

INTRODUCTION

1.1 INTRODUCTION :

1.1.1 The road population in the country is increasing at a rapid pace and the metropolitan cities like Mumbai, Kolkata, Delhi & Chennai are growing at a relatively faster pace. The other cities like Bangalore, Hyderabad & Nagpur etc., have joined the lead of metropolitan cities with a population more than 25 lakhs. The other cities with the present population between 5-10 lakhs are growing faster both in number and size.

1.1.2 The rapid rise in the city population coupled with limited availability of financial resources for investment in transport infrastructure has resulted in endless transport problems. In most of the Indian cities the share of two wheelers is about 60% of the total number of vehicles registered and most likely by the turn of century it is likely to go upto 80%. The unpredictable traffic congestion which degrades the quality of daily life in main cities as direct economic consequences. Business and commercial activities is substantially disrupted because of inefficient transport network leading to higher travel times, increasing consumption of fuel and accidents. These are the economic problems of importance which an effective transport system can substantially influence.

TRAFFIC & TRANSPORT CHARACTERISTICS PREMISE

In addition to the secondary data collected from different planning organizations and agencies, various traffic & transportation surveys were carried out to update the available data and to appreciate the traffic & transport characteristics of commuter, vehicle and rail travel in the study area. The data so collected was suitably utilized to identify problem areas, types and its relative intensity.

Major landmarks around the study area are main market from Sitabuldi Area and Hotel Hardeo connecting towards Ghat Road and Cotton Market Area. An existing technical institution building towards Sitabuldi side is also a major structure coming on the approaches of RUB.

Road network inventory is an important factor to determine the carrying capacity and efficiency of the existing network and to the extent to which they need to be improved with the possibility of upgradation/ widening in future. The main component which effect the above are described as under:-

- i) Right-of Way Characteristics:
- ii) Carriageway Characteristics:
- iii) Footpath Characteristics:

1.7 ANY OTHER INFORMATION :

CIVIL ENGINEERING

PREMISE:

The proposed location of RUB has been selected in consultation with MSRDC and Railway officials. Accordingly the GAD was prepared and submitted to Railways which has already been approved. The area was again surveyed as per the requirements of the project. Visits at site along with the MSRDC officials were performed and various options for the approaches on both the ends of RUB were reviewed with the already approved drawing.

Meetings were also called by the Hon'ble Minister for Public Works Department and Chairman of MSRDC to discuss the various parameters of the proposed Road Under Bridge.

DESIGN REQUIREMENTS:

For preparation of cost estimates, a preliminary design considering the various traffic datas and loading factors was prepared. The geo-technical investigations were also conducted to ascertain the bearing capacity of the soil. The design of the box has been considered as same for the similar type of spans taken in other projects of RUBs. The detailed design is proposed to be done by the executing agency after finalisation of the contract and approval from the local authorities and Railways will also be opined before execution.

SECTION – 1

SECTOR BACKGROUND CONTEXT AND BROAD PROJECT RATIONALE

1.1 EXISTING STATUS OF PHYSICAL INFRASTRUCTURE :

Nagpur being almost at the geographical centre of India, all major highways and railways pass via Nagpur. Nagpur city is the junction of two National Highways NH-6 and NH-7. This has resulted in the city being a major trade and transportation centre. It is connected to all metropolitan cities of India by air route as well. The total length of roads in the city is 1907 kms (Table 3), of which the length of major roads is 500 kms, the remaining being the internal roads. The Nagpur Municipal Corporation (NMC) has executed an Integrated Road Development Project (IRDP) to improve the transportation system within the city limits.

Details of road network in Nagpur

Total length of roads	1907 kms
Cement roads	25 kms
Paved tar roads	1502 kms
Unpaved roads	380 kms
The average width of carriageway in the year 2000	6-14m
Length of Ring Road around the city	41.48 kms
No. of flyovers	3
No. of river bridges	-
No. of railway-over-bridges	3
No. of intersections	200
No. of road crossings with signals	112
No. of road crossings with timer	54
No. of road crossings with blinkers	30
No. of pay and parking zones	11

SECTION-2

PROJECT DEFINATION CONCEPT & SCOPE

PROJECT: CONSTRUCTION OF ROAD UNDER BRIDGE AT RAILWAY KM.835/29-30 ON NAGPUR-AJNI SECTION NEAR ANAND TALKIES, NAGPUR.

PROJECT SCOPE :

MSRDC has undertaken this project to avoid traffic jam at level crossing which remains closed for most of the time causing inconvenience to the public.

OBJECTIVE OF PROJECT:

To avoid traffic jam at l-xing
To provide un-abstracted stretch to the road user.
To avoid accidents at l-xing.

2.1 LAND :

As the proposed bridge is to be constructed on the existing road, no additional land will be required.

2.2 PHYSICAL INFRASTRUCTURE:

RUB: RUB is proposed to be constructed across the main Nagpur-Mumbai Railway track near the existing Loha Pul.

Lighting : Suitable lighting system will provided on RUB so as it should give a light of ave.30 lux.

Painting/markings/signages:

Whole RUB will be painted as per colour approved by MSRDC. RUB will be provided with road markings and road furniture.

SECTION - 3 COST ESTIMATES

3.0 COST ESTIMATES:

3.1 The detailed cost estimate has been divided into under mentioned sections:

- i) Cost of RUB- Railway portion
- ii) Cost of approaches in Rly portion
- iii) Cost of approaches in non rly portion
- iv) Cost of drain work
- v) Cost of electrical works
- vi) Cost of road furniture

3.2 The cost estimate has been prepared based on the rate analysis for individual items available in PWD SOR of 2005-06. The items which are not available in PWD SOR have been taken from MORTH SOR 2005-06.

3.3 Some of the items which are neither available in PWD SOR 2005-06 nor in MORTH SOR 2005-06, have been considered from the rates of the tenders which have been accepted in the recent past or by obtaining quotations of doing similar type of work.

SECTION - 4

PROJECT INSTITUTION FRAME WORK

4.1 Role of different institution involved in construction phase:

- i) MSRDC will appoint a project Management Consultant for tendering, supervision, quality control and proof checking of design etc. Proposed bridge will be constructed by appointed agency through tendering process which has been invited by client through PMC. Appointed agency should have necessary expertise and desired past experience of undertaking project of similar nature and magnitude.
- ii) Funds will be made available by NMC to MSRDC for construction of the bridge.

4.2 Manner of Undertaking construction work :

Agency appointed by the MSRDC through tendering process will execute the work on his own design under supervision of project management consultant.

4.3 Involvement of the construction entity in the subsequent O & M activities.

The construction contractor will be responsible for maintenance of the bridge for the period of five years after successful completion of the RUB. After defect liability period of five years, NMC may maintain the RUB or can engaged same or different agency for non-railway portion. For Railway portion, MSRDC has to deposit 30% of the Railway portion costs as a capitalized maintenance charges for the period of 10 years. After that agreement may be renewed with Railways.

SECTION - 5

PROJECT FINANCIAL STRUCTURING

5.1 Over all Financial Structuring of the Project

1	2	3	4	5	6	7
Sr. No.	Govt.	Project contribution source	Amount (Rs. Lakhs)	% share by specific source	% share by govt. entity	Remarks on when and how state and ULB shares would arranged
1	Central	ACA Grant	1270	50%	50%	Not applicable
2	State	Grant towards its share in project	508	20%	20%	
3		Govt. towards its share				
4	ULB/ Parastatal	Devolved fund				
5		Own surplus resource	619.76	24.4%		
6		Debt/ Term Loan taken from state Govt.				
7		Debt/ Term Loan taken from bank/ FI	142.24	5.6%	30%	During execution period
8		Debt; from accessing capital market				
9		Private equity/ community resource funding others				
		Total amount	2540.00			

SECTION 6

6.1 SCHEDULE OF TENDERING / SELECTION FOR PROCUREMENT OF SERVICES

i) **Construction Contractor:**

Construction contractor is to be appointed by MSRDC through tendering process. He has to design the RUB and carry out construction work after approval of design and drawing by MSRDC.

ii) **Consultant:**

Project management Consultant will be appointed by MSRDC or

- Preparation of tender document
- Supervision
- Quality Assurance
- Preparation of bills etc.
- Proof checking of design submitted by agency

iii) **Consultant/firm for any other specialized activities:**

PMC may appoint a consultant with MSRDC's approval for proof checking of design submitted by agency.

6.2 **Schedule for bringing State level & ULB level contribution to Project:**

It will be finalized after approval of DPR.

6.3 **Mostly clearances from railways will be required:**

General Arrangement Drawing has already been approved by railways.

6.4 **Schedule of obtaining all clearances:**

As proposed bridge is to be constructed on existing road so visibly no utility service is to be shifted, but during execution some under ground utilities may have to be shifted.

6.5 **Project infrastructure component-wise implementation:**

Bar chart Attached.

SECTION – 7

PROJECT O&M PLANNING

7.1 INSTITUTIONAL FRAMEWORK (ORGANIZATION & OPERATION) STRATEGY :

i) The institution to be engaged:

The construction contractor will be responsible for maintenance of the bridge for the period of five years after successful completion of the RUB.

After period of five years NMC may maintain the RUB or can engaged same or different agency for non railway portion.

For railway portion, MSRDC has to deposit 30% of the railway portion costs as maintenance charges for the period of 10 years.

After that contract may be renewed with railways.

ii) Existing method of billing :

Not applicable.

iii) Select performance metrics in regard to billing:

Not Applicable

iv) Key issue:

Not applicable

v) Scope for private Entity :

Maintenance of RUB can be done by engaging a private firm by NMC for Non Railway portion.

7.2 TARIFF AND USER COST RECOVERY :

Not applicable

SECTION 8

PROJECT FINANCIAL VIABILITY & SUSTAINABILITY

- 8.1 As this project is to be constructed for the benefit of the people, and toll collection and commercial utilisation of the site is not possible so this chapter is not applicable. However, financial feasibility computation by CRISIL is enclosed herewith.

- 8.2 A copy of the executive summary of NMC is enclosed wherein the financial status, financial operating plan, financial projections, for the preceding five years has been given. A detail on sources of funding, bridging the deficit and impact of JNNURM reforms on the investment capacity has been given.

SECTION-9

PROJECT BENEFIT ASSESMENT

9.1 A LIST OF BENEFITS FROM SOCIAL PERSPECTIVE:

9.1.1 Introduction of the RUB will yield tangible and non-tangible benefits due to reduction in passenger's travel time, conflict resolution, low fuel consumption, accidents, pollution, etc. and certain socio-economic benefits.

9.1.2 Tangible benefits stream includes:

- a) Savings in Vehicle Operating Cost (VOC) of road traffic due to de-congestion after the RUB is constructed. As part of the saved VOC, fuel consumption will be significantly reduced.
- b) Savings in travel time for the road users on account of no delays and increased speeds.
- c) Savings on account of prevention of rail-road accidents.
- d) Improvement in environment at the level crossing due to less vehicular pollution.