Our Transportation System is in Crisis – 149

Recently, there have been several protests over poor road conditions in various parts of the country, such as, Rio Claro, Caparo, San Francique, and La Brea, etc.

Road conditions deteriorate with several factors, including: (a) Surface rainfall run-off limitations such as blocked roadside drain access, due to, for example, paving over of roadside drain by business enterprises so that there is no longer a drain in front of the premises and so rainfall runoff from both the road and business flows (or remains) on the roadway itself. Another example of blocked roadside drain is the grassing on the road edge which obstructs the rainwater reaching the gutters. (b) Poor road foundation. Many of the roads built in the country were well-used tracks that were paved. Therefore, these are compounded by poor road geometrics (regular and tight bends, narrow lane widths, etc) and weak road structure. (c) Poor roadside drainage structure, with no (proper) sidewalls, and that the road gradually slips into (or underneath) the drain. A good example of this problem is Ackbar Trace along the Uriah Butler Highway in Charlieville, Chaguanas. Note the name "Trace." Ackbar Trace has historically been in a terrible condition. (d) The explosion of vehicles on nation's roadways, especially freight traffic using any and all the roads with no specified truck routes. (e) Utility contractors excavating roads and not repairing them adequately. In fact, there appears to be a "wicked" cycle with respect to the Water and Sewerage Authority (WASA), as poor road structure and excessive vehicle loading results in leaks in the underground water lines, which leads to further deterioration of the road structure. But which comes first? WASA then repairs their line, but their reinstatement to the excavated road usually needs a lot to be desired. It is amazing that both WASA and the Ministry of Works and Transport (MOWT) have basically the same authority with respect to road repairs. Therefore, it appears that WASA could do what it wishes and the Minister for Highways (who is the authority for all roads) can do nothing about it. Surely, that should not continue.

It is recommended that the Government explore legislative changes which would be necessary to ensure that other utilities which need to dig roads in order to carry out their own maintenance or development works are mandated to carry out the necessary repairs to the standards determined by the MOWT. If the utility is unable to meet the standards required for reinstatement, then they should give the money to the road authority and let them do the job.

Roads are designed to accommodate a projected number of axle load repetitions of a specific magnitude for a projected service life. The damage created by traffic loads is expressed in terms of a reference axle load. Projected axle loads from different vehicle configurations are converted into an equivalent number of 8,000-kg single axle loads. These equivalent single axle loads (ESALS) are the basis for determining the thickness of the road structure required to provide the desired design life and thus its cost. The effect of a single axle load on a road increases as approximately a fourth-power of axle load. For example, although a 16,000-kg single axle load is only twice as large as an 8,000-kg single axle load, it causes 17 times more loss in life of a road. In addition to the impacts on road service life, increasing axle loads may also increase the level of maintenance required between major resurfacings. As expected, using tandem axles rather than single axles reduces the damage to the pavement.

It is suggested that Government consider a system of varied license fees based on the number of axles and axle configuration. Lower fees would be applied for the vehicles with higher number of axles, with particular advantage being applied to the usage of tandem axles.

Traditionally, no allowance is made for the progressive depreciation of such capital assets as bridges and roads. Reserve funds are not usually established for the orderly maintenance of facilities. Consequently, as roadways near the end of their design life, there are rarely sufficient funds for replacement or restoration. Hence, the recurring crises in infrastructure finance. What should be clearly understood is that the allocation of funds for construction of any type of infrastructure has consequences on the budget, in terms of annual operations and maintenance costs, for as long that infrastructure may last.

Road management experts throughout the world agree that, as a general rule, adequate road operations and maintenance activity has an annual cost of between 2.5 percent and 3.5 percent of the replacement value of the road, depending on climate and traffic volumes.

The criteria for distributing the revenues must be clearly specified. The simplest would be to base the allocations on vehicle-kilometres of travel, with special care being taken to ensure that monies paid to cover the damage caused by heavy-axle vehicles should be credited to the areas where the damage occurs. But other criteria could also be agreed, for example, focussing the distribution of funds in favour of rural areas to make more of their roads financially viable.

If financial distributions are to be made on traffic counts, the

counts would have to be of unchallengeable accuracy. Therefore, it may not be adequate to use only human or mechanical counters on the ground, which can be subjected to cheating; and, aerial photographs could provide reliable counts to any desired degree of accuracy.

Lastly, there is generally a scarcity of data on national cargo movement and costs. There is hardly any information on the types and amount of commodities moved, how they are distributed through the country, and the costs of transporting these materials. Government should setup a freight survey and database.

Inadequate road operations and maintenance result in an unnecessary increase in annual transportation costs and substantial annual loss of road patrimony.

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