



GOVERNMENT OF KARNATAKA

INFRASTRUCTURE
DEVELOPMENT
DEPARTMENT



FEEDBACK INFRA
Making Infrastructure Happen

*Sector Specific Inventory &
Institutional Strengthening
for PPP Mainstreaming
Infrastructure Development
Department*

Pre-feasibility Report
Logistics Parks in Karnataka

Submitted by:

**Feedback Infrastructure
Services Pvt. Ltd., India**

May 2012



Disclaimer

The information in this Report has been prepared based on information collected from primary and secondary sources. Wherever information was not readily available, reasonable assumptions have been made, in good faith to draw meaningful inferences and these have been mentioned in the respective sections of the report. All such assumptions are subject to further corroboration based on availability of information. The information and analysis presented in this Report is not and does not purport to be comprehensive or to have been independently verified. This report has been prepared by Feedback Infrastructure Services Private Limited (FISPL) for its client, Infrastructure Development Department (IDD), Karnataka for its use for furthering the project development activity on PPP basis. No external agency shall use any part of this report without prior permission from IDD.

The information contained in this Report is selective and is subject to updation, expansion, revision and amendment. It does not, and does not purport to, contain all the information that may be required.

This Report includes certain statements, estimates, projections and forecasts. Such statements, estimates, projections, targets and forecasts are based on reasonable assumptions made by the management, officers and employees of FISPL. Assumptions and the base information on which they are made may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this Report is, or should be relied on as, a promise, representation or warranty.

Table of Contents

LIST OF TABLES	III
LIST OF FIGURES.....	V
1 EXECUTIVE SUMMARY.....	1
2 INTRODUCTION	2
2.1 STRUCTURE OF THE REPORT	3
2.2 APPROACH & METHODOLOGY.....	4
3 SECTOR PROFILE	6
3.1 INDUSTRY OVERVIEW.....	6
3.2 REGIONAL PROFILE OF KARNATAKA.....	7
3.2.1 <i>Transportation</i>	7
3.2.2 <i>EXIM scenario of Karnataka</i>	8
3.2.3 <i>Industrial Scenario</i>	8
3.2.4 <i>Agriculture</i>	8
3.3 INFRASTRUCTURE GAP	9
3.4 PPP ACTIVITIES IN THE SECTOR	9
3.5 KEY ISSUES.....	10
4 PROJECT	11
4.1 DESCRIPTION OF THE PROJECT	11
4.2 SITE/LOCATION DETAILS.....	13
4.2.1 <i>Bangalore</i>	14
4.2.2 <i>Hubli-Dharwad</i>	18
4.2.3 <i>Hassan</i>	22
4.3 CASE STUDIES FOR SIMILAR PROJECTS IN INDIA.....	24
5 MARKET ASSESSMENT.....	25
5.1 BANGALORE	26
5.1.1 <i>Inland Container Depot</i>	26
5.1.2 <i>Warehouse</i>	29
5.1.3 <i>Truck Terminal</i>	30
5.1.4 <i>Future Demand Drivers</i>	30
5.2 HUBLI	32
5.2.1 <i>Inland Container Depot</i>	32
5.2.2 <i>Warehousing</i>	34
5.2.3 <i>Truck Terminal</i>	35
5.2.4 <i>Future Demand Drivers</i>	36
5.3 HASSAN	38
5.3.1 <i>Inland Container Depot</i>	38
5.3.2 <i>Warehousing</i>	40
5.3.3 <i>Truck Terminal</i>	41
5.3.4 <i>Future Demand Drivers</i>	41

5.4	PROJECT DESIGN.....	42
5.4.1	<i>Bangalore</i>	42
5.4.2	<i>Hubli-Dharwad</i>	44
5.4.3	<i>Hassan</i>	47
6	PROJECT FINANCIALS.....	49
6.1	COST ESTIMATION.....	49
6.1.1	<i>Capital Cost</i>	49
6.2	OTHER PROJECT ASSUMPTIONS.....	51
6.2.1	<i>Capital Structure</i>	51
6.2.2	<i>Income Tax Assumptions</i>	52
6.2.3	<i>Depreciation Assumptions</i>	52
6.2.4	<i>Revenue Assumptions</i>	52
6.2.5	<i>Assumptions for Operational Expenses</i>	54
6.3	KEY PROJECT FINANCIALS.....	56
6.4	SENSITIVITY ANALYSIS.....	56
6.4.1	<i>Bangalore</i>	57
6.4.2	<i>Hubli-Dharwad</i>	58
6.4.3	<i>Hassan</i>	59
7	STATUTORY & LEGAL FRAMEWORK.....	62
7.1.	LEGAL & REGULATORY FRAMEWORK.....	62
7.2.	KEY ISSUES.....	63
8	INDICATIVE ENVIRONMENTAL AND SOCIAL IMPACTS.....	65
8.1	ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES.....	65
8.2	SOCIAL IMPACT.....	66
8.3	CONCLUSION.....	66
9	OPERATING FRAMEWORK.....	66
9.1	RISKS AND MITIGATION.....	66
9.2	CLASSIFICATION OF RISKS.....	67
9.3	RISK MITIGATION.....	67
9.4	INDICATIVE PROJECT STRUCTURE.....	68
10	WAY FORWARD.....	70
11	ANNEXURE.....	71
11.1	ANNEXURE 1: ASSUMPTIONS FOR COMMODITY GROWTH RATES FOR PROJECTING CONTAINER TRAFFIC IN HUBLI AND HASSAN	71
11.2	ANNEXURE 2: VALUE FOR MONEY ANALYSIS.....	73
12	ANNEXURE 3 CASHFLOW STATEMENTS FOR ALL LOCATIONS.....	75

List of Tables

Table 1: Major Road Infrastructure in Karnataka.....	7
Table 2: Major Centers handling Goods in Karnataka	8
Table 3: PPP Projects Studies in Logistics Sector Done by the Government of Karnataka.....	9
Table 4: Key Details of the Selected Locations for Logistics Parks	13
Table 5: Major Industrial Areas and Industries in Bangalore.....	14
Table 6 Small Scale Industries in Bangalore.....	15
Table 7: Case Study of Logistics Park on PPP basis.....	24
Table 8: Current Container Traffic Handling Scenario in Bangalore	26
Table 9 EXIM Annual Container Traffic trend at Bangalore’s ICDS.....	27
Table 10: Forecasted Traffic of Containers for Bangalore and the Proposed Facility at Harohalli	28
Table 11: Warehouses Owned and Rented by Various Players in Bangalore	29
Table 12: Assumptions for Warehouse Space at the Proposed Logistics Park in Bangalore at Harohalli ..	29
Table 13: Industrial Estates Planned in Bangalore	30
Table 14: Major Projects Under Implementation in Bangalore	31
Table 15: Commodity wise container traffic in Hubli	32
Table 16: Annual Trend of Container movement in Belgaum ICD	33
Table 17: Projected Container Traffic in Hubli.....	34
Table 18: Warehouses Owned and Rented by major players in Hubli	35
Table 19: Assumptions for Warehouse Space at the Proposed Logistics Park in Hubli	35
Table 20 Future industrial investments in Hubli-Dharwad.....	37
Table 21: Exporters of Coffee in Hassan region	38
Table 22: Commodity-wise container movement at Hassan.....	38
Table 23: Traffic projections for container traffic at Hassan	39
Table 24: Estimating Warehousing Capacity Required at Hassan.....	40
Table 25: Break-up of trucks deployed in Hassan	41
Table 26: Volumes of commodities moved in trucks at Hassan	41
Table 27: Area Plan for Basic Facilities at the Proposed Logistics Park at Harohalli Bangalore.....	42
Table 28: Area Break-Up for Common Facilities at proposed at Logistics Park at Harohalli	43
Table 29: Area Break-Up for Common Facilities proposed at Logistics Park at Harohalli	43
Table 30: Area Summary for the Proposed Logistics Park at Harohalli in Bangalore.....	44
Table 31: Area Plan for Basic Facilities at the proposed Logistics Park at Hubli-Dharwad.....	45
Table 32: Area break-up for Common Facilities at Hubli-Dharwad	45
Table 33: Area for Commercial Facilities at Hubli-Dharwad.....	46
Table 34: Area Summary for the Proposed Logistics Park at Hubli-Dharwad.....	46
Table 35: Area Plan for Basic Facilities at the proposed Logistics Park at Hassan	47
Table 36: Area Summary for the Proposed Logistics Park at Hassan	49

Table 37: Capital Cost Assumptions	50
Table 38: Equipment Assumptions.....	50
Table 39: Cost Break-Up for Logistics Park at all proposed sites	51
Table 40: Financing Assumptions.....	52
Table 41: Depreciation Assumptions.....	52
Table 42: Revenue Assumptions for Proposed Logistics Parks in Bangalore, Hubli-Dharwad and Hassan	52
Table 43 Assumptions for Key Staff at the Logistics Park	54
Table 44: Assumptions for Labour for the Logistics Parks	54
Table 45: Assumptions for other Operational Expenses at Logistics Park.....	55
Table 46: Lease Rental Assumptions for all the sites	55
Table 47: Key Project Returns	56
Table 48: Sensitivity Analysis to changes in construction costs for Logistics Park in Bangalore	57
Table 49: Sensitivity of the Project to the Changes in Operational Costs for Bangalore Logistics Park.....	57
Table 50: Sensitivity to Changes in Revenue For Bangalore Logistics Park	58
Table 51: Sensitivity Analysis to changes in construction costs for Logistics Park in Hubli-Dharwad.....	58
Table 52: Sensitivity of the Project to the Changes in Operational Costs for Hubli-Dharwad Logistics Park	59
Table 53: Sensitivity to Changes in Revenue For Hubli-Dharwad Logistics Park.....	59
Table 54: Sensitivity Analysis to changes in construction costs for Logistics Park in Hassan	60
Table 55: Sensitivity of the Project to the Changes in Operational Costs for Hassan Logistics Park	60
Table 56: Sensitivity to Changes in Revenue For Hassan Logistics Park.....	60
Table 57: Indicative Environmental Impact and Mitigation Measures	65
Table 58: Risk Mitigation Measures for the Project.....	67
Table 59: Project Implementation Framework.....	68
Table 60: Assumed Growth Rates of commodities being handled in containers at Hubli	71
Table 61: Assumed Growth Rates of commodities being handled in containers at Hassan	71
Table 62: VFM Analysis for Bangalore Logistics Park	73

List of Figures

Figure 1: Project Status.....	2
Figure 2: Methodology for the Study	4
Figure 3: Major Logistics Centers in Karnataka.....	9
Figure 4: Aggregation of Major Warehouses at Consumption Centers	12
Figure 5: Location of the Harohalli with Location of Major Industrial Areas.....	16
Figure 6: Industrial Areas en-route to Chennai from Harohalli	17
Figure 7: Location and Connectivity of Mammigatti in Hubli-Dharwad	19
Figure 8: Location and Connectivity of Site Available by KIADB in Hassan that can be used for the proposed Logistics Park	22
Figure 9: Large Scale Projects Under Implementation in Hassan	41

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 done for Logistics Parks on PPP basis in Karnataka at 3 locations:

- a. Bangalore (Harohalli)
- b. Hubli-Dharwad
- c. Hassan

The main project idea is to have an integrated Logistics Park with facilities like Inland Container Depots (ICD), warehouses, truck terminals and ancillary commercial development.

Sector Profile

Logistics is a significant part of economy which deals with the movement and storage of materials. Logistics costs include cost of transport by various modes, warehousing and storage activities, consolidation/deconsolidation activities and database management. Transportation and storage costs contributes significantly to the total logistics cost.

In India logistics cost is estimated to be 8~10% per cent of GDP. India is ranked 47th on the World Logistics Performance Indicator 2011, indicating that India's logistics infrastructure is still at a developing stage and a lot needs to be done to improve its efficiency. However overall logistics industry in India is pegged to grow at around 11 per cent CAGR and is expected to reach INR 4.6 trillion in 2013-14.

Key Issues

1. Though studies have been done by various departments on creating logistics infrastructure on PPP basis, on-ground progress on bidding out projects is slow. This needs a more proactive approach by the concerned departments
2. Availability of land is a major issue. Even though Karnataka Industrial Areas Development Board (KIADB) is creating a land bank for the proposed sites in Bangalore, Hubli and Hassan, it will need to be transferred to the private player. Further, the land at these sites is in final stages of acquisition but it can still take 2-3 months for the final transfer to happen. This is because, even though notification for farmers/owners of land to come up with their claims has been issued by the government, the claims will have to be vetted after which the government will take the possession of the land.

Project Description

Logistics Parks mainly comprises the following components:

1. **Inland Container Depot (ICD):** ICDs are facilities that provide container handling, custom clearances away from the port to industries. There are two types of inland container terminals-EXIM and Domestic Container terminals. While the former is meant for export and import traffic, the latter is meant for domestic traffic. The Consultants do not recommend domestic container terminal in any of the locations as of now. This is because domestic container movement currently is at a highly nascent stage in India, with only Container Corporation of India handling more than 80% of the domestic container traffic. The total domestic container traffic in India is less than 1 mn TEU. One of the main reasons why the domestic container movement has not picked up in India is non-availability of return load and inability to run high frequency train services for domestic traffic.
2. **Warehouses:** Warehouses are storage areas for storing goods before distribution to consumers. Typically, large warehouses aggregate around the metro cities which are major consumption centers. Warehouses play a crucial role in distribution of commodities to the final consumer.
3. **Truck Terminals:** Truck terminals provide parking space for the trucks carrying bulk commodities and containers. By its very nature, a logistics park involves handling of bulk commodities and containers and it will be important to provide space for trucks in the premises. Further, the park can also be used to give truck parking space to other trucks which are not using warehousing and container facility at the park. The need for truck terminal arises from the fact that in its absence trucks are parked on the roads creating congestion on the roads.

While each of the component described above are present on stand-alone basis in most of the cities, a logistics park provides such facilities in an integrated manner. Companies located within the facility will get benefits in terms of economies of scale and ability to provide integrated services with complementary service providers being present in the vicinity. Hence, for the proposed sites similar integrated facility is suggested. The components for each site are suggested based on market assessment of each city.

Market Assessment

Market Assessment was done for all three cities to arrive at what kind of facilities that the proposed Logistics Park would require. The assessment also indicated the project sizing for each city.

1. **Bangalore:** A logistics park is proposed at Harohalli in Rural Bangalore district of Karnataka.
 - a. **Assessment for Inland Container Depot:** A detailed market assessment and container forecasting through regression analysis was done for Bangalore to arrive at container traffic projections. One of the limitations of the site is that it is nearly 20 km away from the nearest rail line; hence the consultants have considered only the container traffic moving on roads for estimation. Further, forecast is done till 2032 after which the

container traffic is assumed to stagnate for the purpose of financial analysis. Following table summarizes the container forecast for the proposed ICD at Harohalli:

Year	2011-12	2014-15	2019-20	2024-25	2031-32
Total Container Traffic (TEUs)	150,965	208,165	355,599	607,455	1,285,547
Road Share of Traffic (TEUs)	65,380	90,152	154,003	263,078	556,747
Assumed Share for the Proposed ICD		2%	3%	6%	6%
Projected Traffic at Harohalli (TEUs)		1803	4620	15,785	33,405

The container traffic is expected to reach 33,000 TEUs per annum in 2031-32. The area sizing of the proposed ICD is done taking into account an annual traffic of 33,000 TEUs. Further, only a road-linked ICD is proposed, as there is no rail linkage available in the proximity to the site.

- b. Warehouse:** Based on the existing trends in warehousing in Bangalore, the consultants propose ~ 15 acre warehousing space, which with 50% ground coverage will translate into ~ 30 acre warehousing complex. The complex will need space for truck movement and loading and unloading activities due to which a 50% ground coverage is considered. It is proposed that the warehouse will store cater to sectors like electronics, retail, FMCG and 3PL & Express Cargo.
- c. Truck Terminal:** Based on the inputs by truck associations of Karnataka, the consultants propose a truck terminal with capacity to handle 1,000 trucks a day.

2. Hubli-Dharwad

A logistics park is proposed in the Dharwad district of Karnataka. Based on the information given by KIADB on the land bank, the consultants propose a logistics park at Mammigatti, as there is an industrial area proposed here which will provide a ready catchment to the proposed park.

- a. Inland Container Depot:** The consultants conducted extensive interviews with the industries, industry associations, transporters, logistics players and neighbouring ICDs like Belgaum to forecast container traffic for Hubli-Dharwad area. Currently, the container traffic potential is very low. Even the Belgaum ICD which is just 70 km away from Hubli-Dharwad does not handle any containers from this area. For forecasting traffic for Hubli-Dharwad, the consultants have used the commodity growth approach due to lack of past trend of container traffic movement in the area. Under this approach, the Consultants through interviews estimated current container movement and the major commodities that are being moved by containers. Then the industry growth rates of these commodities were applied to arrive at the forecasted container

growth for the region. Following table summarizes the projected container traffic for Hubli-Dharwad and for the proposed ICD. For Hubli-Dharwad, a longer period of estimation is used (till 2036-37), as there is expected to be potential for container traffic for this region only in the long-run. Post, 2036-37, the container traffic is assumed to stagnate for the purpose of financial analysis.

Year	2011-12	2014-15	2019-20	2024-25	2029-30	2036-37
Total Container Traffic EXIM (TEUs)	2,148	2983	5327	9,832	18,659	47,703
Assumed Share for the Proposed ICD		5%	10%	20%	30%	45%
Projected Traffic at Proposed ICD at Hubli		149	799	2,458	5,598	21,466

The project sizing is done for ICD is done keeping in mind 21,000 TEUs of annual container traffic. The consultants also suggest that the concessionaire may develop the project in phases. A rail siding is not proposed at present because there is not enough container traffic to justify the investment. It can be considered once the container traffic picks up in the area.

- b. Warehouse:** Based on interactions with industry players and warehouse managers in the Hubli-Dharwad region, a warehousing space of ~ 3 acres is proposed, which with 50% ground coverage translates into an area of 6 acres. The warehouse is expected to cater to sectors like electronics, retail, express cargo & 3PL and other commodities like tyres etc.
 - c. Truck Terminal:** Based on the site visits in Hubli-Dharwad area and interactions with truck operators and local truck associations, it is proposed to set up a truck terminal with a capacity to handle 2,000 trucks a day.
- 3. Hassan:** The land bank available for the proposed logistics park is located very near the Hassan Growth Centre. There is also another competing ICD operated by a private company Vikram Logistics nearby.

- a. **Inland Container Depot:** Even though the container movement in Hassan is more than that seen in Hubli-Dharwad(~ 10,000 container a year), it already has a container depot, which is highly underutilized. The facility is not handling any export containers for past six months due to lack of Electronic Data Interchange (EDI) facility - leading to non-availability of connectivity to the Export Development Authority’s new centralized online clearance system. The ICD is expected to get this connectivity from April 2012. The ICD with 12,000 sqm of yard space has the capacity to handle ~1 lakh containers a year. The Consultants projected the container traffic growth for Hassan the same way it was done for Hubli, but found that the growth will not be enough to justify another ICD. Hence, an ICD is not recommended for Hassan.
- b. **Warehouse:** Currently, Hassan mainly has warehouses for foodgrains and fertilizers. The consultants analysed the movement of food grains and fertilizers from god sheds and the existing capacity of the major warehouses like Karnataka State Warehouses. It is estimated that there is a need for ~ 3.4 acres of warehousing space for foodgrains and fertilizers. With a ground coverage of 50% , this translates into ~7 acres of warehousing complex for Hassan logistics park.

Project Financials

Based on the project sizing, market assessment and various revenue and operating expenses assumptions, the consultants conducted the financial analysis for feasibility of setting up Logistics Parks in Bangalore, Hubli-Dharwad and Hassan. The consultants have also carried out Value for Money (VFM) analysis to recommend the most suitable mode of project procurement

Following tables summarizes the results of the financial analysis:

Parameter	Bangalore	Hubli-Dharwad	Hassan
Upfront Payment (INR Cr)	9	3.0	0.0
Total Project Cost (INR Cr)	150.9	98.1	82.1
Project IRR to the Concessionaire (%)	13.9%	12.5%	12.1%
Project NPV (INR Cr)	54.1	6.1	0.13
Equity IRR (%)	19%	18%	18%
Lease Rental per Year to the government (INR Lakh)	49	14.6	9.2
NPV of Lease Rentals to the government (INR cr)	6.9	2.06	1.29
VFM	113	57	46

From the above analysis, it can be seen that the maximum the government can expect out of the projects in terms of revenue is:

1. Bangalore-INR 16 crore (upfront plus the NPV of lease rentals)
2. Hubli-Dharwad-INR 5 crore (upfront fee plus the NPV of lease rentals)
3. Hassan-INR 1.3 crore of lease rentals

All projects offer positive project and equity NPV in both the scenarios. Further the value for money is also positive for all three projects, hence the project is expected to give generate value for all stakeholders involved and can be taken up on PPP basis.

Statutory and Legal Framework

Logistics sector is not a highly regulated sector, except for facilities which are related to export and import of goods, where prior permission from Ministry of Commerce and Industry is required. There are no restrictions on tariffs to be charged for logistics services and they are determined competitively. However, there are several policies that govern and impact the sector at central and state level.

At the Central level, the regulation that can have a major impact on the sector, especially warehousing is Goods & Service Tax regime. India plans to introduce Goods and Service Tax (GST) in the country, which is a single tax umbrella for goods and services. While the rollout of the Goods and Services Tax is delayed, it is expected that implementation of this tax regime would lead to consolidation of warehousing space in India, with players preferring larger warehouses serving multiple states. The GST is expected to fuel the demand for large integrated logistics facilities in India.

Further, setting up of an inland container terminal (ICD/CFS under the Customs Act, 1962) will require a prior Ministry of Commerce and Industry approval.

Environmental Impacts and Mitigation Measures

Following tables summarizes the environmental impacts the project can have and suggested mitigation measures:

Activity	Possible Environmental Impact	Suggested Mitigation Measure
<ul style="list-style-type: none"> • Pre-construction Stage - Cutting of trees, clearing of shrubs 	Impact natural green cover in the region	Cutting of trees to be avoided to the extent possible. The project area plan incorporates 2-3% green cover for all Logistics Parks
<ul style="list-style-type: none"> • Construction Stage - Construction activities for development of the project 	Deterioration of air quality due to earth work excavation.	Frequent watering of construction sites to suppress dust emission and transport of earth in covered vehicles
	Disturbance to the natural drainage.	Natural course of the drainage should be restored during any construction activity.
	Soil contamination.	No spillage of oil/ diesel from the construction equipments.

	Disposal of excess earth.	The excess earth should be transported to designated place and shall be used for filling and covers.
	Disturbance to other services.	Any shifting of cable / utility lines should be attended with minimum period of disturbance.
	Safety of road users in the implementation area.	Provision of temporary crossings / bridges wherever necessary to facilitate normal movement.
	Noise pollution due to the use of machinery and movement of traffic.	Use of less noise generating equipment and avoiding activities during night.
<ul style="list-style-type: none"> Operation & Maintenance Stage - O&M activities of the machinery and equipments 	Noise pollution due to the use of machinery.	Use of less noise generating equipment and avoiding activities during night.

Social Impacts

As the Logistics Parks are proposed in areas where ~90% of land acquisition has already been undertaken, the Consultants do not see a major negative impact of the proposed project.

- The project is expected to be beneficial not only for the industry but also for the local communities as it will generate employment,
- Other benefits of the project include lower congestion of trucks on the road as the Logistics Park will provide parking area for them.
- As majority of land is already acquired, no major Relocation and Rehabilitation is expected

Risk Mitigation

Following table gives risk mitigation measures for various types of risks

Risk Type	Factors	Mitigation Measures
Construction Risk	<ul style="list-style-type: none"> • Geo-technical risks • Construction technology • Availability of construction materials • Delay by EPC Contractor selected by the project proponent 	<ul style="list-style-type: none"> • Robust technical and engineering studies before the start of project • Fixed time EPC contracts by the project proponent, with built-in penalties for delays • A fixed concession period for the project creates an in-built penalty on the project proponent for delays in terms of loss of

Risk Type	Factors	Mitigation Measures
		revenue- earning years
Environmental & Social Risk	<ul style="list-style-type: none"> • Site in environmentally sensitive areas • Delay in land acquisition and protests of locals 	<ul style="list-style-type: none"> • The sites chosen do not lie in environmentally sensitive areas • The land acquisition in all areas is in advanced stages and it has been confirmed from KIADB that no R&R issues exist • It is recommended that the project proponent employs locals to the maximum extent possible to ensure participation of the local community in the economic growth of the region due to the project
Traffic Risk	<ul style="list-style-type: none"> • Less than anticipated traffic 	<ul style="list-style-type: none"> • Strategic tie-ups with freight forwarders and 3PL players • Large anchor tenants for warehousing
Competition	<ul style="list-style-type: none"> • Risk due to competitors 	<ul style="list-style-type: none"> • Charging competitive rates. Consultants have kept in mind the charges by competitors while making revenue projections
Political Risk	<ul style="list-style-type: none"> • Change in law, • Revocation of licenses, permits etc • Delays due to political instability 	<ul style="list-style-type: none"> • Effective legal provisions for safeguard interests of the project proponent
Force Majeure	<ul style="list-style-type: none"> • Natural Calamity 	<ul style="list-style-type: none"> • Contractual provisions where any penalties for not meeting contractual obligations are suspended for the time of the force majeure event • Insurance

Indicative Project Structure

An indicative project structure is recommended in the table below:

Component	Description
Structure	<ul style="list-style-type: none"> • The project is to be developed under BOT model of PPP • Private players invests in the infrastructure facilities • The private sector player recovers its investments over a period of time from revenues from facilities in the Logistics Parks including the ancillary commercial facilities
Concession Period	<ul style="list-style-type: none"> • 30 years plus a construction period of 3 years
Payment to Concessioneing Authority	<ul style="list-style-type: none"> • Annual Lease rental • Upfront Payment wherever possible
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

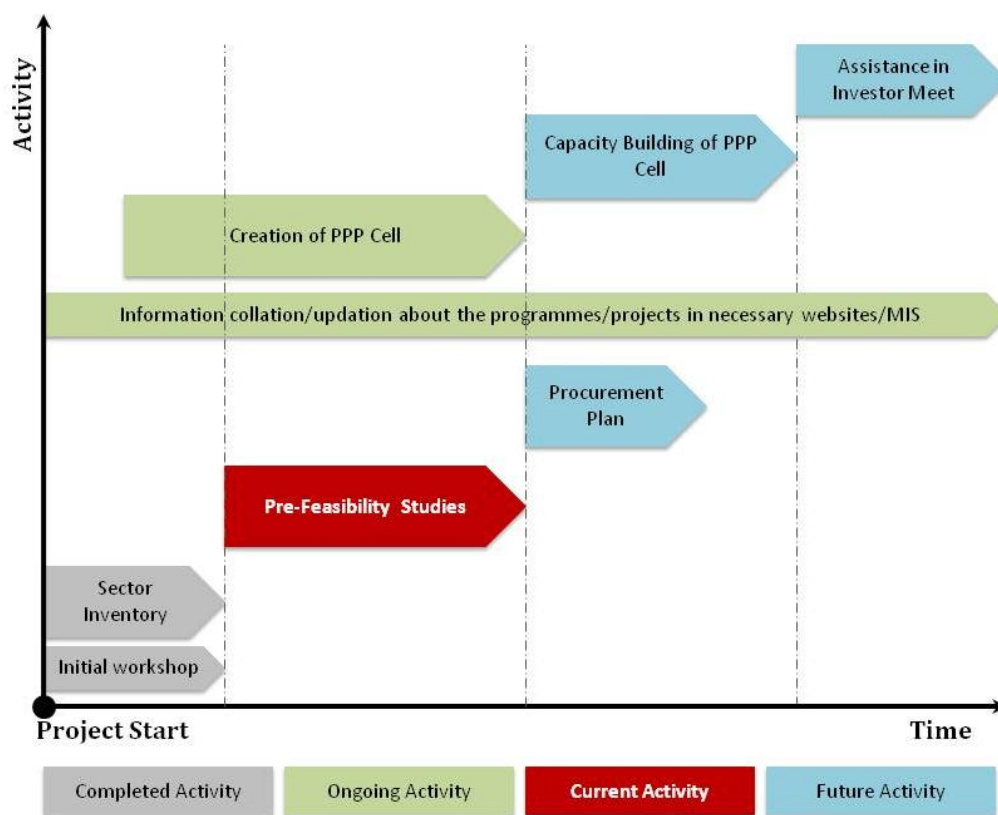
2 Introduction

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 Infrastructure Development Department (IDD) to fulfill the above objective.

For the same, the Inception Report, comprising the preliminary information on the various sectors covered under IDD and the inventory of the projects finalized in consultation with IDD, was submitted by the Consultants on February 22, 2012. The figure below summarizes the progress of the assignment, in reference to the defined objectives.

Figure 1: Project Status



The current report details out the prefeasibility study done for Development of Logistics Park at three locations-Bangalore (Harohalli), Hubli and Dharwad. The sites are finalized in consultation with IDD in the Workshop held under the Chairmanship of the Principal Secretary, IDD on 7th February 2012.

2.1 Structure of the Report

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

Chapter 2: Introduction

The chapter includes the background of the project and introduction about the study that is being undertaken.

Chapter 3: Sector Profile

The chapter includes the industry overview of the logistics sector in India and the regional profile of Logistics infrastructure in Karnataka

Chapter 4: Project Detail

The chapter includes the details and description of the project and project components. The project also includes the needs & considerations undertaken for the development of the project. The best case studies will be reviewed in this chapter and the relevant points will be taken to apply in the specific project and project design

Chapter 5: Market Assessment

Chapter 5 includes the market assessment for the project. The chapter describes the logistics industry outlook of the region, opportunities in the sector & thus the demand projections have been made.

Chapter 6: Project Financials

Based on the market assessment and project details, this chapter describes the project financial analysis. The chapter includes the cost & revenue assessment for the project facilities.

Chapter 7: Statutory & Legal Framework

Based on the above analysis a legal & regulatory framework has been developed for the project and a proposed tariff structure has been prepared for the project.

Chapter 8: Indicative Environmental & Social Impacts

The chapter includes an indicative environmental & social impact assessment and the mitigation measures for the project.

Chapter 9: Operating Framework

The chapter includes the risk assessment for the projects & appropriate mitigation measures. An indicative project structure has been prepared.

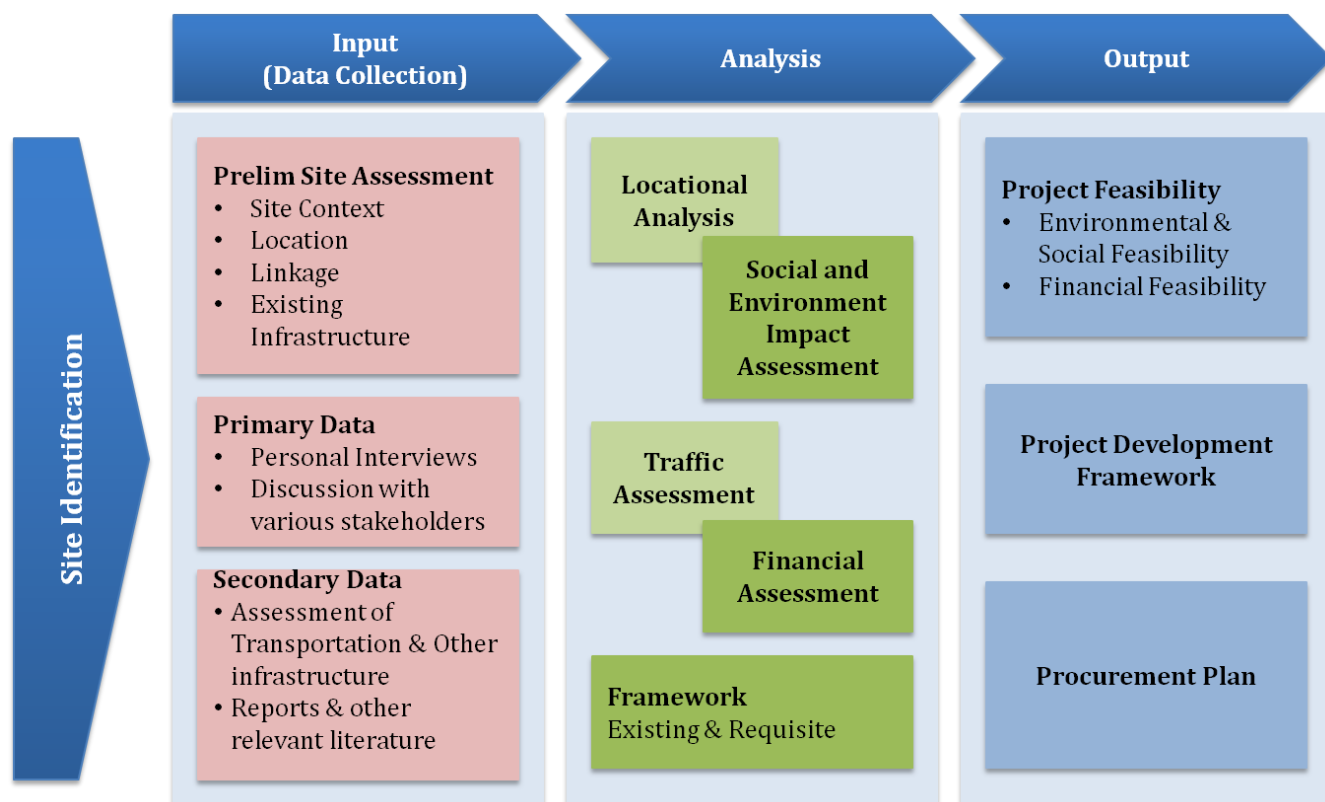
Chapter 10: Way Ahead

The chapter includes the time line for the procurement plan for further development of the project.

2.2 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 helped us to assess the environmental and social impact of the project.

Simultaneously, this stage also involved collection of data, both primary and secondary, to carry out the requisite traffic assessment at later stages.

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 financials as well as environmental & social impacts. The financial analysis encompassed various aspects as detailed below:

- Costs & Revenue Estimation
- Viability Assessment (NPV, Project IRR, Equity IRR)

- Project Funding
- Scenario Analysis, etc.

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 defined.

3 Sector Profile

3.1 Industry Overview

Logistics is a significant part of economy which deals with the movement and storage of materials. Logistics costs include cost of transport by various modes, warehousing and storage activities, consolidation/deconsolidation activities and database management. Transportation and storage costs contributes significantly to the total logistics cost.

In India logistics cost is estimated to be 8~10% per cent of GDP. India is ranked 47th on the World Logistics Performance Indicator 2011, indicating that India's logistics infrastructure is still at a developing stage and a lot needs to be done to improve its efficiency. However overall logistics industry in India is pegged to grow at around 11 per cent CAGR and is expected to reach INR 4.6 trillion in 2013-14.

Logistics includes two major components:

a) Transportation

Transportation is the most important aspect in the logistics, with maximum share in the total logistics cost. Transportation is required at each step in the logistics supply chain, be it the transport of raw materials from production centers to the manufacturing centers or transport of finished products from manufacturing centers to the consumption centers.

The transportation of goods can be through any mode of transport whether it's Road, Rail, Ports or Airports. Thus an efficient transport system helps in reducing the logistics cost of any country.

b) Storage

There are various stages at which storage of goods is required in the logistics supply chain. Storage of goods is required to store both the raw materials and finished products either at or near the manufacturing/production or consumption centres. These spaces also work as a nodal centre for consolidation, stuffing and de stuffing of bulk materials to be transported further. Similarly, to provide efficient and quick supply to various regions, storage is required at various levels.

The facilities required at the logistics park or at the storage facility are as follows:

- **Inland Container Depot (ICD)/Container Freight Station (CFS):** Handle containers emanating out of the catchment area
- **Warehousing Complex:** Providing storage facilities, including cold storage facility
- **Truck Terminal:** Space for truck parking and resting facilities/dormitories for drivers
- **Bulk Handling Facilities:** To be developed at places where bulk handling is required
- Rail Siding where ever necessary can be developed for better connectivity
- Office complex for freight forwarders, shipping agents, logistics companies

Indian logistics industry offers huge opportunity for investments. Government is trying to reform the regulatory scenario to chart the growth path. Introduction of GST will help decrease logistics spend in India.

Key drivers for growth of logistics industry include the following:



Transport Infrastructure- Road, rail, inland waterways, port infrastructure for quick movement, easy evacuation, less lead time, handling capacity & infrastructure

EXIM-Export and Import interaction between various trading countries driven by requirement of raw materials or the search for market for finished products

Industrial production- Major manufacturing centres require raw materials for production and movement of finished products from the production and manufacturing centres to consumption centres.

Agriculture- Agriculture produce has to be transported from one region to another and the surplus needs storage.

3.2 Regional profile of Karnataka

3.2.1 Transportation

3.2.1.1 Roads

Karnataka’s road network is spread across 75,454 km comprising 15 National Highways (NH), 156 State Highways (NH) and other Major District Roads (MDR). 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: Major Road Infrastructure in Karnataka

S. No.	Hierarchy	Nos.	Length (Km)
1.	National Highway	15	4,490
2.	State Highway	156	20,528
3.	Major District Road	-	50,436

Source: Karnataka Public Works Department

3.2.1.2 Rail

Karnataka state has 3,171 Km of railway route with about 354 stations. Out of total railway network, 2,761 Kms is broad gauge. Total electrified route length is approximately 4.2%. There are railway projects for 1,436 Km under implementation while another 2,721 Km is under various stages of studies. South Karnataka (1,729 Km) has slightly larger coverage of railway lines compared to North Karnataka (1,442Km).

3.2.1.3 Ports

Karnataka has 300 Km of coast line and 11 ports with combined capacity of ~50 MTPA. Karnataka has one major (New Mangalore) and 10 minor ports in Karnataka. Total capacity of the major port is 41.8 MTPA and that of minor ports is 10.7 MTPA.

Total traffic handled by minor ports is 3 MTPA in year 2009-10. Major commodities handled by ports are Iron ore, Granite, Molasses, Salt, POL & Products and Edible Oil.

3.2.1.4 Airports

Karnataka’s aviation infrastructure comprises national and international airports. Currently, the air travel demand is catered to by 4 operational airports at Bangalore, Mangalore, Hubli and Belgaum. While the airports at Bangalore & Mangalore are international airports, other airports are used for domestic purpose only. Bangalore Airport is the most significant in the state registering traffic of nearly 8.5 mn passengers during April to November 2011, 18% of which were international passengers.

3.2.2 EXIM scenario of Karnataka

Karnataka EXIM traffic is majorly handled by New Mangalore Port, Bangalore International Airport and ICD Bangalore. Karwar & Belekeri port also handle minor share of EXIM in Karnataka. The table below shows the EXIM scenario of the existing locations in Karnataka.

Table 2: Major Centers handling Goods in Karnataka

Mode	Location	Year	Imports	Exports
Port	Karwar & Belekeri Port (MMT)	(2008-09)	2.96	
	New Mangalore (MMT)	(2008-09)	19.96	16.727
Air	Bangalore International Airport (In INR Cr)	(2008-09)	2.68	1.19
Rail+ Road	ICD Bangalore (In INR Cr)	(2006-07)	5452.81	

3.2.3 Industrial Scenario

Karnataka is considered as one of the most desired industrial locations in the country. Karnataka has various large public sector industrial undertakings, large privately owned industries like steel sugar, textiles etc. Karnataka is among the top five industrial states in the country. In recent times, Karnataka has emerged as the leader in knowledge based industrial sector, making rapid strides in IT & computer related industries and biotechnology with a strong research and development base. There are various other industries like cement, iron ore, coal, automobile and auto components which add to the total production. In addition, Karnataka has mining reserves for iron ore and limestone. The large base of industries in Karnataka necessitates logistics infrastructure for the import of raw materials and export of finished goods.

3.2.4 Agriculture

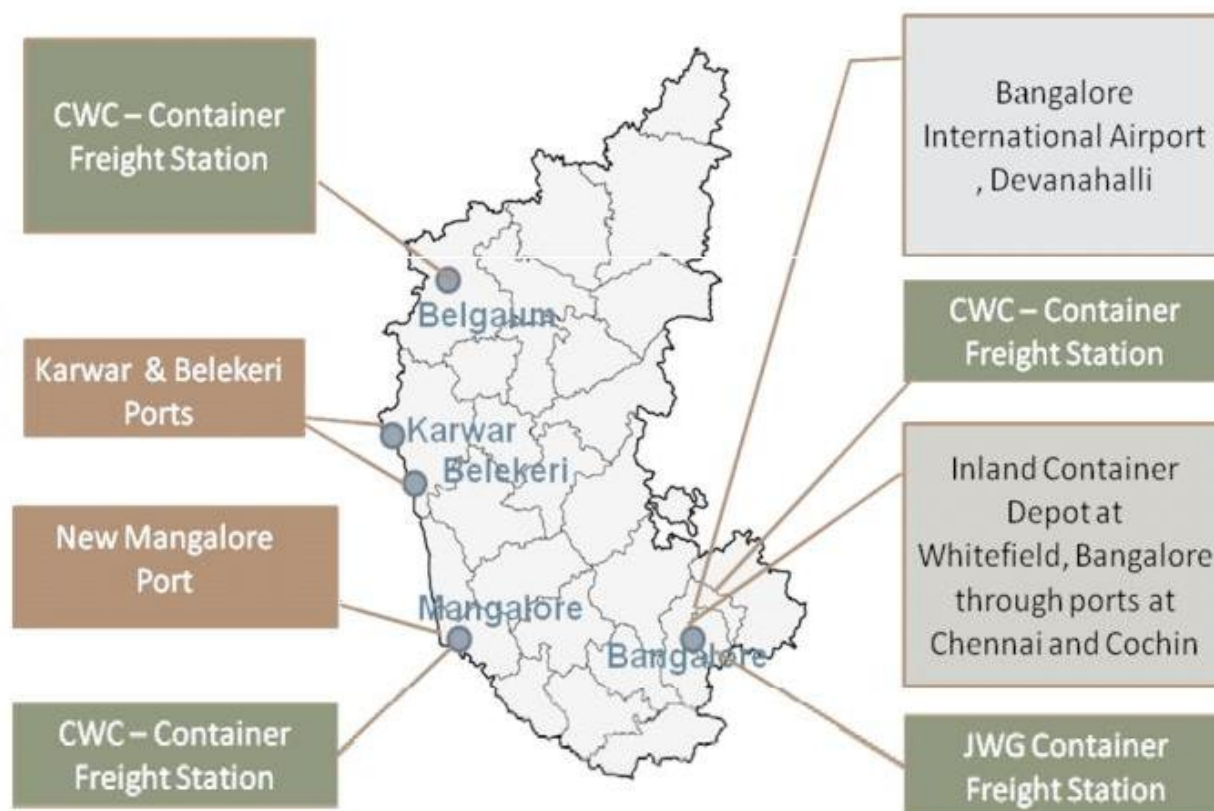
Karnataka has a significant agricultural sector. As per the Pre-feasibility study of Logistics in Karnataka prepared by Infrastructure Development Corporation Limited (iDeCK) in 2007-08, Karnataka produced 99.71 lakh tons of cereal, 307 lakh bales of cotton production and 130.26 lakh tons of horticulture crops. Karnataka ranks fourth in the country in terms of sugarcane production with 221.86 lakh tons of sugarcane production in 2008-09. Karnataka has large agricultural production base and strengthening of logistics sector is important to support transportation, export and storage of its agricultural produce.

3.3 Infrastructure Gap

Karnataka’s logistics & support infrastructure is mainly concentrated in Bangalore Urban district. There is a need for more dispersed facilities for all round development of logistics infrastructure in Karnataka.

The map below shows the existing logistics facilities that Karnataka has at various locations.

Figure 3: Major Logistics Centers in Karnataka



Map source: Pre-feasibility study of Logistics in Karnataka, Vol- I, page 26

3.4 PPP Activities in the sector

Karnataka has already taken several measures in development of logistics infrastructure on PPP basis. There are various projects and studies done to improve the logistics infrastructure in the state. The table below shows the summary of the projects/studies:

Table 3: PPP Projects Studies in Logistics Sector Done by the Government of Karnataka

S. No.	Project Name	PPP Model	Executing Agency	Estimated Cost (Cr INR)	Project	Current Status
1	Development of Logistics Park in Bangalore		KSIIDC	110		Feasibility Study Done
4	Logistics architecture in Karnataka for Fruits & Vegetables		KSIIDC	680		Feasibility Study Done

3.5 Key Issues

3. Though studies have been done by various departments on creating logistics infrastructure on PPP basis, on-ground progress on bidding out projects is slow. This needs a more proactive approach by the concerned departments
4. Availability of land is a major issue. Even though Karnataka Industrial Areas Development Board (KIADB) is creating a land bank for the proposed sites in Bangalore, Hubli and Hassan; it will need to be transferred to the private player. Further, the land at these sites is in final stages of acquisition but it can still take 2-3 months for the final transfer to happen. This is because, even though notification for farmers/owners of land to come up with their claims has been issued by the government, the claims will have to be vetted after which the government will take the possession of the land.

4 Project

4.1 Description of the Project

It is proposed that logistics parks be set up in 3 locations in Karnataka. Logistics centres are generally established to aid the industrial and economic activity in a city. Major components of a Logistics Park include:

1. Inland Container Depots:

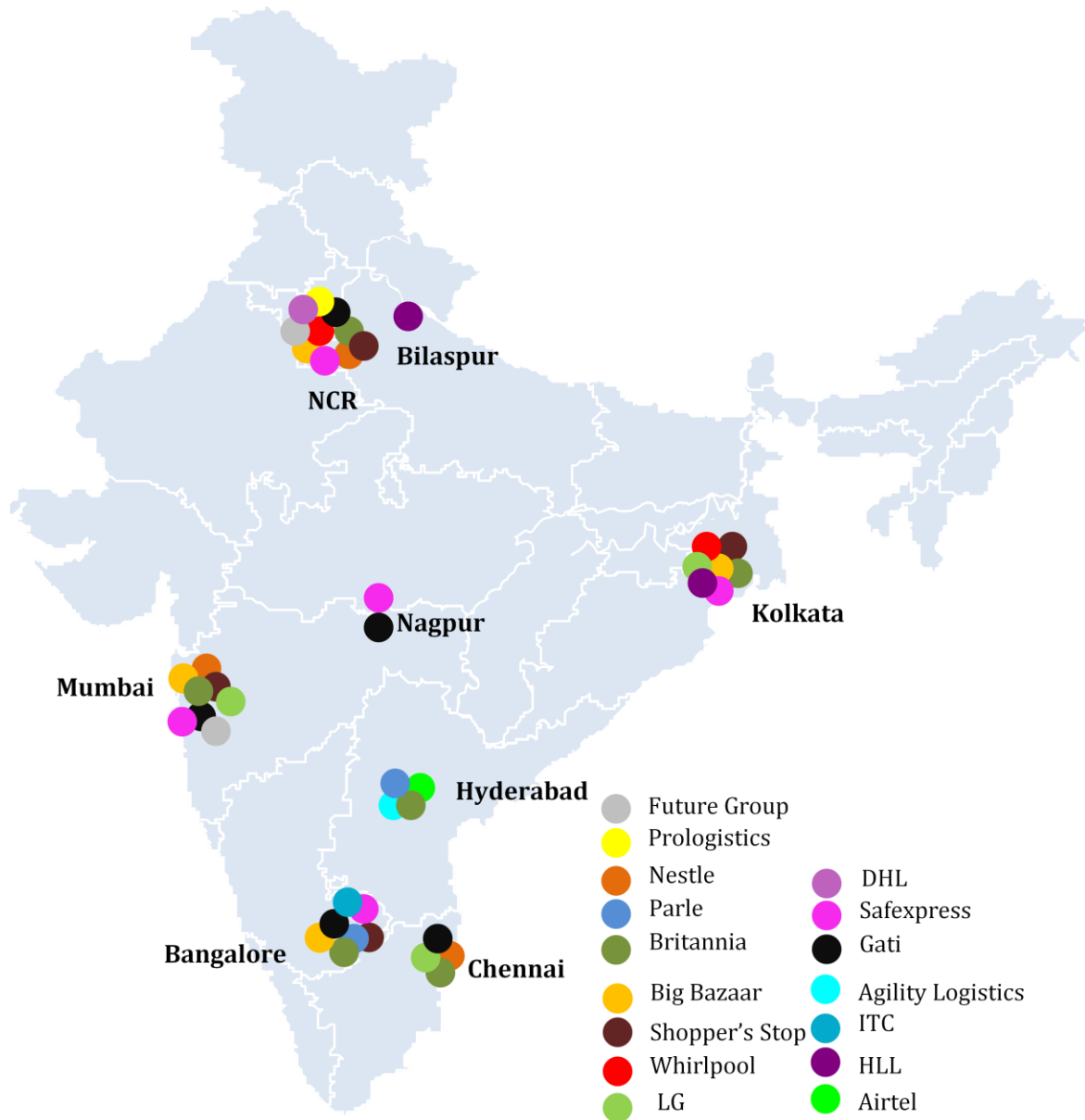
Inland container depots are facilities that provide container handling, custom clearances away from the port to the industries. There are two types of inland container terminals:

- a. EXIM Container Terminals catering to the export and import container traffic of the surrounding industries. The terminals offer services for handling and temporary storage of import/ export laden and empty containers carried under customs control and have the authority to clear goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and export. Transshipment of cargo can also take place from such stations.
- b. Domestic Container Terminals: Acts as aggregation point for goods to be transported within India in containers. Domestic container movement currently is at a highly nascent stage in India, with only Container Corporation of India handling more than 80% of the domestic container traffic. The total domestic container traffic in India is less than 1 mn TEU. The domestic container sector suffers from various issues such as:
 - Non-availability of return load and inability to run high frequency rail services for domestic container traffic
 - Lack of industry specific customized services and containers
 - Lack of last-mile connectivity increases multiple handling, thereby increasing the total logistics cost

Low volumes of domestic container traffic make it unviable to operate domestic container depots. Thus, the consultants do not recommend Domestic Container Terminal in the Logistics Park proposed in any of the identified locations.

2. **Warehouses:** Warehouses are storage areas for storing goods before distribution to consumers. Typically, large warehouses aggregate around the metro cities which are major consumption centers. Warehouses play a crucial role in distribution of commodities to the final consumer. While the manufacturing centres house the mother warehouses, they are generally owned by the production unit itself providing limited opportunity for a private player to provide storage services. It is at the distribution points, where the opportunity for a logistics player to provide services lies. Following figure illustrates how there is an aggregation of warehouses in the major metros, which are also major consumption centers:

Figure 4: Aggregation of Major Warehouses at Consumption Centers



The Consultants' interactions with major logistics players like DHL and Gati indicate preference for major consumption centers for locating their warehouses. Further, the location should have good connectivity and access to adequate transportation infrastructure in terms of transport agencies and truck operators.

- Truck Terminals:** Truck terminals provide parking space for the trucks carrying bulk commodities and containers. By its very nature, Logistics Park involves handling of bulk commodities and containers and it will be important to provide space for trucks in the premises. Further, the logistics park can also be used to give truck parking space to other trucks which are not using warehousing and container facility at the park. The need for truck terminal arises from the fact that in its absence trucks are parked on the roads creating congestion on the roads. Further, truck drivers do not have access to facilities like dormitories, rest rooms etc during stoppages. A truck terminal will provide such facilities at

one place and also provide for space for offices of the truck operators to allow them to conduct business from the terminal itself.

While each of the component of the Logistics Park described above are present on stand-alone basis in most of the cities, a Logistics Park provides such facilities in an integrated manner. Companies located within the facility will get benefits in terms of economies of scale and ability to provide integrated services with complementary service providers being present in the vicinity.

Based on the requirements for each component of the logistics park discussed above, it is evident that locations with considerable economic and industrial activity are ideal for a Logistics Park. Further, it is also important that land is available for construction of Logistics Park with the government. Keeping these factors in mind, 3 locations-Hubli, Hassan and Bangalore are chosen.

Table 4: Key Details of the Selected Locations for Logistics Parks

Location	District	District Domestic Product-FY10 INR Crore (2004-05 prices)	Growth in District Domestic Product w.r.t FY09	Per Capita Income (INR at Current Prices)	Land Availability, as per the Land Bank (for which final notification is issued)	Major Catchment Areas
Harohalli	Bangalore	89,261	6.8%	1,40,369 (2.25 times the state average)	492 acres	Bangalore, Hosur, Tumkur, Hassan
Hubli	Dharwad	8,868	9.8%	59,888 (1.2 times the state average)	1372 acres in Mammigatti, Kelageri, Hiremalligawada	Hubli, Dharwad, Belgaum
Hassan	Hassan	5,981	9.9%	37,546 (0.8 times the national average)	1057 acres IIT Land, near Hassan Growth Centre	Hassan, Chikamagalur, Kushalnagar

Source: Economic Survey of Karnataka (various years), KIADB Land Bank Details

4.2 Site/Location Details

Before going into the details of the project, it is important to understand the strengths and weaknesses of the location in the context of setting up a logistics park in the area. For that, the Consultants have analysed connectivity to major industrial areas, gateway ports and the proximity to the nearest rail line. For each location, the Consultants have also done a SWOT

analysis, to give a balanced picture on strengths and weaknesses of a particular location along with threats and opportunities.

4.2.1 Bangalore

Bangalore is chosen for setting up of a Logistics Park as it is the most prosperous and industrialized district of Karnataka. The site proposed in consultation with Infrastructure Development Department is in Harohalli. KIADB has a land bank of nearly 492 acres in Harohalli 3rd stage, for which the final notification has been issued, (which means all the public hearings are done and land acquisition process is 90% done).

4.2.1.1 Existing Economic and Industrial Base of the City

Bangalore is one of the most prosperous districts of Karnataka accounting for more than 37% of the state domestic product. It is a major industrial centre with electronics, engineering and auto being the major sectors. Further, it is a major consumption centre, being the 5th largest metropolitan city in India with a population of ~8 mn. Of the 13,000 registered factories in Karnataka, more than half of them are present in Bangalore.

Apart from the booming IT/ITES sector, Bangalore has an appreciable manufacturing base also. Major industrial areas in and around Bangalore driving the industrial production of the district include Peenya Industrial Area, Jigani Industrial Area, Neelmangala Industrial Area and Bidadi Industrial Area. Following table gives the prominent industrial areas and industries in the district:

Table 5: Major Industrial Areas and Industries in Bangalore

	Major Industries	Major Companies Operating
Peenya	Machine and Machine Parts, Garments, Machinery, Pharma, Auto	Hitachi, Himalaya Druga, Jindal, Karle, Volvo, ABB
Jigani	Electrical, Electronics, Auto parts, Garments, Granite, Pharma,	Schneider Electric, Lapp India, Gokuldas, Bombay Rayon, Medi Labs
Bidadi	Auto and Auto Ancillaries	Toyota
Neelmangala	Electrical, Granite	ABB, Pacific Granite
Yarahandahalli	Metal, Packaging, Switch Gears	Medium-sized industries
Kachanayakanahalli	Fabricators, Metal, Engg. Goods	Medium-Sized industries
Veerasandara	Hardware, Metal, Electrical	VMX Connectors
Bommassandra	Polymers, Machinery, Engg. Goods, Induction coils etc.	Medium Sized industries
Attibele	Fertiliser, Auto components, Machinery, Plastic	
Harohalli	Granite, Tyre	Medium and Small sized industries

Source: Feedback Research

Apart from large industrial units, Bangalore also has a considerable base of small scale industries. As of 2009-10, nearly 85,000 such units exist with an investment of ~INR 38,00 crore. During 2005-2010, nearly 16,000 units were added with an investment of INR 1,745 crore. Following table gives the number of small scale industries along with investments during 2005-2010:

Table 6 Small Scale Industries in Bangalore

	Urban		Rural		Total	
	Units	Investment (INR crore)	Units (INR)	Investment (INR Crore)	Units	Investment (INR Crore)
2004-05	1378	73.6	540	24.4	1918	98
2005-06	1509	88.12	1491	14.9	3000	103.02
2006-07	1712	116.75	552	8.5	2264	125.25
2007-08	2652	433.61	258	59.7	2910	493.31
2008-09	2373	377.73	235	43.2	2608	420.93
2009-10	2767	444.96	223	59.4	2990	504.36

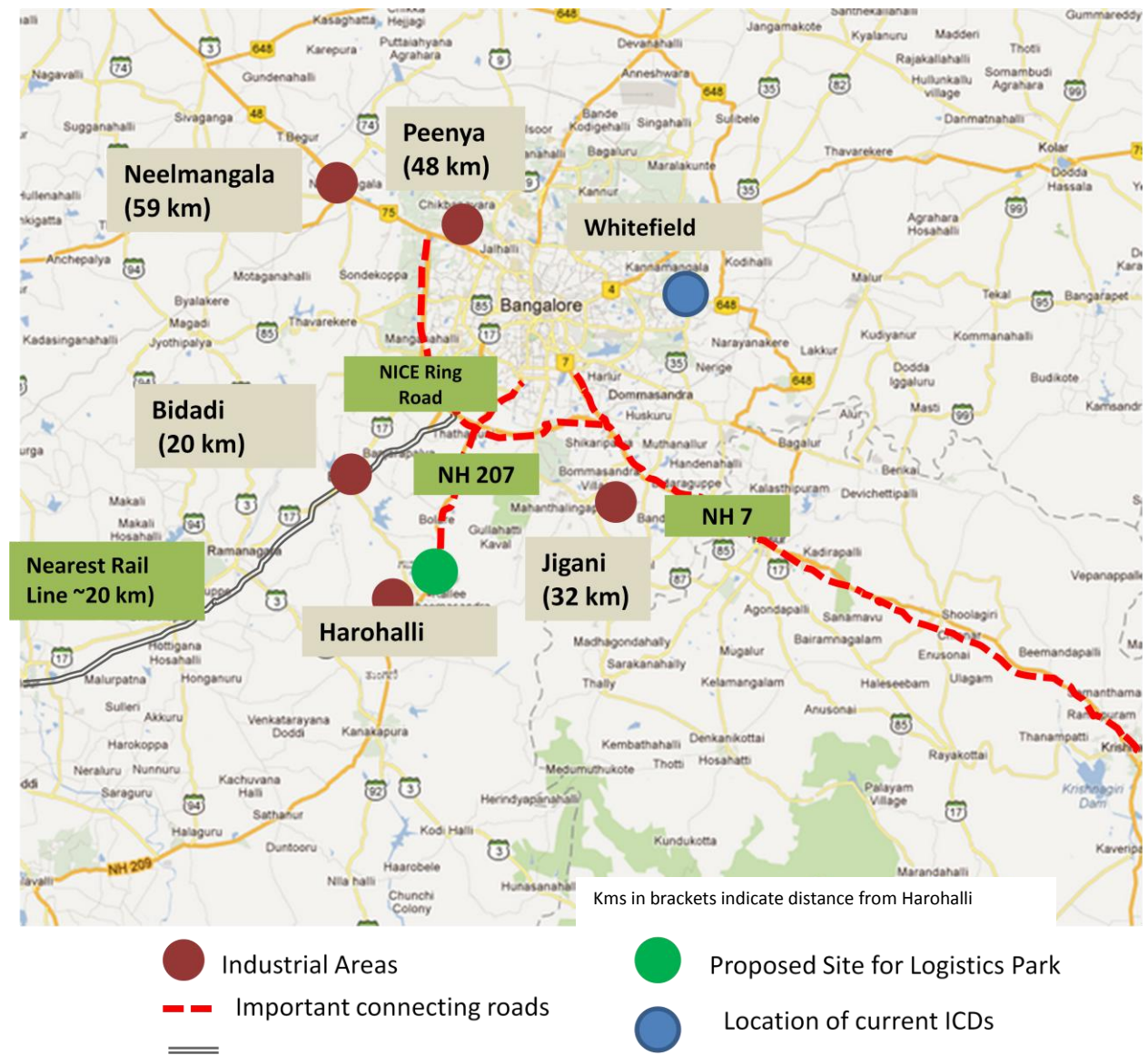
Source: Karnataka Udyog Mitra

While the above analysis outlines Bangalore’s production strength that drives its container traffic (~120,000 TEUs per year), Bangalore is also a large consumption centre fuelled by high disposable incomes of young professionals working in the IT/ITeS sector. As per the AC Nielsen’s Upper, Middle and Rich (UMAR) survey of 2009, Bangalore was the second most affluent city in India, after Delhi. It has hence attracted large players like E-Zone, DHL, Gati, Parle , Kailash Logistics etc to take up warehouses of an average size of 30,000-200,000 sqft.

4.2.1.2 Location and Connectivity of the site

Good connectivity is crucial for location of a logistics park as it important for efficient operation of all the components of the park .The identified site lies in south-west Bangalore, very near the upcoming Harohalli Industrial Estate and just ~20 km away from the auto hub of Bidadi. Following map illustrates the location and connectivity of the identified site for the Logistics Park:.

Figure 5: Location of the Harohalli with Location of Major Industrial Areas

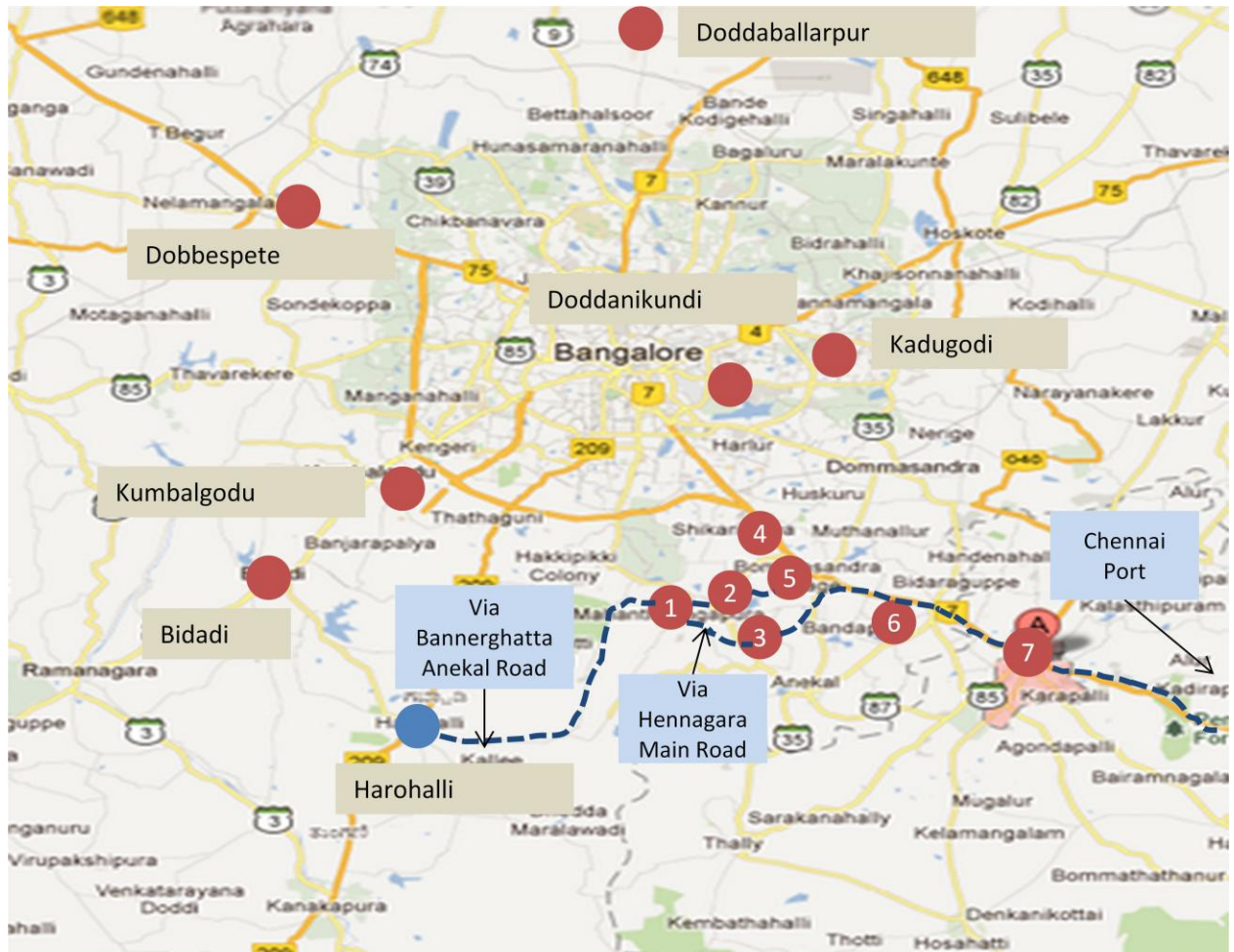


Harohalli is located in Bangalore Rural district of Karnataka. It is connected to major industrial areas in Bangalore via NH 207 and the Nice Ring Road. Further, it is connected to Bidadi via the State Highway 17. Harohalli is 370 km from the gateway port of South India—Chennai Port - by road via NH 7. The nearest rail line, however, is nearly 20 km away precluding the possibility of a rail linked facility at this site.

Harohalli, itself is an upcoming industrial area being developed in three phases. The first two phases are already developed and the third phase is under implementation. The site has majority of industrial areas within 50 km radius, a catchment very similar to Whitefield—which houses two of the only inland container depots of Bangalore. A Logistics Park at Harohalli will benefit from the fact that nearly 7 industrial estates fall en-route to the Chennai Port. Thus, trucks (which is a preferred mode of transport in Bangalore for domestic as well as EXIM traffic due to proximity to the Chennai Port) moving to and from Chennai will have enough stoppages en-route for loading-unloading and securing return traffic. Further, being at the periphery of the city, the trucks will also not have to travel within the city from Harohalli to reach any of the industrial areas and hence will not only avoid

the city traffic but also the curfew hours for large commercial vehicles within the city. Following map illustrates the connectivity of Harohalli to various industrial estates en-route to Chennai:

Figure 6: Industrial Areas en-route to Chennai from Harohalli



1. Jigani	2. Yarahandahalli	3. Kachanayakanahalli	4. Veerasandra
5. Bommasundra	6. Attibele	7. Hosur	

4.2.1.3 SWOT Analysis

1. SWOT Analysis for Bangalore, Harohalli

Strengths

- Good connectivity via National and State Highways
- Major industrial areas within 50 km radius (similar to the catchment of Concor ICD at Whitefield)
- Accessible to industries without entering the city and hence allows the trucks to avoid the curfew hours for truck movement

Weaknesses

- Nearest Rail line in 20 km away, making it difficult to create a rail linked facility
- Connectivity to Bidadi-a major industrial area is via a single lane state highway

Opportunities

- There is no presence of an integrated logistics facility in the Southern part of Bangalore, hence an opportunity for a logistics park exists

Threats

- New Facility coming up in Dobbespeth can act as a major competition for the proposed facility

4.2.2 Hubli-Dharwad

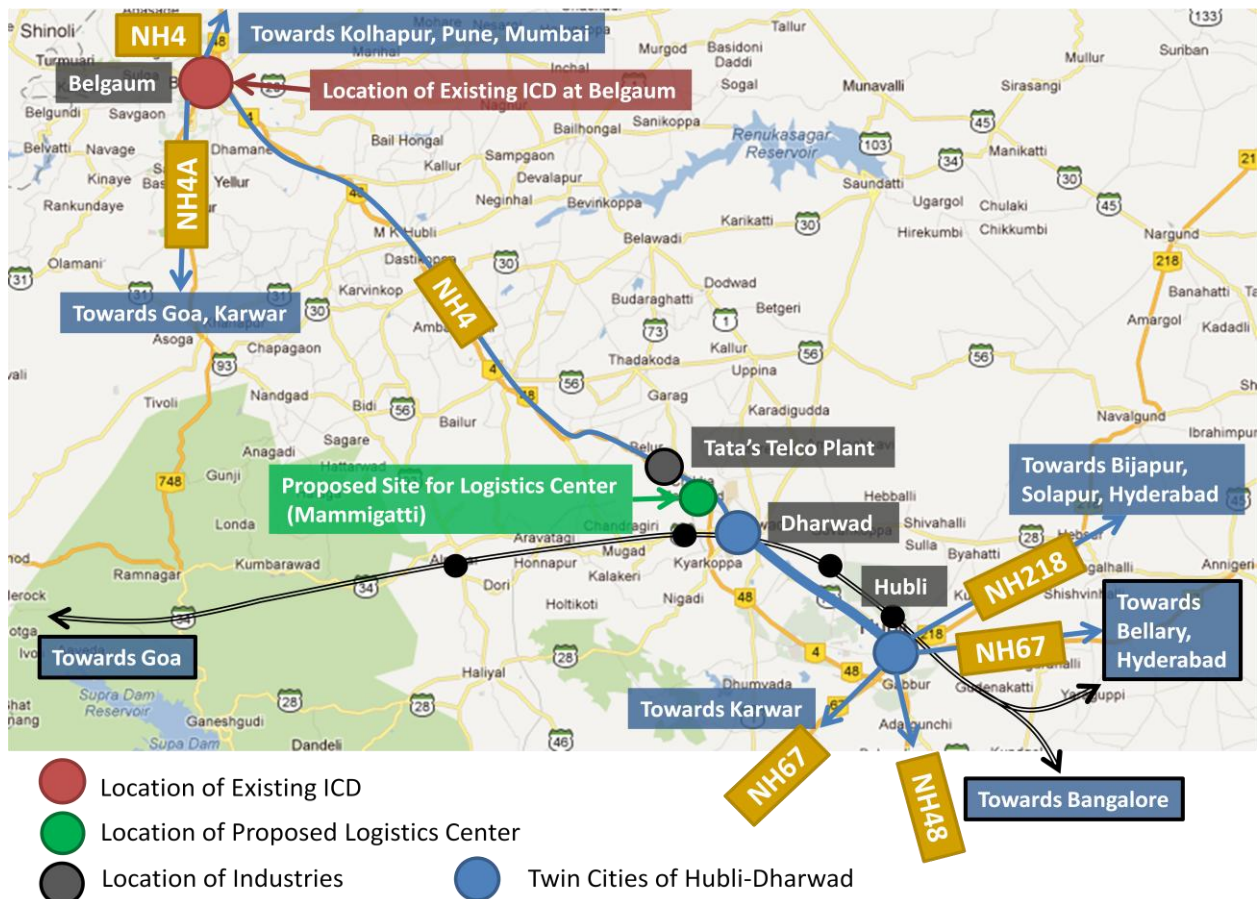
4.2.2.1 Location and Connectivity

Hubli is located in the Dharwad District, which in turn, is located in the Western sector of the northern half of Karnataka State. Dharwad district has an area of 4,236 sq km and comprises 5 taluks – Dharwad, Hubli, Kalghatagi, Kundagol and Navalgund. With a population of 16.04 lakh (as per 2001 Census), the district is the second most advanced district and a very important business center in Karnataka. KIADB has a land bank of 1,372 acres in the Dharwad district in Mammigatti, Kelageri and Hiremalligawad villages, where the final land acquisition notification has already been issued, which means all the public hearings are completed and land acquisition process is 90% done.

The Consultants propose a Logistics Park in Mammigatti because there is already a 500 acre industrial estate planned here, which will act as a ready catchment for the proposed Logistics Park. Mammigatti is connected to Mumbai and Bangalore via NH-4 and is around 10 km northwest of Dharwad town. Mammigatti has several industrial units and estates in its 10 km radius including Tata Marcopolo Motors Limited, Power Grid Corporation and the Belur Industrial Area. Mammigatti is

also just 10 km away from the rail siding of Power Grid Corporation. Following map illustrates the location and connectivity of Mammigatti

Figure 7: Location and Connectivity of Mammigatti in Hubli-Dharwad



Dharwad, the twin city of Hubli, is located 425 km northwest of Bangalore and 421 km south of Pune, on the main highway between Bangalore and Pune (NH-4). The twin cities are well connected by rail too. With regular services to Bangalore, Pune and Mumbai and weekly services to Chennai and Howrah, Hubli junction is an important rail hub in the state.

Hubli has a basic airport serving the twin city of Hubli-Dharwad, 40 km from Mammigatti. The airport is proposed to be upgraded. Dabolim Airport in Goa is the second nearest airport around 182 kms west of Mammigatti.

4.2.2.2 Existing Industrial and Economic Base

Hubli located in Dharwad district is an important industrial and commercial center with more than 3,000 small & medium scale industries along with large presence of IT/ITeS sector industries. Hubli is also the main trading center for agricultural produce. Dharwad, the district in which Hubli lies, is the second most advanced district in Karnataka.

Farmers from all over the state sell their produce here. Primarily, the industries in the region are producing engineering items, industrial valves, electrical goods and agricultural implements, machine tools, electrical products, steel furniture, food products, cotton, etc.

Hubli-Dharwad has six industrial estates with two in each town:

- Hubli – Gokul, Tharihala, Sattur Industrial Estates
- Dharwad – Belur, Raiapur, Lakkammanahalli Industrial Estates

Dharwad is a major consumption centre too, with per capita income of ~ INR 60,000 (2009-10) which is nearly twice the state average. Its growth as a major consumption centre can be understood from the fact that the major carmakers - Maruti Suzuki, Tata Motors, Mahindra & Mahindra, Fiat, Honda, Hyundai, Chevrolet, Skoda and Volkswagen- and retail players have opened their showrooms here.

Further, with the establishment of IT park in Hubli, there is also a presence of young professionals with appreciable disposable incomes to drive the growth of retail sector. Hubli IT park, established in 2002 and housing software giants like TCS, Tata Teleservices, IIIT, SPTI was one of the earliest IT parks set up outside Bangalore and has acted as a precursor for strong capital investments in the region.

Retail giants like Big Bazaar, Aditya Birla Retail and Reliance retail have a presence here. The retail sector in Hubli-Dharwad, as per Karnataka Chambers of Commerce and Industry generates revenue of nearly INR 100 crore everyday.

4.2.2.3 SWOT Analysis

The SWOT analysis for the Hubli region In terms of setting up a logistics center is as follows:

Strengths

- Hubli is strategically located as a trade gateway of Karnataka to the North
- It is a well linked location via Road, Rail as well as Sea Transport
- Presence of manufacturing industries
- It is a consumption centre of an appreciable size.

Weaknesses

- Hardly any containerization of cargo at present
- Skeletal network of services aiding logistics activities like freight forwarders, CHAs and shipping agents

Opportunities

- There is no integrated facility such as a logistics center present in Hubli
- There is a need for a truck terminal in Hubli
- Hubli has great potential for capacity expansion as it is a trade gateway. As the trade increases between Karnataka and North India /JN Port, Hubli will start having a capacity crunch

Threats

- Privately held medium sized land parcels for truck parking are growing at a considerable pace
- Competing operational Inland Container Depot just 70 km away in Belgaum

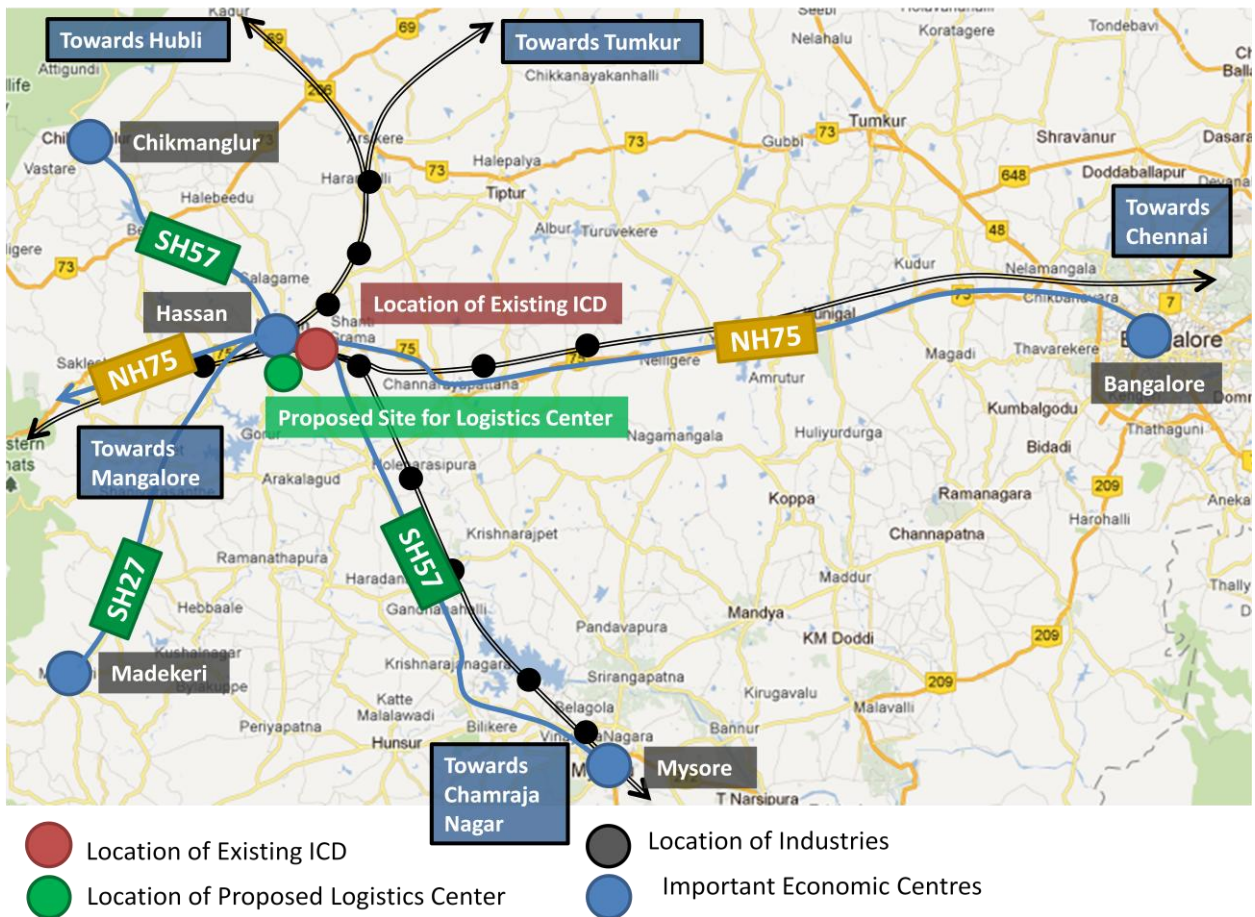
4.2.3 Hassan

4.2.3.1 Location and Connectivity

Hassan is located in the south-eastern part of Karnataka, 194 Kms away from the state capital Bangalore and is bound by Tumkur, Chickmagalur, Devanagere and Bellary Districts. Spread across 6,826 sqkm of land, the Hassan district has a population of 2.2 million as per the 2011 census.

KIADB has a land bank of 1,057 acres land in Aduvalli, Samudravalli and Kachanayakanavalli villages, which lie near the Hassan Growth Centre, which can be used for setting up the proposed Logistics Park. The site identified is on NH-48 (Bangalore-Mangalore Road), just 8.3 kms southeast of the city of Hassan, the district headquarters. The nearest railways stations are in Hassan and Dudda - both in a radius of 10 km. The new broad-gauge railway line between Hassan and Shravanabelagola, an important Jain pilgrim site, also passes through Samudravalli. Following map illustrates the location and connectivity of the proposed site:

Figure 8: Location and Connectivity of Site Available by KIADB in Hassan that can be used for the proposed Logistics Park



The nearest airports are Mysore (115 km), Mangalore (170 km) followed by the one in Bangalore (187 Km). An airport is planned in Hassan, expected to be operational by 2015 and is expected to cater to a passenger capacity of 3 million and cargo capacity of 100,000 ton yearly. It is envisaged that the airport will be an aircraft maintenance and modification (AMM) hub.

The nearest major port is the New Mangalore Port Terminal, around 180 kms from Hassan. The port is a modern all weather-port and is expected to handle 66 million tons of cargo by the end of 2012.

4.2.3.2 Existing Industrial and Economic Base

Hassan region is a major producer of Coffee. Other major crops include Cereals, Pulses, Groundnut and Sugarcane. The district has been identified as an industrial growth center, agri-export zone and special economic zone, which would fuel the growth of general and agri processing industries. There are 2 Textile zones in the district which provide employment to about 2,400 people.

Major industrial areas in Hassan include Katihalli, Hassan Growth centre, IOCL sub-layout Holenarasipura and Thimmanahalli. Land for a textile zone, food-processing zone and Bio-technology and Pharma zone has already been acquired in the district. An IT/ITES SEZ (83 acres) is also being developed. These are expected to boost industrial activity in the region and strongly further the cause for a modern logistics park.

4.2.3.3 SWOT Analysis

The SWOT analysis for the Hassan region In terms of setting up a logistics center is as follows:

Strengths

- Hassan region has production and processing industries for a lot of export commodities like Coffee, Gherkins, Garments, etc.
- It has good and direct connectivity with Mangalore port both via Road and via Rail.

Weaknesses

- The rail connectivity to Mangalore Port is only a single line. The rail line is also not electrified. This results in high freight charges and hence, discourages export from Mangalore Port, reducing through traffic at Hassan
- Not a very high container traffic from Hassan and its catchment

Opportunities

- Opportunity lies for a basic Logistics Park with warehousing facility and truck terminal with ancillary facilities

Threats

- Competition from the existing private ICD at Hassan, operated by Vikram Logistics, which is very near the rail line and also has warehousing space

4.3 Case Studies for similar projects in India

PPP in logistic parks is a relatively new concept. There are few instances where PPP in the sector has taken place. Recently, Government of Andhra Pradesh awarded two logistics park on Design Build Finance Operate Transfer (DBFOT) model. The main features of the project are summarized below:

Table 7: Case Study of Logistics Park on PPP basis

Logistics Park	Mangalapally, Andhra Pradesh	Batasingaram, Andhra Pradesh
Land area	22 acres near ORR towards Nagarjunasagar Highway	40 acres from Outer Ring Road towards Vijayawada.
Facilities	<ul style="list-style-type: none"> i. 250 Truck Parking and Commercial Space of 1500 Sft. ii. 2 Lakh Sft of Warehousing and 5,000 MT of Cold Storage Capacity iii. 5,000 Sft each for Automobile Service Centers and Office Complex for Operators iv. Restaurants/Dhabas and 	<ul style="list-style-type: none"> i. 500 Truck Parking and Commercial Space of 2000 Sft ii. 1 Lakh Sft of Warehousing and 10,000 MT of Cold Storage Capacity iii. 10,000 Sft each for Automobile Service Centers and Office Complex for Operators iv. Restaurants / Dhabas and Dormitories for 200 Persons

- | | |
|--|--|
| <ul style="list-style-type: none"> v. Fuel Stations and Vehicle testing Centre, Electronic Weigh Bridge. 1000 Sft Built up area for Primary Health Centre | <ul style="list-style-type: none"> v. Fuel Stations and Vehicle testing Centre, Electronic Weigh Bridge vi. 1500 Sft Built up area for Primary Health Centre |
|--|--|

Project cost	INR 22 Cr	INR 35 Cr
Development Model	DBFOT	DBFOT
Concessionaire	Ancon Design Group - KCP Projects Ltd (JV)	Credence Logistics Limited
Concession period	33 Years	33 Years
Annual Lease rent	INR 1.5 lakh will be increased @ 5% p.a	INR 4.0 Lakhs with escalation of 5% every year
Revenue share	5% annually and at least INR 15 lakh in the first year of operation	A 5% revenue share annually and INR 35 lakh in the first year of operation
Development Fee	INR 60 lakhs	INR 90 Lakhs
Sublease	No sublease of the land is allowed. Developed space can be leased out	No sublease of the land is allowed. Developed space can be leased out

The projects are currently in pre-construction phase.

As Logistics Park is a new phenomenon in India, there are limited examples of successful PPP projects in this sector.

5 Market Assessment

This section assesses the market in terms of identifying the existing logistics facilities in the selected cities along with ascertaining the need for additional logistics facilities. The Consultants have conducted interviews with industries to ascertain demand for logistics facilities in these areas, and to analyse the need for each component in the Logistics Park. The section also underlines the future industrial development in each of the locations that are expected to drive the future demand.

For container terminal, the catchment area for container traffic generation is identified. Further, the section also makes demand forecast, especially for the container traffic to analyse the possibility of setting up container terminal in the area. Forecasts are done via regression analysis, wherever the past trend is available. In case past trend is not available, the container growth is projected using the growth rates of the major commodities transported in containers.

For warehousing, the major commodities stored in the area are identified. Further, average size of the warehouses is ascertained along with average rentals paid in each city for storage.

The truck associations were interviewed to ascertain the demand for truck terminals in each of the locations.

5.1 Bangalore

5.1.1 Inland Container Depot

1. Current Container Traffic Scenario of Bangalore

Bangalore generates nearly 150,000 TEU of EXIM container traffic annually and ~92% of this traffic is handled at Chennai port. The balance 8% of the containers are handled at other ports like Tuticorin, Cochin and Mumbai. Alternate ports are used when the ship schedules are not available at Chennai port for commodities that are needed to be exported or imported at short notice.

Nearly 75% of the total Bangalore container traffic is currently being handled by two existing inland container terminals, both located at Whitefield. One is the rail-linked ICD of Container Corporation of India and another is the road linked Central Warehousing Corporation's container station being operated by a private player-Pearl Harbour.

Major export commodities in containers include Granite, Machinery, Gherkins, Garments, UPS and Pharmaceuticals. Major import commodities include machinery, electrical goods, steel products, garment accessories and furniture, granite and newsprint.

The **Primary Catchment** area from where this traffic originates is industrial areas in Bangalore. **Secondary Catchment** areas are Hosur and Tumkur. **Tertiary Catchment** areas include Mysore and Hassan.

The following table gives the snapshot of the existing container traffic scenario:

Table 8: Current Container Traffic Handling Scenario in Bangalore

Container Terminal	Annual Traffic Handled 2011-12 (TEU)	Export	Import	Empty	Transported by Road From ICD
ICD, Concor	88,232	39,600	48,000	632	3%
Pearl Harbour, CWC	24,992	18,000	6,792	200	100%
By Chennai CFSs/Direct at Chennai port	37,741	19,200	18,264	277	100%
Total	150,965	90,861	86,431	1,109	43%

Source: Interviews with various freight forwarders, Concor ICD & Pearl Harbour CFS

It can be seen that Bangalore has a very high proportion of container traffic (43%) being moved by road. There are several reasons for this:

- i. Proximity to Chennai Port: Chennai port is just ~350 km from Bangalore, which means just 6-7 hours by road. For companies that want quick transportation of containers, road is a preferred mode
 - a. From a road-linked ICD, total time taken to Chennai is close to 12-15 hours. In comparison Concor ICD takes close to 24 hours as clients have to wait for allocation of wagons and rakes to be filled.
- ii. Commodities that require quick turnaround such as textiles prefer road
- iii. Many of the industrial areas at present are located at the outskirts of the city, while both the ICDs are located in Whitefield. The trucks have to travel through the city to reach these ICDs. Further, there are time restrictions for truck movement within the city. Hence, many companies feel it is faster to transport by road directly to Chennai. Chennai has a strong network of logistics agencies-shipping agents, freight forwarders, Custom House Agents etc to choose and pick from

2. Future Container Traffic Forecast for Bangalore

Future container growth in Bangalore is projected via two steps:

- i. Analyzing the past container growth data in Bangalore and estimating the multiple at which it grows with respect to Karnataka's state income growth. Following table gives the past trend in container traffic handled at Bangalore's ICDs

Table 9 EXIM Annual Container Traffic trend at Bangalore's ICDs

	EXIM Container Traffic at Concor ICD	EXIM Container Traffic at Pearl Harbour	Total Container Traffic	EXIM Karnataka's Gross Domestic Product (at 2000-01 prices)
2005-06	67718	9234	76952	142393
2006-07	79702	10440	90142	152832
2007-08	81494	33286	114780	172573
2008-09	82531	35370	117901	181338
2009-10	63887	21295	85182	191312
2010-11	72652	22800	95452	206999
2011-12	88232	24992	113224	220247

Source: Concor Website, Interviews with ICD Concor & Pearl Harbour, RBI Database, Economic Survey of Karnataka

During 2006-2012, the container traffic growth (CAGR) was 0.88 times the State Income growth. However, this period includes 2 years of downturn (2007-08 and 2008-09). The multiple of container traffic growth to state income growth during economic recovery period (2010-2012) was 2.2. For projections, an average multiple of 1.56 is considered.

- ii. Forecasting Karnataka's State Domestic Product

Regression analysis is done between Karnataka's GSDP and India's GDP during 1999-2000 and 2011-12. Karnataka's future GSDP growth was then projected using BRIC's projections for India's GDP growth. Following equation was used to estimate the growth:

$$Y=MX+C,$$

Where, Y is Karnataka's GSDP, X is India GDP, M=0.52 (from regression analysis), C=4800 (from regression analysis)

iii. Projecting Container Growth

The container growth is projected for first 20 years i.e. till 2032 and is assumed to stagnate for the purpose of this project. Further, as the chosen site is very far away from rail line, only road share of traffic is considered for this facility. The current road share of 43% is assumed during the forecast period. The table below gives the forecasted container traffic pie that is available for the proposed ICD at the Logistics Park in Harohalli. The share for the proposed ICD is expected to gradually increase from 2% (2015) to 7% (2029) and assumed to decline again to 6% thereafter to account for increasing competition.

Table 10: Forecasted Traffic of Containers for Bangalore and the Proposed Facility at Harohalli

Year	2011-12	2014-15	2019-20	2024-25	2031-32
Total Container Traffic (TEUs)	150,965	208,165	355,599	607,455	1,285,547
Road Share of Traffic (TEUs)	65,380	90,152	154,003	263,078	556,747
Assumed Share for the Proposed ICD		2%	3%	6%	6%
Traffic at Harohalli (TEUs)		1803	4620	15,785	33,405

An ICD is expected to handle ~33,000 TEUs of traffic annually by 2031-32. The area sizing of the proposed ICD will be done taking into account an annual traffic of 33,000 TEUs.

3. Competition from other Players

While the major competitors at present are the Concor ICD and Pearl Harbour ICD at Whitefield, more such facilities are expected to come up in future at Dobbespeth, Hosur, Neelmangala and Hoskote.

- A Logistics Park at Dobbespeth is planned by government on PPP basis. The DPR is ready and land transfer process is on.
- Pearl Ports and Warehousing, that is operating the CWC ICD at Whitefield on a 15 year lease ending in 2018, plans a small 4-5 acre facility at Hosur (Border of Bangalore and Tamil Nadu)
- Continental Warehousing Corporation plans an ICD at Neelamangala
- Sical Logistics plans an ICD at Hoskote at an investment of INR 96 crore

5.1.2 Warehouse

As discussed in earlier sections, Bangalore being a major consumption centre attracts large warehousing players across sectors—Electronics, FMCG, Organized Retail, 3PL & Express Cargo. Following table gives major warehouses along with their average size present in Bangalore in various sectors:

Table 11: Warehouses Owned and Rented by Various Players in Bangalore

Player	Sector	Size (sqft)
All Cargo	3 PL	100,000 (Planned-Own)
Britannia	FMCG	~100,000
Big Bazaar	Organized Retail	~140,000-250,000
Future Group	Electronics	30,000
E Zone	Electronics/Organized Retail	50,000-70,000
Food Bazaar	Organized Retail	60,000
Gati	3PL & Express Cargo	250,000 (Own)
Lifestyle	Organized Retail	100,000-120,000
Parle	FMCG	~50,000
Recall	Organized Retail	27,000
Shell	Others/Lubricants	40,000
Shoppers Stop	Organized Retail	180,000-200,000
Sri Kailash Logistics	3PL	Planned (Own)
Tata Tea	Other	30,000
Tata Teleservices	Telecom/Electronics	55,000
Other Electronics Players	Electronics	15,000-30,000
OM Logistics	3 PL	~40,000
TOI	Newspaper (Other)	35,000
Uniworld	3PL/Logistics Player	Planned (Own)
Vision India	3PL/Logistics Player	52 acres
Nuance (Duty Free Shop at Bangalore Airport)	Processed Food, Packaged Food (Cold Storage)	1,000

Source: Feedback Research

It can be seen from the above table that the warehouse size of major players varies between 25,000 sqft to nearly 250,000 sqft of space. For the proposed facility the Consultants have assumed the following:

Table 12: Assumptions for Warehouse Space at the Proposed Logistics Park in Bangalore at Harohalli

	Electronics		FMCG		Organized Retail		3 PL & Express Cargo	
	Space Required by each player (sqft)	Number of Players Renting	Space Required by each player (Sqft)	Number of Players Renting	Space Required by each player (sqft)	Number of Players Renting	Space Required by each player (sqft)	Number of Players Renting
Large Player	50,000	2	60,000	1	75,000	1	100,000	1
Medium	20,000	2	30,000	1	40,000	2	50,000	1

Player								
Small Player	5000	3	10,000	2	10,000	1	20,000	2
Total Space	155,000		110,000		165,000		190,000	
% Share	25%		18%		27%		31%	
Grand Total Warehouse Space		620,000	sqft					

Nearly 15 acres of warehousing space is assumed for the proposed facility. With a 50% ground coverage, about 30 acres will be required for warehousing complex at the Logistics Park. The major sectors include Electronics, FMCG, Organized Retail, 3 PL & Express Cargo. The rentals for warehouses in Bangalore range from INR 18 per sqft per month to INR 25 per sqft per month and ~ INR 58 per sqft per month for cold storage

5.1.3 Truck Terminal

Most of the warehouse users that Feedback interacted with have emphasized on the proximity of transporters as an important decision making factor. Thus, a truck terminal is a complementary facility that is required in a Logistics Park.

Interactions with truck associations of Karnataka yield that there are nearly 3,500 trucks that reach the outskirts of Bangalore per day, of which 1,000-2,000 trucks stop in the city for loading, unloading and picking up new orders.

There is already a truck terminal at Yeshwanthpur that has a capacity to handle around 700 trucks per day and around 500 small vehicles. There has been a demand for another truck terminal at Neelmangala but no terminal has come up.

It is proposed to have a truck terminal with capacity to handle ~1,000 trucks per day as there is already a demand for an additional truck terminal in Bangalore. Further, the Logistics Park will generate demand for trucks too.

5.1.4 Future Demand Drivers

Growing industrial base will be the major demand driver for the proposed Logistics Park. Karnataka Government plans expansion of various industrial estates in the Bangalore Rural and Bangalore Urban areas. More than 2,000 acres of industrial estates is planned by the Karnataka government. Following table gives various industrial estates being planned:

Table 13: Industrial Estates Planned in Bangalore

Name of the Industrial Estates	Area	Status of Land Acquisition
Bidadi-II Phase	442 acres	Acquired
Dodballapur-3rd Phase	600 acres	Acquisition in Final Stages
Dobbespote-4th Phase	1,000 acres	Acquisition in Final Stages

Source: Karnataka Udyog Mitra

Apart from the above industrial estates, at least INR 11,000 crore private investment is planned in sectors like auto-components, aerospace components, tiles and machinery sectors in Bangalore by major companies like Hindustan Aeronautics Ltd, Denso Kirloskar, Tokai Rubber etc. Following table gives major non IT/ITeS projects in Bangalore by various companies:

Table 14: Major Projects Under Implementation in Bangalore

Company Name	Product	Investment in INR Crores
Bangalore International Airport Ltd.	Multi-Product SEZ	3385
Hindustan Aeronautics Ltd.	Engine & Engine Components	2095
Denso Kirloskar Industries Pvt. Ltd.	Radiators, AC	98
Dynamatic Technolgies	Aerospace Components	466
Starragheckert Machine Tools Pvt. Ltd.,	Precision components for Aero Space & Automobile Industry.	127
Tokai Rubber Auto-Parts India Pvt. Ltd.	Rubber products/ Automotive Ancillary components	63
Beml Limited,	Aircraft Components	316
Global Oil Industries Ltd,	Manufacturing & Packing Edible Oil	270
Bell Ceramics Pvt. Ltd,	Tiles	60
Silver Gem Energy Diodes Ltd,	Manufacturing of LED	250
Octamec Infrastructure Limited,	Aerospace SEZ	951
Wipro Ltd	Aerospace Actuators and Parts	52
Tyco Electronics Corporation India (P) Ltd	Electrical Components	595
Jindal Aluminium Ltd.	Aluminium Extrusion Plant	262
Pepsico India Holdings Pvt. Ltd	Non-Alcoholic Beverages, Fruit Juice Based Beverages, packaged drinking water	55
Powerica Limited	Manufacture of DG Sets and Accessories	170
Triveni Engineering & Industries Ltd.,	High Pressure Industrial Steam Turbine	250
Musashi Auto Parts India Pvt. Ltd,	Manufacture of Bearings, Gear & Driving Equipments	400
Britannia Industries Ltd,	Biscuits & Bakery Products, R &D Centre	100
Keihin Fie Pvt. Ltd.	Carburetor and its Parts	160
Wipro Ltd.	Hydraulic Cylinders	100
Jindal Aluminium Ltd.,	Aluminium Sheets & Foil	370
Base Minerals Private Limited,	Industrial Pumps	98.9
Total		10,693

Source: Karnataka Udyog Mitra

5.2 Hubli

5.2.1 Inland Container Depot

1. Current Container Traffic Scenario in Hubli-Dharwad

Hubli-Dharwad area has a very low container traffic generation at present. It is estimated that close to ~ 2,000 EXIM containers per annum are generated from this region. Of this, only 5-6% is imports and rest are exports. The main port for export and import is Jawaharlal Nehru Port at Mumbai.

Major commodities handled include Processed Food, Machines, Auto Parts, Pharmaceuticals, Hardware, Textile Products, Electronics, Gherkins, Food Grains and Chemical Valves.

The following table gives a snapshot of estimated container movement to, from and through Hubli.

Table 15: Commodity wise container traffic in Hubli

Commodity	Movement	Containers per Month
Domestic Traffic		
Processed Food	Out	30
Machines	Out	30
Auto Parts	Via	10
Pharmaceuticals	Via	10
Hardware	Via	10
Textile	Via	5
Electronics	Via	5
EXIM Traffic		
Gherkins	Export	83
Processed Food	Export	42
Aluminum Powder	Via Hubli from Belgaum	70
Auto Parts	Import	12
Food Grains	Export	20
Chemical Valves	Export	12
Machines, Motors, etc.	Export	10

Source: Interviews with industrial estate associations, Karnataka Chambers of Commerce and Industry, Transporters

It can be seen that container traffic is very low at present, not only in the EXIM sector but also in the domestic sector. Most of the domestic container traffic is through traffic originating from Bangalore and going towards Delhi.

Hubli-Dharwad's catchment area is limited to Dharwad district due to the presence of an established ICD at Belgaum being operated by Container Corporation of India - located 70 Km North-West of Hubli, which is also operating below capacity (approximately 60% capacity

utilization). Currently, despite Hubli coming under the primary catchment of this ICD, not much container traffic of Hubli is being handled at the Belgaum ICD.

The container traffic being handled in Belgaum is a good indicator of low container traffic potential in the region at present. In 2011, Belgaum ICD handled just 540 EXIM containers and about 2,500 domestic containers. Even when the economy was at its peak in 2006-07, only 900 EXIM containers and 2300 domestic containers were handled at this ICD.

The following table gives the year wise container movement at Belgaum ICD during the last 4 years:

Table 16: Annual Trend of Container movement in Belgaum ICD

S. No.	Year	International	Domestic	Total
1	2006 – 07	900	2263	3163
2	2007 – 08	696	3192	3888
3	2008 – 09	90	2779	2869
4	2009 – 10	90	3358	3448
5	2010 – 11	540	2572	3112

In the container yard of the Belgaum ICD, the containers are usually not stacked. They are put one beside another. This is an indicator that the capacity of the depot is not utilized to its full extent.

- 2. Future Container Forecast for Hubli-Dharwad Region:** While the current traffic in Hubli-Dharwad region is very low, the region is expected to grow in future. Given the paucity of data on the past growth trends in the container traffic in this region, the Consultants, instead of using regression analysis for projecting growth have used the Commodity Growth Approach.

Under this approach, the commodity growth rates of major commodities being handled in containers is used to project future traffic. The assumed commodity growth rates are given in the Annexure-1

Given these growth rates, the container traffic is projected for first 25 years till 2036-37, after which the traffic is assumed to stagnate. The traffic projected for Hubli-Dharwad area is expected to be ~ 47,000 containers a year in 2036-37. A longer period is used for estimation for Hubli than in Bangalore because Hubli container market is expected to mature in long run only. Thus, even though in the current situation, the potential for an ICD seems low, there is potential for it in the long run. Thus, to create infrastructure for future, an ICD is recommended at Hubli.

At present, Hubli does not have any ICD facility and the entire container traffic is being transported by road to other locations which have a better container infrastructure (in the form of CHAs, freight forwarders, shipping agents etc). However, as the traffic grows and a

facility is provided for handling of containers in the city in the form of an ICD, it can be expected that this ICD will gradually start handling container traffic.

The share of the proposed ICD in total potential container traffic of the region is expected to gradually increase from 5% to 45% by 2035. The share is assumed to stagnate thereafter to account for any competition coming up in future. The assumed share for the Hubli ICD are higher than the proposed ICD in Harohalli, as there is no such facility in Hubli compared to 2 ICDs already present in Bangalore.

Following table gives the Container Traffic Projections for Hubli and the projections for containers expected to be handled by the proposed facility:

Table 17: Projected Container Traffic in Hubli

Year	2011-12	2014-15	2019-20	2024-25	2029-30	2036-37
Total Container Traffic EXIM (TEUs)	2,148	2983	5327	9,832	18,659	47,703
Assumed Share for the Proposed ICD		5%	10%	20%	30%	45%
Traffic at Proposed ICD at Hubli		149	799	2,458	5,598	21,466

Thus, an ICD to accommodate ~ 21,000 EXIM containers annually is proposed for Hubli. The developer may choose to develop the facility in a phased manner

5.2.2 Warehousing

There are a large number of warehouses present in Hubli, both private and government owned. This is primarily due to the fact that Hubli is a major trade center of North Karnataka and the gateway of most of the trade done in this region. For the same reason, the demand of warehousing is expected to be high in the region. These warehouses are distributed in a fragmented manner in Hubli in the form of small clusters. Bangalore Highway (just south of Hubli) has a concentration of about 50-60 warehouses of about 20,000 sqft each. Many notable players such as VRL Logistics, Food Corporation of India, Videocon, Asian Paints, JK Tyre, Philips, Electrolux, etc. have hired/purchased storage space here. VRL logistics, especially, is the largest logistics player in the region and has 3 warehouses of area 20,000 sqft about 10 Km south of Hubli on the Bangalore highway. Most of the warehouses (especially private warehouses) in Hubli have a dimension of 100 x 200 ft. Another notable location where there is a concentration of warehouses is the Hubli-Dharwad link road. The following table gives major players in the warehousing sector in Hubli along with their warehouse sizes and numbers:

Table 18: Warehouses Owned and Rented by major players in Hubli

Player	Sector	Average Size (sqft)	Minimum No of warehouses
VRL Logistics Ltd.	3PL/Logistics Player, Express Cargo	20,000	3
Videocon	Consumer Goods - Electronics	20,000	1
Asian Paints	Paints/Varnishes	20,000	1
JK Tyre	Tyres	20,000	2
Philips	Consumer Goods – Electronics	20,000	1
Electrolux	Consumer Goods – Electronics	20,000	1
Food Corporation of India	Food Grains	20,000	3

Source: Feedback Research

It can be seen from the above table that the average size of warehouses is similar for most of the major players in Hubli. Further, with many retail players like Big Bazaar, Reliance Fresh etc setting up their outlets in Hubli and other parts of North Karnataka like Belgaum and Gulbarga, substantial demand for warehousing in this sector is also expected. For the proposed facility the Consultants have assumed the following:

Table 19: Assumptions for Warehouse Space at the Proposed Logistics Park in Hubli

	Electronics		3 PL		Retail		Others	
	Space Required by each player (sqft)	Number of Players Renting	Space Required by each player (Sqft)	Number of Players Renting	Space Required by each player (Sqft)	Number of Players Renting	Space Required by each player (sqft)	Number of Players Renting
Medium Player	20,000	1	20,000	1	20,000	1	20,000	1
Small Player	5,000	2	5,000	2	5,000	2	5,000	2
Total Space	30,000		30,000		30,000		30,000	
% Share	25%		25%				25%	
Grand Total Warehouse Space		120,000	sqft					

The proposed Logistics Park is expected to provide 2.7 acres of warehousing space, which with 50% ground coverage means 5.5 acres of area requirement. The average rentals prevailing in the area are INR 10-INR 15 per sq.ft. per month.

5.2.3 Truck Terminal

From the interactions with the Karnataka Chambers of Commerce and Industry, Goods Transport and Lorry Owners' Association at Hubli and VRL Logistics Ltd., it is concluded that Hubli has a truck traffic of nearly 5,000 trucks per day of which nearly 1,000 to 1,500 trucks stop at Hubli for loading/unloading (approx. 10,000 tonnes) and about 100 trucks travel within the city primarily for movement of goods from the goods shed at the rail head to various warehouses in Hubli.

The principal commodities handled using trucks at Hubli are Break Bulk cargo, Chili, Sugar, Food Grains, raw materials and products from Tata Telcon, Cement, Chemicals, Steel, Tyre, Construction Aggregate, Lubricants, Fertilizer, Chemical Valves, Fast Moving Consumer Goods, Hardware, etc. In total, less than 5% are containers.

Hubli region is used by many large logistics players such as VRL Logistics as a goods redistribution center for North Karnataka. This means that at Hubli, logistics players arrange the goods in various outgoing trucks according to their dispatch locations. For this, logistics players usually have their own private warehouses and loading/unloading space.

Presently, there is no truck terminal in Hubli. There are private lands at 3-4 locations of about 5 acres each, which have a holding capacity of about 100-150 trucks each, where the trucks currently park. The spillover trucks from these sites are being parked at night on the roads itself. These private land owners charge for parking at the rate of INR 30 to 50 for 12-18 hours. The land parcels are privately owned and operated, and do not have sufficient space nor facilities/amenities to house/service all the trucks. There is a 40 acre parcel of land owned by VRL Logistics about 20 Km south of Bangalore. It has a capacity of about 700-800 trucks and is used by VRL Logistics to park its own fleet of trucks.

As per inputs provided by the North Karnataka Lorry Owner's Association and VRL logistics, of the trucks that are bypassing Hubli and not carrying out loading/unloading at present, nearly 25% trucks stop at Hubli as a mid-journey stop, the number would be approximately 1,000 trucks. In addition, approximately 1500 trucks are doing business within Hubli. Hence a truck terminal would be required for ~2,500 trucks. The present capacity in Hubli is not more than 1,500 trucks, which is highly unorganized (except VRL's private parking area). Thus, a truck terminal for 2,000 trucks is proposed in Hubli with various facilities, amenities and utilities such as Office, Workshop, Petrol Pump, Police Station, Fire Station and Hospital/Medical Center. Considering that even the current facilities charge for parking and do not have good facilities, the proposed facility is expected to sway traffic away from them.

The Government of Karnataka had plans of acquiring 50 acres of land south of Hubli on the Bangalore highway to set up a truck terminal but the plan has not materialized till now. The Consultants recommend that instead, a truck terminal is set up as a part of the proposed Logistics Park at Hubli.

5.2.4 Future Demand Drivers

The major demand drivers that are expected to fuel the growth of logistics activities in the Hubli region are:

1. The Karnataka State Government has earmarked ~1,000 acres of land for development of industrial areas in the near future in Mammigatti and Gamangatti.

This is expected to increase production, which in turn, would increase the logistics business in Hubli.

2. The Hubli region is the gateway of trade activities between Karnataka & rest of North Karnataka. This implies that any increase in trade activity between the aforementioned regions/locations would fuel the growth of logistics activities in Hubli region.
3. As per the data available with Karnataka Udyog Mitra, there are about 70 Small and Medium units coming up in Hubli-Dharwad across various industrial estates. These industries would come up with an investment of ~ INR 700 crore. The major sectors are: Auto Components, Cement, Power Plants, Copper, Cotton, Electrical Equipments, Valves, Welding Equipment, Sheet Metal components, Wood based components, etc.
4. Nearly INR 300 crore of investment is envisaged for large scale projects in Dharwad district in auto-component and IT sector.

Table 20 Future industrial investments in Hubli-Dharwad

Unit Name	Sector	Investment (in INR Crores)
Chandrodaya Holdings Pvt. Ltd.	IT Park	148.46
Fleetguard Filters Pvt. Ltd.,	Automobiles	85.52
Total		234

Source: Karnataka Udyog Mitra

5.3 Hassan

5.3.1 Inland Container Depot

1. Container Movement in Hassan region

It is estimated that Hassan and its catchment generates close to ~ 9,000 EXIM containers per annum. The major commodities being moved in the region using containers are: Coffee, Processed Food, Garments and Granite. While the primary catchment for an ICD located in Hassan is the Hassan district, the secondary catchment is Madikeri, Kushalnagar and Chikmagalur. Tertiary catchment area will comprise Mysore and Chamarajnagar areas.

Nearly 90% of the traffic is exports, with major export commodity being Coffee. The total export of Coffee is about 200-250 containers per month mostly towards Chennai port. Recently, it has started to shift towards Mangalore Port also due to proximity. The coffee exports are mainly from Hassan, Chikmagalur, Madikeri and Kushalnagar area. Following table shows the break-up of coffee container traffic in the region:

Table 21: Exporters of Coffee in Hassan region

Name of Exporter	Traffic per month (TEUs)	Export Port
Garkins Pvt. Ltd.	60-70	Chennai
Alliance Pvt. Ltd.	60	Chennai and Mangalore
Bharti Pvt. Ltd.	40-50	Chennai
N K Jayanti Pvt. Ltd.	30	Chennai
ABC Coffee Pvt. Ltd.	50	Chennai and Mangalore

Source: Interviews with ICD Hassan and Industry Players, Transporters

Apart from these, Garments sector generates export of ~ 200 containers every month towards Chennai port from Hassan. The granite industry is largely fragmented in the region. It generates a total traffic of about 20 containers per month.

The import traffic mainly comprises Borax, Toys, and electronics and Artificial flowers.

Even though Mangalore port is closer, Chennai port is still being preferred because of lack of storage capacity at the Mangalore port and also because the vessel schedules at Chennai suit the industry better. As of now, all containers are being transported by road.

The estimated commodity-wise traffic movement to and from Hassan is as follows:

Table 22: Commodity-wise container movement at Hassan

S. No.	Commodity	Region of Origin/Destination	Estimated Number of Containers per month
EXPORT			
1	Coffee	Hassan, Madikeri, Kushalnagar, Chikmagalur	213
2	Garments	Hassan	180
3	Granite	Hassan	20

5	Polished Granite	Hassan	310
	Total Exports		668
IMPORT			
1	Borax	Hassan	7
2	Toys	Hassan	10
3	Electronics	Hassan	4
4	Artificial Flowers	Hassan	2
	Total Imports		23
	GRAND TOTAL		746

Source: Interviews with Hassan ICD, Transporters, Industry

Further, another ~2,500 containers per month are generated in the tertiary catchment comprising Mysore and Chamarajnar, with the major commodities being granite, electrical goods, FMCG etc. However, there is already an ICD planned in Nanjangud at Mysore. Hence Hassan is not expected to get a large share of this traffic.

Hassan already has an ICD, being operated by Vikram Logistics and Maritime Pvt, Ltd, that handles container traffic of about 50-100 containers per year since 2009. This facility has not been handling any containers for the past 6 months, due to lack of Electronic Data Interchange (EDI) facility - leading to non-availability of connectivity to the Export Development Authority's new centralized online clearance system. The ICD is expected to get this connectivity from April 2012. The ICD, with 12,000 sqm of paved area and 2,500 sqm of warehousing space is highly underutilized now.

Vikram Logistics, till now, has handled approximately 150 export and 20 import containers at its facility. The principal export commodity handled is Coffee.

2. 2. Estimating Future Container Growth for Hassan

As explained for Hubli, in the absence of past growth trends, the commodity-wise growth approach is used for projecting container growth in Hassan too. The projections are made for 20 years, i.e. till 2031-32, after which the traffic is assumed to stagnate. The assumed growth rates for major commodities being transported in containers are given in Annexure-1. Using the commodity growth rates, the traffic projections arrived at are given in the table below:

Table 23: Traffic projections for container traffic at Hassan

Year	2011-12	2014-15	2019-20	2024-25	2031-32
Total Container Traffic EXIM (TEUs)	8,952	12,559	22,171	39,305	88,118

The traffic is expected to reach ~90,000 TEUs per year in 2031-32. The existing ICD at Hassan has a yard area of 12,000 sqm. With average dwell times of 3 days and average stack height of 3, the

terminal has a capacity to handle more than 1 lakh containers per year. Hence, an additional ICD is not recommended as of now.

5.3.2 Warehousing

Warehouses in Hassan are mainly for agricultural products. Commodities like Maize, Ragi, Copra, Oil Seeds, Rice, Wheat, Fertilizers, etc. are being stored in warehouses. Potato seeds are stored in cold storages. **Karnataka State Warehousing Corporation** has a capacity of 45,000 metric tonnes (3,50,000 sqft @ ~128 kg per sq.ft.). Out of this, about 35,000 metric tonnes (2,75,000 sqft) is owned and 10,000 metric tonnes (75,000 sqft). It has a capacity utilization of little more than 100%. On an average, the dwell time of commodities here is 1 month, but there is stock which is sometimes kept for as long as a year.

The fertilizer and food grains traffic is brought to Hassan by rail at the Hassan goods-shed and then moved into the warehouses. At the goods-shed, there is only 1 loading/unloading site presently which can handle not more than 25 rakes per month. About 20 rakes (comprising 42-50 wagons) arrive at the goods shed per month. Each wagon has about 1200 bags of 50 Kg (containing commodities such as Fertilizer, Food Grains, etc).

The warehousing rentals are in the range of INR 6-8 per sq. ft. per month.

Table 24: Estimating Warehousing Capacity Required at Hassan

Calculating the Required Warehousing Capacity in Hassan	
Assumptions based on primaries with warehouse managers	
Average number of rakes coming to the Good Shed in a month	20 rakes
Wagons in each rake	45 wagons
Each wagon Carries	60 tonnes of food grains and fertilizers
Average Dwell Times at Warehouse	1 month
1 sq.ft. can accommodate	128 kg
Results	
Per month foodgrains and fertilizers traffic at the goodshed	54,000
Minimum Warehousing Space required in Hassan for Foodgrains and Fertilizers	4,23,000 sq.ft.

The Karnataka State Warehousing Corporation has capacity of 3,50,000 sq ft at present, which means that there is a shortage of at least 1 lakh sq. ft. warehousing capacity for foodgrains and fertilizers in Hassan. Considering that even KSWC has to hire warehousing space to meet requirements, it is proposed that a warehousing space of ~1,50,000 sq.ft. be provided in the proposed Logistics Park at Hassan to handle food Grains such as Maize, Ragi, Copra, Oil Seeds, Rice, Wheat, etc. and Fertilizers. Despite the demand for cold storage for storing potato seeds, it is not recommended to include any cold storage space as potato seeds are seasonal in nature and hence the cold storages remains empty for most of the year.

Hence, warehousing space for 3.4 acres (equivalent to 1.5 lakh sq ft) is proposed. With a ground coverage of 50%, approximate space of 7 acres will be required for warehousing complex at the proposed Logistics Park at Hassan.

5.3.3 Truck Terminal

About 3,600 trucks move through Hassan per day. Out of these, about 1,000 trucks are doing business (loading/unloading) daily in Hassan. A significant proportion of the other trucks are parking in the city. There is a major problem of parking in Hassan as there is no truck terminal. There are no privately owned land parcels for trucks to park. Presently, the trucks are parking either on vacant government land parcels or on the road. The break-up of trucks deployed in Hassan is as follows:

Table 25: Break-up of trucks deployed in Hassan

Establishment	Approximate number of trucks deployed
Railway goods shed	300
Hindustan Petroleum Corp	300
Milk Federation	200
Others/Misc	200

The principal commodities handled are: Agricultural products (coffee, vegetables), Garments (for export), PDS goods (Rice, wheat), Fertilizer and Cement. Out of the total EXIM traffic, 10% goes towards Mangalore port and the balance moves towards Chennai port. Chennai port is being preferred primarily because of its high handling and storage capacity and because of the fact that more vessels come to Chennai than to Mangalore. The traffic volumes of various products handled are as follows:

Table 26: Volumes of commodities moved in trucks at Hassan

Commodity	Volume ('000 tonnes per annum)
Agri Products + Garments	50
Rice, Wheat	96
Cement	96
Fertilizer	200

Based on interviews with local truck associations and truck operators in Hassan, it is proposed to set up a truck terminal with a capacity of handling 1,500 trucks per day.

5.3.4 Future Demand Drivers

The major demand drivers that are expected to fuel the growth of logistics activities in the Hassan region are:

1. There are at least 12 Small and Medium sized manufacturing projects coming up in Hassan across various industrial estates at an investment of INR 180 crores. The major sectors include textiles, pharmaceuticals and chemicals. Large scale projects with an investment of INR 2,900 crores are under implementation in Hassan.

Figure 9: Large Scale Projects Under Implementation in Hassan

Unit Name	Sector	Investment (in
-----------	--------	----------------

		INR Crores)
Opto Circuits (India) Ltd.,	Electronics/ Hardware	686
Hical Engineering Pvt. Ltd.	Electronic Hardware Technology Park	124
Mineral Enterprises Ltd	Steel Plant	1993
Sri Chamundeshwari Sugars Ltd.	Co-Gen Plant	146
Total		2,900

Source: Karnataka Udyog Mitra

5.4 Project Design

5.4.1 Bangalore

It is recommended that the Logistics Park will have an EXIM ICD (road-linked), warehouse complex and a truck terminal along with other ancillary commercial developments like office space, restaurants, dormitories, guest house etc. The area plan for Logistics Park includes

- Basic Facilities (comprising the ICD, Warehouse, Truck Terminal),
- Common Facilities (comprising Administrative Building, Public Amenities, Utilities) and
- Commercial Complex

1. Basic Facilities: Total area of ~ 45 acres is earmarked for the basic facilities at the Logistics Park at Bangalore. Following table gives a detailed area statement:

Table 27: Area Plan for Basic Facilities at the Proposed Logistics Park at Harohalli Bangalore

	Area (acres)	Capacity	Assumptions
EXIM ICD			
Container Yard	3	33,000 containers per annum	Stack Height: 2.5 Per Container Area: 59 sqm Average Dwell Time at the Yard: 4.5 days (based on interviews with Concor ICD)
EXIM Warehouse	1.6	Export: 1657 sqm Import: 921 sqm Bonded: 3945 sqm	Area per TEU: 30 sqm Dwell Time Export: 4 days Dwell Time Imports: 7 days Dwell Time Bonded: 30 days
Container Repair Facility	0.12 (500 sqm)		
Gate Complex and Custom Office	0.03 (140 sqm)		
Total	4.7		
Domestic Warehouse			
Warehouse	28		Ground Coverage: 50%

	Area (acres)	Capacity	Assumptions
Cold Storage	1		Ground Coverage: 50%
Total	29		
Truck Terminal			
Main Truck Parking Area	9.3	1000 trucks	Area per truck: 60 sqm Average Dwell Time: 15 hours
Truck Parking Area to accommodate traffic emanating out of ICD	0.3	23 trucks	Area per truck: 60 sqm 25% of trucks using the Parking Facility (based on interview with the Whitefield ICD of Concor)
Truck Parking area to accommodate traffic emanating due to Domestic Warehouse	1.7	115 trucks	1 Truck Parking Space for every 500 sqm of the warehouse (Norm given in Bangalore Masterplan 2015) Area per truck: 60 sqm
Total	11.3		

2. Common Facilities: Common facilities to be spread across 1 acre of land

Table 28: Area Break-Up for Common Facilities at proposed at Logistics Park at Harohalli

Area Head	Area (sqm)	Remarks, if any
Offices		
Administrative Building	400	
Security office (6X7)	50	
Security restroom (3X6X2)	40	
Public Amenity		
Truck Repair and Maintenance Shop	500	2 in number @ 250 sqm each
Mess	252	
Medical Room	50	
Waste Disposal System	200	
Public W/C Facilities (Baths & Toilets)	835	
Fire & Safety Office	28	
Water Filtering System & Storage	500	
Weigh Bridge	500	2 weigh bridges, 1 private @ 250 sqm each
Utilities		
Electrical Substation	500	

3. Commercial Complex: The Logistics Park at Bangalore will have ~ 4 acres of Commercial space

Table 29: Area Break-Up for Common Facilities proposed at Logistics Park at Harohalli

Area Head	Per Unit	Number	Total Area sqm
-----------	----------	--------	----------------

	(sqm)		
Office Space	75	30	3750
Shops	50	50	2500
Restaurants	100	5	500
Fuel Stations	2500	2	5000
Dormitory	8 sqm per bed	400 beds	3200
Guest House for Outsiders	15 sqm per room	25 rooms	375
Total			15,325

4. Total Area Statement Summary

Following table gives the total area summary for the proposed logistics park at Harohalli, Bangalore.

Table 30: Area Summary for the Proposed Logistics Park at Harohalli in Bangalore

Summary of Area	Acres	Share in Total Area
EXIM ICD	5	7%
Domestic Warehouse	28	41%
Domestic Cold Storage	1	1%
Truck Terminal for Domestic	11	16%
Office+Services+Utilities	1	1%
Commercial	4	5%
Circulation	17	25%
Open Space	2	4%
Total	70	100%

5.4.2 Hubli-Dharwad

It is recommended that the Logistics Park will have an EXIM ICD (road-linked), warehouse complex and a truck terminal along with other ancillary commercial developments like office space, restaurants, dormitories, guest house etc. The area plan for Logistics Park includes

- Basic Facilities (comprising the ICD, Warehouse, Truck Terminal). Rail linkage not recommended at present as the ICD is not expected to see very high traffic in initial years of operations. The concessionaire may examine the option of setting up a rail siding in future as the nearest rail line is just 8-10 km away from the proposed site.
 - Common Facilities (comprising Administrative Building, Public Amenities, Utilities) and
 - Commercial Complex
1. Basic Facilities: Total area of ~ 26 acres is earmarked for the basic facilities at the Logistics Park at Hubli-Dharwad. Following table gives a detailed area statement:

Table 31: Area Plan for Basic Facilities at the proposed Logistics Park at Hubli-Dharwad

	Area (acres)	Capacity	Assumptions
EXIM ICD			
Container Yard	1	21,000 containers per annum	Stack Height: 2.5 Per Container Area: 59 sqm Average Dwell Time at the Yard: 2 days based on interviews with Concor ICD at Belgaum
EXIM Warehouse	0.5	Export: 1359 sqm Import: 124 sqm Bonded: 371 sqm	Area per TEU: 30 sqm Dwell Time Export: 3 days Dwell Time Imports: 5 days Dwell Time Bonded: 30 days
Container Repair Facility	0.12 (500 sqm)		
Gate Complex and Custom Office	0.03 (140 sqm)		
Total	1.6		
Domestic Warehouse			
Warehouse	5.5		Ground Coverage: 50%
Total	5.5		
Truck Terminal			
Main Truck Parking Area	18.5	2000 trucks	Area per truck: 60 sqm Average Dwell Time: 15 hours
Truck Parking Area to accommodate traffic emanating out of ICD	0.23	15 trucks	Area per truck: 60 sqm 25% of trucks using the Parking Facility (based on interviews with Belgaum ICD & Whitefield ICD)
Truck Parking area to accommodate traffic emanating due to Domestic Warehouse	0.32	22 trucks	1 Truck Parking Space for every 500 sqm of the warehouse (Norm derived from the Bangalore Masterplan 2015) Area per truck: 60 sqm
Total	19		

2. Common Facilities: Common facilities to be spread across 1 acre of land

Table 32: Area break-up for Common Facilities at Hubli-Dharwad

Area Head	Area (sqm)	Remarks, if any
Offices		
Administrative Building	400	

Security office (6X7)	50	
Security restroom (3X6X2)	40	
Public Amenity		
Truck Repair and Maintenance Shop	350	3 in number @ 250 sqm each
Mess	252	
Medical Room	50	
Waste Disposal System	200	
Public W/C Facilities (Baths & Toilets)	835	
Fire & Safety Office	28	
Water Filtering System & Storage	500	
Weigh Bridge	500	2 weigh bridges @ 250 sqm each
Utilities		
Electrical Substation	500	

- Commercial Complex: The Logistics Park at Hubli-Dharwad will have ~ 4 acres of Commercial space

Table 33: Area for Commercial Facilities at Hubli-Dharwad

Area Head	Per Unit (sqm)	Number	Total Area sqm
Office Space	75	50	5250
Shops	50	30	1500
Restaurants	100	3	300
Fuel Stations	2500	1	2,500
Dormitory	8 sqm per bed	800 beds	6,400
Guest House for Outsiders	15 sqm per room	15 rooms	375
Total			16,325

It is assumed that Hubli will require more number of office spaces because it will have a larger truck terminal and hence more space will be required for transport offices to set offices here. Further, due to larger truck terminal the area required for a dormitory will also be higher.

- Total Area Statement Summary

Following table gives the total area summary for the proposed logistics park at Hubli-Dharwad,

Table 34: Area Summary for the Proposed Logistics Park at Hubli-Dharwad

Summary of Area	Acres	Share in Total Area
EXIM ICD	2	3%
Domestic Warehouse	6	10%
Truck Terminal for Domestic	19	33%
Office+Services+Utilities	1	2%
Commercial	4	6%
Circulation	15	26%

Open Space	2	4%
Area for Future Expansion	10	17%
Total	58	100%

It is to be noted that the Consultants have provided area for future expansion to the concessionaire. This is to allow for future expansion of the facilities at Hubli-Dharwad to accommodate future growth of the industries in the city as well as other facilities such as rail siding. Further, being the first integrated logistics park facility, spare capacity for future is provided to attract private players. In Bangalore no such spare area is provided, as Bangalore already had large number of existing and planned logistics facilities and need for more area than what is estimated is not expected. However, the Consultants recommend that when the project for Hubli-Dharwad is awarded to any private developer, enough safeguards are put in form of time-bound expansion obligations to ensure that the spare land is not misused for purposes other than adding to the logistics infrastructure in the city.

5.4.3 Hassan

It is recommended that the Logistics Park will have a warehouse complex and a truck terminal along with other ancillary commercial developments like office space, restaurants, dormitories, guest house etc. The area plan for Logistics Park includes

- Basic Facilities (Warehouse, Truck Terminal)
 - Common Facilities (comprising Administrative Building, Public Amenities, Utilities) and
 - Commercial Complex
1. Basic Facilities: Total area of ~ 21 acres is earmarked for the basic facilities at the Logistics Park at Hassan. Following table gives a detailed area statement:

Table 35: Area Plan for Basic Facilities at the proposed Logistics Park at Hassan

	Area (acres)	Capacity	Assumptions
Domestic Warehouse			
Warehouse	7		Ground Coverage: 50%
Total	7		
Truck Terminal			
Main Truck Parking Area	14	2000 trucks	Area per truck: 60 sqm Average Dwell Time: 15 hours
Truck Parking area to accommodate traffic emanating due to	0.41	28 trucks	1 Truck Parking Space for every 500 sqm of the warehouse (Based on Bangalore norms) Area per truck: 60 sqm

	Area (acres)	Capacity	Assumptions
Domestic Warehouse			
Total	14		

2. Common Facilities: Common facilities to be spread across 1 acre of land

Area Head	Area (sqm)	Remarks, if any
Offices		
Administrative Building	400	
Security office (6X7)	50	
Security restroom (3X6X2)	40	
Public Amenity		
Truck Repair and Maintenance Shop	750	3 in number @ 250 sqm each
Mess	252	
Medical Room	50	
Waste Disposal System	200	
Public W/C Facilities (Baths & Toilets)	835	
Fire & Safety Office	28	
Water Filtering System & Storage	500	
Weigh Bridge	500	2 weigh bridges @ 250 sqm each
Utilities		
Electrical Substation	500	

3. Commercial Complex: The Logistics Park at Hassan will have ~ 4 acres of Commercial space

Area Head	Per Unit (sqm)	Number	Total Area sqm
Office Space	75	70	5250
Shops	50	30	1500
Restaurants	100	5	300
Fuel Stations	2500	1	2,500
Dormitory	8 sqm per bed	600 beds	4,800
Budget Hotel	15 sqm per room	50 rooms	750
Total			14,825

It is assumed that Hassan will require more number of office spaces because it will have a larger truck terminal and hence more space will be required for transport offices. Further, due to larger truck terminal the area required for a dormitory will also be higher.

As the site is near industrial area-Hassan Growth Centre, a Budget Hotel is proposed for business visitors in the area.

4. Total Area Statement Summary

Following table gives the total area summary for the proposed logistics park at Hassan,

Table 36: Area Summary for the Proposed Logistics Park at Hassan

Summary of Area	Acres	Share in Total Area
Domestic Warehouse	7	14%
Truck Terminal for Domestic	14	28%
Office+Services+Utilities	1	2%
Commercial	4	7%
Circulation	12	24%
Open Space	2	5%
Area for Future Expansion	10	20%
Total	51	100%

It is to be noted that the Consultants have provided area for future expansion to the concessionaire. This is to allow for future expansion of the facilities at Hassan to accommodate future growth of the industries in the city as well as other facilities such as rail siding. Further, being the first integrated logistics park facility, spare capacity is provided to attract private players. In Bangalore no such spare area is provided, as Bangalore already has large number of existing and planned logistics facilities and need for more area than what is estimated is not expected. However, the Consultants recommend that when the project for Hassan is awarded to any private developer, enough safeguards are put in form of time-bound expansion obligations to ensure that the spare land is not misused for purposes other than adding to the logistics infrastructure in the city.

6 Project Financials

Financial analysis is done for 30 years concession period plus a 3 year construction period.

6.1 Cost Estimation

The project cost is determined based on the facilities offered by the Logistics park. The various components of the capital cost would include land development, infrastructure development, construction of built up area including administration and customs office, warehousing, container yards and expenditure on equipment.

The operational costs would cover the cost of human resource, operations of equipments, electricity & other utility requirements and maintenance for built up area, infrastructure & equipments .

6.1.1 Capital Cost

1. Capital Cost Assumptions: Capital Costs assumed to be common for all the sites

Table 37: Capital Cost Assumptions

Preoperative Costs		
Project management cost	3%	of Construction Cost
Contingency	5%	of Total cost
Escalation	6%	
Process	Value	Unit
Land		
Soil investigation	20.00	lakhs
Site survey	0.40	lakhs per acre
Land development & filling/Site Development	17.00	lakhs per acre
Civil		
Space Type	Construction Cost	Unit
Built Up Area	10000.00	INR / sq mt
Mess	8000.00	INR / sq mt
Parking area	1300.00	INR / sq mt
Public amenities	10000.00	INR / sq mt
Workshop	6000.00	INR / sq mt
Warehouses	6000.00	INR / sq mt
Stacking yard	1500.00	INR / sq mt
Cold storages	3000.00	INR / sq mt
Amenities		
Water System	8.00	INR lakhs/acre
Electrical system		
Substation construction, DG sets, yard lighting, all electricals	140.00	INR / sq mt
Circulation		
Internal Roads	350.00	INR / sq mt
IT	115.00	INR lakh

For Equipment, following assumptions are made:

Table 38: Equipment Assumptions

	Norms	per	Cost (INR Crore)
Loaded Reach Stacker	1.00	15,000 TEUs	2.00
Empty Reach Stacker Multiple	0.65	of the Loaded Reach Stacker	0.12
Fork Lift-2-5 tonne	1.00	10000 TEUs	0.20
Fork Lift-8-15 tonne	0.10	of the Fork Lift 2-5 tonne	0.40
Sling Crane	1.00	location	0.40

Tractor Trailer in ICD	1.00	10000 TEUs	0.15
-------------------------------	------	------------	------

2. Cost Break-Up for all the sites: The section gives the break-up of investment for Logistics Park in Bangalore, Hubli-Dharwad and Hassan. On the basis of financial analysis, certain upfront payment that the concessionaire will pay to the government is assumed and the total investment is presented in the table below:

Table 39: Cost Break-Up for Logistics Park at all proposed sites

Capex (All Figures in INR crore, unless mentioned otherwise)			
	Bangalore	Hubli-Dharwad	Hassan
Escalation	6%	6%	6%
Upfront Payment	9.00	3.00	0.00
Land Development	12.37	10.38	9.07
Construction Cost			
Built-Up Area	16.33	17.57	16.36
Truck Terminal	6.16	10.40	7.80
Public Amenities	2.19	2.45	2.45
Work Shop	2.09	2.25	2.10
Warehouse	39.89	8.08	8.67
Container Yard	1.85	0.59	0.00
Cold Storage	1.91	0.00	0.00
Mess	0.21	0.21	0.21
Amenities	9.85	8.24	7.18
Circulation & Open Spaces	10.27	8.59	7.48
Equipment	10.26	7.92	5.30
Pre-Operative Expenses	8.84	5.73	4.90
IDC	19.67	12.74	10.65
TOTAL INVESTMENT (With Upfront Payment)	150.89	98.15	82.15

6.2 Other Project Assumptions

This section details assumptions for operational expenses, revenues, tax calculations, depreciation and capital structure.

6.2.1 Capital Structure

The financing assumptions are given below:

Table 40: Financing Assumptions

Financing & Income Tax Assumptions	
Debt	60%
Equity	40%
Cost of Debt	12%
Cost of Equity	18%
Weighted Average Cost of Capital	12%

6.2.2 Income Tax Assumptions

Income Tax including surcharge and education cess is taken to be 32.45%. The Minimum Alternate Tax (including education cess and surcharge) is taken to be 20.5%.

6.2.3 Depreciation Assumptions

Following table gives assumptions for depreciation rates used for analyzing project financials.

Table 41: Depreciation Assumptions

Depreciation as per Income Tax Act	Rate
<i>Civil & Structures</i>	5%
<i>Plant and Machinery</i>	15%
Depreciation as per Companies Act	
<i>Civil and Structures</i>	1.63%
<i>Plant and Machinery</i>	4.75%

6.2.4 Revenue Assumptions

Revenue assumptions are made on the basis of discussions with existing ICDs, industries, truck operators, local truck associations, industrial associations and commercial establishments in the vicinity.

Table 42: Revenue Assumptions for Proposed Logistics Parks in Bangalore, Hubli-Dharwad and Hassan

	Bangalore	Hubli-Dharwad	Hassan
I. Container Terminal			
Per Container Handling EXIM (INR Per Container)	2653	1400	--
Container - Other Revenues (Of the Handling Revenue)	10%	10%	--
II. Warehousing			
Average Warehousing Rental (INR per sqft per month)	18	12	8
Average Cold Storage Rental (INR per sqft per month)	55	--	--
III. Truck Terminal			

Entry Charge	50	50	50
Capacity Utilization of the Terminal (Share in Truck Capacity)	80%	80%	80%
Parking Charges in the Truck Terminal			
<i>Upto 12 hours (INR)</i>	0	0	0
<i>Beyond 12 hours (INR)</i>	75	75	75
<i>Share of Trucks parking upto 12 hours</i>	70%	70%	70%
<i>Share of Trucks parking beyond 12 hours</i>	30%	30%	30%
IV. Commercial Areas			
Dormitory at the Terminal			
<i>Share of trucks using the Dorm *</i>	50%	50%	50%
<i>Charges per Bed per night (INR)</i>	20	15	15
<i>Average Nights stayed</i>	1	1	1
<i>Total Number of Beds that will be occupied</i>	400	800	600
<i>Sqm per bed</i>	8	8	
Other Commercial Spaces			
	Rentals (INR/sqft/month)		
<i>Office Space</i>	25	20	20
<i>Shops</i>	35	30	35
<i>Restaurants</i>	35	30	35
<i>Fuel Stations</i>	20	20	20
<i>Weigh Bridges (1 private weigh bridges out of 2)</i>	15	15	15
<i>Guest House (rentals in INR per day), For Hassan-Budget Hotel</i>	1500	1500	2000
<i>Container Repair Facility</i>	20	20	20
<i>Truck Repair & Maintenance Shops</i>	25	20	20
Escalation	10%	10%	10%

**With 80% utilization, is equivalent to just 40% of maximum truck capacity of the terminal*

6.2.5 Assumptions for Operational Expenses

Operational expenses will mainly comprise staff costs, electricity costs and maintenance costs. It is assumed to be same for all three locations.

1. Staff Costs: This is a major head for operational expenses for the proposed Logistics Parks. Assumptions are made for the key staff, custom staff for ICDs and labour required for handling goods.
 - a. Key Staff: Following table gives the assumptions for the key staff:

Table 43 Assumptions for Key Staff at the Logistics Park

Designation	No.s	Salary per Person per month (INR)
Chief Manager	1	50,000
Operations Manager	1	25,000
Commercial Manager	1	25,000
Sales & marketing	1	15,000
Fire and safety officer	1	15,000
Warehouse Manager	1	25,000
Road Supervisors	1	15,000
Maintenance officer	1	15,000
Maintenance Engineers	2	10,000
F&A Manager	1	25,000
F&A staff	2	20,000
IT	2	10,000
Support staff	5	10,000
Escalation	7%	

- a. Custom Staff: As per the Union Ministry guidelines, inland container terminal proponent is required to post Customs staff on cost recovery basis for customs clearance of the cargo meant for export or import. About 13 such staff members are recommended ideally but can be lesser too if the traffic is low. The Consultants have assumed 7 of such staff for first 5 years of operations and 13 after that. As the staff will include Assistant Commissioner level officials also, the monthly cost at current prices is calculated to be INR 3.75 lakh. An escalation of 7% is taken thereafter.
 - b. Labour: Following table gives assumptions for labour:

Table 44: Assumptions for Labour for the Logistics Parks

Container Terminal	Number	Unit	Wages/month (INR)
Contract Labour/month	2.00	per 100 TEU handled per month	7000
Equipment Operator	1.00	per equipment	8500
Contract Labour/truck for Warehouse	1.00	per 25 tonne	7000
Escalation	3%	Per annum	

2. Assumptions for Other Operational Expenses: These include the expenditure on fuel, electricity and maintenance. Assumptions are taken based on past studies done by the Consultants and interviews with industry players. Following table gives the assumptions for all three sites:

Table 45: Assumptions for other Operational Expenses at Logistics Park

Parameter	Value	Unit
Fuel Cost		
Diesel Consumption per container per day	4.00	L/container
Fuel for bulk cargo	1.00	L/500 tonne
Cost of Fuel	40.00	INR/litre
Fuel Escalation	3%	per annum
Electricity & Utility Cost		
Connected Load	0.01	KWH/sqm
Load Utilization	60%	
Hours of Utilization	16.00	hours/day
Rate per Unit	5.00	INR/Unit
Escalation	5%	pa
Maintenance Cost		
Civil Construction	1%	% of construction cost
Equipments	8%	% of Equipment cost
Rail Siding	4%	% of Rail Siding Capex
IT	15%	% of IT Capex
Escalation	5%	Per annum
Others		
Contingency	5%	

3. Annual Lease Payments to the Government: The land for the Logistics Park will be given to the Concessionaire on a 30 year lease. Annual lease charges are assumed to be at 1% of the market value of the land. The market value of land is ascertained based on interviews with property agents in each of sites. Following table gives the assumptions for the annual lease charges payable by the Concessionaire for each site:

Table 46: Lease Rental Assumptions for all the sites

Site	Market Value of Land	Annual Lease Payable
Bangalore	INR 70 lakh per acre	INR 49 lakh
Hubli-Dharwad	INR 25 Lakh per acre	INR 15 lakh
Hassan	INR 18 Lakh per acre	INR 9 lakh

6.3 Key Project Financials

Based on the market assessment and assumptions described in the earlier chapters, this section presents the results of the financial analysis. The Consultants also carried out a Value for Money Analysis (VFM) to recommend the most suitable mode of project procurement. VFM analysis is 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 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 2.

Following table gives the key project returns for all three sites

Table 47: Key Project Returns

Parameter	Bangalore	Hubli-Dharwad	Hassan
Upfront Payment (INR Cr)	9	3.0	0.0
Total Project Cost including upfront payment (INR Cr)	150.9	98.1	82.15
Project IRR to the Concessionaire (%)	13.9%	12.5%	12.1%
Project NPV (INR Cr)	54.1	6.1	0.13
Equity IRR (%)	19%	18%	18%
Lease Rental per Year to the government (INR Lakh)	49	14	9
NPV of Lease Rentals to the government (INR cr)	6.9	2.1	1.3
VFM	113	57	46

From the above analysis, it can be seen that the maximum the government can expect out of the projects in terms of revenue is:

1. Bangalore-INR 16 crore (upfront plus the NPV of lease rentals)
2. Hubli-Dharwad-INR 5 crore (upfront fee plus the NPV of lease rentals)
3. Hassan-INR 1.3 crore of lease rentals

All projects offer positive project NPV. Further the value for money is also positive for all three projects, hence the project is expected to give generate value for all stakeholders involved.

6.4 Sensitivity Analysis

Sensitivity analysis is done to understand the sensitivity of the project returns to changes in crucial parameters of the project like capital costs, operating costs and revenues. Sensitivity analysis is done for Upfront plus lease model for Bangalore and Lease Model for Hassan and Hubli.

6.4.1 Bangalore

- a. Change in Construction Costs: The project is highly sensitive to changes in the construction costs. Just a 10 % increase in the construction results 33% reduction in Project NPV. Hence, the project proponent will have to ensure that there is no delay in the project that will lead to cost overruns. Changes in Project NPV, Project IRR and Equity IRR corresponding to changes in construction cost is given below:

Table 48: Sensitivity Analysis to changes in construction costs for Logistics Park in Bangalore

Change	Project NPV	Project IRR	Equity IRR
25%	11.9	12%	17%
20%	21.1	13%	17%
16%	28.4	13%	17%
10%	36.4	13%	18%
5%	45.3	14%	18%
0%	54.1	14%	19%
-5%	62.7	14%	19%
-10%	71.3	15%	20%
-15%	79.8	15%	20%
-20%	88.1	15%	21%
-25%	96.4	16%	21%

- b. Changes in Operational Expenses: The project is sensitive to changes in operational expenses. A 10% increase in the operational expenses is expected reduce the Project NPV by 17%. Hence the project proponent will have to keep a tight rein on its project cost. Following table gives the sensitivity of the various returns to the project to changes in operational expenses:

Table 49: Sensitivity of the Project to the Changes in Operational Costs for Bangalore Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	29.9	13%	17%
20%	33.2	13%	18%
15%	39.1	13%	18%
10%	45.0	14%	18%
5%	51.0	14%	18%
0%	54.1	14%	19%
-5%	59.9	14%	19%
-10%	65.7	14%	19%
-15%	68.7	14%	20%
-20%	74.5	15%	20%
-25%	80.2	15%	20%

- c. Changes in Revenue Flow: A lower than forecasted revenue can impact the project viability substantially. Even a 20% lower than the projected revenue can render the project unviable. Hence, the project proponent will have to ensure that it takes adequate marketing measures to boost the traffic at its logistics park.

Table 50: Sensitivity to Changes in Revenue For Bangalore Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	128.2	16%	22%
20%	115.4	16%	21%
15%	99.4	15%	21%
10%	83.4	15%	20%
5%	70.2	14%	19%
0%	54.1	14%	19%
-5%	40.5	13%	18%
-10%	24.0	13%	17%
-15%	10.0	12%	17%
-20%	(6.7)	12%	16%
-25%	(21.3)	11%	15%

6.4.2 Hubli-Dharwad

- a. Change in Construction Costs: The project is highly sensitive to changes in the construction costs. A 10 % increase in the construction renders the project unviable. Hence, the project proponent will have to ensure that there is no delay in the project that will lead to cost overruns. Changes in Project NPV, Project IRR and Equity IRR corresponding to changes in construction cost is given below:

Table 51: Sensitivity Analysis to changes in construction costs for Logistics Park in Hubli-Dharwad

Change	Project NPV	Project IRR	Equity IRR
25%	(22.05)	11%	15%
20%	(16.09)	11%	16%
16%	(11.15)	11%	16%
10%	(5.31)	12%	17%
5%	0.46	12%	17%
0%	6.14	12%	18%
-5%	10.85	13%	18%
-10%	16.39	13%	19%
-15%	21.86	14%	19%
-20%	26.43	14%	20%
-25%	31.75	15%	21%

- b. Changes in Operational Expenses: The project is sensitive to changes in operational expenses. A 15% increase in the operational expenses is expected render the project unviable. Hence the project proponent will have to keep a tight rein on its project

cost. Following table gives the sensitivity of the various returns to the project to changes in operational expenses:

Table 52: Sensitivity of the Project to the Changes in Operational Costs for Hubli-Dharwad Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	(5.77)	12%	16%
20%	(3.20)	12%	17%
15%	(0.65)	12%	17%
10%	1.05	12%	17%
5%	3.60	12%	17%
0%	6.14	12%	18%
-5%	7.74	13%	18%
-10%	10.25	13%	18%
-15%	12.76	13%	18%
-20%	14.31	13%	19%
-25%	16.77	13%	19%

- c. Changes in Revenue Flow: A lower than forecasted revenue can impact the project viability substantially. Even a 5% lower than the projected revenue can render the project unviable. Hence, the project proponent will have to ensure that it takes adequate marketing measures to boost the traffic at its logistics park.

Table 53: Sensitivity to Changes in Revenue For Hubli-Dharwad Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	40.20	15%	21%
20%	33.74	14%	21%
15%	27.22	14%	20%
10%	19.63	13%	19%
5%	12.93	13%	18%
0%	6.14	12%	18%
-5%	(1.65)	12%	17%
-10%	(8.64)	11%	16%
-15%	(15.80)	11%	15%
-20%	(23.10)	10%	14%
-25%	(30.55)	10%	14%

6.4.3 Hassan

- a. Change in Construction Costs: The project is highly sensitive to changes in the construction costs. A 5% increase in the construction renders the project unviable. Hence, the project proponent will have to ensure that there is no delay in the project that will lead to cost overruns. Changes in Project NPV, Project IRR and Equity IRR corresponding to changes in construction cost is given below:

Table 54: Sensitivity Analysis to changes in construction costs for Logistics Park in Hassan

Change	Project NPV	Project IRR	Equity IRR
25%	(22.62)	10%	15%
20%	(18.46)	11%	15%
15%	(13.53)	11%	16%
10%	(8.65)	11%	16%
5%	(3.84)	12%	17%
0%	0.13	12%	18%
-5%	4.82	13%	18%
-10%	9.44	13%	19%
-15%	13.29	13%	20%
-20%	17.79	14%	21%
-25%	22.23	15%	22%

- b. Changes in Operational Expenses: The project is sensitive to changes in operational expenses. A 5% increase in the operational expenses is expected make the project unviable. Hence the project proponent will have to keep a tight rein on its project cost. Following table gives the sensitivity of the various returns to the project to changes in operational expenses:

Table 55: Sensitivity of the Project to the Changes in Operational Costs for Hassan Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	(7.13)	11%	16%
20%	(5.38)	12%	17%
15%	(4.34)	12%	17%
10%	(2.59)	12%	17%
5%	(0.84)	12%	17%
0%	0.13	12%	18%
-5%	1.85	12%	18%
-10%	3.57	12%	18%
-15%	4.52	12%	18%
-20%	6.21	13%	19%
-25%	7.90	13%	19%

- c. Changes in Revenue Flow: A lower than forecasted revenue can impact the project viability substantially. Even a 5% lower than the projected revenue can render the project unviable. Hence, the project proponent will have to ensure that it takes adequate marketing measures to boost the traffic at its logistics park.

Table 56: Sensitivity to Changes in Revenue For Hassan Logistics Park

Change	Project NPV	Project IRR	Equity IRR
25%	26.33	14%	22%
20%	21.43	14%	21%

15%	15.82	13%	20%
10%	10.93	13%	19%
5%	5.96	13%	18%
0%	0.13	12%	18%
-5%	(5.00)	12%	17%
-10%	(10.24)	11%	16%
-15%	(15.61)	11%	15%
-20%	(21.09)	10%	14%
-25%	(26.72)	9%	13%

7 Statutory & Legal Framework

Logistics sector is not a highly regulated sector, except for facilities which are related to export and import of goods, where prior permission from Ministry of Commerce and Industry is required. There are no restrictions on tariffs to be charged for logistics services and they are determined competitively. However, there are several policies that govern and impact the sector at central and state level.

7.1. Legal & Regulatory Framework

I. Central Government Policies and Regulations Impacting Logistics Sector

1. Goods and Service Tax Regime:

India plans to introduce Goods and Service Tax (GST) in the country, which is a single tax umbrella for goods and services. While the rollout of the Goods and Services Tax is delayed, it is expected that implementation of this tax regime would lead to consolidation of warehousing space in India, with players preferring larger warehouses serving multiple states. The GST is expected to fuel the demand for large integrated logistics facilities in India.

2. Foreign Direct Investment Regulations:

For foreign investors, Foreign Direct Investment norms are liberalized for most of the logistics activities, except in sectors like air courier services and air cargo logistics. FDI regulations governing the industry are as given below.

- i. 100% FDI under automatic route (no prior government approval required) is allowed in all the logistics services except:
 - a. FDI upto 100% in courier services require a prior Foreign Investment Promotion Board approval
 - b. FDI upto 49% under automatic route is permitted for air transport services including air cargo services

3. Union Ministry of Commerce Guidelines for setting up an ICD/CFS

Setting up logistics facilities for domestic use does not require prior government approval; however facilities relating to export and import of goods come under the ambit of the Union Ministry of Commerce and Industry. This implies that setting up of an inland container terminal (ICD/CFS under the Customs Act, 1962) will require a prior Ministry of Commerce and Industry approval. Following procedures need to be adhered to for setting up an inland container terminal for export and import purpose:

- a. Application for setting up an inland container terminal is required to be submitted to the Ministry of Commerce and separate copies are to be submitted to the jurisdictional Commissioner of Customs, who will give his views to the Central Board

- of Excise and Customs. The project proponent will be required to submit a copy of the feasibility report with the application
- b. The Ministry of Commerce then will forward the proposal to the Inter-Ministerial Committee (IMC), which will consider the proposal and give clearance for setting up of the Inland Container Terminal. IMC has representation from Department of Commerce, Department of Revenue, Department of Ports and Shipping and Ministry of Railways.
 - c. On acceptance of the proposal, a Letter of Intent will be issued to the project proponent.
 - d. The project proponent, then, is required to set up the infrastructure within one year from the date of approval. Extension can be granted via prior approval of the Ministry of Commerce
 - e. The project proponent is required to send quarterly progress reports to the Department of Commerce
 - f. After the infrastructure has been put up and the facility has met all the requirements of Commissioner of Customs, the government will accord final approval to the project proponent
 - g. The inland container terminal proponent will also be required to post Customs staff on cost recovery basis for customs clearance of the cargo meant for export or import

II. State Policies and Incentives for Logistics Parks

Karnataka Government has promulgated the Infrastructure Policy-2007, with Logistics being one of the beneficiary sectors. As per the policy, the concessions for public-private partnership projects under Logistics sector will get following incentives:

1. Government land will be provided, subject to availability at concessional rates
2. Where the infrastructure project is not viable, the project proponent can acquire additional land on same terms and conditions as for the main project to develop suitable commercial activities
3. Concessions on stamp duty and land conversion fines

7.2. Key Issues

Logistics at present is a highly fragmented sector. While ICD/CFSs come under the purview of Ministry of Commerce and Industry, rest of the activities in the Logistics sector is largely unregulated and comprises a large proportion of unorganized players, especially in the warehousing sector. The roll-out of GST is expected to bring about integration in this industry. However, there has been a delay in roll-out of GST, with even the Union Budget of 2012-13 not setting any timelines for this.

Another long standing issue that Logistics Sector has been grappling with is accordance of 'infrastructure status' to claim tax holiday under the 80 IA section of the Income Tax Act. Even for ICD/CFSs, there is an uncertainty on whether it can be treated as an infrastructure facility to

claim tax holiday under the 80 IA section of the Income Tax Act. The present definition of 'infrastructure facility' does not specifically cover Container Freight Stations and Inland Container Depot, which creates difficulties and disputes in claiming income tax benefits under this section.

8 Indicative Environmental and Social Impacts

For any project, it is important to analyze the social and environmental impact. This is because the government needs to ensure that economic development does not take place at the cost of environmental resources of the state. Social impacts need to be analyzed not only to ensure an inclusive development model but also to preclude any resistance to the project. If these parameters are not given due importance, there can be resistance from local communities and environmental groups that will delay the project and will be harmful for the project itself. At the pre-feasibility stage, the Consultants have only given an indicative overview of the environmental and social impacts, but a more detailed study may be required at the feasibility study stage.

8.1 Environmental Impacts and Mitigation Measures

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 Logistics Parks do 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 anticipate any need for detailed EIA study for this project. Following table gives indicative environmental impacts that can be mitigated :

Table 57: Indicative Environmental Impact and Mitigation Measures

Activity	Possible Environmental Impact	Suggested Mitigation Measure
<ul style="list-style-type: none"> Pre-construction Stage - Cutting of trees, clearing of shrubs 	Impact natural green cover in the region	Cutting of trees to be avoided to the extent possible. The project area plan incorporates 2-3% green cover for all Logistics Parks
	<ul style="list-style-type: none"> Construction Stage - Construction activities for development of the project 	<ul style="list-style-type: none"> Deterioration of air quality due to earth work excavation. Disturbance to the natural drainage. Soil contamination. Disposal of excess earth.

	Disturbance to other services.	Any shifting of cable / utility lines should be attended with minimum period of disturbance.
	Safety of road users in the implementation area.	Provision of temporary crossings / bridges wherever necessary to facilitate normal movement.
	Noise pollution due to the use of machinery and movement of traffic.	Use of less noise generating equipment and avoiding activities during night.
<ul style="list-style-type: none"> Operation & Maintenance Stage - O&M activities of the machinery and equipments 	Noise pollution due to the use of machinery.	Use of less noise generating equipment and avoiding activities during night.

8.2 Social Impact

As the Logistics Parks are proposed in areas where ~90% of land acquisition has already been undertaken, the Consultants do not see a major negative impact of the proposed project.

- The project is expected to be beneficial not only for the industry but also for the local communities as it will generate employment,
- Other benefits of the project include lower congestion of trucks on the road as the Logistics Park will provide parking area for them.
- As majority of land is already acquired, no major Relocation and Rehabilitation is expected

8.3 Conclusion

While the Project is not seen to have any major social and environmental impact, the project proponent will need to take initiatives to minimize any environmental or social disturbance caused during construction and operation period of the project. While environmental mitigation steps have been outlined in the earlier section, for making project socially acceptable, it is recommended that employment to local people be provided to the maximum extent possible.

9 Operating Framework

9.1 Risks and Mitigation

Risks are inherent in all Public Private Partnership projects. They arise due to uncertain future outcomes which may have direct effect on the provision of services by the project, and/or the commercial viability of the project. The risk allocation to parties in contract and the management of risks are, are hence crucial for project structuring.

The risk analysis, allocation and management involve the following activities:

- Identification of all possible risks and assessing their likelihood;
- Examining the likely effects of the risks in quantitative and qualitative terms;
- Considering suitable mitigation measures that may be available
- Allocation of risks to parties

9.2 Classification of Risks

For a project, several types of risks exist:

- a. Construction Risk: Risk arising out of delays in construction leading to cost overruns
- b. Environmental & Social Risk: Risk of project getting delayed due to environmental considerations. Further, there can also be risks due to delays in land acquisition and protests of the people being displaced due to the project
- c. Traffic Risk: Risk of lower revenues due to less than expected traffic
- d. Competition: Risk of losing business to competitors
- e. Political Risk: Risks arising due to changes in law and delay in grant of approvals
- f. Force Majeure Risk: Risks arising due to incidents not in control of the project proponent like natural calamity, strikes etc.

9.3 Risk Mitigation

The following matrix gives risk mitigation measures for various types of risks.

Table 58: Risk Mitigation Measures for the Project

Risk Type	Factors	Mitigation Measures
Construction Risk	<ul style="list-style-type: none"> • Geo-technical risks • Construction technology • Availability of construction materials • Delay by EPC Contractor selected by the project proponent 	<ul style="list-style-type: none"> • Robust technical and engineering studies before the start of project • Fixed time EPC contracts by the project proponent, with built-in penalties for delays • A fixed concession period for the project creates an in-built penalty on the project proponent for delays in terms of loss of revenue- earning years
Environmental & Social Risk	<ul style="list-style-type: none"> • Site in environmentally sensitive areas • Delay in land acquisition and protests of locals 	<ul style="list-style-type: none"> • The sites chosen do not lie in environmentally sensitive areas • The land acquisition in all areas is in advanced stages and it has been confirmed from KIADB that no R&R issues exist

Risk Type	Factors	Mitigation Measures
		<ul style="list-style-type: none"> It is recommended that the project proponent employs locals to the maximum extent possible to ensure participation of the local community in the economic growth of the region due to the project
Traffic Risk	<ul style="list-style-type: none"> Less than anticipated traffic 	<ul style="list-style-type: none"> Strategic tie-ups with freight forwarders and 3PL players Large anchor tenants for warehousing
Competition	<ul style="list-style-type: none"> Risk due to competitors 	<ul style="list-style-type: none"> Charging competitive rates. Consultants have kept in mind the charges by competitors while making revenue projections
Political Risk	<ul style="list-style-type: none"> Change in law, Revocation of licenses, permits etc Delays due to political instability 	<ul style="list-style-type: none"> Effective legal provisions for safeguard interests of the project proponent
Force Majeure	<ul style="list-style-type: none"> Natural Calamity 	<ul style="list-style-type: none"> Contractual provisions where any penalties for not meeting contractual obligations are suspended for the time of the force majeure event Insurance

9.4 Indicative Project Structure

Indicative Structure is given below:

Table 59: Project Implementation Framework

Component	Description
Structure	<ul style="list-style-type: none"> The project is to be developed under BOT model of PPP Private players invests in the infrastructure facilities The private sector player recovers its investments over a period of time from revenues from operation of Logistics Park and the ancillary commercial facilities at the park
Concession Period	<ul style="list-style-type: none"> 30 years plus a construction period of 3 years
Payment to Concessional Authority	<ul style="list-style-type: none"> Annual Lease rental Upfront Payment wherever possible

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

10 Way Forward

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.

11 Annexure

11.1 Annexure 1: Assumptions for Commodity Growth Rates for Projecting Container Traffic in Hubli and Hassan

1. Hubli

Table 60: Assumed Growth Rates of commodities being handled in containers at Hubli

S. No.	Commodity	Assumed Growth Rates	Source
1	Gherkins	13%	10 Year CAGR for Gherkin Export from APEDA
2	Processed Food	13%	5 year Export CAGR from Ministry of Commerce
3	Aluminum Powder	7%	
4	Auto Parts	20%*	Based on 5 year CAGR of Imports from ACMA
5	Food Grains	2%	
6	Chemical Valves	10%	CII estimate of Industry Growth Rate
7	Machines, Motors, etc	1%	Past 5 year Export Growth Rate from Indian Machine Tool Manufacturer's Association

*Though a 5 year CAGR of 30% seen, it is assumed that such high growth rates won't be seen for all the years under the forecast. An average growth of 20% is assumed

2. Hassan

Table 61: Assumed Growth Rates of commodities being handled in containers at Hassan

S. No.	Commodity	Source	Assumed Growth Rate
EXPORTS			
1	Coffee	5 year Export CAGR from Ministry of Commerce	11%
2	Garments	5 year Export CAGR from Ministry of Commerce	12%
3	Granite & Polished Granite	5 year Export CAGR from Ministry of Commerce	7%
4	Gherkins	5 year Export CAGR from Ministry of Commerce	13%
IMPORTS			
5	Borax	Growth Rate Assumed	1%
6	Toys	Based on the Assocham estimates for Toy Industry	15%

		Growth	
7	Electronics	5 Year Import CAGR from Ministry of Commerce	15%
8	Artificial Flowers	Growth Rate Assumed	1%

11.2 Annexure 2: 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 Bangalore (Upfront Plus Lease Rental Model). VFM for all other sites is also calculated in a similar way.

Table 62: VFM Analysis for Bangalore Logistics Park

Risks		Financial Impact	Risk Allocation (%) as per PPP Model		NPV at Risk	NPV of Risk to be added back	NPV of retained risks
1	2	3	4	5	6	7	8
			Concessionaire	Authority			
Construction Phase	Construction Cost Overrun	Cost overrun of 16%	100%	0%	-0.16	-0.35	0.000

	Construction Time Overrun	Time overrun by 50% of the construction period (Loss of revenue of 6 quarters)	100%	0%	-16.3	-16.8	0.000
Operation Phase	Revenue Risk (Due to traffic shortfall)	Decrease in Revenue by 20%	100%	0%	-32.21	-32.71	0.000
	Opex risk	Increase in O&M Cost by 15%	100%	0%	-9.1	-9.64	0.000
	Total					-59.4	0.000
VFM (INR Cr)	113.09						

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.

12 Annexure 3 Cashflow Statements for All Locations

1. Bangalore

Cashflow (INR cr)								
Year-->	1	5	10	15	20	25	30	33
Inflow								
Equity	28.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PBDIT	0.00	2.25	13.80	53.11	125.86	236.90	410.53	560.20
Loan	43.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Inflow	72.16	2.25	13.80	53.11	125.86	236.90	410.53	560.20
Outflow								
Capex	72.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Repayment	0.00	7.54	7.54	7.54	0.00	0.00	0.00	0.00
Interest	0.00	9.51	4.98	0.45	(0.00)	(0.00)	(0.00)	(0.00)
Tax	0.00	0.00	1.35	12.18	36.13	76.30	132.76	181.39
Total Outflow	72.16	17.05	13.87	20.18	36.13	76.30	132.76	181.39
Cash Surplus	0.00	(14.80)	(0.07)	32.93	89.73	160.60	277.77	378.81
Cumulative Cash	0.00	(31.18)	(66.08)	24.69	360.93	1,001.80	2,134.55	3,162.09
Project Cash Flow Before Tax	(72.16)	(7.26)	8.82	52.66	125.86	236.90	410.53	560.20
Project Cash Flow After Tax	(72.16)	(7.26)	7.48	40.48	89.73	160.60	277.77	378.81
Project IRR	13.9%							
Project NPV	54.05							
Equity Cash Flow	(28.87)	(14.80)	1.28	45.11	125.86	236.90	410.53	560.20
Equity IRR	18.7%							

2. Hubli-Dharwad

Cashflow (INR crore)								
Year→	1	5	10	15	20	25	30	33
Inflow								
Equity	18.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PBDIT	0.00	6.34	12.12	23.68	46.54	97.92	168.82	231.76
Loan	27.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Inflow	46.33	6.34	12.12	23.68	46.54	97.92	168.82	231.76
Outflow								
Capex	46.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Repayment	0.00	4.91	4.91	4.91	0.00	0.00	0.00	0.00
Interest	0.00	6.18	3.24	0.29	0.00	0.00	0.00	0.00
Tax	0.00	0.00	1.49	5.28	14.02	31.40	54.49	74.96
Total Outflow	46.33	11.09	9.64	10.48	14.02	31.40	54.49	74.96
Cash Surplus	0.00	(4.75)	2.48	13.21	32.52	66.52	114.32	156.81
Cumulative Cash	0.00	(10.91)	(13.58)	30.24	161.62	412.07	878.51	1,303.64
Project Cash Flow Before Tax	(46.33)	0.15	8.88	23.39	46.54	97.92	168.82	231.76
Project Cash Flow After Tax	(46.33)	0.15	7.38	18.11	32.52	66.52	114.32	156.81
Project IRR	12.5%							
Project NPV	6.14							
Equity Cash Flow	(18.53)	(4.75)	3.97	18.48	46.54	97.92	168.82	231.76

3. Hassan

Cashflow (INR Cr)								
	1	5	10	15	20	25	30	33
Inflow								
Equity	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PBDIT	0.00	6.24	11.51	20.91	37.06	63.75	107.78	146.80
Loan	22.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Inflow	38.31	6.24	11.51	20.91	37.06	63.75	107.78	146.80
Outflow								
Capex	38.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Repayment	0.00	4.11	4.11	4.11	0.00	0.00	0.00	0.00
Interest	0.00	5.18	2.71	0.25	(0.00)	(0.00)	(0.00)	(0.00)
Tax	0.00	0.00	1.53	5.29	11.60	20.36	34.72	47.42
Total Outflow	38.31	9.28	8.34	9.65	11.60	20.36	34.72	47.42
Cash Surplus	0.00	(3.04)	3.17	11.27	25.46	43.39	73.06	99.38
Cumulative Cash	0.00	(7.34)	(4.79)	34.30	139.36	316.83	616.88	886.97
Project Cash Flow Before Tax	(38.31)	1.07	8.80	20.67	37.06	63.75	107.78	146.80
Project Cash Flow After Tax	(38.31)	1.07	7.28	15.38	25.46	43.39	73.06	99.38
Project IRR	12.1%							
Project NPV	0.13							
Equity Cash Flow	(15.32)	(3.04)	4.70	16.56	37.06	63.75	107.78	146.80
Equity IRR	17.6%							