

# Environmental and Social Impact Assessments for the Rehabilitation of the Philip Goldson Highway between Miles 8.5 to 24.5



## D-8 Public Participation Report



**Ministry of Works  
Belmopan, November 2017**

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# 1.0 Public Participation

## 1.1 Introduction

Public participation is not only a statutory requirement, but a process that is designed to provide interested and affected parties with the necessary and sufficient opportunities to: provide local knowledge on the Project Area; raise issues of concern; identify and confirm issues requiring further investigation in the impact assessment; influence project decisions; evaluate the results of environmental and social impacts and suggest enhancement/mitigation thereof.

Through informed and transparent public participation of interested and affected parties, effective social and environmental management/mitigation measures can be established and implemented. To this end, the PPP's design focuses on achieving the following objectives:

- Ensure that interested and affected parties are well informed about the proposed Project;
- Provide a broad range of interested and affected parties sufficient opportunity to engage and provide input and suggestions on the proposed Project;
- Verify that interested and affected parties' issues have been accurately recorded, considered and/or addressed;
- Draw on local knowledge in the process of identifying environmental and social issues associated with the proposed Project; and to involve interested and affected parties in identifying ways in which these can be addressed;
- Provide opportunities for clearing up misunderstanding about technical issues, resolving disputes and reconciling conflicting interests;
- Contributes to improving transparency and accountability in decision making;
- Contributes to maintaining a healthy, vibrant democracy; and
- Comply with statutory requirements, as per the EIA regulations.

## 1.2 Methodology

To achieve effective public participation in the ESIA process, communities along the existing ROW in the Study Area and PAPs were engaged, informed and consulted using various methods and techniques and their socio-economic profiles studied to ensure the use of socio-culturally appropriate participatory approaches during the consultations.

The overall PPP took into account various types, levels and techniques of engagement for completeness, inter alia:

- ✓ Inform: provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.
- ✓ Consult: obtain public feedback on analysis, alternatives and/or decisions.
- ✓ Involve: work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.
- ✓ Collaborate: partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.

To this end, the PPP process is empowering to communities as it respects their right to know and participate in decision making; undoubtedly, this is contributing positively to improved relations between and among Central and Local Government as well as improving overall transparency and accountability.

Principal among the methods and techniques used were key informant interviews, focus group discussions, probability and purposeful surveys, community meetings and the required statutory public consultation as per the EIA regulations.

As detailed in the ESBA Report, the Social Baseline Component of the ESIA Study utilized a mixed method approach and relied on the use of primary data derived from a carefully targeted survey and right-of-way census and complemented by key informant interviews, focus group discussions and direct field observations over the period March-April, 2017. Additionally, these primary data sources were further complemented by secondary data derived from the 2010 Census and relevant literature review of the Study Area comprising the villages as specified in Table 1.1.

**Table 1.1: Road Sections and Communities in Study Area**

<b>Road Section</b>	<b>Village</b>
<b>RS I: Section from Mile 8.5 – Mile 15</b>	Ladyville and Lord’s Bank
<b>RS II: Section from Mile 15 – Mile 24.5</b>	Sandhill, Gardenia and Biscayne

**Direct Field Observations:** To better understand the dynamics of the project affected communities, albeit a snapshot of community life, time was dedicated observing various sporting events in Ladyville, Lord’s Bank and Sandhill as well as observing the daily routines of adults going to work and children going to school and the respective transportation and road safety issues associated with the existing road conditions across the five communities.

**Key Informant Interviews and Focus Group Discussions:** To deepen the understanding of issues observed, a number of key informant interviews were conducted with educators, village residents and local entrepreneurs. Additionally, focus group discussions were also conducted with the respective village councils to inform on the proposed road rehabilitation and to ascertain an overall qualitative understanding of the socio-economic development from their perspective and document key issues currently impacting their communities as well as potential impacts as a consequence of the proposed road rehabilitation. See Annex 2.1 and 2.2 for Instrumentation

**Social Baseline Survey and ROW Census:** The Social Baseline Survey targeted a random sample of households in each identified village using the PPS method and a 95% confidence level and 6% margin of error. The face-to-face Survey was conducted by 12 trained interviewers over the period April 3 - 13, 2017 using a semi-structured questionnaire, Annex 2.3.

**Table 1-2: Social Baseline Survey Response Distribution**

HH located along ROW?	Result of HH Interview:	CTVC?					Total
		Ladyville	Sandhill	Lord's Bank	Gardenia	Biscayne	
Yes	completed	31	62		29	20	142
	no one at home	1	1		0	0	2
	partially completed	2	5		0	2	9
	vacant dwelling/lot	1	0		0	0	1
	no suitable respondent	0	1		0	0	1
	Total	35	69		29	22	155
No	completed	102	27	50	5		184
	no one at home	1	0	0	0		1
	refusal	0	0	1	0		1
	partially completed	2	0	2	0		4
	Total	105	27	53	5		190
Total	completed	133	89	50	34	20	326
	no one at home	2	1	0	0	0	3
	refusal	0	0	1	0	0	1
	partially completed	4	5	2	0	2	13
	vacant dwelling/lot	1	0	0	0	0	1
	no suitable respondent	0	1	0	0	0	1
	Total	140	96	53	34	22	345

The census of households was conducted simultaneously alongside the Survey and targeted all households along the right-of way, adjusting for households already included in the Survey sample listing. As detailed in Table 1.2, overall response rate for the Survey and Census is 94.5%.

Of importance to note to the overall PPP and this Report is the use of probability surveys by the BET Team to effectively gauge community concerns and level of support for the Road Project. This is of particular importance given the poor participation rates and lack of community representativeness associated with traditional public meetings. To this end, the Socio-Economic Baseline Survey included inter alia, a Module on Road Users: Issues, Concerns and Recommendations, for which summary findings are summarized further below.

**Pre-ESIA Consultation Meetings:** In the pre-ESIA consultations, two local-level sessions were organized and conducted as per schedule below, Table 1.3. Prior to the public meetings, paid community mobilizers distributed a total of 2000 invitational flyers, Annex 2.5, to residents

across the ROW; notwithstanding the added effort, level of participation is considered low. The public meetings were organized in collaboration with the respective village councils. .

**Table 1.3: Meeting Schedule**

Day/Date/Time	Community	Venue
<b>Sunday August 20, 2017; 3:00 p.m.</b>	Ladyville and Sandhill	Ladyville Community Centre
<b>Thursday August 31, 2017; 7:00 p.m.</b>	Sandhill, Gardenia and Biscayne	Sandhill Community Centre

**Follow-up Targeted a-RAP Supplemental Survey:** The Social Baseline Survey and ROW Census of HH in the Study Area was conducted over the period April 3-13, 2017; at this time however, information from the pre-feasibility Consulting Team on existing encroachments and land acquisitions were not yet available. To this end, a follow-up and supplemental Survey driven by the identified encroachments and proposed land acquisitions<sup>1</sup> associated with the re-engineering of various junctions along the road sections as identified by the Pre-feasibility Consulting Firm was conducted over the period November 11-13, 2017, Copy of Survey Instrument can be found at Annex x. Findings from the supplemental Survey along with the ROW Census informed the asset encroachment analysis and wider a-RAP Report.

**ESIA Consultation Meeting:** The statutory Public Consultation Meeting was conducted on November 8, 2017 at the Ladyville Community Center; the Meeting was coordinated by the Department of the Environment and BSIF and moderated by the Government of Belize Press Office. A total of 56 persons attended the Consultation Meeting despite best efforts to advertise in the widest circulated print media, super prime time radio public announcements and the availability of bus transportation to and from the meeting venue for residents of surrounding communities.:

Key to the success of the overall PPP and an underpinning strategy of the BET team in this process was engagement of the village chairpersons/councillors from the PAPs communities as the first points of contact. This served not only to validate the legally established leadership in these communities, but also paved the way for the Team to better understand the socio-economic

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<sup>1</sup> Excel data file furnished on October 30, 2017



and political context of the communities, map community assets and build excellent rapport for future engagement. Additionally, the use of surveys as a technique of wider representative consultation also contributed to better understand the views and concerns of PAPs. The chairpersons communicated their appreciation for BET's consideration and commented on the number of times activities/projects would be undertaken in their communities without any levels of information exchange much less being consulted.

## **1.3 Summary Issues, Concerns and Recommendations**

### **1.3.1 Key Informant Interviews and Focus Groups**

Chairpersons and councillors from the villages of Ladyville, Lord's Bank, Sandhill and Gardenia were interviewed as key informants over the period March – April, 2017 and later in June, 2017. Unanimously, all chairpersons/councillors are very supportive of the proposed road upgrade and see this as an opportunity for direct benefit to their communities in the form of potential employment of youth, women and men as well as indirectly via improved economic development for the area via expanded opportunities for micro-businesses and tourism. High on the list of priorities was the need for the proposed Project to hire workers from the local communities with special attention given to youth and women in what is generally perceived as a male dominated work force.

Another shared concern of the chairpersons/councillors is the safety of pedestrians and cyclists along the ROW. There are many documented cases of traffic accidents which have resulted in fatalities or serious bodily injury to villagers, inclusive of young children in school zones. These accidents are attributed to the lack of safety features and pedestrian infrastructure along the portions of the road passing through their villages particularly in Ladyville and Sandhill where the road passes immediately adjacent to schools, placing children in dangerous proximity to unregulated traffic and undisciplined drivers. In response, the chairpersons/councillors suggested as an inclusion in the Project, the construction of walkways/bicycle paths They also suggested the construction of appropriate pedestrian crossings, signage, bus stops, lighting, garbage facilities and speed bumps or other traffic calming devices in their sections of the road accesses.

A recommendation for the Project to support the installation of CCTV within school zones to enforce speed limits and other traffic laws was made.

Furthermore, focus group discussions were held with youth and women from the communities of Ladyville and Sandhill. The concerns raised by these groups understandably reflect those similarly raised by the chairpersons/elders. Youth and women first addressed the existing concerns and problems with the existing road and those possibly arising from the rehabilitation work. They identified the existing concerns and problems as: the road being too narrow and needs to be widened; inadequate/lack of proper drainage; road being too dusty causing/aggravating health issues (asthmatics), especially in the dry season; road needs to be paved; terrible road conditions when it rains; and reckless drivers with the need to enforce speed laws and put more speed bumps and pedestrian crossings in place, especially within the school zones. They also identified the need for more bus stops with adequate room for pulling off the road.

When the rehabilitation is complete/during construction, these groups believe a new set of concerns will occupy the attention of villagers within the Project Area. These include: increased traffic and speeding; fast approaching traffic; the need for more speed bumps; the need for proper lighting; noise pollution; dust pollution from works; better road pavement. a need for pedestrian crossings especially for school children and the elderly; a need for highway patrols; installation of CCTVs and the potential loss of livelihood during the construction period.

In addition, these groups also focused however on the benefits that would accrue from the rehabilitation of the road accesses in their communities. They believe the rehabilitation would lead to more job opportunities, especially during the construction phase and may quite likely lead to more economic opportunities after its completion from increased local and international visitors passing through to experience the local tourist attractions (Burrell Boom, Altun Ha, Crooked Tree and Lamanai) and stopping in at the local establishments along the ROW. Another important benefit pointed out by these groups was the possibility of faster travelling time to healthcare facilities in Belize City as well as quicker response time from Police due to improved road surfacing.

Notwithstanding the perceived benefits, a core issue in need of being addressed is the potentially negative impact of the work force as it relates to sexual exploitation of adolescent girls and harassment of women by the predominantly male work force and so communities wanted to ensure that women and children would be protected.

On a final note, these focus groups recommended for inclusion in the Project, the following safety improvements to the sections of the road passing through their communities: traffic signs, pedestrian crossings, better drainage, sidewalks, and bus stops with lay-byes.

### **1.3.2 Survey and Census: Level of Support, Issues and Recommendations**

Seventy-five per cent (75%) of all residents across the Study Area have expressed high/very-high levels of support for the proposed road rehabilitation project and a further 17% remained neutral as they reportedly were somewhat sceptical that the road rehabilitation would actually materialize given prior promises of road/general infrastructure upgrade, ST Table R-1, Annex 2.8. Notwithstanding, the broad level of support, a number of issues/concerns and recommendations were also noted as summarized below.

Overall condition of the mile 8.5-24.5 segment of the PGH roadway was rated as poor/very-poor by 47% of the residents across the Study Area, Table R-2. Only one in every five resident gave a rating of good/very-good condition with a significant proportion, 32%, remaining neutral, Table R-2. During the rainy season, the road condition seemingly worsens with 59% of residents indicating poor/very poor compared to 34% during the dry season, ST Table R-3 and ST Table R-4. Furthermore, only 18% of residents rated their experience travelling the PGH by vehicle as being comfortable/very-comfortable; while a mere 5% rated their experience as a pedestrian as being safe/very-safe.

Overall, residents indicated that the three most important road features to them for the PGH are: better lighting, enforcement of speed limits and installation/maintenance of pedestrian crossings/speed humps, ST Table R-20 - R-22. At the time of the Survey, 10% of residents reported having personally been involved in/family member involved in an RTA on the PGH, Table R-26.

“Too narrow/should be widened”, “people drive too fast/speeding”, “no/poor lighting and “driving under the influence” were among the top ranked problems associated with the PGH road section, Table R-17 –

R-19. Additionally, the dust from the existing road was identified by 61% of residents as the cause of ‘problems’ and 18% indicated that the dust caused health related issues for them, ST Table R-10 – R-11.

With respect to mode of transport, use of public transport (56%) and personal vehicles (36%) ranked highest, ST Table R-12 – R-13. From the Survey it was apparent that the PGH forms a critical link for residents in the pursuit of their livelihoods and in accessing basic services. “Better access to services”, “faster travelling time”, and “safer roads for users” were among the top ranked benefits of the proposed rehabilitated PGH, St Table R-23 – R-25.

### 1.3.3 Consultations: Pre-ESIA Meetings

In the pre-ESIA consultations, two local-level sessions were organized and conducted as per schedule above; a total of fifty-two persons (36 men; 16 women) participated in the consultations, Table 1.4. Prior to the public meetings, paid community mobilizers distributed a total of 2000 invitational flyers, Annex 2.5, to residents across the ROW; notwithstanding the added effort, level of participation was low. The public meetings were organized in collaboration with the respective village councils.

**Table 1.4: Community Consultation Participation**

Road Section (RS)	Community	Meeting Date	Participants		
			Male	Female	Total
RS-I	Ladyville/Lord’s Bank	Aug 20	15	6	21
RS-II	Sandhill/Gardenia/Biscayne	Aug 31	21	10	31
<b>Total</b>			36	16	52

By design, and to facilitate documentation of participants’ concerns and recommendations, consultation forms were prepared and distributed to those participants who wanted to express their concerns/recommendations in writing, Annex 2.7. Otherwise, concerns/recommendations were shared verbally and documented by BET personnel; participants chose the latter modality.

Main issues and concerns raised and recommendations offered mirrored those previously documented and raised by the viillage councils, key informants, focus group participants and wider survey respondents inter alia: Poor Road Conditions: pavement, edges, shoulders;

Speeding in residential areas and school zones; DUI: Driving under the influence of alcohol; Sidewalks and Crossings; Bus-byes; Lighting; Flooding; and Employment and Livelihoods.

#### **1.3.4 ESIA Consultation:**

The statutory Public Consultation Meeting was conducted on November 8, 2017 at the Ladyville Community Center; the Meeting was coordinated by the Department of the Environment and BSIF and moderated by the Government of Belize Press Office. A total of 56 persons attended the Consultation Meeting despite best efforts to advertise in the widest circulated print media (Annex 2.12), super prime time radio public announcements and the availability of bus transportation to and from the meeting venue for residents of surrounding communities.

Summary issues raised to a large extent mirror those earlier documented and as such serve as further validation, inter alia:

Lighting; rehabilitation of feeder and access roads, e.g. Grace Bank Community Road; very good initiative but need to ensure good value for money for the Project; localized flooding and drainage; littering; Project timeframe; utilize shift workers to allow for night operations; effective traffic management during constructions; query list of quarries included in the ESIA Report; clarifications on the 'link canal' objective of the Project; Bus stops; proper culverts; and the need for adequate/qualified Project supervision. Section 1.3.04.1 details the proceedings and issues raised and responses offered.

##### **1.3.4.1 Consultation Presentation**

The Public Consultation took place at the Ladyville Community Center, Ladyville, Belize on November 8, 2017. The consultation was called to order at approximately 6:48 PM. There was a total of 56 persons in attendance, see Annex 2.10. The moderator, Dorian Pakeman, GOB Press Office Director, called the meeting to order. Leo Sosa, Environmental Officer then presented the EIA process, why it is required and how the DOE uses the information provided within the EIA to fully understand any and environmental impacts that the proposed Project may pose to the environment.

Mark Usher, Ramon Frutos and John Flowers, Consultants for this project at BET, then gave a power point presentation on the ESIA findings. Annex 2.11. The topics discussed included:

- a. Project Description, and Present Road and Infrastructure Condition**
- b. General Ecology of Project Area**
- c. Biodiversity**
- d. Impacts and Mitigation:**
- e. Flooding and Climate Change Impacts**
- f. Social Settings and Issues of Concern**
- g. Assessment of Alternatives (Road Improvements and Road Surfacing)**
- h. Environmental and Social Management Plan**

Following the presentation, the moderator opened the floor for discussion and reminded the participants of the rules that guided the discussion.

#### **1.3.4.2 Questions and Answer Session**

- 1) Q. Issue of road lighting. Will the entire rehabilitated section be lighted and what type of lighting?
  - A. The design is in its preliminary stage and those specifications are not yet finalized. The intention is to light populated area with led lights similar energy efficient lights like those being used in the newly upgraded section. With reference to lighting the entire road section that is left to the final design.
  
- 2) Q. Dorita Dawson, Biscayne and Lionel Tillet, Sandhill and Belize Rural North NEMO Coordinator. What will be done for the Grace Bank road?
  - A. The rehabilitation of this section of the PGH does not include the upgrading (paving) of any secondary roads. The benefit to the communities will be indirect by the improvement of the highway and installation of proper drainage. However, a request can be made to the relevant authorities to help fill those flood prone sections of secondary road from discarded or left-over material during road construction. It is also envisioned that with the new recommended balancing culverts to be installed after the Mexico Bridge, water will flow from west to east rather than south towards the Grace Bank road.

3) Q. Miss Sharmane Garcia, Lords Bank: Proud to see that much research and study was done in preparation for the road rehabilitation. Hoping that when building the road, the proper material is used that will withstand floods and a good contractor is selected. The airport road is a clear example of good road construction.

4) Q. What happens or what will be done to improve the drainage?

A. Improved culvert and drainage designs with proper *outfalls* with Mitigation measures and proper maintenance have been recommended to drainage improvement.

Thanks for your kind comments. Project is being funded through a World Bank grant for this study and subsequently a loan to rehabilitate the road section. The Bank requires an in-depth study be conducted for all aspects of the road rehabilitation, therefore great care is being taken that the process is followed by doing an assessment to ensure GOB gets value for money.

5) Q. Zen Estel, Ladyville Village. How will littering of the drains be prevented?

A. Weirs or baffle walls are recommended to trap garbage and silt within the drain for easy removal. In covered drains trash screens or metal grates could be used at the drain openings to prevent debris or trash from reaching the drain. A behavior change by the public is required to stop the littering of public spaces which eventually reach the drains. Put in place an Educational Campaign beyond the project life to address this problem with the involvement of central government and local government and the community. Civic Pride!

6) Q. Hon. Patrick Faber, Lords Bank resident. What is the timeline for the project? Reason for asking is that there are too much congestions resulting from construction along other section of the Philip Goldson highway. Also, what are the check and balances during construction? Will there be proper supervision of the work? Recently we note the lack of adequate and professional supervision in road works. My concern is in relation to the pumping water from the drains on to road being constructed at the entrance of the City and also the lack of maintenance of the road during construction.

- A. Implementation will be August or September [2018] hopefully by then the Belize City project has being completed or nearing completion. More than likely no study was conducted for that project; therefore the check and balances are not in place. However, check and balance for mitigation measures and supervision will form part and parcel of the contract for contractors and sub-contractors for this project. Therefore supervision and monitoring will be conducted by MOW as well as by DOE and the NEAC and other parties like yourselves who are now aware of the mitigations that should be carried out during rehabilitation of the road. If mitigation is not being carried out, you then use the Grievance Mechanism to report on this to have the contractor sanctioned and avoid the system being short circuited. For example, the rehabilitation project for the George Price Highway from Roaring Creek to Benque, this is provision for a “supervision contracts” for these project.
- 7) Q. The crossing or proposed “crossing” at Vista del Mar may not be the best place for such crossing, it would be better at before and after the proposed roundabout at the Airport junction. Note that the traffic is constricted at Vista del Mar junction.
- A. Pedestrian crossing, bus stops, and lay bys are being considered along the road. This project will re-engineer the Vista Del Mar junction to rectify what is presently happening at that junction.
- 8) Q. Then, will the Javier Berbey Sr. Boulevard be paved? This can greatly alleviate the traffic congestions as those living in Vista del Mar can use this boulevard.
- A. Presently it is to be rehabilitated short of paving. We do recommend this boulevard be paved up to Perez road to serve as a bypass after road construction, but this is subject to budgetary constraints.
- 9) Q. Why not work at night?
- A. In other countries this is done. Mr. Omar Espejo, SIF Project Manager, explained that if opportunity arises, working at night may be considered. However, this not only depend on the contractor but also on support services whether they are able to supply material needed at night or are there is enough storage area for material to be used at night. Safety and cost implications are also to be considered. In addition, working weekends is another option to keep people employed.



9) Q. Gilroy Middleton, Lord's Bank Resident, Observation/comment: Get people who know about traffic management to direct traffic during construction. In addition, what can be done about the filling of water receiving ponds during and after road construction?

A. BET recommends traffic management training of personnel employed in this capacity by contractors. Survey of low-lying areas and rush ponds/wet lands have been done. T

The recommendation is that sensitive areas such as flood water receiving ponds be protected and drainage directed to these ponds. Private owners are to ensure that rush ponds are maintained. However, where the authorities permit that rush pond be filled, the owners must address the issue of drainage. A clear example is the land in front of Lows, this land filling has exacerbated the flooding in this section of the road since proper drainage was never addressed.

10) Q. Pierre Bou Nahra, Representative of National Aggregate Limited: I don't see National Aggregate Limited in the list of Quarry Sites in the ESIA? National Aggregates Limited is one of the larger supplier of road material in the project zone.

A. This may have been an oversight and in no way intentional. BET will revisit this section of the ESIA to see if indeed there was an omission. Apologies for the oversight, if there was one!

B. Ed. Note: BET (Ismael Fabro and Juan Rancharan) held a meeting on Thursday, November 9, 2017 at BET's office in Belize City with National Aggregates owner/manager Pierre Bou Nahra and lawyer Emil Arguelles. It was explained that the report section on quarry and material selection ought not to be read in isolation but rather holistically. It was indicated that indeed the quarry was identified but under its old name Belize Aggregates and that the UTM coordinates provided are those of National Aggregates (PGH ESIA Chap 4 Section 4.1.6.2. Table 4.1 and Figure 4.6). BET undertook an extensive evaluation of the identified sites with an aim to identify sites for each phase of the road upgrade. In addition, it was explained that the selection process was made on a set of criteria, which National Aggregates did not meet one of them, namely: **Proximity to Roadway** (Chapter 6 sec 6.3.3

Subsection 6.3.3.1). Consideration was given to greater than normal haulage distance for only the specialized materials (chippings) (Sub Section 6.3.3.2). The interested party argued that notwithstanding this, they are presently supplying the Belize City project with base and sub-base fill material since it is of good quality and that they are meeting the demand on a timely manner. Hence, with BET making a recommendation like this, BET is automatically precluding National Aggregates from being selected in the future to supply material for this project. BET once again reiterated that there is no malice intended and that it stands by the selection process based on the criteria used and that this is only a recommendation, since the final say, and the selection of road material suppliers is based on a tender process to MOW of which they (National Aggregates) are fully aware. It was pointed out that as with any competitive business, National Aggregates can compensate for its long-haul distance with an attractive bid package. The meeting ended with BET replacing the old quarry name with the new name in both the table and figure in which they appear.

Subsequently BET has replaced the old name to National Aggregates in Table 4.1 and Figure 4.6. In *Section 6.3.3.3 Potential Sites Selected for Material Supply*, BET inserted a sentence that reads as follows: *A 16<sup>th</sup> quarry was identified based on its material quality and immediate supply to meet demand, however it did not meet the proximity criteria (Table 6.1 and Figure 6.3).*

- 11) Q. Lindsford Giddean, Biscayne residence: How wide will the road be? Concerned because my fence is close to the road and the recent survey peg fell within my yard.
- A. The width of the road will be 22 feet and the shoulder about 6 feet. It should be noted that the road reserve is 100 feet from mile 8.5 to Sand Hill and 200 feet thereafter. Therefore, more than likely, your fence is within the road reserve if the survey peg is within your yard. Mr. John Flowers will meet the resident to validate encroachment if that is the case.
- 12) Q. Larry Flowers, Developer/Contractor (RODLA): What is the “Link Canal” I am hearing about? What other suggestion there are for reducing some of these floods in other parts of the road section? Was the MOW involved in these discussions? I am in support of National Aggregates to be included as a recommended quarry.

A. That was one of the objectives of this project. The proposed Link Canal is a canal joining the sea to the river in the lower limits of the PGH road rehabilitation project site to help control the river floods and storm surge, so as to reduce flooding on the road. A preliminary hydraulic study was conducted as well as the social and environment implication considered and the conclusion was to postpone this objective until a detailed level study can be conducted. BWS raised concern as to the effect of this link canal to the supply of water [salt intrusion] especially during the dry spells. However, the existing and unused wide drain running from the highway at the north end of the Estephan's property and just south of the Airport junction that extends to the Vista del Mar Canal, will be rehabilitated to help with the drainage in this lower section of the project site.

Yes, MOW was involved. In discussions held with MOW, Golder and BET it was recommended that in addition to the installation of lateral drains along the road projects, the drainage system ought to include drainage that of Poinsettia Street and Marage Road into the Vista Del Mar Canal. Lords bank road is also to be drained with a settling pond installed just before it reaches the river. Further north by Calva Pan Pond drainage will lead towards this pond. The filling of the area in front of Lows is unfortunate but this can be remedied by installing proper drainage and connecting this section to the airport drainage system.

13) Q. Carlo Arguelles, IE. Who will sign the ECP? Who was the company doing the design?

A. The Ministry of Works (MOW) will sign the ECP on behalf of GOB. MOW will ensure that the Contractor comply with the ECP, which will from part of the Contract to the road rehabilitation.

Golder Associates Limited from Canada with local affiliate Thornton Engineering Limited is the company doing the road design

14) Q. Isaac Williams, Maxboro-Sandhill Village. Will alternate, and proper bus stops be considered at the Maxboro junction with the PGH? An existing culvert on the PGH allows the storm water

flow to the Maxboro Community Access Road, if the road is upgraded and larger culverts are used the existing problem will be compounded. How can this potential problem be prevented?

A. Alternate Bus Stops-Lay Bys are being considered at busy junctions in the final design of the highway. The culvert installations normally require the clearing of outfalls to allow for the channelling of water away from the highway, this action should however not cause or affect other road accesses. If this were to happen, then the grievance mechanism is to be used to report the problem immediately.

15) Q. General Question. When Contractors do the drainage, is there adequate supervision?

A. BET was not able to answer this question since this falls under MOW's responsibility. However, the contract to build the road/drainage will stipulate who will supervise the work.

16) Q. Comment: I notice that some Contractors just come and dig drains and deep ditches with the drains leading nowhere, which makes the flooding worst!

A. Proper drainage construction must be done after in-depth study and surveys are completed. The work must be scientifically sound and meet high engineering standards. Supervision and specifications will be taken into consideration in this project as required by the lending agency (World Bank).

The Question and Answer time having been exhausted, the Moderator called the meeting to a close at 9:20 p.m.

Attached are the copies of the Public Consultation notice published in two newspapers, two consecutive weeks (Annex III).

### **1.3.5 Conclusion**

In keeping with the EIA regulations and the WB safeguards, the proposed Road Project has undergone extensive consultations with PAPs across the ROW using varied methods of engagement and consultations, inter alia: key informant interviews, focus group meetings, town hall-type meetings and survey and census.

Notwithstanding the low levels of participation in the town hall-type public meetings, customary in Belize, BET has been able to obtain a representative level of feedback from PAPs via the use of its carefully targeted survey methodology. While the primary intent of the Survey was to establish prevailing socio-economic conditions within communities across the Study Area, the insertion of a Module to gauge PAPs concerns with and level of support for the proposed road Project was key to better understanding their overall concerns and documenting recommendations.

Residents of the communities within the Study Area have expressed their appreciation for the wide and varied consultations conducted and have gone on record to document their overall very positive levels of support for the proposed road rehabilitation. Furthermore, the extensive levels of consultation have undoubtedly contributed positively to the relationship between residents and government (central and local) through improved perceptions of openness, transparency and accountability. To this end, and in combination with the effective implementation of the community grievance mechanism, BET recommends that MOW/BSIF directly and indirectly through its agents continue with effective community engagement and consultations throughout the remaining phases of the Road Project all the way to its operational phase.

## 2.0 Annexes

### 2.1 Key Informant Interview Guide



#### Proposed Rehabilitation of PGH, Miles 8.5-24.5

**Date:** \_\_\_\_\_ **Village/Community:** \_\_\_\_\_  
**School:** \_\_\_\_\_ **Contact Person:** \_\_\_\_\_  
**Post:** \_\_\_\_\_ **Contact Info:** \_\_\_\_\_

1. How would you characterize this Village/Community: [school discipline; level of parental support; in general social and community life; existing services and infrastructure; main issues of concern to the community: crime, youth unemployment, flooding, etc. ...]?
2. Main concerns and problems associated with the PGH and possibly arising from the proposed road works [in general and specifically Road Section from miles 8.5-24.5]?
3. Main benefits from the proposed road project?
4. Any recommendations for road safety improvements?
5. Any recommendations for improvements to drainage/flooding (if applicable)?
6. Any Other Issue? [Community meetings?]

## 2.2 Focus Group Discussion Interview Guide



Village Chairpersons Focus Group Discussion  
**Proposed Rehabilitation of PGH, Miles 8.5-24.5**



Date:

Village/Community?	Name?	Sex?	Position on Council?	Contact No./E-mail?

General Description of Village/Community: [main issues/problems; main environmental problems; main economic/livelihood activities; social and community life; services and infrastructure ...]?

Community Assets/Infrastructure and Services?

Type	Available		Contact Person	Comments
	Yes	No		
Electricity				
Water				
Internet/Cell Phone				
Education				
Health				
Security: Police, Fire, Crime...				
Community Centre				
Cultural/Heritage sites				
6 shops/stores				

Main concerns and problems associated with the PGH {in general and specifically RS from miles 8.5-24.5] and possibly arising from the proposed road works?

Main benefits from the proposed road project?

Safety improvements in relation to the proposed road rehabilitation?

Any Other Issue? [Community meetings? (time and place)]







**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

<p><b>C14. Data entry Supervisor: :</b> Signature: _____</p>
--



**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

**C15**  
 Record the start time:  
 \_\_\_\_\_

**SECTION I: DEMOGRAPHICS (D)**

**PLEASE TELL ME THE NAME OF EACH PERSON WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD.** *[List the head of the household on line 01, followed by all other household members, their relationship to the household head, their sex, date of birth, age, ethnicity, school status, highest level of education completed, marital and union status.]*

D1. <i>Person Number</i>	D2. NAME	D3. RELATIONSHIP OF <i>(name)</i> TO THE HEAD OF HOUSEHOLD?	D4. SEX?	D5. DATE OF BIRTH?			D6. AGE?	D7. ETHNICITY?	D8. CURRENTLY ATTENDING SCHOOL? [IF ON VACATION, CODE AS YES] 1 YES; 2 NO	D9. HIGHEST LEVEL OF EDUCATION COMPLETED?	D10. MARITAL STATUS?	D11. UNION STATUS?	D12. LENGTH OF TIME LIVING IN COMMUNITY	D13. WHERE WERE YOU LIVING BEFORE COMING HERE?
		01 1 2	1 2	98 DK	(DK)								Years	CTVC
Line	First and Last Name	CODE	CODE	dd	mm	yyyy	Age	CODE	CODE	CODE	CODE	CODE	Years	CTVC
01		01												
02														
03														
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														



**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

<b>SECTION II: DISABILITY AND HEALTH (H)</b>								
<b>H1.</b> PERSON NUMBER	<b>H2.</b> DOES (NAME) HAVE ANY DIFFICULTY WITH:					<b>H3.</b> HAS (NAME) EVER BEEN DIAGNOSED BY A MEDICAL DOCTOR WITH ANY LONGSTANDING OR RECURRING ILLNESS(ES)?  [MULTIPLE ENTRIES ALLOWED; SEPARATE WITH A COMMA]	<b>H4.</b> ANY ILLNESS, INJURY OR OTHER HEALTH PROBLEM IN THE PAST MONTH?	<b>H5.</b> IF YES, DID YOU VISIT A HOSPITAL/HEALTH CENTRE/CLINIC? WHERE?
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>			
	SEEING (EVEN WITH GLASSES)?	HEARING (EVEN WITH HEARING AID)	COMMUNICATING/ SPEAKING?	WALKING/CLIMBING STAIRS?	SELF-CARE?			
Line	CODE	CODE	CODE	CODE	CODE	CODE	ILLNESS	Name of Facility, if Yes
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								

<b>Codes for H2: DISABILITY</b>	
01 No difficulty	04 Cannot do it at all
02 Some difficulty	05 DK/NS
03 Lots of difficulty	

<b>Codes for HL3: LONGSTANDING ILLNESS</b>			
01 Arthritis/rheumatism;	05 Hypertension (High blood pressure)	09 Heart disease	98 DK/NS
02 Kidney disease	06 Sickle cell anaemia	10 = Lupus	
03 Asthma	07 Glaucoma	11 Autism	
04 Diabetes	08 Cancer	12 = Other (specify)	



Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5

**SECTION IIIA: EMPLOYMENT STATUS AND ECONOMIC ACTIVITY (E)**

E1. <i>Person Number</i>	E2*. WHAT IS (NAME)'S EMPLOYMENT STATUS?	E3. LAST WEEK, DID (NAME) DO ANY WORK FOR PAY, PROFIT OR FAMILY GAIN FOR AT LEAST 1 HOUR?	E4. LAST WEEK, DID (NAME) DO ANY OF THE FOLLOWING ACTIVITIES FOR PAY, PROFIT OR FAMILY GAIN FOR AT LEAST 1 HOUR?	E5. IN THEIR MAIN JOB, WHAT CATEGORY OF WORKER IS (NAME)?	E6. OCCUPATION?  IF HOMEMAKER/STUDENT, WRITE IN HOMEMAKER/STUDENT	E7. LAST WEEK, WHAT WAS (NAME) INCOME?  BZ \$	E8. MAIN SOURCE OF INCOME?  01 SALARY 02 EARNINGS SELLING PRODUCE 03 MONEY SENT BY FAMILY NOT LIVING IN BELIZE 04 OTHER (SPECIFY)
Line	CODE	CODE	CODE	CODE	OCCUPATION	BZ\$	CODE
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							

**\*For persons 14 years and older**

**SECTION IIIB: CRIME (C)**

<p>C1. HAVE YOU/ANY MEMBER OF YOUR HH BEEN A VICTIM OF A CRIME DURING THE PAST YEAR??</p> <p>01 YES <input type="radio"/>      02 NO <input type="radio"/>      98 DK</p>	<p>C2. REFERRING TO THE MOST RECENT CRIME, WHAT TYPE WAS IT??</p> <p>01 MURDER/MANSLAUGHTER <input type="radio"/>      02 SEXUAL ASSAULT <input type="radio"/></p> <p>03 SHOOTING <input type="radio"/>      04 DOMESTIC VIOLENCE <input type="radio"/></p> <p>05 WOUNDING/ASSAULT/HARM <input type="radio"/>      06 BURGLARY <input type="radio"/></p> <p>07 ROBBERY <input type="radio"/>      08 HOME INVASION <input type="radio"/></p> <p>08 OTHER: _____</p>
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**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

<b>SECTION IV: ROAD TRANSPORT (RT)</b>	
<p><b>RT1.</b> HOW WOULD YOU DESCRIBE THE GENERAL CONDITION OF THE PGH, MILES 8.5-24.5?</p> <p>01 VERY POOR <input type="radio"/>      06 OTHER: _____</p> <p>02 POOR <input type="radio"/>              98 DK <input type="radio"/></p> <p>03 NEUTRAL <input type="radio"/></p> <p>04 GOOD <input type="radio"/></p> <p>05 VERY GOOD <input type="radio"/></p>	<p><b>RT2.</b> HOW WOULD YOU DESCRIBE THE CONDITION OF THE PGH, MILES 8.5-24.5 DURING THE <u>RAINY SEASON</u>?</p> <p>01 VERY POOR <input type="radio"/></p> <p>02 POOR <input type="radio"/></p> <p>03 NEUTRAL <input type="radio"/></p> <p>04 GOOD <input type="radio"/></p> <p>05 VERY GOOD <input type="radio"/></p> <p>98 DK <input type="radio"/></p>
<p><b>RT3.</b> HOW WOULD YOU DESCRIBE THE CONDITION OF THE PGH, MILES 8.5-24.5 DURING THE <u>DRY SEASON</u>?</p> <p>01 VERY POOR <input type="radio"/></p> <p>02 POOR <input type="radio"/></p> <p>03 NEUTRAL <input type="radio"/></p> <p>04 GOOD <input type="radio"/></p> <p>05 VERY GOOD <input type="radio"/></p> <p>98 DK <input type="radio"/></p>	<p><b>RT4.</b> THREE OF THE MOST SERIOUS PROBLEMS CONCERNING THE PGH, MILES 8.5-24.5 ARE? <b>TOP 3 [1=MOST SERIOUS]</b></p> <p>01 TOO MANY HOLES _____</p> <p>02 TOO DUSTY _____</p> <p>03 ROADWAY TOO NARROW/SHOULD BE WIDENED _____</p> <p>04 NO STORM WATER/FLOOD DRAINAGE _____</p> <p>05 NO/INADEQUATE SPACE PEDESTRIANS/CYCLISTS _____</p> <p>06 NO/LOW MAINTENANCE SCHEME _____</p> <p>06 OTHER: _____</p>
<p><b>RT5.</b> HOW WOULD YOU DESCRIBE THE LEVEL OF DUST ON AND AROUND THE PGH, MILES 8.5-24.5?</p> <p>01 NO DUST <input type="radio"/>      02 DUST CAUSES SOME PROBLEMS <input type="radio"/></p> <p>03 DUST IS A MAJOR PROBLEM <input type="radio"/>      98 DK <input type="radio"/></p>	<p><b>RT6.</b> HAS THE DUST EVER CAUSED HEALTH PROBLEMS FOR YOU/YOUR HH MEMBERS?</p> <p>01 YES <input type="radio"/>      DID YOU/HH MEMBER HAVE TO GO SEE A DOCTOR: _____</p> <p>02 No <input type="radio"/>      98 DK <input type="radio"/></p>
<p><b>RT7.</b> WHAT IS THE FORM OF TRANSPORT USED MOSTLY BY YOU/ YOUR HH?</p> <p>01 WALKING <input type="radio"/>                      02 DRIVE OWN CAR <input type="radio"/></p> <p>03 DRIVEN (FAMILY/FRIEND) <input type="radio"/>      04 BICYCLE <input type="radio"/></p> <p>05 MOTORBIKE <input type="radio"/>                      10 HORSE &amp; CARRIAGE</p> <p>06 DRIVE WORK VEHICLE <input type="radio"/>      09 DK</p> <p>10 PUBLIC TRANSPORT <input type="radio"/></p> <p>08 OTHER: _____</p>	<p><b>RT8.</b> WHAT METHOD OF TRANSPORT DO YOU USE TO GET TO WORK, IF ANY?</p> <p>01 WALK <input type="radio"/>                              02 DRIVE OWN CAR <input type="radio"/></p> <p>03 SOMEONE ELSE'S CAR <input type="radio"/>      04 BICYCLE <input type="radio"/></p> <p>05 MOTORBIKE <input type="radio"/>                      06 DRIVE WORK VEHICLE <input type="radio"/></p> <p>07 PUBLIC TRANSPORT <input type="radio"/>      08 NOT WORKING <input type="radio"/></p> <p>98 DK <input type="radio"/></p> <p>08 OTHER: _____</p>
<p><b>RT9.</b> HOW WOULD YOU RATE THE EXPERIENCE OF TRAVELLING THE PGH, MILES 8.5-24.5 BY VEHICLE?</p> <p>01 VERY UNCOMFORTABLE <input type="radio"/></p> <p>02 UNCOMFORTABLE <input type="radio"/></p> <p>03 NEUTRAL <input type="radio"/></p> <p>04 COMFORTABLE <input type="radio"/></p> <p>05 VERY COMFORTABLE <input type="radio"/></p> <p>98 DK <input type="radio"/></p>	<p><b>RT10.</b> HOW SAFE WOULD YOU RATE THE EXPERIENCE OF TRAVELLING THE PGH, MILES 8.5-24.5 BY FOOT?</p> <p>01 VERY UNSAFE <input type="radio"/></p> <p>02 UNSAFE <input type="radio"/></p> <p>03 NEUTRAL <input type="radio"/></p> <p>04 SAFE <input type="radio"/></p> <p>05 VERY SAFE <input type="radio"/></p> <p>98 DK <input type="radio"/></p>
<p><b>RT11A.</b> HOW MUCH TIME DO YOU SPEND TRAVELLING ON THE PGH (MILES 8.5-24.5) <u>EACH WEEK</u>?                      HOURS:</p>	
<p><b>RT11B.</b> WHAT IS YOUR MAIN PURPOSE FOR USE OF THE PGH, (MILES 8.5-24.5)?</p>	
<p><b>RT12.</b> HOW MUCH DOES YOUR HH SPEND ON TRANSPORT <u>EACH WEEK</u>?                      BZ\$:</p>	
<p><b>RT13.</b> WHAT IN YOUR OPINION CAUSES THE MOST SAFETY CONCERNS ON THE PGH, MILES 8.5-24.5? <b>TOP 3 [1=HIGHEST CONCERN]</b></p> <p>01 TOO MANY HOLES _____</p> <p>02 TOO DUSTY _____</p> <p>03 ROADWAY TOO NARROW/SHOULD BE WIDENED _____</p> <p>04 NO STORM WATER/FLOODING DRAINAGE _____</p> <p>05 NO/INADEQUATE SPACE PEDESTRIANS/CYCLISTS _____</p> <p>06 PEOPLE WALKING ON THE ROAD _____</p> <p>07 PEOPLE DRIVE TOO FAST _____</p> <p>08 DRIVERS DRINKING ALCOHOL AND DRIVING _____</p> <p>09 NO/POOR STREET LIGHTING _____</p> <p>10 DANGEROUS/STEEP CURVES _____</p> <p>11 ANIMALS CROSSING THE ROADWAY _____</p> <p>12 OTHER: _____</p> <p>98 DK <input type="radio"/></p>	<p><b>RT14.</b> WHICH OF THE FOLLOWING ROAD FEATURES ARE MOST IMPORTANT TO YOU? <b>TOP 3 [1=MOST IMPORTANT]</b></p> <p>01 STREET LIGHTING _____</p> <p>02 FOOT/BICYCLE PATHS _____</p> <p>03 DRAINAGE _____</p> <p>04 SPEED LIMITS _____</p> <p>05 POLICING _____</p> <p>06 BUS STOPS/SHELTERS _____</p> <p>08 EMERGENCY PHONES NEAR BUS STOPS _____</p> <p>09 SPEED HUMPS _____</p> <p>10 PEDESTRIAN CROSSINGS _____</p> <p>11 ROAD SAFETY SIGNAGE _____</p> <p>12 OTHER: _____</p> <p>98 DK <input type="radio"/></p>
<p><b>RT15.</b> HOW WOULD IMPROVING THE PGH, MILES 8.5-24.5 AFFECT YOU/YOUR HH THE MOST? <b>TOP 3 [1=MOST IMPORTANT]</b></p> <p>01 BETTER ACCESS TO SERVICES ( SCHOOLS, HEALTH CARE, STORES...) _____      04 NEW JOB OPPORTUNITIES _____</p> <p>02 SAFER ROAD FOR PEDESTRIANS/OTHER ROAD USERS _____      05 MORE BUSINESS /CAN MAKE MORE MONEY _____</p> <p>03 FASTER TRAVELLING TIME _____      06 OTHER: <input type="radio"/>                      98 DK <input type="radio"/></p>	
<p><b>RT16.</b> HAVE YOU/ANYONE IN YOUR HH EVER BEEN INVOLVED IN AN ACCIDENT/INJURED ON THE PGH, MILES 8.5-24.5?</p> <p>01 YES (PERSON NUMBER): _____      02 No <input type="radio"/>      98 DK <input type="radio"/></p>	
<p><b>RT17.</b> WHAT IS YOUR OVERALL LEVEL OF SUPPORT, IF ANY, FOR THE PGH (MILES 8.5-24.5) REHABILITATION PROJECT?</p> <p>01 VERY LOW <input type="radio"/>      02 LOW <input type="radio"/>      03 NEUTRAL <input type="radio"/>      04 HIGH <input type="radio"/>      05 VERY HIGH <input type="radio"/>      98 DK <input type="radio"/></p>	



**SECTION V: HOUSING, LAND TENURE AND ASSETS (A)**

<p><b>A1. WHAT TYPE OF DWELLING DOES THIS HH OCCUPY?</b></p> <p>01 UNDIVIDED PRIVATE HOUSE.....<input type="radio"/></p> <p>02 PART OF A PRIVATE HOUSE..... <input type="radio"/></p> <p>03 FLAT, APARTMENT, CONDOMINIUM..... <input type="radio"/></p> <p>04 COMBINED BUSINESS AND DWELLING..... <input type="radio"/></p> <p>05 DWELLING ATTACHED TO BUSINESS..... <input type="radio"/></p> <p>06 TOWN HOUSE ..... <input type="radio"/></p> <p>07 DUPLEX ..... <input type="radio"/></p> <p>08 BARRACKS ..... <input type="radio"/></p> <p>09 OUT-ROOM ..... <input type="radio"/></p> <p>10 OTHER (SPECIFY) _____ <input type="radio"/></p> <p>98 DK/NS ..... <input type="radio"/></p>	<p><b>A2A. HOW MANY ROOMS IN THIS HOUSEHOLD?</b></p> <p>NUMBER OF ROOMS</p> <hr/> <p><b>A2B. HOW MANY ROOMS ARE USED FOR SLEEPING?</b></p> <p>NUMBER OF BEDROOMS</p> <hr/> <p><b>A3. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING?</b></p> <p>01 Electricity ..... <input type="radio"/></p> <p>02 Liquefied Petroleum Gas (LPG) ..... <input type="radio"/></p> <p>03 Kerosene ..... <input type="radio"/></p> <p>04 Charcoal ..... <input type="radio"/></p> <p>05 Wood ..... <input type="radio"/></p> <p>06 Other (<i>specify</i>) ..... <input type="radio"/></p>																														
<p><b>A4. WHAT IS YOUR HH MAIN SOURCE OF ELECTRICITY?</b></p> <p>1 <input type="radio"/> BEL (MAIN GRID)      2 <input type="radio"/> SOLAR</p> <p>3 <input type="radio"/> OTHER: _____</p>	<p><b>A5. DO YOU OR SOMEONE LIVING IN THIS HOUSEHOLD OWN THIS DWELLING?</b></p> <p>01 Own <input type="radio"/> WHO: WRITE PERSON NUMBER _____</p> <p>02 Rent <input type="radio"/></p> <p>03 Other (Not owned or rented) <input type="radio"/></p>																														
<p><b>A7. HOW MANY ACRES OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN?</b></p> <p>ACRES _____</p>	<p><b>A6. Does any member of this household own any land that is used/can be used for agriculture?</b></p> <p>01 Yes ..... 1</p> <p>02 No..... 2 ➡ Q-A9</p> <hr/> <p><b>A8. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OTHER FARM ANIMALS, OR POULTRY?</b></p> <p>Yes ..... 1</p> <p>02 No..... 2 ➡ <b>SECTION VI-A</b></p>																														
<p><b>A9. How many of the following animals does this household have, if any?</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">1. Cattle, milk cows, or bulls</td> <td style="width: 30%; border: 1px solid black; text-align: center;">1.</td> <td style="border: 1px solid black; width: 10%;"></td> <td style="border: 1px solid black; width: 10%;"></td> <td style="border: 1px solid black; width: 10%;"></td> </tr> <tr> <td>2. Horses, donkeys, or mules</td> <td style="border: 1px solid black; text-align: center;">2.</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td>3. Goats</td> <td style="border: 1px solid black; text-align: center;">3.</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td>4. Sheep</td> <td style="border: 1px solid black; text-align: center;">4.</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td>5. Chickens</td> <td style="border: 1px solid black; text-align: center;">5.</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td>6. PIGS</td> <td style="border: 1px solid black; text-align: center;">6.</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </table>		1. Cattle, milk cows, or bulls	1.				2. Horses, donkeys, or mules	2.				3. Goats	3.				4. Sheep	4.				5. Chickens	5.				6. PIGS	6.			
1. Cattle, milk cows, or bulls	1.																														
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**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

**SECTION VI-A: ENVIRONMENT I: WATER AND SANITATION ( WS)**

<p><b>WS1. WHAT IS THE MAIN SOURCE OF DRINKING WATER FOR YOUR HOUSEHOLD?</b></p> <p>01 PIPED WATER</p> <p>11 PIPED INTO DWELLING <input type="radio"/></p> <p>12 PIPED INTO COMPOUND, YARD OR PLOT <input type="radio"/></p> <p>13 PUBLIC FAUCET /STANDPIPE <input type="radio"/></p> <p>02 DUG WELL</p> <p>21 PROTECTED WELL <input type="radio"/></p> <p>22 UNPROTECTED WELL <input type="radio"/></p> <p>03 WATER FROM SPRING</p> <p>31 PROTECTED SPRING <input type="radio"/></p> <p>32 UNPROTECTED SPRING <input type="radio"/></p> <p>04 RAINWATER COLLECTION <input type="radio"/></p> <p>05 TANKER-TRUCK <input type="radio"/></p> <p>06 CART WITH SMALL TANK / DRUM <input type="radio"/></p> <p>07 SURFACE WATER (RIVER, STREAM, DAM, LAKE, POND, CANAL, IRRIGATION CHANNEL) <input type="radio"/></p> <p>08 BOTTLED WATER <input type="radio"/></p> <p>09 OTHER (SPECIFY) _____</p>	<p><b>WS2. WHAT IS THE MAIN SOURCE OF WATER USED BY YOUR HOUSEHOLD (FOR COOKING, WASHING ...)?</b></p> <p>01 PIPED WATER</p> <p>11 PIPED INTO DWELLING <input type="radio"/></p> <p>12 PIPED INTO COMPOUND, YARD OR PLOT <input type="radio"/></p> <p>13 PUBLIC TAP /STANDPIPE <input type="radio"/></p> <p>02 DUG WELL</p> <p>21 PROTECTED WELL <input type="radio"/></p> <p>22 UNPROTECTED WELL <input type="radio"/></p> <p>03 WATER FROM SPRING</p> <p>31 PROTECTED SPRING <input type="radio"/></p> <p>32 UNPROTECTED SPRING <input type="radio"/></p> <p>04 RAINWATER COLLECTION</p> <p>05 TANKER-TRUCK <input type="radio"/></p> <p>06 CART WITH SMALL TANK / DRUM <input type="radio"/></p> <p>07 SURFACE WATER (RIVER, STREAM, DAM, LAKE, POND, CANAL, IRRIGATION CHANNEL) <input type="radio"/></p> <p>08 BOTTLED WATER <input type="radio"/></p> <p>09 OTHER (SPECIFY) _____</p>
<p><b>WS3. WHERE IS THAT WATER SOURCE LOCATED?</b></p> <p>01 IN OWN DWELLING <input type="radio"/> ⇒ <i>Go to WS6</i></p> <p>02 IN OWN YARD / PLOT <input type="radio"/> ⇒ <i>Go to WS6</i></p> <p>03 ELSEWHERE <input type="radio"/></p>	<p><b>WS4. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?</b></p> <p>NUMBER OF MINUTES: _____</p> <p>98 DK <input type="radio"/></p>
<p><b>WS5. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD?</b></p> <p>01 ADULT WOMAN <input type="radio"/></p> <p>02 ADULT MAN <input type="radio"/></p> <p>03 FEMALE CHILD (UNDER 15) <input type="radio"/></p> <p>04 MALE CHILD (UNDER 15) <input type="radio"/></p> <p>98 DK <input type="radio"/></p>	<p><b>WS6. DO YOU DO ANYTHING TO THE WATER TO MAKE IT SAFER TO DRINK?</b></p> <p>01 YES <input type="radio"/></p> <p>02 NO <input type="radio"/> ⇒ <i>Go to WS8</i></p> <p>98 DK <input type="radio"/> ⇒ <i>Go to WS8</i></p>
<p><b>WS7. WHAT DO YOU USUALLY DO TO MAKE THE WATER SAFER TO DRINK?</b></p> <p>01 BOIL <input type="radio"/></p> <p>02 ADD BLEACH / CHLORINE <input type="radio"/></p> <p>03 STRAIN IT THROUGH A CLOTH <input type="radio"/></p> <p>04 USE WATER FILTER (SAND, CHARCOAL, ETC.) <input type="radio"/></p> <p>05 SOLAR DISINFECTION <input type="radio"/></p> <p>06 LET IT STAND AND SETTLE <input type="radio"/></p> <p>07 OTHER (SPECIFY) _____</p> <p>98 DK <input type="radio"/></p>	<p><b>WS8. WHAT KIND OF TOILET FACILITY DO MEMBERS OF YOUR HOUSEHOLD USUALLY USE</b></p> <p>01 FLUSH</p> <p>11 FLUSH TO PIPED SEWER SYSTEM <input type="radio"/></p> <p>12 FLUSH TO SEPTIC TANK <input type="radio"/></p> <p>13 FLUSH TO PIT <input type="radio"/></p> <p>14 FLUSH TO SOMEWHERE ELSE/UNKNOWN PLACE / NOT SURE /DK WHERE <input type="radio"/></p> <p>02 PIT LATRINE</p> <p>21 VENTILATED IMPROVED PIT LATRINE (VIP) <input type="radio"/></p> <p>22 PIT LATRINE WITH SLAB <input type="radio"/></p> <p>23 PIT LATRINE WITHOUT SLAB /OPEN PIT <input type="radio"/></p> <p>03 COMPOSTING TOILET <input type="radio"/></p> <p>04 BUCKET <input type="radio"/></p> <p>05 NO FACILITY, BUSH, FIELD <input type="radio"/></p> <p>06 OTHER (SPECIFY) _____</p>
<p><b>WS9. DO YOU SHARE THIS FACILITY WITH OTHERS WHO ARE NOT MEMBERS OF YOUR HOUSEHOLD?</b></p> <p>01 YES <input type="radio"/></p> <p>02 NO <input type="radio"/></p>	

**SECTION VI-B: ENVIRONMENT II: WILDLIFE (WL)**

<p><b>WL1. HOW OFTEN DO YOU/HH EAT GAME MEAT?</b></p> <p>01 DAILY <input type="radio"/></p> <p>02 THREE TO FOUR TIMES WEEKLY <input type="radio"/></p> <p>03 ONCE OR TWICE WEEKLY <input type="radio"/></p> <p>04 ONCE OR TWICE YEARLY <input type="radio"/></p> <p>05 THREE TO FOUR TIMES YEARLY <input type="radio"/></p> <p>06 NEVER <input type="radio"/> ⇒ <b>SKIP TO WL3</b></p> <p>98 DK <input type="radio"/></p>	<p><b>WL2. WHICH ARE YOUR TOP 3 PREFERRED GAME SPECIES ?</b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">PREFERENCE</th> <th style="text-align: left;">SPECIE CODE</th> </tr> </thead> <tbody> <tr> <td>1<sup>ST</sup></td> <td></td> </tr> <tr> <td>2<sup>ND</sup></td> <td></td> </tr> <tr> <td>3<sup>RD</sup></td> <td></td> </tr> </tbody> </table>	PREFERENCE	SPECIE CODE	1 <sup>ST</sup>		2 <sup>ND</sup>		3 <sup>RD</sup>	
PREFERENCE	SPECIE CODE								
1 <sup>ST</sup>									
2 <sup>ND</sup>									
3 <sup>RD</sup>									
<p><b>WL3. DO YOU OR ANYONE IN YOUR HH GO HUNTING FOR GAME, OR DO YOU BUY FROM OTHER PERSONS/MARKET?</b></p> <p>01 I GO HUNTING <input type="radio"/></p> <p>02 OTHER MEMBERS OF MY HH GO HUNTING <input type="radio"/></p> <p>03 BUY FROM PERSONS IN THE COMMUNITY <input type="radio"/></p> <p>04 BUY FROM THE MARKET <input type="radio"/></p> <p>05 OTHER: _____ 98 DK <input type="radio"/></p>	<p><b>WL4. DO YOU NORMALLY SEE WILDLIFE CROSSING THE ROAD?</b></p> <p>01 YES <input type="radio"/> 02 NO <input type="radio"/></p> <p>WHERE? _____</p>								
<p><b>WL5. HAVE YOU SEEN /HEARD OF WILDLIFE BEING KILLED ON THE ROAD (ROAD KILLS)?</b></p> <p>01 YES <input type="radio"/> 02 No <input type="radio"/></p> <p>WHERE? _____</p>									



**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**





**Baseline Survey: Proposed Rehabilitation of the Philip Goldson Highway, Miles 8.5 – 24.5**

Species	WL7. Near here, where can you find or would normally go to see them?		WI8. How abundant are they? 01 Very low (scarce) 02 Low 03 Average 04 High 05 Very high(common)	WI9. Would you say that over the past 10-years, their numbers have been: 01 Increasing 02 Stay same 03 Decreasing 98 DK	WI10. Do you hunt them? 01 Yes 02 No	WL11. Do you buy them? 01 Yes 02 No	WL12. Why do you hunt/buy? 01 To Eat? 02 To Sell? 03 To eat and sell? 04 Keep as a Pet?	WL13. Do they cause you any problems: 01 Crop damage? 02 Kill/eat Livestock? 03 Kill/eat domestic animals? 04 Threaten personal /family safety?	WL14. If YES, how often would this happen? 01 Never 02 Rarely (1x in 2-3 yrs.) 03 Sometimes (1x/yr.) 04 Often (2-3x/yr.) 05 Very Often (≥ 4x/yr.) 98 DK
	1 <sup>st</sup> Place of Choice	2 <sup>nd</sup> Place of Choice							
1 Howler monkey									
2 Spider Monkey									
3 Hicatee									
4 Jaguar									
5 White Lipped Peccary									
6 Collared Peccary									
7 White Tailed Deer									
8 Paca(Gibnut)									
9 Manatee									
10 Iguana									
11 Crocodile									
12 YH Parrot									
13 Curassow									
14 Guan									
15 Tapir									



SECTION VII: COMMUNICATIONS(CS)	
<b>CS 1. DO YOU OWN A CELL PHONE?</b> 01 YES <input type="radio"/> 02 NO <input type="radio"/>	<b>CS 2. WHICH SERVICE PROVIDER DO YOU USE?</b> 01 DIGICELL <input type="radio"/> 02 SMART <input type="radio"/> 03 BOTH <input type="radio"/>
<b>CS 3. HOW WOULD YOU DESCRIBE THE OVERALL QUALITY OF CELL PHONE SERVICE?</b> 01 VERY POOR <input type="radio"/> 02 POOR <input type="radio"/> 03 NEUTRAL <input type="radio"/> 04 GOOD <input type="radio"/> 05 VERY GOOD <input type="radio"/> 98 DK <input type="radio"/>	<b>CS 4. HOW IS YOUR CELL PHONE RECEPTION?</b> 01 NO RECEPTION AT ALL <input type="radio"/> 02 CAN TEXT ONLY <input type="radio"/> 03 CAN TALK ONLY <input type="radio"/> 04 CAN TEXT AND TALK <input type="radio"/> 05 HAVE FULL SERVICE (TEXT, TALK AND DATA ACCESS) <input type="radio"/>
<b>CS 5. DO YOU/YOUR HH HAVE ACCESS TO THE INTERNET?</b> 01 YES: COMPUTER <input type="radio"/> MOBILE DEVICE <input type="radio"/> BOTH <input type="radio"/> 02 NO <input type="radio"/> 98 DK <input type="radio"/>	<b>CS 6. WHERE DO YOU/YOUR HH MEMBERS MOSTLY ACCESS THE INTERNET?</b> 01 AT HOME <input type="radio"/> 02 FAMILY/FRIEND'S HOUSE <input type="radio"/> 03 SCHOOL <input type="radio"/> 04 WORK <input type="radio"/> 05 INTERNET CAFÉ <input type="radio"/> 06 OTHER: _____
<b>CS 7. THROUGH WHAT MEDIUM/MEDIA DO YOU/YOUR HH RECEIVE INFORMATION MOSTLY (TOP 3)?</b> 01 RADIO _____ 06 TV _____ 02 NEWSPAPER _____ 07 TEXT MESSAGING _____ 03 COMMUNITY LEADERS _____ 04 FAMILY & FRIENDS _____ 05 INTERNET _____	<b>CS 8 WHICH MEDIA SOURCE IS YOUR/HH PREFERRED SOURCE OF INFORMATION DURING A DISASTER (E.G. HURRICANE)?</b>  NAME OF MEDIA SOURCE: _____

SECTION VIII: CLIMATE CHANGE & DISASTER PREPAREDNESS (CC)													
<b>CC 1A. IN YOUR COMMUNITY, HAVE YOU NOTICED CHANGES IN THE WEATHER PATTERN IN RECENT YEARS?</b> 01 YES <input type="radio"/> 02 NO <input type="radio"/> 98 DK <input type="radio"/> → GO TO Q-CC2 <b>CC1b. WHAT TYPE OF CHANGE/S HAVE YOU NOTICED?</b>	<b>CC1c. HAVE YOU EVER EXPERIENCED ANY MAJOR FLOODING IN YOUR COMMUNITY?</b> 01 YES <input type="radio"/> 02 NO <input type="radio"/> 98 DK <input type="radio"/> <b>CC1d. IF YES, CAN YOU RECALL THE LAST 2/3 TIMES (MONTH/YEAR) AND THE EVENT WHEN THE COMMUNITY WAS FLOODED?</b>  <table border="1"> <thead> <tr> <th>OCCASION</th> <th>MONTH/YEAR</th> <th>EVENT</th> </tr> </thead> <tbody> <tr> <td>1<sup>ST</sup></td> <td></td> <td></td> </tr> <tr> <td>2<sup>ND</sup></td> <td></td> <td></td> </tr> <tr> <td>3<sup>RD</sup></td> <td></td> <td></td> </tr> </tbody> </table>	OCCASION	MONTH/YEAR	EVENT	1 <sup>ST</sup>			2 <sup>ND</sup>			3 <sup>RD</sup>		
OCCASION	MONTH/YEAR	EVENT											
1 <sup>ST</sup>													
2 <sup>ND</sup>													
3 <sup>RD</sup>													
<b>CC 2. HAVE YOU EVER HEARD OF THE TERM "CLIMATE CHANGE?"</b> 01 YES <input type="radio"/> 02 NO <input type="radio"/> 98 DK <input type="radio"/> → GO TO Q-CC4													
<b>CC3. WHICH OF THE FOLLOWING, IF ANY, DO YOU THINK IS/ARE RELATED TO CLIMATE CHANGE (SELECT ALL THAT APPLY):</b> 01 CHANGING WEATHER PATTERNS, E.G. HEAVIER RAINFALL, HOTTER PERIODS, ETC. <input type="radio"/> 02 INCREASE IN THE SEA SURFACE TEMPERATURE <input type="radio"/> 03 WARMER SEA SURFACE TEMPERATURES AND CORAL BLEACHING <input type="radio"/> 04 CHANGE IN SEA CURRENTS <input type="radio"/> 05 STRONGER AND MORE FREQUENT HURRICANES <input type="radio"/> 06 DECREASING SEA-LEVELS <input type="radio"/> 07 MELTING OF ICE CAPS AT THE POLES <input type="radio"/> 08 ALL THE ABOVE <input type="radio"/> 09 NONE OF THE ABOVE <input type="radio"/> 98 DK <input type="radio"/>	<b>CC 4. DISASTER RISK REDUCTION ARE ACTIONS TAKEN TO REDUCE THE EFFECTS OF NATURAL OR MAN-MADE HAZARDS. INDICATE WHICH OF THE FOLLOWING IS/ARE BEING CARRIED OUT IN YOUR COMMUNITY TO ADDRESS THE THREATS OF HAZARDS?</b> 01 FIRST AID TRAINING <input type="radio"/> 02 VILLAGERS ARE FAMILIAR WITH FLOOD EVACUATION PLAN <input type="radio"/> 03 OUR VILLAGE HAS AN ACTIVE EMERGENCY FIRST RESPONDER TEAM <input type="radio"/> 04 TRAINING SEMINARS ARE REGULARLY CONDUCTED FOR VILLAGE EMERGENCY FIRST RESPONDERS <input type="radio"/> 05 REPAIR AND IMPROVE CONDITIONS OF THE VILLAGE HURRICANE SHELTER <input type="radio"/> 06 HAVE A PLAN TO STORE AND SAFEGUARD WATER FOR AN EMERGENCY <input type="radio"/> 07 SENSITIZE COMMUNITY MEMBERS ON WHAT TO DO BEFORE, DURING AND AFTER A HURRICANE EMERGENCY <input type="radio"/> 08 COMMUNITY LEADERS HAVE A STRATEGY TO SAFEGUARD LIVESTOCK AND CROPS DURING FOR AN EMERGENCY <input type="radio"/> 09 VILLAGERS ARE FAMILIAR WITH ACTIONS NECESSARY IN THE EVENT OF A "TSUNAMI WARNING" <input type="radio"/> 10 TRAINING ON BACK YARD GARDENING AND FOOD PRESERVATION <input type="radio"/> 11 THE NEMO DISTRICT OFFICER IS ACTIVE IN OUR VILLAGE <input type="radio"/> 12 NONE OF THE ABOVE <input type="radio"/> 98 DK <input type="radio"/>												
<b>CC5A. THERE IS A PROPOSAL TO UPGRADE THE SECTION OF THE PGH THAT PASSES THROUGH OR NEAR YOUR VILLAGE DO YOU THINK THIS WILL HELP TO REDUCE THE EFFECTS OF HURRICANE HAZARDS (FLOODS AND FLASH FLOOD, STORM SURGE, DRAINAGE, ETC.) IN YOUR VILLAGE?</b> 01 YES <input type="radio"/> 02 NO <input type="radio"/> 98 DK <input type="radio"/> → GO TO Q-CC2 <b>CC5B. IF NO, WHY NOT?</b>													



**SECTION VIII: CLIMATE CHANGE & DISASTER PREPAREDNESS (CC)**

**CC6. DO YOU THINK AN UPGRADED PGH THROUGH OR NEAR YOUR VILLAGE WILL HELP IN THE RESPONSE EFFORTS TO REDUCE THE IMPACTS OF HURRICANE HAZARDS (FLOODS AND FLASH FLOOD/STORM SURGE ETC.) OR A MAN-MADE HAZARD?**  
01 YES  02 NO  98 DK

**SECTION IX: HIV & AIDS-KNOWLEDGE(HA)**

<p><b>HA1. HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/></p>	<p><b>HA2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/> 98 DK ..... <input type="radio"/></p>																				
<p><b>HA3. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/> 98 DK <input type="radio"/></p>	<p><b>HA4. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/> 98 DK ..... <input type="radio"/></p>																				
<p><b>HA5. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS THE AIDS VIRUS?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/> 98 DK <input type="radio"/></p>	<p><b>HA6. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?</b> 01 Yes ..... <input type="radio"/> 02 No ..... <input type="radio"/> 98 DK <input type="radio"/></p>																				
<p><b>HA7. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:</b></p> <table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th>DK</th> </tr> <tr> <th></th> <th>01</th> <th>02</th> <th>98</th> </tr> </thead> <tbody> <tr> <td>1. DURING PREGNANCY</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>2. DURING DELIVERY</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>3. BY BREASTFEEDING</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>			Yes	No	DK		01	02	98	1. DURING PREGNANCY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2. DURING DELIVERY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3. BY BREASTFEEDING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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3. BY BREASTFEEDING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																		

**Other Comments/Concerns/Observations:**

THANK YOU!  
-END-

## 2.4: Key Informant Interviews and Focus Group Discussions Participants

	Community	Name	Institution/Organization	Phone Contact	e-mail Contact
1	Ladyville	Diane White	Chairperson, Village Council	607-8646	-
2		Audrey Moss	Councillor	625-1986	-
3		Denise Neal	Principal, Our Lady of the Way RC Primary School	620-5150	deniseneal08@hotmail.com
4		Joel Wade	Teacher, Our Lady of the Way RC Primary School	615-1924	whoisthechamp95@gmail.com
5		Diane Westby	Principal, Ladyville Technical High School	225-3499	ladyvilletech@yahoo.com
6		Phillip Ramirez	Resident/Owner, Friends of Friends Outback Steak House	601-2503	-
7		Dra. Anibal Larrea	Health Clinic, Ladyville	225-2764	-
8	Lord's Bank	Terry Gordon	Chairperson, Village Council	635-1485/610-1484	terrygonthemic@gmail.com
9		Beverly Jones	Vice Chairperson, Village council	622-8812	lollypop_23@yahoo.com
10		Sharlene Sankey	Councillor, Village Council	605-6148	sharla_90@yahoo.com
11		Gilroy Middleton	Councillor, Village Council	632-0920	gmiddleton@ub.edu.bz
12		Dion Gibson	Councillor, Village Council	615-6199	beverlyhillfinest@hotmail.com
13	Sandhill	Marconi Leal	Chairperson, Village Council	665-3545	-
14		Darlene Vacario	Treasurer, Village Council	620-7091	-
15		Lisa Gideon	Secretary, Village Council	632-9609	-
15		David Mucollough	Councillor, Village Council	-	-
17		Anna Reyes	Principal, Pancotto Methodist Primary School	225-5143	-
18		Esther Nal-Requena	Principal, Guadalupe RC Primary School	205-5114	-
19	Gardenia	Egbert Woods	Chairperson, Village Council	600-2324	-
20		Ruth Dawson	Councillor, Village Council	610-1719	-
21	Biscayne	Dorla Wade	Principal, Biscayne Government Primary School	235-1216	-
22		Kathlyn Tillett	Chairperson, Village Council	666-6790	-
23		Janet Cal	Councillor, Village Council	-	-

## 2.5: Community Sample Invitational Flyers



**BELIZE ENVIRONMENTAL TECHNOLOGIES (BET) and the MINISTRY OF WORKS and TRANSPORT in collaboration with the SANDHILL and GARDENIA VILLAGE COUNCILS hereby invite all residents and other interested parties to a COMMUNITY CONSULTATION MEETING...**

**WHY: To discuss the Proposed Upgrade of the Phillip Goldson Highway from Miles 8.5 – 24.5 by the Government of Belize with support from the World Bank**

**WHEN: Thursday August 31, 2017; 7:00 p.m.**

**WHERE: Sandhill Community Centre**

### **You have a Right to Know...**

Come out and join us in open and unbiased discussions with you the residents/stakeholders/interested parties on the proposed road project. Key Agenda Points include but are not limited to:

- Overview of the Proposed Road Project;
- Summary of the main environmental and socio-economic issues associated with the proposed Road Project;
- Documentation of issues/concerns from you the residents/stakeholders/interested parties;

**For Queries/Additional Info, Please Contact:  
Ismael Fabro, MSc, Managing Director BET  
2216 Juliet Soberanis St. ■ Belama Phase I ■ Belize City, Belize  
501-223-1819 ■ 501-615-1957 ■ [iefabro@gmail.com](mailto:iefabro@gmail.com)**

## 2.6: Pre-ESIA Community Meetings Participants

**See scanned attendance sheets**

## 2.7: Pre-ESIA Community Meetings Consultation Documentation Forms



### Environmental and Social Impact Assessment Studies for the Proposed Rehabilitation of the Phillip Goldson Highway, Miles 8.5 – 24.5

#### Community Meeting Consultation: Documentation Form(Issues/Concerns)

**1. I live in?**

- Ladyville                       Lord’s Bank                       Los Lagos                       Maxboro                       Sandhill  
 Gardenia                       Biscayne                       Other: \_\_\_\_\_

**2. What do you consider to be some of the main benefits, if any, of the proposed Road Project to you, your community and wider Belize?**

	Main Benefit/s of the Proposed Road Project for:
a) Me and My family?	
b) My Community?	
c) Belize?	

**3. What are your main concerns/issues relating to the proposed Road Project and what would you recommend to address these issues/concerns? [please use the other side of page if you need more space]**

	My Main Issues/Concerns are:	My Recommendations are:
1.		
2.		
3.		

**4. How would you rate your overall level of support, if any, for this proposed Road Project?**

- Extremely Supportive     Very Supportive     Neutral     Somewhat Supportive     Do Not Support

**5. Any other comments:**

--

## 2.8: ST R-1 – R-25

See excel file



## 2.9: Targeted Supplemental a-RAP Survey Instrument

PGH Road Rehabilitation Project, Mile 8.5-24.5

RAP Supplemental Questionnaire

November 2017

### A Control Variables:

1 QID:   2 Community: Ladyville  Sandhill  Gardenia  Biscayne

3 Road Section: Section I  A  B  Section II  A  B  4 Encroachment  Acquisition

5 Classification: **Business**  **Residence**  **Combined Business/Residence**  **Community-Based Structure**

Grocery <input type="checkbox"/>	Undivided <input type="checkbox"/>		Bus stop <input type="checkbox"/>
Food/Snack <input type="checkbox"/>	Divided <input type="checkbox"/>		Water main <input type="checkbox"/>
F/Vegetable <input type="checkbox"/>	Apartment <input type="checkbox"/>		Electric pole <input type="checkbox"/>
Tire repair <input type="checkbox"/>	Condo <input type="checkbox"/>		Church <input type="checkbox"/>
Clothes <input type="checkbox"/>	Other <input type="checkbox"/>		Other <input type="checkbox"/>
DVD/Misc <input type="checkbox"/>			

6b Description/Photograph of Structure:

6a Size of Structure:

6c Condition of Structure: Excellent  Good  Fair  Bad  7 Level of Repairs: None  Minor  Major

8a Respondent: HHH  Owner: Structure  Land  Other:   
(Relationship to HHH/Owner)

8b  Name:  Reason HHH/Owner not interviewed:

### B Demographics: **If Residence ONLY → Section C**

1 # of persons in dwelling: Adults  Mnors  2 DOB:  d  d  m  m  y  y  y  y

3 Sex: Male  Female  4 Ethnicity:  5 Age:   years

6 Union Status: Married & living with spouse  Common law  Visiting partner  Not in a union

7 Preferred language: English  Spanish  Creole  Other

business <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
everyday <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

### C Assets and Economic Activity

1a Structure Occupancy: Own: Mortgage  No Mortgage  Rent  Rent-free  Other:

1b # of dependents on livelihood: Adults  Mnors:  PS  SS  6th F  U

1c # of medical dependents (chronic illness/disability): Chronic illness  Disability

2 Land Occupancy: Own  → Q. 4 Lease  Squat  Other:

3 Who owns the land: \_\_\_\_\_ Contact: 

--	--	--	--

 - 

--	--	--	--

  
If Residence ONLY, END Here

4 Nature of the business (type, supply and demand): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5 How long in business: 

--	--

 years      6 How long at this location: 

--	--

 years

7 Estimated value of business/dwelling:      Structure       Current Stock       Land (if owned)

8 Time to relocate and set up/restore operations: 

--	--

 Months      9 Where will you go? \_\_\_\_\_

10 Preference:      Rehabilitation support       Cash compensation

11 Business Income      Income: BZ\$      Daily \_\_\_\_\_      Weekly \_\_\_\_\_

12 Business Xpenditure BZ\$: 

Stock	Rent/Motgage	Water	Electricity	Fuel	Transportation	Communications
Daily						
Weekly						
Monthly						

1 Positive and Negative Impacts of Rehabilitated Highway:

Positive Impacts		Negative Impacts	
a		a	
b		b	
c		c	
d		d	
e		e	
f		f	

2 Main Concern:

3 Level of Support:      Very High       High       Average       Low       Very Low

## 2.10: Attendance Record and Pictures



Environmental and Social Impact Assessment for Miles 8.5 – 24.5,

Philip Goldson Highway, Belize

**PUBLIC CONSULTATION**

Wednesday November 8, 2017, at 6:30 p.m.

Ladyville Community Centre

SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1		<i>[Signature]</i>	4247293	Biscayne Village <sup>24 1/2</sup>	<i>[Signature]</i>
2		Donta Dawson	6008698	Gardenia Village	D. Dawson
3		Jada Dawson	6077473	Gardenia Village	<i>[Signature]</i>
4		Marconi Leal	615-9811	Sand Hill	<i>[Signature]</i>
5		LIONEL TILLET	615-4834	SAND HILL/MANBARO	<i>[Signature]</i>
6		Sharlene Sankey	605-6148	Lord's Bank	<i>[Signature]</i>
7		Beverly Jones	622-8812	LORDS BANK	<i>[Signature]</i>
8	Fisheries Dept.	Vanessa Figueroa	622-4889		<i>[Signature]</i>
9	Coastal Zone Management Authority & Institute	Arlene Young	223-0719	Director@coastalzonebd.gov	<i>[Signature]</i>
10	TIDE	Joe Villafraza	722-2274		<i>[Signature]</i>



**Environmental and Social Impact Assessment for Miles 8.5 – 24.5,**  
**Philip Goldson Highway, Belize**  
**PUBLIC CONSULTATION**  
 Wednesday November 8, 2017, at 6:30 p.m.  
 Ladyville Community Centre

SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1		SHERMAN ESTELL	600-135-8	E ESTELL 59 @1707 MAIL.COM	<i>S Estell</i>
2		Zoe Waller	680 6578	office@worldhacksbelize.org	<i>Zoe Waller</i>
3		Shunthon Sankey	605-6148	—	<i>S Sankey</i>
4	DOE	Edgar et		edgar@environment.gov.bz	<i>Edgar</i>
5	DOE	Marcel	828 4848	ciaunit@environment.gov.bz	<i>Marcel</i>
6	NATIONAL AGGREGATES	PIERRE BOUNAITRA	610-4040	PIERRE@MIRABS BELIZE.COM	<i>Pierre</i>
7	KE	CARLO ARGUELLES	223-6996	carlo@ie-worldwide.com	<i>Carlo</i>
8	ARGUELLES & Co. Attorney for National	ERIC ARGUELLES	6102845	info@belizelawyer.com	<i>Eric Arguelles</i>
9	COURTNEY COYE ASSOCIATES for National Aggregates	CHRISTOPHER COYE	610-5680	ccoye@courtnaycoye.com	<i>Christopher Coye</i>
10	RODICA	LARRY FLOWERS	610-4990	larryflowers@vodk.com	<i>Larry Flowers</i>



**Environmental and Social Impact Assessment for Miles 8.5 – 24.5,**  
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 Ladyville Community Centre

SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1			630-1481		Austin Gentle
2	CNP/SIF	WENDEL PARHAM	605-2979	wendel.parham@sifbelize.org	[Signature]
3	BELIZE RURAL CENTRAL	BEVERLY WILLIAMS	610-0657	beverlywilliams@gmail.com	Beverly Williams
4	Bridgetown Village	Erol Dominguez	635-4777		Dominguez
5	Social Invest Fund <del>Evan Dakers</del>	Evan Dakers	622-4365	evan.dakers@sifbelize.org	[Signature]
6	CNP/SIF	José Doras	665-2018	jose.doras@sifbelize.org	[Signature]
7	BET	Ramón Frutos	630-9724	rfrutos01@yahoo.com	[Signature]
8	CONTRACTOR ASSIST. SURVEYOR	JOHN-A HENRY	604-2363	JONATHANLAND@YAHOO.COM	John Henry
9	CNP/SIF <del>Jorge O. Espejo</del>	JORGE O. ESPEJO	610-0625	jorge.espejo@sifbelize.org	[Signature]
10	DFI Productions	Zayne T. Estell	600-3473	demonfireinternational@gmail.com	Zayne T.



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SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1		E. Dalton	620455		E. Dalton
2	CANBU	Keishalyn Beleguie	6301055	administration@canbu.edu.bz	Keishalyn Beleguie
3	CANBU	Yvette Halidag	6044790	"	
4	BSIF	Richard Neal	631-7125	-	Richard Neal
5	BSIF	Nellie Trench	822-0508	nellie.trench@bsifbelize.org	Nellie Trench
6	-	Georgina Frankl	6076085	gfranklin@health.gov.bz	Georgina Frankl
7	-	Pheona Staine	615-0920	pheonastaine@gmail.com	Pheona Staine
8	-	MICHAEL ARTHURS	615-0938	michael.kareem@gmail.com	Michael Arthurs
9	Resident	Sharmarco Garcia	629-2965	sharmarogarcia@optima.com	Sharmarco Garcia
10	Councilor	Taysha Chou	6308413	tayshachou@gmail.com	Taysha Chou



**Environmental and Social Impact Assessment for Miles 8.5 – 24.5,**  
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SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1	BET	Alberto Rosado	6522368	aarosadot@gmail.com	<i>[Signature]</i>
2	Sandhill Resident Chair Lady Village (Ladyville)	ISAAC WILLIAMS	629-7177	isaacwilliams2089@gmail.com	<i>[Signature]</i>
3		Dian Wite	607-8646	teacherwite@yahoo.com	<i>[Signature]</i>
4		Stanley Parice	6279680		<i>[Signature]</i>
5		Romel Atamilla	615-9770		<i>[Signature]</i>
6	LORDS BANK VILLAGE COOP	GILROY MIDDLETON	632-0920	gmmiddleton@ub.edu.bz	<i>[Signature]</i>
7	Lord's Bank	PATRICK FABER	610-5599	patrickfaber@hotmail.com	<i>[Signature]</i>
8	BESTON	Derrin Fortward	610-2564	dfortward@gmail.com	<i>[Signature]</i>
9	BESTON	MANDISH SINGH	610-2564	mandish.singh@gmail.com	<i>[Signature]</i>
10	BET	Juan Rauderom	6643786	jrrauderom@yahoo.com	<i>[Signature]</i>



**Environmental and Social Impact Assessment for Miles 8.5 – 24.5,  
Philip Goldson Highway, Belize**

**PUBLIC CONSULTATION**

Wednesday November 8, 2017, at 6:30 p.m.


Ladyville Community Centre

SIGN IN SHEET					
	Organization	Name	Phone	e-Mail	Signature
1	BET/WildTracks	Paul Walker			
2	BET	Ismael Fabros			
3	BET	John Flower			
4	BET	Mark Asher			
5	Lords Bank America	Patricia Faber (Hans)			
6	BET	Sylvia Nonley			
7					
8					
9					
10					






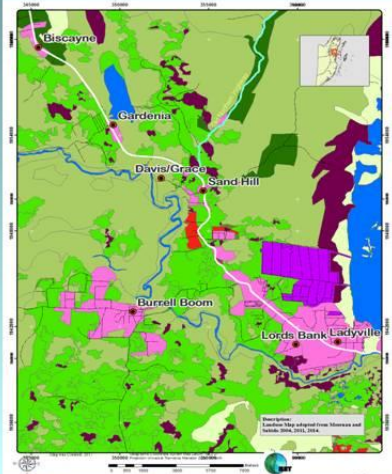
## 2.11: Philip Goldson Highway Miles 8.5 to 24.5 ESIA Public Consultation Presentation

 **BELIZE ENVIRONMENTAL TECHNOLOGIES**

**Environmental and Social Impact Assessment for Miles 8.5 – 24.5, Philip Goldson Highway, Belize District, Belize**

**PUBLIC CONSULTATION**

*November 8, 2017*



**PROJECT**



**Rehabilitation of miles 8.5 to 24.5 of the PGH has been identified by the Ministry of Works (MOW) as an important sub-project under the Climate Resilient Infrastructure Component.**

## Importance of the Road

- **Linking:** Belize City with the northern towns of Orange Walk and Corozal and Mexico's Southern Border. Part of the Pan American Highway, linking the rest of Central America with Belize.
- **Access to Belize's only International Airport and Military Bases**
- **Commercial and Industrial Activities within Project Area-** Belikin, Coca- Cola, BWS, Construction etc
- **Tourism Sites:** Altun Ha, Crooked Tree Wildlife Sanctuary, and the Bermudan Landing Baboon Sanctuary.



## Expected Project Outputs

- **Rehabilitation of Existing Pavement and Drainage**
- **Restoring original cross section of Mexico Creek, cleaning of Mussel and Black Creeks to improve hydraulic efficiency to reduce the incidence of flooding**
- **Mitigating the flooding of Mexico Creek and approaches and other vulnerable areas along the route (Ladyville, Lords Bank, and Double Run).**
- *Link canal to reduce the duration and extent of flooding from Belize River.*





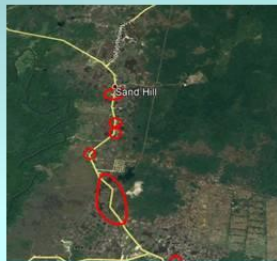
## ROAD AND INFRASTRUCTURE CONDITIONS

### Traffic and Road Safety

- Sharp increase in truck and bus traffic transporting workers and commerce.
- Sharp Curves (Section 2)
- Lack of road facilities (Bus Stop lay bys)
- Limited signs and road Markings and signs)



Increase Traffic



Sharp Curves



No Road signs or markings



No Bus Stop Lay by



## ROAD AND INFRASTRUCTURE CONDITIONS

### Pavement condition

- ranges from fair to poor over different sections of the road.

### Drainage

- The highway itself acts as a dam
- Drains non existent in some areas and with no defined turnouts
- Drains are silted/filled with debris/wetland vegetation



# ROAD AND INFRASTRUCTURE CONDITIONS

## Culverts

In various states of conditions



Undersized



Above Drainage Level



Partially or completely blocked

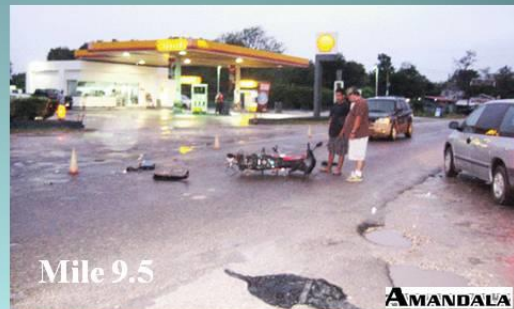
## Condition of Mexico Creek Bridge

Material on the creek bed was not properly extracted, and now restricts the proper flow (in dry season)



## Road Accidents

### Section 1



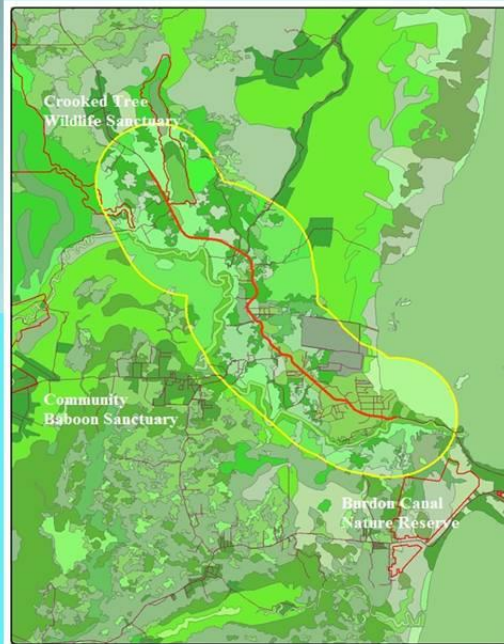
### Section 2



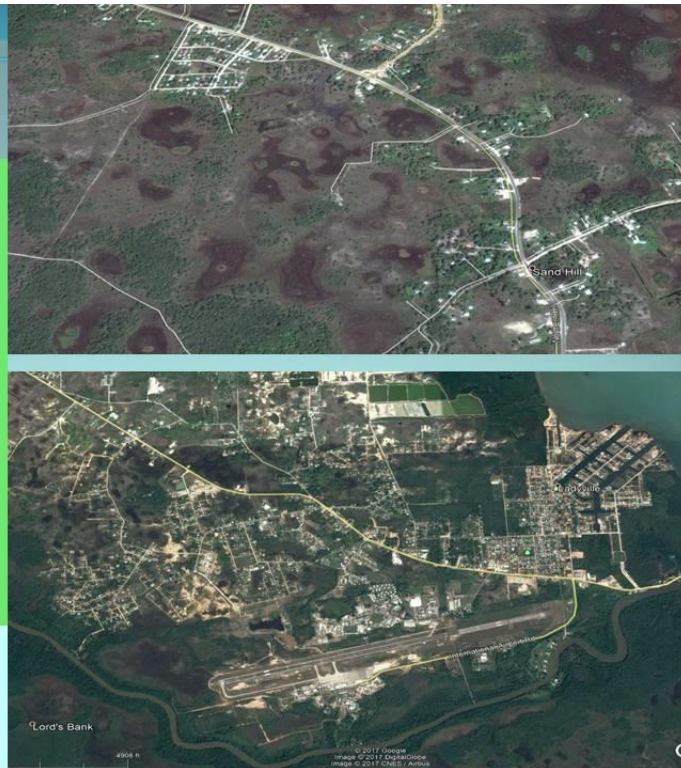
## General Ecology of Project Area

### The PGH Mile 8.5 to 24.5 Project

The project site is roughly a swath through the coastal savannah and associated wetlands of Northern Belize, including those associated with the Lower Belize River and its creeks.



There is a large difference between the conditions of wetlands in the southern, more heavily urbanized portion of the project area (section I) and the northern, more rural portion (section II).





Black Creek Apr 2017

Three creeks (Black, Mussel and Mexico) are blackwater streams, originating in lowland wetlands, with waters having a characteristic “tea” color from the tannins leached from the decomposition of leaves and other plant material.

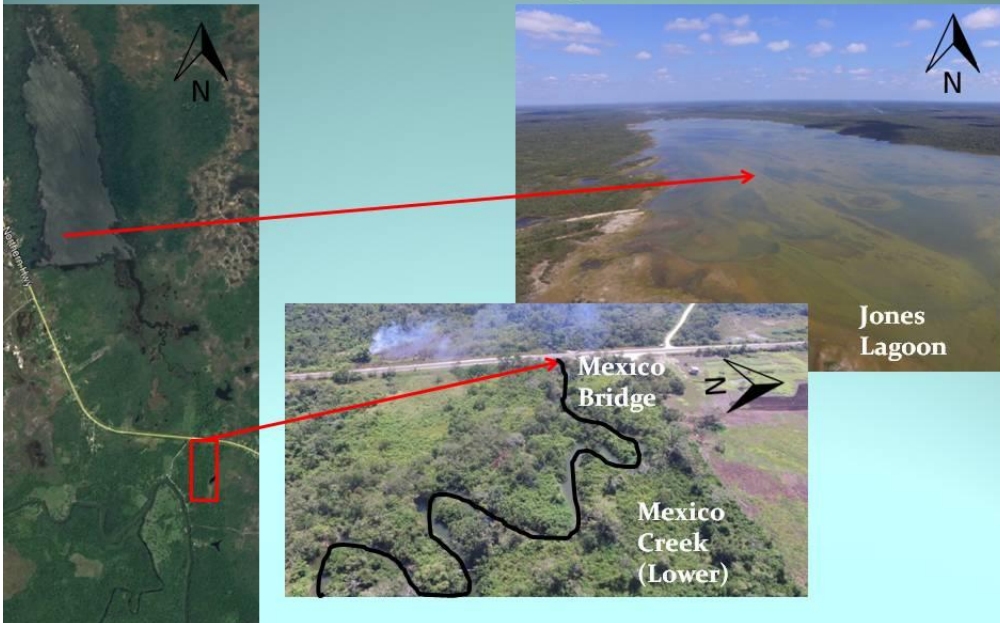


Mussel Creek Mar 2017



Mexico Creek Nov 2017

Jones Lagoon and upper Mexico Creek lie in protected areas and suffer less damage, except for fishing and hunting, and some construction activities and agriculture encroachment.



Jones Lagoon

Mexico Bridge

Mexico Creek (Lower)





Rivers, streams, lagoons, and wetlands in this area experience large changes in water stage between the wet and dry seasons.

Flow characteristics are very different between the two seasonal extremes.

Flow directions may vary during flood conditions.

## These wetland are important home To various fauna

**Birds: 370 species** (61% of those reside in Belize).

Including the (Jabiru Stork , Yellow Head Parrot, Agami Heron, Great Curassow)

**Amphibian 17 species.**

**Fish 7 orders of 28 species**



**Mammals 28 species.** Howler Monkeys.  
Important to note that the five cat species  
have been recorded.



## Mitigation Measures

- **Connectivity to Wetlands will be improved with the addition of balancing culverts.**
- **Balancing culverts and other underpasses will be large enough to accommodate floods and to serve as wildlife crossings.**



## Mitigation Measures

- **Measures will be implemented to avoid impacts from siltation and contamination and damage to wetlands and water bodies.**
- **No clearance of riparian forests along the creeks will be permitted during clean-up of blockages aimed at restoring their hydraulic flow.**
- **Clearance of fallen trees will be done manually.**



## Potential Impact to Water Quality

- Discharges of contaminants.
- Direct disturbance of the Mexico Creek during construction works, and removal of diversion
- Pollution from accidents or spillages (fuel, oils or cementitious material).
- Sewage and Waste Disposal from Worksites and Work Camps.



## Mitigation Measures to Protect Water Quality

- Use of intercepting ditches, check dams, wing dams, siltation curtains, by-pass channels, barriers and settling ponds during earthwork activities.
- Prevent discharges of solid matter, contaminants, debris and other pollutants and wastes into creeks and wetlands.
- Proper storage and handling of petroleum products especially during refuelling.
- Proper storage of re-usable road material.



## Mitigation Measures to Protect Water Quality

- Maintain equipment in good operational condition, no oil and fuel leaks.
- Place aboveground fuel or waste oil within a bunded area.
- Construction area kept litter free and all domestic waste properly containerized and disposed of.
- Provide sanitation facilities at work spots and base camps.



## Potential Impacts from Noise, Air Emissions, and Vibration

- These impacts are assessed as **moderate** especial along urban areas and areas of concern - Schools and Residential areas.



- During Highway construction - from use of heavy equipment and road building activities.
- During Highway Operations - from vehicular traffic compounded by rumble strips and higher vehicular speeds.

## Potential Mitigation Measures

### Noise

- Proper maintenance of equipment.
- Equipment turned off when not in use.
- In school areas avoid excessive reversing to reduce use of reversing beepers.
- Activities, in excess of 75 dBA should be restricted to daylight hours (Jack hammers etc.).
- Consideration to install noise barriers.
  - Leave any existing vegetation as green noise barriers or plant new vegetation.
  - Fences to be constructed or renewed as noise barriers.



### Vibration Impacts

- Rarely reach the levels that can damage structures and building.
- Can cause interference with sleep and conversation.



### Mitigation Measures

- All workers will be advised of the potential vibration hazard when operating equipment.
- Construction vibration will be assessed in cases where there is a significant potential for impact.
  - Such as the breaking of sidewalks, pile driving, and drilling or excavation in close proximity to buildings and dwellings (in Section 1).



## Air Emissions Mitigation Measures

- USE methods and devices that control, prevent or minimize the discharge of contaminants.
- Avoid burning of materials
- Use application of water and other dust suppressants to control dust.
- Limit speed and place barriers to slow down traffic.
- Maintain equipment in good operating conditions.
- Locate Construction Camp site away from residences and public areas
- Ensure that all loads entering and leaving site are covered.
- Erect effective barriers around dusty activities near schools and other sensitive areas.



## Flooding and Climate Change Impacts

Presented by  
Ramón Frutos

The Project Area is vulnerable to flooding from three main sources:

- Extreme Rainfall,
- Storm Surge and,
- Belize River Floods

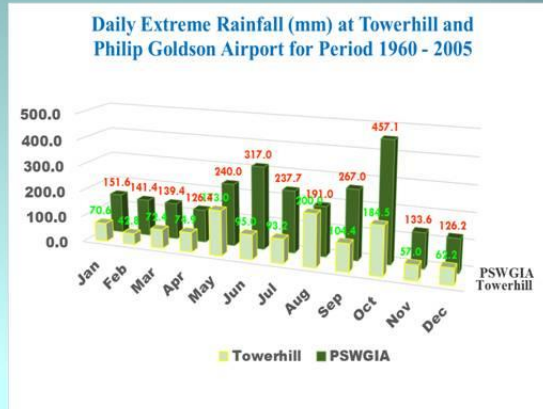
All these are predicted to be exacerbated by Climate Change



*Flooded PGH, Ladyville June 2017*

# Extreme Rainfall Events and Climate Change

- Hurr Keith, 1 in 50 yr 457 mm
- Cat 3 Hurr, 1 in 25 yr 389 mm
- Cat 2 Hurr, 1 in 10 yr 276 mm
- Cat 1 Hurr, 1 in 4 yr 211 mm
- *Climate Model Projections*
- Temp: 1.1 - 1.3 °C above 1970-2000 by 2025; 2.9 - 4.0 mid 2080
- Rainfall: increased variability ----- 20% to -30 % by 2030-2040
- Increased frequency of stronger tropical cyclones
- Increased heat waves and droughts



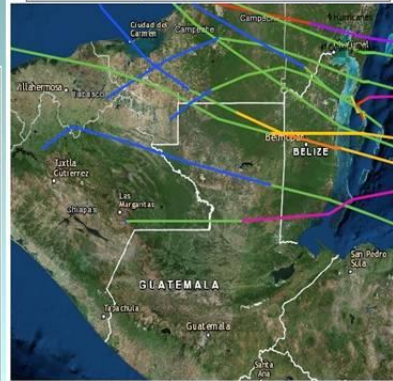
# Climate Change -Sea Level Rise and Storm Surge

- ❑ *Climate Model Projections Sea Level Rise Northern Coast of Belize*
- ❑ 0.18 to 0.43 m under SRES B1 by the 2090s relative to 1980-1999 sea-level;
- ❑ 0.21 to 0.53 m under SRES A1B;
- ❑ 0.23 to 0.59 m under SRES A2 (McSweeney, et al. 2012).
- ❑ *Storm Surge Analysis Projection for Project Zone (Golder Assoc. Ltd)*
- ❑ Low slope of coastal plain result in sea level rise influencing Bze River water levels
- ❑ Projected sea level rise for 20-year project life span: 30 cm by 2040
- ❑ Predicted storm surges: 2-year RP— 0.20 m; 100-year RP— 6.5 m
- ❑ Astronomical tides: little contribution to high water levels at site
- ❑ Predicted mean higher high water value: 21 cm at Belize City
- ❑ Calculated flood flows adjusted to potential Climate Change impacts:
  - 1 in 2 year Bze River flow: 313 m<sup>3</sup>/s; 1 in 100 year 1,092 m<sup>3</sup>/s

# Recent Tropical Cyclones over Belize & Flood Prone Areas on the PGH

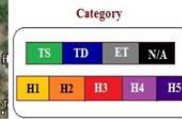


Historical Hurricane Trajectories Over and in the Vicinity of Belize, 2000-2016



Hurr. Dean Aug. 13-23, 2007  
 Hurr. Karl Sep. 13-18, 2010  
 TS Chantal Aug. 14-23, 2001  
 Hurr. Keith Sep. 28 - Oct. 6, 2000  
 TS Arthur May 21- June 2, 2010  
 Hurr. Earl Aug. 2-6, 2016  
 TS Alex June 24 - July 2, 2010  
 Hurr. Richard Oct. 19-26, 2010  
 Hurr. Iris Oct. 4-9, 2001

TS Mathew Sep. 23-26, 2010



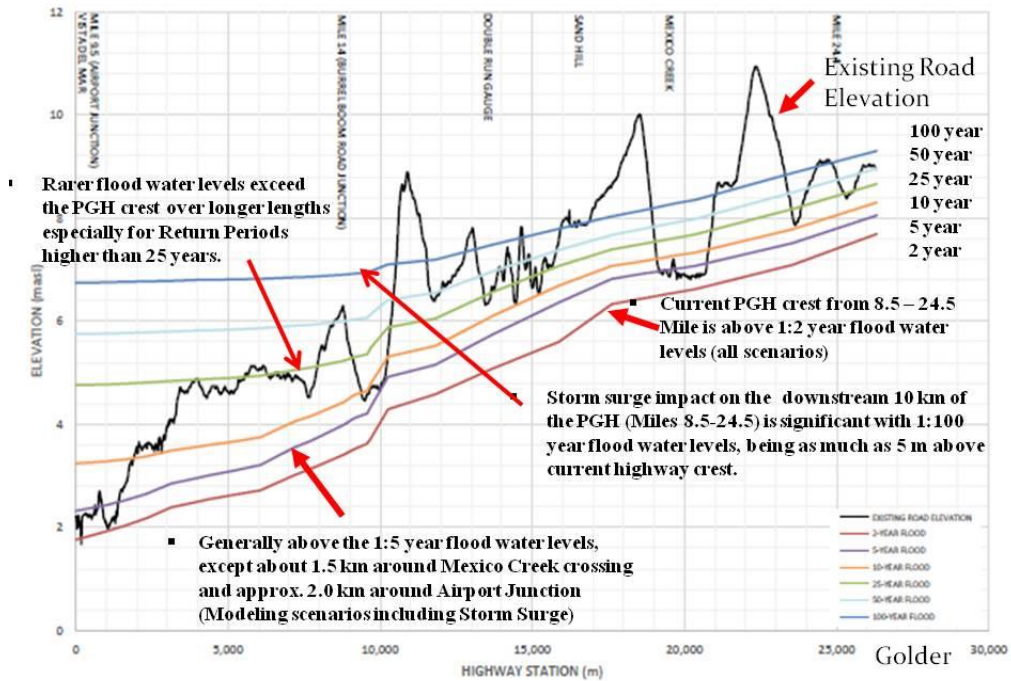
Source: NOAA Hurricane Database, 2017; R. Frutos, 2017

## Projected Storm Surge & Riverine Flooding on PGH

- Hydraulic modeling done for Belize River (including Mexico Creek and Haulover Canal) to generate flood water level prediction along PGH.



SIMULATED WATER LEVELS ALONG THE PHILIP GOLDSON HIGHWAY  
(CURRENT FLOWS & WITH STORM SURGE)



## Hazard Risk Index

Major Hazards	Likelihood	Consequence	Risk Index
Tropical Cyclones & Hurricane	Almost Certain (5)	Severe (5)	25 <i>Extreme</i>
Pluvial floods, Inundation & Storm Surge	Likely (4)	Major (4)	16 <i>Extreme</i>
Traffic accidents	Likely (4)	Major (4)	16 <i>Extreme</i>
Wild Fires	Almost certain (5)	Significant (3)	15 <i>Very High</i>



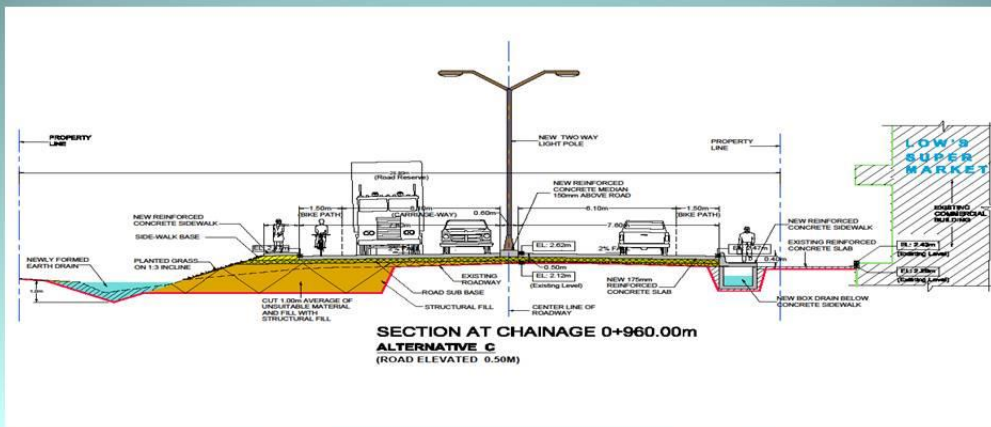
# Flood Mitigation Measures

- Reconstructing Vista del Mar Drain to direct drainage to the Sea
- Improved drainage in flood prone zones (Ladyville, Lords Bank, Double Run, Burrell Boom Junction/Road, San Hill, Mexico Creek Bridge area)
- Refurbishing Mexico Creek bridge 1.3 m (above 1:5 year flood)



Re-enforced Concrete Lined Drains with adequate drain holes (Residence and Street sides).

- Raising of sections of PGHW: 0.5 m in the Ladyville area (above 1:5 year flood)



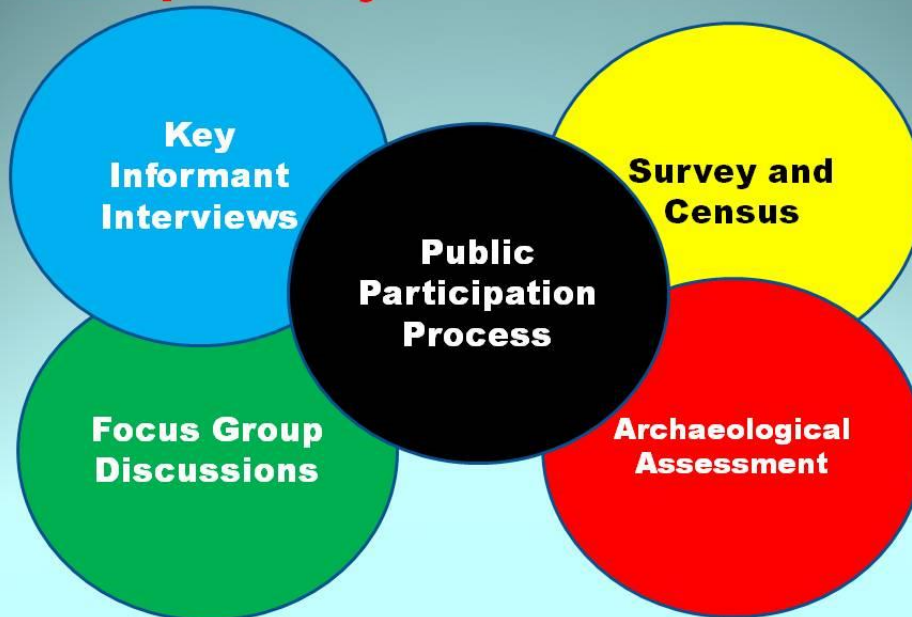
# Flood Mitigation Measures

- Clearing and restoring channels to improve hydraulics: Mexico Creek, Black Creek, Mussel Creek, Haulover Creek, and Belize River mouth estuary
- Flood Relief Culverts and directed outflow to wetlands and river
- Flood prone areas to have concrete pavement
- Scheduled 'road and waterways maintenance' with adequate budget (MOW)



## Social Settings and Issues of Concern

**Underpinned by:**



<b>Core Indicator s</b>	
<b>Road Importance: Economic Development (Tourism) and Citizen Security</b>	<b>Health: Long-Term Illness &amp; Disability</b>
<b>Community Support for Road Project, Main Concerns &amp; Main Road Uses</b>	<b>Water Supply, Waste Disposal and Electricity Supply</b>
<b>Population Age Structure</b>	<b>Comprehensive Knowledge of HIV</b>
<b>Education</b>	<b>SES/Poverty Distribution</b>
<b>Migration</b>	<b>Crime(victim)</b>
<b>Ethnicity</b>	<b>Employment</b>
<b>Marital and Union Status</b>	<b>Community Governance and Infrastructure</b>
<b>Land Occupancy and Dwelling Status</b>	<b>Cultural Heritage</b>

Indicator	Total	Community				
		Ladyville	Lord's Bank	Sandhill	Gardenia	Biscayne
Sample Size (n)		140	96	53	34	22
Survey Response Rate (%)		95.0	92.7	94.3	100	90.9
<b>Level of Support: Road Project</b>						
High/Very High (%)	75					
Neutral (%)	17					
Low/Very Low (%)	8					

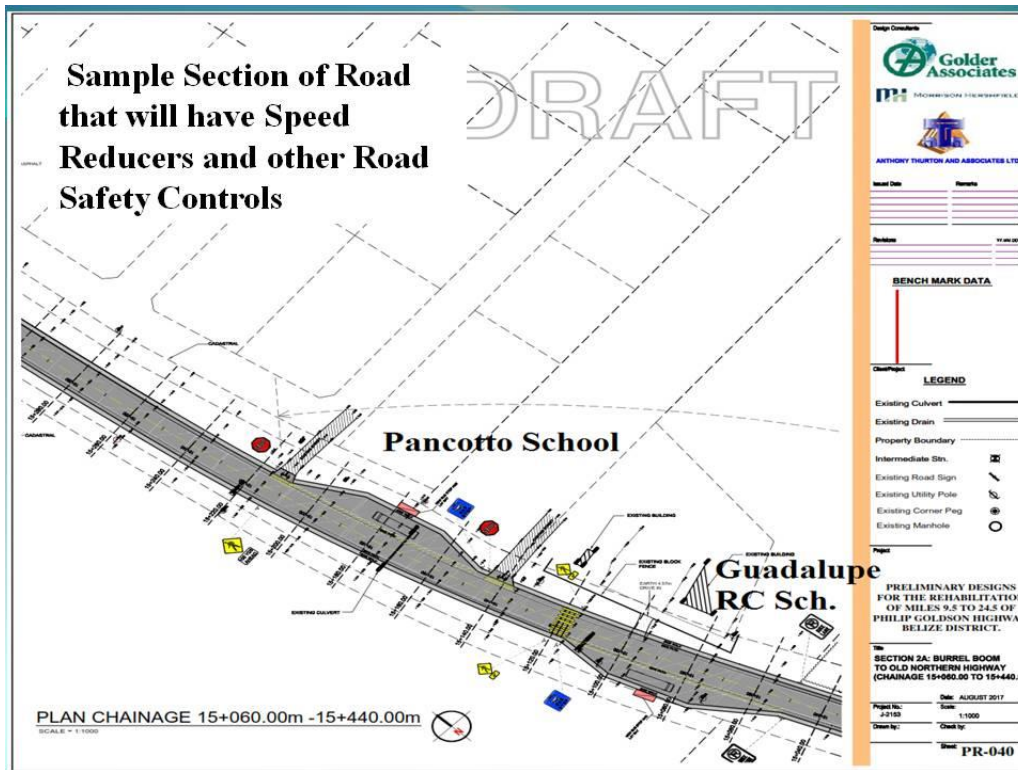
**Survey:**  
 95% Confidence Level  
 6% Margin of Error

# Main Issues/Concerns ...

- Road Conditions: pavement, edges, shoulders
- Speeding in residential areas and school zones
- DUI: Driving under the influence of alcohol
- Sidewalks and Crossings
- Bus Stops-Lay by
- Lighting
- Flooding
- Employment and Livelihoods
- Community Grievance Mechanism



## Safety for Road Users



## Summary of Social Impacts

Category	Impact			Impact After Mitigation
	Positive	Neutral	Negative	
Community Governance, Cohesion and Organization	Green	Grey	Red	Grey
Services and Community Resources	Green	Grey	Red	Yellow
Health	Green	Grey	Red	Red
Socio-Demographic	Green	Grey	Red	Yellow
Cultural Heritage	Grey	Yellow	Red	Grey
Involuntary Displacement	Grey	Grey	Red	Yellow
Economic Development	Green	Grey	Red	Grey
Employment, Livelihoods and Income Generating Activities	Green	Grey	Red	Green

# Assessment of Alternatives



## 1. Road Design Speed

Three Alternatives Considered:

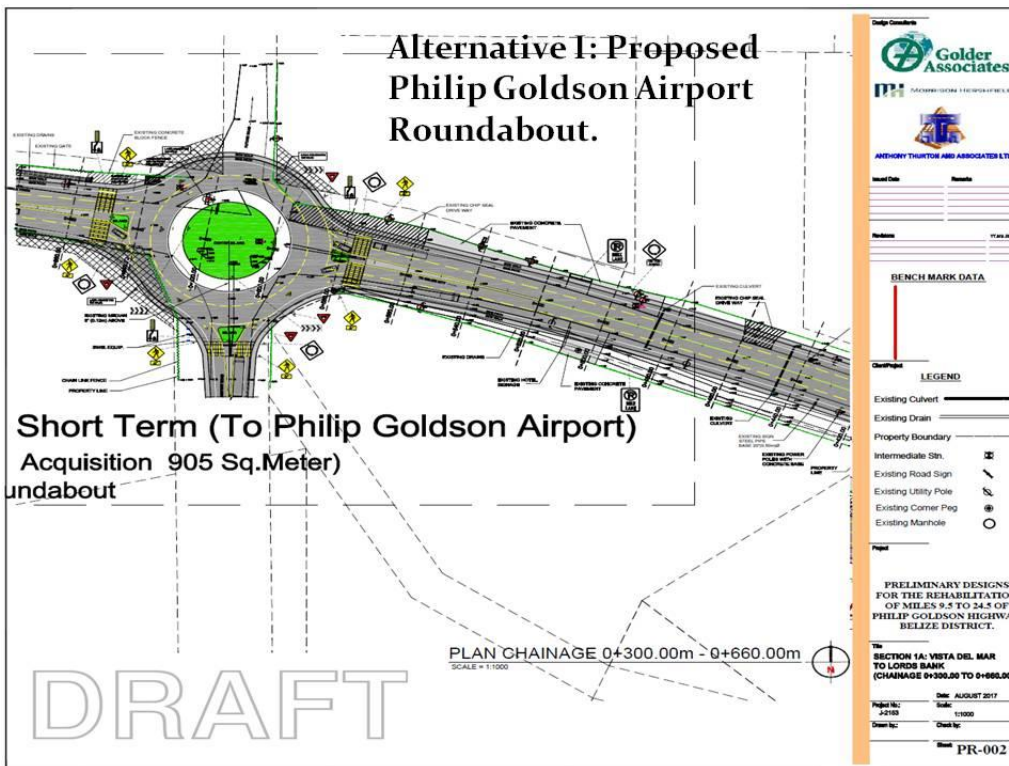
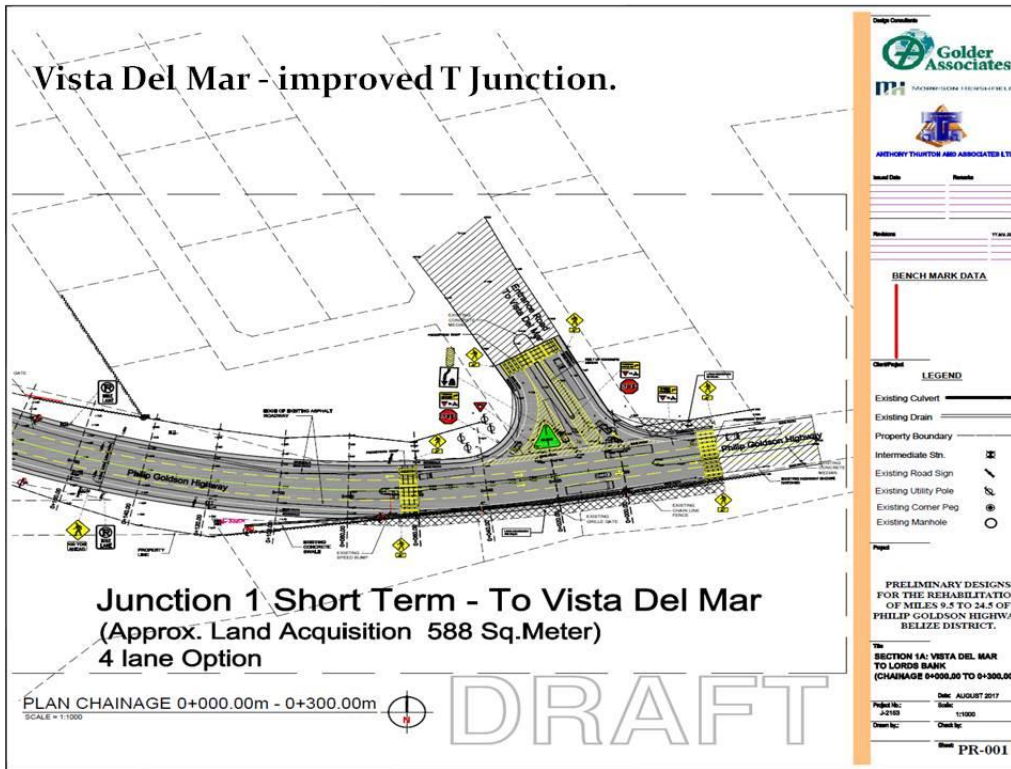
- a. 100 km/h - rural settings and 40 km/h two lane highway - urban areas between Lords Bank and Ladyville. **TOR Design Speed option.**
- b. 100 km/h in most rural settings (remain within ROW, minor smoothing out of curves and use of speed reducing measures) and a 40 km/h four-lane highway in urban areas between Lords Bank and Ladyville as a possible **Variable Design Speed option. THIS OPTION CHOSEN**
- c. **No Action Alternative**

## Road Junctions Alternatives

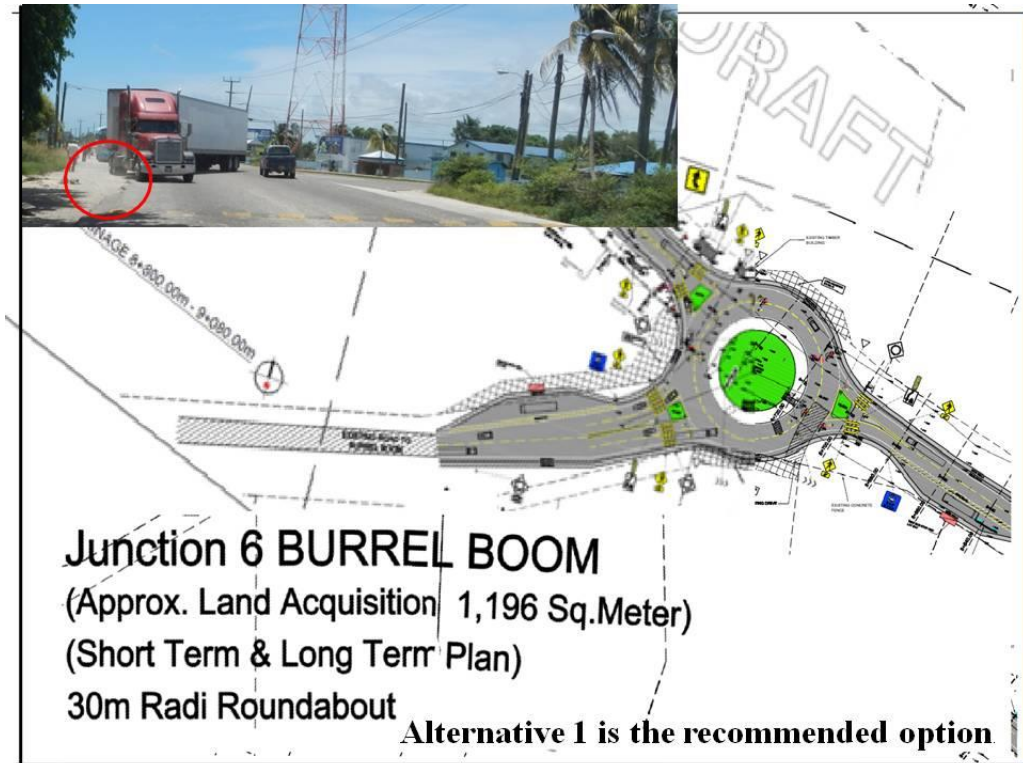
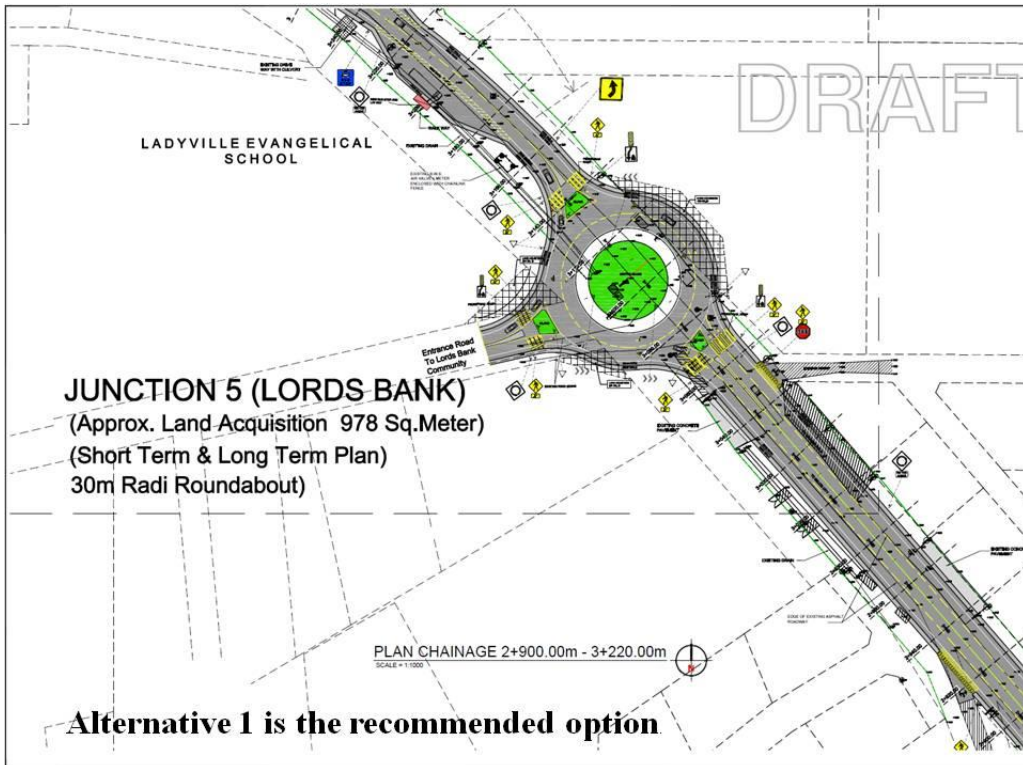
Three road junction alternative were looked at:

1. **Alternative I: Roundabout**
2. **Alternative II design of a new T- junction**
3. **Alternative III. No action alternative.**

**Most of the junctions were for improved T junctions with three roundabouts recommended for PGIA Junction, Lords Bank Junction and Burrell Boom Junction based on traffic volume, and economic cost/land acquisition.**







## Alternatives for Road Surfacing



**Alternative 1 is the recommended option with sections vulnerable to flooding and storm surge impacts considering concrete to make these sections more robust.**



### PROS

- Achieves Design life of 20 years with timely routine and periodic maintenance.
- Local contractors are most familiar with this option;
- Greater employment opportunities
- More comfortable ride-greater traction,
- higher visibility of pavement markings relative to concrete for improved road safety.
- Low capital cost (\$58/m<sup>2</sup>).

### CONS

- Resealing at 7-year intervals shorter disturbance period.
- Higher maintenance cost.

## Environmental & Social Management Plan (ESMP)

- ❑ Mitigation and management measures addressing impacts and identify who is to be involved and how these should be implemented and monitored.
- ❑ The ESMP document is incorporated in the Contract Documents
- ❑ Environmental monitoring will ensure that mitigation measures are implemented and that impacts are monitored and mitigation measures adjusted where necessary.
- ❑ Recognising that mitigation should be supported by the appropriate resources and capacity to implement them, the ESMP includes cost estimates to carry out these activities.

## Consolidated Environmental and Social Management Plan

- 1 General Construction Requirements
- 2 Drains and Culverts Construction Requirements
- 3 Excavation and Burrow Pit Requirements
- 4 Material Storage and Handling Requirements
- 5 Workers Camp
- 6 Ecological Requirements



7 Vegetation Removal and Re-vegetation Requirements

8 Traffic Management Requirements

9 Cultural Heritage

10 Utilities Management Requirements

11 Community and Worker Welfare, Safety and Health Requirements

12 Mexico Creek Bridge and other large box culvert - Construction Requirements

13 Ladyville/Lords Bank Road Construction





## 2.12: Public Consultation Notices

Friday, October 20, 2017

AMANDALABelize

*Right to the point*

### Revisiting Common Law unions

Continued from Page 9, Issue no. 3124 Tues. Oct. 17, 2017 of the *Amandala*

would entitle the estate of the deceased party to be entitled to his portion in the property, if he dies without a Will, but in joint tenancy this can never be possible!

## PUBLIC NOTICE

### Philip Goldson Highway Rehabilitation Mile 8.5-24.5, Belize District ESIA Lodgment and Public Consultation Notice

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The General Public is hereby informed that the EIA Report is available for public review and examination, free of charge, as of October 20, 2017 and the public is invited to make comments, objections or representations in writing on or before November 15, 2017 to the DOE at Market Square, Belmopan City, Tel.: 822-2548/2819. Comments can also be faxed or emailed to the following: Fax: 822-2860 or email: [envirodept@environment.gov.bz](mailto:envirodept@environment.gov.bz); [eiaunit@environment.gov.bz](mailto:eiaunit@environment.gov.bz).

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Funded by The EU

# NGO SCHOLAR OPPORT

## NGO PROFESSIONAL ONLINE C

DELIVERED BY THE UNIVERSITY OF THE  
COMMENCING IN J

### TRAINING C

- ESSENTIALS OF NGO
- DEVELOPING AND MANAGING IN NGO

DEADLINE FOR SUBMISSIONS  
TUESDAY, 31ST OCTOBER

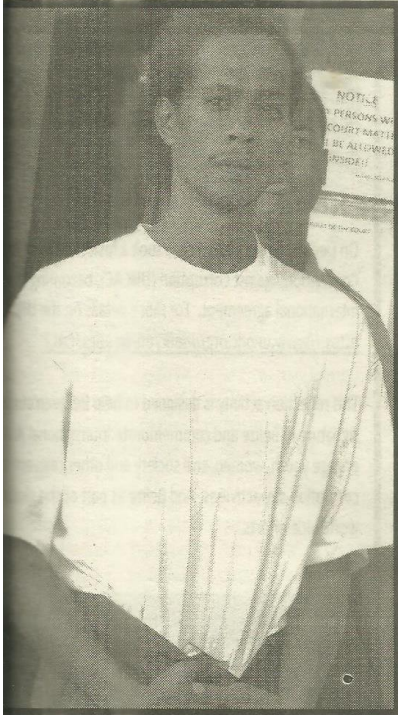
FOR MORE INFORMATION  
CPDCSUBMISSIONS

TEL: 1 246 437 6055 FAX: 1 246 437 6056  
WWW.CPDCGO.ORG

@CPDCNGO

@CPDC

# Others and a friend charged with possession of unlicensed firearm



**Lewis pleads guilty to possession of firearm and ammunition**

The case before... his guilty... accepted full liability for the... ammunition. ...of the fact that... provided no... against his... and the driv- gistrate Trapp... ed the charges... them and told... they were free

...ticed an F150 pickup truck coming towards them and stopped the vehicle when they saw the occupants behaving strangely.

That search yielded a firearm which was hidden under the driver's seat of the vehicle. They also found a black magazine containing six live rounds in the gun.

Andrew Lewis was ordered to serve two five-year sentences concurrently by Magistrate Trapp, meaning he will serve only five years in jail.

...nday, October... 7 two officers... ed a mobile... e Hattievill... area. They no-

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**DIAL**  
**0-800-922-TIPS (8477)**



WE PAY CASH FOR INFORMATION ON ANY UNSOLVED CRIMES

A Community Program Coordinated by the Rotary Club of Belize.

## PUBLIC NOTICE

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Mile 8.5-24.5, Belize District

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Empowered lives.  
Resilient nations.

### Request for Proposal –Individual Consultancy We kindly request Individuals to submit their Proposal for: Consultancy to Develop a Chemicals and Waste Management Strategy and Action Plan and a Disposal Plan

#### Background:

Chemicals play a part in almost all human activities (medicines, water purifiers, agricultural chemicals etc.). Many consumer and industrial products, including fuels, solvents, fertilizers, pesticides, paints, and household cleaning disinfectants, contain hazardous substances. Improper management and disposal of these chemicals and its respective wastes can lead to unexpected releases of toxins that are hazardous to humans and harmful to the environment.

Belize is faced with pollution issues associated with improper and unsafe chemicals and waste management practices. Also, safe handling, storage and disposal of seized chemicals, and waste encountered at sites present unique problems to law enforcement and regulatory authorities in Belize.

The Sound Management of Chemicals and Wastes (SMCW) plays a key role in enabling countries to decouple growth from resource use and pollution, by redesigning products and production processes, phasing out toxic materials, minimizing waste generation and optimizing resource use through recycling and reuse.

As a signatory to Stockholm Convention on Persistent Organic Pollutants (POPs), the Basel convention, Rotterdam Convention, Vienna Convention and Montreal Protocol, the Government of Belize promotes the coherent and sound management of chemicals in Belize.

The Government of Belize, through the United Nations Development Programme and the Global Environment Facility (UNDP/GEF), is executing the project entitled "Belize Chemicals and Waste Management (BCWM) Project". The project aims to assist Belize in implementing its relevant obligations under the Stockholm Convention, in particular to reduce the releases of Unintentional Persistent Organic Pollutants (UPOP's), as well as to build the country's capacity to manage chemicals and waste.

The Government of Belize, through the BCWM project is seeking a suitable individual professional with expertise in chemicals management to work with the Department of the Environment to develop a chemicals and waste management Strategy and Action Plan, including a Disposal Plan.

#### Duties and Responsibilities Objective

Under the direct supervision of the Project Manager, the Chemicals Management Expert shall be responsible for the development of a chemicals and waste management Strategy and Action Plan, including a Disposal Plan. Specifically, the Chemicals Management Expert's responsibilities include but are not limited to the following:

- Prepare a detailed work plan for consultancy activities, a schedule for site visits along with a list of users/importers/waste generators to be visited.
- Undertake site visits at various chemical users, importers and waste generators to conduct a situational analysis of the chemicals, waste management, disposal methods and practices in Belize.
- The Chemicals Management Expert must consult with pertinent regulatory agencies.
- Develop a chemicals and waste management Strategy for Belize.
- Based on the collected data and the developed chemicals and waste management Strategy, the Chemicals Management Expert will be responsible to develop an Action Plan, inclusive of a disposal Plan, for Belize.
- Actively participate as an advisory member to the Project Execution Group (PEG) and Expert committee for key meetings.
- Conduct site visits, consultation meetings, workshops, including a National Consultation workshop to review proposed draft of the chemicals and waste management Strategy and Action Plan, including a disposal Plan, and a National validation workshop with



# GOB helps BTL speed up fiber-optic Internet roll-out

By William Ysaguirre  
Freelance Reporter

All Belizean Internet

Minister Anthony "Boots" Martinez

introduced at a Special sitting of the House of Representatives in Belmopan on Friday morn-

banking regulations from Central Bank prevent a private bank from extending a loan of more than their legal offspring up to 18 years of age.

# Credit unions unw...

By Benjamin Flowers  
Staff Reporter

Members of the Belize Credit Union Credit Union. Corine Robinson-

Fuller, execu rector of the explained t league has working w ICB since 7 arrangements tablishments

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## NOTI

GOVERNMENT OF BELIZE  
ISSUE NUMBER

Tenders are invited for an issue of Government of Belize \$64,391,800.00.

The Bills will be issued in denominations of \$200, \$200,000, \$500,000, \$1,000,000, \$5,000,000, and \$10,000,000 issue. They will be issued on Tuesday, 31 October 2017 2018.

Each tender must be for \$200 or a multiple of \$200 and which is offered for each one hundred dollars face value.

The Auction on the Central Securities Depository System pm on Tuesday, 31 October 2017.

Successful tenders will be charged on the settlement date Securities Settlement System of Belize (APSSS).

The Government of Belize reserves the right to accept in part.

CENTRAL BANK OF BELIZE

Notices are place on Central Bank of Belize