CRISIL Risk and Infrastructure Solutions Limited

Bangalore Development Authority (BDA)

Construction of elevated corridor between Jnanabharathi and Old Airport Road

Pre-feasibility report

April 2012

Abbreviations

Acronym	Definition
BBMP	Bruhat Banaglore Mahanagar Palike
BDA	Bangalore Development Authority
BMA	Bangalore Metropolitan Area
CITB	City Improvement Trust Board
CRIS	CRISIL Risk and Infrastructure Solutions Limited
CRISIL	Credit Rating and Information Services Limited
CRRI	Central Road Research Institute
DPR	Detailed Project Report
IRR	Internal Rate of Return
KTCP	Karnataka Town and Country Planning Act
NPV	Net Present Value
PPP	Public Private Partnership
SPC	Special Purpose Company
VGF	Viability Gap Funding

Contents

List of Tables

List of Figures

1. Executive Summary

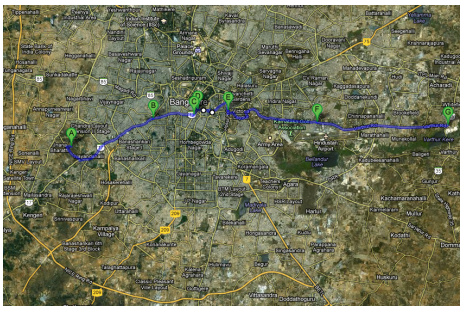
The growth of Bangalore has been unprecedented in the past couple of decades. This fact is laid bare from the growth in population in the last century. Bangalore continues to attract throngs of people due to the economic opportunities it offers. This is also supported by a salubrious weather which makes Bangalore an obvious choice for not only businesses but also for people.

Bangalore has grown at average compounded annual growth rate (CAGR) of 3.58% in the last three decades. It is projected that Bangalore's population will cross the 10 million mark by 2021. This explosive growth has meant that the infrastructure in Bangalore has been put under tremendous pressure.

The Central Road Research Institute (CRRI) found that the annual rate of traffic growth rates vary in the range of 2 – 4% in the central zone, 5 – 7% in the intermediate zone and 8 – 9% on the regional roads in Bangalore. CRRI study also reported delays of 26.8 sec per km of travel and 9.9 seconds per minute of travel. It is estimated that the daily travel demand is expected to grow from 57.2 lakh person trips in year 2006 to 127 lakh in year 2025.

This has forced the authorities in Bangalore to find an alternate solution to the ever growing travel demands of the city. The existing roads do not have the scope of being expanded further and hence the only solutions available is for the roads to go vertical i.e. creation of roads at an elevation providing direct point to point access for passengers.

The current report examines the proposed elevate corridor from Jananabharathi to Varthurkodi which will dissect some of the core areas of the city. The proposed Elevated corridor from Jnanabharathi to Varthurkodi entails a stretch of 28 kms along the ring road from Tumkur to Mysore. The elevated corridor is proposed to start from the Jnanabharathi (A) and connect to Varthurkodi via Sirsi circle (B), Town Hall (C), Hudson circle (D), Vellara junction (E), and Old Airport Road (F).



We have assessed the project's feasibility based on the annuity model. The annuity model was chosen due to the following reasons:

- The elevated corridor is essentially an urban road. Urban roads are, typically, not tolled. There are no examples in the country of an urban road being tolled.
- Under the BDA Act, 1976, there are no provisions for levying tolls on roads. If a road user chooses not to pay toll, the user cannot be forced under any existing policy framework to do so.

The financial assessment of the project has been developed for a concession period of 20 and 25 years. The results of the financial viability indicate that the project will be attractive for a private developer on in the case of a 25 year concession period which will allow the developer to make reasonable returns on the investments in the project.

The execution of the project can be undertaken through a Special Purpose Company which will be formed by equity participation from the developer.

The way ahead for the project has been analyzed and it is recommended that the key task for the BDA is to commission the preparation of a Detailed Project Report (DPR) for the project which would

allow development of realistic cost estimates. Once the DPR has been prepared, the BDA may appoint a transaction advisor who will conduct a detailed feasibility for the project and facilitate selection of the private developer.

The procurement plan for the proposed project envisages that the entire process of selection of technical consultant and transaction advisor can be completed within 8 months while the selection of developer can be achieved within 9 to 10 months after the selection of the transaction advisor.

2. Introduction

CRISIL Infrastructure Advisory, a division of CRISIL Risk and Infrastructure Solutions Limited (CRIS), has been appointed by the Infrastructure Development Department, Government of Karnataka to work closely with the Bangalore Development Authority for the assignment "Institutional Strengthening and Sector Specific Inventory for PPP Mainstreaming in Sectors". Under this BDA has identified a set of nine projects for which pre-feasibility assessments are to be carried out.

Construction of elevated corridor between Jnanabharathi and Old Airport Road is one of the nine projects that CRIS has been entrusted to study.

2.1 Project idea

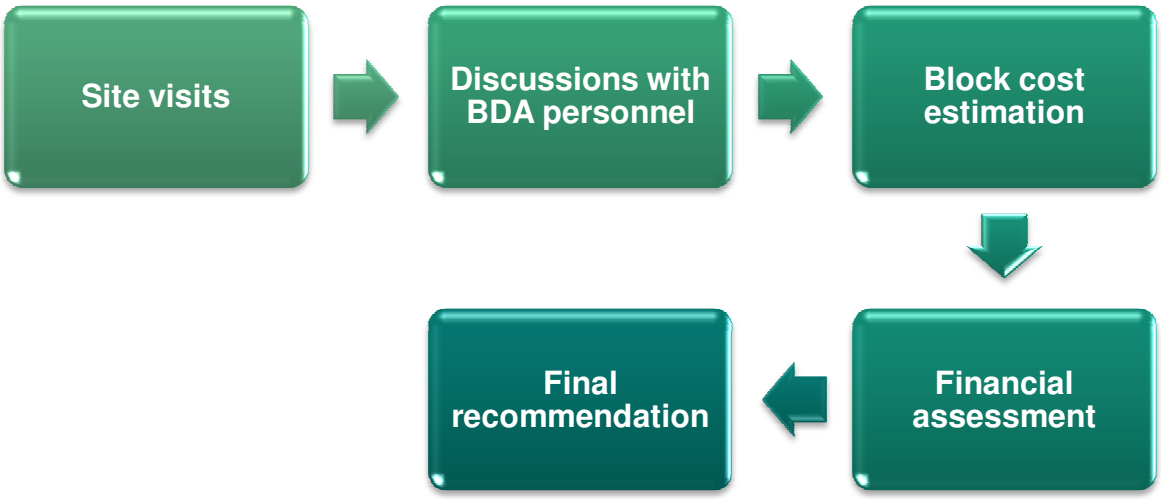
The increasing traffic volumes in Banaglore and the limitations on expansion of existing roads have forced the authorities to explore provision of alternative transportation infrastructure in the city. To this end the option being currently deliberated is to provide elevated roads between strategic points in the city.

The elevated roads are being contemplated to ease traffic congestion on some of the key city roads and thereby reduce the travel time as well as reduce pollution in central parts of the city. The elevated roads would provide an option for travellers to take direct routes rather than ply on city roads which impacts the transit time between the origin and destination for any commuter.

The elevated roads would be developed on an Annuity basis and would be operated and maintained by the developer for the given concession period.

2.2 Approach and methodology

The broad approach and methodology followed for study of these projects has been depicted graphically below:



3. Sector Profile

The city of Bangalore has witnessed very rapid growth. The city today is home to over 8.4 million people (2011 Census). The salubrious weather and the rapid concentration of economic activities in Bangalore have fuelled the growth of Bangalore. As one of the world's fastest growing cities, Bangalore is experiencing a steady growth in population.

Bangalore has been substantially affected by globalization and rapid urbanization over the last decade. The demand for services and quality of life is not confined to the central core or the erstwhile Bangalore Mahanagra Palike jurisdiction but spreads beyond into the peri-urban areas, the Metropolitan Area and outwards, into Bangalore Metropolitan Region. With the emergence of the Bangalore-Mysore Infrastructure Corridor, the Bangalore International Airport and the planned ring roads, urbanization has sprawled out.

Banaglore has incontestable advantages to develop into an international metropolis but at the same time faces significant constraints. The city is embedded in its histors and depicts the greatness of a truly Indian city established before the invasions and colonization. It has a diverse set of activities, from silk to aeronautics, from clothing to information technology and is a gauge of dynamism and solidity of the city. Natural drainage, climatic advantage and the availability of water in the Cauvery baisn are factors assisting in improving the quality of life.

3.1 Bangalore Development Authority

Bangalore Development Authority (BDA) is one of the premier urban planning and development agencies that oversee the growth of the city. The BDA came into being with effect from 6th January 1976 under a separate Act of the State Legislature viz. the BDA Act 1976. This Authority combined in itself the Planning functions of the City Planning Authority and the developmental functions of the erstwhile City Improvement Trust Board (CITB).

The key objects of the authority as per the BDA Act shall be to promote and secure the development of the Bangalore Metropolitan Area (BMA) and for that purpose the Authority shall have the power to acquire, hold, manage and dispose of moveable and immoveable property, whether within or outside the area under its jurisdiction, to carry out building, engineering and other operations and generally to do all things necessary or expedient for the purposes of such development and for purposes incidental thereto.

The Bangalore Development Authority is designated as the Planning Authority under the Karnataka Town and Country Planning Act, 1961. The BDA performs the following functions:

- Planning
  - Preparation of development plan for Bangalore
  - Preparation of Scheme Plans
  - Approval of Development Plans for Group Housing and Layouts
  - Approval of building plans
  - Other statutory functions under KTCP Act
- Development
  - Planning and implementation of schemes to provide for Residential sites, Commercial sites, Industrial sites, Civic Amenity sites, Parks and playgrounds
  - Construction of Commercial complexes

- Construction of houses for Economically Weaker Sections, Low Income Group, Middle Income Group, High Income Group
- Development of major infrastructure facilities

BDA has a jurisdiction of 1219 sq. kms which also includes the area under the jurisdiction of the Bruhat Bengaluru Mahanagar Palike (BBMP). As is evident from the set of functions for BDA, the BDA, apart from planning and regulation, also develops key infrastructure facilities like roads and other transportation infrastructure.

3.2 Key issues

BDA has been investing significantly in developing the transport infrastructure for the area under its jurisdiction. However, the ever increasing size of population has put immense pressure on the demand for land for not only residential facilities but also for developing adequate transportation infrastructure. The limited resources available with BDA are most of the times not adequate to undertake improvements of existing transport infrastructure and development of new infrastructure facilities.

While the country is increasingly moving towards the public private partnership model in infrastructure facilities, BDA has had limited avenues to do so given the nature of infrastructure facilities it has been developing or improving. Hence the actual experience of BDA in developing infrastructure facilities through the PPP mode is very limited.

4. Project

4.1 Description of the Project

The project envisages developing an elevated road corridor between Jnanabharathi and Varthurkodi. The alignment will largely follow the existing roads connecting the two points and will act as an alternate means of transit between the two points. The identified alignment (Jnanabharathi junction to Varthurkodi) carries heavy local and commercial traffic owing to the industrial and commercial development along the corridor. The Nayandahalli junction is congested with vehicles entering Bangalore city from Mysore viz SH-17, thus adding to the chaos along this network.

The proposed corridor is envisaged to ease the traffic flow and result in unhindered traffic movement along this route.

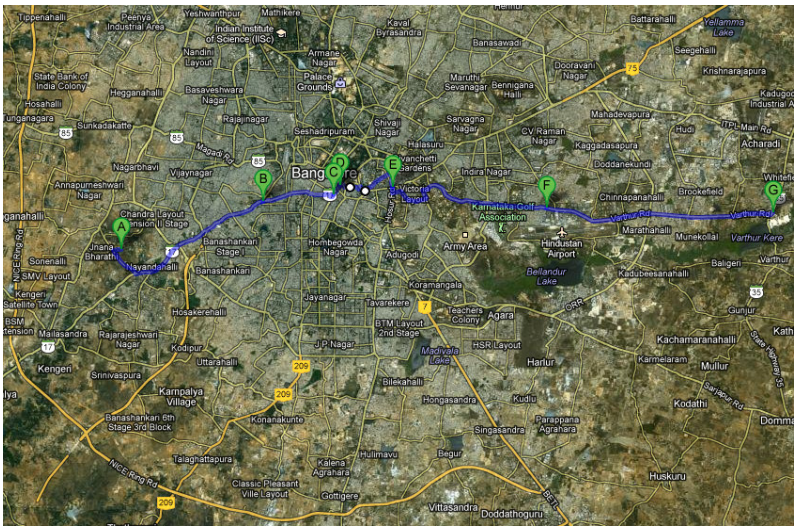
4.2 Components of the Project

The construction of elevated corridor along the identified alignment will include the following:

- Widening of roads
- Improvement of junctions
- Pavement improvement
- Provision and relocation of concealed drainage under the pavements on either side of the roads
- Upgrade of 4 lane carriageways
- Overlay treatment
- Provision of crash barriers
- Road and overhead signage

4.3 Description of the Site

The proposed Elevated corridor from Jnanabharathi to Varthurkodi entails a stretch of 28 kms along the ring road from Tumkur to Mysore. The elevated corridor is proposed to start from the Jnanabharathi (A) and connect to Varthurkodi via Sirsi circle (B), Town Hall (C), Hudson circle (D), Vellara junction (E), and Old Airport Road (F).



4.4 Development Needs, Public needs & Planning Considerations

Bangalore had a population of 24.75 Lakh in 1981, 65.00 Lakh in 2001 and 84 lakhs in 2011. The extent of Developed Area has also increased considerably, in 1971 the Area was 174.7 Sq. km. and today it is about 800 Sq. km. In absence of adequate mass transportation systems, the use of personal motor vehicles for intra – city travel has increased substantially. This has resulted in growth of motor vehicles, which is four times the rate of population growth in the last two decades (1.91 Lakh vehicles in 1981 and over 36 Lakh vehicles in 2009). The public transport system is overstressed carrying about 50 lakh commuters on a daily basis. Congested streets and longer route length due to urban sprawl have only served to reduce bus frequencies further. In a recent study done by Centraol Road Research Institute (CRRI), it has been reported that annual traffic growth rates vary in the range of 2 – 4% in the central zone, 5 – 7% in the intermediate zone and 8 – 9% on the regional roads in Bangalore. CRRI study also reported delays of 26.8 sec per km of travel and 9.9 seconds per minute of travel.

Thus it is clear that the rapid growth of the city has resulted in the transportation infrastructure coming under severe stress. It is imperative for the city to find new solutions to resolve its traffic congestion. The elevated road is one such solution that is being explored in order to decongest central parts of the city.

4.5 Best Case Studies for similar projects in India/ world

4.5.1 Tuni Anakapalli Annuity Road Project

The Tuni Anakapalli project is a road expansion project undertaken by the National Highways Authority of India (NHAI) as one of the several projects under the Golden Quadrilateral programme. The project's scope was to strengthen the existing two lanes and widen it to a four lane dual carriageway of an aggregate 59 kilometre stretch between Tuni and Anakapalli on National Highway (NH) 5 (Chennai to Kolkata) in Andhra Pradesh on PPP basis. Keeping in mind the lack of attractiveness in tolling the road, NHAI decided to take up the project on the Build Own Transfer (BOT) Annuity model.

4.5.1.1 PPP structure of the project

The GMR Group, in consortium with United Engineers Malaysia (UEM) Berhad Group, were awarded the project contract. An SPV with the name GMR Tuni Anakapalli Expressways Private Limited (GTAEPL) was formed to execute the project. The construction (expansion) of the road started in May 2002 and ended in December 2004 after a month's time overrun due to delays in handing over of land by NHAI. The total project cost was Rs. 295 crores.

The NHAI pays the concessionaire a fixed annuity of Rs. 29.48 crores semi annually from May 9, 2005 to November 9, 2019.

The Project has been awarded by NHAI on a BOT (Annuity) basis. The annuity model involves the payment of a fixed semi-annual sum by the NHAI to the concessionaire during the concession period to compensate him for the capital cost and operational and maintenance expenses of the project plus a certain percentage of returns thereon.

If due to the concessionaire's failure, the actual availability of carriageway in any annuity payment period is less than the assured availability then the annuity is proportionately reduced. NHAI secures the annuity payment by providing a revolving letter of credit from a schedule bank in India throughout the operations period.

The GMR Group (that included GMR Power Corporation Private Limited, GMR Infrastructure Limited and GMR Technologies and Industries Limited), in consortium with UEM Group of Malaysia, won the project contract to develop, operate and maintain the road for a 17.5 years concession period including the construction period of 2.5 years. An SPV - GTAEPL was formed to execute the project in which the GMR group had 74% stake and UEM had 26% stake.

GTAEPL has also entered into a State Support Agreement dated March 18, 2003 with the State of Andhra Pradesh and NHAI, under which the Government has agreed to extend continued support and to grant certain rights, authorities to facilitate the implementation and operation of the project, including all infrastructural facilities, applicable permissions, dedicated team of police personnel, highway patrols and to generally support the project implementation.

GTAEPL does not have any right to toll, levy charges or allow any kind of other developments or advertising options on the road. The annuity is the only project revenue for the developer. However, NHAI has the right to levy and collect a toll or fee or permit any advertisements.

GTAEPL has entered into an operations and maintenance agreement with UEM Limited (O&M Contractor) to operate and maintain and to take full risk in the care of the project facilities against:

- An O&M fee of Rs. 0.125 crore per month; and
- A periodic fee of Rs. 7.5 crore.

The O&M fee and the periodic fee are escalated by 1.5% per annum, 1 year from the date of commencement of operations.

At the end of the concession period in November 2019, the concessionaire shall handover the project assets free of cost to NHAI.

4.5.1.2 Financing information

The estimated project cost of the project was Rs. 315 crores. The project achieved financial closure on 26 June 2002. The project was funded on a debt-equity ratio of 3:1. The term loan component was Rs. 154 crores, the non convertible debentures component was Rs. 82 crores and the equity component was Rs. 78.69 crores.

ICICI Bank was the lead banker and the lending consortium included several public sector banks such as State Bank of India, Union Bank of India, Indian Overseas Bank, Jammu & Kashmir Bank, Bank of India, Punjab National Bank, Industrial Investment Bank of India and State Bank of Mysore. The average spread of the loan ranged from 12.5% to 12.75%. The loan tenure was 13.5 years, including a construction period of 2.5 years.

The equity funding for the project was primarily through the issue of preference shares.

In May 2005, GTAEPL raised further debt of about Rs. 372 crores from a consortium of lenders through securitisation of future annuity receivables (68% of annuity receivables) to be received from NHAI over a period of fifteen years. These funds were raised at a cost lower than the cost of project debt by about 3% and were used for prepayment of the project debt.

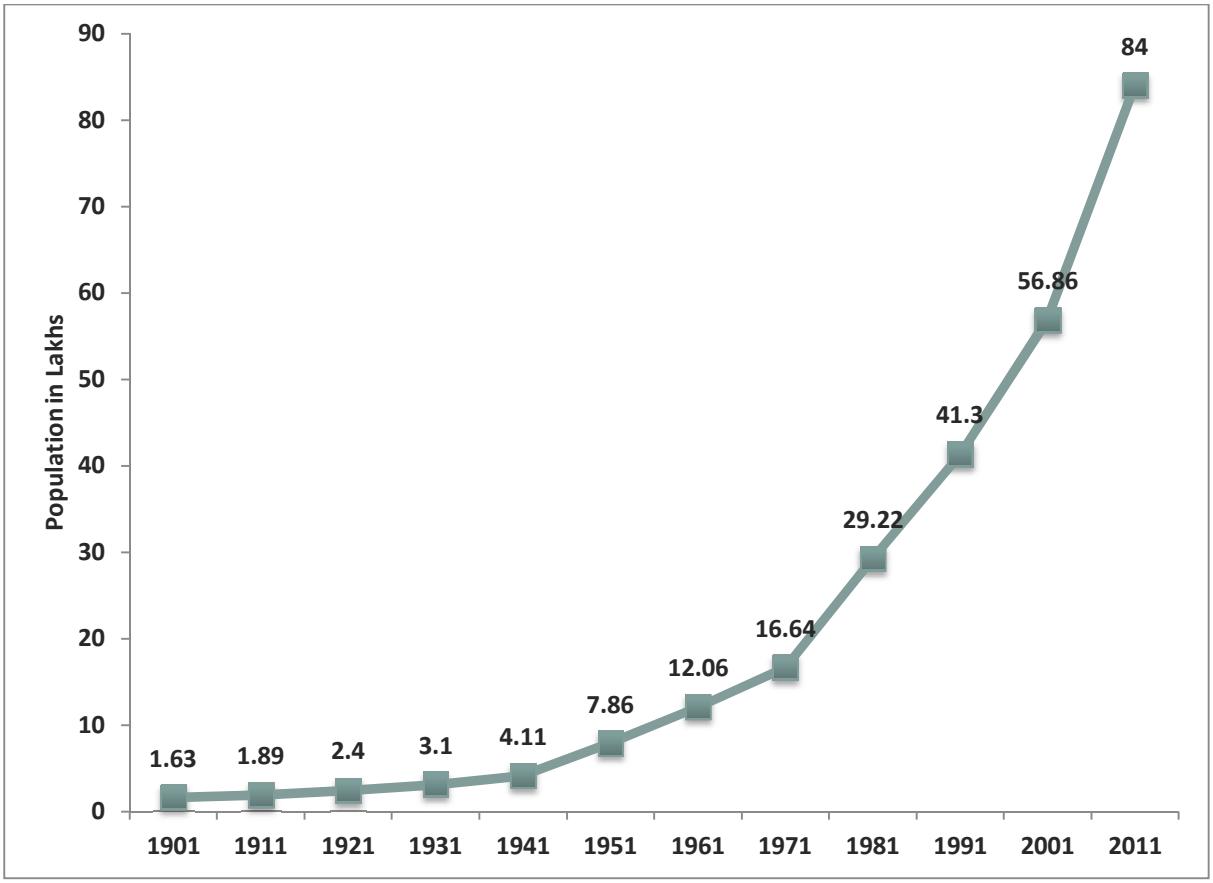
5. Market Assessment

5.1 Bangalore growth overview

The growth of Bangalore has been unprecedented in the past couple of decades. This fact is laid bare from the growth in population in the last century. Bangalore continues to attract throngs of people due to the economic opportunities it offers. This is also supported by a salubrious weather which makes Bangalore an obvious choice for not only businesses but also for people.

Bangalore has grown at average compounded annual growth rate (CAGR) of 3.58% in the last three decades. It is projected that Bangalore's population will cross the 10 million mark by 2021. This explosive growth has meant that the infrastructure in Bangalore has been put under tremendous pressure.

Figure 5-1: Population growth in Bangalore between 1901 and 2011



Source: City Development Plan, Bangalore Development Authority and Census of India

The stress on infrastructure is often most prominently evident in the transport infrastructure of the city. To gauge the extent of pressure on the transport infrastructure, the number of vehicles registered in Bangalore was analysed. The average year on year growth of registered vehicles in Bangalore has been found to be 10% in the last 20 years.

The Central Road Research Institute (CRRI) found that the annual rate of traffic growth rates vary in the range of 2 – 4% in the central zone, 5 – 7% in the intermediate zone and 8 – 9% on the regional

roads in Bangalore. CRRI study also reported delays of 26.8 sec per km of travel and 9.9 seconds per minute of travel.

5.2 Demand projections

Revised Master Plan-2015 for the BMA has been published. This document gives the likely growth to take place in various areas of the BMA. The population of the BMA is expected to grow from 61 lakh in 2001 to 122 lakh in 2025. The proposed growth of population and economy is expected to generate high travel demand. As per travel demand modelling exercise, daily travel demand is expected to grow from 57.2 lakh person trips in year 2006 to 127 lakh in year 2025. Thus while population is expected to become 1.74 times in 19 years, the travel demand is likely to become 2.25 times. Similarly inter-city travel demand from/ to Bangalore and through traffic are also expected to more than double of present levels. Transport network will also need to be augmented to cater to the expected travel demand.

6. Project financials

The project costs have been largely derived from the costs indicated by the Bangalore Development Authority (BDA).

6.1 Cost Estimation

The estimated cost of the project is Rs. 2800 crores. The costs have been outlined below:

Particular	Amount (in Rs. Lakhs)
Site clearance and dismantling	307
Civil works	120,148
Drainage and protective works	31,791
Road furniture and appurtenances	23,934
Structures	71,419
Total hard costs	247,599
Contingencies	7,428
Preliminary and pre-operative expenses	12,380
Interest during construction	12,594
Total project cost	**280,000**

6.2 Revenue streams

The revenues to the developer will accrue in the form of an annuity payment spaced over the concession period. The estimated base annuity amount works out to be approximately Rs. 21500 lakhs. This annuity amount would be escalated by 5% every year. The income statement for the developer has been provided in Annexure 1.

6.3 Viability assessment

The viability assessment has been carried out over two concession period i.e. 20 years and 25 years. The debt to equity ratio has been assumed to be 3:1. Additionally, it is assumed that the project will be able to access the central and state government viability gap funding (VGF) to the tune of 40% of the project cost (20% from central and 20% from state).

The viability based on the annuity structure has been depicted below. The project level internal rate of return (IRR), IRR of equity and the net present value of the equity have been worked out:

Table 6-1: Viability assessment for elevated road

Concession Period	Project IRR	Equity IRR	NPV of Equity
20 years	13.65%	16.98%	3,162
25 years	14.78%	18.48%	9,682

It is evident that for the concession period of 25 years, the project would be more attractive for a private developer since the project level IRR is roughly 15% while the equity IRR is pegged at 18%. The net present value (NPV) of the equity is also positive for the said concession period.

6.4 Funding Available (Central/ state etc.) under various schemes

The funding available from central and state government will be under the VGF scheme. It is assumed that the developer would access both these funding mechanism and would be able to fund 40% of the project cost through funding available under these schemes.

6.5 Ranking of options based on commercial viability

Having assessed the project for two concession periods of 20 years and 25 years, we are of the view that the 25 year concession option will be more suitable since it allows the developer to make reasonable returns on the projects and his own investments.

6.6 Discussions on the report

While we have developed the report and have provided recommendations based on our assessment of the project, we would like to further discuss the recommendations with the BDA officials and factor in their suggestions and recommendations as well.

7. Regulatory & Legal Framework

7.1 Applicable laws & act and legal cover for the project

Currently, the elevated roads being developed by BDA would fall under the functions of the BDA as defined by the BDA Act, 1976. The Public Works Department will not have a role to play in the development of these roads since these will essentially be classified as urban roads.

The current BDA Act, 1976 does not have provisions relating to the tolling of roads developed by BDA. This is a critical aspect since under the current framework no tolling is possible and the road user may choose not to pay toll. The BDA will not be able to force the users to pay tolls.

The BDA may wish to secure the partnership of Bruhat Bangalore Mahanagar Palike (BBMP) in development of these roads since this elevated corridor will be developed within the BBMP limits.

7.2 Key Issues

The key issue for the development of this elevated road will be that of traffic management during the construction period.

The second issue envisaged is that in case the BDA intends to develop the road on a toll model, the existing policy framework will need to be modified. The BDA Act may need to be amended to include provisions for tolls or the state government may have to notify a toll policy for BDA which can mandate tolling of roads.

8. Indicative environmental & social impacts

8.1 Environmental Impacts

The potential environment impact that the elevated corridors might have are in terms of air pollution due to construction activity. The air pollution will also increase due to slow movement of traffic during the construction period since the effective carriageway available would be very limited. The air pollution issue may also come upon in other areas since many of the vehicles might choose an alternative route to avoid delays along the construction site.

The constant construction activity may also account for noise pollution on two counts i.e. noise from construction activity and noise due to vehicle congestion which can often lead to increased honking.

8.2 Social Impacts

The social impacts anticipated are in terms of formal and informal businesses that may need to be shifted along the alignment due to land acquisition. In case there are any residential units along with alignment which need to be razed, it may also result in displacement of people.

The indirect social impact may be on account of increase in commuting time which may have an impact on family life of people.

8.3 Mitigation Measures

It is necessary that the impacts are identified early and action plans are prepared for their mitigation in advance. For instance, for air pollution, the BDA may insist on the developer to use clean and green technologies.

It is also necessary that the project development plan is also accompanied by a Relocation and Rehabilitation plan which will layout detailed action points with the requisite intervening entity.

9. Operating Framework

9.1 Risks and mitigation

The risk framework for this project has been outlined below:

Table 9-1: Risk mitigation measures

Risk Category	Risk implication	Mitigation measure
Sponsor risk	BDA scraps the project	Termination payments in case of BDA scrapping the project
Environment risk	Adverse impact on surrounding environment	Penalty clauses in case of default on Concessionaire's part Environmental Impact Assessment to identify all risks in advance
Political risk	Change in government may put project in jeopardy	Termination payments in case of project being scrapped
Force majeure risk	Project is abandoned	Force majeure clauses in the concession agreement
Revenue risk	Annuity not paid to the concessionaire	Interest and penalty clauses on non-payment of annuity
Design risk	Overdesign of the project	Project design to be finalized in mutual agreement of concessionaire and BDA
Completion risk	Completion of project is delayed; inconvenience to users of road	Penalty clauses for time overrun in the concession agreement

9.2 Indicative Project Structure

The best approach for such a large ticket project would be for the BDA to become a key actor in the entire process of development. The BDA may ask the private sector partner to form a Special Purpose Company where the equity will be brought in by the private sector developer.

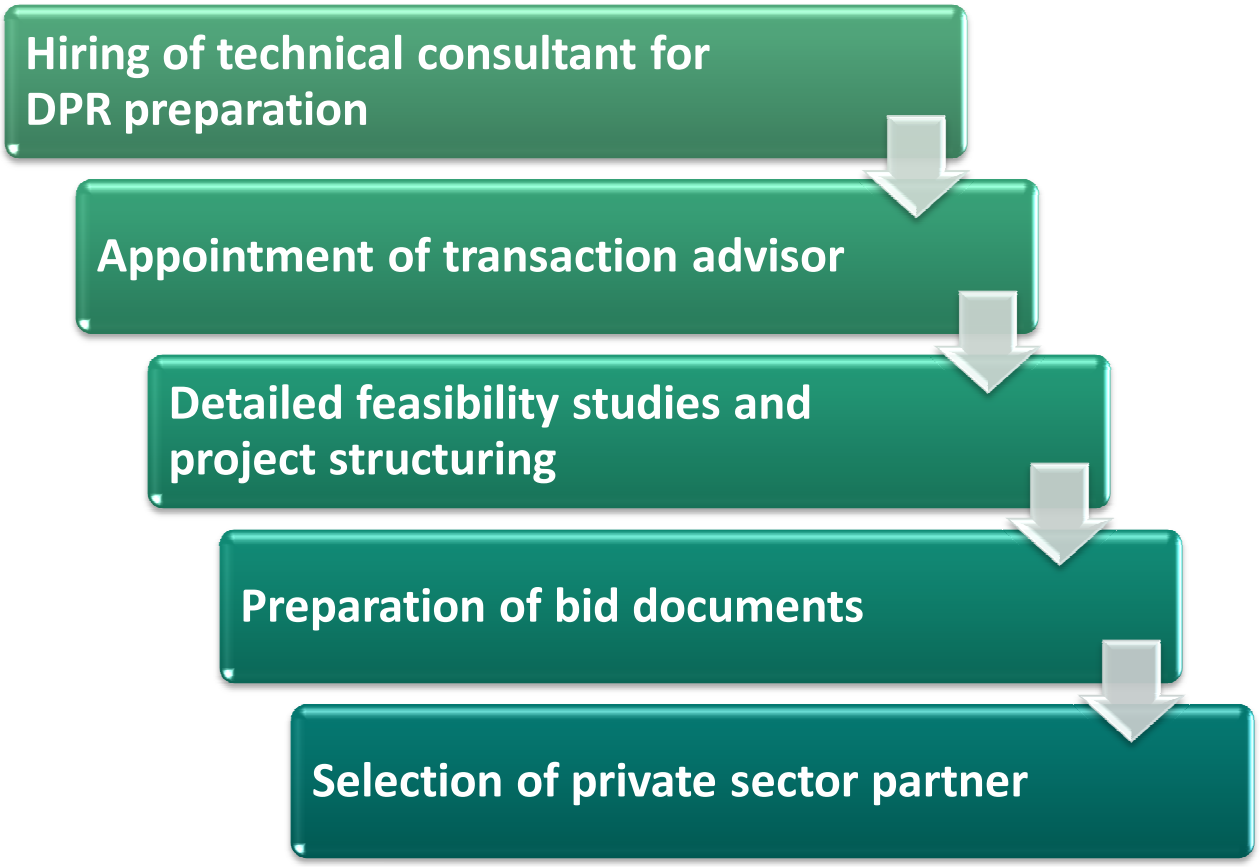
The SPC will develop and maintain the elevated road throughout the concession period. The BDA will pay an annuity amount to the SPC which will be escrowed in a separate account and can be withdrawn after reserving a portion of the annuity as performance security.

10. Way Ahead

10.1 Project Development Framework

The key task for BDA is to first conduct a detailed technical investigation to determine the technical requirements and feasibility of the project in the form of a Detailed Project Report (DPR). Upon preparation of the DPR the BDA may then appoint a transaction advisor to carry out feasibility studies as well as to undertake bid process management on behalf of BDA.

Figure 10-1: Project development framework for elevated roads



The transaction advisor shall structure the project upon completion of the feasibility studies and shall also prepare the relevant bid documents. The transaction advisor shall undertake bid process management on behalf of BDA and will assist in appointment of the private sector partner.

10.2 Procurement Plan

The first and foremost task for BDA will be to appoint a technical consultant for preparation of a DPR for the project. Upon the completion of the DPR preparation, the BDA shall appoint transaction advisor for conducting detailed feasibility, project structuring and bid process management.

Figure 10-2: Procurement plan for elevated road

Activity	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Appointment of technical consultant																		
DPR preparation																		
Appointment of transaction advisors																		
Feasibility, project structuring and bid document preparation																		
Bid process management																		
Selection of Private sector partner																		

11. Annexure 1 – Cash-flow statement

Concession Period (years)	31-Mar-13	31-Mar-14	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19	31-Mar-20	31-Mar-21	31-Mar-22
Cash from Operating Activities										
PAT	-	-	(859)	(2,172)	(964)	1,325	3,914	6,554	8,815	11,564
Add :Depreciation	-	-	2,306	9,353	9,353	9,353	9,353	9,353	9,892	9,892
Add :Interest on Term Loan	-	-	3,938	15,752	15,691	14,276	12,307	10,338	8,368	6,399
Total CF from Operating Act.	**-**	**-**	**5,386**	**22,934**	**24,080**	**24,955**	**25,574**	**26,245**	**27,076**	**27,855**
Cash from Investing Activities										
Less : Capex	(32,470)	(113,368)	(134,205)	-	-	-	-	-	-	-
Less : Increase in CA	-	-	-	-	-	-	-	-	-	-
Add : Increase in CL	-	-	-	-	-	-	-	-	-	-
Total CF from Investing Act.	(32,470)	(113,368)	(134,205)	-	-	-	-	(3,232)	-	-
Cash from Financing Activities										
Add : Equity Drawdown	19,482	2,393	20,131	-	-	-	-	-	-	-
Add : Debt Drawdown	-	65,627	60,392	-	-	-	-	-	-	-
Less : Debt Repayment	-	-	-	-	3,938	15,752	15,752	15,752	15,752	15,752
Less : Interest Payment on Term Loan	-	-	3,938	15,752	15,691	14,276	12,307	10,338	8,368	6,399
Total CF from Financing Act.	32,470	113,368	130,267	(15,752)	(19,629)	(30,028)	(28,059)	(26,090)	(24,121)	(22,152)
Cash generated for the year	**(0)**	**-**	**1,448**	**7,181**	**4,451**	**(5,074)**	**(2,485)**	**(3,077)**	**2,955**	**5,703**

Concession Period (years)	31-Mar-23	31-Mar-24	31-Mar-25	31-Mar-26	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31
Cash from Operating Activities									
PAT	14,371	17,584	20,566	21,991	23,340	24,910	24,735	22,458	23,809
Add :Depreciation	9,892	9,892	9,892	9,892	10,075	10,075	10,075	10,075	10,075
Add :Interest on Term Loan	4,430	2,031	-	-	-	-	-	-	-
Total CF from Operating Act.	**28,693**	**29,507**	**30,459**	**31,883**	**33,415**	**34,985**	**34,811**	**32,533**	**33,884**
Cash from Investing Activities									
Less : Capex	-	-	-	-	-	-	-	-	-
Less : Increase in CA	-	-	-	-	-	-	-	-	-
Add : Increase in CL	-	-	-	-	-	-	-	-	-
Total CF from Investing Act.	-	-	-	(4,332)	-	-	-	-	-
Cash from Financing Activities									
Add : Equity Drawdown	-	-	-	-	-	-	-	-	-
Add : Debt Drawdown	-	-	-	-	-	-	-	-	-
Less : Debt Repayment	15,752	11,814	-	-	-	-	-	-	-
Less : Interest Payment on Term Loan	4,430	2,031	-	-	-	-	-	-	-
Total CF from Financing Act.	(20,183)	(13,845)	-	-	-	-	-	-	-
Cash generated for the year	**8,510**	**15,662**	**30,459**	**27,551**	**33,415**	**34,985**	**34,811**	**32,533**	**33,884**

Concession Period (years)	31-Mar-32	31-Mar-33	31-Mar-34	31-Mar-35	31-Mar-36	31-Mar-37
Cash from Operating Activities						
PAT	25,443	26,722	28,160	29,908	31,762	28,633
Add :Depreciation	10,075	10,321	10,321	10,321	10,321	7,776
Add :Interest on Term Loan	-	-	-	-	-	-
Total CF from Operating Act.	**35,518**	**37,043**	**38,480**	**40,229**	**42,082**	**36,409**
Cash from Investing Activities						
Less : Capex	-	-	-	-	-	-
Less : Increase in CA	-	-	-	-	-	-
Add : Increase in CL	-	-	-	-	-	-
Add : Recovvery of Meter Cost						
Total CF from Investing Act.	(5,805)	-	-	-	-	-
Cash from Financing Activities						
Add : Equity Drawdown	-	-	-	-	-	-
Add : Debt Drawdown	-	-	-	-	-	-
Less : Debt Repayment	-	-	-	-	-	-
Less : Interest Payment on Term Loan	-	-	-	-	-	-
Total CF from Financing Act.	-	-	-	-	-	-
Cash generated for the year	**29,714**	**37,043**	**38,480**	**40,229**	**42,082**	**36,409**

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