



Project Completion Report

PCR

Project Name	Infrastructure Rehabilitation Project (IRP) – Phase I
Country	The Commonwealth of The Bahamas
Sector	Disaster Risk Management
Original Project Team:	Peter Zoll (FI3 – Team Leader), Jacob Greenstein (FI3), Vera Lucia Vicentini (FI3), Margaret Hagen-Wood (OD6), Oscar Spencer (CBH) and Javier Cayo (LEG)
Project Number	BH0031
Loan Number	1266/OC-BH
CRG Date	November 4th, 2008
Approval date	November 24th, 2008

PCR Team:

Principal Author and Members: Colin Forsythe, Margaret Walsh and Alejandro Taddia.



ACRONYMS AND ABBREVIATIONS

BEST	Commission – Bahamas Environmental Science and Technology Commission
CDS	Civil Design Section of the Department of Public Works
FI	Family Islands defined as islands other than New Providence and Grand Bahamas
GDP	Gross Domestic product
GOBH	Government of The Commonwealth of The Bahamas
GWB	Glass Window Bridge
GWC	Glass Window Causeway
IDB	Inter-American Development Bank
IRP	Infrastructure Rehabilitation Project
\$M	Millions of United States dollars
MOWT	Ministry of Public Works and Transport
PCR	Project Completion Report



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I. BASIC INFORMATION

BASIC DATA (AMOUNTS IN US\$)							
Project Title	1266/OC-BH Infrastructure Rehabilitation Program						
Borrower: The Commonwealth of The Bahamas	Date of Board Approval: 13 Sep 2000						
Executing Agency (EA): Ministry of Public Works and Transport	Date of Loan Contract Effectiveness: 21 Mar 2001						
	Date of Eligibility for First Disbursement: 24 Jul 2001						
Loan(s): 1266/OC-BH							
Sector: Transport	<u>Months in Execution</u> * from Approval: 81 * from Contract Effectiveness: 75						
Lending Instrument: Investment Loan	<u>Disbursement Periods</u> Original Date of Final Disbursement: 21 Mar 2005 Current Date of Final Disbursement: 21 Jun 2007 Cumulative Extension (Months): 24 Special Extensions (Months): 3						
	<u>Loan Amount(s)</u> * Original Amount: 21,000,000.00 * Current Amount: 21,000,000.00 * Pari Passu (if applicable): 70:30						
Poverty Targeted Investment (PTI): No	<u>Disbursements</u> * Amount to date: \$19,686,224 (93.5%)						
Social Equity (SEQ): No							
Environmental Classification: A, B, or C	<u>Total Project Cost (Original Estimate): \$30,000,000.00</u>						
	<u>Redirectioning</u> Has this Project? Received funds from another Project [No] Sent funds to another Project [No] N/A [N/A]						
	<table border="1"> <thead> <tr> <th>To/From Project Number</th> <th>From Sub-Loan Number</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	To/From Project Number	From Sub-Loan Number	Amount			
To/From Project Number	From Sub-Loan Number	Amount					
	* Current amount (adjusted for redirectioning):						
	<u>On Alert Status</u> Is project currently designated "on alert" by PAIS: No If yes then why is the project on alert (DO , IP Ratings and/or relevant PAIS indicators): N/A Comments on relevance of "on alert" status for this project (if applicable): N/A						

Summary Performance Classifications				
DO	<input checked="" type="checkbox"/> Highly Probable (HP)	<input type="checkbox"/> Probable (P)	<input type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)
IP	<input type="checkbox"/> Highly Satisfactory (HS)	<input checked="" type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (US)	<input type="checkbox"/> Very Unsatisfactory (VU)
SU	<input type="checkbox"/> Highly Probable (HP)	<input checked="" type="checkbox"/> Probable (P)	<input type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)

II. THE PROJECT

A. Project Context

- 2.1 The Bahamas comprise 700 islands and cays with a total land area of 5,383 square miles, supporting a population of 300,000 persons. Transportation among the 29 inhabited islands of the Bahamian archipelago is both by air and sea. Mail boats and fishing boats require a large number of small docks around the islands. The country has 62 airports (33 with paved runways) with 17 of them being international ports of entry. Much of the archipelago is made of reefs and sand and the highest point is just over 200 feet above mean sea level. In settlements where populations live and where the main road generally runs at close proximity to the shore, sea defenses have had to be constructed to protect against surges often associated with heavy storms.
- 2.2 The Bahamas due to its location and archipelagic nature is intrinsically vulnerable during the annual hurricane season. On the 14th September 1999, Hurricane Floyd passed through The Bahamas with sustained winds of over 155 miles per hour causing extensive damage to infrastructure and buildings in the islands of the archipelago. The Government of The Bahamas (GOBH) immediately declared a state of emergency and with financial support from the IDB commissioned three consulting firms to prepare an assessment of the damage done by the hurricane. The assessment completed in November 1999 set forth the repairs required and organized them according to priority. While the assessment was being prepared, the private and semi-public utilities repaired the essential services for electricity, telephone, water and sewerage and the Government undertook emergency road repairs and removed debris from public areas. The Prime Minister mandated the MOW&T to develop, in consultation with the IDB, a scope of works for restoration of the infrastructure destroyed by Hurricane Floyd. This was done on the basis of the damage assessment, previously mentioned, and formed the foundation of the Infrastructure Rehabilitation Project (IRP) loan operation, which was approved Sep. 13, 2000.
- 2.3 The IRP had been in execution for 4 ½ years with all except 4 of the 60 planned sub-projects completed, when in 2004, on September 2 and September 25 the country was hit by two successive hurricanes, Frances and Jeanne. Damage caused by these two hurricanes was estimated at \$382 million representing approximately 7.3% of GDP. The Government and the Bank agreed to pursue a three-pronged response: 1) a new loan operation under the Immediate Response Facility (IRF); 2) a separate new loan under the Disaster Prevention Facility; and 3) use of the remaining balance (approx. US\$5 million) of the IRP-Phase I resources to effect remedial works on the islands of Eleuthera, Cat Island and New Providence. The IRF (\$16.7M) was implemented in 2005/2006 with very limited results (only \$3.3M disbursed) and the Natural Risk Preventive Management Project was approved in December 2006, however at the time of this report it is yet to be signed.
- 2.4 The macro-economic environment in The Bahamas remained stable during the project period after recovering from the slight downturn of the 9/11 event, with GDP growth averaging around 2.5 %. Tourism, the leading sector of the economy, mirrored this trend and emerged buoyant, notwithstanding the temporary brake of the hurricanes.

Unemployment remained at a low of 9%. Consumer prices grew by under 1 per cent per annum. However inflation in the construction sector was estimated at above 5% per annum from 2003. Income levels were substantially lower in the Family Islands than in New Providence and Grand Bahama and poverty and unemployment higher. The change in political Administration almost midway during the loan period (May 2002) did not affect GoBH's firm commitment to the development objectives of the project. There was however, a period of review immediately after the changeover, which resulted in the late awarding of contracts and some delay in project implementation.

B. Project Description

- 2.5 **Development Objectives.** The overall objective of the Project is the rehabilitation of basic infrastructure – roads, bridges, sea defenses and docks - damaged by Hurricane Floyd.

The project development objective remained throughout the loan period.

- 2.6 The conceptual framework for the project sought to respond to the country's request for Bank support to help solve the emergency problem in as short a time as possible, starting with very limited executing capacity. The required remedial works were divided into two phases, according to their technical and environmental complexity. The first phase project, which is the subject of this PCR, was intended to rehabilitate the simpler, more urgent works, establish effective and sustainable in-country capacity to deal with basic infrastructure rehabilitation and environment issues and to prepare the studies required for the more complex Phase 2 works.

- 2.7 In order to reduce execution time, the design/build approach was identified as the modality to be used. The design/build modality required establishing a new contract execution and supervision culture within MOWT and the local contracting industry. Once successful, the project would establish a systemic framework for providing technologically appropriate infrastructure to the Family Islands of The Bahamas over the long term.

C. Components

The project consisted of the following components:

1. Rehabilitation works on specific roads, seawalls, bridges and docks
2. Preparing the Civil Design Section of the MOW for the most appropriate contracting techniques to meet current and future needs
3. Studies for replacement works intended under Phase 2

Component was broadened in scope to include rehabilitation works resulting from Hurricane Francis/Jeanne in September 2004.

Quality -At- Entry Review

Not Applicable

Quality -At- Entry Review			
<input type="checkbox"/> Highly Satisfactory (HS) - 1	<input type="checkbox"/> Fully Satisfactory (S) - 2	<input type="checkbox"/> Less than Satisfactory (LS) - 3	<input type="checkbox"/> Unsatisfactory (U) - 4

III. RESULTS

A. Outcomes

ACHIEVEMENT OF DEVELOPMENT OBJECTIVES (DO)				
Development Objective (Purpose)		Key Outcome Indicators		
1. Basic infrastructure damaged by Hurricane Floyd rehabilitated. <i>Classification: HP</i>		1.1 Roads returned to minimum local standards with an IRI of at least 4. 1.2 Docks restored to serviceable conditions with sea surge protective devices installed 1.3 Seawalls restored to pre-hurricane height and drainage devices installed 1.4 Causeways rehabilitated		
		<u>Planned Outcomes</u>		<u>Outcomes Achieved</u>
<u>Baseline</u>		<u>Intermediate</u>	<u>End of Project</u>	
1.1 Indicator included in loan proposal restored		1.1I n/a	1.1E 11 km of road	1.1 Dec. 2005 – 14.5 km restored
1.2 Indicator included in loan proposal restored		1.2I n/a	1.2E 22 docks	1.2 Dec. 2003 – 26 docks restored
1.3 Indicator included in loan proposal seawalls restored		1.3I n/a	1.3E 9.5 km of	1.3 Mar. 2007 – 9.5 km seawall restored
1.4 Indicator included in loan proposal restored		1.4I n/a	1.4E 2 causeways	1.4 Dec. 2003 – 2 causeways restored.
Reformulation: There was no reformulation of the project objectives. However the project objective was broadened in scope in Aug. 2005 when the Borrower and the Bank signed an amendatory contract to clarify that an additional objective of the Project is “to rehabilitate or reconstruct infrastructure works damaged or destroyed by hurricanes Jeanne and Frances that passed through the islands of The Bahamas in Sept. 2004.				
PPMR Retrofitting. Indicate if and when the PPMR was retrofitted and explain any changes resulting from this exercise. [The PPMR for this project was not retrofitted, since the project was adjudged to be at least 65% completed at the time the PPMR retrofitting exercise was introduced across the Bank’s portfolio.]				
Summary Development Objectives Classification (DO):				
<div>[X] Highly Probable (HP)</div> <div>[] Probable (P)</div> <div>[] Low Probability (LP)</div> <div>[] Improbable (I)</div>				
<p>Briefly justify DO classification, based on degree to which planned targets were met, explaining the differences between planned and achieved outcomes as well as any other relevant factors. Include references to evidence that can support these results.</p> <p>The successive GOBH Administrations placed a very high priority on restoring damaged infrastructure to pre-hurricane levels. This was in keeping with their declared policy of promoting Family Islands development, by providing, improving and maintaining basic infrastructure in the islands.</p> <p>In the log frame prepared at the time of the loan proposal, no quantitative metrics are included for the outcome indicators. In the table above these quantitative metrics can only be and are actually inferred from the output indicators of the logframe. In fact the Outcome and the Outputs statements are distinctly similar. Had there been a retrofitting of the PPMR, the Outcomes statement perhaps may have been more appropriately stated as “The restoration of basic infrastructure and services damaged by hurricanes to at least pre-hurricane levels.” Also the indicators would be more of the nature of those assigned in the original logframe to the goal level.</p> <p>Generally the indicators of the Development Objectives were achieved within the intermediate and extended ‘End of Project’ time limits. The infrastructure rehabilitated under the project has served to provide adequate protection to coastal communities and inland structures and road traffic and marine docking have been restored to at least pre-hurricane levels. The supervisory consultant, WSP and the consultants hired for the assessment of damages created by Frances/Jeanne have attested in their Final Report that the rehabilitated works which were subsequently subjected to the onslaught of Hurricanes Frances, Jeanne and Wilma have generally performed in accordance with their designs.</p>				

Country Strategy. Given the results described above, briefly discuss how the project contributed to the Bank's strategy in the country.

The Bank's strategy in The Bahamas is to support the Government's continuing efforts to improve sustained economic growth by improving competitiveness, and effectively managing the country's environment so that sustainable development could take place.

The project contributed to this strategy by reinstating the transport infrastructure necessary to support economic development, especially in the Family Islands.

This was done through the rehabilitating of roads, docks, coastal protection and bridges to acceptable engineering standards. In keeping with a key area of the Country Strategy - strategic human resource development to maximize economic flexibility - the project operation contributed to strengthening the capacity of local contractors to execute works in accordance with engineering and environmental management specifications acceptable to the MOWT and the BEST Commission.

a. Externalities

Due to the environmental management requirements adopted for the Phase I projects the MOWT and BEST Commission – the Bahamas advisory council on environmental matters - have been collaborating on incorporating guidelines in non-IDB projects.

For several of the projects, the opportunity was taken to embellish the original scope of works in order to increase the social benefits e.g. installation of recreational areas with benches at various points of the sea defences, construction of covered areas at docks to protect waiting passengers from inclement weather and provide shade, installation of boat launch ramps to docks.

b. Outputs

IMPLEMENTATION PROGRESS (IP)			
Components (Outputs):			
1. Component 1: Rehabilitation of Specific Works			
Total cost of Component 1: \$22,938,255.39			
Counterpart: \$5,240,504.63			
IDB: \$17,697,750.76			
IDB Disbursement: 77%			
<u>Classification: S</u>			
Key Output Indicators:			
1. By March 2003, all works under Phase I of the Project would have been contracted out.			
2. By the end of the original period for completion, March 2004, the status of works as follows:			
(a) 11 km of roads rehabilitated to local standards.			
(b) 9.5 km of sea walls built;			
© 22 docks replaced and in full working condition;			
(d) Two causeways completed.			
<u>Planned Outputs</u>			<u>Outputs Achieved</u>
<u>Baseline*</u>	<u>Intermediate</u>	<u>End of Project</u>	
n/a	1. Sept. 2003	1. Sept 2003	1. Sept 2003
n/a	2(a) Sept 2004	2(a) Sept. 2005	2(a) Dec. 2005 – 14.5 km of road
n/a	2(b) Sept. 2004	2(b) Nov. 2006	2(b) March 2007 – 13.7 km of seawalls`
n/a	2© Sept. 2004	2© Sept. 2004	2© Dec. 2003 – 26 docks
n/a	2(d) Sept. 2004	2(d) Sep. 2004	2(d) August 2003 – 2 causeways
* (if applicable)			

Briefly explain differences between planned and actual outputs (if applicable).

The actual outputs achieved were numerically more than those planned when compared in terms of the metrics chosen for the indicators. This was partially on account of the net additional remedial works, which were included in 2005 to rehabilitate the damages caused by Hurricanes Frances and Jeanne. The additional works were essentially rehabilitation of seawalls (approx. 5.5 km), hence the concomitant appreciable increase in this output.

Generally a satisfactory pace of implementation was maintained throughout the implementation of this component. Its extended disbursement period was primarily warranted to allow available resources to be channeled to reconstruction of infrastructure damaged by the 2004 hurricanes. Before the advent of Hurricane Frances and Jeanne in Sept 2004, the original program of works for this component was substantially completed, which would have meant a time overrun of just 6 months on the original completion date. This time overrun was primarily due to increase in the number of sub-projects included in the program, delays in tendering and awarding of some contracts (contracts scheduled to be awarded in late 2002, which were not awarded until mid-2003 caused by a review process following the change in political Administration) and extended construction periods in a few instances e.g. Sweeting's Cay road and James Cistern sea defences.

Restructuring. Indicate if this component was restructured (date of approval by Manager). Briefly discuss the consequences of these changes.

This component was re-structured in scope. In 2003 five (5) sub-projects totaling \$5.3 million were deleted at the request of the Borrower because of extensive environmental challenges envisaged. Subsequently in 2005 the loan contract was amended [LEG III/BH-568904-05] to include the execution of remedial works projects to address damages caused by hurricane Frances/Jeanne. The consequences of the loan amendment are outlined in the preceding sections.

2. Component 2: Prepare the Civil Design Section of the MOWT for the most appropriate contracting techniques

Total cost of Component 2: \$3,774,194.89

Counterpart: \$1,957,954.04

IDB: \$1,816,240.85

IDB Disbursement: 48%

Classification: S

Key Output Indicators:

By September 2002, MOWU (CDS) present acceptable written procedures for processing future design and contracting of works.

<u>Planned Outputs</u>			<u>Outputs Achieved</u>
<u>Baseline*</u>	<u>Annual/Intermediate</u>	<u>End of Project</u>	<u>End of Project</u>
2. n/a		2. Sep. 2002	2. June 2002
* (if applicable)			Standard designs and specifications for sea walls, docks and bridges prepared for MOWT Civil Design Section.

Briefly explain differences between planned and actual outputs (if applicable).

Output objective achieved.

Restructuring. Indicate if this component was restructured (date of approval by Manager). Briefly discuss the consequences of these changes.

The GoBH had expressed a preference towards employing the design-build modality. for the execution of the remedial works projects and this was agreed in principle between the Bank and the Government during the preparation of the loan. This modality had been successfully adopted for the Paradise Island bridge project. The perceived advantage of the Design/Build format was that it would expedite the completion of the remedial works. Prior to project start-up it became apparent that the favorable experience with the Paradise Island Bridge project was not transferable directly to the much smaller projects, widely spread on various Family Islands. Further, given the lack of engineering design capacity of small Family Islands contractors, the MOWT reverted from the Design/Build to the conventional Design/Tender/Build modality in order to realistically execute the works. As a consequence, the Project Supervisory Firm prepared standard designs and specifications for seawalls, docks and bridges. These standard design and bid documents now form an integral part of the database of the Civil Designs Section of the MOWT.

3. Component 3: Conduct Engineering, economic and environmental studies of the Phase II Replacement Works

Total cost of Component 3: \$321,866.75

Counterpart: \$194,634.50

IDB: \$127,232.25

IDB Disbursement: 40%

Classification: **U**

Key Output Indicators

By September 2002, the Designs, EIA's and Economic Analysis for the Phase II Replacement Works are prepared and accepted by the Bank.

<u>Planned Outputs</u>			<u>Outputs Achieved</u>
<u>Baseline</u>	<u>Intermediate</u>	<u>End of project</u>	<u>End of Project</u>
n/a	3. Sept. 2002	Prelim. Eng. Designs EIA for the GWC Economic Analysis of	3. Oct. 2002 Pre-feasibility studies and modeling for GWC Nov. 2003 – EIA for the Glass Window Causeway (GWC) Sept. 2005 – Economic Analysis of Glass Window Causeway
GWC		Env. review of projects Final Designs of	May 2004 - Ex-post environmental Review of Phase I projects
GWC			

Briefly explain the differences between planned and actual outputs (if applicable)

The Phase II of the Program originally was to include the construction of the Glass Window Causeway and new docks on Crooked Island and at Conch Rock Creek on Abaco island. The GoBH decided not to pursue Bank financing for the Conch Creek dock due to technical and environmental constraints and the Crooked Island dock was intended to be rolled into a private development. Hence from 2002 the Glass Window Causeway was the only project considered for Phase 2. The preliminary designs and physical modeling of Glass Window Causeway was completed, however the preparation of the final design of the GWC was not completed. This activity was put on hold by the GOBH, pending the outcome of the economic evaluation. The economic evaluation was carried out and indicated that the replacement of the Glass Window Bridge by a causeway was not economically feasible.

Summary Implementation Progress Classification:

☐ Highly Satisfactory (HS)
 ☒ Satisfactory (S)
 ☐ Unsatisfactory(U)
 ☐ Very Unsatisfactory (VU)

c. Project Costs

Total Project Cost - Planned (US\$000)	Total Project Cost - Actual (US\$000)	% Difference
(Reproduce cost table)	(Reproduce cost table)	

Briefly explain any differences:

See Excel Spreadsheet attached as Annex I.

The actual total expenditure on Remedial Works was within 10% of that originally envisaged and totaled US\$22.9 million as compared with US\$24.1 million allocated in the original budget (including pro-rating the contingencies and escalation among the budget categories). The IDB accumulated contribution was US\$17.7 million as compared with US\$18.2 budgeted.

Significant variances were however experienced with the accumulated expenditures for Components 2 and 3 amounting to +ve 320% and -ve 37% respectively. Component 2 consisted mainly of project design and supervision and the allocation for this category had to be increased substantially through several budget transfers on account of i) the revision of modality from design/build to the conventional design/tender/construct and ii) expansion of the supervisory consultant's contract to cover the extended period of execution of the remedial works. For Component 3, since the GWC was ruled, as a result of the economic analysis (late in the project), to be ineligible for funding under Phase II, the funds for the preparation of final designs and bid documents were not utilized.

IV. PROJECT IMPLEMENTATION

A. Analysis of Critical Factors

Project Design

- 4.1 The design build modality applied to numerous small infrastructure projects proved to be inappropriate considering the technical capacity and capability level of the local contractors who had experience in carrying out work in the family islands. Also the relative contract size (average cost \$250,000) of the 60 Hurricane Floyd sub-projects did not lend to utilizing this modality, but rather to preparing standard designs and adopting them to the site-specific conditions.
- 4.2 The Glass Window Causeway (GWC) was included as the main sub-project for consideration under Phase II even though it was fairly evident that it would be challenging for the conventional economic considerations' such as traffic volumes on Eleuthera's main highway, to be sufficient to merit the attainment of an EIRR acceptable to the Bank. It was felt in some quarters that the imperative to maintain the natural transport land link between North Eleuthera and Central and South Eleuthera was evidently supported by social, cultural and integration considerations and should have counted as a significant factor in the economic assessment. In the end the GWC was adjudged by the consultant's evaluation to have an EIRR of 9.5% which was less than the 12% threshold required by the Bank for funding. Accordingly the GWC was no longer considered for inclusion in phase II and the GoBH proposed a list of other 'Phase I-type' projects instead. In retrospect this prolonged sequence of design and analysis of the GWC was unfortunate as it caused the expenditure of considerable effort and resources which predictably did not result in the development of the main project envisaged for the second phase operation. It also produced an inordinate delay - 18 months in taking this critical decision with regards to the IRP Phase II. The Bank's position from the inception of the project (as emphasized by the Transport Sector Review Mission of May 2003) was to encourage the Govt to proceed to undertake the economic assessment. However the GoBH stalled on this issue until it was eventually agreed with the BH Programming Mission of November 2004 to embark upon the economic evaluation. The GoBH

resisted embarking on the economic analysis on account of their conviction that the GWC was unlikely to be assessed as being economically feasible. The failure of this major infrastructure project for a major Family Island to be deemed fungible, clearly has implications for the Bank's consideration and strategy of future funding support of infrastructure expansion/rehabilitation in the Family Islands.

- 4.3 The diagnosis of the organizational capacity and institutional framework in the Loan Proposal recognized that the CDS had limited resources and needed expansion and strengthening. However most of the inputs for this strengthening was projected to come from the activities of the institutional strengthening component under the New Providence Transport Program (NPTP), approved in the following year. Unfortunately the institutional Strengthening component of the NPTP was subsequently designed to be totally focused on the Transport Department, which came under a the Ministry of Transport which was separated from the Ministry of Public Works with the change in Government in May 2002. Hence the Department of Public Works which was the Executing Agency for the IRP did not eventually benefit in any respect from institutional strengthening as was assumed in the loan proposal and remained under-resourced throughout most of the life of the project, despite the representations of the Country Office to the MOWU in this regard. The impact of this was reflected in the speed and efficiency of project implementation being below projected levels and the consequent extensions of the completion and disbursement periods. The mid-term review did recommend that the institutional arrangement and allocation of human resources for the implementation of the project, including financial control, needed to be reviewed. However the MOWT for the greater part of the execution period did not share this view and up until the latter stages of the project implementation maintained that the level of human resources allocated to the IRP was adequate.

Affecting Delivery of Project Outputs – Implementation

- 4.4 The requirement (a condition precedent to first disbursement) for the procurement of a project supervision firm, early in the life of the project proved to be a critical factor in project implementation, as the supervisory consultant played a progressive role in the design of the works and overseeing the technical, environmental and financial execution of the works. The standard of workmanship and quality of materials from the contractors was generally considered satisfactory and was due, in large measure to the presence in most cases of full-time site supervision. This factor has also contributed to the strengthening of the local contractors capability in carrying out works in the family Islands.
- 4.5 The Commission became involved in overseeing the environmental aspects of the execution of the IRP after the completion of the MOWU-supervised projects. During the initial involvement BEST became concerned about some aspects of the environmental management of the Program. The mid-term review recommended that there was need for a formal understanding of and greater collaboration between the MOWT and the BEST Commission in the project implementation. As a result in March 2003 BEST and MOWU began to hold bi-weekly meetings to better coordinate the environmental management of projects. BEST thereafter contracted an environmental consultant to provide dedicated oversight to the project and this action helped to improve significantly the environmental supervision of the projects under construction.

- 4.6 During the period mid-2002 to mid-2003 the approval time for the award of contracts by the upper echelons of the MOWT after the receipt of the bid evaluation reports from the project execution team was inordinate. This seems to have been primarily due to a review of projects/contracts by the new political Administration. This action contributed significantly to an extension with costs to the supervisory consultant's contract, delayed commencement of several contracts and concomitant delay in the overall completion of the IRP.
- 4.7 The diagnosis in the Loan Proposal did not result from an extensive assessment of the organizational capacity of the MOWT and seem to have been based on the capability and performance of the expatriate engineers attached on contract to the MOWT at the time of the project analysis. This situation changed with time and from early 2004 onwards, following the turnover of 3 key senior MOWU engineers involved in the implementation of the IRP, along with the demobilization of the supervisory firm, the management of the remedial works was thinly spread and project monitoring and reporting declined significantly until the MOWU succeeded in recruiting a critical mass of engineering staff in January 2006.
- 4.8 Every project was jointly inspected by the consultant design team and the Family engineer and detailed scoping reports prepared and approved after discussions between the consultant and the Ministry. This was a successful approach as it ensured that the requirements of the MOWT were clear and minimized any abortive design work.

Achieving Project Outcomes

a. Borrower/Executing Agency Performance

Borrower/Executing Agency			
<input type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

Positive Performance Issues:

1. The MOWT/WSP/Cox/ETS project management team generally performed well in supervising the contractors, providing guidance to the smaller local contractors on issues with which they were inexperienced e.g. understanding and interpreting the bid documents and environmental management procedures.
2. The standards designs and specifications developed as a result of this project should serve the MOWT well in the future design and implementation of infrastructure works in the Family islands.
3. The internal and accounting systems put in place and maintained by MOWU for the managing of the project funds was satisfactory and the Borrower/Executing Agency generally complied with Bank requirements regarding disbursements and financial statements. There was one instance, early in the project (2002) regarding a misunderstanding by the Borrower/Executing Agency in the control/use of the monies in the Revolving Fund. Some \$1,050,000 was removed from the Revolving Fund in error by the Treasurer of The Bahamas. The Treasurer, at the request of the PEU's would routinely pay eligible project expenses from the Consolidated Fund of the GoBH and later on

reimburse the Government by debiting the revolving fund. The Treasurer in this case mistakenly debited the balance of the Revolving Fund; specifically the Treasurer mistakenly believed that the drawdown from the Revolving Fund could be effected on the total amount already paid through the Consolidated fund, instead of the 70% established by the pari-passu. This problem was satisfactorily resolved by the Bank and the Borrower. The Borrower/Executing Agency subsequently took the appropriate measures to conform to the procedures established by the Bank for withdrawing funds from the revolving fund.

4. The model adopted for project execution was not that of a dedicated, satellite PEU, but rather the Project execution team comprised officers of the MOWT who were attached to various sections of the Ministry and had other duties to carry out besides those related to the project. e.g. the Deputy Director Special Projects, Finance Officer, Chief Civil Engineer and Family Islands Engineer. Notwithstanding the limitations of resources and organizational capacity, the Project execution team achieved fairly good coordination of the project among the different entities – intra-unit in the MOWU (Civil Design Section/Special Projects/Family Islands Unit) as well as inter-island with the local Government Authorities in the various Family islands.

Negative Performance Issues:

1. The submission of semester reports by the MOWT in compliance with the contractual clauses of the loan was not done on a regular basis and within the timeframe prescribed. This inhibited the timely monitoring by the Bank, especially after the supervisory consultants, WSP Inc. had been demobilized. The local consultants for the 4 hurricane Frances/Jeanne projects were generally tardy in this regard.

b. Bank Performance

The Borrower provided an independent classification and comments on the Bank's performance on the appropriate form.

Bank Performance			
<input type="checkbox"/> Highly Satisfactory (HS)	<input checked="" type="checkbox"/> Satisfactory (S)	<input type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

V. SUSTAINABILITY

A. Analysis of Critical Factors

- 5.1 The project has benefited substantially from the detailed environmental monitoring and mitigation procedures that were put in place. The supervisory firm has at the request of the MOWU developed and expanded the elements of the environmental management plan into general environmental guidelines for all MOWU projects. These guidelines need to be institutionalized. This could be done strategically through periodic workshops in a future Family Islands infrastructure improvement project in order to reinforce the environmental management skills and capability of the technical staff of the MOWU.
- 5.2 The MOWU was unable, throughout the project, to present an annual maintenance plan and reports on the completed works in keeping with Section 4.03 of the loan contract, simply because no routine maintenance plan existed previously for the infrastructure in the Family Islands and the MOWU lacked the available in-house resources to prepare one. Regrettably, this deficiency was not foreseen and included as a task as part of the supervisory consultant's terms of reference. At one stage during the implementation of the IRP it was decided to 'piggyback' on the RMMS proposed to be developed under the institutional strengthening component of the New Providence Transport Program. However that RMMS has not materialized. Accordingly, a planned maintenance system (detailing maintenance activities, resources, timing, budget and reports) for the works rehabilitated under the Program and for the transport infrastructure of the Family Islands on the whole, is still to be developed and implemented. Such a routine maintenance plan would be desirable in order to ensure the projected effective life, functionality and benefits of the infrastructure rehabilitated under the Program.

a. Potential Risks

- 5.3 The principal risk facing the sustainability is the maintenance of the rehabilitated infrastructure. This risk is deemed moderate as most of the rehabilitated works are low-maintenance and should not pose a burden for the National recurrent budget. The development and implementation of a simple and appropriate infrastructure maintenance plan by the MOWT would be an effective step in mitigating this risk. This could easily be done with a short technical assistance of an individual should preferably be done at the inception or prior to the implementation of a future F.I. infrastructure program.
- 5.4 Most of the technical personnel who would have benefited from the experiences and technology transfer under the project were expatriate staff on contract to the MOWT, who have since completed their contracts and left. This has limited the transfer of technology to the MOWT achieved through the project.

b. Institutional Capacity

- 5.5 A positive result of the Bank's environmental management requirements for the Phase 1 projects and BEST's involvement in their review and environmental supervision is that

MOWU and BEST have subsequently been cooperating on environmental management of non-IDB projects

Sustainability Classification SU:

[] Highly Probable (HP) [P] Probable (P) [] Low Probability (LP) [] Improbable (I)

VI. MONITORING AND EVALUATION

A. Information on Results

- 6.1 The baseline data was established prior to loan approval arising out of the consultants' report on the Hurricane Floyd Damage Assessment. The data was simple and discrete (e.g. condition of docks, roads, causeways and seawalls) and monitoring was carried out and reported on by the independent supervisory consultants via their progress reports, which were monthly for the greater part of the project. However during the extension of the project via the loan amendment the frequency and timing of the progress reports declined appreciably.

B. Future Monitoring and Ex-Post Evaluation

- 6.2 An ex-post evaluation is not required for this operation.

VII. LESSONS LEARNED

- 7.1 There was insufficient design capability among the local Bahamian contractors who generally undertake work in the Family Islands, which inhibited the use of the design/build modality. As a result the MOWU had to revert to the conventional Design/Tender/Build modality which is well understood and produced effective results. Project teams, during the preparation of an operation, should thus verify the existing capacity of local contractors before proposing innovative forms of execution for a country.
- 7.2 Significant development of small local contractors could result from the provision of guidance in the explanation of the contract documents prior to the bidding process and during the contract execution.
- 7.3 That environmental concerns must be identified and discussed during design, pre-tender and pre-contract stages of projects with the involvement of the stakeholders, particularly the contractor and the national entity responsible for environmental oversight. This ensures the incorporation of environmental issues into the bid documents and could avoid costly change orders resulting from proscribing the contractor's method of work after the contract award.

- 7.4 For future infrastructure projects, the development and implementation of a maintenance plan should be included as a funded activity of the project, once it is determined that the Executing Agency has limited capacity in this regard.
- 7.5 Projects should be designed as far as practicable to be self-contained, including all the activities which are necessary for the success of the project and not have as critical inputs, outputs from a separate project.
- 7.6 Appropriate organizational/institutional capacity analysis of the Executing Agency should be carried out with a view to incorporating the necessary institutional strengthening measures early in the implementation of the operation. This is particularly important where the executing agency is involved in the implementation of multiple major Government and multilateral -funded national projects.

BAHAMAS
Infrastructure Rehabilitation Project (IRP) - Phase I
1266/OC-BH - BH0031

LOAN 1266/OC-BH
Period Ended June 21, 2007
(US\$000)

REVISED BUDGET \1			ORIGINAL BUDGET			ACCUMULATED EXPENDITURE			V A R I A N C E S		
LO-1266/OC	GOB/Other	TOTAL	LO-1266/OC	GOB/Other	TOTAL	LO-1266/OC	GOB/Other	TOTAL	LO-1266/OC	GOB/Other	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)=(4)-(7)	(11)=(5)-(8)	(12)=(6)-(9)
<u>20,950.00</u>	<u>8,600.00</u>	<u>29,550.00</u>	<u>16,400,000.00</u>	<u>5,500,000.00</u>	<u>21,900,000.00</u>	<u>19,641,223.86</u>	<u>7,393,093.17</u>	<u>27,034,317.03</u>	<u>(3,241,223.86)</u>	<u>(1,893,093.17)</u>	<u>(5,134,317.03)</u>
14,400.00	5,300.00	19,700.00	15,200,000.00	5,300,000.00	20,500,000.00	13,508,422.04	4,550,619.33	18,059,041.37	1,691,577.96	749,380.67	2,440,958.63
2,000.00	2,200.00	4,200.00	700,000.00	200,000.00	900,000.00	1,816,240.85	1,957,954.04	3,774,194.89	(1,116,240.85)	(1,757,954.04)	(2,874,194.89)
300.00	200.00	500.00	500,000.00	-	500,000.00	127,232.25	194,634.50	321,866.75	372,767.75	(194,634.50)	178,133.25
4,250.00	900.00	5,150.00	-	-	-	4,189,328.72	689,885.30	4,879,214.02	(4,189,328.72)	(689,885.30)	(4,879,214.02)
<u>-</u>	<u>-</u>	<u>-</u>	<u>4,100,000.00</u>	<u>1,100,000.00</u>	<u>5,200,000.00</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>4,100,000.00</u>	<u>1,100,000.00</u>	<u>5,200,000.00</u>
-	-	-	3,300,000.00	900,000.00	4,200,000.00	-	-	-	3,300,000.00	900,000.00	4,200,000.00
-	-	-	800,000.00	200,000.00	1,000,000.00	-	-	-	800,000.00	200,000.00	1,000,000.00
<u>50.00</u>	<u>2,400.00</u>	<u>2,450.00</u>	<u>500,000.00</u>	<u>2,400,000.00</u>	<u>2,900,000.00</u>	<u>45.00</u>	<u>3,172,588.95</u>	<u>3,172,633.95</u>	<u>499,955.00</u>	<u>(772,588.95)</u>	<u>(272,633.95)</u>
-	2,100.00	2,100.00	-	1,800,000.00	1,800,000.00	-	3,007,562.49	3,007,562.49	-	(1,207,562.49)	(1,207,562.49)
-	300.00	300.00	-	600,000.00	600,000.00	-	165,026.46	165,026.46	-	434,973.54	434,973.54
50.00	-	50.00	500,000.00	-	500,000.00	45.00	-	45.00	499,955.00	-	499,955.00
<u>21,000.00</u>	<u>11,000.00</u>	<u>32,000.00</u>	<u>21,000,000.00</u>	<u>9,000,000.00</u>	<u>30,000,000.00</u>	<u>19,641,268.86</u>	<u>10,565,682.12</u>	<u>30,206,950.98</u>	<u>1,358,731.14</u>	<u>(1,565,682.12)</u>	<u>(206,950.98)</u>

NOTE

\1 Loan Contract Amendment No 1.

**BAHAMAS
INFRASTRUCTURE REHABILITATION PROGRAM (IRP) – PHASE I
BH0031 – 1266/OC-BH**

Minutes of Exit Workshop

**Held at British Colonial Hilton, Nassau
November 9, 2007**

I. PARTICIPANTS

1.1 Present were:

Ms. Melanie Roach, Director of Public Works, Ministry of Works and Transport (MOWT)
Mr. Khader Alikhan, Project Coordinator, IRP & Deputy Director MOWT
Mr. George Hutchinson, Deputy Director, MOWT
Mr. Dion Munroe, Engineer, Civil Design Section, IRP, MOWT
Dr. Bridgette Rolle, Project Executing Unit MOWT
Mr. Lambert Knowles, Principal, Engineering Technical Services
Mr. Cyprian Gibson, President, Bahamas Society of Engineers
Mr. Colin Forsythe, Operations Specialist, INE/TSP/CBH
Mr. Michael Baptiste, Social Sector Specialist, CCB/CBH
Ms. Michelle Ifill-Johnson, Operations Analyst a.i., CCB/CBH

1.2 Regrets:

Mr. Oscar Spencer, Representative CCB/CBH (on leave)
Mr. Alejandro Taddia, Project Team Leader, INE/TSP/HQ (on mission)

II. WORKSHOP PROCEEDINGS

2.1 Introduction:

The workshop was convened at 9.25 a.m. Mr. Forsythe gave a briefing on the rationale behind the IDB project completion reporting mechanism and the Exit Workshop procedure. He informed that the PCR, upon approval, would be available on the Bank's website for public viewing and that the minutes of the Exit Workshop would be attached as an Annex to the Project Completion Report (PCR). He welcomed everyone to the Exit Workshop and explained that the workshop had encountered 2 postponements on account of: (i) the specific effort to include the project team leader – Mr. Alejandro Taddia – in the first instance; and (ii) the recent passing of (ii) Tropical Storm Noel. He disclosed that 24 persons had been invited to the Exit Workshop. However some persons had

indicated their unavailability due to preoccupation with response activities in the wake of Tropical Storm Noel. Introductions of participants then followed.

- 2.2 Mr. Forsythe presented a power point summary of the draft Project Completion Report (PCR) in the sequence viz. of Project Context and Description; Logical Framework, Outcomes/Outputs; Design Issues; Implementation Issues; Costs; Executing Agency Performance; Borrower Performance; Borrower's Evaluation; Sustainability; and Lessons Learned. Mr. Baptiste thereafter facilitated the discussion of the draft PCR presentation.

III. DISCUSSIONS

3.1 Inclusion of Maintenance Plan as Funded Activity:

The Ministry of Works and Transport (MOWT) commented that a maintenance plan had not been done for the project and emphasized that a maintenance plan should be developed for similar projects in the future, in the interest of sustainability. The Tonique Williams-Darling Highway, which was taken out of the New Providence Transport Program, was cited by a participant as an example of a recently constructed road, which is not being properly maintained in accordance with a plan.

3.2 Delays and Cost Overruns:

The question was raised as to whether the role of the supervisory consultant was optimally used in minimizing cost overruns. It was noted that no site-specific geotechnical investigations were carried out for the rehabilitation of sea defences to inform the designs and hence this may have been a factor in the cost overruns. The MOWT observed that it was necessary for the Executing Agency to consult with Cabinet for approval of contract variations. This was generally time-consuming and ultimately impacted the project by way of delays and cost overruns. It was acknowledged that this is a systemic issue that needed to be addressed.

3.3 Technology Transfer:

Mr. Lambert Knowles, supervisory consultant for the hurricane Frances/Jeanne remedial works in Eleuthera and Cat Island opined that the standard designs prepared by the main supervisory consultant for the MOWT could have been better presented and properly organized in manuals. He further expressed the view that the main supervisory consultants used should preferably have been Bahamians, or more Bahamians should have been hired as consultants, especially in view of the relatively large sum of money expended on consultancy. It was generally agreed that a lesson learnt is that in order to reap the benefits of technology transfer, the Ministry of Works & Transport staff should have an adequate amount of junior engineers seconded to the supervisory consultants and more senior engineers involved in providing oversight.

3.4 Project Execution Mechanism:

MOWT confirmed that the project started off as a design-build project, but was subsequently changed to the conventional design-tender-build modality very early in the implementation. The adopted modality took a longer time, allowing for the consultants to come up with site-specific design solutions.

The significant turnover experienced with the staff of the project caused some variability in the institutional development strengthening of the Executing Agency's and affected its implementation capacity.

The ETS consultant suggested that consideration should be given in the future to a project management arrangement in which a private contractor could tenders on behalf of, for example, 6 consultants and work along with the Ministry in deciding who would carry out what works. The meeting agreed that flexible approaches to mitigating the delays in the procurement processes should be explored in future and there could be much improvement in the procurement strategy by structuring the program and the procurement processes related to it, allowing for greater efficiency going forward.

The question was raised as to whether or not critical works were accorded the 'level' of priority. It was not apparent whether this had translate into the actual scheduling of the works.

3.5 Lessons Learned:

Based on the discussion, a number of additional lessons learned were suggested for inclusion viz.:

- Workshops to orient and train contractors should be held up front i.e. before the contract is tendered. You don't want to award a contract and then have to train the contractor.
- Regarding the works design and with respect to the engineering of the project, it was done pretty well and it was very self-contained, which is very good. All of the measurements were standard and kept very simple. This approach should be retained.
- In terms of sustainability and institutional memory, the Civil Design Section of the Ministry of Works & Transport should maintain a technical library and make improvements over the course of the years. The Ministry should continue its training in the design standards developed under the project so that all personnel would become more aware of the new methodologies.
- The quality of projects benefited from the use of contractors who live in the family islands. Since these contractors were making a contribution to the local community infrastructure with the project, they were cognizant of this and this was reflected in the quality of their work.

- Works were successfully coordinated across many Family Islands. In addition, the project coordination modalities employed were structured within and across the organization of the MOWT itself, which was a good thing. However, the Ministry's structure for the organization of the implementation could be improved in the future.

3.6 Bank's Performance from the Borrower's Perspective:

In what way did the Bank play a mobilizing role and maintain the dialogue and help the Ministry in terms of monitoring the project, procurement, etc.

- The MOWT rated the Bank's performance as excellent and helpful to the Ministry. The Project Coordinator recommended that the Country Office should be given more power to administer the projects, especially with the Glass Window Bridge Phase II.
- The Bank's modus operandi is very bureaucratic and time consuming and should be made more flexible.
- The consultant opined that the Bank was more accommodating than previously, e.g. as regarding procurement. The Bank's officers were available and extremely helpful with the contractors and the Ministry of Works.
- Mr. Cyprian Gibson – The Bank has improved over the years. However, the Bank is designed for more developed nations and it needs to continue to put mechanisms in place to focus on smaller island states like The Bahamas.

3.7 Other Issues/Business:

Dr. Rolle – Will the Bank make more training available to the Ministries? In response, Mr. Baptiste said that the Bank's new role is now to engage more with the Ministry in training, workshops, etc. However, it also depends on the willingness of the construction industry to participate in the program.

A question was asked as to the future of Phase II of the Project. Phase II of the Project is the Government's call.

3.8 Conclusion:

The meeting concurred generally with the findings of the evaluation. The points articulated will be incorporated in the final Project Completion Report (PCR).

The discussion ended at 11:05 am and Mr. Colin Forsythe thanked everyone for participating and invited any further inputs by electronic communication.

Inter-American Development Bank
Project Completion Report -2006 PCR
Borrower Evaluation

Project Name: INFRASTRUCTURE REHABILITATION PROJECT (IRP) (PHASE I)	
Executing Agency(ies): MINISTRY OF WORKS & TRANSPORT	
Borrower: GOVERNMENT OF THE BAHAMAS	
Date of Project Approval: 13 Sept 2000	Date of Contract Effectiveness: 21 March 2001
Date of Borrower Evaluation: 13 NOVEMBER 2007	Expected Date of Exit Workshop: 9 NOVEMBER 2007

Borrower Project Performance Ratings

Probability on Achieving its Development Objective(s):

☒ Highly Probable (HP) ☐ Probable (P) ☐ Low Probability (LP) ☐ Improbable (I)

Project Implementation:

☐ Highly Satisfactory (HS) ☒ Satisfactory (S) ☐ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Sustainability of Project Results:

☒ Highly Probable (HP) ☐ Probable (P) ☐ Low Probability (LP) ☐ Improbable (I)

Comments: **SUSTAINABILITY OF EXPERIENCED & QUALIFIED TECHNICAL STAFF @ NOW BT WILL EXPEDITE PROJECT IMPLEMENTATION.**

Bank Performance

Please rate the Bank's overall performance during project preparation and execution. Factors to be considered include the extent to which the Bank facilitated a participatory project design, proposed adequate technical solutions to the problems identified, and responded to the needs of the Borrower (timeliness, selection of instrument type) as well as technical assistance (including informal and formal training) to Executing Agency, timeliness of Bank response and the Bank's flexibility to respond to emergency situations during project implementation. Your comments will be incorporated unedited into the PCR.

☐ Highly Satisfactory (HS) ☒ Satisfactory (S) ☐ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Comments: **BANK SHOULD EMPLOY MORE TECHNICAL STAFF AT REGIONAL LEVEL & ORGANISE MORE TRAINING SEMINARS & WORKSHOPS**

Borrower Performance

Please rate your own overall performance during project preparation and execution.

☒ Highly Satisfactory (HS) ☐ Satisfactory (S) ☐ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Comments: **NOW BT PERFORMED TO ITS BEST WITH STAFF CONSTRAINT**

Additional Suggestions for Improving Bank Performance

Additional comments/suggestions for improving Bank performance in the future. **Bank**

BANK IS MAKING EFFORTS TO IMPROVE ITS PERFORMANCE

K. ALI KHAN 1/11/07