

identify the encroachments at this stage. Structure impact is given here in terms of number of structures affected.

This number does not reflect number of project affected families, as one structure may accommodate one or more number of families.

6.4.4 Loss of Land

As the entire Elevated alignment runs on the existing roads(owned by Highways and Chennai Corporation) Sea shore(Under PWDs control) and on opens lands, only Land Alienation has to be carried out from the respective departments(PWD, Tamil Nadu Police, Forensic science department and TNSCB) for this project. It is estimated that 61,500 sq.m (6.15 hectares) of land to be alienated from the other departments for the Proposed elevated highway.

6.4.5 Loss of Structures

Impact on various types of structures have been identified such as residential, commercial, community structures (religious, educational institutions, government structures, health-related, theatres), and public utilities (public toilets, drinking water sources, bus stands, community halls etc.) and presented in Table 6.9. The residential structures have major impact due to the proposed elevated highway.

Table 6.8: Summary of Affected Structures- Both Options

	Phase-I	
	Nos	%
Residential	529	95.8
Commercial	14	2.5
Religious	3	0.5
Public Utility	6	1.1
Total	552	100

(i) Residential Structures.

Entire phase-I of the proposed alignment envisage impact on around 529 residential structures. Of the total residential structures affected 91.7 % of them are kutcha structures and remaining 8.3% are pucca structures as given in Table 6.10

Table 6.9. Impact on Residential Structures

Residential structures	Phase-I	
	Nos	%
	kutchha	485
pucca	19	3.6
G+1	21	4.0
G+2	4	0.8
compound wall	0	0.0
Total	529	100

Of the 529 Residential structures, 91.7%(485 structures) of them fall under kutchha category, 8.2%(44 structures) fall under pucca category.

(ii) Commercial Structures.

Entire project road envisage Impact on around 14 commercial structures.

Of the 14 structures, 71.4% are kutchha shops found along the alignment and rest 28.6% are pucca structure as given in Table 6.11

Table 6.10. Impact on Commercial Structures

Residential structures	Phase-I	
	Nos	%
	Commercial	
kutchha	10	71.4
pucca	4	28.6
G+1	0	0.0
Total	14	100.0

(iii) Religious Structures.

The phase-I of the project road envisage Impact on 3 religious structures which are found on the fishermen settlements along the project corridor. The legal status of the land should be ascertained by the revenue authorities at the time of implementation.

The details are given in Table 6.12. The R&R cost for the temples which will have minor / major Impact are included in the project cost.

Table 6.11 Details of affected Religious Structures

Sl.No	Name	Chainage	Village	Impact
Phase - I				
1	Amman temple	1/450	Dumming kuppam	Major
2	Amman temple	1/750	Dumming kuppam	Major
3	Janmagini church	2/900	Srinivasapuram	Major

(iv) Public Utility and Community Structures. Public utility and community structures are generally owned either by the government or by local authorities. However, structures owned by communities were also found in between Nochikuppam and Sreenivasapuram stretch which are to be constructed by implementing authorities. Structures owned by private entities with public usage such as various educational and other institutes, health facilities, government offices play grounds etc. are also considered under this category. When Impact to these structures due to the proposed Elevated Highway is assessed, there is no significant Impact to the other community structures.

6.4.6 Loss of Livelihood / Trade / Occupation

Owners whose lands / structures are fully or partially affected are likely to incur economic losses and loss of tenure due to the project. Additionally, tenants/ leaseholders will also envisage loss of livelihood/ tenure.

Though the proposed alignment does not have any major direct Impact on the fishermen settlements, it may cause some indirect Impact during construction period since the alignment is along the coast and fishermen settlements. Construction activities may have a hindrance on the fishermen's business as these people are solely depending on the sea shore for landing their catamarans, distributing and retail sales of their catchments and drying the fishes. Hence, an appropriate place had to be identified for them to carry out their routine works during the construction period.

Amongst the affected persons, most vulnerable groups are women-headed households and below poverty line households. Special attention need to be given in terms of skill up gradation and income restoration programs as they are most likely to face impoverishment. All such affected households shall be identified subsequent to census and detailed socio-economic surveys and

appropriate measures to address their requirements shall be proposed as part of the compensation packages developed for the project.

6.4.7 Summary of Impact

Proposed Elevated Highway involves 6.15 Hectares (61,500 sq.m) of land alienation and Impact on 552 structures. There is no land acquisition involved in this Phase-I of the elevated alignment. This elevated alignment is proposed to run on wherever existing roads are available and also on the seashore and open land to minimize Impact on congested fisherman settlements. This has reduced Impact considerably.

6.4.8 Impact on Livelihood/ Tenure

When the loss is more than 20% of the structure, it is considered to be fully affected and entitlements are calculated accordingly. Hence it has been taken into account that commercial establishments which have major impact are considered for lively hood assistance. The details on the rent loss and loss of employment can be ascertained only at the time of project implementation.

6.4.9 Conclusion

This chapter has described the project area situation with regard to the human settlements and the acquisition of land for the implementation of the project.

6.5 PUBLIC CONSULTATIONS AND INFORMATION DISSEMINATION

6.5.1 Introduction

To ensure that people's concerns are incorporated in the project design and to promote public understanding about the project and its implications public consultation and information dissemination is treated as a two way process where the information is passed on to public and their feed back is sought to understand their issues. The consultative process is continued through out the project period – design preparation, implementation and post implementation periods. The preparatory stage consultation helps to explore alternative design options, to avoid very adverse social impacts and to reduce the magnitude of the impacts of the project, while consultations during implementation stage helps to facilitate a smooth resettlement of the PAFs thereby enabling speedy implementation of the project.

6.5.2 Objectives of Stakeholder Consultations

The overall goal of the consultation programme is to disseminate project information and to incorporate PAFs views in the Resettlement Action Plan. The specific objectives of the consultations are to:

- (i) Improve project design and lead to fewer conflicts and delays in implementation;
- (ii) Facilitate development of appropriate and acceptable entitlement options;
- (iii) Increase long-term project sustainability and ownership;
- (iv) Reduce problems of institutional coordination;
- (v) Make the resettlement process transparent; and
- (vi) Increase effectiveness of sustainability of income restoration strategies and improve coping mechanisms.

6.5.3 Identification of Stakeholders

Stakeholders are those who have a direct interest in project development and whose participation needs to be ensured in consultations at various stages. For consultation and participation primary and secondary stakeholders are to be identified. The following are the major stakeholders:

- (i) All Project Affected Persons (PAPs) and Households, Beneficiaries of the Project, including representatives of Vulnerable Households;
- (ii) Host population at planned resettlement site(s);
- (iii) Elected representatives, Community leaders of PAPs, representatives of CBOs;
- (iv) Designated staff of Project Implementation Unit (PIU)
- (v) DC / officials from DC's office and local Revenue officials; and
- (vi) Representatives of local NGOs

6.5.4 Stages of Consultations and Information Dissemination

The consultation process formulated for the project employs a range of formal and informal consultative methods including in-depth interviews with key informants, focus group discussions, meetings, and workshops. The consultation programmes are scheduled at several stages of the project, which can be broadly classified as:

- Project preparation phase
- Project initiation phase
- Project implementation phase
- Post implementation phase

Project preparation phase: The current phase is the project preparation stage where in the information gathered from field surveys are incorporated in the design phase of the project and preparation of RAP. At this stage following methodologies were used by the consultants for public consultation and information dissemination.

- (i) Reconnaissance survey
- (ii) Focus Group Discussions

Project initiation phase: In project initiation phase, the ULB will be responsible for issue of notification, under sub-section LA Act, to inform potential PAPs about proposed acquisition along with project details. The notice will be published in two local newspapers, one of which will be in local/native language. In addition to this, PIU staff will inform potential PAPs about proposed acquisition with the help of village/ULB and revenue officials. With this, PAPs will be given opportunity to be heard in person or through legal practitioner within 21 days and can register any complaint related to proposed acquisition with Competent Authority (CA)¹. The CA will satisfactorily disallow the complaints registered by PAPs in consultations with them. After disallowing complaints registered by PAPs, notification will be issued confirming the land acquisition. This notice will also be issued in two local newspapers, one of which will be in local/native language.

Project implementation phase: Consultations conducted during RAP implementation will help to identify help required by PAPs during rehabilitation. Further, an intensive information dissemination campaign for PAPs will be conducted at the outset of RAP implementation. This campaign will be designed by the PIU and executed by the implementing NGO. The objectives of the campaign are:

- (i) To help counter rumours and prevent distress;
- (ii) To assist in preparation for relocation to new sites; and
- (iii) Ensure all questions of the PAPs are answered to the best ability; print and audio-visual materials will be of secondary use in such areas.

¹ District Commissioner (DC) will be the Competent Authority (CA)

All the comments made by the PAPs will be documented and summarized in project monitoring reports. Copies of approved Entitlement Matrix along with RAP implementation procedures and arrangements will be made available with CA/DC and PIU for reference and study by the public.

Implementing NGOs will ensure that any views of the PAPs, particularly BPL households, related to the resettlement process are looked into and addressed and that groups and individuals consulted are informed about the outcome of the decision-making process, and confirm how their views were incorporated. Since resettlement and rehabilitation is a continuous process and a baseline data/information is available, the implementing NGO will update the baseline information as and when required.

Post implementation phase: In this phase an evaluation of the project will be conducted to estimate whether the intended benefits have reached the people. All monitoring and evaluation reports of the R & R components of the project will be disclosed to the public.

6.5.5 Reconnaissance Survey

Social Assessment for the project began with reconnaissance surveys using social/ environment mapping format for collecting primary data on various categories/ typology of structures, natural and anthropogenic features and other important land uses like cultivable land, forest areas etc. As part of this a detailed socio-environmental mapping was undertaken for the entire project area for 20 m on either side from the existing edge of the carriage way. This exercise enabled social team to develop initial perceptions about the potential loss and benefits of the project on the Project Affected Families (PAFs). This exercise was also useful to interact with the public and pass on information about the project and get their feed back and viewpoints about it.

6.5.6 Consultation with Potentially Affected Households

The effectiveness of resettlement and rehabilitation process is directly related to the degree of continuing involvement of those affected by the project. In order to document the issues raised by PAPs, public consultations should be conducted.

6.5.7 Focus Group Discussions (FGD)

FGDs were conducted to assess the perception of the people about the proposed project. The stakeholders selected included mainly fishermen communities, local residents, owners/ workers of local commercial establishments etc. Issues and concerns of the people pertaining to the proposed elevated road had been discussed including their perception on the project. These discussions should be conducted to assess the perception of the people towards the project.

As the entire alignment runs along the coast, focused group discussions were conducted at various places(fishermen settlements) to make the people aware of the proposed elevated alignment and and to solicit their co-operation towards the project.

The Focussed group discussions were conducted at the following places

Table 6.12 Details of focused group discussion

Sl.No	Date	Venue	Name of the community head
1	03.01.07	Srinivasapuram	Mr.Selvamani and others
2	08.01.07	Oroor kuppam	Mr.Kasinathan and other villagers

Issues discussed

At the outset, all the heads and fishermen community people expressed their happiness and welcomed the initiative of the consultants to meet them to know their perception and views. Generally all of them pointed out the following issues.

1. Their settlements should not be disturbed.
2. Their fishing and allied activity on the sea shore should not be disturbed during the construction activities.
3. They also accepted to move from the coast if there is any unavoidable requirement provided the government assures them a reasonable rehabilitation packages.

As the consultants have assured that since the proposed road is an elevated alignment there won't be any major impact on the settlements and the affected PAPs would be suitable compensated, the people expressed their co-operation for the proposed project.

Land Acquisition: In all the places, the extent of ownership of land should be ascertained by the revenue people, as there is a chance of encroachment into government land and wherever it is needed, PAFs will be approached for their willingness to part their land for the project with comparative market rates.

6.6 INSTITUTIONAL FRAMEWORK

6.6.1 Institutional Framework

The implementing authority should have an Environmental and Social Development Unit which will undertake the revalidation of RAP before the start of RAP implementation and will engage services of Project Consultant (PC) for the same.

RAP Implementation

R&R Cell will be established as a part of PIU, and a District Resettlement and Rehabilitation Officer (DRRO), for the project district will be appointed to R&R Cell. DRRO will assist PD in all land acquisition and resettlement activities for the project implementation. Chennai Corporation will be the Executing Agency (EA) for project. GoTN will oversee all RAP implementation activities, and will engage services of Non-Governmental Organization (NGO) for RAP implementation and an independent agency for external monitoring. Networking with Central/State/Town Departments will also be established (i) so as to link proposed income restoration packages with government schemes, if any; (ii) for restoration/replacement of community infrastructure such as water supply, sewerage, electricity/telephone network, irrigation canals etc.; and (iii) for restoration/replacement of CPR's/public amenities such as shrines, schools etc.

Implementation Schedule: Implementation of RAP will include land acquisition, and Resettlement and Rehabilitation (R&R) activities. The implementation process will cover (i) identification of cut-off date and notification; (ii) verification of properties of PAPs and estimation of their type and level of losses and distribution of identity cards; (iii) preparation of PAPs for relocation through consultation, however, the process of consultation will continue throughout the RAP implementation and (iv) Relocation and resettlement of the PAPs. It is assumed that implementation will take minimum 3 months to hand over land for civil works. No civil works should begin until all PAPs receive the approved compensation package. Civil works should therefore be linked with the completion of land acquisition.

Monitoring and Evaluation: RAP implementation will be closely monitored to provide Project Implementation Unit (PIU) with an effective basis for assessing resettlement progress and identifying potential difficulties and problems. For monitoring and evaluation (M&E), PIU will appoint an independent agency to undertake external monitoring of the entire project. The independent agency will monitor the project on a half-yearly basis and submit its reports directly to the PIU. This monitoring will include, administrative monitoring, socio-economic monitoring and impact evaluation.

Internal monitoring will track indicators such as the number of families affected, resettled, assistance extended, infrastructure facilities provided, financial aspects, such as compensation paid, grant extended etc. R&R Cell at PIU will carry out internal monitoring, who will report to the Project Director on a monthly basis in prescribed monitoring formats. These formats, to be

filled by District Resettlement and Rehabilitation Officers (DRRO) at R&R Cell, will indicate actual achievements against the targets fixed, and reasons for shortfall, if any. Based on the reports, the PIU will monitor and evaluate in every three (3) months the overall progress on each R&R component within the project and determine actions to be taken by the PIU in situations where the set objectives are not being met.

6.7 RAP BUDGET

6.7.1 Introduction

This chapter outlines the methodology of RAP cost estimation and RAP cost in terms of Land Acquisition (LA), assistance for structure and asset loss and various other kinds of assistance that is eligible under the framework of entitlement.

6.7.2 Proposed Approach for Estimating the Compensation

In acquiring the land for the proposed road improvement, Land Acquisition Officer normally follows guidance values for fixing the compensation to PAFs. In the State of Tamil Nadu, modified guide line values(07-08) published by the government and these are base values for property transaction. The available guide line value has been taken from the official Website of Tamil Nadu Registration Department for the areas falling along the project stretch and used for calculation of compensation for land acquisition. However, current rate published in the official website will vary with the market value of the land at the time of project implementation considerably.

In case of loss of structures and assets, a technical valuation team of PWD inspects the site and advises LA Officer to fix individual award based on approved prevailing PWD Schedule of Rates for the concerned district. The LA Officer is the final discretionary authority to fix individual awards. However, the awards can be challenged in the Court of Law.

6.7.3 Per Unit Rate of Land, Structure & Other Assets

Guide Line values taken from Official website of Tamil Nadu Registration Department for the year 2007-2008 is considered for preparation of RAP budget. As there is no acquisition of private land is involved in the Phase-I, there is not land cost arrived.

For calculation of loss of structures and other household assets, following standardized rates have been used, which have been worked out using 'Schedule of Rates' for Chennai district published by PWD, Govt. of Tamil Nadu.

- (a) For Pucca Structure – Rs.4000/ sq.m. of plinth area.
- (b) For Semi-Pucca Structure – Rs.2200/ sq.m. of plinth area.
- (c) For Kutcha Structure – Rs.700/ sq.m. of plinth area.
- (d) For Boundary Wall – Rs.1000/ running metre of 1.5m high and 1 foot wide plastered wall.
- (e) For Thatched - Structure – Rs.400/ sq.m. of plinth area

The above mentioned rates are applied to the plinth area of the above category of structures to get the total cost. Based on the extent of impact upon the structures if the remaining part is found unviable then full structure is considered as fully affected and entire area is taken for cost estimation. Where ever the remaining portion is found to be viable, it is considered as partial

impact and only the affected area is considered for valuation of the structures. The minor assets like open wells, compound walls etc. has been valued separately. However, detailed item wise valuation based on PWD schedule of rates needs to be undertaken at the time of implementation.

6.7.4 RAP Budget

RAP budget, can be broadly subdivided into following three subsections:

- (a) Assistance for Loss of Land
- (b) Assistance for Loss of Structures, Assets & Developed Area within Resi/Com. Plots
- (c) R&R Implementation

6.7.4.1 Assistance for Loss of Land

As there is only government land to be alienated for the Phase-I there is no land cost involved for Phase-I. However, if the cost of the land is to be paid, the social cost needs to be revised

6.7.4.2 Cost of Structures

Cost of affected property adds upto Rs. 3.69 crores ,of these 1.59 crores for pucca buildings. (Construction material used for constructing roof, floor and walls of a property is the major criteria to differentiate the likely affected structure into pucca, and kutcha). Remaining amount is for Kutcha buildings, religious buildings and compound wall.

Table.6.13 Cost of Structures

Sl No	Type of Structure	Area of Structure(Sqm)	Unit cost(Rs)/Sq.m	Total Amount(Rs. p)	Total Amount(in Crores)
Phase - I					
1	Kutcha	6900	1500	10350000	1.04
2	Pucca	3782	4200	15884400	1.59
3	Religious	110	8000	880000	0.09
4	25% building allowance			6778600	0.68
	Total			33893000	3.39
5	9% Registration and stamp duty charges			3050370	0.31
	Total			36943370	3.69

6.7.4.3 R&R Assistance

Generally, R&R assistance include livelihood allowance, rental allowance, one time shifting allowance which are given for the major impact category. As the residential and few commercial structures that have major impact are found to be on the government land, R& R assistance is not given. Hence there is no R&R assistance arrived for Phase-I.

6.7.5 Final RAP Budget

Table.6.14: Final RAP Budget –Phase – I

Total budget-Phase I	Rs.p	Rs.in crores
Compensation-Land	0.00	0
Compensation-Structure	36943370.00	3.694337
Total	36943370.00	3.69
Solatum 30%	11083011	1.11
Establishment charges 10%	3694337	0.37
Contingency 3%	1108301.1	0.11
Supervision 1%	369433.7	0.04
Grand Total	53198452.80	5.32

Chapter 7: Project Cost Estimates

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7 PROJECT COST ESTIMATES

7.1 General

This chapter deals with derivation of preliminary cost of for Phase 1 from Light house on Kamarajar Salai (Beach Road) to Besant Nagar of length 4.7km long elevated corridor road. The estimate quantities were derived based on the improvement proposal discussed in Chapter 4.

7.2 Costing Methodology

The project cost is arrived based on the improvement proposals and quantities thereof. The unit rate arrived for construction of new elevated corridor. The project cost was worked out using schedule of rates of PWD Tamilnadu 2007-08 to MoRT&H standards. The quantities were worked out by taking into account for 1 km length corridor.

7.3 Cost Components

The cost for the road and structural components has been worked out under the following sub heads

- Site clearance
- Road works including earth work
- Drainage and protective works
- Road furniture (Traffic signs, markings and other appurtenances)
- Shifting of utilities
- Electrical works
- Land acquisition and social cost
- Foundation, structure and superstructure cost for elevated corridor including ramps
- Environmental mitigation cost

7.4 Land/Environmental/Social Costs

The project corridor passes through mostly on the existing road along beach and in some portions on the shore land. Acquisition cost has been calculated as given in social screening report. Environmental cost includes monitoring and mitigation measures.

7.5 Up gradation Rates

Tender premium in this project is to be higher as compared to locally bid contract due to large spread project area, CRZ zone and also along the coastal line. While working out actual cost additional percentage is to be added. However this additional percentage is not included in the present study and has to be considered at DPR stage during detailed designs and estimation.

7.6 Contingency and Centage Charges

The base costs are added with following components to get the project cost

Contingencies	3% of base cost
Petty supervision	2% of base cost
Quality control charges	1% of base cost
Design and other charges	2.0% of base cost

7.7 Basic Rates

Basic rates for material and labour have been adopted from Tamilnadu PWD schedule of rate 2007-2008. for items not covered by PWD schedule of rate, local market rates were considered.

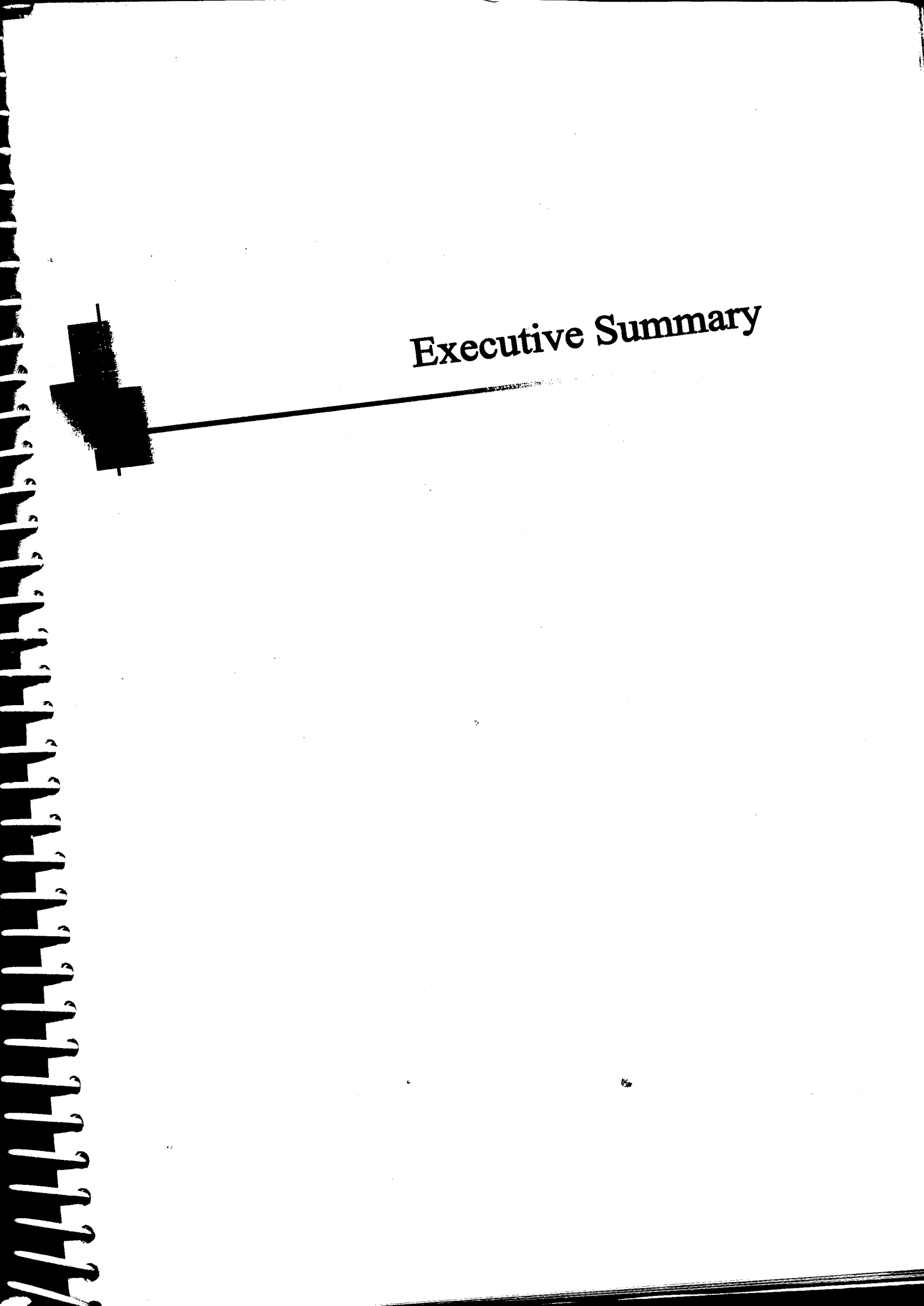
7.8 Total Project Cost

As discussed in Chapter 4, the project costing is given in Table 7.1.

Table 7.1 Summary of Project Cost
Tentative Project Cost for Phase I - Light House to Oorurkuppam near Elliots Beach (4.7 km)

Item Description	Cost (Rs. Crores)
Elevated Corridor	377
Signature bridge across Adyar Estuary (250m)	32.0
Road works including junction improvements	8.0
Drainage and protective works	4.0
Road Furniture (Traffic signs, markings and other	0.5
Shifting of utilities	2.0
Street Lighting & High Mast Lighting	1.5
Land Acquisition and Social cost	5.3
Environmental Mitigation Cost	0.4
Total Project Cost	430.7
Say, Rs. 431 Crores	
Provision of interchange to connect the proposed Adyar river bund corridor	40.0

Executive Summary



Annexure

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details										ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	LHS			Median	RHS			Distance of boundary		
						Earthen Shoulder	Paved Shoulder	Carriage way		Carriage way	Paved Shoulder	Earthen Shoulder		Foot Path	
4+600	4+630	Res	Res			1		2.5		2.5		1		7	1) 1 Electric Pole on LHS
4+630	4+700	Res	Res			1		3.5		3.5			2	10	2) 2 Electric Poles on RHS
4+700	4+800	Res	Res		1.5			6.5		6.5			1.5	16	1) Besant Nagar Beach Road Junction @4+700 on LHS 2) Cross Road of 3.5m wide @4+790 on RHS 3) Cross road of 3.5m wide @ 4+800 on LHS 4) water tank @4+750 on LHS 5) Two Telephone Boxes @ 4+800 on RHS 6) Two electric poles @30m c/c on RHS
4+800	4+900	Res	Res			1		7		7		1		16	1) Cross road of 3.5m wide @ 4+900 on LHS (Besant Nagar 32nd Cross Road) 2) 4 Electric Poles @ 25m c/c on RHS
4+900	5+000	Govt	Res			1		7		7		1		16	1) LHS Rajaji Bhavan Compound wall 2) Cross Road of 6m wide @4+990 on RHS 3) Electric Transformer @ 4+950 on LHS (Inside the Rajaji Bhavan Compound wall)
5+000	5+070	Govt	Res			1		7		7		1		16	1) Junction @ 5+070 (Besant Nagar 3rd Avenue) 2) BSNL Telephone Box on RHS @5+070 3) 3 Electric Poles @ 20m c/c on RHS pavement edge
5+070	5+100	Govt	School		1.5		4	7		7	4		1.5	25	1) LHS Rajaji Bhavan Compound wall 2) OLCOTT Memorial High school 3) Olcott Bus stand on Foot path opposite to Junction @5+070 on RHS 4) Electric Poles on Both sides @ 20 m interwell
5+100	5+200	Govt	School		1.5		4	7		7	4		1.5	25	1) RHS Olcott Scholl compound wall 2) Rajaji Bhavan Gate on LHS at 5+195 3) Olcott School Bus stand on LHS paved Shoulder @ 5+110 4) 0.5m divider from 5+100 to 5+160 5) Electric Poles on Both sides @ 20m c/c
5+200	5+300	Res	Res		1.5		4	7		7	4		1.5	25	1) BSNL telephone Box on LHS Foot Path @ 5+230 2) BSNL telephone Box on LHS Foot Path @ 5+300 3) Cross Road of 14m wide on RHS @ 5+265 4) Electric Transformer & Two Electric Boxes on LHS pavement edge @5+295 5) Telephone Box on RHS of Cross Road @ 5+265

Annexure 2.1 Road Inventory

Section	Land Use (Res / Com)		Cross Section Details													ROW (m)	Remarks
			LHS						RHS								
			LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
5+300	5+400	Res	Res	1	1	1	2	7		7	2	1	1	1	24	1) Besant Nagar Club @ 5+345 2) Cross Road of 12m wide on LHS @ 5+330 3) Telephone Box on RHS Foot Path @ 5+345 4) Trees on RHS @ 2m Offset from the Pavement edge on the Road	
5+400	5+500	R/C	Com	1.5			3	7		7	3			1.5	23	1) Bus stops on Both sides @5+400 2) Cross Road of 3.5m wide on LHS @5+425 3) Temple on LHS @5+445 (Photo No: 11) 4) Besant Nagar Bus Stand on RHS @ 5+500 (Photo No: 12 & 13)	
5+500	5+600	Res	Res		2		3	7		7	3		2		24	1) Metro Water Gate on LHS @ 5+510 2) Electric Transformer on LHS @ 5+570 3) CPWD Quarters Gate on LHS @ 5+600 4) BSNL Telephone Box on LHS foot path @ 5+590	
5+600	5+700	Res	Res		2		3	7		7	3		2		24	1) cross road of 3.5 m wide on RHS @ 5+605 2) Cross Road of 9m wide on LHS @ 5+675 (Photo No: 14) 3) CPWD compound wall is upto 5+675 on LHS	
5+700	5+800	Com	Res		1.5		3	7		7	4		1.5		24	1) Besant Nagar 13 th cross road on RHS @ 5+710 2) cross road of 3.5 m wide on LHS @5+775 3) cross road of 6.0 m wide on RHS @5+775 4) Two electric Boxes on LHS pavement edge @ 5+760	
5+800	5+900	Com	R/C		2		3	7		7	4		1		24	1) ICICI Bank Bus Stop on LHS @5+815 2) Besant Nagar 4th cross road on RHS @ 5+835 3) BSNL Telephone Box on LHS Foot path is @	
5+900	6+000				1	3		7		7	3		2		23	1) Besant Nagar 16th cross road on LHS @ 5+950 2) Bus stop on RHS Foot Path @ 5+950 3) cross road Junction on RHS @ 6+000 (Photo No: 15 & 16)	
6+000	6+100				2	1.5	2	7		7	2		2		23.5	1) Three Bus shutters on LHS paved Shoulder from 6+015 to 6+030 2) Besant Nagar 6th cross road of 6m wide on RHS @6+100 3) Telephone Box on RHS foot path before the cross road Junction @ 6+100 4) Two electric boxes on LHS earthen shoulder @ 6+100	

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
6+100	6+200				2		3	7		7	3		2		24	1) Cross road of 3.5m wide on LHS @6+175
6+200	6+300				2		3	7		7	3		2		24	1) Reserve Bank staff Quarter Gate on RHS @ 6+230 2) Bus Stand on RHS Foot path @ 6+260
6+300	6+400				2		3	7		7	3		2		24	1) BSNL Telephone box on LHS foot path @ 6+315 2) 4 Road Junction @ 6+330, LHS towards Anna Colony and RHS Besant Nagar 1st Main road 3) Electric Transformer on LHS paved shoulder @ 6+350
6+400	6+500	com	com		2		3	7		7	3		2		24	1) Electric transformer on LHS paved shoulder @ 6+475 (Photo No: 19) 2) Fish Market on LHS from 6+420 to 6+470 (Photo No: 17) 3) cross road of 3.5m wide on RHS @ 6+475
6+500	6+600	com	com		2	2.5	3	7		7			2		23.5	1) Temple on LHS @6+510 (Photo No: 18) 2) Bus stop on LHS foot path @ 6+520 3) Bus stop on LHS earthen shoulder @ 6+550 4) Hand pump on LHS shoulder @ 6+590 5) Bus stop on RHS foot path @6+600
6+600	6+640	com	com		2		3	7		7	3		2		24	1) 4 Road Junction @6+640 (3.5m width roads)
6+640	6+700	com	com		2			7		7			2		18	2) cross road on LHS @ 6+700
6+700	6+800	com	com		2	1		7.5		7.5		1	2		21	1) cross road of 3.5m wide on RHS at 6+730 2) electric box before the cross road on RHS @ 6+730 3) electric box on LHS earthen shoulder @ 6+790
6+800	6+900				2	1.5		7.5		7.5		1.5	2		22	1) electric box on RHS earthen shoulder @ 6+950 2) Bus stop on LHS pavement edge @ 6+900
6+900	7+000				2		1	7		7	1		2		20	1) Shastri Nagar 1st Main Road of 7m wide on RHS @ 6+925 2) Two electric boxes are after the cross road on RHS @ 6+925 3) BSNL telephone box on LHS foot path @ 6+980 4) cross road of 3.5m wide on LHS @ 7+000 5) electric box on RHS foot path @7+000

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks	
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary			
																6) Electric transformer and 3 electric Boxes after the cross road on LHS @7+000	
7+000	7+060				2		1	7		7	1					20	1) cross road of 3m wide on LHS @ 7+045
7+060	7+100				2		2	7		7	1					21	2) St. Marry's Teacher training school on RHS @ 7+045 (Photo No: 20) 3) Electric Box on RHS foot path @ 7+100
7+100	7+200	com	com		2		1.5	7		7	1.5					21	1) BSNL telephone box on Both sides pavement shoulder edge @ 7+130 2) Bus stop on RHS foot path @7+160
7+200	7+245				2		1.5	7		7	1.5					21	1) From 7+245 Meet stalls wall is at carriage way edge on RHS up to the 7+300 Junction
7+245	7+300				2		1.5	7		7						17.5	2) Lattice Bridge Road Junction @7+300 (Photo No: 21 & 22)
7+300	7+400	com	com		2			7		7						18	1) water tank on LHS pavement edge @ 7+340 2) electric boxes on both sides @ 7+340 3) cross road of 3.5m wide on RHS at 7+340 4) water tank on LHS @ 7+370 5) Temple on RHS @ 7+370 Photo NO:(23) 6) cross road of 3.5m wide on LHS @ 7+400 7) Electric box on both sides @ 7+400 (after the LHS Cross road)
7+400	7+475	com	com		2			7		7						18	1) electric box on RHS foot path @7+430
7+475	7+500	com	com		2			5.5		5.5		1.5				16.5	2) cross road of 2m wide on LHS @ 7/490
7+500	7+530				2			5.5		5.5		1.5	1.5			16	1) Two water tanks on LHS Pavement edge @ 7+540
7+530	7+570				2			5.5		5.5			1			14	2) Photo No: 24 shows the Bottle Neck portion
7+570	7+600				2			5.5		5.5		1.5	1.5			16	
7+600	7+640				4			6		6			2			18	1) 12/0 km stone @ 7+640
7+640	7+700				4			6		6			2	6		24	
7+700	7+800				4			6		6			2	6		24	1) Electric Box on LHS foot path @7+770
7+800	7+900				3			8		8			2	5		26	1) Electric pole on LHS pavement edge @7+815 2) 12/2 Stone @ 7+840 3) BSNL telephone box on LHS pavement edge @ 7+890
7+900	8+000				2			7		7			2	6		24	1) Electric transformer on LHS Foot Path @ 7+910 2) 12/3 stone @7+950

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
																3) Indira Nagar Cross road Junction on RHS @ 7+975 (Photo No: 25 & 26)
																4) Electric Box on LHS foot path @7+975
8+000	8+100				3			7		7				3	20	1) BSNL telephone box on LHS foot path @8+020
																2) 4 Road Junction @ 8+010 (LHS is Kalachetra Road)
																3) Theygaraja Cinema Hall on LHS @ 8+100 (Photo No: 28)
																4) Sri vidya Kalyana Mahal on RHS @ 8+100 (Photo No: 27)
8+100	8+200				3			7		7				3	20	1) Bus stop on RHS foot path @8+125
																2) Electric box on both sides on foot path @ 8+150
																3) Transformer & Two electric boxes on LHS foot path @ 8+180
8+200	8+300				2		3	7		7		2	2		23	1) Jayanthi Cinema hall on RHS @ 8+220 (Photo No: 29)
																2) cross road of 3.5 m wide on RHS @ 8+250
																3) EC Road Junction@ 8+300 (Photo No: 30, 31 & 32)
8+300	8+370	com	ocm		2		4	10	1	10			2		29	1) High Mask Light on the Median at Junction 8+300
8+370	8+400	com	ocm	5	2		2	7	1	7	2		2		28	2) Electric poles are 25m c/c on the median Continuously
																3) BSNL telephone box on RHS foot path @ 8+315
																4) 11/9 km Stone on median @ 8+335
																5) Advertisement Boadrs on Median at 25m c/c continuous
																6) BSNL telephone box on LHS paved shoulder @ 8+360
																7) Cross road of 3.5m wide on LHS @ 8+365
																8) Electric transformer on LHS foot path @ 8+370
8+400	8+500	com	ocm	5	2		2	7	1	7	2		2		28	1) 12/0 km Stone on Median @ 8+435
																2) cross road of 3.5 m wide on RHS @ 8+460
																3) Electric box on LHS foot path @ 8+500
8+500	8+550	com	ocm	2	2		3	7	1	7	2		2	2	28	1) 12/1 km stone on median @ 8+535
8+550	8+500	com	ocm	1	2		3	7	1	7	1		1		23	2) 4 road junction @ 8+550 (LHS 3.5 m wide road and RHS 6m wide Road)
																3) electric box on both sides on foot path @8+570

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
																4) electric transformer on RHS foot path @ 8+570 5) Tirvanmayur Bus Depo on RHS Photo No: 37 &
8+600	8+700	com	ocm	1	2		3	7	1	7	2			3	26	1) 12/2 km stone on median at 8+635 2) temple on RHS @8+640 3) Post box on RHS @ 8+645 4) Tiruvanmyur Bus stand on RHS @ 8+660 (photo No: 39) 5) Ambethkar statue on RHS paved shoulder @ 8+670 6) cross road of 3.5m wide on LHS @ 8+690 7) Telephone box on LHS paved shoulder @8+700
8+700	8+740	com	ocm		2		2	7	0.5	7					18.5	1) This section is on 90degrees curved portion
8+740	8+770	com	ocm		2		2	7	2	7	3		2		25	2) Cross road on LHS @ 8+740
8+770	8+825	com	ocm		2		2	7	6	3.5	1		1		22.5	3) temple just after the cross roan on LHS @ 8+740
8+825	8+855	com	ocm		2		2	7	1	7	2		2		23	4) Temple on Median @ 8.825 (Photo No: 40, 41 & 42)
8+855	8+900	com	ocm		2		2	7	1	7	2		2		23	5) cross road of 3.5m wide on LHS @ 8+835 6) Electric Poles and Advertisement Boars are continuous except in curve portion) 7) Bus stop on LHS foot path @ 8+885
8+900	9+000	com	ocm	3		2	1	7	1	7	2		2		25	1) Temple on LHS @ 8+980 (Photo No: 46) 2) Two bus stops on LHS foot path @ 8+960
9+000	9+100						4	7	1	7	2		2		23	1) Cross road of 3.5 m wide on LHS @ 9+030 2) 12/5 km stone on median @ 9+035 3) Thygaraja swamy Marriage Hall on RHS @ 9+040 4) cross road on RHS @ 9+095 5) Electric transformer and electric box on RHS foot path @ 9+090 6) Electric box on LHS paved shoulder @9+100
9+100	9+200						2	7	1	7	2		2		21	1) 12/6 km stone on median @9+135 2) cross road of 5m wide on LHS @ 9+200 (Signalized Junction) 3) Temple on RHS @ 9+200 (Photo No 47) 4) Electric box just after the cross road on LHS @ 9+200
9+200	9+300						1	7	0.5	7	1.5		2		19	1) Water ford appartments on RHS @ 9+300 (Photo No: 48)

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
9+300	9+400					2	2	7	0.5	7	1			2	21.5	1) BSNL telephone box on LHS @ 9+350 2) 12/8 km stone @9+340 3) Electric Box on LHS @ 9+400
9+400	9+480					2	2	7	0.5	7	1			1	20.5	1) Temple Under Construction on RHS @ 9+460 (Photo No: 49)
9+480	9+500					1	1	7	0.5	7	1	1			18.5	
9+500	9+600						1	7	0.5	7	1				16.5	1) 13/0 km stone @9+535 2) Nathans Comple on RHS @ 9+540 (Photo NO: 50) 3)Twin Roses appartments on RHS @ 9+560 and compound wall upto 9+600
9+600	9+700						1	7	0.5	7	1				16.5	1) Cross road of 3.5m wide on RHS @ 9+670 2) 13/1 km stone @9+635 3) open land on RHS from 9+600 to 9+670 (belongs to Krishna Builders)
9+700	9+740						1	7	0.5	7	1				16.5	1) 13/2 km stone @9+735
9+740	9+770							6.5	0.5	6.5					13.5	2) cross road of 3.5m wide on RHS @ 9+740
9+770	9+800							7	0.5	7					14.5	3) Temple on paved shoulder on LHS @ 9+740 4) Photo No: 51 shows th Bottle neck @ 9+740 5) Cross road of 7m wide on LHS @ 9+800 (Signalized Junction) Photo No: 52
9+800	9+900					1	1.5	7	0.5	7					17	1) RTO office on LHS (Photo No: 53) 2) Advent Christian Church on RHS @ 9+850 (Photo No: 54) 3) Sai soubodhaya apartment on RHS @ 9+900 (Photo No: 55)
9+900	10+000					1.5	2	7	1	7	1			2	21.5	1) Electric Transformer on RHS @ 9+910 2) Two bus stops on LHS paved shoulders @9+920 3) RTO office Boudary end on LHS at 9+920 4) 13/4 km stone @ 9+935 5) Cross road of 3.5 m wide on LHS @ 9+995
10+000	10+100					1		7	1	7	1	0.5			17.5	1) Mosque on RHS @ 10+062 (Photo No: 56) 2) electric box on LHS earthen shoulder @ 10+080 3) 13/5 km stone @ 10+035
10+100	10+200	R/C	R/C			1	2	7	1	7	2	1	2		23	1)Bus stop @10+155 on LHS 2)Ganesh temple@10+150 on LHS (Photo No57)

Annexure 2.1 Road Inventory

Section		Land Use (Res / Com)		Cross Section Details											ROW (m)	Remarks
From	To	LHS	RHS	Distance of boundary	Foot Path	Earthen Shoulder	Paved Shoulder	Carriage way	Median	Carriage way	Paved Shoulder	Earthen Shoulder	Foot Path	Distance of boundary		
																3)Cross Road of 3.5m wide@10+150 on RHS 4)Cross Road of 3.0mwide@10+160 on LHS 5)Cross Road of 3.5m wide@10+210 on RHS
10+200	10+300	R/C	R/C				2	7	1	7	1	2			20	1) Post Box and Earthen Shoulder @10+230 on RHS 2)Bus stop and Earthen Shoulder@ 10+250 on RHS 3)Cross Road of 3.5m wide @ 10+260 on LHS 4)Electric Box @ 10+260 on LHS of Cross Road 5)Telephone Box @10=300 on LHS
10+300	10+320	R/C	B U			1		7	1	3.5					12.5	1)Cross Road of 3.5m wide @ 10+320 on LHS
10+320	10+400	R/C	R/C		2		2	7	1	7	1			2	22	1)Cross Road of 5m wide @ 10+330 on RHS 2)13+800 K M Stone is @ 10+335 and median lighting ends 3)Cross Road of 3.5m wide @10+370 on RHS
10+400	10+500	R/C	R/C			2	2	7	1	7	2	2			23	1)13+900 K M Stone is @ 10+435 2)A Junction @ 10+445 on RHS 3)Cross Road of 3.5m wide @ 10+445 on LHS 4)No F P & P S @ 10+445 Junction
10+500	10+600	R/C	R/C			1	2	7	1	7		1			19	1)Cross Road of 3.5m wide @ 10+580 on LHS 2)Road width decreased to 5.5m from 10+580 to 10+600
10+600	10+700	R/C	R/C			1	2	7	1	7	1			2	21	1) A Temple @10+670 on RHS (Photo No 60) 2)Cross Road of 3m wide @10+660 on LHS 3)Fish Market & Water tank @10+700 on RHS (Photo No 61&62) 4)Cross Road of 3m wide @10=700 on LHS
10+700	10+800	R/C	R/C				2	7	1	7	2			2	21	
10+800	10+900	R/C	R/C			2		7	1	7		2				1)Cross Road of 2m wide @10+820 on LHS 2)Petrol Bunk (B P) @ 10+830 on RHS (Photo No 64) 3)Cross Road of 3m wide @ 10+840 on RHS 4)Cross Road of 3.5m wide @ 10+890 on LHS
10+900	11+000	R/C	R/C				2	7	1	7	2			2		1)Petrol Bunk (Indian Oil) @ 10+925 on LHS (Photo No 65) 2)14+400 K M Stone is @10+935

Traffic Study for Preparation of Final Detailed Feasibility Report for Construction of a link road from Light House on Kamarajar Salai to Besant Nagar (Via) Santhome Bypass, Sreenivasapuram, Uoorurkuppam including construction of a high level Bridge across Adyar Estuary to join ECR
CLASSIFIED VOLUME COUNT SURVEY

Station :
 Direction :

Shift : Day/ Night

Date :

Weather : Sunny/Cloudy/Rainy

Enumerator :

Time 24:00 Hours Format	Bus					Private Vehicles & IPT						Goods Vehicles			Slow Moving Vehicles			
	MTC	Mofussil Bus	Company Bus	Other Bus	Mini Bus/ var	Old Car/Jeep	New Car/Jeep	Two Wheelers	Pass. Auto	Share Auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand Carts	Fish Carts	Cycle Rickshaw
Total (Hourly)																		

Traffic Study for Preparation of Detailed Feasibility Report for Construction of a link road from Light House on Kamarajar Salai to Besant Nagar (Via Santhome Bypass, Sreenivasapuram, Uoorukkuppam including construction of a high level Bridge across Adyar Estuary to join ECR

ROAD SIDE INTERVIEW SURVEY

Name of the Road :

Interviewer :

Location :

Date :

Day:

Direction :

Time (24:00 Hours Format) :

Sheet No:

Vehicle Type	Trip Frequency	Occupancy	Origin of the Trip Origin of the Trip	Destination of the Trip	Purpose of Journey	Goods Vehicle Only		Willingness to use the new road
						Goods Type	Loading in Tonnes	
1. Truck 2. MAV 3. LCV 4. Car/Jeep/van 5. Auto 6. Two Wheeler	1. 1/Day 2. 2/ Day 3. 3/Day 4. >3/Day 5. 1/Week 6. 2/Week		City: Area Name : Street Name :	City : Area Name : Street Name:	1. Work 2. Business 3. Education 4. Social & Recreation 5. Tourism 6. Others	1. Foodgrains, Cereals 2. Perishables Goods (Vegetables, Eggs etc) 3. Petroleum Products 4. Building Materials 5. Industrial Materials 6. Garments 7. Parcel Lorries 8. Empty 9. Others (Specify)		1. Yes 2. No
1. Truck 2. MAV 3. LCV 4. Car/Jeep/van 5. Auto 6. Two Wheeler	1. 1/Day 2. 2/ Day 3. 3/Day 4. >3/Day 5. 1/Week 6. 2/Week		City : Area Name : Street Name :	City : Area Name : Street Name :	1. Work 2. Business 3. Education. 4. Social & Recreation 5. Tourism 6. Others	1. Foodgrains, Cereals 2. Perishables Goods (Vegetables, Eggs etc) 3. Petroleum Products 4. Building Materials 5. Industrial Materials 6. Garments 7. Parcel Lorries 8. Empty 9. Others (Specify)		1. Yes 2. No
1. Truck 2. MAV 3. LCV 4. Car/Jeep/van 5. Auto 6. Two Wheeler	1. 1/Day 2. 2/ Day 3. 3/Day 4. >3/Day 5. 1/Week 6. 2/Week		City: Area Name : Street Name :	City : Area Name : Street Name :	1. Work 2. Business 3. Education 4. Social & Recreation 5. Tourism 6. Others	1. Foodgrains, Cereals 2. Perishables Goods (Vegetables, Eggs etc) 3. Petroleum Products 4. Building Materials 5. Industrial Materials 6. Garments 7. Parcel Lorries 8. Empty 9. Others (Specify)		1. Yes 2. No

SPEED AND DELAY SURVEY

Annexure 3.1.3

Sl.No	Junction / Turning Point	<i>QJT</i>			<i>JLT</i>			Time taken to travel (in sec) excluding delay	Delay in sec	Length of Jn (in Km)	Speed in Km/sec	Speed in Kmph
		min	sec	tot tim (sec)	min	sec	tot tim (sec)					

Preparation of FS for Santhome Bypass

Summary of Classified Traffic Volume Count

Location: Thiru Vi Ka Bridge		Direction: Towards Adyar																			
Day	Date	MTC	Omni Bus	Company Bus	Institutional Bus	Mini Bus/Van	Car/Jee p/Van (New)	Car/Jee p/Van (Old)	Two Wheelers	Auto (Passenger)	Share Auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand Carts	Fish Carts	CR	Total Vehicles	Total PCU
Sunday	8thJan, 2006	1039	6	96	104	294	1006	9329	25330	3871	66	426	612	13	651	2108	16	6	12	44985	44623
Monday	09thJan, 2006	1314	6	100	291	795	1504	12890	29316	5724	191	840	718	20	879	4494	23	11	17	59133	59982
Tuesday	3rdJan, 2006	1315	2	98	260	764	1412	13083	28483	5646	195	747	634	19	752	4780	24	14	12	58240	58783
Wednesday	04thJan, 2006	1225	5	107	256	743	1452	12813	26733	5916	191	796	654	17	818	4926	17	11	13	56693	57843
Thursday	05thJan, 2006	1239	5	104	269	732	1381	12386	27703	5748	199	806	627	18	787	4877	16	8	9	56914	57677
Friday	06thJan, 2006	1263	4	109	296	773	1489	12733	26161	5667	197	783	670	15	621	5446	15	10	12	56264	57080
Saturday	07thJan, 2006	1240	4	86	199	546	1233	10574	26925	4243	162	717	722	16	702	4212	18	6	12	51617	51168
Average		1234	5	100	239	664	1354	11973	27236	5259	172	731	662	17	744	4406	18	9	12	54835	55308

Location: Thiru Vi Ka Bridge		Direction: Towards Parrys																			
Day	Date	MTC	Omni Bus	Company Bus	Institutional Bus	Bus/Van	Car/Jee p/Van (New)	Car/Jee p/Van (Old)	Wheelers	(Passenger)	Share Auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand Carts	Fish Carts	CR	Total Vehicles	Total PCU
Sunday	8thJan, 2006	991	0	32	133	286	1086	9564	24397	3409	60	386	573	7	564	2339	11	6	12	43856	42889
Monday	09thJan, 2006	1325	4	102	272	829	1565	13126	30689	5413	190	792	657	17	817	5130	16	15	16	60975	60697
Tuesday	3rdJan, 2006	1306	8	107	278	780	1356	12876	27846	5977	194	786	685	15	728	4965	21	17	10	57955	59010
Wednesday	04thJan, 2006	1202	3	107	251	708	1388	12690	27977	5740	192	826	672	16	799	5322	20	9	10	57932	58392
Thursday	05thJan, 2006	1292	3	116	255	642	1417	12589	28260	5568	197	759	658	15	767	4922	15	9	8	57492	57907
Friday	06thJan, 2006	1200	0	100	250	714	1351	12653	28001	5311	192	747	690	16	743	4934	17	8	8	56935	57058
Saturday	07thJan, 2006	1211	4	94	171	470	1214	11171	27607	4172	157	577	663	13	750	4049	17	7	12	52359	51455
Average		1218	3	94	230	633	1340	12096	27825	5084	169	696	657	14	738	4523	17	10	11	55358	55344

Location: Thiru Vi Ka Bridge		Direction: Both (Towards Adyar and Parrys)																			
Day	Date	MTC	Omni Bus	Company Bus	Institutional Bus	Mini Bus/Van	Car/Jee p/Van (Old)	Car/Jee p/Van (New)	Two Wheelers	Auto (Passenger)	Share Auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand Carts	Fish Carts	CR	Total Vehicles	Total PCU
Sunday	8thJan, 2006	2030	6	128	237	580	2092	18893	49727	7280	126	812	1185	20	1215	4447	27	12	24	88841	87512
Monday	09thJan, 2006	2639	10	202	563	1624	3069	26016	60005	11137	381	1632	1375	37	1696	9624	39	26	33	120108	120679
Tuesday	3rdJan, 2006	2621	10	205	538	1544	2768	25959	56329	11623	389	1533	1319	34	1480	9745	45	31	22	116195	117793
Wednesday	04thJan, 2006	2427	8	214	507	1451	2840	25503	54710	11656	383	1622	1326	33	1617	10248	37	20	23	114625	116235
Thursday	05thJan, 2006	2531	8	220	524	1374	2798	24975	55963	11316	396	1565	1285	33	1554	9799	31	17	17	114406	115584
Friday	06thJan, 2006	2463	4	209	546	1487	2840	25386	54162	10978	389	1530	1360	31	1364	10380	32	18	20	113199	114137
Saturday	07thJan, 2006	2451	8	180	370	1016	2447	21745	54532	8415	319	1294	1385	29	1452	8261	35	13	24	103976	102624
Average		2452	8	194	469	1297	2693	24068	55061	10344	340	1427	1319	31	1483	8929	35	20	23	110193	110652

Preparation of FS for Santhome Bypass

Table Summary of Classified Traffic Volume Count

Location: Eliots Beach													Direction: Towards Besant Nagar								
Day	Date	MTC Bus	Mofussil Bus	Company Bus	Other Bus	Mini Bus/Van	Old Car/Jeep	New Car/Jeep	Two Wheelers	Pass. Auto	Share auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand carts	FishCarts	Cycle Rickshaw	Total No. of Vehicles	Total PCU
Sunday	8thJan, 2006	6	0	0	2	12	605	2166	3218	385	15	37	18	11	2	1113	7	2	10	7609	6768
Wednesday	28th Dec, 2006	8	1	0	2	9	196	1261	1987	350	9	31	3	18	4	678	32	8	9	4606	4279
Thursday	29th Dec, 2006	7	0	0	1	19	194	1155	2189	420	15	33	12	12	8	738	46	4	14	4867	4548
Average		7	0	0	2	13	312	1482	2411	385	13	33	11	14	5	824	30	5	11	5557	5086

Location: Eliots Beach													Direction: Towards Parray's								
Day	Date	MTC Bus	Mofussil Bus	Company Bus	Other Bus	Mini Bus/Van	Old Car/Jeep	New Car/Jeep	Two Wheelers	Pass. Auto	Share auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand carts	FishCarts	Cycle Rickshaw	Total No. of Vehicles	Total PCU
Sunday	8thJan, 2006	6	0	0	1	17	188	2174	3544	451	21	14	4	11	0	566	28	55	6	7086	6550
Wednesday	28th Dec, 2006	9	0	3	1	16	120	1199	1745	389	14	27	2	25	6	573	30	7	7	4173	4028
Thursday	29th Dec, 2006	9	0	1	5	11	139	1258	1884	393	24	28	16	12	9	582	34	4	8	4417	4224
Average		8	0	1	2	15	146	1499	2309	408	20	24	8	16	5	574	31	20	7	5092	4819

Location: Eliots Beach													Direction: Both (Parray's & Besant Nagar)								
Day	Date	MTC Bus	Mofussil Bus	Company Bus	Other Bus	Mini Bus/Van	Old Car/Jeep	New Car/Jeep	Two Wheelers	Pass. Auto	Share auto	Goods Auto	Trucks	MAV	LCV	Cycles	Hand carts	FishCarts	Cycle Rickshaw	Total No. of Vehicles	Total PCU
Sunday	8thJan, 2006	12	0	0	3	29	793	4340	6762	836	36	51	22	22	2	1679	35	57	16	14695	13318
Wednesday	28th Dec, 2006	17	1	3	3	25	316	2460	3732	739	23	58	5	43	10	1251	62	15	16	8779	8307
Thursday	29th Dec, 2006	16	0	1	6	30	333	2413	4073	813	39	61	28	24	17	1320	80	8	22	9284	8772
Average		15	0	1	4	28	458	2980	4720	793	32	57	18	30	10	1398	61	25	18	10650	9905

Preparation of FS for Santhome Bypass

Table 2 Summary of Classified Traffic Volume Count

Location: Santhome Beach Road													Direction: Towards Besant Nagar									
Day	Date	MTC Bus	sil Bus	Compa ny Bus	Other Bus	Mini Bus	Car/ Jeep	Car/J eep	Wheel ers	Pass. Auto	Share auto	Goods Auto	Trucks	Mav	LCV	Cycles	Hand carts	FishCart s	Cycle Rickshaw	Total No. of Vehicles	Total PCU	
Sunday	7thFeb, 2006	0	0	6	2	15	24	226	557	105	10	24	3	2	36	132	9	20	34	1205	1202	
WednesDay	28thDec, 2005	0	1	18	2	97	84	394	1205	108	13	94	47	37	32	429	37	4	31	2633	2680	
ThursDay	29thDec, 2000	0	1	26	4	55	109	372	851	90	4	70	59	40	62	343	27	5	25	2143	2261	
Average		0	1	17	3	59	76	338	893	101	9	65	39	28	44	313	25	9	30	2050	2108	

Location: Santhome Beach Road													Direction: Towards Parrys									
Day	Date	MTC Bus	sil Bus	Compa ny Bus	Other Bus	Mini Bus	Car/ Jeep	Car/J eep	Wheel ers	Pass. Auto	Share auto	Goods Auto	Trucks	Mav	LCV	Cycles	Hand carts	FishCart s	Cycle Rickshaw	Total No. of Vehicles	Total PCU	
Sunday	7thFeb, 2006	0	0	9	2	16	54	256	935	251	1	43	27	6	30	304	53	32	46	2065	2131	
WednesDay	28thDec, 2005	2	2	5	1	28	51	269	729	101	4	32	26	24	42	215	17	0	28	1576	1592	
ThursDay	29thDec, 2000	0	0	11	4	36	56	209	823	114	3	51	28	23	49	390	26	3	35	1861	1823	
Average		1	1	8	2	27	54	244	821	149	3	42	27	19	41	303	31	10	36	1818	1829	

Location: Santhome Beach Road													Direction: Both (Besant Nagar and Parrys)									
Day	Date	MTC Bus	sil Bus	Compa ny Bus	Other Bus	Mini Bus	Car/ Jeep	Car/J eep	Wheel ers	Pass. Auto	Share auto	Goods Auto	Trucks	Mav	LCV	Cycles	Hand carts	FishCart s	Cycle Rickshaw	Total No. of Vehicles	Total PCU	
Sunday	7thFeb, 2006	0	0	15	4	31	78	482	1492	356	11	67	30	8	66	436	62	52	80	3270	3333	
WednesDay	28thDec, 2005	2	3	23	3	125	135	663	1934	209	17	126	73	61	74	644	54	4	59	4209	4271	
ThursDay	29thDec, 2000	0	1	37	8	91	165	581	1674	204	7	121	87	63	111	733	53	8	60	4004	4084	
Average		1	1	26	5	86	129	582	1715	249	12	107	66	47	85	616	56	19	65	3868	3937	