

ANNEX VI

Info Sent on BTL project for Social Survey

Kirah/Mito:

Hey guys, this is the project I was talking to you about. Mito, could you also pass on to your wife also as her capacity as chairperson for her comments also. Also could you send this to Billy Leslie and Arceo, or send me their e-mails so i can get this to them. Kirah, could you pass this to Miguel for me please, and also would appreciate your comments also. If you need more info please feel free to contact me at the email i sent this from or call me at 667-9789. Much appreciated.

Some basic questions would be:

1. Do you foresee any problems with the *btl* submarine cable project?
2. Do you foresee any problems with the route of the cable?
3. Would the management of the reserve be willing to work with the project to ensure environmental viability for the project area and surroundings?
4. What are your general comments on the project and the area that is being proposed?

Also kindly provide any additional comments that you may deem fit.

Attached please find a brief description of the project.

Thanks in advance for your assistance.

Respectfully,

Alfonso Avilez

## **Project Location**

The Government of Belize is committed to improve the standard of living of the people of Belize. To this end tourism development has been earmarked as one of the most promising avenues of growth thus increasing the demand for safe, fast and reliable telecommunication services. As always the relevant issue is how to steer growth in a sustainable direction so that it will provide sustainability for all stakeholders, local, national and international stakeholders. The object of the project is to ensure social, economical and environmental sustainability and equilibrium, which are the three keys to a successful project.

The Belize Telemedia Limited (*btl*) has embarked on a nationwide venture that will upgrade and improve a hundred fold the service of telecommunications not only to the mainland sector of Belize, but also to the island of San Pedro.

The project entails the installation of a Submarine Fiber Optic Cable (SFOC) from mainland Belize to Ambergris Caye [See Fig 1.0], where it will be incorporated into the network that presently exists on the island. This upgrade, by virtue of Fiber Optic Cable (FOC), which is a state of the art tool in telecommunications, will allow for quicker service time and allow easier access and download times on the internet, which in the case of San Pedro, is essential due to its importance to the tourism industry of Belize.

The FOC will run from Maskall to Bomba and from Bomba to the coastline overhead on the existing Belize Electricity Limited (BEL) poles. The FOC will then proceed underground and via a SFOC to the island of San Pedro.

Once the SFOC reaches the island, it will be incorporated into the grid via manholes that have already been installed throughout the town.

It must be noted that this project will take place during the dry season, so there is the minimization of impacts onto the environment, both land and marine.

## **Planned Development**

The proposed project thus entails the installation of FOC from Maskall in the Belize District to San Pedro Town. This venture will be utilizing the existing infrastructure already in place belonging to BEL, incorporating a submarine section and finally linking to an existing underground network in San Pedro [See Fig 2.0].

Utilizing the existing BEL poles to the coast off Bomba, which are a part of the BEL Power II Project, the FOC will run to the coast, thus avoiding the need to clear, trench or install any new poles on mainland Belize.

Stage two (2) entails the laying of a submarine fiber optic cable (SFOC) from the mainland coast to San Pedro by burying the cable in the seabed.

The third stage is the incorporating of the SFOC to the grid network that exists for the town of San Pedro.

This will include the demarcation of the SFOC by the installation of marker buoys at every 2km , which will aid in future repairs to the cable, and to delineate the location of the SFOC to fishers, boaters and the general public, and signs to notify where the SFOC is passing.

## **Development Options**

The project had several development options for the initial crossing, and also a series of options for the final option that was chosen [See Fig. 3.0]. In this section, the options will be discussed and reasoning will be presented for the choices that were taken.

### **Option 1**

In option 1[See Fig. 3.0], the proposed route would have been running approximately 50 feet North of the BEL submarine cable route [See Fig. 2.0], and then proceeding to San Pedro via the overhead transmission poles that support the power lines in the South Beach area. The surfacing point would be near to that of the BEL cable, in the South Beach area.

### **Option 2**

In option 2, the route would take the *btl* FOC a little further North of the BEL cable [See Fig 3.0], but would have the same exit point and utilize the transmission poles to reach San Pedro Town.

### **Option 3**

Option 3, would take a different route. It would have a landing in San Pedro itself, and thus avoid the over head transmission lines in the South Beach area. Additionally, it would steer further away from Hol Chan Marine Reserve, thus reducing the impact of sedimentation on the flora of the area.

However, for this option, there were 3 options, 3, 3b & 3c [see Fig 3.0] on how to run the SFOC behind San Pedro Town. This was necessary due to the bedrock and depth constraints in the area. Option 3 would take the cable through a shallow area and then to the exit point, while 3b & 3c would utilize the access channel that the barges use to reach the marina behind San Pedro. Option 3c would then continue further North to an area behind the *btl* tower. Option 3b would land at the same point as option 3 [See Fig 3.0].

#### **1.1.2.2.2 Preferred Option**

After careful consideration, and discussion with the *btl*, it was decided that Option 3 would be the preferred option. The rationale was that this option would ensure the protection and longevity of the FOC especially in San Pedro. The underground network that option 3 would

link up with would protect the FOC from hurricane damage. If the FOC was overhead, strong winds associated with hurricanes, which have been frequent in the past years, would damage the FOC. The water in the pipes and trenches would not affect the cable since the cable is properly insulated, thus functioning with no interruptions.

It was also noted that the utilization of the access channel to the marina could cause possible problems, due to the fact that the access channel requires regular maintenance dredging, thus would place the SFOC at risk. Route option 3, even though will require digging into bedrock, was the most feasible and practical option, since by laying the cable in bedrock, the protection of the cable increases a hundredfold. Route 3 project corridor would consist of a length of 23.26 km as compared to 19.23 for option 2, but the safety issue, protection and longevity of the SFOC warrants the additional 4 km.

### **Construction Phase**

The construction phase of the project will last approximately 10 wks for Stage 1(overhead from Maskall to coastline) and about 6 weeks for Stage 2 (SFOC) section of the project.

Due to the fact that there already exists a network in San Pedro, the time frame will be only days, which will be to splice the SFOC into the existing grid.

### **Stage 1**

Due to the different activities that will be taking place, the project has been broken down into Stages, and then consequently phases, especially in the case of Stage 2.

Stage 1 thus comprises of the following:

1. The splicing of the FOC at Maskall and utilizing the BEL transmission lines that run to Bomba.
2. Attaching the FOC to the poles and running the FOC to Bomba and subsequently to the coastline.
3. Lower the FOC from the poles and then dig a trench, within the buffer zone of the transmission lines (approximately 30ft from the BEL trench), toward the beach.
4. Construct a beach manhole where the underground FOC will be prepared to start the submarine phase of the project.

### **Stage 2**

Stage 2 of the project is the actual trenching of the seabed for the submarine section of the project. At this juncture, due to the difference in the area to be utilized, we have broken this stage into two phases. The first will be from the beach by Bomba to just off the channel that is utilized by the barges that go to the marina behind San Pedro Town, and the second is from the outcrop by the channel to the coast line near the manhole on San Pedro Town.

Phase 1 of Stage 2 thus comprises of the following:

1. The project activities of the first ¼ mile of the seabed utilizing a backhoe on a pontoon due to the depth constraints in the area.
2. The protecting of the cable by utilizing an articulated pipe that will provide extra protection to the cable against props or any other threat that may arise from time to time. This could be from exposure of the cable due to a storm or hurricane.
3. The burial of the SFOC in the seabed to a depth of 3 feet utilizing a jet plough [See Plate 1.1 & Appendix 4] for a distance of 19.15 km. At the point where the sea lanes (utilized by the BSI Sugar Barges) will be crossed, the cable will then again be protected utilizing the articulated pipe covering to ensure 100% protection of the SFOC.

Phase 2 of Stage 2 thus comprises of the following

1. The trenching of the sea bed from the point where the jet plough terminated to the coastline on San Pedro utilizing a backhoe on a pontoon. This is necessary due to the fact that there is bedrock at very shallow levels below the seabed. This area will thus require specialized equipment that will break the bedrock, which happens to be soft-slate like limestone. At one point, where the cable will cross the access channel to the marina behind San Pedro, the cable will be protected utilizing the articulated pipe covering up to the point that the cable comes up on shore at San Pedro. This is to provide extra protection from vessels utilizing the area, especially in the San Pedro Lagoon.

### **Stage 3**

Stage 3 of the project is the splicing of the SFOC unto the existing network in San Pedro. This stage comprises of the following.

1. Gaining access to the area and installing a manhole.
2. Splicing of the SFOC unto the San Pedro Grid.
3. Ensuring that the SFOC is protected from exit point to manhole.

### **Conclusion**

By worldwide standards, Fiber Optic Cable is the newest and latest in telecommunication technology. For the country of Belize to be competitive on the international market, a reliable and fast service is required and needed. *btl* has thus embarked on a nationwide network that will enable Belizeans to surf the net and use the worldwide web with much ease and comfort. Considering the small footprint of the total area, both marine and terrestrial, the potential of the land to accommodate the project is already available and the sea-bed to be used is miniscule. The estimated burying of the cable should be no more than a depth of 3 feet below the sea-bed.

The route layout of the project will assure that the stakeholders of the area are not inconvenienced, and that the environment is not unduly negatively impacted although the development, as it will run for an estimated 24 km, and will be cross into several different biological zones.

The anticipated project plans to improve the existing telecommunications service of not only for San Pedro but the entire country by installing the Fiber Optic Cable Network. This action has been undertaken throughout the country and it is now one of the final stages of the network which is San Pedro Town where development has given way to the need for better and more reliable service. Overall, the developer aims at achieving a high level of standard for the residents, guests and visiting population of San Pedro as well at achieving economic returns for both project and community enhancement.



**Fig: 1.0:** Project Corridor Location Map

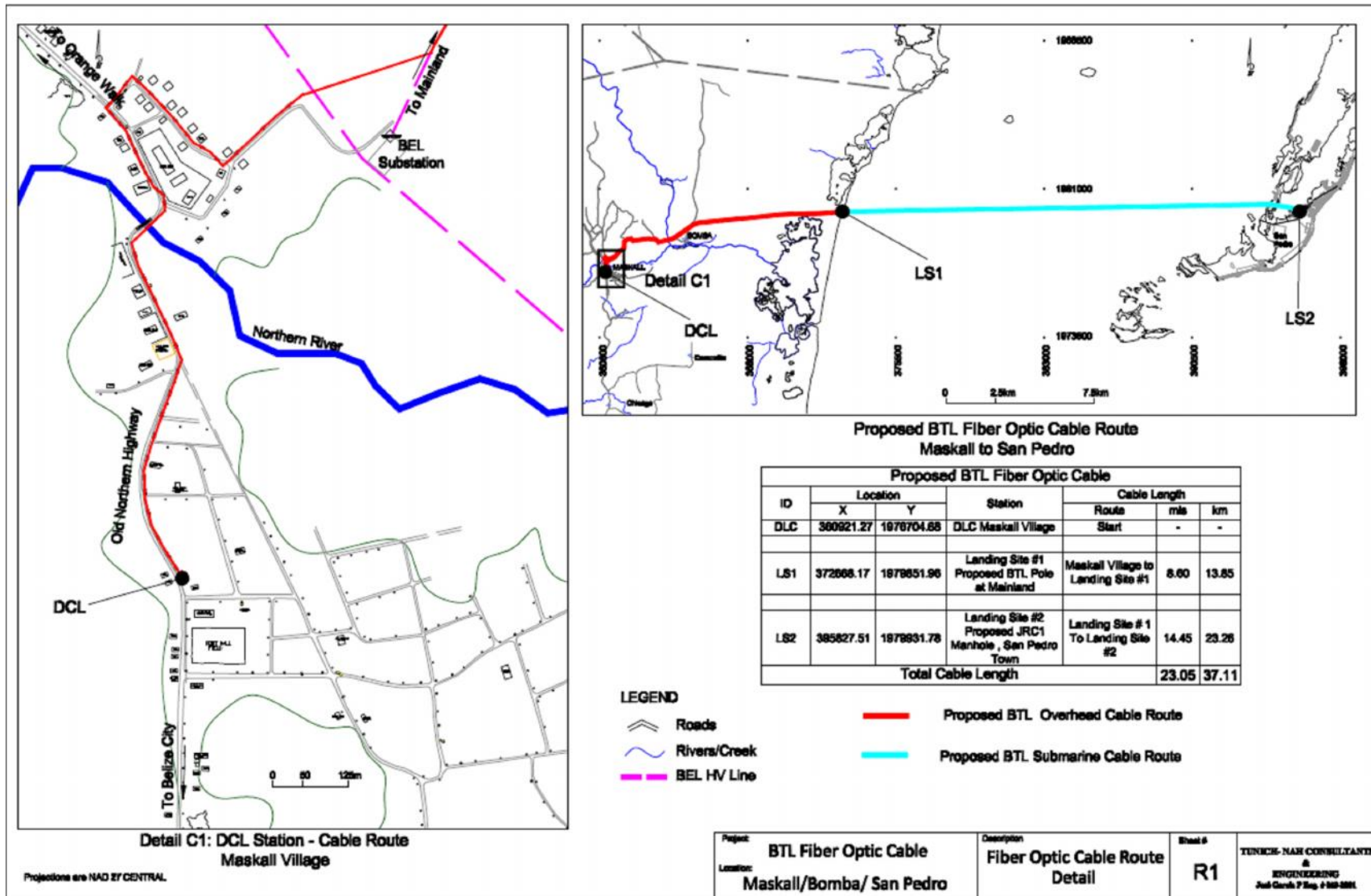


Fig 2.0: FOC Project Corridor Route from Maskall through Bomba to San Pedro

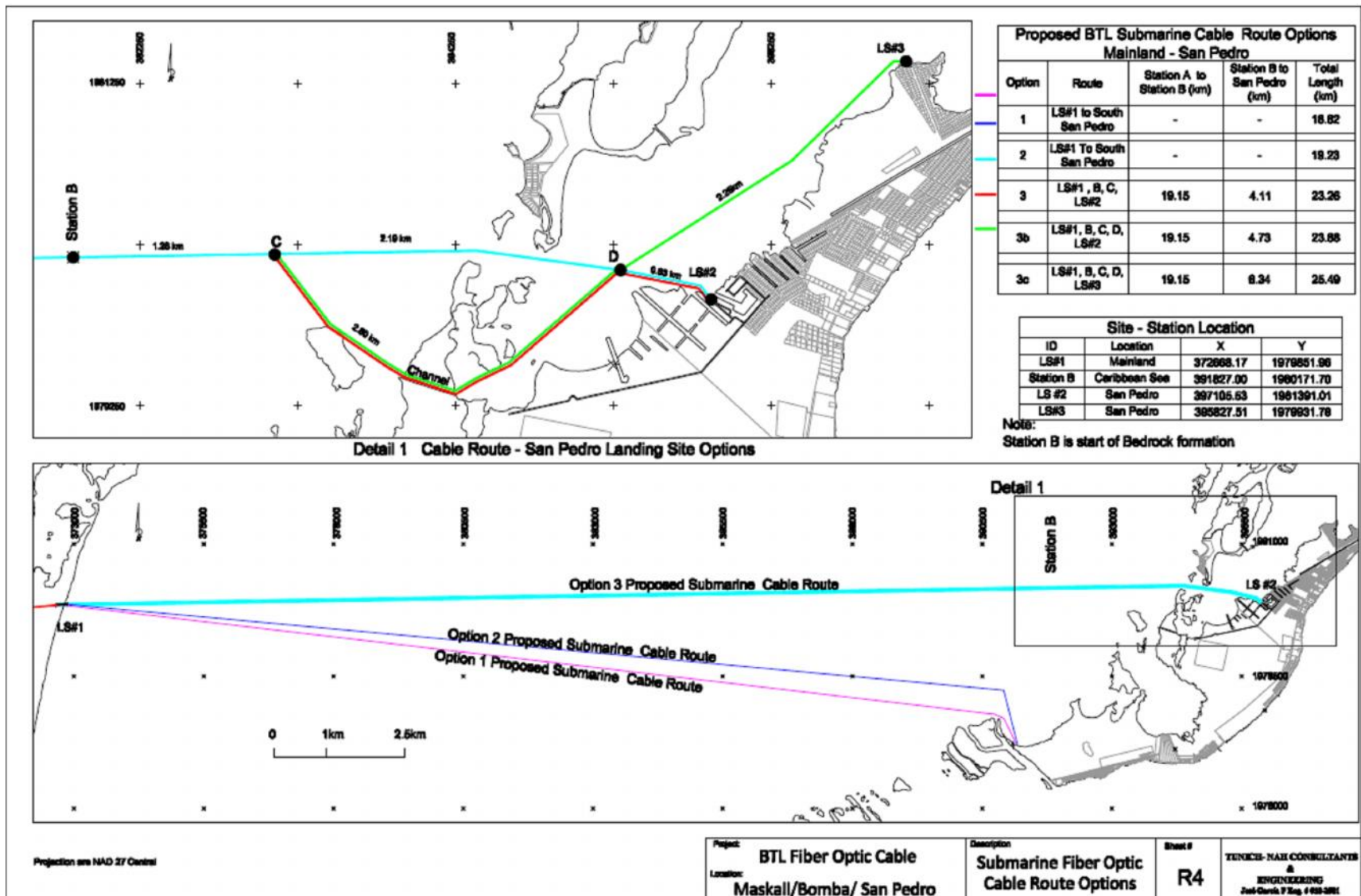


Fig 3.0: Map showing options for the project corridor