMMARY OF CONCLUSIONS

- Project offers potential benefits to the environment and people of Nicaragua
- Delivering the benefits requires a robust business case and secure financing to completion
- Project must be constructed and operated to International Standards and all of HKND's commitments defined in the ESIA must be fully realized for benefits to be achieved



# OVERALL ESIA OUTCOME

- ESIA does not recommend or oppose Project; that is a decision of Government
- ESIA describes likely environmental & social effects of construction & operation of the Canal
- Project would result in significant environmental and social impacts
- Project also has potential for positive effects if properly implemented



# RECOMMENDED ACTIONS IF PROJECT IS APPROVED

- Robust ESIA disclosure and public briefings so the community understands the Project and its effects
- Confirmation of preliminary technical conclusions by further studies
- Continue design optimization process to improve outcomes
- Subject the final design to Expert Review
- Ensure proper Project governance



# RECOMMENDED ACTIONS – ESIA DISCLOSURE

- Extent of stakeholder engagement and publicly available information to date has been criticized
- Additional engagement with affected people and interested parties about the ESIA is recommended



# RECOMMENDED ACTIONS – CONFIRMATION OF CONCLUSIONS

- Preliminary analysis indicates that canal as designed would be safe and Lake de Nicaragua adequately protected
- Most of the impacts are reasonably well defined and quantifiable
- Additional studies to be completed to reduce uncertainty with some conclusions and to confirm preliminary conclusions
- Studies to be completed before final design approval and commencement of construction
  - Topography survey
  - Geotechnical & seismic risk assessment
  - Acid Rock Drainage potential
  - Lake de Nicaragua sediment study
  - Lake de Nicaragua bathymetry study
  - Water balance & salinity study
  - Archaeological study

# RECOMMENDED ACTIONS – OPTIMISE PROJECT DESIGN

- Proposed route is the preferred route, taking into consideration economic feasibility and environmental and social risks
- Some optimization already undertaken at increased Project construction cost in order to avoid/reduce environmental/social impacts and to minimize environmental and social risks (e.g. at El Tule)
- Additional optimization recommendations
  - Move West Canal Pacific Entrance another 200 metres south (accepted)
  - Move East Canal Caribbean Approach slightly to the north (accepted)
  - Optimize EMPA's to minimize environmental and social impact (accepted)
- Further optimizations to be considered
  - West Canal alignment (will be considered based on further studies)
  - East Canal Lock (location and design of East Lock and Lago Atlanta to be reviewed)
  - Relocate some port facilities from Point Aguila to Lake Atlanta

# RECOMMENDED ACTIONS – OBTAIN EXPERT REVIEW

- Segments of the project are located in seismically active, remote, and/or high precipitation areas, rich in bio-diversity and a critical source of fresh water
- Project failure would have significant consequences
- Establish an international Expert Panel to review engineering design and constructability



# PROJECT GOVERNANCE

- All recommended mitigation and offsetting measures should be implemented
- Some issues and mitigation measures go beyond the legal authority of the Project Sponsor. Successful implementation requires coordinated effort
- Government of Nicaragua roles and responsibilities
- HKND is a Special Purpose Vehicle. Needs to expand its capacity to manage the project and implement environmental and social commitments
  - Organization structure
  - International technical experts
  - Establish an Environmental and Social Management system
- Conditions of Approval

Thank You !



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