

*Case Study*

**THIRUVANANTHAPURAM CITY  
ROADS IMPROVEMENT PROJECT**

*Transport Infrastructure*

## CASE OVERVIEW

**Country:** India

**Centre/State/ULB:** Thiruvananthapuram, Kerala

**Sector:** Urban Transport      **Sub-Sector:** Transport Infrastructure

**Award Date:** March 2004

**Type and Period of concession:** 17.5 year Build-Operate-Transfer (BOT) Annuity Contract

### Stakeholders:

<b>Contracting Authority</b>	Public Works Department (PWD), Kerala (funded by Kerala Road Fund Board, KRFB)
<b>Concessionaire</b>	Special Purpose Vehicle (SPV) – Thiruvananthapuram Road Development Company Ltd (TRDCL) formed between IL&FS Transportation Networks Ltd and Punj Lloyd Ltd
<b>Oversight Arrangement</b>	Concessioning Authority through appointment of an Independent Auditor

**Present Status of Project:** Project is presently being implemented (construction phase partly completed).

### PROJECT TIMELINE:

<b>2004</b>	<i>Constitution of the Kerala Road Fund Board (KRFB) for administering the Road Fund. Award of the Concession to TRDCL through a competitive bid</i>
<b>2006</b>	<i>Pre-termination notice by TRDCL due to failure of Kerala PWD to hand over of land</i>
<b>2008</b>	<i>First Resumption Agreement after a series of negotiations following the termination notice</i>
<b>2009</b>	<i>Second Resumption Agreement setting renewed timelines for project completion</i>

## 1. PPP CONTEXT

1. Enactment of Kerala Road Fund Act in 2001, making provisions for setting up a 'Road Fund' outside the consolidated fund of the State and constituting a Board for its administration. The Act also provided for collection of user charges by private companies. The Road Fund was to be constituted of 10% of motor vehicles taxes, tolls collected under the Kerala Tolls Act of 1986 and contributions from the Central Road Fund. Rules were issued in 2003 for carrying out the provisions of the Act.
2. Constitution of the Kerala Road Fund Board (KRFB) in 2004, to mobilize funds for road infrastructure, approve PPP arrangements and allocate funds (subsidies/annuities) from the Fund to

private players in road projects. The Road Fund formed the primary source of annuity payments under the Thiruvananthapuram City Roads Improvement Project (TCRIP).

3. All major city roads, including important National Highway Bypasses needed improvement in terms of widening, improvements in strength of road surface, improvement of pedestrian pathways and signage.

## **2. PROJECT DEVELOPMENT**

### **2.1 PROJECT CONCEPTUALIZATION**

Urban Roads are typically constructed and maintained through small construction contracts with short liability periods in case of defects. As a result most such projects are fraught with piece-meal improvements and poor quality of construction, leading to frequent repair and maintenance of the same stretches of roads.

TCRIP attempted a 'life cycle' approach to road improvement, making the Concessionaire responsible for long term maintenance of the roads, thereby ensuring better quality of services. The project envisaged expanding, strengthening and upgrading some of the arterial roads of the city, keeping in mind the likely growth in traffic over the next decade and was structured on an annuity (semi annual) basis, since tolling within the city was not feasible. The annuity was to be paid through the Kerala Road Fund so as to provide additional assurance to private agencies, as against the normative practice of budgetary allocations which are made one year at a time.

### **2.2 PROJECT DEVELOPMENT**

1. Annuity payments to the Concessionaire were to be made from the Road Fund. For this purpose extensive financial analysis was conducted and plans were prepared in due consultation with various related departments (including the Finance Department).
2. A Detailed Project Report (DPR) was prepared through a Technical Consultant<sup>1</sup> and involved preparation of technical designs, drawings and estimation of costs.

### **2.3 PROCUREMENT PROCEDURE**

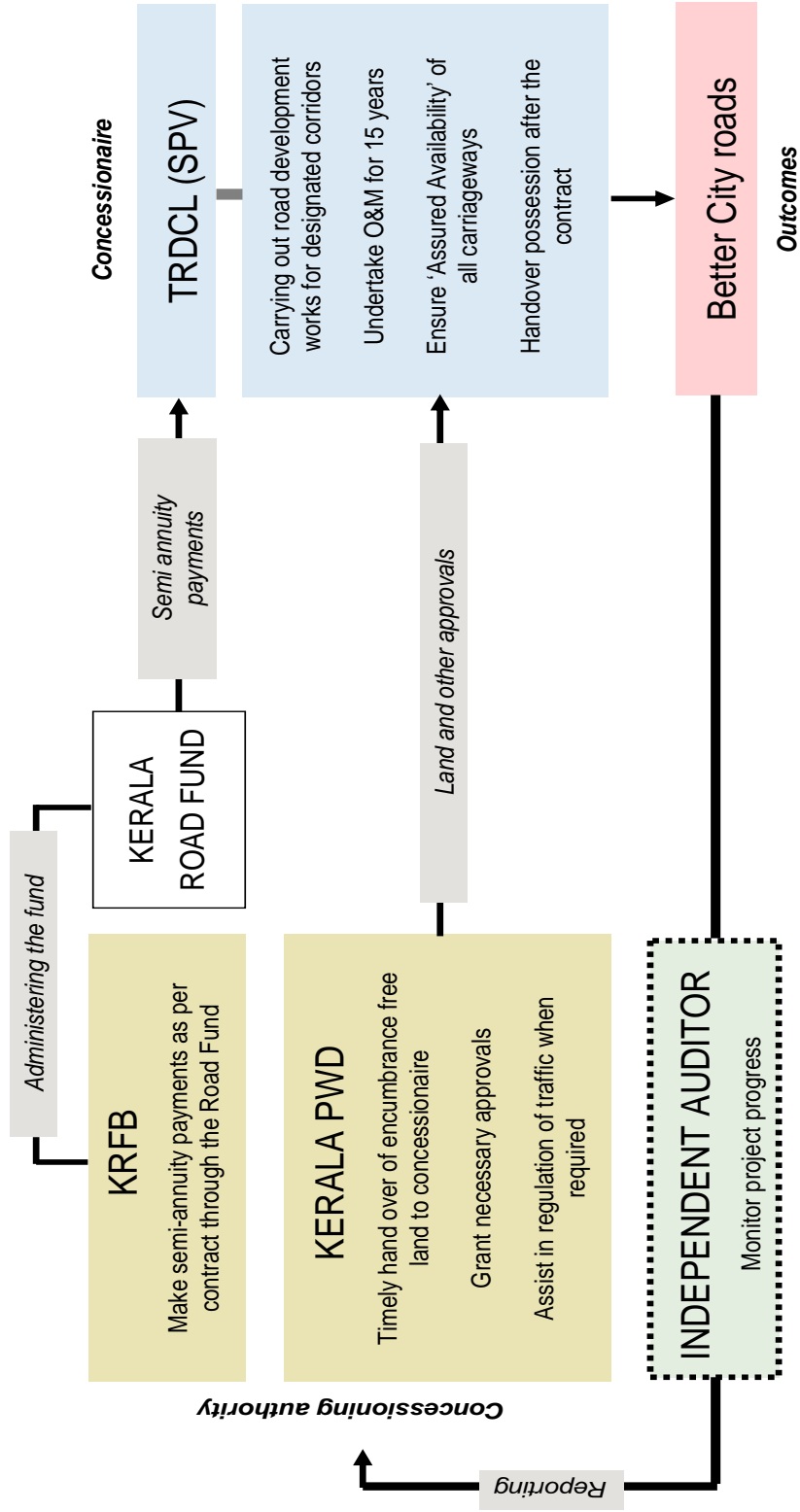
Procurement of Concessionaire for the TCRIP was based on a two stage (RfQ and RfP) competitive bidding process. The project was awarded in March 2004 to an SPV called Thiruvananthapuram Road Development Company Limited (TRDCL) formed between IL&FS Transportation Networks Limited and Punj Lloyd Limited, based on their quote for lowest annuity amount (bid parameter).

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<sup>1</sup> Infrastructure Development Corporation (Karnataka) Limited (IDeCK)

### 3. CONTRACTUAL ARRANGEMENTS

#### 3.1 PROPOSED CONTRACTUAL STRUCTURE



### **3.2 OPERATOR OUTPUT OBLIGATIONS**

1. TRDCL was responsible for carrying out the following works as part of its obligations:
  - 1.1. Widening of 12 corridors (total length of 42km) including 2-laning of a total stretch of 4.9km, 3-laning of 13.1km, 4-laning of 17.2km and 6-laning of 6.8km.
  - 1.2. Geometric improvement and strengthening of the road surface
  - 1.3. Improvement of 65 junctions – including flyovers at two junctions and an underpass at one junction
  - 1.4. Improvement or replacement of existing culverts and minor bridges
  - 1.5. Provision of 2m wide footpaths, signalized pedestrian crossings, signage including destination boards, solar based traffic signals and high mast lighting.
  - 1.6. Provision of 94 dedicated bus bays, offset from the main carriageway
  - 1.7. Provision of storm water drains, new street lights and roadside tree plantation
  - 1.8. Reorganizing existing utilities (telephone and electric lines etc) so as to avoid future road cutting
2. TRDCL had to complete work within 30 months and undertake Operation and Maintenance (O&M) for the next 15 years based on O&M requirements specified in the contract.
3. In order to ensure that the entire carriageway (under the project scope) was available for use during the O&M phase, the contract specified the total number of ‘Lane kilometres’ (156.75 lane km) for which the Concessionaire had to ensure ‘Assured Availability’ within each annuity period. Lane km was calculated as the total length of all lanes within each road stretch (thus lane km for a 3-lane corridor was calculated as 3 times the length of the road). Stretches were deemed unavailable if the same were closed for traffic use or if the riding quality thereof had deteriorated below levels prescribed as per the O&M manual.
4. Handover possession of project facilities in good operating condition at the end of the project

### **3.3 OBLIGATIONS OF THE CONCESSIONING AUTHORITY**

Obligations of the Concessioning Authority included peaceful and timely handover of land for the purpose of carrying out works as per committed schedule, granting relevant approvals, and assisting the Concessionaire in tasks such as regulating traffic whenever required.

### **3.4 REGULATORY AND MONITORING ARRANGEMENTS**

In the absence of a sector regulator the project is monitored as per contract by the Kerala PWD through an Independent Auditor appointed for the purpose.

### **3.5 PROJECT FINANCIALS**

1. The Concessionaire was responsible for all investments required to fulfil contractual obligations.
2. Recovery for the Concessionaire was envisaged through annuity payments of Rs. 18 Crore from the Road Fund. Deductions could be made in the annuity amount based on factors such as delay in completion of works, default in ‘Assured Availability’ (elaborated in 3.2 above) during the O&M

phase, etc. There was also a provision for enhancing the annuity amount in case of early completion of works.

### 3.6 PROJECT RISKS AND ALLOCATION

<b>Construction Risk</b>	Including time and cost overruns due to contractor default, was borne by the operator. Overruns due to delays in handover by PWD were borne by PWD. Though designs were provided by the PWD, the responsibility for accepting/modifying these (design risk) so as to suit outcome specifications was borne by the Concessionaire
<b>Investment Risk</b>	Investment risks in the project were mitigated through a fixed annuity payment structure, assuring regular returns to the Concessionaire.
<b>Performance Risk</b>	Borne by the operator through mechanisms for penalties for non-compliance with contractual commitments such as Assured Availability and project timelines and through a performance guarantee.
<b>Policy Risk</b>	The Concessioneing Authority bore all responsibility for changes in policy regime or scope of the project and all related remuneration thereof.

### 3.7 DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved. In the event of non resolution the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

## 4. PARTNERSHIP IN PRACTICE

The TCRIP is the first city roads improvement projects to be structured on a PPP basis and is unique in its use of a Road Fund for ensuring annuity payments to the private operator. However the project has experienced a series of legal issues and time delays, primarily on account of the inability of the Kerala PWD to make land available in time.

### 4.1 PROJECT OUTCOMES

The following outcomes have been achieved under the project as of January 2010:

#### 1. Status of Construction Works

Marappalam and Murinjapalam Bridge	Construction completed
Bakery Fly Over and KIMS Bridge	Construction ongoing
Chackai Bridge	Work Initiated
Pattom - Kowdiar Road	Work on retaining wall completed Work on side drain ongoing
Vellayambalam – Sasthamangalam Road	Work on retaining wall and side drains completed Cross drainage work and road widening ongoing
MG Road	Side drain works initiated
LMS	Student’s Centre work ongoing
Kowdiar – Peroorkada Road	Construction of 50% side drains

2. Shifting of utilities - 95% of electric lines completed and shifting of other utilities is in progress
3. A total of 3357 seedlings were planted to compensate for the trees cut during road widening processes

#### **4.2 PROJECT SHORTCOMINGS**

Kerala PWD has not been able to hand over land (free of encumbrances) as per its obligation in the concession agreement, resulting in severe project delays (detailed in 4.3 below) and repeated renegotiations of the contract.

#### **4.3 LEGAL/CONTRACTUAL ISSUES**

1. The full stretch of land required for project execution was to be handed over free of all encumbrances before November 2005. However only about 14km was actually handed over leading to a pre-termination notice by TRDCL in July 2006. Following a series of negotiations the first Resumption Agreement was signed in January 2008. However the balance land was still not made available to the Concessionaire.
2. Following the delay, the Concessionaire claimed compensation on grounds of extended stay. The matter was referred to an Arbitration tribunal, which granted an award of Rs.124.947 Crore in favour of TRDCL.
3. A second Resumption Agreement was executed in May 2009 for completing the balance 28km stretch (works for the 14km land made available prior to the first Resumption Agreement had been completed as Phase I). As per the agreement, Phase II involves works for 18km stretch to be completed by November 2010 and Phase III involves completion of works for the remaining 10km stretch by May 2011. Around 99% of the project land has now been handed over to the Concessionaire and work is presently underway

### **5. LESSONS LEARNT**

1. The project highlights the possibility of undertaking unusual urban sector projects – such as development and maintenance of ‘within city’ road projects through PPP arrangements. The project also highlights the importance of making the Concessionaire responsible for long term maintenance of the infrastructure so as to ensure the quality of services obtained through such arrangements.
2. The need for creating a dedicated funding mechanism, such as the ‘Road Fund’ created in Kerala for the TCRIP project, to increase the comfort level of the private sector for participating in such projects - particularly when the payment is structured as a fixed annuity to be paid by the Concessions Authority.
3. Importance of structuring operator remuneration in a way that monitoring is in-built into the mechanism and quality services are ensured. In this case the linking of annuity payments in O&M

phase with factors such as 'Assured Availability' of the entire carriageway acts as a monitoring device.

4. Timely provision of land is one of the key requirements for achieving desired project outcomes within fixed timelines. In the TCRIP the failure of the PWD to secure and handover land as per its time commitments has severely affected project outcomes and resulted in additional financial liability (through compensation) for the Concessioneing Authority. The importance of gaining possession of adequate land before committing to the contractual obligation cannot be understated.
5. The issue of delay in handover of land also highlights the importance the Concessioneing Authority's compliance with its own commitments. In this the failure of the PWD has resulted in extra financial liabilities for the Authority and resulted in wastage of public money.