

The Way Forward in Highway Sector

By

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The Present status

- Total NH network: 70,934 km
- Development by NHAI in : 50,024 km (net 41,824 km)
 - (a) Various Phases of National Highway Development Project
(NHDP): 47866 km
 - NHDP Phase I (Golden Quadrilateral): 5846 km
 - NHDP Phase II (North-South- East West corridor): 7300 km
 - NHDP Phase III (Four laning of other NHS): 12,109 km
 - NHDP Phase IV (Two lane with paved shoulders): 14,799 km
 - NHDP Phase V (Six laning of GQ and others): 6,500 km
 - NHDP Phase VI (Expressways): 1000 km
 - NHDP Phase VII (Bypasses, Ring Roads, Flyovers): 700 km
 - (b) **Port Connectivity: 380 km**
 - (c) **Other NHS: 1390 km**
 - (d) **SARDP-NE: 388 km**

The Present status (..contd)

(As on 30.09.2011)

- Completed: 16,207 km
- Under implementation: 11,818 km
- Balance for award: 21,841 km

Thus, **opportunity available for investment in over 20,000 km** of development of four lane highways on DBFOT

Need for paradigm shift

- Nearly 16,000 km (almost one third of the approved programme) of National highways constructed,
 - The **lessons learnt** in Planning, procurement and construction should be applied to the balance two third projects
 - Operation and maintenance of this sizeable length of the developed network should be devised
 - The focus should shift from **construction to safe and efficient operation**

The lessons learnt

- Divided highways cause **severance** (splitting the community) and **cross movement facilities** must be provided for
 - Underpasses at convenient locations
- Developed highways encourage **high speed** driving and therefore, slow and **vulnerable road users** must be segregated
 - Service roads for segregation and underpasses for crossing and circulation

The lessons learnt

- Developed highways fuel **economic activities and developments** along side the highway unleashing **demands for access**, which must be regulated
 - If such developments part of local development plan, access roads to be provided by local authority
 - Access to NH at predetermined points and not on any other basis

The lessons learnt (..contd)

- The **curtailed access facilities** for road side establishments results in creation of **unsafe and unauthorised accesses**, which must not be allowed and appropriate facilities provided for
- In public consultation, the **views of public not properly articulated**, necessitating **changes post award**, which must be avoided by proper consultation

The lessons learnt (..contd)

- During **design**, a hesitation in bringing any **innovation** (materials, method, technology)
 - Stabilized materials, Reclaimed Asphalt, GeoSynthetics, Stone Matrix Asphalt, Porous Asphalt,
 - International design methods and standards
 - Long span bridges, precast, prefabricated components and launching technology, recycling of pavements, eosynthetic drains, retaining walls, gabions

Such innovations in design would enable **better performing** pavement and structures, will **conserve natural materials** and environment, will enable **faster construction** and **better aesthetics**

These innovations are **permitted in the Manual**

The lessons learnt (..contd)

- During **construction** users suffer **inconvenience and lack of safety**
 - Inadequate traffic management
 - Inadequate road signs
 - Lack of safety provisions
- Construction interrupted due to **land acquisition, utility removal and delay in environmental clearance**
 - Better coordination with State Governments
 - Better cooperation of the State Governments
 - Better planning and monitoring of preconstruction activities

The lessons learnt (..contd)

- During **operation** period there is room for improvement through better management and monitoring,
 - Timely maintenance intervention
 - Safety and emergency management
 - Toll Operation

Where things can go wrong

- If the Concessionaire suffers **pre-construction delays** affecting his revenue not compensated by damages under the concession agreement
- If the Client fails to fulfil the **conditions precedent**
- If there is **no strong design team** with the concessionaire
- If the actual execution is given to **small contractors** having little or no experience of executing big projects
- If there is **no strong management team** with the concessionaire to oversee and coordinate the works of various contractors
- If **on ownership change**, the new controlling stake holders lack experience in operation and management and do not hire a strong team
- If the **overall project delivery and operation** and management turns out to be unsatisfactory for some reason making the concessionaire financially liable

What if things go wrong?

- In **Client's view** the design, construction or operation do not meet the requirements of the concession agreement

and

- The **Concessionaire contests** this view

then

- A **dispute** arises and has to be settled through long drawn arbitration process (likely to be) followed by litigation

In such an event,

Users suffer due to shifting of focus from design, construction and operation to dispute settlement and litigation

Client subjected to public criticism for (a) not ensuring proper service, and (b) not solving the disputes

Concessionaire left at the mercy of the outcome of dispute settlement and litigation and **runs the risk of financial loss**

Dispute, therefore, **a loose-loose proposition** and must be avoided by proactive action by both Client and the Concessionaire

The Operation Focus

- Experience of operation of 16000 km of divided highway suggests that the focus should shift to operation
 - Operational features in design
 - User information System
 - Operation system
 - Toll Operation

The Operation Focus (..contd)

- Design should have safety and operation focus
 - **Access control** (predetermined access points through service roads, junction design and spacing, acceleration deceleration lengths, fencing, regulated U-turn/ right turn, median openings, etc)
 - **Segregations** (slow moving and vulnerable traffic not to be exposed to high speed traffic, circulation and cross over facilities for segregated traffic)
 - **Service roads** (to permit two way traffic, to be means for providing access and circulation, to be added as and when required)
 - **Underpasses** (to have sufficient width and clearance, exclusive pedestrian facilities)

The Operation Focus (..contd)

- An effective **user information system**
 - **Road signs** (advance information, information and reassurance, standard colour, font size, visibility, installation, symbols and word messages)
 - Separate signs for **construction zone**
 - **Road markings** (lanes, shoulders, travelled way , chevrons, arrow markings, stop, give way, no overtaking)
 - Signs and markings should **complement** each other
 - **Variable message signs** (based on real time road and traffic conditions)

The Operation Focus (..contd)

- The **Operation system** under the concession agreement should,
 - Detect the need for **emergency maintenance** and intervene (damaged road, safety structures, accidents and road blocks)
 - Address **violation of safety and traffic norms** (cooperation with Police for helping enforcement)
 - Gather **real time information** (Video cameras installed at vantage locations)
 - **Quick response** (dedicated teams on high alert to respond to the needs of the road and road users)
 - Arrangements and **protocol with Emergency Services** (Ambulance services, trauma care centres, fire services, crane providers, state Police Department)
 - **Traffic Control Centre** to monitor and coordinate the operational activities

The Operation Focus (..contd)

- **Toll operation** is the **most visible** part of DBFOT concession and should be fair, smooth, efficient, courteous and hassle free
 - **Automatic** Vehicle classification and toll charging
 - Aim at quickest possible **service time** (say not more than 10 seconds) and remove the irritants (like shortage of change, discussion and arguments, verification of passes or documents)
 - Operate extra booths or reversible lanes during peak periods to **avoid build up of queues**
 - Promote **tag lanes** and tag use
 - Be fair to local users and **monthly pass holders**
 - Be **transparent in reconciliation of cash collection** and the cash being deposited to the Escrow Account without loss of time
 - Should have **a public grievance redressal system**
 - Should aim at **earning users good will** rather than hostility

In conclusion

- DBFOT system has come to stay **and every one has a stake in its success**
- Beyond the point of Model Concession Agreement, which is in the public domain, **the system is virtually unregulated**
 - The success of the system will depend upon **self regulation** by parties to the agreement
- The concessionaires should view the **ownership** of the projects not only in financial terms but as a part of the national asset
 - Design, construction and operation should, therefore, be in **mission mode**
- **The written concession agreement can never capture the spirit of the agreement, which is providing public good for a consideration**
 - Therefore, **disputes must be avoided** as it will be a loose-loose proposition and spell disaster for the future of DBFOT

Thank you for your attention