Ministry of Works

Coastal Areas, Ecosystems and Community Resilience

Making Infrastructure Climate Resilient

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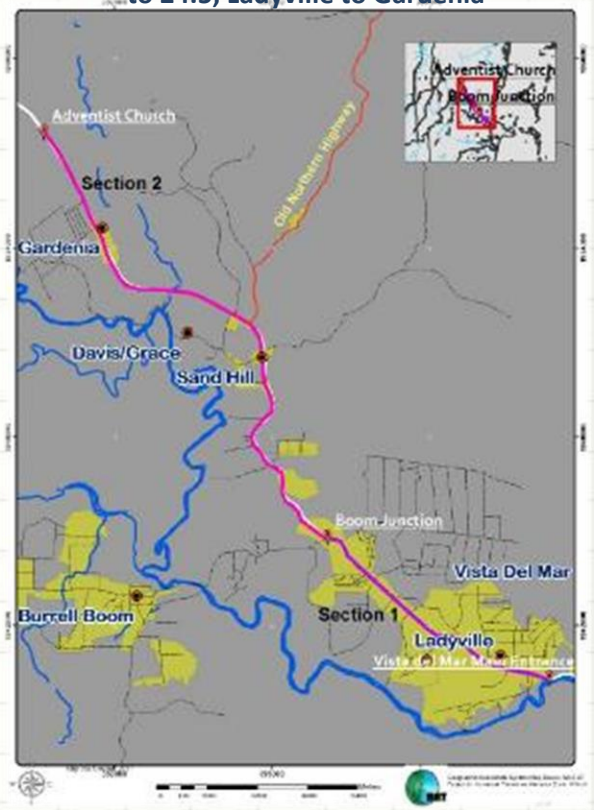
Global Platform for Disaster Risk Reduction – SISRI workshop 21-23 May 2017

Knowing and Understanding the Environment

- Establishing the Extents of the project – ie. The CRIP project.
- Identifying the areas of impact through which the project will traverse – known areas of development and townships, villages etc. as well as sensitive ecosystems and water bodies, watersheds and floodplains.
- Conducting topographical and bathymetric surveys to better understand the contour of the area and the function of any intricate water body networks.

Climate Resilient Infrastructure Project – Rehabilitation of the Philip Goldson Highway Mile 8.5 to 24.5, Ladyville to Gardenia



Assessing the Challenges (Past & Present)

- Documenting impacts of past events.
- Assessing the integrity of existing Highway and Drainage infrastructure.
- Observing & understanding the impacts on pavement structures due to current traffic demands and land development.
- Assessing the immediate flooding concerns due to urban development and anticipated climate change effects.

Data Gathering for Engineering Evaluation

- Collecting historical rainfall and Storm event data.
- Measuring Pavement Deflection using Benkelman Beam Deflectometer.
- Soil exploration for proper road sub-structure and pavement design.
- Trial pits to assess existing road sub-structure condition.
- Vehicle weight studies & traffic surveys to evaluate and design road criteria.
- Assessment of road roughness on pavement.

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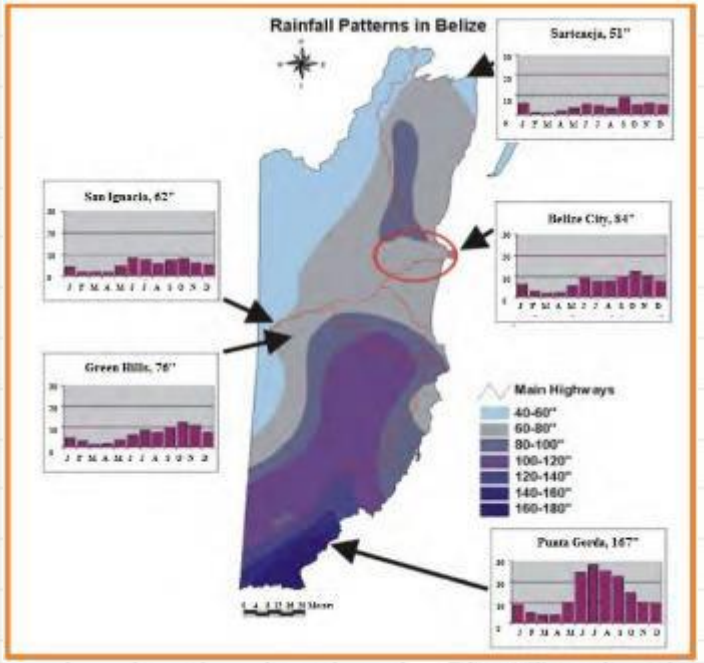

Use of Innovative Technology to Improve Design

- Introduction of LiDAR Survey
- Allows for capture of larger areas of impact such as the Belize River Watershed.
- Provides greater detail of Terrain
- Improves Hydrological and Hydraulic Assessments allowing greater accuracy.
- Sub-meter contours allow for improved flood modelling, flood risk assessment and vulnerability assessment.
- Allows for assessment of Climate change scenarios.

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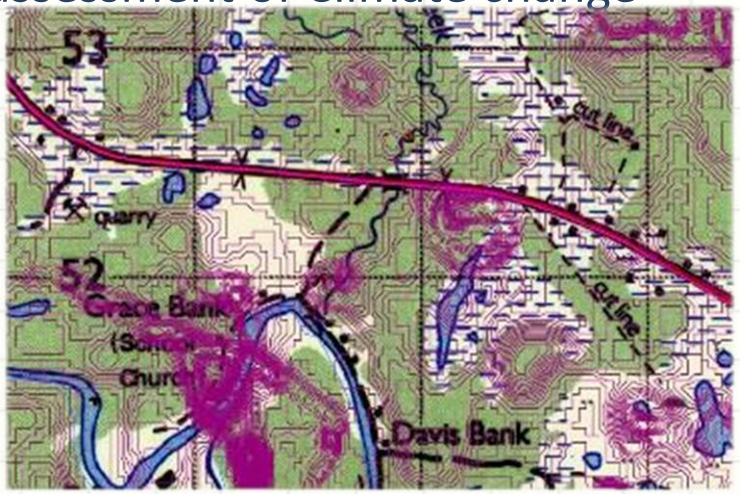

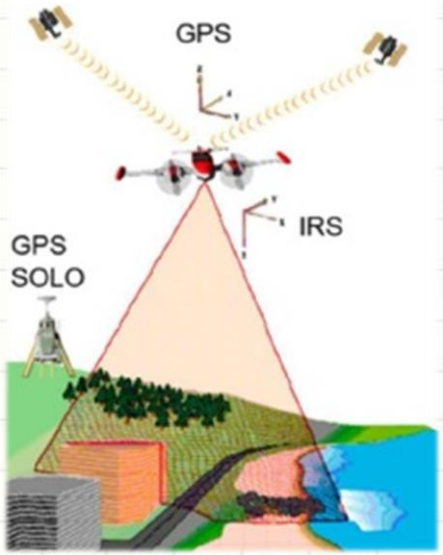

Summary

- The ability to close any data gaps in the following areas:
  - Digital Elevation Model Accuracy
  - Establish accurate and related hydrological data, such as rainfall, storm surge, bathymetric data and developing realistic IDF (intensity-duration-frequency) curves
  - Forecasting current and future traffic demand
  - Establishing all necessary engineering design criteria.
- Will provide an opportunity to prepare, design and construct for both Highway and Drainage infrastructure that will better perform under the adverse impacts of climate change.

THANK YOU