Our Transportation System is in Crisis – 299

Last week I suggested the "*highway to Point Fortin*" should really be known as "*an urban primary arterial system to connect the Southwestern Peninsula to improve accessibility to the major urban centres in the region, including Debe, Penal, Siparia, Fyzabad, La Romaine, Oropouche, La Brea, and Point Fortin. In order to facilitate the high traffic demand on both the eastern and western sides of the Region, it is necessary to adjust the new arterial system to be closer to these urban centres from which the high traffic is generated*."

After consultation with the Government and the Highway Re-Route Movement, the Joint Consultative Council for the Construction Industry (JCC) and its Civil Society Kindred Associations have appointed an Independent Working Group, to examine the several matters of concern on the disputed Debe to Mon Desir segment. I decided to put some thoughts on the matter.

The context of the assignment must be clearly defined. It would include the purpose of the arterial road system which was described above, in addition to its design standard, such as traffic volumes, design vehicle, design speed, horizontal and vertical alignment controls, maximum grade, lane and shoulder width, cross-section elements and roadside design, access management and location of interchanges and at-grade intersection control.

Next, the identification of environmental features:

(a) Identification of major topographic, cultural, soil and vegetation features; including, wetlands, habitats of endangered species, and other man-made features of social or cultural significance.
(b) Air pollution
(c) Noise pollution
(d) Determination of minimum clearances from sensitive areas.
(e) Property acquisition, disruption and relocation
(f) Agricultural production
(g) Drainage patterns
(h) Energy use
(i) Aesthetics

Then, determination of drainage requirements:

(a) Determination of elements of the drainage system, and the associated computations.
(b) Determination of the proposed arterial road system on existing catchment areas and the drainage of existing roadways.

Finally, screening of alternative route alignments:

(a) Determination of evaluation criteria
(b) Measurement and quantification of criteria factor values, including penalties (restrictions) and weights (compromise levels) for each factor

I have also put my thoughts on the penalties and weights leading to computation of an automated optimal route alignment.

My suggestion is that the Evaluation Criteria should include:

1. Maximization of population served within 5 kilometres –this could be done by computation of residential population with the Central Statistical Office (CSO) communities
2. Minimization of natural environment and associated penalties (that is minimization of impact on protected areas (including consideration of the levels (weights) of protection) – What are the minimum distances to protected areas?
3. Minimization of social penalties (that is minimization of impact on public, commercial, and residential buildings and other public facilities (including consideration of the levels (weights) of protection)
4. Minimization of earthwork

Criteria factors include, in no category or order of priority:

- Geology and geological structures,
- Lakes/ponds,
- Flood prone areas,
- WASA treatment plants
- Schools
- Landuse (Commercial and Services; Cropland and Pasture; Evergreen Forest; Forested Wetland; Industrial; Residential; Strip Mines Quarries, and Gravel Pits)
- Rivers and streams
- Protected Areas (Godineau Swamp; Nature Conservation Reserve; Erin Savannas Scientific Reserve)
- Land Ownership (State; Private; Leasehold)
- Oil wells
- Pipelines (NGC; Petrotrin)
- Fire stations,
- Police stations,
- Gas stations
- Land Capability (Good land requires moderate to intensive conservation and management practices; Moderately good land requires intensive conservation and management practices; Fairly good land should be used for forest, tree crops, grazing and building depending on the slope; Unsuitable for Agriculture due to slope and/or water limitations, should be left under indigenous growth or forest)
- Landslide susceptibility

Multicriteria analysis has been suggested as a decision support tool in order to allow decision-makers to screen route alignment options. The tool uses subjective judgement to ease the practical problem of measurement and quantification of criteria values based on analysies of project identification, project information / readily available data regarding evaluation criteria, and prioritization.

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