A Feasibility study On Green Expressway 6/8 Lane Corridor Between Salem To Coimbatore Under Public Private Partnership

1. Introduction
An open private association is a legally restrictive agreement for the arrangement of benefits and the transfer of administrations between government and company that allocates [1] obligations and business dangers among the various accomplices. The government remains effectively included in the agreement over the life cycle of the company. For the more business capacities, for example, venture plan, growth, fund and tasks, the private part is liable.

PPPs (Figure 1) take an assortment of structures, with shifting degrees of open and private segment [2] inclusion and changing degrees of open and private segment hazard. Actually, chance exchange from people in general to the private area is a basic component all things considered.

Fig. 1: Assortment of structures

The Government of India's Secretariat of the Infrastructure Commission describes PPP as a project based on a contract or [3] concession arrangement between one party's government or legal entity and the other party's private sector business. The aim is to provide PPP infrastructure facilities for the payment of user fees.

The World Bank depicts [4] PPPs as long-haul plans by which the legislatures buy benefits under an agreement either straightforwardly or through financial support to buyers. In different PPPs, the administration bears generous dangers - instance, ensuring income or cashback, on ventures that sell legitimately to customers. PPPs give an opportunity for increasing administration conveyance through permitting the two segments to do what they specialize in; Improve cost-adequacy by exploiting private area advancement, experience and adaptability; Increase interest in open foundation, PPPs lessen government's capital costs, assisting with overcoming any issues among the requirements in framework and the money related limit. Decrease open segment chance by moving to private accomplice those dangers that would be better overseen by private accomplice; Deliver capital undertakings faster, using the increased adaptability and access to assets of the private accomplice; Allowing better use of incentives, private section accomplices are convinced to fully use offices and take advantage of market opportunities to raise cashback on their undertakings.

2. PPP forms and formats
It will group PPPs into two groups. They are institutionalized PPPs and contractual PPPs, respectively. Usually, institutional PPPs are a collaborative initiative between open and separate segment partners to expand [5] maximum PPP by exchanging risks and providing open forms of assistance on a drawn-out basis. The Noida Toll Bridge Company and the Bangalore International Airport Limited Green Field are examples of this kind. Then again, legally binding PPPs fall under the concession model, in which case an office may provide the private division accomplice with the open area concerned that typically structures, establishes and operates PPP venture within periodicity. The PPP models are classified in to following types,

Build-Operate Transfer (BOT): In this model the private accomplice is [6] exclusively liable for the planning, working of structures, activity works and move back the office to the public area. The private area accomplice is relied upon to bring the account to the venture and assume the liability to build and look after it. During the contracted period, financial [7] specialists gather client expenses to take care of the expenses of development and obligation overhauling and activities, and to understand a
quantifiable profit. The public roadway projects contracted out by NHAI under PPP mode is a sample.

**Build, Own, & Operate (BOO):** This is a variant of the BOT model in which, during the time of negotiation, the responsibility for the newly constructed office would actually remain with the private party. This would result in the sharing of a large part of the hazards [8] associated with the task's structure, timetable, production and operation to the private accomplice. The public area accomplice will anyway agree to 'buy' the merchandise and ventures created by the task according to concurred terms & conditions. BOO was commonly used in the development of telecommunications, power and social systems, such as squandering water treatment facilities.

**Build Own-Operate & Transfer (BOOT):** In the last case (BOOT), the workplace/adventure operated under PPP will be transferred back to the division or office of the company near the end of the agreement duration, overall, at the leftover value and after [9] the private partner recovers its expenditure and fair return as decided by the understanding. This model is generally used to finance road adventures, the construction of harbours, power utilities, etc.

**Build-Transfer-Operate:** In the BTO model, at the beginning of the foundation working cycle, private companies collect, pass the duty relating to the office to the public [10] authority, and later work as per the terms of understanding. In general, the model is contracted where the public position agrees that the workplace should not always be passed to private owners.

**Lease-Develop-Operate:** The LDO model is especially legitimate because the organizing organization has a responsibility to the current institution and leases sections [11] concurrently with a private occupant, and thus encourages reform and supervises the workplace/utility movement. As a consequence of key reasons, government may reliably need to retain its ownership with it this model is suitable for making air terminal, port or rail establishment. Rehabilitate-Operate-Transfer: The ROT model allows private budgetary authorities to restore and operate a provision during the concession period, during which the provision taken care of or restored by the [12] bosom is restored to official power. Such a provision may be a non-utilitarian waste treatment facility, a cleared-out drug association needing information from money-related, focused and analysis sources, or some other invaluable provision of assistance.

Some variations in the format are as listed below, with the terms indicating basic arrangements.

- **BOO** - Build Own Operate,
- **BLT** -Build Lease Transfer,
- **BOOM** -Build Own Operate Maintain,
- **BOOT** -Build Own Operate Transfer,
- **BTO** -Build Transfer Operate,
- **DBFO** - Design Build Finance Operate,
- **DBOM** - Design Build Operate Maintain,
- **DOB** -Design Operate Transfer,
- **ROO** -Rehabilitate Own Operate,
- **ROT** - Rehabilitate Operate Transfer.

Although the alternative models of the PPP model are those in which, during the contract period, the ownership of the underlying asset stays with the public entity and the project is transferred back to the public entity upon termination of the contract, the final decision on the form of the PPP is based on the Value for Money Analysis.

3. **Aim of the study**

The assessment intends to give an information about PPP in Indian infrastructural [13] broadens and surveys the positive or negative impact of the present Infrastructural adventures on the Road improvement of the nation to suggest a capable PPP Policy.

4. **Green Expressway**

In 1946, TamilNadu had a remarkable ability to create the Department of Highways exclusively to deal with road improvement works. "increase the cut-off, [14] organization, profitability and prosperity" increasing cut-off, organization, profitability and prosperity. Vision 2023 highlights, to the detriment of Rs.1,34,600 Crore, the intensive development of road networks within the state.

Salem is an important town in the state. In the Salem region, including Magnesite, Bauxite, Limestone, Iron-metal, Quartz and Granites, a vital bit of the mineral plenitude of the State is found. The Salem Handloom Industry is an industry with deep roots. Salem City. City experiences major corridors like the North-South Corridor, Salem-Cochin National Highway and several State Highways. All of these lead the City to expect a fundamental role in the economy of the State. 34 Bangalore - Hosur - Dharmapuri - Salem - Namakkal - Karur - Dindigul - Madurai portion of NH-7 (new No.44) may be considered to join the prerequisite list masterminded by MoRT&H for upgrading from the 4-way to 6/8-way arrangement in view of the expanded traffic circumstances with separate gag centres and their shortcomings in accidents.

The Salem-Kumarapalayam-Bhavani-Perundurai-Chengapalli stretch of NH-47 (new No.544) can be considered to have a standardized connectivity for the upgrade from 4-lane to 6-lane configuration as the segment beyond Chengapalli up to Coimbatore has already been built as a 6-lane highway. In order to make the entire corridor from Salem to Cochin as a 6-lane interstate highway, a further segment beyond Coimbatore and up to Cochin can also be considered for gradation to 6-lane standards.

The stretch (Table 1) of Salem – Kumarapalayam - Bhavani – Perundurai - Chengapalli of NH-47 (new No.544) can be considered to have a standardized connectivity for the upgrade from 4-lane to 6-lane configuration as the part beyond Chengapalli up to Coimbatore has just been created as a 6-path highway. Further segment beyond Coimbatore and up to Cochin may likewise be considered for enhancement to 6-path norms to make the whole hallway from Salem to Cochin as a 6-path interstate highway.
Table 1: 6/8 Lane Triangular Corridor

<table>
<thead>
<tr>
<th>6/8 Lane Triangular Corridor: Coimbatore - Chengalpet Road Alignment</th>
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</thead>
<tbody>
<tr>
<td><strong>Project Name</strong></td>
</tr>
<tr>
<td><strong>Cost Investment</strong></td>
</tr>
<tr>
<td><strong>Method of Financing</strong></td>
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<tr>
<td><strong>Description</strong></td>
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<tr>
<td><strong>Scope</strong></td>
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<td><strong>Time Frame</strong></td>
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<tr>
<td><strong>Implementing Agency</strong></td>
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</tbody>
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Table 2: Coimbatore-Chengalpet Alignment

<table>
<thead>
<tr>
<th>S. No</th>
<th>Coimbatore-Chengalpet Alignment</th>
<th>Road Segment</th>
<th>Distance</th>
<th>New road length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Madukkurai (Coimbatore)-Avinashi</td>
<td>NH47</td>
<td>41km</td>
<td>82km</td>
</tr>
<tr>
<td>2</td>
<td>Avinashi-Perundurai</td>
<td>NH47</td>
<td>42km</td>
<td>84km</td>
</tr>
<tr>
<td>3</td>
<td>Perundurai-Bhavani</td>
<td>NH47</td>
<td>22km</td>
<td>44km</td>
</tr>
<tr>
<td>4</td>
<td>Bhavani-Salem</td>
<td>NH47</td>
<td>61km</td>
<td>122km</td>
</tr>
<tr>
<td>5</td>
<td>Salem-Karur</td>
<td>SH18</td>
<td>62km</td>
<td>248km</td>
</tr>
<tr>
<td>6</td>
<td>Karur-Uttangarai</td>
<td>SH18</td>
<td>27km</td>
<td>108km</td>
</tr>
<tr>
<td>7</td>
<td>Uttargarai-Chengam</td>
<td>NH77</td>
<td>30km</td>
<td>60km</td>
</tr>
<tr>
<td>8</td>
<td>Chengam-Polur</td>
<td>SH133</td>
<td>49km</td>
<td>196km</td>
</tr>
<tr>
<td>9</td>
<td>Polur-Vandavasi</td>
<td>SH115</td>
<td>54km</td>
<td>216km</td>
</tr>
<tr>
<td>10</td>
<td>Vandavasi-Kanchipuram</td>
<td>SH115</td>
<td>39km</td>
<td>156km</td>
</tr>
<tr>
<td>11</td>
<td>Kanchipuram-Chengalpet</td>
<td>SH58</td>
<td>35km</td>
<td>140km</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>462km</td>
<td>1456km</td>
</tr>
</tbody>
</table>

From Coimbatore to Chengalpet, the third portion of the Six/Eight Lane Triangular Alignment covers 196 km of national highways and 266 km of state highways.

5. Usage Strategy

In the Public-Private-Partnership mode, the venture will be updated on a Design, Develop, Operate and Transfer (DBOT) basis. The stretches of 4-path public expressways and 2-path state interstates will preferably be changed with cleared shoulders over to six/eight-path streets. Around 1,456 km is the absolute latest street length to be laid. The arrangement's absolute cost is about Rs. 9,000 crores.

6. Allegations on implementing green expressway 6/8 lane corridor between Salem-Chennai

**Allegation One**

The interstate will be laid through towns and ranches that could influence mango cultivates in Salem. An aggregate of 2,300 hectares of land is required.

**Fact**

The turnpike won't influence town and homesteads all through the 274-kilometer course it goes through. Truth be told, the vast majority of the land that the thruway will go through are badlands. Second, the legislature should obtain just 1,900 hectares for the thruway. Of these, 400 hectares are flooded grounds, another 400 has a place with the legislature and the rest are where cultivating is being completed, somewhat.

For instance, paddy is developed in over 1.15 lakh hectares in Thiruvannamalai, one of the areas through which the freeway will navigate. However, the measure of farmland that is probably going to be procured in the locale for the task will be short of what one percent of the zone under paddy development. Furthermore, of these, exactly 100 hectares will probably be inundated terrains.

**Allegation Two**

The road will be 900 feet wide.

**Fact**

The definite undertaking report (DPR) says the task's most extreme width will be 90 meters or somewhat more than 256 feet. The thumb decide is that the width of a four-path expressway is 23.5 m and that of a six-path one is 43.6 m. The 90 m incorporates administration streets.

**Allegation Three**

The passage arrangement slices through 22 km of save timberlands

**Fact**

GE has been realigned so that under 10 km slices through save woods. This implies the zone through which the interstate would cross isn't any exceptionally delicate environmental zone or one possessed by untamed life creatures. Edappadi K Palaniswami, Chief Minister of Tamil Nadu, told the Tamil Nadu Assembly on 11 June that the task slices through just 9.9 km of save backwoods land, however those associated with its execution state it will really be lower. The length of the interstate has been expanded by 10 km since it was realigned to abstain from influencing timberland lands. Sources in the focal government state the interstate will go through just on the edge of the woodland and just for 6 km. Of this, 3 km will be a passage.

**Allegation Four**

The task is being imagined to support just corporate firms and multi-nationals. It will bring about high mining movement in the region. The Japanese will control the parkway since the nation is setting up a mechanical park in the hallway.
Fact

The passageway is coming up in light of the fact that the Chennai-Bengaluru and Chennai-Madurai national roadways are being utilized at about 150 percent of their ability. The discussion of high mining is bogus on the ground that every such action is observed by the National Green Tribunals and courts. The Salem Steel Plant was set up to utilize iron mineral that is accessible in the locale [18]. In any case, its quality was seen as poor that the plant is bringing in coal from Orissa through Ennore port. The discussion of magnesite mining isn't right since mining organizations find greater mines in eastern India [19]. The Japanese mechanical park is coming up at Mamallapuram and has got nothing to do with this hall.

Allegation Five

The hall is superfluous since the Chennai-Bengaluru and Chennai-Madurai national expressways can be stretched out to suit increment in rush hour gridlock.

Fact

The Chennai-Bengaluru National Highway is seeing somewhere in the range of 60,000 PCU (traveller vehicle units) traffic that is 20,000 more than its ability. The Chennai-Madurai National Highway is seeing a traffic of 80,000-90,000 PCU against its ability of 40,000. In the following 15 years, the traffic will increment to 2.1 occasions of what it is presently.

These expressways can't deal with such a high limit of traffic and mishaps will undoubtedly increment because of this. Right now, 3,000 people lose their lives and another 10,000 become impeded because of mishaps on these thruways. The number will just ascent.

The expansion of these expressways will mean obliterating almost 20,000 houses on every roadway, which is absolutely not attainable.

Then again, the hallway is being conceived to decongest the Chennai-Bengaluru and Chennai-Madurai National Highways. Of the 1.40 lakh PCU now working in both these interstates, 60,000 are destined for the western areas like Erode, Tirupur and Coimbatore in Tamil Nadu and Kerala. This underlines the significance and capability of the proposed venture.

Allegation Six

Slopes on path from Salem to Chennai will be thumped down making harm condition and biology.

Fact

None of the slopes on the course will be harmed or cut down. Just a passage under three km long will be dove up in one of the slopes close to Salem. This is the ideal method to protect environment and biological system. Comparative procedure has been embraced to develop roadways to Jammu and Kashmir and different places on the planet.

Allegation Seven

Real time taken to venture out from Salem to Chengalpattu is 2.5 hours and it requires some investment to make a trip from Chengalapattu to Chennai.

Fact

The road isn't intended to take into account Chennai alone. It is to assist individuals with arriving at other associating places faster. The issue with the present national interstates associating Chennai to Bengaluru and Madurai is that the specialists either have no control or have just incomplete power over components that thwart traffic on these courses [20]. The road passage, then again, will permit section or exit just at nine focuses. This will accelerate the movement time other than giving quicker availability to significant towns like Kanchipuram, Chengalpattu and Thiruvannamalai. This will likewise give a quicker network to modern centre points and extraordinary monetary zones.

Also, fears that it will be difficult for individuals to get to their properties or ranches on the opposite roadside are unwarranted. The hallway will be a raised one, accommodating adequate underpasses for the individuals to go over. There will be an underpass each 300 meters to make it simple for individuals to move about.

Allegation Eight

The hall stops at Chengalpattu and doesn't come to Chennai. Network to port and different spots could be an issue.

Fact

Allway lines up with the external ring street at Vandalur. From here, getting to Chennai, Ennore or the private Kattupakkam ports will be simple since vehicles can utilize the Chennai-sidestep and afterward lock on to the proposed raised expressway to Chennai port or travel further on the detour and reach Ennore or Kattupalli ports [21]. The Vandalur external ring street can give speedier access to north and focal Chennai. For south Chennai, the Vandalur-Kelamabakkam four-path street will place in an advantageous position other than causing those went to Mamallapuram or the East Coast Road [22].

A flyover is coming up at Perungalathur on the Chennai-Madurai expressway to assist ease with dealing clog of vehicles entering and leaving Chennai [23].

Allegation Nine

The movement cost will be high as cost charges will end up being a weight on those utilizing it.

Fact

One, the interstate passage won't be the main course from Chennai to Salem. In the event that individuals have the opportunity and feel the cost charges are high, they can utilize the backup courses of action. Second, the DPR has assessed the movement cost for a vehicle on the proposed passage at Rs 2,240 contrasted and an expense of over Rs 2,900 on the Chennai-Krishnagiri-Salem course and Rs 2,625 on the Chennai-Ulundurpet-Salem course.

The expenses have been shown up at contemplating the expense of running the vehicle, the estimation of movement time, the genuine time, cost charges and the outing length.

(From the Feasibility Report of Tamilnadu government)
7. Conclusion
One of the most critical steps in the allocation of risk is the
detection of the risk factor. The conclusion from this
checked analysis is that there are clusters of risk factors.
Meanwhile, change in legislation, delay in project
approval and approvals, land acquisition and cost overrun
activity are the most common reasons.

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