An Alternative Approach to the Development of Water Supply and Sewerage Projects in Jamaica

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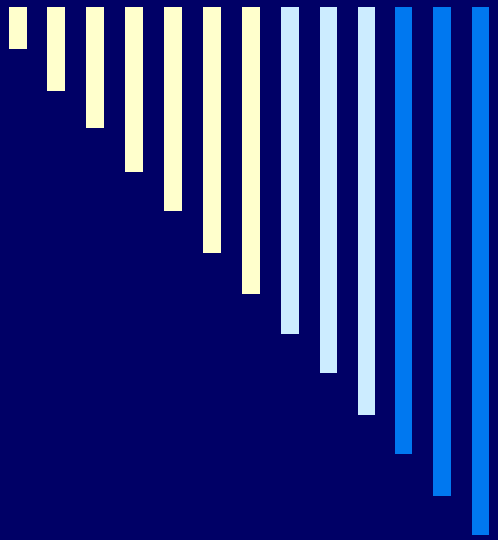
Outline

- NWC – The Early Years
- NWC - Evolution
- The Water Sector Policy
- NWC Supporting Tourism Development
- Development and Implementation of Infrastructure Projects in the Traditional Way
- Alternative Project Development Approach
- Going Forward



NWC – The Early Years

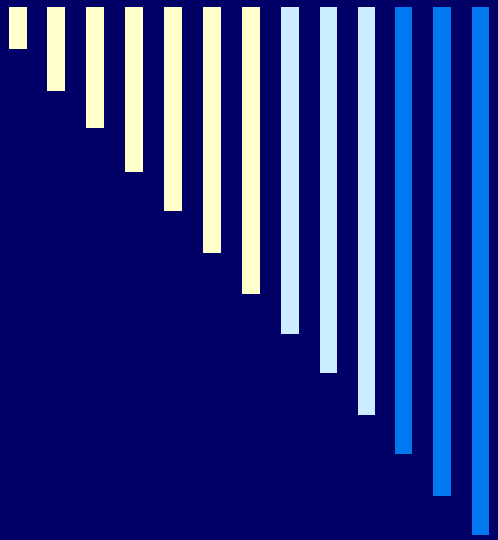
- **NWC established in 1980**
  - Merger of the Corporate Area Water Commission & Rural based National Water Authority
- All Parish Council Facilities transferred to NWC in mid 1980
- Some of smaller former Parish Council Facilities returned to the respective parish councils (e.g. entombed springs in remote areas) in 1991

- **NWC has developed over the years**
  - Extending water supply services to areas of the country (major capital towns)
  - Slow transformation from a “Department of Government” to a more business type operation
    - Organization restructuring in search of best fit
      - In 1980 staff level was over 5,000
      - Limited use of technology & specialized equipment
    - Slow response to customer queries and addressing technical problems (broken main, defective pumping equipment, etc)
  - Had faced many challenges in the process

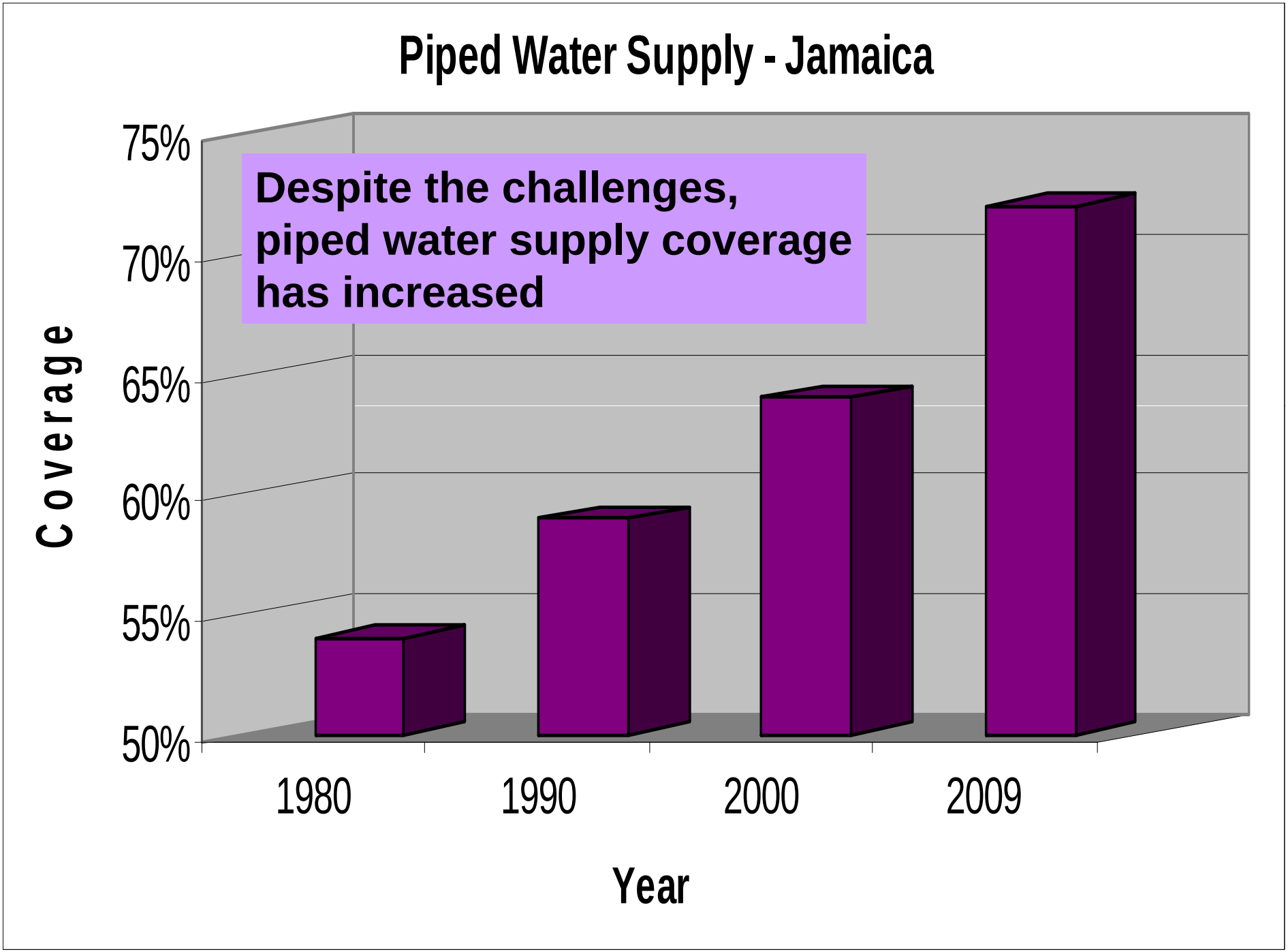
Financing of operations was done through water charges and government grants

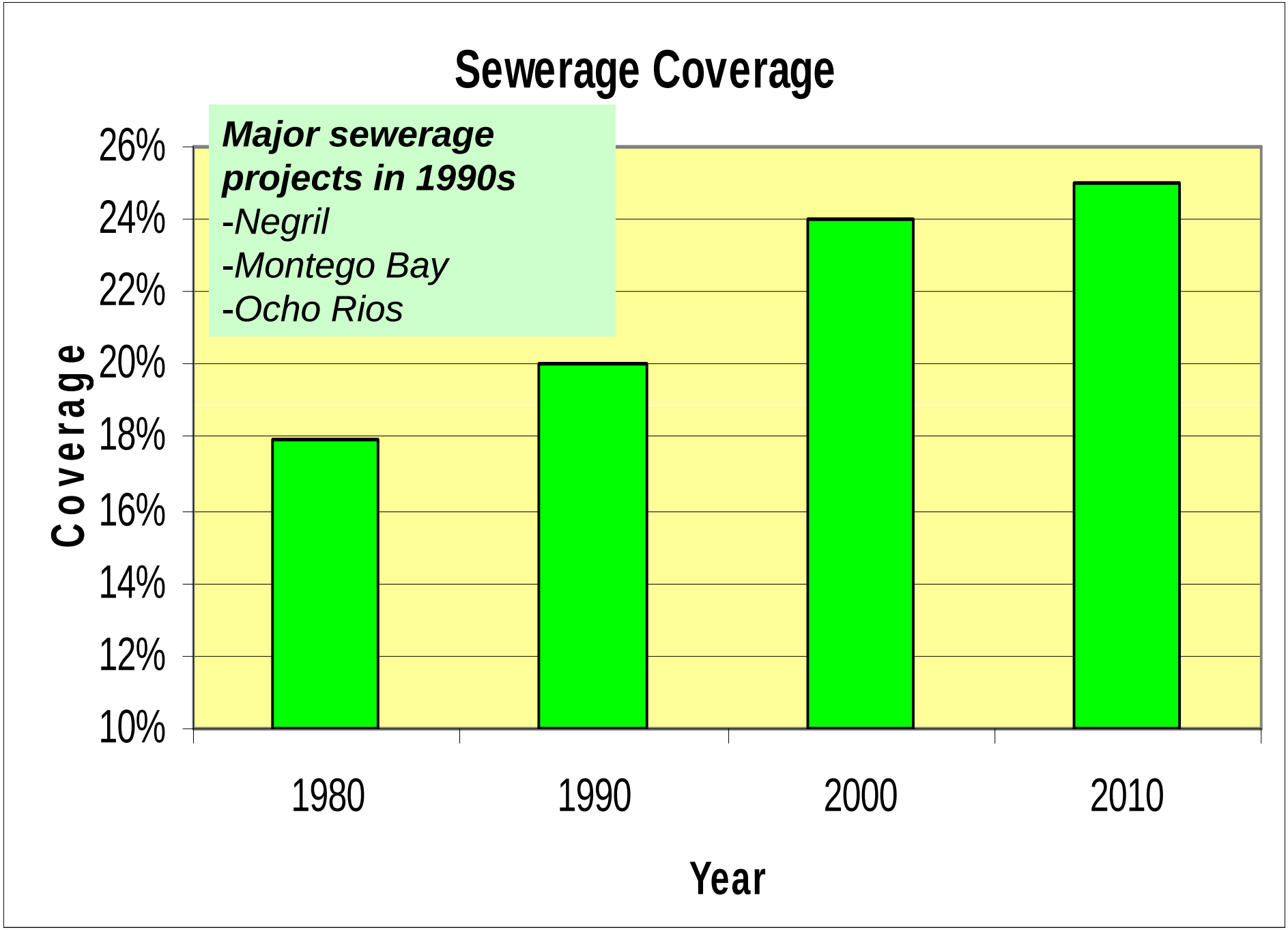
- Tariff adjustments were infrequent and inadequate and was the prerogative of the portfolio Minister
- Maintenance suffered, resulting in poor state of water supply & sewerage infrastructure

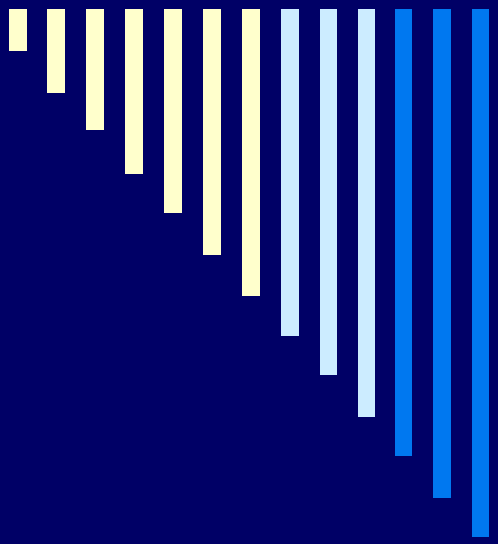
- **NWC depended on the government to obtain financing from multi-lateral/bi-lateral agencies**



NWC – Evolution


Piped Water Supply - Jamaica
Despite the challenges, piped water supply coverage has increased
Coverage
75%
70%
65%
60%
55%
50%
1980
1990
2000
2009
Year


Sewerage Coverage
Major sewerage projects in 1990s
-Negril
-Montego Bay
-Ocho Rios
26%
24%
22%
20%
18%
16%
14%
12%
10%
Coverage
1980
1990
2000
2010
Year



The Water Sector Policy

NEED FOR NWC REFORM

- Situation in late 1990s necessitated NWC taking actions to address the inadequacies in service delivery & financial viability that existed then
  - There was no articulation of the role of NWC in the water sector
    - NWC was all things to everyone in the water sector
  - Worker unrest
  - Public distrust and some people saw the utility as uncaring
  - NWC was often in the newspaper headlines for negative things.
  - There were many protests due to inadequate service
- GOJ prepared the **WATER SECTOR POLICY**
  - Became Effective in 2002

NWC now operates within the context of the Government of Jamaica's WATER SECTOR POLICY

- all Jamaicans to have access to potable water by 2015
- major towns to have central sewerage by 2030
- the provision of water & sewerage services is to be
- focused to have the maximum impact on national
- growth & development
- NWC's role in the water sector was defined

Development and Implementation of Infrastructure Projects in the Traditional Way

- The development of the earlier water supply and sewerage projects have been undertaken in traditional ways and though the use of standard project management tools
  - Preliminary Design
  - Finance Sought (Multi-lateral/Bi-lateral)
  - Detailed Design
    - Tendering & selection of Design consultants
    - Design work
  - Construction
    - Tendering & selection of contractor
    - Implementation of the works
  - Delays resulting from issues in the procurement process (multi-layered approval process), terms of the financing (level of inflexibility to respond to changes in situation

KMA Water Supply and Rehab Project

- Conceived in early 1990s
- **JBIC** loan finalized in 2000
- Design Engineers selected in 2002 & design work commenced shortly after
- Contractor selected and commenced work in 2006
  - Tender
  - Evaluation
  - Approval Process (NWC Board, NCC, Cabinet)
- First stage of work completed in 2010.

ELAPSE TIME (from Loan Approval) : 10 YEARS

Port Antonio WS Sewerage & Drainage

- Conceived in the mid 1990s
  - Port Antonio Study conducted by consultants engaged by UDC (water supply, sewerage, drainage and solid waste)
- NWC approached EIB for financing in 2000 and to do water supply & sewerage
  - EIB required that drainage component be included (since excavation in the road for sewers was to be done), but was to be financed by GOJ
- Consultant selected in 2005
  - Detailed design for Stage 1 completed in 2007
  - Contractor Selected in mid 2009
  - Commencement of work has been delayed
    - No “fiscal space” available; no disbursement request can be made to EIB

ELAPSE TIME TO DATE (from Loan Approval) : : 10 YEARS

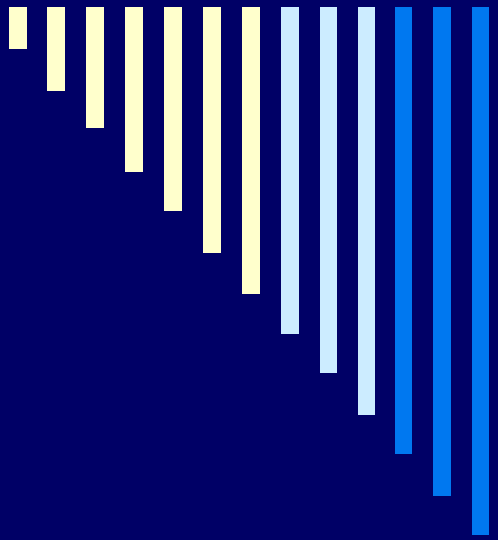
Kingston Water and Sanitation Project

- NWC approached IDB in 1998
- Preliminary Engineering completed in 2003
- **IDB** Board approval in 2004
- Loan signed in 2006
  - IDB was concerned about certain NWC related taxation contributed to the delay
- Engineering Consultant Engaged in late 2008
  - Pre-Qualification
  - Approval of pre-qualified consultants
  - Tendering
  - Evaluation
  - Approval Process

Kingston Water and Sanitation Project (cont'd)

- Some US$15M diverted in 2008 to assist Food Safety Programme
- New Loan being negotiated with IDB
- Designs for some aspect of the Project
  - Darling Street PS – Work about to commence
  - Mona and Hope – Work about to commence
  - Tenders for others to be invited shortly

ELAPSE TIME TO DATE (from Loan Approval) : 7 YEARS



ALTERNATIVE PROJECT DEVELOPMENT APPROACH

Alternative Project Development Approach

- **DEVELOPING AND IMPLEMENTING PROJECTS USING THE TRADITIONAL APPROACH – *WITH FUNDING ASSISTANCE FROM INTERNATIONAL AGENCIES* - IS DIFFICULT**

LONG LEAD TIME

FORTUNATELY SOME PROJECTS REPRESENT AN OPPORTUNITY FOR RELATIVELY FAST COMMERCIAL RETURNS

- **SO THEY ALSO OFFER AN OPPORTUNITY FOR AN ALTERNATIVE IMPLEMENTATION & FINANCING APPROACH**

  - **IMPACT CHARGES - CONNECTION FEES**

  - **EARLY (and LARGE) REVENUE STREAM**

An innovative approach to Project Development and Implementation has been developed

Integrated Project Management Team Established

NWC

Independent Consultant

Construction Company

BUILT ON MUTUAL RESPECT AND TRUST

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1. NWC DEFINES PRIORITY OBJECTIVES
2. NATIONAL CONTRACTS COMMISSION (NCC) APPRAISED
3. INDEPENDENT CONSULTANT APPOINTED
4. CONSTRUCTION COMPANY SELECTED
5. PROJECT TEAM, USING COLLECTIVE EXPERIENCE, DEFINES PROJECT IN DETAIL – TO OPTIMIZE NWC INVESTMENT

6a. CONSULTANT'S COST ESTIMATE

6b. CONSTRUCTION COMPANY'S PROPOSAL FOR COST & FINANCING

7. NEGOTIATIONS
8. "VALUE-FOR-MONEY" SUBMISSION TO NCC FOR APPROVAL
9. CABINET APPROVAL
10. IMPLEMENTATION

NWC’S APDA EXPERIENCE

- The US$39 M GREAT RIVER PROJECT

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46% of PROJECT COST

FRENCH BUYER CREDIT **9 Million EURO - 7 years - 3.6%**

COMMERCIAL LOAN **6 Million EURO - 4 years - 7.5%**

3 Million US$ - 4 years - 7.5%

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54% of PROJECT COST

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17.2 Million US$ - 5 years - 9.25%

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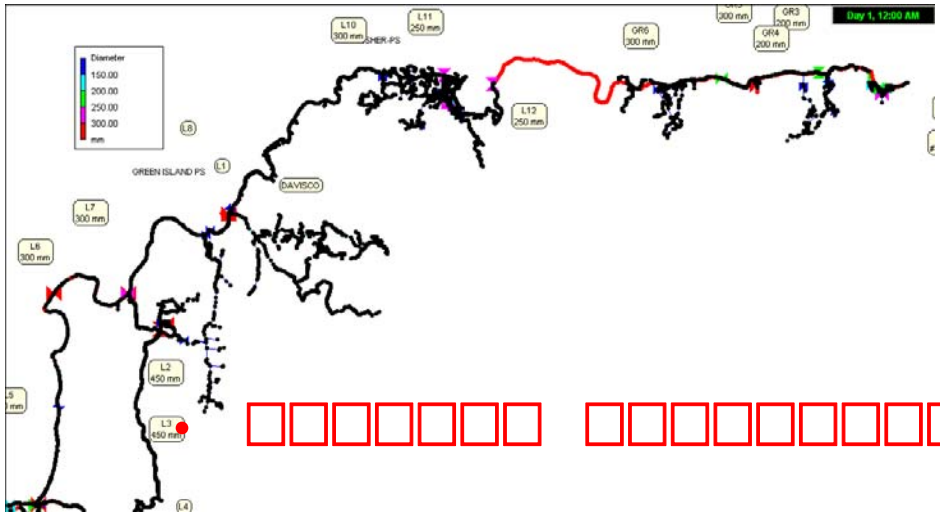
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- **Scope of INITIAL 2 YEAR CONTRACT:**
- **CAPITAL WORKS:**
  - **Refurbishment of (17 year old) 6 migd Treatment Plant**
  - **19.2 kms 500mm Ø Trunk Transmission Main**
  - **2 # Service Reservoirs – each 2.75 Ml**
  - **10kms Distribution Mains**
- **NETWORK IMPROVEMENT OVER WESTERN PARISHES:**
- ***47 Production sites, 130 Reservoirs, 1611kms distribution mains***
  - **Reduction and Control of Non-Revenue-Water**
  - **Increase in Billable Consumption**
- **through comprehensive approach including system audit, network modeling, detection and repair of leakage, pressure control, customer surveys, metering with training of NWC personnel**

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50% of PROJECT COST

FRENCH BUYER CREDIT **6 Million EURO - 8 years - 4.56%**

SPANISH BUYER CREDIT **3.5 Million EURO - 8 years - 4.21%**

COMMERCIAL LOAN **6 Million EURO - 3 years - 7.5%**

4.8 Million US$ - 3 years - 9.5%

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50% of PROJECT COST

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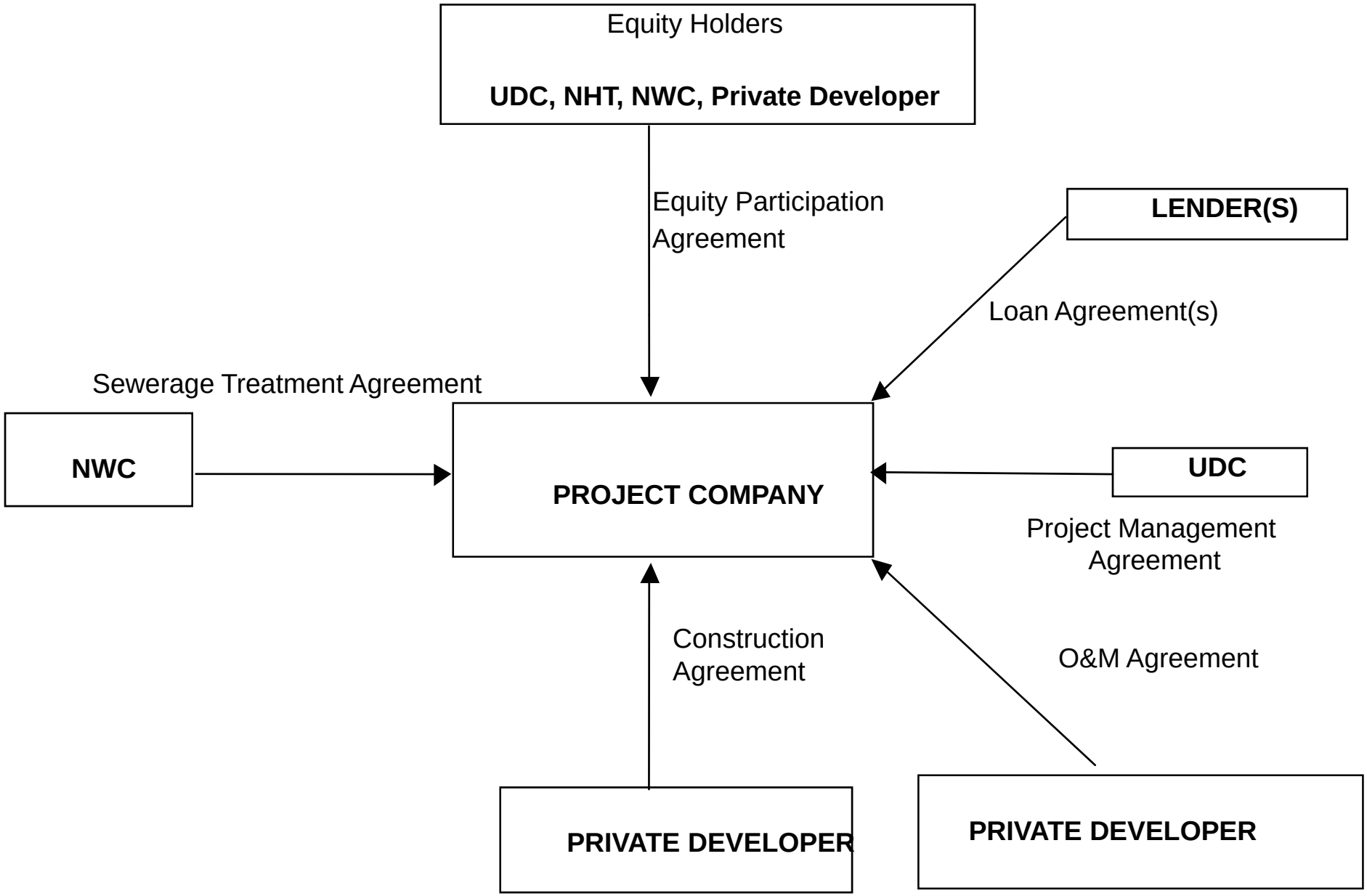
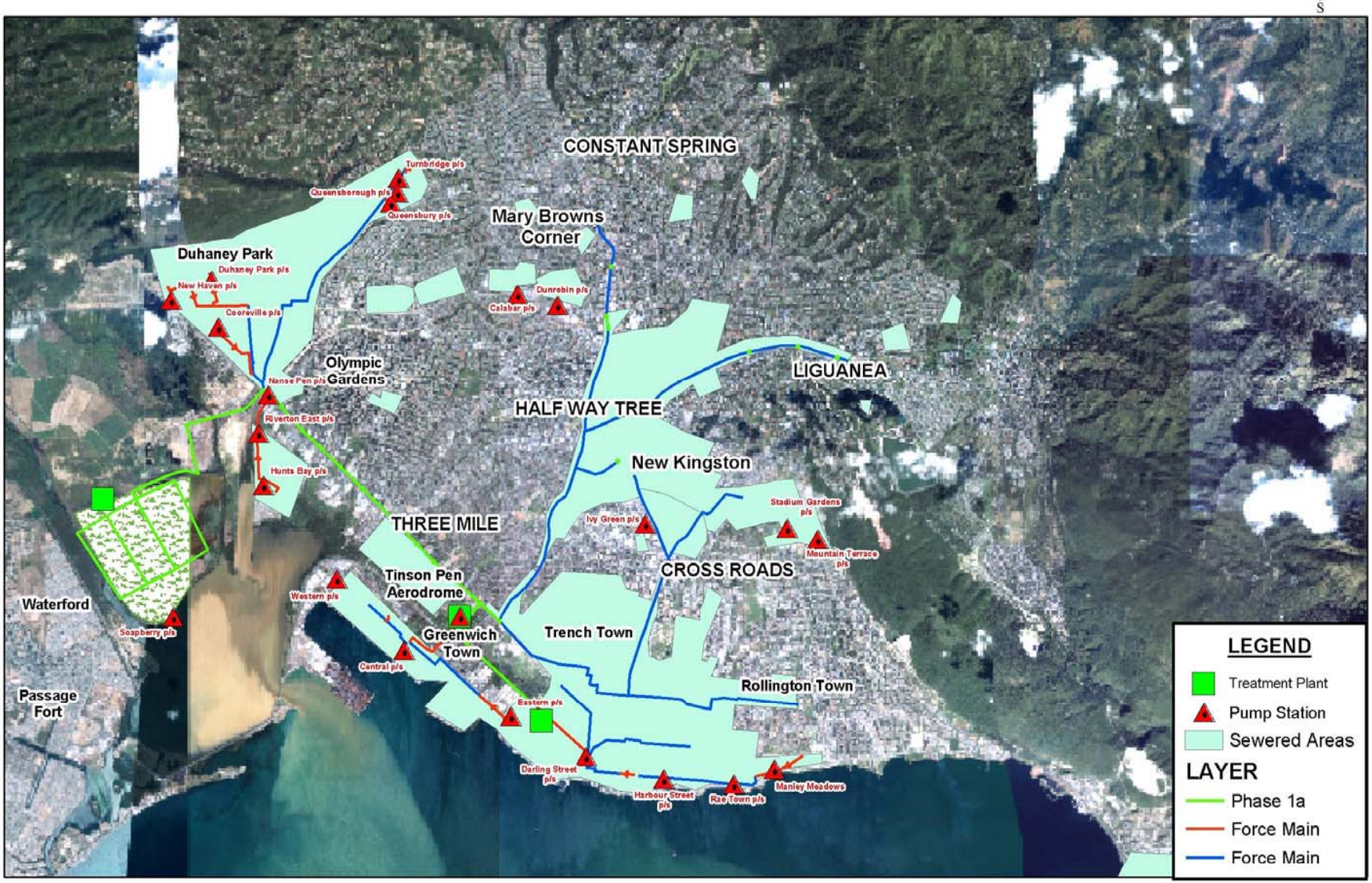
SOAPBERRY SEWERAGE

- Development of Sewerage sector not as attractive as water
- Special arrangements to implement & operate
- Soapberry Sewerage
  - New WW TP for KSA
  - Pending for over 30 years
  - Will reduce environmental impact
- Special Purpose Company (SPC) established
- BOOT arrangement with the SPC

PROJECT AGREEMENTS



KSA SEWERAGE - STAGE 1A



- Decision to proceed with arrangement made in 2004
- Design completed by mid 2005
- Construction Completed in late 2008
- Has been in operation for almost 2 years
- Project Cost : US$50M
  - Loan of US38M from NCB

ELAPSE TIME TO DATE : 4 YEARS

Jamaica Water Supply Improvement Project

In 2006 NWC received an unsolicited proposal to address the water supply shortfall in KSA – The Kingston Improvement Project

The proposal was considered and the *Alternative Project Development Approach* applied

Independent Consultant appointed in 2007

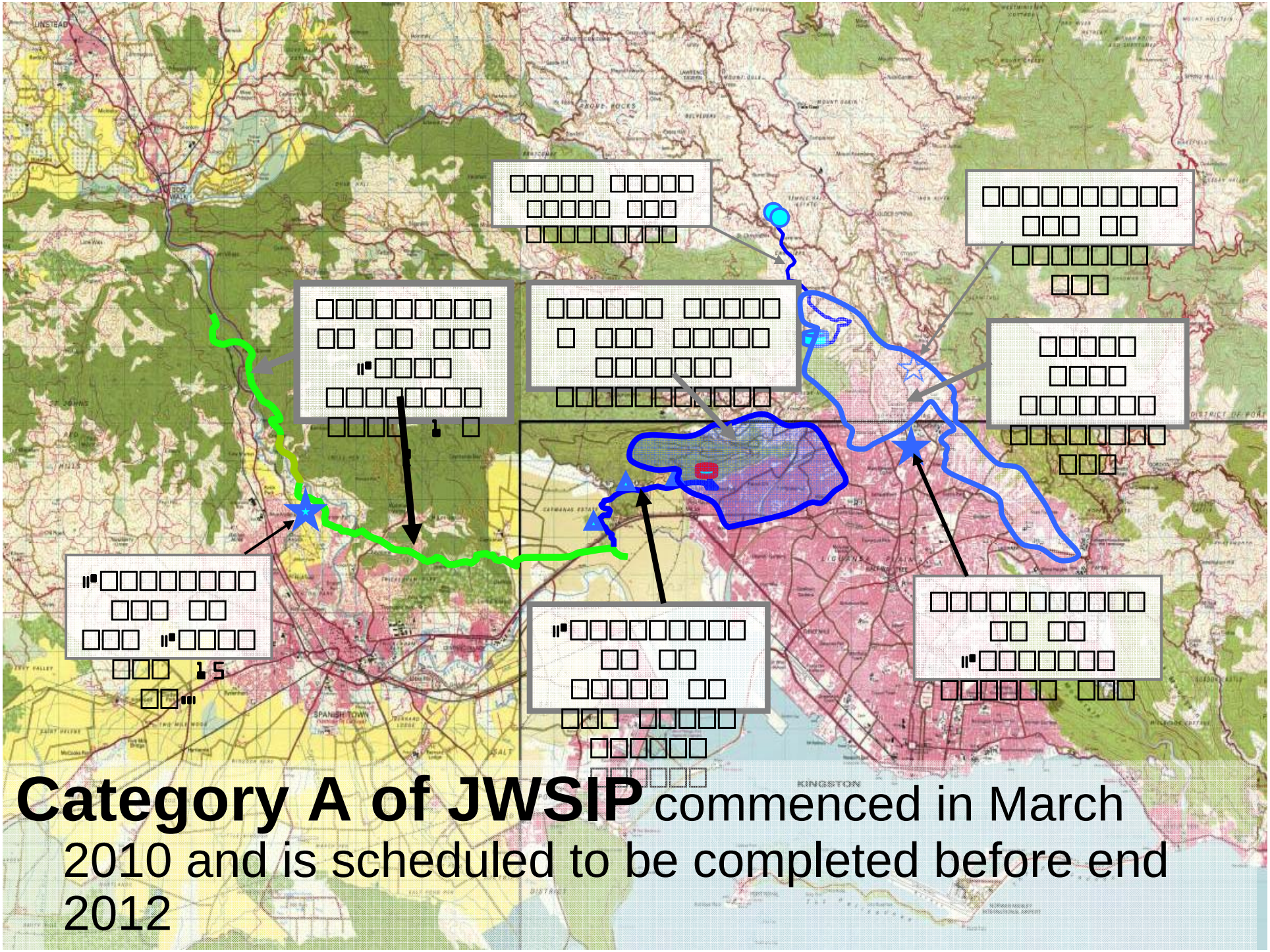
Over time the project evolved into the **Jamaica Water Supply Improvement Project (JWSIP)** to include projects in rural areas

JWSIP

The Project has Two Broad Components:

- **CATEGORY A**
  - Rehab of Constant Spring & Seaview WTP
  - New wells (Halls Green) – 1 mgd
  - Replacement of asbestos cement Rio Cobre Pipeline (Bog Walk to Dam Head)
  - Consumer Metering – 70,000 meters

- **CATEGORY B**
  - New 15 mgd WTP
  - Replacement of asbestos cement Rio Cobre Pipeline (Dam Head to Ferry)
  - Network improvements (F/Hills & Stony Hill)
  - Connecting Pipeline to F/Hills
  - Rural WS Projects



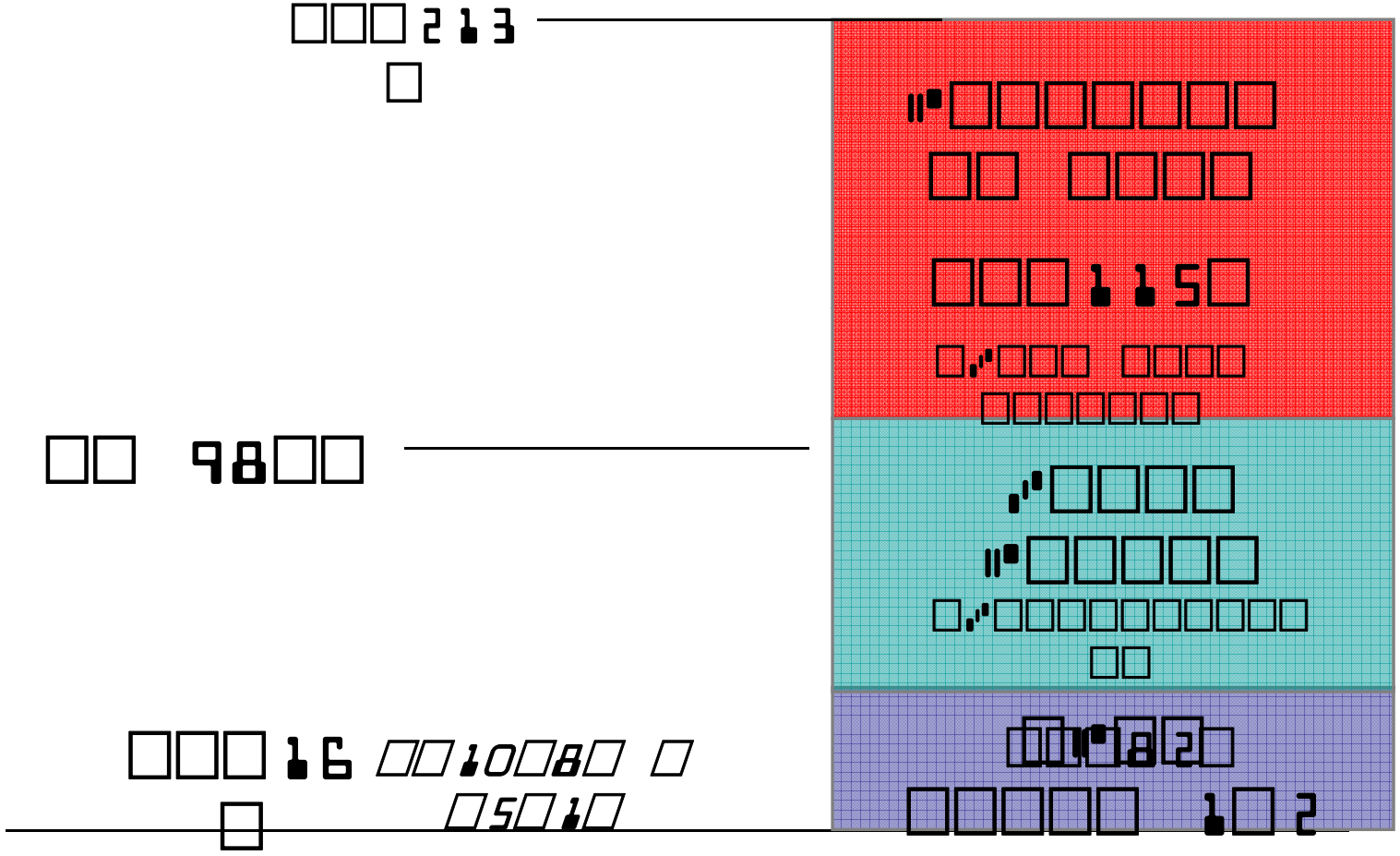
Category A of JWSIP commenced in March 2010 and is scheduled to be completed before end 2012

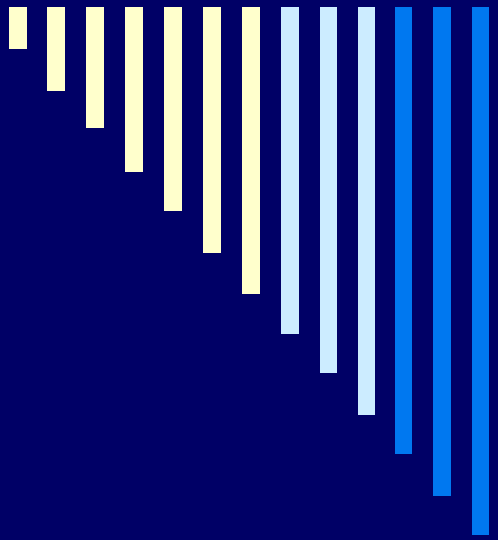
JWSIP

Project Benefits include

- Addressing the water supply shortfall in the KMA
  - New sources
  - reduction of water loss
- Improve Reliability
  - Rehab of two major WTP
  - Network improvement
- Improvement in the efficiency of the operations

ELAPSE TIME : 2006 TO 2012





LESSONS LEARNT

- Menu of project development and implementation strategies
- The approach outlined is available for utilities to consider
  - Time critical
  - Compare loss revenue due to delays in project implementation using the tratiditional approach versus the additional cost (interest cost) pursuing the one presented here