

THE BAHAMAS POST HURRICANE DORIAN RECONSTRUCTION



INFRASTRUCTURE

1. BACKGROUND

The DaLA concluded that during the passage of Hurricane Dorian, there were damages, losses and additional costs totalling approximately \$463.7 million associated with infrastructure (excluding those related to health and education). It identified specific damages to existing roads, bridges, airport and seaport infrastructure totalling \$51 million and public buildings totalling \$10.6 million. For example:-



The **Little Abaco Causeway** was built in the 1960's to connect Little Abaco Island to Great Abaco Island. Construction of the causeway effectively cut off the migration route for marine life to the south side of the islands which has shallow waters and vast mangroves ideal for spawning. Additionally, it prevented access to small boat traffic through the underlying channel. In 2016, a culvert system was constructed to allow for the water flow under the road. During the passage of Hurricane Dorian, the culvert structure suffered severe damage from storm surge. Consequently, it has been recommended that a bridge be constructed to replace the causeway.

On Grand Bahama, regarding the **Fishing Hole Road Bridge**, the approach embankments and asphalt road pavement suffered severe damage from storm surge and thus due to their current condition, replacement is required.

The DaLA also recommended the construction of seawalls as part of the spatial planning and mapping efforts of risk areas, as they are less invasive than other coastal defenses.

2. VISION FOR RESILIENT & SUSTAINABLE INFRASTRUCTURE

The Government's vision is to have quality, reliable, sustainable and resilient public infrastructure, consistent with the United Nations Sustainable Development Goal 9.

The Bahamas Building Code Edition 3 is known to be of exceptionally high standards. For example, it prescribes that structures be built to withstand 180 mph wind gusts. The building requirements have been upgraded over time to take into account new technology and to enable structures to withstand increasing storm threats. Following Hurricane Irma in 2017, the Ministry of Public Works Buildings Control Division again commenced a review of the Code for revisions that would include far reaching climate change mitigation and environmental protection provisions. The revised Code and innovations

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being called for in the infrastructure reconstruction Post Hurricane Dorian in the impacted zones will take into account thermal installation, potential flooding, surges, greater hurricane force winds, zoning mapping with No Build Zones, and renewable energy.

3. TRANSPORT INFRASTRUCTURE PROJECTS SUMMARY

ABACO

PROJECT 1: LITTLE ABACO BRIDGE

AMOUNT: US\$6 Million

- Remove existing culvert boxes and set aside for inspection and reuse at another less vulnerable site.
- Construction of new road bridge with a total length of 270 feet and a width of 25 feet (20 foot road carriage with 5 feet verge/sidewalk to road edge).
- Substructure - Bridge to be supported on sheet piled abutments with rock revetment protection. Provide parapets to wing walls.
- Superstructure - steel truss.
- Environmental Assessment - one of the main advantages of the project is it will restore the original environment by re-opening the channel there will clearly be a net environmental benefit to the project. It is felt that this aspect could be adequately addressed by an environmental management plan incorporated into the contract documents.
- Road improvements in the vicinity of the bridge.

PROJECT 2: BAYSHORE ROAD, MARSH HARBOUR REPAIR & CONSTRUCTION OF A SEAWALL

AMOUNT: US\$1.5 Million

GRAND BAHAMA

PROJECT 3: FISHING HOLE ROAD BRIDGE, GRAND BAHAMA

AMOUNT: US\$1.21 Million

In order to have a more climate resilient structure for future storm events, it has been recommended that:

- The asphalt road pavement should be replaced with an 8" concrete rigid pavement.
- A 4" thick spill through concrete slab on the eastern embankment will replace the damaged articulated block slope protection from that area.
- As a measure to prevent soil erosion between the existing slope protection and the new concrete rigid pavement, there will be a 6' wide 6" thick reinforce concrete shoulder that will be constructed between the rigid pavement and articulated slope protection.

PROJECT 4: REPAIR & NEW CONSTRUCTION OF SEAWALLS IN GRAND BAHAMA

AMOUNT: US\$24 Million

TOTAL AMOUNT FOR THE FOUR (4) PROJECTS: US\$32.71 MILLION