



GOVERNMENT OF KARNATAKA

INFRASTRUCTURE
DEVELOPMENT
DEPARTMENT



*Sector Specific Inventory &
Institutional Strengthening
for PPP Mainstreaming
Transport Department*

FEEDBACK INFRA
Making Infrastructure Happen



Pre-feasibility Report

**Development of Vehicle Fitness
Centres**

May 2012



Feedback Infrastructure Services Pvt. Ltd., India

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1 EXECUTIVE SUMMARY

Background:

Government of Karnataka (GoK) envisages development of infrastructure through Public Private Partnership (PPP) and intends to attract investments in various sectors in Karnataka.

The current report details out the prefeasibility study done for 'Development of Vehicle Fitness Centre'. Following sites were finalized in consultation with Transport department in the Workshop held under the Chairmanship of the Principal Secretary, Transport on 23rd February 2012:

- Mysore (Area- ~2.0 Acres)
- Humnabad (Area- ~2.2 Acres)
- Dharwad (Area- ~3.4 Acres)

The project idea is to utilize the existing land parcels, with various state transport undertakings, and develop them in the form of Vehicle Fitness Centres (VFC).

Sector Profile:

Transport sector in Karnataka is looked after by the State Transport Department (Secretariat). It has under it the following line departments:

- Four State Transport Undertakings, viz; Karnataka State Road Transport Corporation (KSRTC), Bangalore Metropolitan Transport Corporation (BMTC), North East Karnataka Road Transport Corporation (NEKRTC) & North West Karnataka Road Transport Corporation (NWKRTC) for providing road transport services and associated infrastructure across Karnataka. The functions of State Transport Undertakings are governed by the Road Transport Corporation Act, 1950 and Karnataka Road Transport Corporation Rules, 1961. All issues involving finances and all functions to be carried out by Government as per the Road Transport Corporation Act, 1950 & Karnataka State Road Transport Corporation Rules, 1961 are being discharged in the Transport Secretariat
- Dr. Devraj Urs Truck Terminal Ltd that is responsible for setting up truck terminals, wherever required in Karnataka
- Office of Transport Commissioner: Also called as the Road Transport Department that is responsible for tax collections and registrations of the vehicle, issue of permits, driver's and conductor's licenses etc in Karnataka. It has 56 Regional Transport Offices across the state

Some of the key steps required for greater success of PPP projects in the sector are as follows:

- More proactive approach to take up a larger number of PPP projects
- Need for structuring the projects for sustained commercial and financial viability
- A need for standardized bidding documents including concession agreement across all the state transport undertakings

- Flexibility in concession period and FAR restrictions for making projects more attractive
- Interdepartmental issues should be resolved before the project is bid out
- The distribution of risk between the private and public sector needs to be balanced
- Concession period needs to be in sync with the kind of development envisaged. An option of extending concession period via right of first refusal can also be given

Project Details:

The Transport Department proposes to set up Vehicle Fitness Centres on PPP basis to provide “Certificate of fitness” using automated equipment rather than visual inspection. The main aim of the automated vehicle fitness centre shall be: -

- To provide quality check and thereby reducing accidents and ensuring safety of passengers
- Cleaner and safer environment by keeping the vehicles in good condition
- To provide proper awareness to the drivers
- Ease congestion at RTO’s because it is impossible for MVI’s to check huge volume of commercial vehicles in a day

Locations for the VFC’s were selected and finalized on the basis of extensive discussion with the Principal Secretary (Transport Department), Joint Commissioner (Transport Department) and North East Karnataka Road Transport Corporation (NEKRTC). The Identified sites are:-

- Mysore (Rajivnagar 3rd Stage): Of the total plot area of 8.25 acres, located at Rajivnagar 3rd stage in the North east suburbs of Mysore, ~ 2.5 acres is earmarked for the VFC. The site is with the Transport department and is proposed for the RTO (Mysore east) office and drivers testing track facility. The project sites are divided into two blocks, where Block 1 will be utilized for VFC and driver testing track and Block 2 for the RTO office.
- Dharwad: The site is with the Transport department (RTO Dharwad) and is proposed for Vehicle fitness centre and Driving testing track facility in an area of 9.54 acres. Of the total ~ 3.5 acres is earmarked for VFC. The site is located within the Rayapur Industrial Area (under KIADB) and is at present vacant. The project site is shaped by merging 8 plots, plot no. 94 to 98 and 101 to 108.
- Humnabad: The VFC is proposed on NEKRTC land with an area of ~2.2 Acres. The site is part of a 20.75 acres land that is presently used as a training centre for heavy motor vehicle driving with a heavy vehicle driving testing track facility at the campus. The NEKRTC has agreed (during the initial workshop held with the Principal Secretary, Transport Department for this assignment) to provide a part of the land to the Transport department for setting up of Vehicle fitness centre. The project site, towards its western side abutting the Mumbai – Hyderabad highway (NH 9), is lying vacant and the said area shall be utilized for developing the vehicle fitness centre.

Case Studies:

In order to derive a better understanding of the issues faced and to cull out the learning from past experiences, the Consultants have analyzed experiences of similar projects undertaken in Karnataka and other states. The following case study was considered:

- Automated Commercial Testing Lane at Rishikesh, Uttarakhand

Market Assessment:

Various factors which directly and indirectly govern the suitability and demand of possible or envisaged activities are discussed in this section for the three identified sites. The findings of the market assessment are based on site visits, primary interviews with RTO officials, commercial establishments in the vicinity, hotels and the users of commercial facilities. The following product mixes are proposed for the three sites:

- Mysore

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	89%	1,967
Retail	3%	75
Service Station	4%	100
Dormitory	4%	100
Total		2,242

- Humnabad

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	97%	6,533
Retail	1%	75
Service Station	1%	100
Dormitory	1%	100
Total		6,808

- Dharwad

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	92%	2,833
Retail	2%	75
Service Station	3%	100
Dormitory	3%	100
Total		3,108

Project Financials:

Financial analysis of the projects is done to understand if the project is bankable from the perspective of DSCR (Debt Service Coverage Ratio) and Post Tax NPV. Different concession fee scenarios are considered to analyse returns / risks for the Concessionaire and the Government.

Three payment models to the Government which have been considered are:

1. When the private player pays only the lease rental to the government, Lease Rental is taken to be the bid variable here
2. When the private player pays an upfront amount plus the lease rental to the government. Upfront payment is taken to be the bid variable here
3. When the private player pays an upfront amount, the lease rental and annual revenue share. Revenue share is considered as the bid variable here

It is to be noted that the values assumed for the bid variable components in each case is the maximum reserve prices/percentages for the respective components that the government can expect for the project to be attractive to private player.

From the financial analysis, it is concluded that VFC's at Mysore and Humnabad are unviable. Dharwad shows positive NPV provided that the entire proceeds from issue of fitness certificates go to the private player.

The summary of the project financials is presented below:

- **Mysore:** The project is found to be financially unviable with low Project IRR values and negative Project NPV

Item	Only Lease Rental Paid by the Pvt Developer
Project Cost (INR Cr) including IDC and Upfront Payment	7.61
Equity (INR Cr) @ 30% of capital cost	2.28
Debt (INR Cr) @ 70% of capital cost	5.33
Project IRR (%)	0.5
Project NPV (INR Cr)	(9.10)
Equity IRR (%)	(0.5)
VFM (INR Cr)	1.69
Receivables to Govt	
<i>Lease Rental (INR cr/Year @ INR 5 per sqft/year)</i>	0.04
NPV of Receivables to Govt (INR Cr)	0.23

- **Humnabad:** The project is found to be financially unviable with negligible Project IRR values and negative Project NPV

Item	Only Lease Rental Paid by the Pvt Developer
Project Cost (INR Cr) including IDC and Upfront Payment	10.77
Equity (INR Cr) @ 30% of capital cost	3.23
Debt (INR Cr) @ 70% of capital cost	7.54
Project IRR (%)	(1.8)
Project NPV (INR Cr)	(14.16)
Equity IRR (%)	(3.0)
VFM (INR Cr)	1.62

Receivables to Govt	
<i>Lease Rental (INR cr/Year @ INR 5 per sqft/year)</i>	0.05
NPV of Receivables to Govt (INR Cr)	0.29

- Dharwad:** Upfront plus lease rental model is the best option as it balances the returns to the government and the private player. As per the model the NPV of receivables to the government is INR 0.68 Cr. The private player is expected to observe a Project IRR of 13.9% and a Project NPV of INR 4.06 Cr. However, the project has a minimum DSCR of less than 1, which means that it will have issues in retiring the debt taken for the project.

Item	Only Lease Rental Paid by the Pvt Developer	Upfront plus Lease Rental Model	Upfront, Lease Rental and Revenue Share
Project Cost (INR Cr) including IDC and Upfront Payment	25.55	25.92	25.73
Equity (INR Cr) @ 30% of capital cost	7.66	7.78	7.72
Debt (INR Cr) @ 70% of capital cost	17.88	18.14	18.01
Project IRR (%)	14.1	13.9	13.8
Project NPV (INR Cr)	4.38	4.06	3.78
Equity IRR (%)	14.6	14.4	14.3
VFM (INR Cr)	25.73	25.73	25.37
Receivables to Govt			
<i>Lease Rental (INR cr/Year @ INR 5 per sqft/year)</i>	0.07	0.07	0.07
<i>Upfront Payment (NR Cr)</i>	-	0.34	0.17
<i>Revenue Share (% of Revenue)</i>	-	-	1
NPV of Receivables to Govt (INR Cr)	0.41	0.68	0.83

Statutory & Legal Framework:

As per the amendments made to the Infrastructure Policy, 1997 in 2007 (Government Order No.IDD 32 IDM 2003 Bangalore dated 16th July 2007), Government of Karnataka has introduced the involvement of private players through Public Private Partnerships (PPP) for the implementation of major infrastructure projects. The projects would be implemented through open competitive bidding for the upgradation, expansion and development of new infrastructure projects.

Environmental & Social Impacts:

Preliminary environmental and social screening of the projects has been conducted to identify critical issues and areas that would require to be studied in detail for impact assessment, mitigation measures and management plan. Findings of the screening are presented in this

chapter. A more detailed study will be required to be done by the Concessionaire in the subsequent stages of the project.

For the purposes of prior environmental clearances, the projects do not fall either under Category ‘A’ or ‘B’, as the projects do not satisfy all the criteria laid under the purview of the EIA Notification of September 2006 and its subsequent amendments.

The social impact of these projects is generally a consequence of Land Acquisition process and the change in land use and traffic flow patterns. Because the land is already owned by government agencies, there will be no issues related to shifting or disruption of activities on the site.

Another impact of any new development with commercial component is changes in traffic pattern and generation of additional traffic, which can create congestion on roads. These issues will need to be dealt with in detail by the Government in co-ordination with the concerned municipal authorities.

Operating Framework:

The projects are proposed to be implemented on Public-Private Partnership (PPP) format under Design, Finance, Build, Operate and Transfer (DBFOT) basis.

Under this structure, Private Developer / Private Sector Player (PSP) shall finance, design, engineer, construct, market, operate, maintain and manage the projects during the concession period and transfer the project facilities to the Concessions Authority at the end of the same. The following structure is proposed:

Component	Description
Structure	<ul style="list-style-type: none"> • The project is to be developed under DBFOT model of PPP • The project is structured for capital investment to be brought in by the selected private sector player and land is provided by Concessions Authority. <ul style="list-style-type: none"> • The private sector player recovers its investments over a period of time from revenues from issue of fitness certificates, commercial facilities created under the project as well as revenue generated through operation of dormitories and any other applicable sources.
Concession Period	30 years
Payment to Concessions Authority	Option to choose from 3 models: <ul style="list-style-type: none"> ○ Lease Rental only ○ Lease Rental plus Upfront Payment ○ Lease Rental, Upfront Payment plus Revenue Share

Component	Description
Role of Concessioneing Authority	<ul style="list-style-type: none"> • Provision of identified land for the Project, free from all encumbrances • Grant of lease hold rights of the project site to the developer • Provision of adequate rights to the developer for collection of user charges, parking fees and rentals from property development.
Role of Private Sector Developer	<ul style="list-style-type: none"> • Detailing and placement of the Project components • Detailed designing and Engineering of facilities based on Concept • Achieving financial closure and making the necessary capital investment • Construction, Marketing, Operating, Maintaining and Managing (Utilities, Facilities, Equipments etc) the Project during the Authorization Period • Obtaining all clearances/approvals from the concerned Govt. Department, handling legal issues etc

2 INTRODUCTION

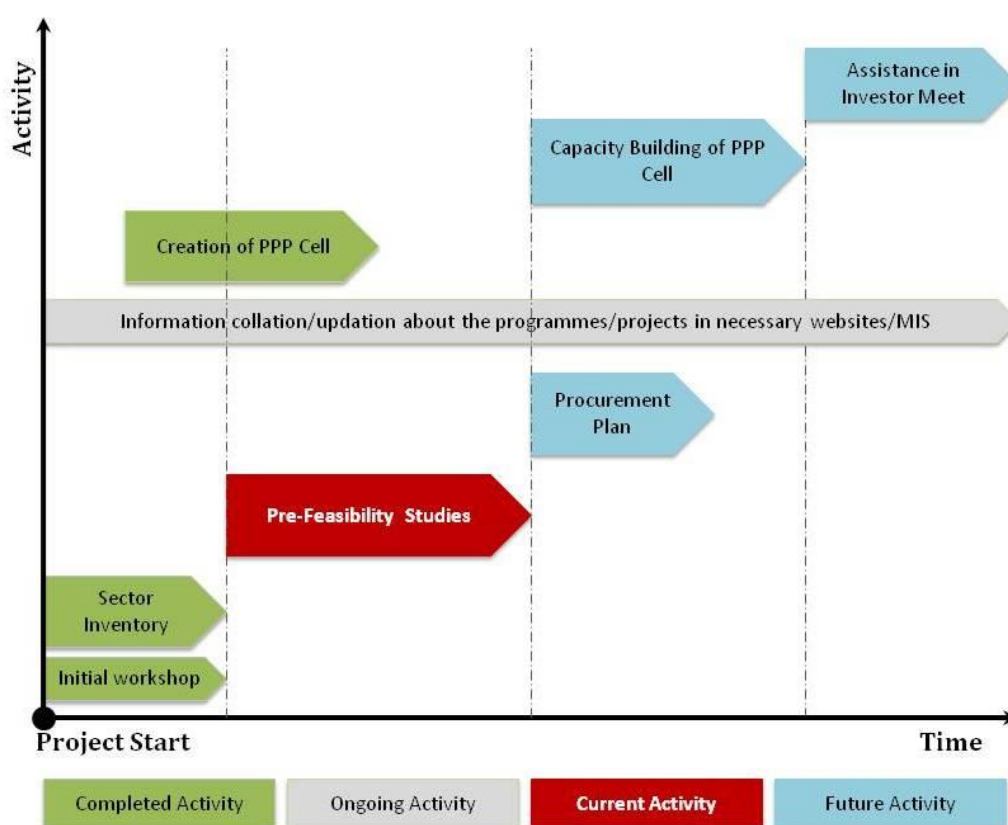
2.1 Project Background

Government of Karnataka (GoK) envisages development of infrastructure through Public Private Partnership (PPP) and intends to attract investments in various sectors in Karnataka.

For this, Infrastructure Development Department (IDD) has selected consultants for Sector Specific Inventory & Institutional Strengthening for mainstreaming of PPP for various departments related to infrastructure development in the state. Feedback Infrastructure Services Private Limited (FISPL) was selected to assist Transport Department to fulfill the above objective.

For the same, the Inception Report, comprising of the preliminary information on the various sectors covered under Transport and the inventory of the projects finalized in consultation with Transport department, was submitted by the said consultant on March 06, 2012. The figure below summarizes the current state of work, in reference to the defined objectives.

Figure 1: Project Status



The current report details out the prefeasibility study done for ‘Development of Vehicle Fitness Centres’. The following sites were finalized in consultation with Transport department in the Workshop held under the Chairmanship of the Principal Secretary, Transport on 23rd February 2012:

- Mysore (Area- ~2.0 Acres)
- Humnabad (Area- ~2.2 Acres)

- Dharwad (Area- ~3.4 Acres)

The project idea is to utilize the existing land parcels, with various state transport undertakings, and develop them in the form of Vehicle Fitness Centres (VFC). Typically following facilities are provided in a VFC; however, the facilities will differ as per the requirement at each site, arrived at after detailed market assessment. The facilities are:-

- Assistant RTO to provide fitness certificate
- Service Station for repair and maintenance of vehicles coming at the centre
- A PUC Centre
- A Commercial Area for small stalls, eateries and shops. This can be clustered / merged with a truck terminal.

2.2 Structure of the Report

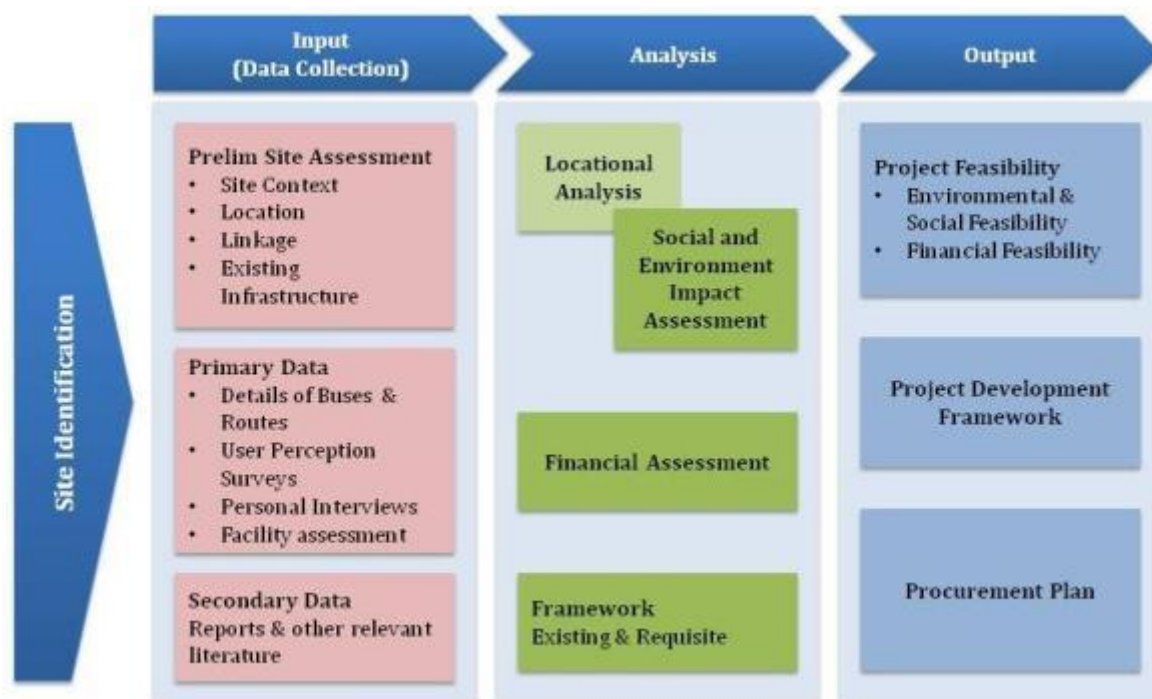
This Project Report has been structured along the following in a chapter-wise format.

Introduction	<ul style="list-style-type: none"> •Project Idea •Approach & Methodology
Sector Profile	<ul style="list-style-type: none"> •Industry Overview •Regional Profile
Project Details	<ul style="list-style-type: none"> •Description and Components •Needs & Considerations •Best Case Studies
Market Assessment	<ul style="list-style-type: none"> •Industry Outlook •Opportunities & Demand Projections •Product Design
Project Financials	<ul style="list-style-type: none"> •Cost & Revenue Assessment •Project Viability •Funding
Statutory & Legal Framework	<ul style="list-style-type: none"> •Legal & Regulatory Framework
Indicative Environmental & Social Impacts	<ul style="list-style-type: none"> •Environmental & Social Impact Assessment •Mitigation Measures
Operating Framework	<ul style="list-style-type: none"> •Risks & Mitigation •Project Structure
Way Ahead	<ul style="list-style-type: none"> •Key Milestones •Recommendations

2.3 Approach & Methodology

The approach and methodology adopted for the study is as outlined in the figure below.

Figure 2: Methodology for the study



Stage I: Input

The first stage involved the study of the project site to understand its suitability for the defined activity. Various factors influencing the site's potential like accessibility, linkages, physical features, economic activities and developments in proximity, etc were analyzed. This study also helped us to carry out the environmental and social impact assessment of the project.

Stage II: Analysis

This stage involved the review and analysis of data, collected in previous stages, in order to determine the feasibility of the project, both in terms of financial as well as environmental & social impact.

This stage also involved a study of the legal and statutory framework along with identification of issues and mitigation measures.

Stage III: Output

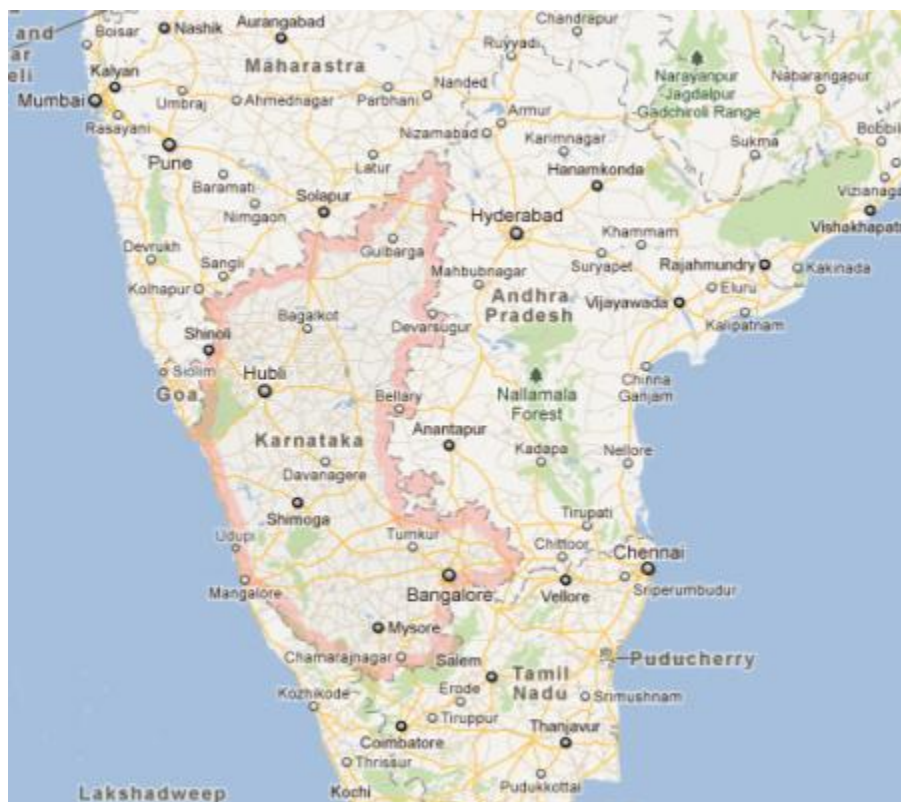
Based upon the results of the analysis, the framework and the procurement plan for further development of the project were finalised.

3 SECTOR PROFILE

3.1 Overview

Karnataka is the 8th largest state in India with an area of 191,791 sqkm, spread across 30 districts and accounts for 5.83% of India’s geographical area. It has a population of about 61 million (as per census 2011). Located in the southern part of India, the state is bordered by Andhra Pradesh to the east, the Arabian Sea to the west, Maharashtra to the north and Tamil Nadu in the south. Bengaluru is the administrative and financial capital of the state.

Figure 3: Map of Karnataka



Karnataka has a total road length of 75,454 km comprising of 15 National Highways, 156 State Highways and other Major District Roads. While the improvement and development of the NH network comes under the purview of the central ministry and National Highways Authority of India (NHAI), the development and maintenance of state highways, MDRs and other district roads/village roads are the responsibility of the Karnataka Public Works Department (KPWD).

Table 1: Karnataka - Road Length (as on 31 Mar, 2010)

S.No.	Hierarchy	Nos.	Length (Km)
1.	National Highway	15	4490
2.	State Highway	156	20528
3.	Major District Road	-	50436

Source: Karnataka Public Works Department

3.2 Transport Sector

Transport sector in Karnataka is looked after by the State Transport Department (Secretariat). It has under it the following line departments:

- Four State Transport Undertakings, viz; Karnataka State Road Transport Corporation (KSRTC), Bangalore Metropolitan Transport Corporation (BMTC), North East Karnataka Road Transport Corporation (NEKRTC) & North West Karnataka Road Transport Corporation (NWKRTC) for providing road transport services and associated infrastructure across Karnataka. The functions of State Transport Undertakings are governed by the Road Transport Corporation Act, 1950 and Karnataka Road Transport Corporation Rules, 1961. All issues involving finances and all functions to be carried out by Government as per the Road Transport Corporation Act, 1950 & Karnataka State Road Transport Corporation Rules, 1961 are being discharged in Transport Secretariat
- Dr. Devraj Urs Truck Terminal Ltd that is responsible for setting up truck terminals, wherever required in Karnataka
- Office of Transport Commissioner: Also called as the Road Transport Department that is responsible for tax collections and registrations of the vehicle, issue of permits, driver's and conductor's licenses etc in Karnataka. It has 56 Regional Transport Offices across the state

Karnataka State Road Transport Corporation (KSRTC)

The Karnataka State Road Transport Corporation was established in August, 1961 under the provisions of Road Transport Corporation Act 1950 with the objective of providing “adequate, efficient, economic and properly coordinated road transport services”.

With its corporate office in Bangalore, KSRTC is spread across Karnataka via 12 divisional offices. Assets owned by KSRTC include 7,599 buses, 66 depots, 124 bus stations, eight Divisional Work Shops, two Regional Workshops.

Bangalore Metropolitan Transport Corporation (BMTC)

The Bangalore Metropolitan Transport Corporation came into existence in 1997 to provide public transportation in the Bangalore city and its sub-urban areas. The organization comprises a fleet of over 6,092 buses servicing the area in the 36 kilometers radius from the city centre. In a day BMTC operates on 583 city and 1,785 sub-urban routes, runs 13 lakh kilometers and makes 79,445 trips.

North West Karnataka Road Transport Corporation (NWKRTC)

The North Western Karnataka Road Transport Corporation was established in the year November 1997, under provision of the Road Transport Corporation Act 1950. The Corporation's jurisdiction covers Belgaum, Dharwad, North Kannada, Bagalkot, Gadag & Haveri districts. The corporate office of NWKRTC is situated at Hubli, under which seven division headquarters are located at Belgaum, Hubli, Sirsi, Bagalkot, Gadag, Chikkodi & Haveri. NWKRTC

has 46 Depots functioning under the administrative control of respective divisions and 4,315 buses. NWKRTC operates in all villages, which have motorable roads in its jurisdiction.

North East Karnataka Road Transport Corporation (NEKRTC)

NEKRTC was established in 2000, carved out of KSRTC for providing “adequate, efficient, economic and properly coordinated road transport services” in the North Eastern part of Karnataka. NEKRTC operates 2,710 schedules covering 9.78 lakh km carrying 10 lakh passengers every day. It has 8 divisional offices in Gulbarga, Yadagir, Koppal, Raichur, Bijapur, Bellary, Bidar and Hospet.

NEKRTC serves 92% of the 4,200 villages in its area. NEKRTC’s infrastructure includes 41 Depots, 108 bus stands and 2,745 buses.

Office of Transport Commissioner

The Road Transport Department is responsible for tax collections and registrations of the vehicle, issuing of permits, driver and conductor licenses etc in Karnataka. This Department controls all vehicles and road limits and rules and regulation on road transport. There were 8.8 mn registered vehicles in Karnataka in 2009-10. The Transport Commissioner’s office operates through 56 Regional Transport Offices across the state.

A summary of the total infrastructure under the various line departments is presented in the table below:

Table 2: Summary of Transport Infrastructure under line departments

Infrastructure owned	KSRTC	BMTC	NWKRTC	NEKRTC
Depots	72	37	-	41
Divisions	15	-	-	8
Bus Stations	128	48	136	108
Vehicles	7599	6102	4315	2745
Effective Kms per day (Lakhs)	24.91	12.7	15.5	9.78
Schedules	6881	5910	3892	2710
Average traffic revenue per day (Lakhs)	589.78	385	-	-
Average passengers travelled per day (Lakhs)	23.6	45	21.5	10
Staff	34019	32715	21433	-

Source: Transport Secretariat, Karnataka

3.3 Budgetary Provisions for the sector

The Karnataka state budget 2011-12 defines a total expenditure of INR 85,319 Cr with a Plan Outlay of INR 38,070 Cr. At present, a total of ninety-one projects with an investment outlay of INR 67,792 Cr are being pursued through Public-Private Partnership mode. The plan outlay for Transport sector has been set for INR 3,743 Cr (10% of total outlay). Following are some of the major initiatives under the plan for roads and urban transport infrastructure:

- Projects for development of 4000 km of roads are under various stages of progress
- State government has obtained loan approval from the Asian Development Bank to develop 600 km of state highways at an estimate of INR 1330 Cr
- The World Bank has conveyed its concurrence to finance development of 269 km of state highways at an estimate of INR 657 Cr.
- A state level Transport Fund to be constituted with an annual contribution of INR 60 Cr to fund the urban transport initiatives.
 - Annual accrual to this fund to come through INR 20 Cr each from the budgetary sources, a cess on local taxes collected by Urban Local Bodies and a cess on Motor Vehicle Taxes.

Some other ongoing projects, being handled by the Transport Department include:

Table 3: Ongoing projects for the transport department

Project Name	Nodal Agency	Capacity	Status
Modern Bus Terminal & Commercial complex at Hassan	KSRTC	Commercial Complex (1,50,000 sq ft)	Agreement signed
Modern Bus Terminal & Commercial complex at Mangalore	KSRTC	KSRTC Guest House (3000 sq ft) & Commercial Complex (90,000 sq ft)	Agreement signed
Modern Bus Terminal & Commercial complex at Puttur	KSRTC	Integrated Bus Station & Commercial Complex	Agreement signed
Development of Modern Bus Station & Commercial Complex at Gulbarga	NEKRTC	Modern Intra City Bus Station - 12 Platforms in 3 Bus Bays & Commercial development - 72,000 sq.	Signing of Concession Agreement
Commercial Development of KSRTC vacant land parcel at Chitradurga	KSRTC	Yet to be decided	Pre-Feasibility Done
Development of Commercial Complex at Bidar	NEKRTC	Yet to be finalised	Pre-Feasibility Done

3.4 Sector initiatives in the State

The Department of Road Transport and Highways at the centre is executing a project for establishing Vehicle Fitness Centre at 10 locations in India. For this, the Transport Department of Karnataka has identified 6 acres at Nelamangala and a proposal has been forwarded to the Union Minister of Road Transport and Highways, seeking a grant of INR 15 Cr. Once the new centre comes up, it will have other facilities like emission testing, wheel alignment and headlight testing equipment.

The benefits of the proposed facility are evident from the fact that currently 10 RTOs in Bangalore together test over 1,000 vehicles per day, which not only puts pressure on traffic but at many times, required norms are not followed due to staff shortage and space constraints in RTO office premises. Respective RTOs issue fitness certificate based on visual inspection and brake test. This has adverse effect on number of certificates issued per day and also on the city traffic. To rectify this, Transport department has decided to implement a centralised vehicle fitness centre.

3.5 Other Initiatives

Besides the above, there are also various other urban transport related projects currently ongoing/completed in the region. One such example is that of projects under the purview of JNNURM. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is a countrywide city modernisation scheme launched, in December 2006, by the Government of India under the Ministry of Urban Development with an aim to create 'economically productive, efficient, equitable and responsive Cities' through upgradation of social and economic infrastructure.

Under JNNURM, a total of 47 projects, with a cost of INR 3694 Cr, have been sanctioned till date, out of which 21 projects have been completed while the rest are under various stages of progression.

3.6 Key Issues

Some of the key steps required for greater success of PPP projects in the sector are as follows:

- More proactive approach to take up a larger number of PPP projects
- Need for structuring of projects for sustained financial viability
- A need for standardized tender documents including concession agreement across all the state transport undertakings
- Flexibility in concession period and FAR restrictions for making projects more attractive
- Interdepartmental issues should be resolved before the project is bid out
- The distribution of risk between the private and public sector needs to be fair
- Concession period needs to be in sync with the kind of development envisaged. An option of extending concession period via right of first refusal can be given

4 PROJECT DETAILS

The vehicle fitness centre or the testing station is a facility for the inspection of vehicles and provision of fitness certificate. As per the provisions of Motor Vehicle Act, 1988 all Transport Vehicles are required to carry a valid “Certificate of Fitness” without which the registration of the vehicle is treated as invalid. This Certificate is required to be obtained annually from the competent authority. All commercial vehicles are required to get a vehicle fitness certification every year on payment of a specified fee from the concerned RTO’s (Regional Transport Office) where vehicles got registered. New vehicles need get the fitness certificate after two years while old vehicles to have fitness certificate every year. Currently, the Certificate of Fitness is given by RTO based on visual inspection and brake check. The type of tests and inspection on vehicles conducted by the Motor Vehicle Inspectors (MVI) are provided in the Annexure 1.

Transport Department has now proposed to provide “Certificate of fitness” using automated equipment rather than visual inspection. For this purpose it has decided to implement VFC on PPP basis. The main aim of the automated vehicle fitness is: -

- To provide quality check and thereby reducing accidents and ensuring safety of passengers
- Cleaner and safer environment by keeping the vehicles in good condition
- To provide proper awareness to the drivers
- Ease congestion at RTO’s because it is impossible for MVI’s to check huge volume of commercial vehicles in a day

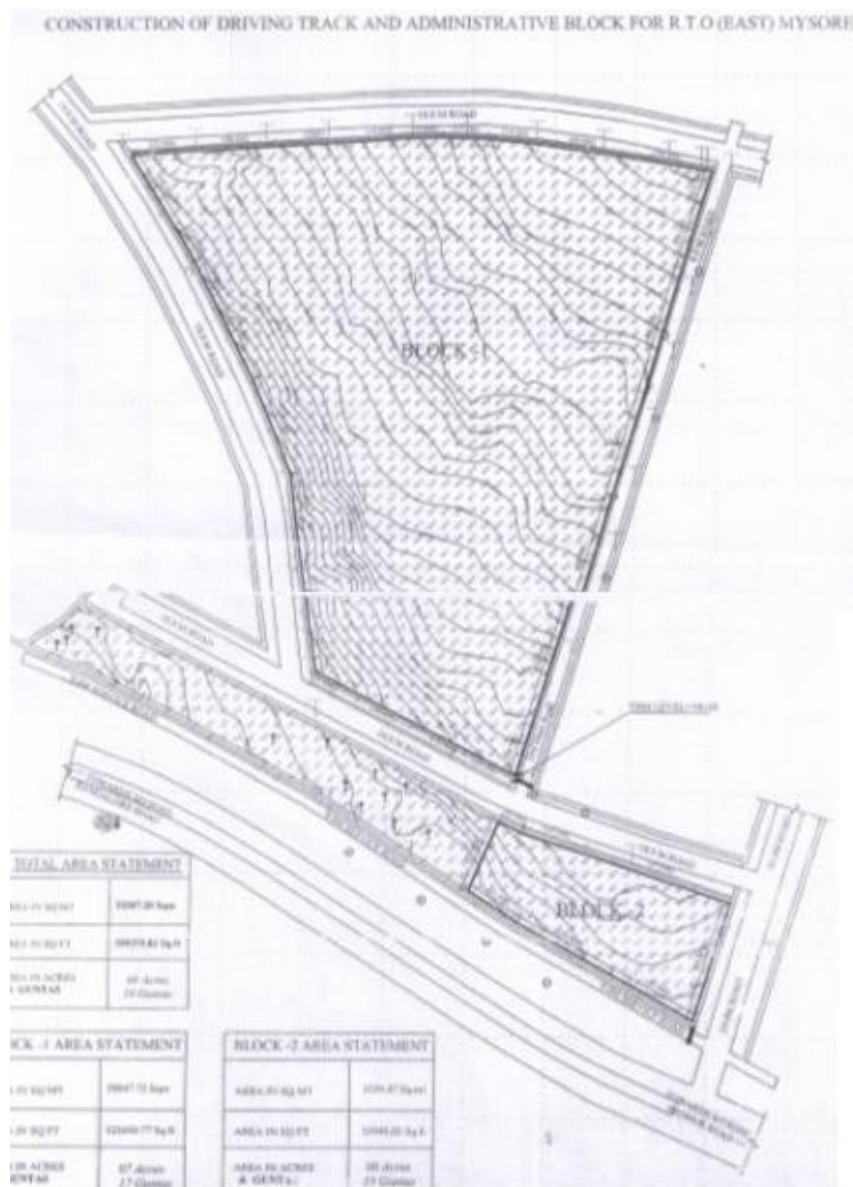
The automated vehicle fitness centers will have the following facilities: -

- Transport department office - Assistant RTO to provide fitness certificate
- Service Station for repair and maintenance of vehicles coming at the centre
- A Pollution Under Control (PUC) Centre
- Commercial Area for small stalls, eateries and shops
- Truck Parking Area
- Budget hotels / Dormitory for truck drivers

Locations for the VFC’s were selected and finalized on the basis of extensive discussion with the Principal Secretary (Transport Department), Joint Commissioner (Transport Department) and North East Karnataka Road Transport Corporation (NEKRTC). The identified sites are:-

- Mysore (Rajivnagar 3rd Stage): Of the total plot area of 8.25 acres is located at Rajivnagar 3rd stage in the North east suburbs of Mysore, ~ 2.5 acres is earmarked for the VFC. The site is with the Transport department and is proposed for the RTO (Mysore east) office and drivers testing track facility. The project sites are divided into two blocks, where Block 1 will be utilized for VFC and driver testing track and Block 2 for the RTO office. The details of the project sites are provided in the figure given below.

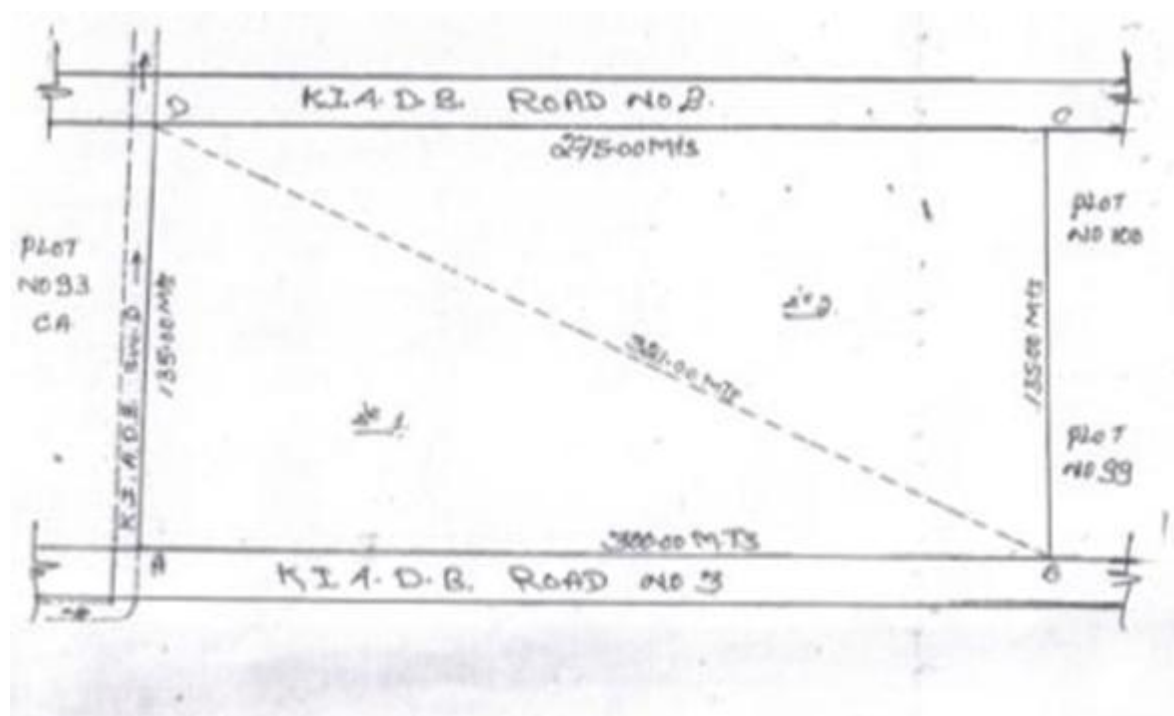
Figure 4: Details of Mysore site



Source: Mysore RTO (East)

- Dharwad: The site is with the Transport department (RTO Dharwad) and is proposed for Vehicle fitness centre and Driving testing track facility in an area of 9.54 acres. Of the total ~ 3.5 acres is earmarked for VFC. The site is located within the Rayapur Industrial Area (under KIADB) and is at present vacant. The project site is shaped by merging 8 plots, plot no. 94 to 98 and 101 to 108.

Figure 5: Details of Dharwad site



Source: Dharwad RTO

- Humnabad: The VFC is proposed on NEKRTC land with an area of ~2.2 Acres.. The site is part of a 20.75 acres land that is presently used as a training centre for heavy motor vehicle driving with a heavy vehicle driving testing track facility at the campus. The NEKRTC has agreed (during the initial workshop held with the Principal Secretary, Transport Department for this assignment) to provide a part of the land to the Transport department for setting up of Vehicle fitness centre. The project site, towards its western side abutting the Mumbai – Hyderabad highway (NH 9), is lying vacant and the said area shall be utilized for developing the vehicle fitness centre.

4.1 Mysore

The project site is located along the ring road near to the Bangalore – Mysore road (SH 17) on the North east of Mysore. The adjoining plots are at present lying vacant and are being allotted for residential developments by the Mysore Urban Development Authority (MUDA). Only a hospital is under construction opposite to the project site. Only block 2 of the project site is along the ring road (with direct access to the Block 1 through service roads), while block 1 is accessible by 18m wide feeder roads from the ring road.

Figure 6: Location and connectivity map of Mysore site



Source: Google map

4.1.1 Connectivity

As it is located along the ring road, the project site enjoys a good connectivity with other parts of Mysore. The site is ~8.0 Km away from the city centre and is 2.0 Km away from the Bangalore – Mysore road (SH 17), which further connects the project site with the city centre. The connectivity of the project site with Mysore is provided in the figure given above.

4.2 Dharwad

The project site is located within the Rayapur (KIADB) Industrial estate area and is at present vacant. The Rayapur industrial estate is located 13 Km away from the city of Hubli, 7.0 Km away from Dharwad city and 3.5 Km away from the existing RTO office. The project site is 2 Km away from the Main Hubli-Dharwad road and this may reduce the commercial attractiveness of the site. The adjoining plots, which are proposed for industrial uses are lying vacant and the major existing industries includes Indian Oil Corporation and Hindustan Petroleum. The site is also in proximity to the Railway good shed which attracts heavy commercial vehicular traffic to the surrounding areas. The location of the site with respect to Dharwad and Hubli is provided in the figure given below.

Figure 7: Location and connectivity of Dharwad site



Source: Google map

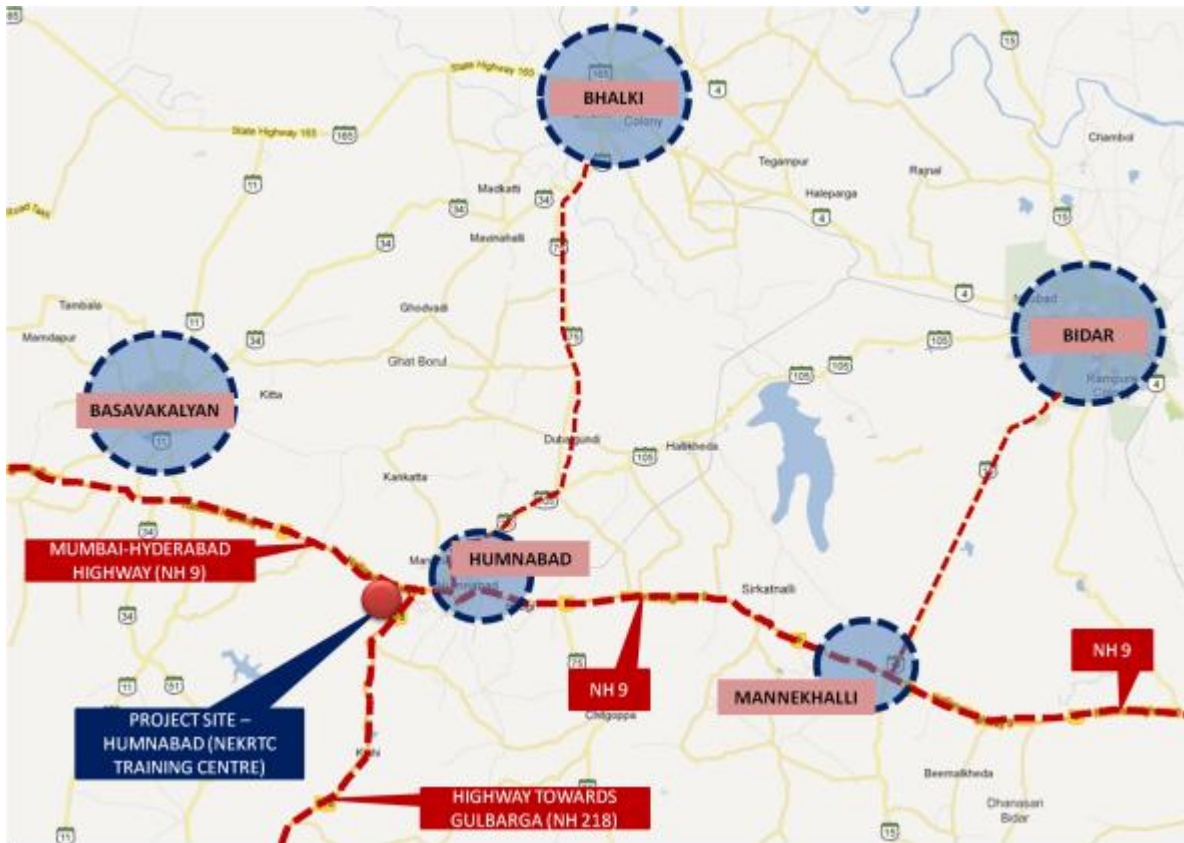
4.2.1 Connectivity:

The project site is connected via 18 m R.O.W road to the main road (Hubli-Dharwad road) which further connects to Hubli and Dharwad. As, the site is not located along the main highway/road connecting major towns or cities; it does not enjoys a good connectivity.

4.3 Humnabad

The project site is located along the Mumbai – Hyderabad highway (NH 9) at the intersection of Gulbarga – Bidar highway and the NH 9. The project site is located opposite to the existing Humnabad ARTO check post due to which there is stoppage of trucks and other commercial vehicles at the location. The location of the site with respect to the other major towns is provided in the figure given below. Currently, Vehicle fitness certificates are issued from the locations which are ~ 25 Km to 50 Km away from the proposed site i.e, Basukalyan, Balki and Bidar, as per the assistant RTO official.

Figure 8: Location and connectivity map of Humnabad site



Source: Google map

4.3.1 Connectivity:

As the subject site is located along the Mumbai-Hyderabad highway (NH 9), the site enjoys a good connectivity with the major towns and cities along the highway such as Bijapur, Basavkalyan, Mannaekhalli, Hyderabad etc. The site is also at the intersection of Gulbarga-Bidar highway and NH 9. So, the site is also connected with major cities such as Bidar and Gulbarga. The connectivity of the site with other major towns is provided in the figure given above.

4.4 Case studies

4.4.1 Case Study: Automated Commercial Vehicle Testing Lane at Rishikesh, Uttarakhand

Project Overview:

Transport Department, Government of Uttarakhand proposes to construct Automated Testing Lane at Rishikesh on Built, Operate and Transfer (BOT) for a concession period of 20 years. The land was transferred by Forest Department in favour of Transport Department for the proposed project before the EOI was issued.

Project Requirement:

Total Area: 1 Ha. Automated Vehicle Testing (800 sq m) capable of testing Light duty vehicles (vehicles below 3500 kg GVW including 3 wheelers) and Heavy duty vehicles (vehicles above 3500 kg GVW), Assistant RTO office (700 sq.m) and rest of the area for commercial developments

Present Status:

At present the project is under the bidding stage

PPP Structure:

In the RFP, it is mentioned that the land shall be provided by Transport department to the concessionaire and the period of concession shall be 20 years. In return, the concessionaire can earn commercial rentals as the Concessionaire shall get ~ 8500 sq.m of land for commercial development.

Key Learning:

The land is provided by the government. To improve the viability for private players, additional land was offered for commercial developments. The land provided for commercial development is very high compared to other PPP projects in India.

4.5 Development Control regulations and other Planning considerations for the site

Physical and land development activity in Mysore, Dharwad and Humnabad; land development activities are based on the zoning regulations prepared by respective Municipal Corporation or the respective urban development authority for the towns/cities on the basis of Karnataka Town and Country Planning Act, 1961. This Chapter provides an analysis of Development Control Regulations which defines the development framework at the subject sites.

4.5.1 Permissible FAR and Ground Coverage

All the projects sites are under the Transportation use and the relevant FAR and ground coverage for the transportation use is applied for the subject sites. The permissible FAR and ground coverage for Mysore and Dharwad is derived from the zoning regulations prepared by the respective urban development authority. For, Humnabad, the FAR and ground coverage is derived from building regulations prepared by the respective Municipal Corporation.

Mysore (Rajivnagar 3rd Stage)

- The maximum permissible FAR for the site is 2.75 and maximum permissible Ground Coverage is 55% of the plot area.

Dharwad

- The maximum permissible FAR for the site is 1.75 with a maximum permissible Ground Coverage of 50% of the plot area.

Humnabad

- The maximum permissible FAR for the site is 1.75 with a permissible Ground Coverage of 50% of the plot area.

4.5.2 Permitted Activities

As per the Notification No: UDD 249 BcMaPra 2008 dated 12.02.2009 (amendments made by the Government of Karnataka to the Zoning Regulations, in the exercise of the power conferred by the section 13-E of the Karnataka Town and Country Planning Act, 1961), uses that are permissible under special circumstances under the traffic and transportation use are as follows:

- Retail shops
- Restaurants and Hotels
- Showrooms
- Offices
- Boarding and lodging houses
- Banking counters
- Indoor recreational uses
- Multiplexes
- Clubs

The uses given above are permissible provided that total area for such ancillary uses **shall not exceed 45% of the allowable floor area ratio** of the project when taken up by Central and State government and Public undertakings.

4.5.3 Parking Norms:

The parking requirements for the proposed developments in Mysore, Dharwad and Humnabad sites are found to be similar, so similar parking requirement shall be considered for all the sites. The adopted parking regulations are provided below (the parking requirements are adopted as per the zoning regulations prepared by Karnataka State Planning Board for the towns/cities in Karnataka).

Table 4: Adopted parking norms for Vehicle fitness centre

Sl no	Type of use	Minimum one parking space for every
1.	Retail business	50 sq.mt of floor area.
2.	Restaurants serving food & beverage	100 sq.mt of floor area.
3.	Lodging establishments & Tourist homes	100 sq.m of floor area.
4.	Office buildings [Govt/semi-Govt & pvt] & Commercial / Banks	75 sq.mt of office floor space.
5.	Public and semi-public buildings	100 sq.mt of floor area.

5 MARKET ASSESSMENT

Various factors which directly and indirectly govern the suitability and demand of possible or envisaged activities are discussed below for the three identified sites. The findings of the market assessment are based on site visits, primary interviews with RTO officials, commercial establishments in the vicinity, hotels and the users of commercial facilities.

5.1 Mysore (Rajivnagar 3rd Stage)

5.1.1 Sites location in the city

Location is traditionally considered as the single most critical parameter for deciding best use of land parcels, as it governs most important aspects like demand and attractiveness. The site is located on the north east suburbs of Mysore along the ring road making it a potential site for commercial development. But, the facility shall be located at the northern end of the plot, for which the access to the facility shall be from the local roads. This may reduce the commercial attractiveness of the site. So, the location has good potential for a VFC, but may not be highly suited to large commercial establishments.

5.1.2 Primary Catchment

Analysis of primary catchment gives the profile and estimation of user base, which will use the proposed development. It also gives understanding of the surrounding area characteristic, which is a critical aspect affecting the attractiveness of the land parcel for various use types. The primary catchment of the subject site includes vacant residential plots allotted by MUDA. As the entire Rajivnagar 3rd stage is vacant, it may be difficult to attract the private players who rely on the commercial aspect of the project site for the revenue generation.

5.1.3 Demand supply scenario for issue of “certificate of fitness”

The number of vehicles getting registered in Mysore is generally low (on the basis of discussion with RTO officials) when compared to the rest of Karnataka. The number of vehicles that got registered in in 2011 was just 10,911 compared to nearly 3 lakh vehicles registered in Dharwad.. This implies that, the “certificate of fitness” issued will also be low. The number of “certificate of fitness” issued in Mysore district is as follows.

Table 5: Number of “certificate of fitness” issued in Mysore

Year	No. of fitness certificate issued
2009	7824
2010	8445
2011	8431

Source: RTO Mysore (East)

In the year 2011, out of the 8431 vehicles issued with certificate of fitness, autos were 3953 and 4478 goods vehicles The fees collected from various types of vehicles for issuing the “certificate of fitness” is as follows.

Table 6: Fee for issue of “certificate of fitness”

Type of vehicle	Fees (in INR)
2 or 3 vehicle	100
Light motor vehicle	200
Medium motor vehicle	300
Heavy motor vehicle	400

Source: RTO Mysore (east)

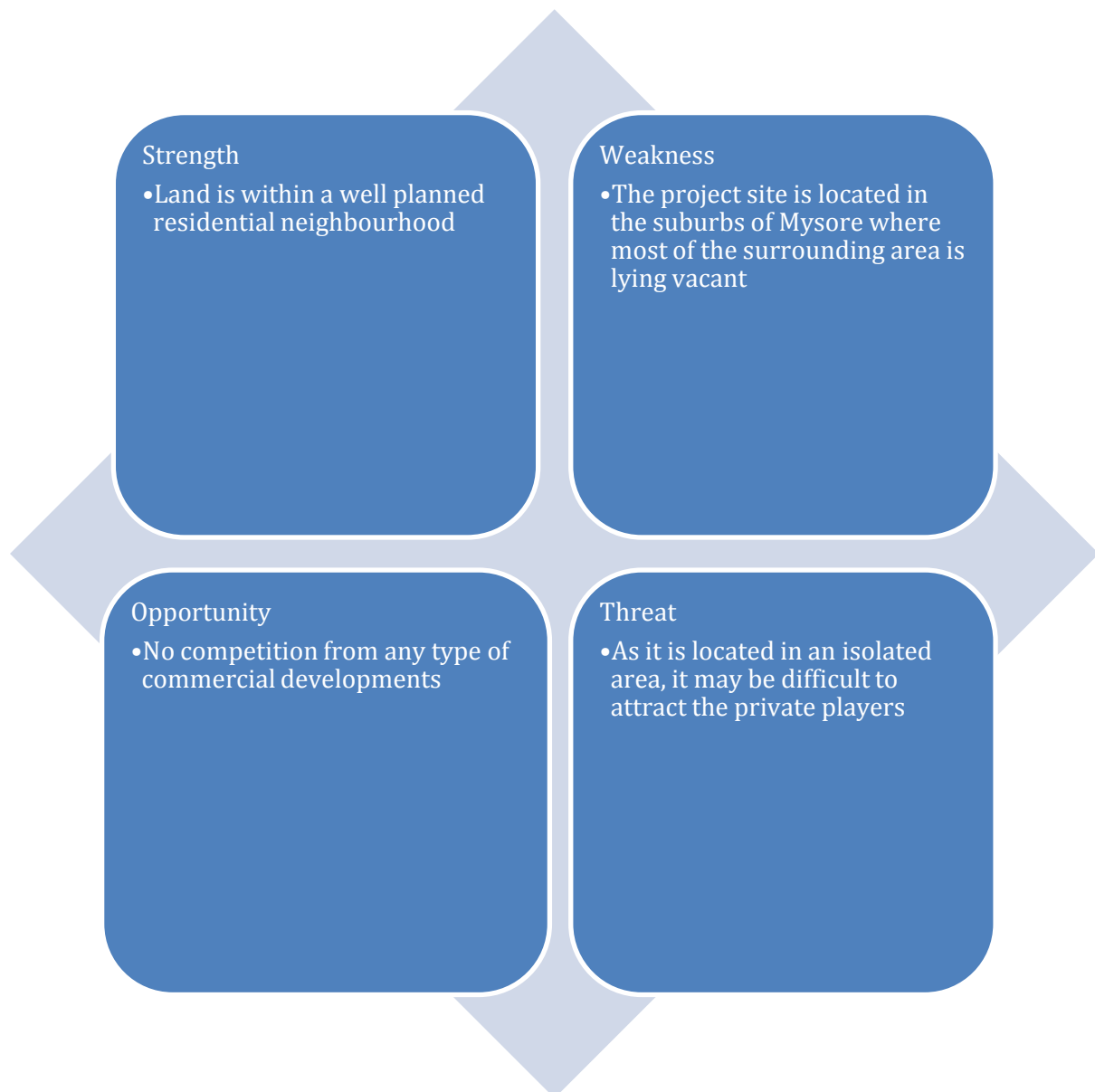
Apart from the above charges, a fee of INR 100 is collected as inspection fee from each vehicle. It is proposed that the above fees can be collected by the respective operators / developers who develops the facility.

5.1.4 Demand Supply scenario for commercial developments

As most of the area are lying vacant and due to non-availability of any commercial developments in the vicinity, the rentals for the commercial development is not available for the site.

5.1.5 SWOT analysis for Mysore site

Based on above discussion under various heads, a SWOT analysis of the site is done to determine the potential of the site in terms of opportunity for commercial developments.



5.2 Dharwad

5.2.1 Sites location in the city

The site is located at the Rayapur industrial area which midway between Hubli and Dharwad cities and is ~2 Km away from the Hubli-Dharwad main road. As the location is away from the city area and has access through wider roads, the site has a good potential for VFC but may not be suitable for large commercial developments. A location away from the city is ideal for a VFC, as the congestion due to various commercial vehicles waiting for fitness certificates is not desirable in the city centre, which anyway will be a congested area. Primary Catchment

The primary catchment of the project site has vacant industrial plots in the vicinity and agricultural plots. From the primary catchment, it is seen that the project site may not be a

probable option for commercial developments. So, only few commercial spaces are proposed at the site which may complement the VFC.

5.2.2 Demand Supply scenario

The number of vehicles getting registered is generally higher in the cities of Hubli-Dharwad and stands in second place after Bangalore. Due to unavailability of data from Dharwad RTO regarding the number of certificate of fitness issued, the consultants have assumed that the number of vehicle registrations are equivalent to number of certificates issued with a 2 year lag. The assumption is taken because for Mysore and Humnabad, for which data for vehicle registrations and number of certificates issued is available, it is observed that both the figures are comparable. Further, new vehicles do not require fitness certificates for first 2 years. The number of vehicles which got registered in 2010 is 3,09,455 and for the year 2011, it is 338481 vehicles. From registration data, the mode-wise percentage is (From Traffic report prepared for Hubli-Dharwad):-

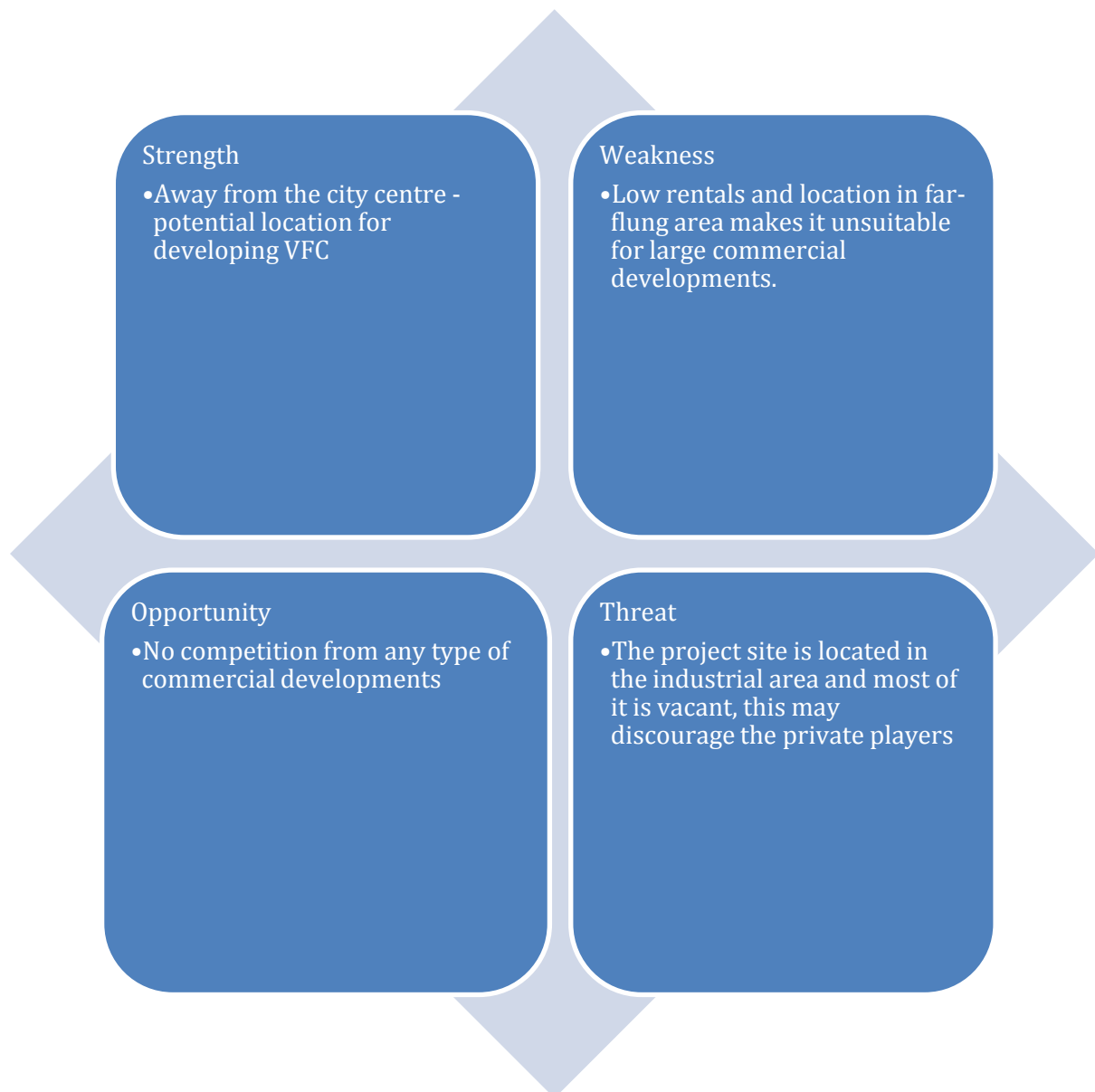
- 2 wheeler – 66%
- Auto – 5.4%
- Car – 10% (for Taxi it is assumed to be 1.81%)
- Heavy Motor Vehicle – 7.25%
- Medium motor vehicle – 1.63%
- LCV – 1.21%

The charges for issuing the certificates are same as that provided in the table provided earlier.

The rentals for the commercial developments in the vicinity is not available as there are no commercial shops in the primary catchments. The average commercial rentals Dharwad city – INR 35-40 / sq.ft / month. It is on the lower side when compared to Hubli. Near the Dharwad RTO office (7 km away from the Dharwad city centre) – rentals are in the range of INR 25-30 / sq.ft / month.

5.2.3 SWOT analysis for Dharwad site

Based on above discussion under various heads, a SWOT analysis of the site is done to determine the potential of the site in terms of real estate opportunity.



5.3 Humnabad

5.3.1 Sites location in the city

The project site is located in the suburbs of Humnabad town and along the Mumbai-Hyderabad highway (NH 9). The plot is located at a major intersection and with the presence of ARTO check post, many trucks are parked overnight on both sides of the roads. As it is located along the NH 9 and away from the town area, the site has good potential to be developed as VFC.

5.3.2 Primary Catchment

The primary catchment comprises of NEKRTC training centre, a restaurant cum lodge (under renovation) & an ARTO check post. And as secondary catchment, there are 4 to 5 dhabas

operating on the highway and few with workshops (tyre puncture repairing). Otherwise the area is of low density developments with mostly agriculture fields. So, retail and VFC may be a probable option but hospitality and restaurant options shall be in direct competition from existing lodges and Dhabas.

5.3.3 Demand Supply Scenario

The “certificate of fitness” for the commercial vehicles in Bidar district is issued from 3 locations, Basukalyan, Balki and Bidar. The number of certificate issued in the last three years are provided in the table given below:-

Table 7: Certificate of fitness issued in Bidar district

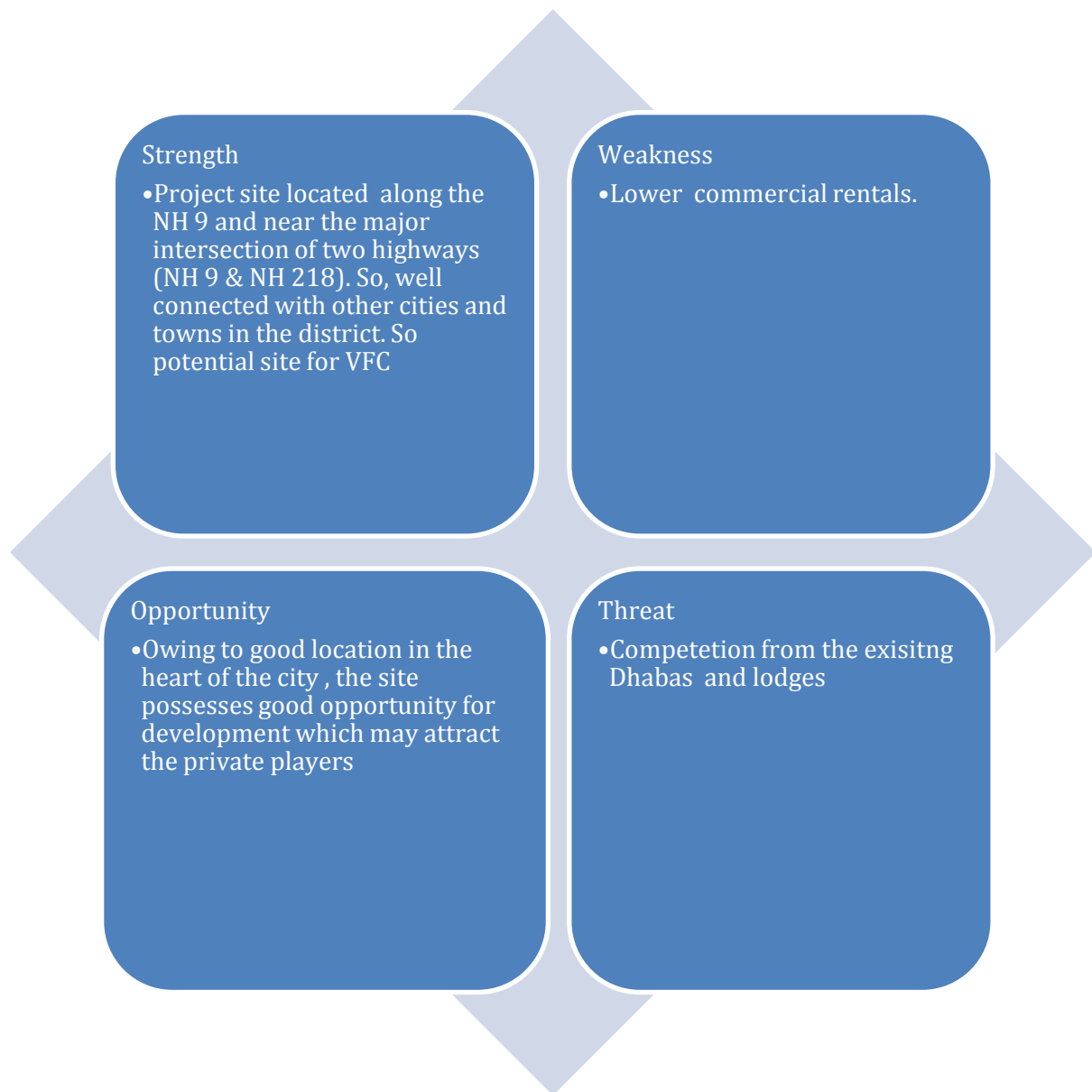
Location	Basava Kalyan			Bidar			Balki		
	Auto	LMV	HMV/MMV	Auto	LMV	HMV/MMV	Auto	LMV	HMV/MMV
2011	436	243	1884	951	45	2650	564	540	892
2010	324	146	1558	722	40	2509	993	608	1546
2009				634	38	2213	1229	670	2746

Source: RTO, Bidar

It is observed that, apart from Bidar, other two locations are not well connected. So, the proposed site, owing to good connectivity within the district, may be a potential site for VFC...

5.3.4 SWOT analysis for Dharwad site

Based on above discussion under various heads, a SWOT analysis of the site is done to determine the potential of the site in terms of commercial development opportunity.



5.4 Recommended Product Mix Options

Having analyzed the demand supply scenario and traffic movement along the highways, options of retail and dormitories may be a probable options in the Vehicle fitness centre at various sites. The major portions shall be utilised for the provision of VFC and rest of the allowable commercial area for the retail and dormitories. The product mix options for the VFC development for the different sites are given below:-

Table 8: Product mix option for the Mysore site

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	89%	1,967
Retail	3%	75
Service Station	4%	100
Dormitory	4%	100
Total		2,242

Table 9: Product mix option for the Dharwad site

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	97%	6,533
Retail	1%	75
Service Station	1%	100
Dormitory	1%	100
Total		6,808

Table 10: Product mix option for the Humnabad site

Product Mix	Percentage	Area (in Sq.m)
Vehicle fitness centre	92%	2,833
Retail	2%	75
Service Station	3%	100
Dormitory	3%	100
Total		3,108

5.5 Product Design

The following conceptual designs have been adopted for the respective sites, in order to carry out the financial feasibility analysis for the project.

Mysore:

Table 11: Product Design for Mysore VFC

Item	Value	Unit	Item	Value	Unit
Area Break Up			VFC Unit Area	1,967	Sqm
Total Plot Area	8,152	Sqm	No. of HCV Lanes	1	
Built-up Area	2,242	Sqm	No. of LCV Lanes	1	
No. of Floors	1		No. of 3-Wheeler Lanes	1	
Retail Area	75	Sqm			
No. of Shops (15sqm)	5		Parking		
Dormitory Area	100	Sqm	Truck Terminal	35	Bays
No. of Beds	20		Car Parking	24	ECS*
Service Station Area	100	sqm			

*ECS – Equivalent Car Space

Humnabad:

Table 12: Product Design for Humnabad VFC

Item	Value	Unit	Item	Value	Unit
Area Break Up			VFC Unit Area	2,833	Sqm
Total Plot Area	8,881	Sqm	No. of HCV Lanes	2	
Built-up Area	3,108	Sqm	No. of LCV Lanes	1	
No. of Floors	1		No. of 3-Wheeler Lanes	1	
Retail Area	75	Sqm			
No. of Shops (15sqm)	5		Parking		
Dormitory Area	100	Sqm	Truck Terminal	31	Bays
No. of Beds	20		Car Parking	33	ECS*
Service Station Area	100	sqm			

*ECS – Equivalent Car Space

Dharwad:

Table 13: Product Design for Humnabad VFC

Item	Value	Unit	Item	Value	Unit
Area Break Up			VFC Unit Area	6,533	Sqm
Total Plot Area	13,617	Sqm	No. of HCV Lanes	5	
Built-up Area	6,808	Sqm	No. of LCV Lanes	2	
No. of Floors	1		No. of 3-Wheeler Lanes	2	
Retail Area	75	Sqm			
No. of Shops (15sqm)	5		Parking		
Dormitory Area	100	Sqm	Truck Terminal	26	Bays
No. of Beds	20		Car Parking	70	ECS*
Service Station Area	100	sqm			

*ECS – Equivalent Car Space

6 PROJECT FINANCIALS

Financial Analysis of the projects is done to get a perception of different scenarios from the Concessioning Authority's perspective and to then determine how much the Concessioning Authority can get from the developer while ensuring that the developer gets a reasonable IRR, and that the Project is Bankable from the perspective of DSCR (Debt Service Coverage Ratio) and Post Tax NPV.

6.1 Key Assumptions and Considerations

6.1.1 Mysore

- a) **Period of Analysis:** The period of analysis has been taken as 30 years inclusive of a 2 year construction and 28 years operations period for the developments.
- b) **Land Area Break-up & Built up area:** The Land Area Break-up and built up area for the site is as follows:

Description	Value	Unit
Plot Area	8,152	sq.m
F.A.R	2.75	
Permissible Ground Coverage	55	%
Adopted Ground Coverage	28	%
No. of Floors	1	
Max BUA on Ground	2,242	sq.m
Max BUA	22,417	sq.m
Max Permissible Commercial Space	45	%

The F.A.R and Ground coverage for the site have been taken in accordance with the Development Control Regulations, as defined.

- c) **VFC related assumptions:** For calculation of revenue from Vehicle Fitness Centre, the following assumptions have been taken.

Description	Value	Unit
Base Year Traffic for Certificates Issued		
HCV+MCV	1,791	Vehicles
LCV+Taxi	2,687	Vehicles
3-Wheeler	3,953	Vehicles
Vehicular Growth rate		
Concession Year 1-10	8*	%
Concession Year 11-20	6*	%
Concession Year 21-30	5*	%
Typical Test Lane Cycle		
HCV+MCV	10	Minutes per Vehicle
LCV+Taxi	10	Minutes per Vehicle
3-Wheeler	7	Minutes per Vehicle

*Growth rates are adopted on the basis of previous traffic studies done by the consultant and the secondary data available for the State of Karnataka

d) Project Construction Cost: While calculating the project cost, the assumptions have been based on market feedback, as well as the Consultant’s own experience of advisory and project management consultancy.

Construction Component	Value	Unit
VFC Building	1,200	INR per sq. ft.
VFC Equipment		
HCV Lane	1.65	INR Cr per Lane
LCV Lane	1.23	INR Cr per Lane
3-Wheeler Lane	0.60	INR Cr per Lane
Commercial Area (Retail+Service Station+Dormitory)	1,000	INR per sq. ft.
Ground Parking	100	INR per sq. ft.

e) Recurring Expenditure: Recurring expenditures, in the form of O&M costs, are taken into consideration in order to define the total project cost. These assumptions are based upon market trends and the consultant’s own past experience.

O&M Cost	Value	Unit
Vehicle Fitness Centre		
Building O&M	5	INR per sq. ft.
Equipment R&M	20%	of equipment cost per Annum
Manpower		
Unskilled (3 per lane)	8,000	INR per person per month
Skilled (3 per lane)	15,000	INR per person per month
O&M Commercial Building		
O&M Expenses	5	INR per sq. ft.
O&M Escalation	15%	every three years
Dormitory		
O&M (Rooms, HR)	20%	of total receivables from Dormitory

f) Revenue Assumptions: Revenue assumptions for development options are based on site analysis and demand assessment already discussed in previous chapters. Sales phasing and occupancy has been taken considering prevailing demand supply scenario for comparable projects. Following is the detail of revenue related considerations:

Revenue Head	Value	Unit
VFC Certificate Revenue		
HCV+MCV	500	INR per Vehicle
LCV+Taxi	300	INR per Vehicle
3-Wheelers	200	INR per Vehicle
Commercial		
Retail	20*	INR/Sft
Service Station	20*	INR/Sft
Dormitory	75*	INR/Bed/Day
Truck Terminal		

Parking	50*	INR
Escalation in Rentals	15%	every three years
Advertising Revenue	10%	of total revenue

*As per primary surveys done in the project vicinity

- g) Construction Cost and Schedule:** It has been assumed that the construction of all the developments will complete in two years.
- h) Debt Equity Ratio (DER):** A debt equity ratio of 70:30 has been considered.
- i) Revenue & Expenditure increment Rates:** An inflation rate of 5% has been applied on the cost streams while revenue related escalations have been provided in the previous section
- j) Interest Rate:** The rate of interest for the analysis has been assumed as 13% per annum.
- k) Debt Tenure & Repayment:** 10 years debt tenure, including a moratorium period of 2 years, has been considered excluding construction period.
- l) Pre-Operative Charges and Contingencies:** Preliminary and pre-operative expenses @ 5% have been considered for all the developments.
- m) Taxation:** The tax rates have been taken as follows:

Tax Component	Rate	
Income tax	30%	on the profit before tax
Surcharge	5%	on the tax
Education Cess	3%	on the income tax and surcharge
Effective tax component @ 30.00%	32.45%	

- n) Depreciation:** The depreciation on the project components of Buildings has been taken as per the Company's Act through Straight line Method (SLM), @1.63% and for equipment @7.07%

6.1.2 Humnabad

- a) Period of Analysis:** The period of analysis has been taken as 30 years inclusive of a 2 year construction and 28 years operations period for the developments.
- b) Land Area Break-up & Built up area:** The Land Area Break-up and built up area for the site is as follows:

Description	Value	Unit
Plot Area	8,881	sq.m
F.A.R	1.75	
Permissible Ground Coverage	50	%
Adopted Ground Coverage	35	%
No. of Floors	1	
BUA on Ground	3,108	sq.m
Max BUA	15,542	sq.m
Max Permissible Commercial Space	45	%

The F.A.R and Ground coverage for the site have been taken in accordance with the Development Control Regulations, as defined.

- c) VFC related assumptions:** For calculation of revenue from Vehicle Fitness Centre, the following assumptions have been taken.

Description	Value	Unit
Base Year Traffic for Certificates Issued		
HCV+MCV	5,246	Vehicles
LCV+Taxi	828	Vehicles
3-Wheeler	1,951	Vehicles
Vehicular Growth rate		
Concession Year 1-10	8*	%
Concession Year 11-20	6*	%
Concession Year 21-30	5*	%
Typical Test Lane Cycle		
HCV+MCV	10	Minutes per Vehicle
LCV+Taxi	10	Minutes per Vehicle
3-Wheeler	7	Minutes per Vehicle

*Growth rates are adopted on the basis of previous traffic studies done by the consultant and the secondary data available for the State of Karnataka

- d) Project Construction Cost:** While calculating the project cost, the assumptions have been based on market feedback, as well as the Consultant's own experience of advisory and project management consultancy.

Construction Component	Value	Unit
VFC Building	1,200	INR per sq. ft.
VFC Equipment		
HCV Lane	1.65	INR Cr per Lane
LCV Lane	1.23	INR Cr per Lane
3-Wheeler Lane	0.60	INR Cr per Lane
Commercial Area (Retail+Service Station+Dormitory)	1,000	INR per sq. ft.
Ground Parking	100	INR per sq. ft.

- e) Recurring Expenditure:** Recurring expenditures, in the form of O&M costs, are taken into consideration in order to define the total project cost. These assumptions are based upon market trends and the consultant's own past experience.

O&M Cost	Value	Unit
Vehicle Fitness Centre		
Building O&M	5	INR per sq. ft.
Equipment R&M	20%	of equipment cost per Annum
Manpower		
Unskilled (3 per lane)	8,000	INR per person per month
Skilled (3 per lane)	15,000	INR per person per month
O&M Commercial Building		
O&M Expenses	5	INR per sq. ft.
O&M Escalation	15%	every three years
Dormitory		
O&M (Rooms, HR)	20%	of total receivables from Dormitory

- f) **Revenue Assumptions:** Revenue assumptions for development options are based on site analysis and demand assessment already discussed in previous chapters. Sales phasing and occupancy has been taken considering prevailing demand supply scenario for comparable projects. Following is the detail of revenue related considerations:

Revenue Head	Value	Unit
VFC Certificate Revenue		
HCV+MCV	500	INR per Vehicle
LCV+Taxi	300	INR per Vehicle
3-Wheelers	200	INR per Vehicle
Commercial		
Retail	30*	INR/Sft
Service Station	25*	INR/Sft
Dormitory	75*	INR/Bed/Day
Truck Terminal		
Parking	50*	INR
Escalation in Rentals	15%	every three years
Advertising Revenue	10%	of total revenue

*As per primary surveys done in the project vicinity

- g) **Construction Cost and Schedule:** It has been assumed that the construction of all the developments will complete in two years.
- h) **Debt Equity Ratio (DER):** A debt equity ratio of 70:30 has been considered.
- i) **Revenue & Expenditure increment Rates:** An inflation rate of 5% has been applied on the cost streams while revenue related escalations have been provided in the previous section
- j) **Interest Rate:** The rate of interest for the analysis has been assumed as 13% per annum.
- k) **Debt Tenure & Repayment:** 10 years debt tenure, including a moratorium period of 2 years, has been considered excluding construction period.
- l) **Pre-Operative Charges and Contingencies:** Preliminary and pre-operative expenses @ 5% have been considered for all the developments.
- m) **Taxation:** The tax rates have been taken as follows:

Tax Component	Rate	
Income tax	30%	on the profit before tax
Surcharge	5%	on the tax
Education Cess	3%	on the income tax and surcharge
Effective tax component @ 30.00%	32.45%	

- n) **Depreciation:** The depreciation on the project components of Buildings has been taken as per the Company's Act through Straight line Method (SLM), @1.63% and for equipment @7.07%

6.1.3 Dharwad

- a) **Period of Analysis:** The period of analysis has been taken as 30 years inclusive of a 2 year construction and 28 years operations period for the developments.
- b) **Land Area Break-up & Built up area:** The Land Area Break-up and built up area for the site is as follows:

Description	Value	Unit
Plot Area	13,617	sq.m
F.A.R	1.75	
Permissible Ground Coverage	50	%
Adopted Ground Coverage	50	%
No. of Floors	1	
BUA on Ground	6,808	sq.m
Max BUA	23,829	sq.m
Max Permissible Commercial Space	45	%

The F.A.R and Ground coverage for the site have been taken in accordance with the Development Control Regulations, as defined.

- c) **VFC related assumptions:** For calculation of revenue from Vehicle Fitness Centre, the following assumptions have been taken.

Description	Value	Unit
Base Year Traffic for Certificates Issued		
HCV+MCV	30,057	Vehicles
LCV+Taxi	10,154	Vehicles
3-Wheeler	18,413	Vehicles
Vehicular Growth rate		
Concession Year 1-10	8*	%
Concession Year 11-20	6*	%
Concession Year 21-30	5*	%
Typical Test Lane Cycle		
HCV+MCV	10	Minutes per Vehicle
LCV+Taxi	10	Minutes per Vehicle
3-Wheeler	7	Minutes per Vehicle

*Growth rates are adopted on the basis of previous traffic studies done by the consultant and the secondary data available for the State of Karnataka

- d) **Project Construction Cost:** While calculating the project cost, the assumptions have been based on market feedback, as well as the Consultant's own experience of advisory and project management consultancy.

Construction Component	Value	Unit
VFC Building	1,200	INR per sq. ft.
VFC Equipment		
HCV Lane	1.65	INR Cr per Lane
LCV Lane	1.23	INR Cr per Lane
3-Wheeler Lane	0.60	INR Cr per Lane
Commercial Area (Retail+Service Station+Dormitory)	1,000	INR per sq. ft.
Ground Parking	100	INR per sq. ft.

- e) **Recurring Expenditure:** Recurring expenditures, in the form of O&M costs, are taken into consideration in order to define the total project cost. These assumptions are based upon market trends and the consultant’s own past experience.

O&M Cost	Value	Unit
Vehicle Fitness Centre		
Building O&M	5	INR per sq. ft.
Equipment R&M	20%	of equipment cost per Annum
Manpower		
Unskilled (3 per lane)	8,000	INR per person per month
Skilled (3 per lane)	15,000	INR per person per month
O&M Commercial Building		
O&M Expenses	5	INR per sq. ft.
O&M Escalation	15%	every three years
Dormitory		
O&M (Rooms, HR)	20%	of total receivables from Dormitory

- f) **Revenue Assumptions:** Revenue assumptions for development options are based on site analysis and demand assessment already discussed in previous chapters. Sales phasing and occupancy has been taken considering prevailing demand supply scenario for comparable projects. Following is the detail of revenue related considerations:

Revenue Head	Value	Unit
VFC Certificate Revenue		
HCV+MCV	500	INR per Vehicle
LCV+Taxi	300	INR per Vehicle
3-Wheelers	200	INR per Vehicle
Commercial		
Retail	35*	INR/Sft
Service Station	35*	INR/Sft
Dormitory	75*	INR/Bed/Day
Truck Terminal		
Parking	50*	INR
Escalation in Rentals	15%	every three years
Advertising Revenue	10%	of total revenue

*As per primary surveys done in the project vicinity

- g) **Construction Cost and Schedule:** It has been assumed that the construction of all the developments will complete in two years.
- h) **Debt Equity Ratio (DER):** A debt equity ratio of 70:30 has been considered.
- i) **Revenue & Expenditure increment Rates:** An inflation rate of 5% has been applied on the cost streams while revenue related escalations have been provided in the previous section
- j) **Interest Rate:** The rate of interest for the analysis has been assumed as 13% per annum.
- k) **Debt Tenure & Repayment:** 12 years debt tenure, including a moratorium period of 2 years, has been considered excluding construction period.
- l) **Pre-Operative Charges and Contingencies:** Preliminary and pre-operative expenses @ 5% have been considered for all the developments.
- m) **Taxation:** The tax rates have been taken as follows:

Tax Component	Rate	
Income tax	30%	on the profit before tax
Surcharge	5%	on the tax
Education Cess	3%	on the income tax and surcharge
Effective tax component @ 30.00%	32.45%	

n) **Depreciation:** The depreciation on the project components of Buildings has been taken as per the Company’s Act through Straight line Method (SLM), @1.63% and for equipment @7.07%

6.2 Key Project Financials

Based on the above stated inputs, the exercise of financial analysis has been carried out for the proposed project. The upfront payment potential; either one time or staggered over years; depends on the returns to the investor after making the upfront payment. Three models of PPP are considered:

1. When the private player pays only the Lease Rental to the government. In this case, the Lease Rental will become the bid variable and the private player will quote in terms of the annual lease rental payable to the Authority.
2. When the private player pays an upfront amount plus the lease rental to the government. In this case, the Lease Rental shall be a fixed at a minimal amount and shall be kept so that the Developer can’t claim ownership right in case of any dispute. The bid variable will be the Upfront Amount payable in pre-decided installments, as defined in the Bid Document.
3. When the private player pays an upfront amount, the lease rental and annual revenue share. In this case, the Lease Rental shall be a fixed at a minimal amount and shall be kept so that the Developer can’t claim ownership right in case of any dispute. Further, an Upfront Amount shall also be fixed and payable as per the installments defined in the Bid Document. In this model, Revenue Share shall be the bid variable and the Bidder will quote the revenue share (in percentage terms of the Gross Revenue) that the Bidder intends to share with the Authority. In this particular model, the revenue risk is shared between the Developer and the Authority to the extent of the Revenue Share percentage. Both the upside / downside of the revenue is captured in this model. Further, an important point to note in this particular model is that the Authority will need to develop a strong mechanism to keep a check on the total annual gross revenues of the project.

It is to be noted that the values assumed/derived at for the bid variable components in each case is the recommended maximum reserve prices/percentages for the respective components. The government/bidders may want to consider lower quotes for the variable components in order to improve the project IRR and, consequently, project viability, wherever required.

The consultants have also carried out Value for Money (VFM) analysis to recommend the most suitable mode of project procurement. Value for Money (VFM) analysis is essentially a cost-benefit analysis, where it is examined if the benefits of the project are positive as compared to alternative procurement method. A PPP project is said to achieve value for money if it costs less

than the best realistic public sector project alternative which would deliver the same services. Thus, a positive Value for Money for the government means that the project will generate enough value to be taken up on PPP basis.

A detailed explanation for VFM is given in Annexure 4.

A summary of the project financials estimated in the process are presented below:

Mysore

Table 14: Detailed project cost for Mysore

Cost Component \ Construction Year	Year 1	Year 2
Vehicle Fitness Centre (INR Cr)	2.41	3.79
Construction Cost (INR Cr)	1.02	1.60
Equipment Cost (INR Cr)	1.39	2.19
Construction Cost of Commercial Built-Up Area (Retail+Service Station+Dormitory)	0.12	0.19
Pre-operative Expenses (INR Cr)	0.13	0.20
Parking (INR Cr)	0.14	0.22
IDC (INR Cr)	0.03	0.38
Sub-Total (INR Cr)	2.83	4.78
Landed Cost (INR Cr)	7.61	

Table 15: Key project financials for Mysore

Item	Only Lease Rental Paid by the Pvt Developer
Project Cost (INR Cr) including IDC and Upfront Payment	7.61
Equity (INR Cr) @ 30% of capital cost	2.28
Debt (INR Cr) @ 70% of capital cost	5.33
Project IRR (%)	0.5
Project NPV (INR Cr)	(9.10)
Equity IRR (%)	(0.5)
VFM (INR Cr)	1.69
Receivables to Govt	
Lease Rental (INR cr/Year @ INR 5 per sqft/year)	0.04
NPV of Receivables to Govt (INR Cr)	0.23

It can be seen that the project has a negative Project NPV along with extremely low IRR values, thus, making it unviable. Further, it also has a minimum DSCR of less than 1, which means that it will have issues in retiring the debt taken for the project. As the project is unviable even in the lease rental model, where the outgo to the government is the least, the results of other two models are not presented. Further, even when the entire income from certificates is assumed to go to the private player, the project is unviable.

Humnabad

Table 16: Detailed project cost for Humnabad

Cost Component \ Construction Year	Year 1	Year 2
Vehicle Fitness Centre (INR Cr)	3.52	5.52
Construction Cost (INR Cr)	1.46	2.29
Equipment Cost (INR Cr)	2.06	3.23
Construction Cost of Commercial Built-Up Area (Retail+Service Station+Dormitory)	0.12	0.19
Pre-operative Expenses (INR Cr)	0.18	0.29
Parking (INR Cr)	0.14	0.22
IDC (INR Cr)	0.05	0.54
Sub-Total (INR Cr)	4.01	6.76
Landed Cost (INR Cr)	10.77	

Table 17: Key project financials for Humnabad

Item	Only Lease Rental Paid by the Pvt Developer
Project Cost (INR Cr) including IDC and Upfront Payment	10.77
Equity (INR Cr) @ 30% of capital cost	3.23
Debt (INR Cr) @ 70% of capital cost	7.54
Project IRR (%)	(1.8)
Project NPV (INR Cr)	(14.16)
Equity IRR (%)	(3.0)
VFM (INR Cr)	1.62
Receivables to Govt	
<i>Lease Rental (INR cr/Year @ INR 5 per sqft/year)</i>	0.05
NPV of Receivables to Govt (INR Cr)	0.29

It can be seen that the project has a negative Project NPV along with negative IRR values, thus, making it unviable. Further, it also has a minimum DSCR of less than 1, which means that it will have issues in retiring the debt taken for the project. As the project is unviable even in the lease rental model, where the outgo to the government is the least, the results of other two models are not presented. Further, even when the entire income from certificates is assumed to go to the private player, the project is unviable.

Dharwad

Table 18: Detail project cost for Dharwad

Cost Component \ Construction Year	Lease Rental Only		Lease Rental, Upfront		Lease Rental, Upfront, Revenue Share	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Vehicle Fitness Centre (INR Cr)	23.15		23.15		23.15	
Construction Cost (INR Cr)	3.37	5.31	3.37	5.31	3.37	5.31
Equipment Cost (INR Cr)	14.47		14.47		14.47	
Construction Cost of Commercial Built-Up Area (Retail+Service Station+Dormitory)	0.12	0.19	0.12	0.19	0.12	0.19
Pre-operative Expenses (INR Cr)	0.31	0.49	0.31	0.49	0.31	0.49
Parking (INR Cr)	0.16	0.25	0.16	0.25	0.16	0.25
IDC (INR Cr)	0.10	0.77	0.10	0.79	0.10	0.78
Upfront Payment to Concessioneing Authority	-	-	0.17	0.18	0.08	0.09
Sub-Total (INR Cr)	9.20	8.75	9.37	8.95	9.28	8.85
Landed Cost (INR Cr)	25.55		25.92		25.73	

Table 19: Key project financials for Dharwad

Item	Only Lease Rental Paid by the Pvt Developer	Upfront plus Lease Rental Model	Upfront, Lease Rental and Revenue Share
Project Cost (INR Cr) including IDC and Upfront Payment	25.55	25.92	25.73
Equity (INR Cr) @ 30% of capital cost	7.66	7.78	7.72
Debt (INR Cr) @ 70% of capital cost	17.88	18.14	18.01
Project IRR (%)	14.1	13.9	13.8
Project NPV (INR Cr)	4.38	4.06	3.78
Equity IRR (%)	14.6	14.4	14.3
VFM (INR Cr)	25.73	25.73	25.37
Receivables to Govt			
Lease Rental (INR cr/Year @ INR 5 per sqft/year)	0.07	0.07	0.07
Upfront Payment (NR Cr)	-	0.34	0.17
Revenue Share (% of Revenue)	-	-	1
NPV of Receivables to Govt (INR Cr)	0.41	0.68	0.83

It can be seen from the above results that, while the NPV of receivables is highest for the Government in the third model (where the Government gets upfront fee and a revenue share), the private player earns lower returns. For ensuring balanced returns to both the parties, an **upfront payment plus lease rental model** is the best option. The Value for Money for the government is positive in all the models hence the project is expected to create value for all stakeholders if awarded on PPP basis. However, if the private player does not have the right to income generated via the fee for issuing certificates, the project will become unviable. Thus, if the project is to be made viable, it is recommended that the entire proceeds from issuing certificates should go to the private player.

However, the project has a minimum DSCR of less than 1, which means that it will have issues in retiring the debt taken for the project

6.2.1 Conclusions of the Financial Analysis

- Both, Mysore and Humnabad have negative Project NPV and IRR values and, therefore, are unviable under the proposed PPP model. This is primarily because of the high degree of investment required for O&M of the equipment involved in operating the proposed facility.
- For Dharwad, an upfront plus lease rental model is the best option as it balances the returns to the government and the private player. As per the model the NPV of receivables to the government is INR 0.68 Cr. The private player is expected to observe a Project IRR of 13.9% and a Project NPV of INR 4.06 Cr. However, the project has a minimum DSCR of less than 1, which means that it will have issues in retiring the debt taken for the project
- It is recommended that the entire proceeds from issuing certificates should go to private player. Else, even the Dharwad VFC project will be unviable.

Detailed cash flow tables for the projects are given in Annexure 5.

6.3 Sensitivity Analysis

Sensitivity analysis is done for the recommended models of the financially viable projects to understand the sensitivity of the project returns to changes in crucial parameters of the project like capital costs, operating costs and revenues.

Dharwad

- Change in Construction Cost:** The project is sensitive to changes in construction costs, and hence the private player will have to ensure that there is no delay in the project that will lead to cost overruns. A 25% higher construction cost will lead to a negative Project NPV. Changes in project and equity IRR corresponding to changes in construction cost is given in the table below

Table 20: Sensitivity of Returns of Dharwad Project to changes in Construction Cost

Change in Construction Cost	Post Tax Project NPV (INR cr)	P IRR	E IRR
25%	(2.70)	11%	11%
15%	0.24	12%	12%
10%	1.37	13%	13%
5%	2.83	13%	14%
0%	4.06	14%	14%
-5%	5.19	15%	15%
-10%	6.61	15%	16%
-15%	7.72	16%	17%
-25%	10.36	18%	19%

- b. **Changes in Operational Costs:** Compared to changes in construction costs, the project is less sensitive to changes in operational costs. A 25% higher operational cost will lead to a negative Project NPV. The project proponent will need to take steps to ensure that its operational expenses are kept in check. The changes in project and equity IRR in response to changes in Operational Expenses is given in the table below:

Table 21: Sensitivity of the Dharwad Project Returns to Changes in Operational Expenses

Change in Opex	Post Tax NPV (INR Cr)	P IRR	E IRR
25%	(1.12)	12%	12%
15%	0.87	13%	13%
10%	2.01	13%	13%
5%	3.14	14%	14%
0%	4.06	14%	14%
-5%	4.87	14%	15%
-10%	5.97	15%	16%
-15%	7.06	15%	16%
-25%	8.90	16%	17%

- c. **Changes in Revenue:** Lower than forecasted revenues can impact the project viability substantially. A 15% lower revenue will result in a negative project NPV. Thus, the project proponent will have to ensure that the project gets operational on time so that it does not lose on its revenue earning years and also ensure that it does adequate marketing to bring about maximum capacity utilization of its commercial facilities. The following table gives the changes in the project returns in response to changes in revenue streams realized for the project.

Table 22: Sensitivity of the Dharwad Project Returns to Changes in Revenue

Change in Revenue	Post Tax NPV (INR Crore)	P IRR	E IRR
25%	13.77	18%	20%
15%	9.89	16%	18%
10%	7.77	16%	16%
5%	5.93	15%	15%
0%	4.06	14%	14%
-5%	2.04	13%	13%
-10%	0.09	12%	12%
-15%	(2.20)	11%	11%
-25%	(6.14)	9%	9%

7 STATUTORY & LEGAL FRAMEWORK

As per the amendments done to Infrastructure policy, 1997 in 2007 (Government Order No.IDD 32 IDM 2003 Bangalore dated 16thJuly 2007); Government of Karnataka has introduced the concept of involvement of private players through public private partnerships (PPP) for the implementation of major infrastructure projects. The projects would be implemented through open competitive bidding for the upgradation, expansion and development of new infrastructure projects.

The policy comprises different sectors and their rules and legislations including The Indian Tolls Act of 1851, The Land Acquisition (Karnataka) Amendment Act of 1988, Dispute Settlement Act of 1940, National Highways Act of 1965, Motor Vehicles Act of 1988, National Highways Authority of India Act of 1988 and the Central Road Fund Act of 2000.

Karnataka Infrastructure Development and Regulatory Bill of 2011 was also drafted with a purpose of providing a legal framework for infrastructure through Public Private Partnerships, 'incorporating contractual arrangements to design, finance, construct, operate and maintain Infrastructure Projects, provide for a fair and transparent selection process, set out rights and obligations of the Government and private sector in the implementation of Infrastructure Projects, reduce administrative and procedural delays, set out incentives, specify project delivery process, establish an Infrastructure Authority with a view to present bankable projects to the private sector and generally to improve the delivery of public services in the state of Karnataka and for matters connected therein or incidental thereto'.

8 INDICATIVE ENVIRONMENT & SOCIAL IMPACTS

Preliminary environmental and social screening of study has been carried out to identify critical issues and areas that would require to be studied in detail for impact assessment, mitigation measures and management plan. Further a detailed study will be required to be done by the Concessionaire in the subsequent stages of the project.

8.1 Environmental Impacts

8.1.1 Description of Environment

The state enjoys three main types of climates. For meteorological purposes, the state has been divided into three sub-divisions namely,

- Coastal Karnataka (Dakshina Kannada and Uttara Kannada districts),
- North Interior Karnataka (Belgaum, Bidar, Bijapur, Dharwad, Gulbarga and Raichur districts) and
- South Interior Karnataka (the remaining districts of Bangalore Rural, Bangalore, Bellary, Chikmagalur, Chitradurga, Kodagu, Hassan, Kolar, Mysore, Mandya, Shimoga and Tumkur districts)

The Tropical Monsoon climate covers the entire coastal belt and adjoining areas. The climate in this region is hot with excessive rainfall during the monsoon season i.e., June to September. The Southern half of the state experiences hot, seasonally dry tropical savana climate; while most of the northern half experiences hot, semi-arid, tropical steppe type of climate.

8.1.2 Environmental Impact Assessment Study for the Proposed Sites

As per the Environmental Impact Assessment Notification 2006, large projects in specified sectors and projects lying in environmentally sensitive areas will require Environmental Clearance from the centre. This would involve preparing an Environment Impact Assessment Report and conducting public hearings. Smaller projects in the specified sectors do not require EIA report but still will require clearance at the state level.

However, the proposed project does not fall under any project category as specified under the EIA, 2006 notification. Further, as per the preliminary assessment, the proposed sites do not lie in any environmentally sensitive area, hence the Consultants do not see any need for detailed EIA study for this project. Applicable Acts or Legislation

The Government of India has formulated various policy guidelines; acts and regulations aimed at protection and enhancement of environmental resources. The following table summarizes the existing legislations pertaining to the project, depending upon which various environmental clearances may be required.

Table 23: Relevant Environmental Laws & Regulation

Sl. No.	Law / Regulation / Guidelines	Relevance	Implementing / Responsible Agency
1	The Environmental (Protection) Act. 1986, and the Environmental (Protection) Rules, 1987-2002 (various amendments)	Umbrella Act. Protection and improvement of the environment. Establishes the standards for emission of noise in the atmosphere.	MoEF, State Department of Environment & Forest, CPCB and SPCB
2	The EIA Notification, 14th September 2006 & subsequent amendments	Identifies expansion of National highways greater than 30 Km involving additional ROW greater than 20m involving Land Acquisition and all state highways (item 7 (f) of schedule) as one of the projects requiring prior clearance.	MoEF / SEIAA
3	The Water (Prevention and Control of Pollution) Act, 1974	Central and State Pollution Control Board to establish/enforce water quality and effluent standards, monitor water quality, prosecute offenders, and issue licenses for construction/operation of certain facilities.	State Pollution Control Board
4	The Air (Prevention and Control of Pollution) Act. 1981	Empowers SPCB to set and monitor air quality standards and to prosecute offenders, excluding vehicular air and noise emission.	State Pollution Control Board
5	Noise Pollution (Regulation And Control) Act, 1990	Standards for noise emission for various land uses	State Pollution Control Board
6	Ancient Monuments and Archaeological sites and Remains Act 1958	To protect and conserve cultural and historical remains found.	Archaeological Survey of India, State Dept. of Archaeology
7	The Motor Vehicle Act. 1988	Empowers State Transport Authority to enforce standards for vehicular pollution. From August 1997 the "Pollution Under Control Certificate is issued to reduce vehicular emissions.	State Motor Vehicles Department

8.2 Social Impacts

1. Better Infrastructure for Public Use

The central idea of the project is to provide social infrastructure in the form of a Vehicle Fitness Centre. These plazas will help to improve the available facilities, therefore, resulting in the benefit of the commuters.

2. No major displacement seen due to land acquisition:

This is mainly because the land, in all three cases, is already acquired. The table below summarizes the current status of land ownership for the project sites and corresponding acquisition, if any, required.

Table 24: Status of land ownership for project sites

S.No.	Site	Current Ownership of Land	Remarks
1	Mysore	Road Transport Department	Land already acquired
2	Humnabad	North East Karnataka Road Transport Corporation (NEKRTC)	
3	Dharwad	Road Transport Department	

In all the three cases, as the land is already owned by government agencies, there will be no issues related to shifting or disruption of activities taking place on the site, due to acquisition of private land.

3. Externalities like impact on traffic flow

The upcoming facilities will be designed so as to provide sufficient circulation and parking space for any vehicular traffic that will associate with it. Therefore, it is unlikely that the upcoming Midway Plazas will result in any negative impact on the traffic flow in respective areas.

9 OPERATING FRAMEWORK

Appropriate risk mitigation structures have to be evolved for effective implementation of the Project. Various risks associated with the Project and their broad mitigation measures are explained below:

9.1.1 Construction Risk

Construction risk can be in the form of Design Risk, Cost Overrun and/or Time Overrun.

Design Risk:

The concessionaire will be responsible for any defects and/or deficiency in the design and shall rectify the same at his/ her own cost. By transferring the design risk to private party there is scope for innovation leading to efficiency in cost and services.

Cost Overrun:

Concessionaire to be made responsible for any cost over runs. Termination payments, specified in the Agreement, linked to Total Project Cost which shall be lowest of (i) Total Project Cost as per financing documents, (ii) actual capital cost as certified by auditor (iii) project cost defined by Client in the agreement.

Time Overrun:

This leads to delay in completion. Construction period to remain fixed. Effective clauses to be provided in the Agreement to be signed between the Client and the Developer. Timely clearances and handing over of site for the project should be ensured.

9.1.2 Commercial Risk/ Revenue Risk

This risk arises from existing demand and future competition, effectiveness in utilizing space and management of facilities. With the involvement of Private Sector in marketing, O&M and management and attractive incentive structures linked with Project success, risk would be transferred to the Concessionaire. The Concessionaire also has the right to decide the lease rental tariff for the property development and other applicable charges / fees for the project components under the facility.

9.1.3 Operational Risk

The Concessionaire to operate and maintain the facility for an agreed lease period. Effective clauses addressing the above should be incorporated in the Agreement. Increase in the O & M costs, except in cases due to change in Specification & Standards and Change in Law, shall be borne by Developer. The Developer may transfer operational rights to another party subject to approval from Client.

9.2 Indicative Project Structure & Operating framework

The projects are proposed to be implemented on Public-Private Partnership (PPP) format under Design, Finance, Build, Operate and Transfer (DBFOT) basis.

Under this structure, Private Developer / Private Sector Player (PSP) shall finance, design, engineer, construct, market, operate, maintain and manage the projects during the concession period and transfer the project facilities to the Concessions Authority at the end of the same.

Further, as previously discussed, the Concessions Authority also has the option to adopt one of the following payment structures under the structure:

- **Recurring Rental only** – This is the option where the developer gives a recurring rental in consideration for the lease/concession rights. Lease rental is the bid variable here.
- **A combination of Upfront and Recurring Rental** – This mechanism is used mainly in the lease type model of commercial projects. The developer gives an upfront amount to the leasing/concessions authority and follows it with either Quarterly / Annual Recurring Payment. In such an option, bid variable is the upfront amount paid by the concessionaire. There is an inbuilt provision for annual escalation in the recurring payment to take care of the inflation or upside.
- **A combination of Upfront, Recurring Rental and fixed Revenue Share** - This mechanism is also used mainly in the lease type model of commercial projects, where a recurring source of revenue is available to the developer. The developer gives an upfront amount to the leasing/concessions authority and follows it with either Quarterly/Annual recurring Payment. In addition, the developer also shares a fixed percentage of the revenue with the authority. The bid variable in this case is the Revenue Share.

In this form of payment structure, Escrow Account Mechanism is used to protect the recurring revenue apart from bank guarantee to protect at least one year revenue. In practice, irrevocable bank guarantee has been found to work better as the Escrow Account system requires stringent monitoring and there are practical fault lines in the same. However, it has been seen in many cases that due to administrative and audit hassles involved, a very small percentage of revenue sharing is not worth the attendant administrative issues.

9.2.1 Project Structure

The projects are proposed to be structured as under:

Table 25: Proposed Project Structure

Component	Description
Structure	<ul style="list-style-type: none"> • The project is to be developed under DBFOT model of PPP • The project is structured for capital investment to be brought in by the selected private sector player and land is provided by Concessioneing Authority. • The private sector player recovers its investments over a period of time from revenues from issue of fitness certificates, commercial facilities created under the project as well as revenue generated through operation of dormitories and any other applicable sources.
Concession Period	30 years
Payment to Concessioneing Authority	Option to choose from three models: <ul style="list-style-type: none"> • Lease Rental only • Upfront payment plus Lease Rental • Upfront payment, Lease Rental and Revenue Share
Role of Concessioneing Authority	<ul style="list-style-type: none"> • Provision of identified land for the Project, free from all encumbrances • Grant of lease hold rights of the project site to the developer • Provision of adequate rights to the developer for collection of user charges, parking fees and rentals from property development.
Role of Private Sector Developer	<ul style="list-style-type: none"> • Detailing and placement of the Project components • Detailed designing and Engineering of facilities based on Concept • Achieving financial closure and making the necessary capital investment • Construction, Marketing, Operating, Maintaining and Managing (Utilities, Facilities, Equipments etc) the Project during the Authorization Period • Obtaining all clearances/approvals from the concerned Govt. Department, handling legal issues etc

10 WAY AHEAD

10.1 Key Milestones

1. Key Milestone for the Project

i. Preparation of Tender Documents for Selection of Transaction Advisor for the Project

Tender documents will be prepared for selection of Transaction Advisors which would include the following:

- Detailed Scope of Work including deliverables and timelines for submission.
- Outlining the minimum eligibility criteria, which the bidders would necessarily have to meet before their bids are evaluated in detail.
- Description of Evaluation process elaborating the various evaluation parameters and their respective weightages.
- A draft Agreement which would spell out the following:
 - The Obligations and Scope of Work for the consultant
 - Progress Reporting Mechanism
 - Dispute Resolution Mechanisms
 - Termination of Contracts by either of the parties
 - Defining conditions and events leading up to a default in obligations
 - Conditions construing Force Majeure
 - Conditions leading up to a termination of Contract and invoking of the Performance Guarantee.

2. Capacity Building of PPP Cell Personnel

Capacity Building Workshops will be conducted for officials who are identified as PPP Cell personnel by the department. These workshops will be conducted in order to enable these personnel in understanding the concept of PPP, model procedures and documents related to implementation of PPP projects, key issues related to PPP etc. Three training sessions will be organised as a part of capacity building. Various techniques of effective communication like audio-visual media in form of PowerPoint presentations, videos, notes, interaction dialogues etc will be used for these capacity building sessions.

10.2 Key Recommendations

- Both, Mysore and Humnabad have negative Project NPV and IRR values and, therefore, are unviable under the proposed PPP model. This is primarily because of the high degree of investment required for O&M of the equipment involved in operating the proposed facility.

- For Dharwad, an upfront plus lease rental model is the best option as it balances the returns to the government and the private player. As per the model the NPV of receivables to the government is INR 0.68 Cr. The private player is expected to observe a Project IRR of 13.9% and a Project NPV of INR 4.06 Cr.
- In cases where the projects are borderline, the government may consider relaxations in FAR and commercial permissibility norms, in order to make them more attractive for private players.

11 ANNEXURE

11.1 Annexure 1: Existing fitness tests conducted on commercial vehicles

FORM KVM 25

G Tax - (See Rule 31 (15)) C.F. No.:

INSPECTION REPORT OF TAX/TRUCK BUS NO.

Chassis No. : Make :

Enginee No. : Model :

WEIGHTMENT PARTICULARS :

<p>1. F.C. Valid upto</p> <p>2. Fees paid Rs.....</p> <p>3. Addl Fees Rs</p> <p>U.L.W. Kgs.</p> <p>G.V.W. Kgs.</p> <p>F.A.W. Kgs.</p> <p>R.A.W. Kgs.</p>	<table border="0" style="width: 100%;"> <tr> <td></td> <td style="text-align: center;">Tyres</td> </tr> <tr> <td></td> <td style="text-align: center;">No. and size ply rating</td> </tr> <tr> <td>Front Axle</td> <td></td> </tr> <tr> <td>Rear Axle</td> <td></td> </tr> <tr> <td>Any other Axle</td> <td></td> </tr> <tr> <td>No. of Seats</td> <td>(including Driver)</td> </tr> <tr> <td>No. of Standees.....</td> <td></td> </tr> </table>		Tyres		No. and size ply rating	Front Axle		Rear Axle		Any other Axle		No. of Seats	(including Driver)	No. of Standees.....	
	Tyres														
	No. and size ply rating														
Front Axle															
Rear Axle															
Any other Axle															
No. of Seats	(including Driver)														
No. of Standees.....															

<p>4. FRONT AXLE AND STEERING :</p> <p>a . King Pin and Bushes</p> <p>b . Front Wheel Bearing</p> <p>c . Front wheel Alignment</p> <p>d . Steering wheel ring Circle</p> <p>e . Steering Lock</p> <p>f . Wheel Free movement</p> <p>g . Steering</p> <p>h .Other items</p> <p>5. FRONT SPRINGS :</p> <p>a . Shackle oins & Bushes</p> <p>b . Clamps</p> <p>c . Camber</p> <p>d . Hanger U Bolts</p> <p>d . Hangers & Brackets</p> <p>6. FUEL SYSTEM :</p> <p>a . Fuel Tank b . Fuels</p> <p>7. ELECTRICAL SYSTEM :</p> <p>a . Lamps b . Wiring</p> <p>c . Horn d . Dipper</p> <p>8. ENGINE PERFORMANCE :</p> <p>a . Silencer</p> <p>b . Transmission</p> <p>c . Clutch g. Gear Box</p> <p>d . Universal Joint</p> <p>e . Propeller Shaft</p> <p>f . Different</p>	<p>9. REAR SPRINGS</p> <p>a . Shackle Pins and Bushes</p> <p>b . Clamps and U Bolts</p> <p>a . Camber</p> <p>d . Auxiliary Springs</p> <p>e . Hanger and Brackets</p> <p>10. TYRES :</p> <p>11. CHASSIS FRAMES :</p> <p>a . Distored b. Welded</p> <p>b . Cracked d. Reinforced</p> <p>e . Dimensions f. Boards</p> <p>12. BODY</p> <p>a . Paint work b. Upholstry</p> <p>b . Painting of Weights d. Rear Wings</p> <p>e. Dimensions f. Boards</p> <p>13. BREAKS</p> <p>a . Foot b. Hand</p> <p>c. Booster system</p> <p>14. COMPULSORY EQUIPMENT</p> <p>a . Bulb Horn</p> <p>b . Wind Shied Wiper</p> <p>c . Rear view Mirror d. Speedometer.</p> <p>15. REQUISITE EQUIPMENT AND SPARE</p> <p>16. CLEANLINESS</p> <p>17. ANY OTHER OBSERVATION OR DEFECT WORTH MENTIONING</p>
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1 . Issue / Renewal of Certificates is refused for the reason that the Vehicle does not comply with requirements of chapter VII of the Mother Vehicles act. 1988, vide the above defects.

2 . Issue / Renewal of C. F. is hereby sanctioned for a period formonths and valid upto.....

Place :

Date :

KEY FOR ABBREVIATIONS :
U/S Un serviceable
R/A required attension
O/K Satisfaction 223

**Sr Inspector of Motor Vehicles
Regional Transport Office, Mysore**

11.2 Annexure 2: Section 56 of the Motor vehicle act 1988

56. Certificate of fitness of transport vehicles. – (1) Subject to the provisions of section 59 and 60, a transport vehicle shall not be deemed to be validly registered for the purposes of section 39, unless it carries a

certificate of fitness in such form containing such particulars and information as may be prescribed by the Central Government, issued by the prescribed authority, or by an authorized testing station mentioned in sub-section (2), to the effect that the vehicle complies for the time being with all the requirements of this Act and the rules made thereunder.

Provided that where the prescribed authority or the “authorized testing station” refuses to issue such certificate, it shall supply the owner of the vehicle with its reasons in writing for such refusal.

(2) The “authorized testing station” referred to in sub-section (1) means a vehicle service station or public or private garage which the State Government, having regard to the experience, training and ability of the operator of such station or garage and the testing equipment and the testing personnel therein, may specify in accordance with the rules made by the Central Government for regulation and control of such station or garages.

(3) Subject to the provisions of sub-section (4), a certificate of fitness shall remain effective for such period as may be prescribed by the Central Government having regard to the object of this Act.

(4) The prescribed authority may for reasons to be recorded in writing cancel a certificate of fitness at any time, if satisfied that the vehicle to which it relates no longer complies with all the requirements of this Act and the rules made thereunder; and on such cancellation the certificate of registration of the vehicle and any permit granted in respect of the vehicle under Chapter V shall be deemed to be suspended until a new certificate of fitness has been obtained:

³³[Provided that no such cancellation shall be made by the prescribed authority unless such prescribed authority holds such technical qualification as may be prescribed or where the prescribed authority does not hold such technical qualification on the basis of the report of an officer having such qualification.]

(5) A certificate of fitness issued under this Act shall, while it remains effective, be valid throughout India.

Corresponding Law. - Section 56 corresponds to section 38 of the Motor Vehicles Act, 1939

Objects and Reasons. - Clause 58 requires that every transport vehicle should carry an effective certificate of fitness issued by the prescribed authorities or by any authorised testing stations specified by the State Governments. It also empowers the issuing authorities to cancel any such certificate if the vehicle fails to comply with the requirements of this Act. The certificate of fitness is to be effective throughout India.

11.3 Annexure 3: Site Assessment Data

Location: Humnabad (NEKRTC training institute)

Date: 06 - 03 - 2012

Interviewed Person: 1) Mr. Divakar Errugappa (AEE, NWKRTC); 07760992203

2) Mr. Pawan (ARTO, Humnabad checkpoint)

3) Mr. Wahid Hussain (Principal, Training Institute); 07760992019

Project Idea: Vehicle Fitness centre

Area: 2 Acres (total 13 Acres – for training institute)

Plot Location: the plot is located at the intersection of NH 9 and NH 218, within the training institute plot.



Potential: High

Abstract:

- The plot is located at a major intersection and with the presence of ARTO check post, many trucks are parked overnight on both sides of the roads.
- 4 to 5 dhabas are operating on the highway and few with workshops (tyre puncture repairing)
- Low density developments with mostly agriculture fields

- The Humnabad town is approximately 5 km away from the highway towards the north of the proposed site
- As per ARTO, Humnabad; presently, Vehicle fitness certificates are issued from the locations which are ~ 25 Km to 50 Km away from the proposed site i.e, Basukalyan, Balki and Bidar.
 - Data on VFC issued are sent to Bangalore office every month and have to be collected from Bangalore
 - The present ARTO office may have to be located to other location as the NH 9 highway is proposed to be 4 lane (from existing 2 lane highway) and the construction is supposed to be commenced within next 4 months

About the plot: Rectangular plot with no encroachment. At present the land is with NEKRTC. A training institute and NEKRTC offices are there in the plot. Driving track is under construction.

The area is used for training NEKRTC drivers and licenses are issued at the site. Trainings are also given for individuals other than NEKRTC for which they collect some charges.

Surrounding Area:

- Hotel cum lodge (under renovation)
- Noor Dhaba – 1.5 Km away towards Mannekhalli
- ARTO check post
- Small petty shops for condiments
- Trucks are parked on both the sides of the highways

Rentals:

- Restaurant (Noor Dhaba):
 - Operating from their own building and a 3000 sq.ft is under construction for the dhaba expansion and parking.
 - Parking and new building shall be operational from next 6 months
 - Footfall: 500 – 750 vehicles / day (2500 ppd)
 - Footfall of Private vehicles to commercial vehicle ratio shall be 45:55
- Lodge(Hotel Mayura): Rs. 400 / day
 - G+1 building with ground floor utilized for restaurant and 1st floor for lodges
 - At present it is under renovation – increasing room capacity from 8 to 12 and expansion of restaurant below
 - Shall be operational from May 2012
 - Rooms: 8 rooms
 - Occupancy: 60%
 - As per the proprietor, Mr Riaz; business is good (reason for expansion) and is operating for last 10 years. Rentals are higher as it is on the highway and at the town rentals are in the range of Rs. 300-350 per day

- Workshop
 - 10 to 12 trucks / week for tyre works
 - 4 to 5 trucks / week for axle and oiling works
 - Charges - Rs 50 for front tyre and Rs 100 for rear tyre / truck
 - Mechanical work – Rs 300 to Rs 500 / truck and depends on intensity of issues

Land price:

- Circle rate – Rs. 90,000-1 lakhs / acre
- From a recent private transaction – Rs. 1 Cr. for 60x40 m plot along the NH 9

11.4 Annexure 4: Value for Money Analysis

Value for Money (VFM) analysis is essentially a cost-benefit analysis, where it is examined if the benefits of the project are positive as compared to alternative procurement method. A PPP project is said to achieve value for money if it costs less than the best realistic public sector project alternative which would deliver the same services.

The VFM analysis basically takes into account the Project NPV achieved by alternative means of implementation and compares it with the NPV achieved through PPP. Private partnership brings in several efficiencies in cost control, reining in operating expenses and ensuring adequate marketing measures which makes the implementation of the project more efficient. A PPP project typically allocates risks due to increases in costs and incidence of lower than forecasted revenue onto the private partner.

For VFM analysis, the consultants have identified risks at construction and operation stage.

Risks at Project Construction Stage:

1. Higher Construction Cost: Risks due to higher construction costs substantially impact the Project NPV adversely.
2. Time Overrun: Delays in projects lead to loss of revenue, as lesser number of operational years are available during the concession period to earn revenues

Risks at Project Operation Stage:

1. Revenue Risk: Risk emanating due to lower than anticipated revenues, which can be due to traffic shortfall
2. Operational Expenses Risk: Risk of higher than anticipated operational expenses

Following table illustrates the VFM calculation for Dharwad (Upfront plus Lease Rental Model). VFM for all other sites are also calculated in a similar way.

Risks		Financial Impact	Risk Allocation (%) as per PPP Model		NPV at Risk	NPV of Risk to be added back	NPV of retained risks
			4	5			
1	2	3	4	5	6	7	8
			Concessi onaire	Authority			
Constructi on Phase	Constructi on Cost Overrun	Cost overrun of 15%	100%	0%	-7.6	-2.3	0.0
	Constructi on Time Overrun	Time overrun by 50% of the constructi on period (Loss of	100%	0%	-7.1	-1.9	0.0

		revenue of 6 quarters)					
Operation Phase	Revenue Risk (Due to traffic shortfall)	Decrease in Revenue by 20%	100%	0%	-9.5	-4.3	0.0
	Opex risk	Increase in O&M Cost by 15%	100%	0%	-7.1	-1.8	0.0
	Total					-10.3	0.0
VFM (INR Cr)	25.73						

1. Column 2 defines the risks while the Column 3 defines the financial impact of the risks. The average value of these risks and their probabilities are taken from PPP Toolkit for Roads and Highway Sector
2. Column 4 & 5 gives the risk allocation to Concessionaire and Authority as per the PPP model that has been selected
3. Column 6 or NPV at Risk gives the Project NPV if the state government had implemented the project, and the project bears the financial impact described in Column 3.
4. Column 7 or NPV of Risk to be added is the change in the Project NPV of the government due to financial impact of the specific risk weighted by the risk allocated to the private concessionaire. Adding this to the Base Project NPV for the government gives a risk adjusted NPV for the government.
5. Column 8 is the NPV of retained risks is the change in the Project NPV of the government due to financial impact of the specified risks, weighted by the risk allocated to the government. Adding this to the Base Project NPV of the private concessionaire gives Risk Adjusted NPV for PPP project.
6. The difference between the Risk Adjusted NPV for the Private Player and Risk Adjusted NPV for the government gives the Value for Money for the project

11.5 Annexure 5: Project Cash Flow Statements

Mysore (Lease Rental Only)

Concession Year	5	10	15	20	25	30
Inflows						
Equity	-	-	-	-	-	-
Debt	-	-	-	-	-	-
Total income	0.60	1.14	1.75	3.12	5.44	8.09
Total (A)	0.60	1.14	1.75	3.12	5.44	8.09
Outflows						
Capital Expenditure	-	-	-	-	-	-
Principal repayment	0.67	0.67	-	-	-	-
Interest repayment	0.65	0.22	-	-	-	-
Taxation	-	-	-	-	-	-
OPEX	1.37	1.75	2.24	2.86	3.65	4.65
Total (B)	2.69	2.64	2.24	2.86	3.65	4.65
Free Cashflow						
Opening Balance	(2.98)	(12.45)	(17.62)	(18.46)	(15.27)	(3.24)
Net Surplus/Deficit (A-B)	(2.09)	(1.49)	(0.49)	0.26	1.79	3.43
Closing Balance	(5.07)	(13.94)	(18.11)	(18.20)	(13.49)	0.19
Project IRR						
Capex	-	-	-	-	-	-
PBT	(1.68)	(1.01)	(0.63)	0.15	1.71	3.37
Depreciation	0.26	0.19	0.14	0.11	0.08	0.06
Interest	0.65	0.22	-	-	-	-
tax	-	-	-	-	-	-
Pre Tax Project Cash Flow	(0.78)	(0.61)	(0.49)	0.26	1.79	3.43
Post tax project Cash flow	(0.78)	(0.61)	(0.49)	0.26	1.79	3.43
Equity IRR						
Equity	-	-	-	-	-	-
Profit after tax (PAT)	(1.68)	(1.01)	(0.63)	0.15	1.71	3.37
Book Depreciation	0.26	0.19	0.14	0.11	0.08	0.06
Principal repayment	0.67	0.67	-	-	-	-
Equity Cash flow	(2.09)	(1.49)	(0.49)	0.26	1.79	3.43

Humnabad (Lease Rental Only)

Concession Year	5	10	15	20	25	30
Inflows						
Equity	-	-	-	-	-	-
Debt	-	-	-	-	-	-
Total income	0.79	1.48	2.22	3.98	6.98	10.42
Total (A)	0.79	1.48	2.22	3.98	6.98	10.42
Outflows						
Capital Expenditure	-	-	-	-	-	-
Principal repayment	0.94	0.94	-	-	-	-
Interest repayment	0.92	0.31	-	-	-	-
Taxation	-	-	-	-	-	-
OPEX	1.96	2.50	3.19	4.07	5.19	6.62
Total (B)	3.82	3.75	3.19	4.07	5.19	6.62
Free Cashflow						
Opening Balance	(4.36)	(18.28)	(26.68)	(29.61)	(27.77)	(15.05)
Net Surplus/Deficit (A-B)	(3.03)	(2.27)	(0.97)	(0.08)	1.79	3.80
Closing Balance	(7.39)	(20.55)	(27.65)	(29.69)	(25.98)	(11.25)
Project IRR						
Capex	-	-	-	-	-	-
PBT	(2.46)	(1.60)	(1.17)	(0.24)	1.67	3.71
Depreciation	0.38	0.27	0.20	0.15	0.12	0.09
Interest	0.92	0.31	-	-	-	-
tax	-	-	-	-	-	-
Pre Tax Project Cash Flow	(1.16)	(1.02)	(0.97)	(0.08)	1.79	3.80
Post tax project Cash flow	(1.16)	(1.02)	(0.97)	(0.08)	1.79	3.80
Equity IRR						
Equity	-	-	-	-	-	-
Profit after tax (PAT)	(2.46)	(1.60)	(1.17)	(0.24)	1.67	3.71
Book Depreciation	0.38	0.27	0.20	0.15	0.12	0.09
Principal repayment	0.94	0.94	-	-	-	-
Equity Cash flow	(3.03)	(2.27)	(0.97)	(0.08)	1.79	3.80

Dharwad (Upfront payment plus Lease Rental)

Concession Year	5	10	15	20	25	30
Inflows						
Equity	-	-	-	-	-	-
Debt	0.73	-	-	-	-	-
Total income	4.24	8.45	12.48	17.30	24.27	28.89
Total (A)	4.97	8.45	12.48	17.30	24.27	28.89
Outflows						
Capital Expenditure	0.73	-	-	-	-	-
Principal repayment	1.81	1.81	-	-	-	-
Interest repayment	1.30	0.69	-	-	-	-
Taxation	-	-	2.04	3.53	5.55	6.72
OPEX	3.04	4.28	5.38	6.07	6.95	8.06
Total (B)	6.89	6.79	7.42	9.59	12.50	14.78
Free Cashflow						
Opening Balance	(1.31)	(5.64)	5.83	37.61	81.30	144.89
Net Surplus/Deficit (A-B)	(1.92)	1.67	5.06	7.71	11.77	14.11
Closing Balance	(3.23)	(3.98)	10.89	45.32	93.07	159.01
Project IRR						
Capex	0.73	-	-	-	-	-
PBT	(0.71)	2.78	6.43	10.74	16.96	20.55
Depreciation	0.61	0.70	0.67	0.49	0.37	0.28
Interest	1.30	0.69	-	-	-	-
tax	-	-	2.04	3.53	5.55	6.72
Pre Tax Project Cash Flow	0.47	4.18	7.10	11.23	17.32	20.83
Post tax project Cash flow	0.47	4.18	5.06	7.71	11.77	14.11
Equity IRR						
Equity	-	-	-	-	-	-
Profit after tax (PAT)	(0.71)	2.78	4.39	7.22	11.40	13.84
Book Depreciation	0.61	0.70	0.67	0.49	0.37	0.28
Principal repayment	1.81	1.81	-	-	-	-
Equity Cash flow	(1.92)	1.67	5.06	7.71	11.77	14.11