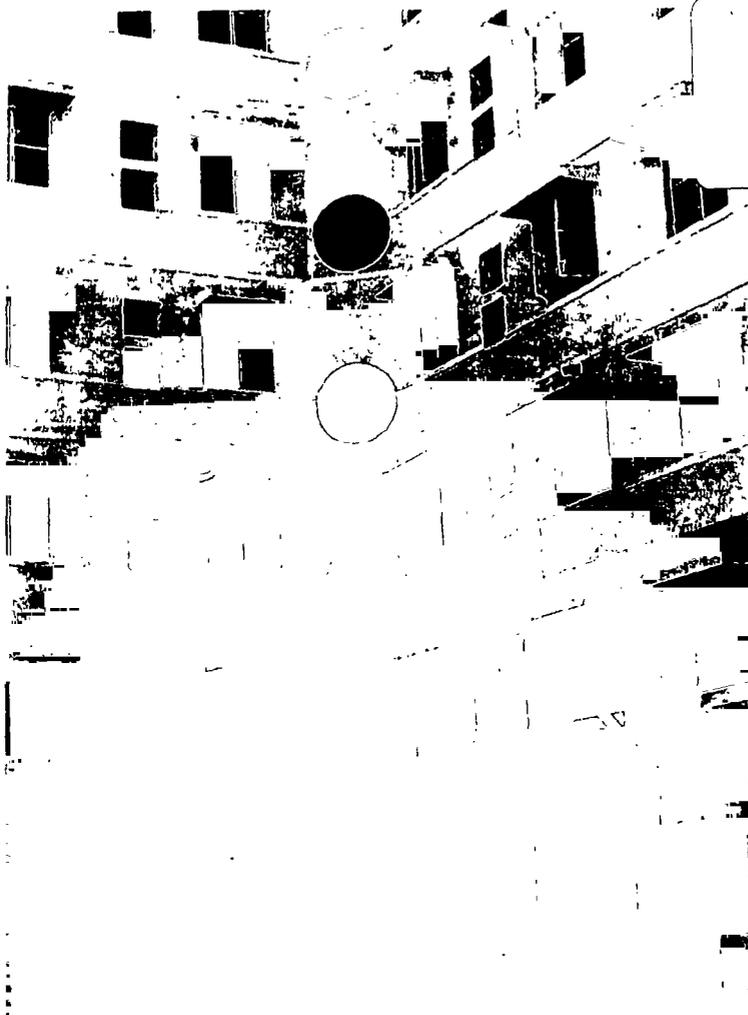


**MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY
(MMRDA)**

MUMBAI URBAN TRANSPORTATION PROJECT (MUTP)

**FINAL REPORT OF COMMUNITY ENVIRONMENTAL MANAGEMENT
PLAN (CEMP)**

FOR PERMANENT RESETTLEMENT SITE OF MSRDC AT DINDOSHI



E2548 v14

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LIST OF ABBREVIATIONS

BEST	Bombay Electric Supply and Transport Undertaking
BMC	Bombay Municipal Corporation
BSES	Baseline Socio Economic Society
CEMP	Community Environment Management Plan
CO	Carbon Monoxide
CRZ	Coastal Regulation Zone
DCR	Development Control Regulations
EA	Environmental Assessment
EHS	Environment, Health and Safety
EMC	Environmental Management Committee
EMP	Environment Management Plan
FSI	Floor Space Index
GOM	Government of Maharashtra
HC	Hydrocarbons
IBRD	International Bank of Reconstruction and Development
IDA	International Development Association
JVLR	Jogeshwari Vikhroli Link Road
MCBM	Municipal Corporation of Brihan Mumbai
MCGM	Municipal Corporation of Greater Mumbai
MHADA	Maharashtra Housing and Area Development Authority
MMR	Mumbai Metropolitan Region
MMRDA	Mumbai Metropolitan Region Development Authority

LIST OF ABBREVIATIONS

MoEF	Ministry of Environment and Forest
MPCB	Maharashtra Pollution Control Board
MSEB	Maharashtra State Electricity Board
MTNL	Mahanagar Telephone Nigam Limited
MUTP	Mumbai Urban Transport Project
NGO	Non-Governmental Organisation
NO _x	Nitrogen Oxides
OD	Operational Directive (of the World Bank)
PAH's	Project Affected Households
PCC	Project Coordinating Committee
PIA	Project Implementation Agency
PIC	Public Information Center
PIL	Public Interest Litigation
PMC	Project Management Consultants
RAP	Resettlement Action Plan
R & R	Resettlement and Rehabilitation
RIP	Resettlement Implementation Plan
ROB	Road Over (RAIL) Bridge
SPARC	Society For The Promotion Of Area Resource Centre
SO ₂	Sulphur Di Oxide
SRS	Slum Rehabilitation Society
TDR	Transfer of Development Rights

EXECUTIVE SUMMARY

1.1 Background Of The Project:

Mumbai Urban Transport Project (MUTP) conceptualized in 1994 envisages substantial improvements in both the rail and the non-rail infrastructure primarily to encourage public transport. The Project is to be implemented a joint venture between Government of Maharashtra (GOM), Indian Railways, BEST, MCBM and MSRDC, etc. A total of 19,000 Project Affected Households (PAH's) are likely to be affected by the Project and required to be re-settled in accordance to Resettlement and Rehabilitation (R & R) policy adopted by GOM for MUTP. Resettlement Action Plan (RAP) (April 2002) prepared by MMRDA / MSRDC projects the details of the R & R policy, socio-economic characteristics of PAH's, resettlement entitlements and the institutional framework.

The applicable Indian Laws and World Bank safeguards within which this resettlement will be carried out for this sub-projects and overall MUTP are enlisted in Article 1.2 of this Report.

Therefore, as a part of Project preparation, a site specific Community Environmental Management Plan (CEMP) is proposed to be carried out for each sub-project to meet the requirements of OP 4.01 guidelines published by the World Bank for each Sub-Project Site along with a Resettlement Implementation Plan (RIP).

MMRDA appointed M/s. ECON POLLUTION CONTROL CONSULTANTS (M/s. ECON) in November 2001 to prepare a site-specific CEMP for the Permanent Resettlement Site at Dindoshi, where PAH's from the Jogeshwari – Vikhroli Link Road are in the process of getting shifted. This site falls under Option 'C' category of the RAP.

The social, economical and environmental conditions in the existing slum pockets which housed the PAH's earlier or even now varies from pocket to pocket but is by and large unhygienic, with poor living and sanitary conditions. The water supply to these slums is inadequate and of suspect quality. The sewage and sullage is collected and disposed in open. The people defecate in open areas. The area gets water logged during monsoon due to improper drainage.

The implementation of the CEMP is targeted at improving the status of PAH's in terms of their environmental conditions.

A number of consultation meetings with PAH's were undertaken by M/s. ECON through MMRDA / MSRDC and the local NGO's. Public consultation on the whole of MUTP was carried out by MMRDA / MSRDC as a part of the final "Consolidated Environmental Assessment" Study.

Due to urgent need to resettle Residents from Milind Nagar, Chandan Nagar and Hariyali Nagar, MMRDA / MSRDC is in the process of shifting Residents from the Slums to readymade flats available with Shivshahi Punarvasan Prakalp Limited. Hence, a formal Site selection process by reviewing Alternative Sites could not be undertaken.

Out of 375 PAH's about 38 have been resettled in Four buildings purchased from Shivshahi Punarvasan Prakalp Limited by MMRDA / MSRDC at Dindoshi.

Based on the consultation meetings with Representatives of the PAH's information available with MSRDC / MMRDA, discussions with the local NGO's, M/s. ECON has prepared a list of environmental impacts due to urban infrastructure services.

1.2 Recommendations And Conclusions:

The recommendations of the CEMP in Chapter 5 gives a parameter wise site-specific mitigatory action plan for each of the impacts, along with the responsible agency, time frame and costs for their implementation. The cost for implementing the CEMP is Rs. 1,64,000/-. This cost for departmental monitoring, consultants' fees, incidental expenses, sundries, etc. is included in final "Consolidated Environmental Assessment Report" prepared by MMRDA.

The recommendations include formation and functioning of the EMC's / Society / Apex body for the whole Housing Complex. For the guidance of the EMC's, a typical maintenance schedule, budgetary calculations for monthly maintenance charges are given. A list of Do's and Don'ts in simple language along with its translation in local language to form a part of larger awareness, educational and participation programme is also included.

The implementation of the CEMP will be monitored and reported monthly based on the suggested indicators in Annexure 5.4. After taking corrective actions, where necessary, it will be ensured that good housekeeping practices and local laws on environmental parameters are complied with.

It is expected that the environmental conditions of the PAH's at the Resettlement Site will improve after implementation of the CEMP along with general improvement in their social and economic status.

CHAPTER 1
INTRODUCTION

1.1 Overview

- 1.1.1 Mumbai, over the last few decades, has emerged as the financial and commercial capital of India. Greater Mumbai's population that was around 4 million in 1961 is now 11.9 million in 2001. The urban growth has spread beyond the boundaries of Municipal Corporation of Greater Mumbai (MCGM) in the northern, northeastern and eastern directions mainly along the suburban rail corridors to form Mumbai Metropolitan Region (MMR). Greater Mumbai has an area of 438 sq. km and a population of 11.9 million and the MMR has an area of 4354 sq. km and a population of about 18 million. By 2011, MMR is expected to have a population of 22 million. MMR generates about 5% of national GDP and contributes to over one third of India's tax revenues.
- 1.1.2 As a result of population growth and increase in private ownership of vehicles, public transport is under severe stress. Until now, solutions to Mumbai's acute transport problems have been hindered by the likely magnitude of displacement and resettlement of slum dwellers by the fragmentation of institutional responsibilities and the inadequacy of financial resources.
- 1.1.3 The transport challenges of Mumbai are compounded by the fact that over 50 % of Mumbai's population lives in squatter settlements. These settlements are most often located on publicly owned land and land reserved for public purposes in the master plans, including the land reserved for roads, road widening and along the rail tracks. Managing the resettlement and rehabilitation of a large number of households and businesses therefore becomes a critical part of most transport projects.
- 1.1.4 Mumbai Urban Transportation Project (MUTP) has been conceptualized in 1994 to improve transportation in the Mumbai region.

The major components of MUTP are:

1. Rail Transport Component
 - Railway system – Capacity, Optimization and Enhancement
 - Setting up new corridors
 - Purchase of rolling stock
2. Road Transport Component
 - Road Transport – Traffic Management (TM) and related measures including Area Traffic Control (traffic signal system), bus priority and rail station area transport integration.
 - Road Transport – Infrastructure, including roads and road even rail bridges.
 - Road Transport – Equipment (procurement of buses)
3. Resettlement and Rehabilitation.
 - Construction of 19,000 permanent dwelling units.
 - Construction of 6,000 transit dwelling units.
 - Land acquisition and R & R assistance.

Each component has related provisions for environmental protection and improvement, institutional capacity building and training.

1.1.5 Environmental Assessment Process and Impacts due to Sub-Projects

The EA consists of:

- Sectoral Environmental Analysis (SLEA) of the three strategic transport options for MMR identified as part of CTS (1998).
- Sub-project level Environmental Assessment undertaken by way of:
 - Programmatic Level Environmental Assessment (PLEA) of generic sub-projects (1998).

- Micro-Level Environmental Assessment (MLEA) of sub-projects projects with a potential for significant environmental issues. (1998)
- Consolidated EA, which brings together the updated findings of the above-mentioned documents into a comprehensive document. (2002).

Typical environmental impacts of subprojects have been categorized into impacts during the construction phase and during the operation phase. These impacts are expected to be in respect of the following environmental resources:

- Ambient Air Quality Deterioration
- Increase in Noise Levels
- Adverse Impacts on Ecology (Flora/Fauna)
- Population displacement
- Land degradation
- Surface and groundwater degradation
- Occupational health and safety
- Impacts on Traffic and road safety

1.1.6 GOM in March 1997 adopted an R & R Policy for the R & R of PAH affected by the MUTP. The main objective of the R & R Policy is to avoid or minimize the displacement by exploring all the viable alternative designs and where unavoidable execute the resettlement action plan to enable the project affected persons to improve their living standards.

MMRDA has prepared RAP. This RAP contains the details on policy provisions and legal framework, magnitude of land acquisition and displacement, findings of socio-economic surveys and baseline characteristics, organizational responsibilities, the process adopted under two stage

resettlement, generic time table for construction of transit and permanent housing, and consolidated costs and budgets. The RAP also identified criteria for judging the completion of R&R and monitoring indicators for physical and financial progress. The RAP also describes the Community Environmental Management Plan (CEMP).

The dwelling units required for the resettlement of the PAH's are proposed to be procured in three different ways;

Option A: In this option building construction is directly contracted the PMU by following the World Bank procurement guidelines for works, on land obtained through TDR or land transferred by GOM. 7.97 ha. of land has been identified for constructing about 4000 dwelling units under this option.

Option B: The land and dwelling units are procured under this method by inviting competitive bids from developers against the TDR benefits that would accrue to the developers for land and the construction area. (Please refer to paragraph 33 for details of TDR). Approximately 12000 dwelling units will be constructed under this option and the Executive Committee of MMRDA has approved the evaluation of bids on 22 February 2002. Work is expected to be awarded shortly.

Option C: Dwelling units already constructed by Maharashtra Housing and Area Development Authority (MHADA) are purchased in this option at a price ranging between Rs.1,25,000/- and Rs. 2,00,000/- per dwelling unit depending upon the location. The TDR benefit accrues to MHADA in this case. 4000 Dwelling units under this option have already been procured.

1.1.7 Public Interest Litigation (PIL)

PIL petition was filed in August 1998 in which the petitioner prayed for the removal of encroachers along the railway tracks for ensuring safe and smooth

running of the local trains. The matter was discussed in the Bombay High Court on several occasions and the court had asked the government to provide a time bound plan for removing the encroachers along the safety zone of the railways track with or without resettlement. In response to this, the government had given a time frame for shifting the squatters during September 2000. According to this plan, the GOM had to shift all encroachers (about 10,000 families) by March 2001. The Additional Solicitor General subsequently verified the removal of squatters along the safety zone and in support of this showed the certificates to the court signed by the concerned railway officials. The court in the final hearing in June 2001 had concluded that all encroachers have been shifted out of the safety zone except few religious structures which will be shifted later and which require careful handling without affecting the sentiments of the local people. Based on this information, the court concluded that the Indian Railways and GOM had complied with the court orders. Accordingly, the court has disposed the petition. Subsequent to this there is one more PIL on one of the site for change in land use. However, since the government has followed the due process, the court has not granted any stay on proceeding with the construction. The resettlement entitlements and process followed during this initial phase of resettlement activities are in accordance with policy provisions adopted for the project and endorsed by the World Bank.

The implementation of resettlement program has already commenced and so far 4707 households (20%) have relocated in 48 buildings in four different locations. In addition 107 were also offered alternative shops to enable them to reestablish their petty shops. Another 6,901 (32%) are shifted to the transit housing will eventually be shifted to permanent houses within three years. Because of delays in awarding of contracts, time taken for legal clearance for payment of cash supplement for construction of dwelling units using TDR, long time taken for change in land use for some of the resettlement sites and public interest litigations on change of land use for one of the sites will eventually delay about 6- 9 months in case of shifting about 3,000 households

from transit to permanent houses. The transit houses have been constructed by following the prevailing norms set by the Slum Rehabilitation Authority (SRA) which consist of a minimum of 120 sq. ft. with common basic amenities such as one toilet seat for six families, one drinking water tap for 10 families, common washing place of 5m x 3m for 50 families, drains and individual electric connections. NGOs have supported both construction of transit houses and resettlement of the PAH to new locations.

MUTP involves resettlement of about 19,000 PAH's. The study involves resettlement of PAH's who have been shifted due to construction of road over bridge along Jogeshwari - Vikhroli Link Road by MSRDC. The section of the Project being administered by MSRDC is non-Bank funded component under MUTP.

About 38 families have been shifted to permanent dwelling and around 200 families are to be shifted from Milind Nagar post resolution of disputes regarding the acceptance criteria for the PAH's.

MSRDC has procured 375 apartments from Shivshahi Purnaprakalp Limited at Dindoshi distributed in four buildings. A map of Mumbai showing Site Location is attached as Annexure 1.1. Some other buildings are likely to house PAH's from other Projects, while the balance apartments are to be sold commercially.

MMRDA/MSRDC proposes to prepare a site-specific CEMP for implementation for the Permanent Site at Dindoshi, where some of the PAH's are already shifted and others are in the process of shifting.

There was a court order by which PAH's residing in Slums along the Railway Corridor had to be evicted. Government of Maharashtra intervened and instructed MMRDA / MSRDC to resettle these PAH's in permanent housing constructed and readily available with Shivshahi Punarvasan Prakalp Limited.

Therefore, a formal process of reviewing alternative Resettlement Site could not be undertaken as a part of this CEMP.

1.1.8 The main objective of the study is to improve the environment at the Resettlement Sites. The specific objectives are as follows:

1. To identify the basic environmental and sanitation related issues such as water supply, sewage disposal, solid waste management, access road, storm water drain, mosquito nuisance, etc., while people are living on the permanent dwelling units.
2. To identify the environmental and health impacts issues on the Community.
3. To improve Project Affected Person's knowledge on environmental issues and enhance their ability to participate directly by identifying, evaluating and receiving the benefits among themselves.
4. To prepare the Community Environmental Management Plans for the permanent dwelling units.

M/s. ECON POLLUTION CONTROL CONSULTANTS have been appointed to prepare the site-specific CEMP for this Resettlement Site at Dindoshi.

1.2 Applicable Indian Laws and World Bank Safeguards Policies.

1.2.1 The applicable Indian Laws and World Bank Safeguards with a brief overview that are applicable to the overall MUTP are presented in Annexure 1.1.

1.2.2 The Indian Laws and World Bank Safeguards Policies that are applicable to this CEMP / Sub-Projects are:

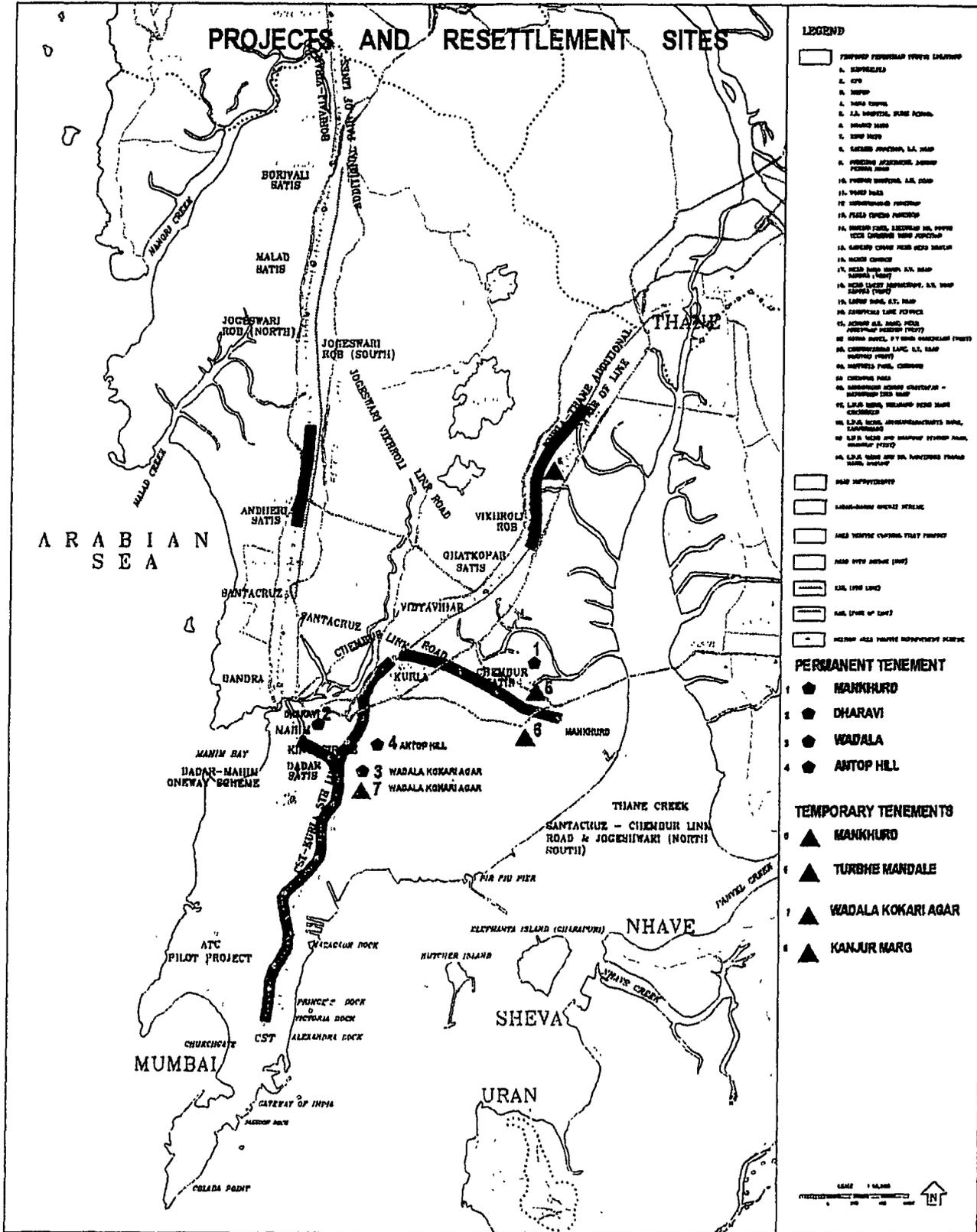
- a) The Maharashtra Co-operative Societies Act, 1960
- b) Environmental Assessment (OP 4.01)
- c) Involuntary Resettlement (OP 4.30)

ANNEXURE 1.1

MAP OF MUMBAI

MAP

MUTP: RESETTLEMENT SITES



ANNEXURE 1.2

**APPLICABLE INDIAN LAWS AND WORLD
BANK SAFEGUARDS POLICIES**

ANNEXURE 1.2 APPLICABLE INDIAN LAWS AND WORLD BANK
SAFEGUARDS POLICIES

A brief overview of key provisions of the policy, legal framework and safeguard policies applicable overall to the MUTP are provided below:

A. APPLICABLE INDIAN LEGAL REQUIREMENTS

I. Legislation Related To Environment:

There are various Acts, Rules and Notifications applicable for different environmental components such as Air Pollution, Water Pollution, Noise Pollution, Coastal Areas, Hazardous Materials Handling and Transport, Forest and Wildlife, etc. In addition, regulatory provisions by way of environmental clearance also exist. The applicable regulations are listed below.

Environmental (Protection) Act, 1986

This is an umbrella act for environmental protection. Various rules and notifications are issued from time to time under the provisions of this Act. Environmental Protection Rules (2000) specify standards for ambient air quality whereas Noise Pollution (Regulation and Control) Rules, 2000 provide for the ambient noise standards in public places. However legal mechanism to achieve these are not explicit in terms of emission at source in transport sector except for the vehicle emission norms like Euro II or Bharat II that have been prescribed. The Environmental Impact Assessment Notification, 1994 (as amended in May 1994) make environmental clearance mandatory for 29 categories of developmental projects listed in Schedule 1 of the notification. Railways are not listed in schedule 1 and hence do not need environmental clearance. For other components under MUTP, MoEF has confirmed that environmental clearance is not required.

ii. Coastal Regulation Zone Notification 1991

The notification provides for determining certain areas between the Low Tide Line (LTL) and High Tide Line (HTL) and adjacent land ward area as the Coastal Regulation Zone and its classification into CRZ I (ecologically sensitive), CRZ II (where development has already occurred) and CRZ III the residual area (largely rural in character). The notification also prescribes prohibited activities in CRZ and activities that can be taken up with the approval of MoEF. Reclamation being a prohibited activity cannot be undertaken in CRZ I. This restricts use of such lands for R & R. MoEF clearance is required for Borivali Virar Railway section that traverses the Vasai Creek and adjoining wetland which is a Coastal Regulation Zone though construction of such links is a permitted activity in CRZ. This clearance has been requested and is being processed.

iii. The Maharashtra Felling Of Trees (Regulation) Act 1964

GOM legislation requires every local authority to constitute a tree authority. No tree can be felled without the permission of this authority. Trees in the right of way of roads can be removed with the permission of this authority, which may prescribe transplanting or compensatory plantation.

II LEGISLATION RELATED TO R & R

i. Land Acquisition Act 1894 (La Act):

This act provides for compulsory acquisition of land for public purposes by paying compensation at the market rate with 30% solatium for the compulsory nature of acquisition and interest at 12 percent per annum from the date of notification.

ii. Maharashtra Regional And Town Planning Act, 1966 (Mr&Tp Act):

The Act provides for preparation of Development Plans (Master Plans). These plans designate land required for public purposes, which can then be acquired in conjunction with the provisions of Land Acquisition Act. The act also provides a statutory framework for formulation and enforcement of Development Control Regulations.

iii. Development Control Regulations For Greater Mumbai 1991 (Dcrs):

These regulations prepared under the MR & TP Act offer an alternative to acquisition under LA Act by way of Transfer of Development Rights (TDR). The permissible Floor Space Index (FSI) defines the development rights of every parcel of land in Mumbai. If a particular parcel of land is designated for a public purpose the landowner has an option of accepting monetary compensation under the LA Act 1894 or accept TDR (equivalent to the plot area times the permissible FSI), which can be sold in the market for use elsewhere in Mumbai. The DC Regulations have been amended to provide incentives for rehabilitation (including resettlement of slum dwellers) in 1997. For landowners prepared to provide 225 sq.ft. dwelling units free of cost to slum dwellers, the incentive is in the form of right to build and sell floor space equivalent to that required for slum rehabilitation subject to the maximum *in-situ* utilization of FSI of 2.5. The remainder of the total development rights can be used as TDR. In case of land designated for resettlement of slum dwellers affected by infrastructure projects, the land owner has an option of offering dwelling units to the project implementing agency free of cost and getting the benefit of maximum of TDR equivalent to floor area calculated at FSI of 3.5 (1 for land and 2.5 for the built-up area). The DCRs also set out the standards for building design and construction, provision of services like water supply, sewerage, site drainage, access roads, elevators, fire fighting etc. Buildings procured for R & R have to conform to these

DCRs. Up-front clearance of the entire project is however not required under the DCR. Approvals are to be obtained for individual scheme, as it gets prepared.

iv The Maharashtra Co-Operative Societies Act 1960:

This act provides for establishing, registering and administering the co-operative societies. Housing co-operative is a special form of co-operative society, where the land and building is owned by the co-operative and its members have occupancy rights of apartment occupied by them. Sale and purchase of such units can take place only with the consent of the society. This is a common form of tenure in Mumbai's apartment buildings and is widely understood.

B. APPLICABLE WORLD BANK SAFEGUARD POLICIES

Given that MUTP has been developed with the intention of mobilizing financial resources from the World Bank, project preparation has included a number of studies and assessments which have sought to address and meet the requirements of the World Bank's environmental and social policies, often referred as the 'safeguard' policies. The next paragraphs provide a summary overview of how these guidelines have been considered. Several policies were found not to have been triggered and are therefore not discussed any further.

i. Environmental Assessment (OP 4.01):

In the context of the Bank's Operational Policy (OP) 4.01 on Environmental Assessment, MUTP has been classified as category "A" project, largely on the basis of the large number of people requiring resettlement and rehabilitation. Because of the large-scale resettlement and the triggering of more than one safeguard policy the project is also classified as "S1" in terms of safeguard issues. A consolidated EA including SEA and sub-project specific EAs and EMPs have been prepared in compliance with the World Bank policy.

ii. Cultural Property (OP 4.11):

Mumbai with its history of nearly three hundred years is rich in cultural property particularly in the form of built heritage. GOM and MCGM are acutely aware of the need to conserve such heritage. GOM in 1995 with the involvement of NGOs listed over 600 buildings and precincts as of heritage significance. DCR 67 governs the development of these listed buildings and precincts. GOM has also constituted a Heritage Conservation Committee in 1995 to advise the Municipal Commissioner regarding development permission to be granted in case of listed buildings and precincts. No development permission can be granted of the listed buildings or within the precincts without the consent of the Heritage Committee. None of the MUTP sub-projects, except the pedestrian subways, directly or indirectly affect heritage buildings. Some of the pedestrian facilities in the Island City notably one near the CST would be located in the heritage precinct. The design consultants have been advised to take cognizance of this fact. In any case the proposals will be subject to the review of the Heritage Conservation Committee.

During the execution of works, if a “chance find “ of archaeological significance occurs, the contract requires the contractor to immediately inform the employer and stop further work. Employer will in turn inform the state Archaeology Department for further investigation.

In addition to the listed buildings, there are smaller common cultural properties like shrines, small temples or mosques within the project-affected communities. Thus this policy applies to the project. These have been identified during the BSES and the RIP's cover their resettlement. In case of JVLR Phase I there are 9 small temples, which will be relocated according to the RIP prepared in consultation with the PAH's.

iii. Natural Habitat (OP 4.04):

Mumbai's notable natural habitat is limited to the 103 sq.km. National Park at Borivali, which is located in the northern part of the peninsula between the two rail corridors and the coastal wetlands in the eastern and western suburbs. The MoEF protects both through variety of legal and administrative mechanisms. The National Park is protected under the Indian Forest Act whereas the coastal wetlands are protected by the Coastal Regulation Zone (CRZ) Notification of 19 February 1991. None of the subprojects pass through these areas except a section of 4.5 km. of the Borivali - Virar Railway line that (total length 26 km.) crosses the Vasai Creek and the adjoining wetlands having degraded mangroves. The area of the wetland directly affected is less than 5000 sq.m. out of a total extent of wetland of 48 sq.km. Bridges traversing the CRZ are not prohibited but require environmental clearance. MoEF has already been approached for the approval under the CRZ Notification. In case of JVLR an area of 2000 sq.m. is observed to have dwarf and stunted mangroves. This also has weeds and garbage. The construction of road has been approved as a part of CZMP by MoEF. However suitable measures to enhance the growth of mangroves have been included in the EMP. In an effort to provide immediate temporary transit accommodation for squatters, in response to a court order with stringent implementation schedule, resulted in an inadvertent breach of the coastal zone regulations at the transit sites at Mankhurd and Turbhe and Mandale. GOM has now undertaken to move all squatters currently housed in transit accommodation to their permanent accommodation within a period of not more than three years. Environmental audit of these transit camps has also been carried out to determine how the land under CRZ can be restored to its original status after the dismantling of transit houses. Thus, although the impacts on natural habitat are small, the policy applies, and has been complied with.

iv. Involuntary Resettlement (OP 4.30):

MUTP will require resettlement of about 19000 households (77000 persons). The World Bank Policy on Involuntary Resettlement is therefore applicable to the project. In compliance with to this policy an R & R Policy has been prepared and adopted by GOM for MUTP. RAP and sub-project specific RIPS are being prepared. RIPS including CEMPs have been prepared for four sub-projects scheduled for commencement in the first year. The project is therefore in compliance with the policy.

v. Indigenous People (OP 4.20):

About 1% of the PAH's belong to the Scheduled Tribes. A field based review was undertaken to determine if these PAH's were subject to application of this Policy since they might have originally belonged to tribal communities in the distant past. As of now they are integrated with the city life and do not have their traditional habitat or follow traditional ways of life. More particularly, (a) they no longer have close attachment to ancestral territories; (b) they do not identify themselves or are identified by others as distinct cultural group; (c) they do not speak an indigenous language; and (d) they no longer belong to customary social and political institutions. There is also a general reluctance to reveal the caste or tribe particularly pronounced when data is to be kept in public domain. It was determined by the review that the social impact of the project on such people is therefore similar to that on other PAH's and thus the policy does not apply. No separate Indigenous Peoples Development Plan (IPDP) has therefore been prepared.

CHAPTER 2

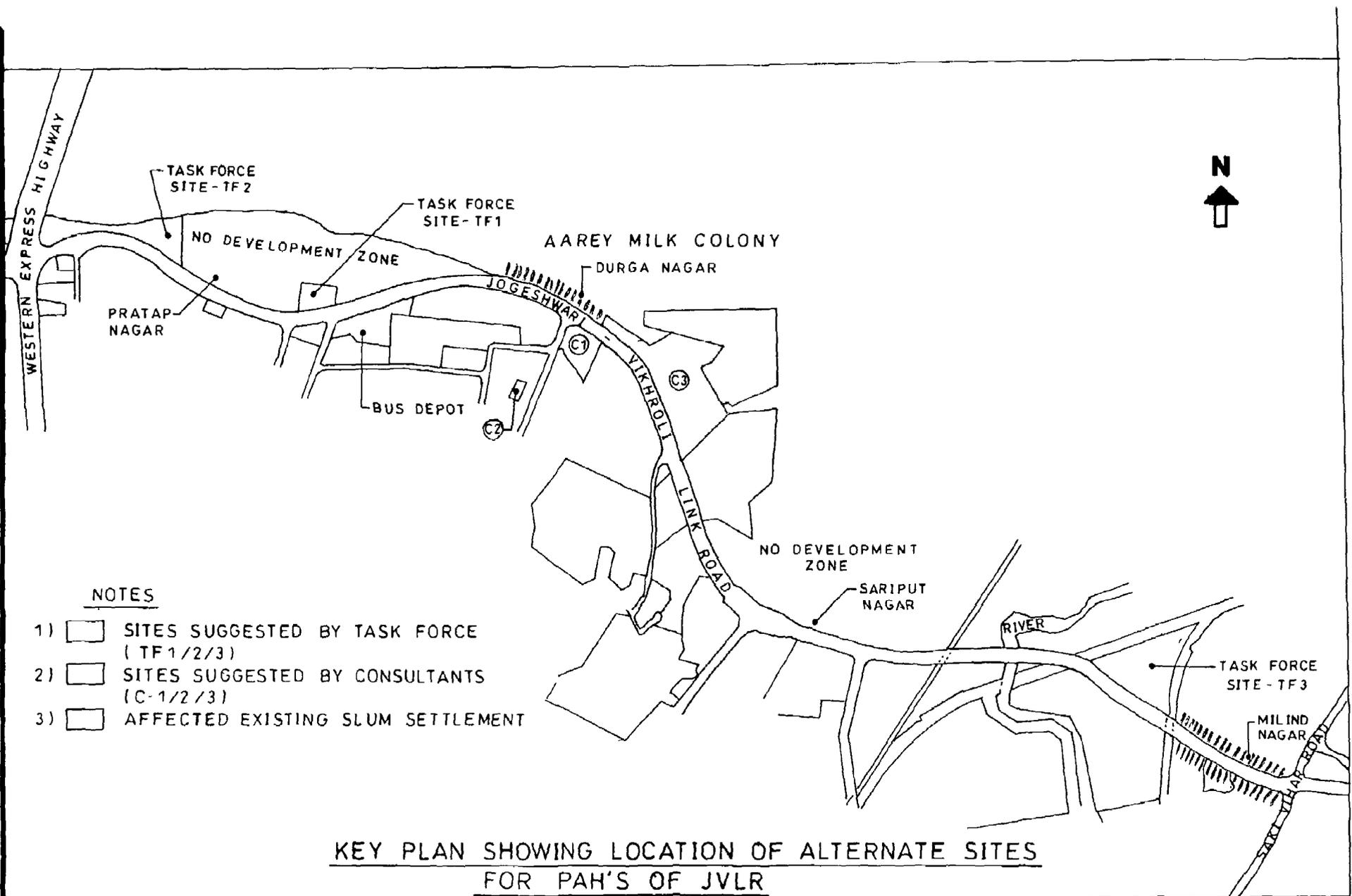
**SUB-PROJECT DESCRIPTION, ANALYSIS OF
ALTERNATIVES AND SELECTION OF SITE**

- 2.1 A large slum development exists at Milind Nagar along the Jogeshwari – Vikhroli Link Road (JVLR). These slums come in the way of widening the Jogeshwari – Vikhroli Link Road. The Residents of these slums affected by the widening of road over bridges for the JVLR are proposed to be resettled by MSRDC at Shivshahi Purnarvasan Prakalp development at Malad Village, Dindoshi.
- 2.2 Milind Nagar slums are in existence for the last 25 years and appear to be backward – socially and economically. It is situated at the end of link road stretching to about 1 Kilometer with huts on either side of Jogeshwari – Vikhroli Link Road. A map showing location of Milind Nagar along JVLR is shown as Annexure 2.1 and. Annexure 2.2 shows the Layout Plan.
- 2.3 The Residents hail from border areas of Karnataka and some are from Marathwada and Solapur. Most families are engaged in casual labour.

PAH's from these slums are in the process of shifting to the Permanent Resettlement Site at Dindoshi.

ANNEXURE 2.1

**MAP SHOWING LOCATION OF MILIND NAGAR
ALONG JVLR**



NOTES

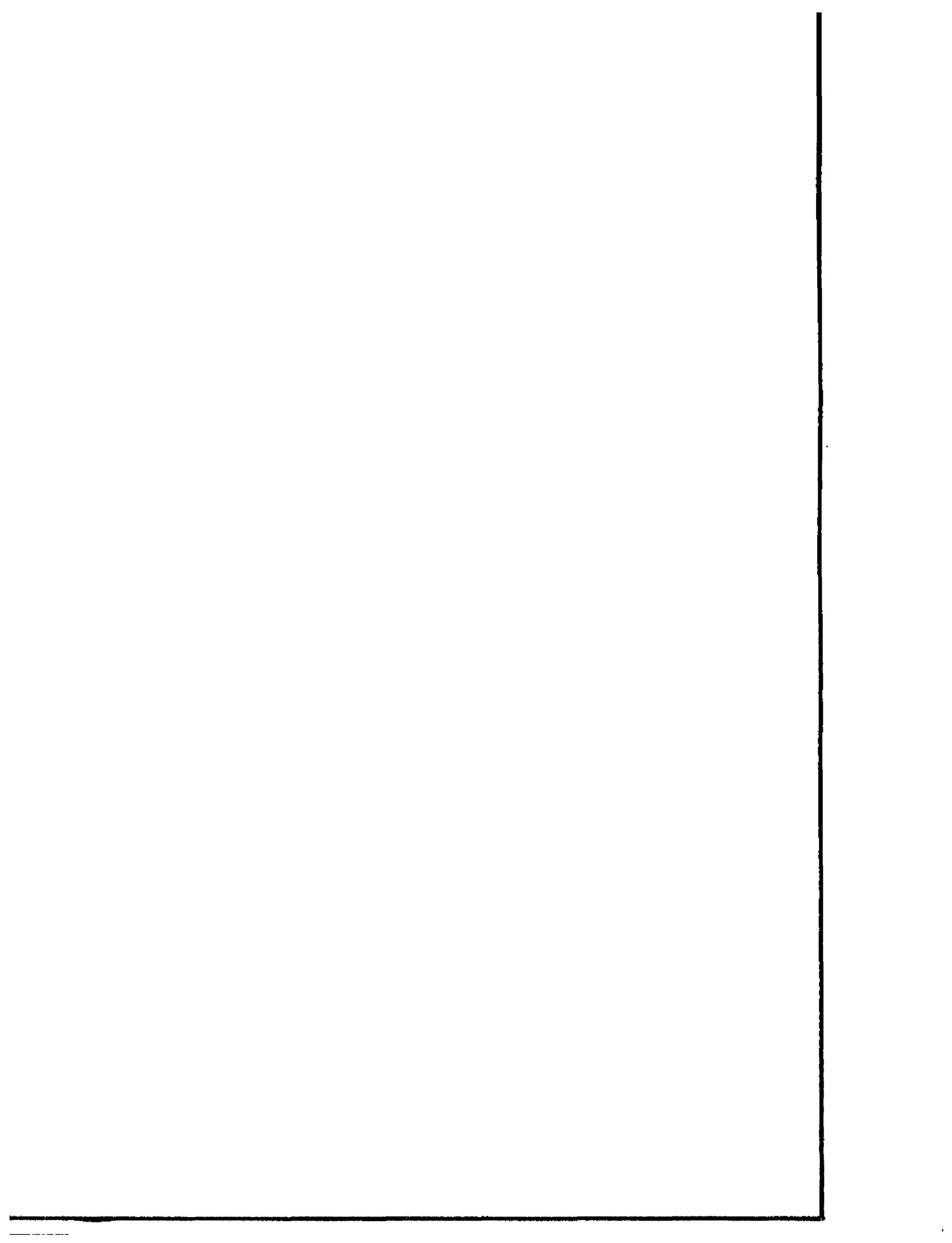
- 1) SITES SUGGESTED BY TASK FORCE (TF1/2/3)
- 2) SITES SUGGESTED BY CONSULTANTS (C-1/2/3)
- 3) AFFECTED EXISTING SLUM SETTLEMENT

KEY PLAN SHOWING LOCATION OF ALTERNATE SITES FOR PAH'S OF JVLR

econ pollution control consultants
(mumbai)

ANNEXURE 2.2

LAYOUT PLAN



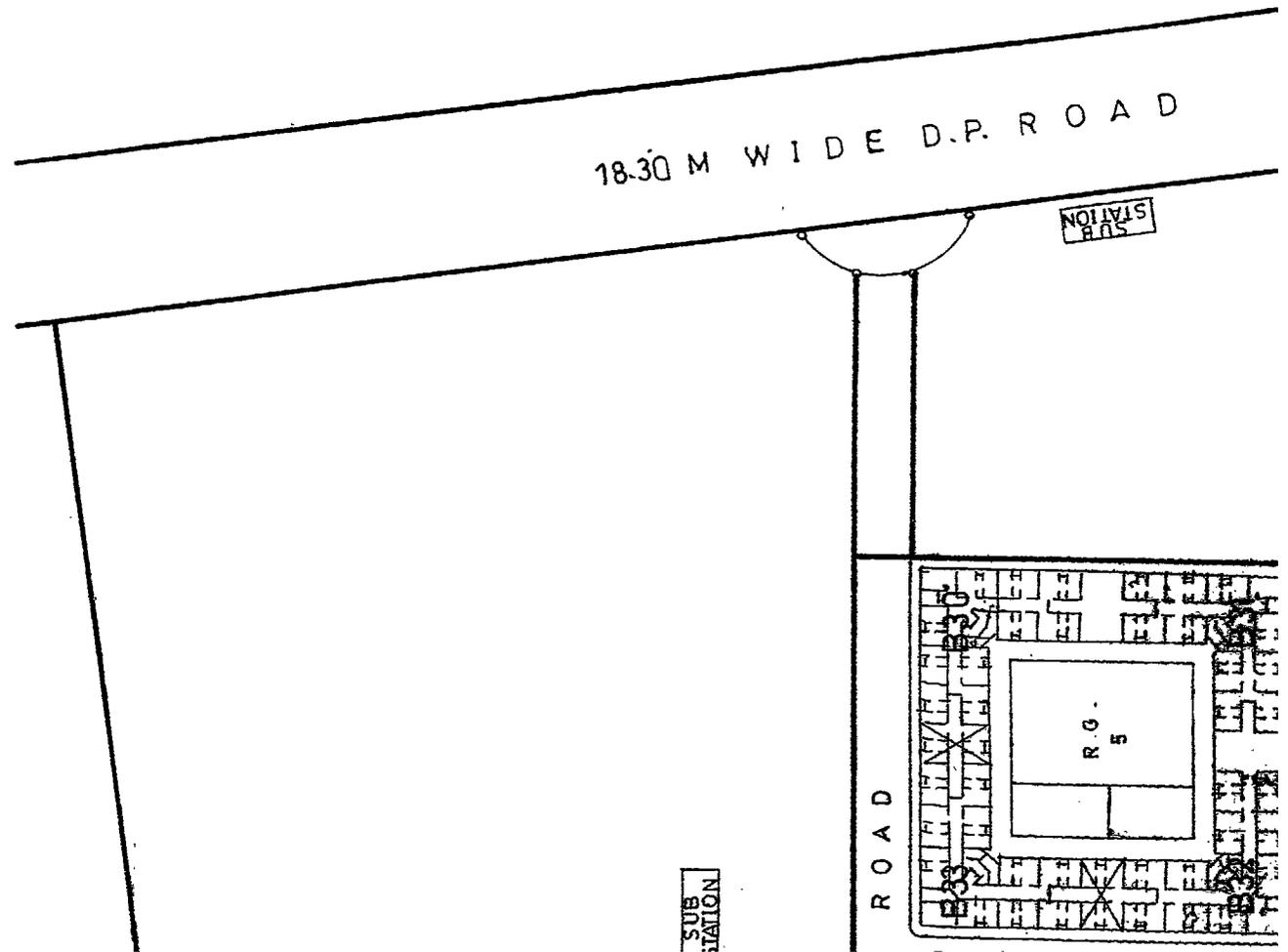
18.30 M WIDE D.P. ROAD

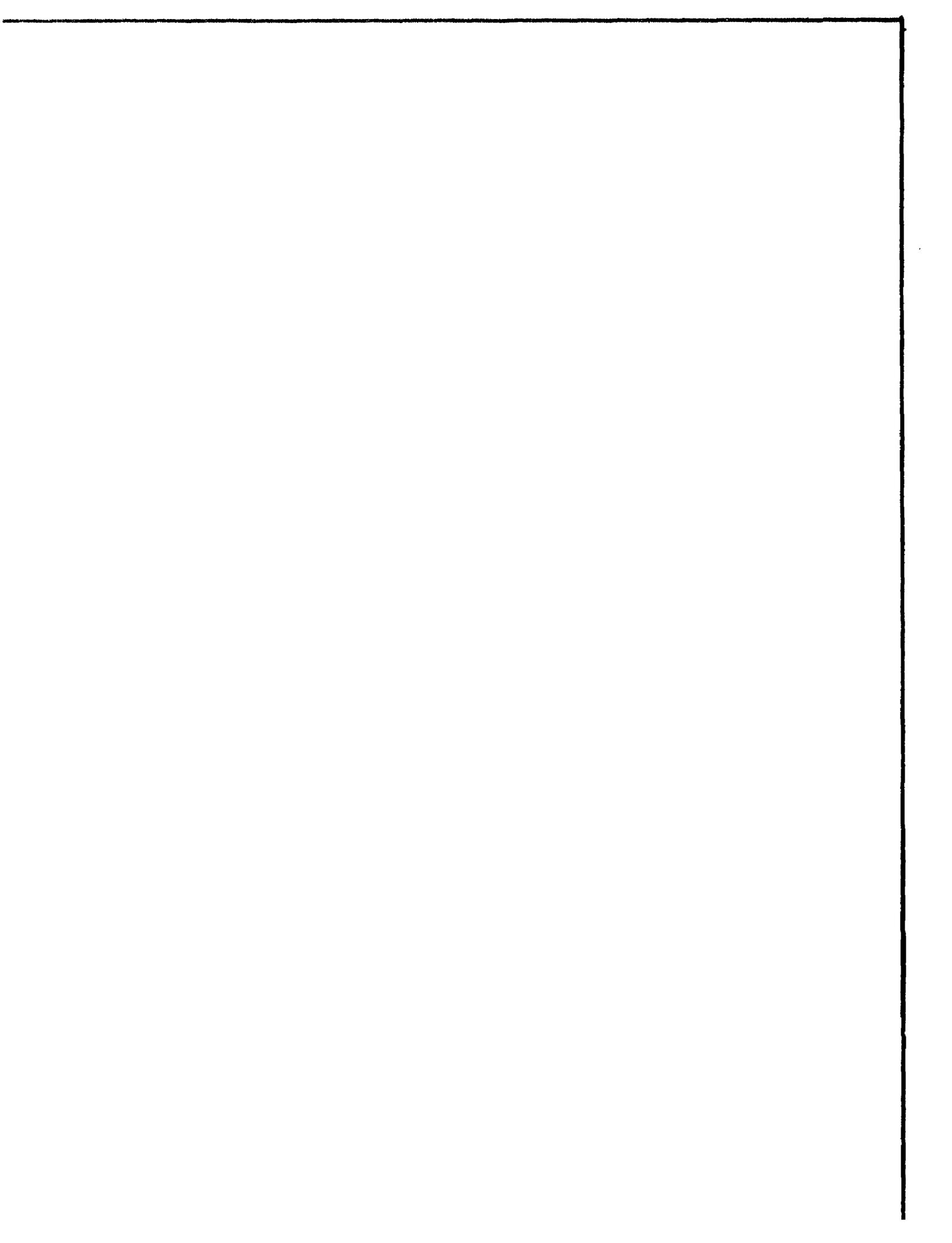
SUB STATION

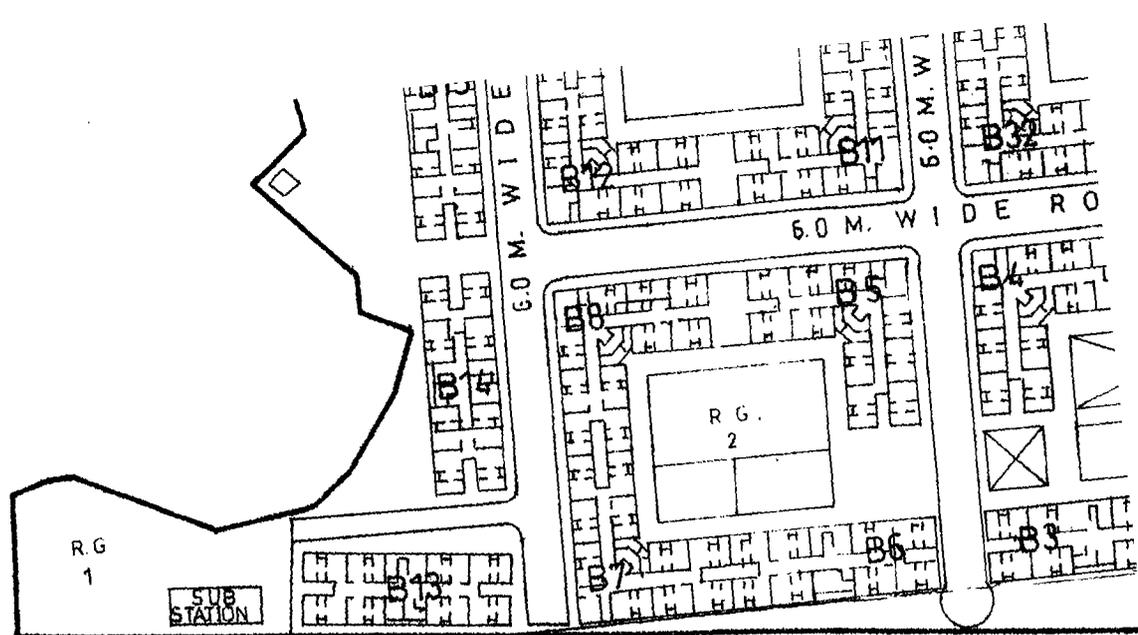
ROAD

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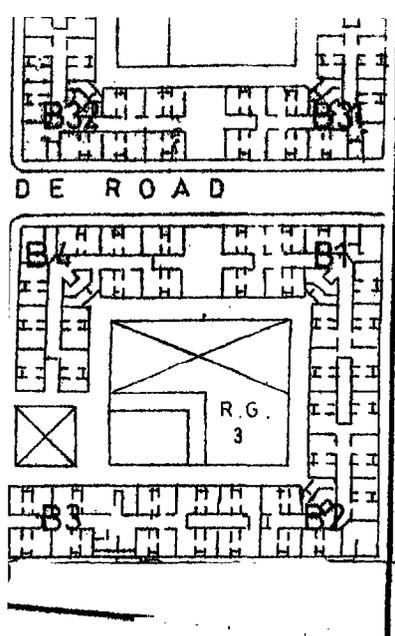
SUB STATION







LAYOUT PLAN OF COMPLEX OF S.P.L. RI



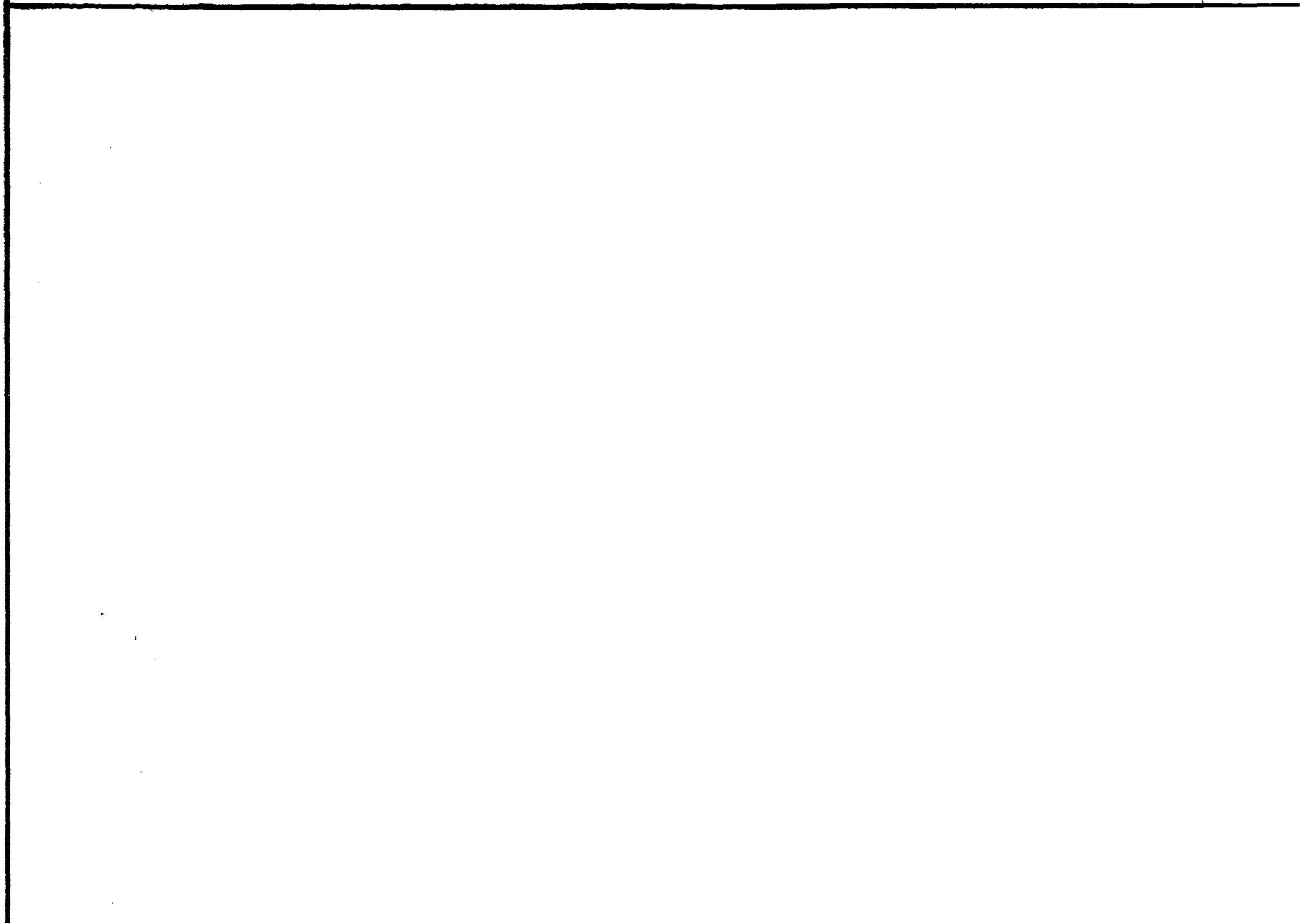
SUB
STATION

P.L. RESETTLEMENT SITES

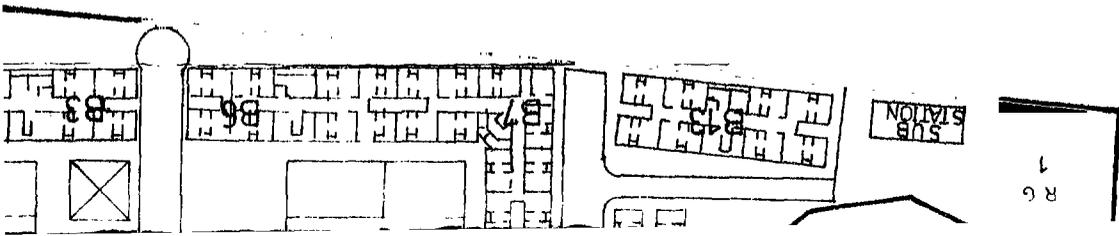
NOTES

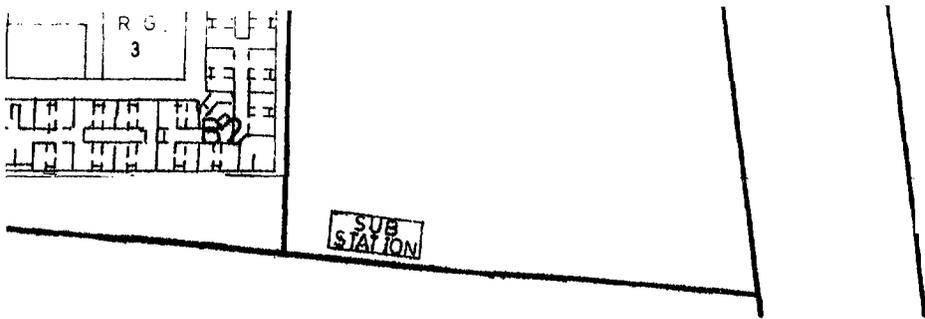
- 1) S.P.P.L. RESETTLEMENT BUILDINGS FOR MUTP /MMRDA
- 2) THE BUILDING NOS. ARE = B28, B29, B31, B32

REV.	DESCRIPTION	D R N.	C H K.	DATE
	CLIENT	M.M.R.D.A (MUMBAI)		
	JOB	COMMUNITY ENVIRONMENT MANAGEMENT PLAN FOR PERMANENT TENEMENTS AT DINDOSHI		
	TITLE	LAYOUT PLAN FOR PLOT NO. C.T.S. NO. 827		
	DRAWN	DESIGNED	CHECKED	DATE
	S.S.Kadam	H.S.Thakker	G.K.Thevar	16-1-2002
				APPROVED
				V.N.Kharakar



LAYOUT PLAN OF COMPLEX OF S.P.R.L. RI





RESETTLEMENT SITES

NOTES

- 1) S.P.P.L. RESETTLEMENT BUILDINGS FOR MUTP /MMRDA
- 2) THE BUILDING NOS. ARE = B28, B29, B31, B32

REV.	DESCRIPTION	D R N.	CH K.	DATE
CLIENT M.M.R.D.A (MUMBAI)				
JOB COMMUNITY ENVIRONMENT MANAGEMENT PLAN FOR PERMANENT TENEMENTS AT DINDOSHI				
TITLE LAYOUT PLAN FOR PLOT NO. C.T.S. NO. 827				
DRAWN S.S.Kadam	DESIGNED H.S.Thakker	CHECKED G.K.Thevar	DATE 16-1-2002	APPROVED V.N. Kharkar
econ pollution control consultants 4-5 diamond court 1 st floor 142-144 lady jamshedji road, mahim, mumbai-400016 tel. no. 4443325 fax. no. 4443308				SCALE 1: 500
				DRG. NO. econ/MMRDA/M/05

CHAPTER 3
BASELINE ENVIRONMENT

- 3 1 Through the implementation of R & R component of MUTP, it is the intention to improve the social and environmental quality of the living standards of PAH's affected by the Sub-Project
- 3 2 The environmental health status of Greater Mumbai is largely affected by the fact that half of its population lives in slum colonies or pavements. Slum dwellers suffer from the exposure to air pollution in form of smoke, foul smells from municipal garbage & dumping grounds, traffic pollution and noise pollution. It is observed that majority of the slum and pavement dwellers are susceptible to diarrhea, dysentery, typhoid, jaundice, colds and coughs, flu, bronchitis and asthma. The health status of the general public has also been reported to be affected in industrial and congested traffic areas of Mumbai. Malaria is perceived as a major health-related problem. As regards other ailments, Gastro-intestinal disorder, pregnancy related and respiratory problems are acknowledged as the more common ones. The causes for the health problems are attributed to open drains, mosquito menace and to air pollution. Accumulated garbage is also perceived as an important factor leading to poor health. Studies in Mumbai have shown that effect of gases and particulate matter from vehicles and industries is manifested in the respiratory diseases in the people either working in or staying near the source of pollution.
- 3 3 Physical appearance of hutments indicate that community is unorganized and deprived of amenities. The condition of huts is also very poor. There are no sanitation facilities. People make use of open spaces. Water is spilled on to the road. Garbage is strewn around and the area is filthy and unhygienic and unfit for human habitants. However, the people continue to survive and live here immune to dust and filth.

CHAPTER 4

**PUBLIC CONSULTATION AND
IDENTIFICATION OF ENVIRONMENTAL
IMPACTS**

- 4.1 There are a series of disclosures and public consultations that have taken place on the MUTP. This documentation is attached as Annexure 4.1.
- 4.2 As mentioned earlier, Option 'C' of R & R component involves purchase of already built housing from SSPL. The PAH's for this su-project have already started to move into these new buildings. It is now proposed to carryout an Environmental Audit as a part of CEMP with respect to this Resettlement Site at Dindoshi.

To assess the Environmental status at the Permanent Site for resettlement, a series of Site inspections, reference to earlier studies (RIP) and other relevant information, consultations with PAH's, discussions with NGO's and interaction with Representatives of MMRDA / MSRDC were undertaken by the Consultants.

- 4.3 The back up information, Site photographs to demonstrate issues and minutes of the meeting are presented in Annexure 4.2.
- 4.4 Based on information available from 4.3 above, the assessment of environmental impact for the resettlement site is given in 4.4.1. The identifiable environmental impacts are restricted to issues related to urban infrastructure services.

4.4.1 Identified Environmental Impacts for Dindoshi Resettlement Site

We are enlisting here identified negative impacts on the urban infrastructure services at the Dindoshi Resettlement Site.

1) Water Supply and Quality

- i. Municipal water supply is at site from nearby main.
- ii. There is no separate meter for each building.
- iii. The Municipal connection is at a dead end.
- iv. The water received is reddish in colour. Now the PAH's have cleaned their tanks and expect quality of water to improve.
- v. Until the tanks were cleaned they used borewell water for drinking purpose.

2) Sewerage and Sewage Disposal

- i. The sewerage from the buildings flow through a RCC pipe to a Septic Tank Upflow Filter.
- ii. The treated sewage from the Upflow Filter flows into the nullah behind the Complex.
- iii. The Septic Tanks have been commissioned and are adequate.
- iv. As of now, there are no indications of any operational problem.

3) Solid Wastes Disposal

- i. Residents used to throw garbage out of their windows but now have started collecting individually from the occupied room and dispose it to the Municipal Collection Point outside the Complex. MCBM garbage van collects it from that point for disposal.

4) Storm Water Disposal

- i. Storm Water Drains are provided around the buildings.
- ii. Residents have not witnessed any flooding during monsoon.
- iii. The drains appear to be properly designed and constructed. There does not seem to be a problem for storm water drain except where the drains are blocked due to garbage disposed.

5) Lifts

- i. Lifts have been commissioned and used by some residents to transfer their household ware and furniture.
- ii. Lifts have been shut off on request from PAH's. They plan to operate them when all the buildings are occupied.
- iii. Lifts are neat and clean

6) Compound Wall

Compound Wall for the Complex has been properly constructed.

- i. There is no fear of any encroachment since other buildings are being constructed. The builder has provided security arrangements.

7) Electricity

Electricity supply is available at site.

- i. Individual meters are provided for each tenant prior to occupation itself.
- ii. Meter Room is kept under lock and key to prevent unauthorized tampering.

4.8 The parameters identified for the environmental assessment have a direct or indirect affect on human health. The parameters enlisted cover Basic Urban Infrastructure as well as other Environmental Issues.

4.9 Based on these environmental impacts, site specific CEMP is prepared. The CEMP recommends mitigatory action for each of the impacts and also identifies the agency responsible alongwith time frame and costs for its implementation.

ANNEXURE 4.1

**PUBLIC INFORMATION CENTERS AND
CONSULTATIONS**

ANNEXURE 4.1 PUBLIC INFORMATION CENTERS (PICs) AND CONSULTATIONS

MMRDA has established two Public Information Centers, one at the MMRDA office and the other at Mankhurd, a project site. Documents and information related to MUTP Project summaries, EA reports, R&R Policy, RAP, RIP and CEMPs, etc are made available at these PICs. Written comments or suggestions will also be received at the PICs. The PICs will receive grievances from public, in respect of implementation of mitigating measures from the concerned citizens. These will be referred to the concerned PIA and reports will be obtained and kept at the PICs on the corrective actions taken.

Public consultation has been adopted since early stages of project preparation. The consultation process is highlighted below.

Consultations During CTS (1994)

Proposals of CTS were presented to various PIAs, Government agencies and NGOs who generally endorsed the strategy of PT+DM recommended by the CTS. These considerations have also reflected in the MUTP now proposed for implementation.

Consultation During Environmental Assessment (1997)

The findings of the Environmental Assessment carried out by the consultants were first presented in a Workshop held on 2nd June 1997. The participants included the representatives of the government departments, local authorities, project implementation agencies and the consultants in the transport and environment field. The clarifications and suggestions were then incorporated in the final reports.

Consultation for R & R

The consultation process in case of R & R began with the BSES undertaken by the NGOs and has been a continuous process since then. BSES involved explaining the GOM's policy of R & R to PAH. During the formulation of RIP and CEMP, more intensive consultation takes place to decide the location of resettlement, design of building, community facilities required and the procedure to be followed for maintaining the multi-storied settlement. The main techniques used for ensuring public participation and their expected outcomes are described below. Engaging NGOs and CBOs to carry out Baseline Socioeconomic surveys through the active participation of the community identified and strengthened the local community network and motivated it to actively participate in the process of planning for resettlement. Formation of cooperative societies with community willingness is the key to management of the shelter and local environment. During the preparation of CEMP, local Environmental Management Committees (EMC) were formed and trained in maintenance and management of individual service. This effort toward preparing the community to adapt to new life style in multi-storied buildings will be helpful in maintenance of the local environment and services.

Some of the outcomes of the consultation process revealed the critical importance of reestablishing the access to public services such as ration shops that supply food under the Public Distribution System, transfer of names in the electoral rolls, admission to nearby municipal schools etc. Assistance was extended through the NGO in this regard where resettlement has taken place. At the design stage particularly where multi-storied buildings are involved the critical issue was whether the buildings should be walk-ups or with elevators. Wherever possible walk-ups have been preferred. Similarly a preference mechanism was also worked out for allotting the dwelling units on the ground floor to the handicapped and the aged.

Some sections of the society however perceive R & R Policy as a way of rewarding illegal squatting at the cost of society at large and therefore strongly resent such a policy.

Consultation on Updated EA

With the passage of time and substantial developments like construction of flyovers that had occurred, the EA was updated. A consultation workshop involving academia, environmental experts, consultants, NGOs and representatives of PIAs and the World Bank was organized on November 20, 2000 for presentation of updated EA.

Public consultation with PAH

A public consultation workshop was organized predominantly for the PAH on the 13th December 2000. The response from the participants highlighted the importance of maintaining local environment - solid waste management, storm water drainage, sewerage and water supply. Respondents particularly women, based on their personal experiences emphasized the importance of community efforts in keeping the buildings and the surroundings clean by timely removal of garbage. Based on this response, it is proposed to pay particular attention to solid waste disposal in preparing CEMPs as a part of preparing sub- project specific RIPs.

PUBLIC CONSULTATION ON CONSOLIDATED EA IN 2001

Public consultation workshops for cross-sections of society on November 23, 24, and 30, 2001

A public consultation workshop was organized for cross section of the society on the 23rd November 2001. A public consultation workshop on the 24th November 2001 was organized predominantly for the project-affected persons. Public consultation workshop for general public was carried out on November 30, 2001. The consultation workshops were carried out following the Bank

guidelines and all the basic disclosure requirements. These workshops held on November 23, and 30, 2001 were attended by representatives of leading NGOs of Mumbai such as Save Bombay Committee, Bombay Environmental Action Group, Humlog, Clean Air, Netra, SPARC, SOCLEEN etc. In addition there were representatives from the media, the private sector, R &D Institutions, Environmental Consultants, Project Implementing Agencies and also the members of the public.

Public opinions, concerns and responses

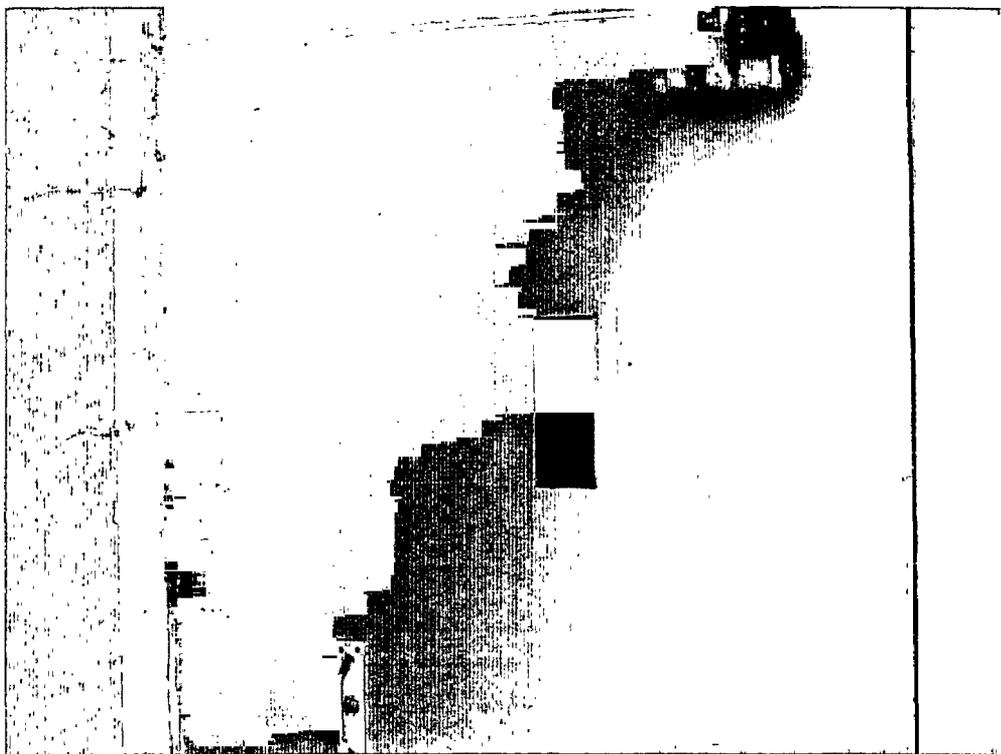
From the series of public consultations organized by MMRDA on November 23, 24 and 30, 2001, it was observed that overall there is a strong support for MUTP. People were more concerned about the delay in actual implementation of the project. Following major issues that emerged from the three public consultation workshops held on November 23, 24, and 30, 2001 on the basis of draft consolidated EA were considered by MMRDA.

A strong case was made for providing adequate facilities for safe movement of pedestrians. Concerns were also expressed about the road maintenance and safety. The project supports a program of pedestrian grade separation facilities at busy intersections and widening and strengthening footpaths with a total provision of Rs. 600 million. Similarly, a provision of Rs. 450 million is proposed for traffic management schemes and road safety measures. The project emphasizes the Institutional Strengthening by supporting creation of a Traffic Management Unit (TMU) in MCGM. A provision of Rs. 50 million is made for 'Technical Assistance to TMU' and a separate provision of Rs. 40 million is made for 'Accident Data Recording, Analysis and Report System'.

Suggestions were made for making the railway platforms more user-friendly. Attention was drawn to the railway passengers' safety due to fast moving trains on the platforms. Project supports a study for Station Design and Engineering, which could help provide user friendly and environmental friendly situation on the railway platforms.

ANNEXURE 4.2

**EXHIBITS OF DINDOSHI RESETTLEMENT SITE
AND
MINUTES OF THE MEETING**



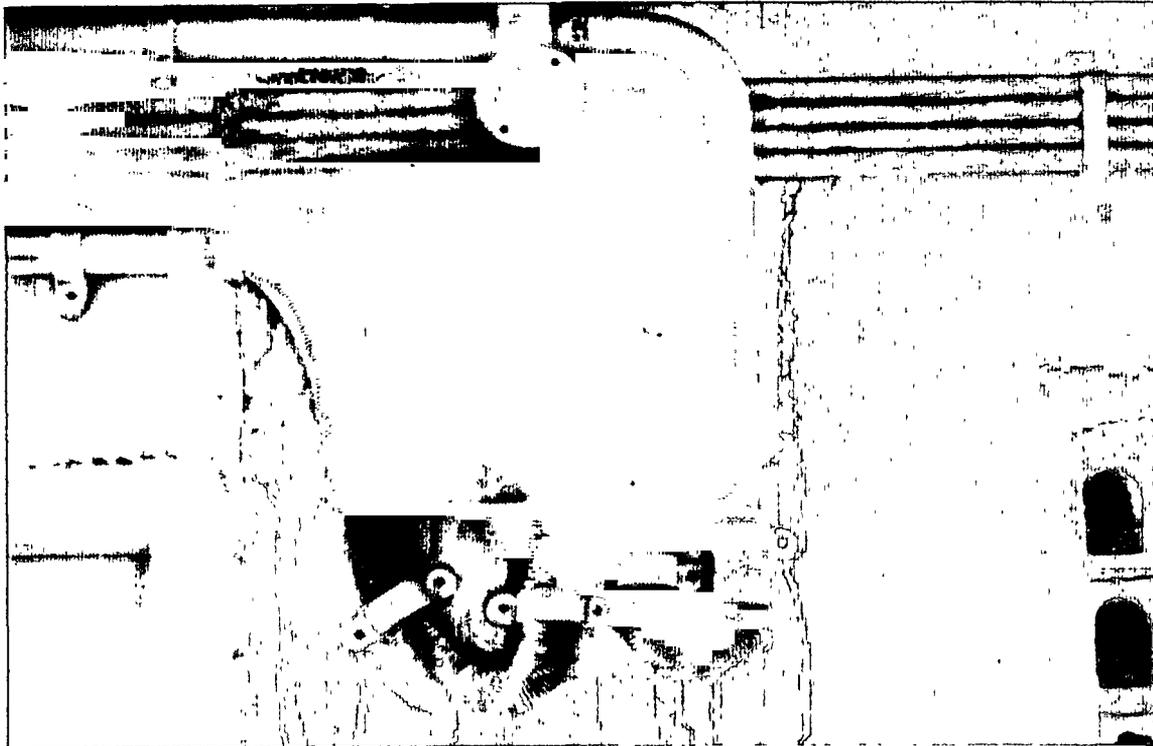
**EXHIBIT 1: LIFT COMMISSIONED, NOTE LIFT SWITCH IS INTACT.
SAFETY DOOR PROVIDED.**



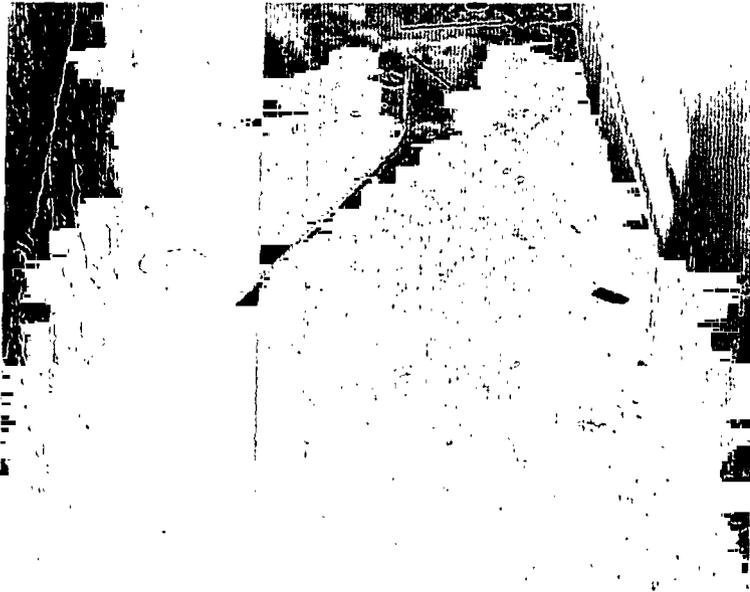
EXHIBIT 2: PROPER COMPOUND WALL PROVIDED.



EXHIBIT 3: ELECTRICAL DISTRIBUTION BOX SEPARATE FOR EACH CLUSTER.



**EXHIBIT 4: INTERNAL TELEPHONE WIRING DONE FOR EACH BLOCK.
PICTURE SHOWN OF TELEPHONE DISTRIBUTION BOARD OF
BUILDING No. 29.**



**EXHIBIT 5: NOTE GARBAGE DUMPED IN STORM WATER DRAIN. RESIDENTS
HAVE NOW TAKEN UP CLEANING OF DRAINS TO REDUCE
MOSQUITO PROBLEMS.**



EXHIBIT 6: UNDERGROUND WATER TANK RECEIVES WATER FROM MUNICIPAL MAINS AT FOOTHILL.



EXHIBIT 7: UNDERGROUND WATER TANK AT HILL TOP RECEIVES WATER FROM FOOTHILL RESERVOIR.

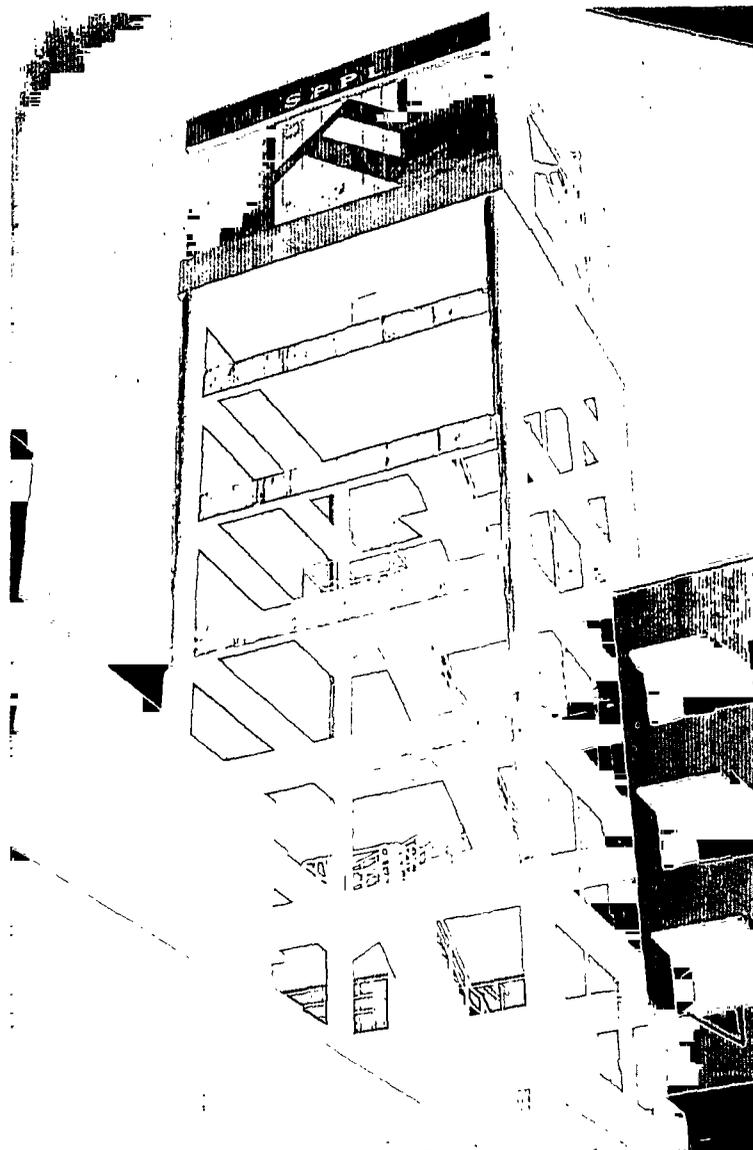


EXHIBIT 8: CENTRAL OVERHEAD TANK FOR ENTIRE COMPLEX.

EXHIBIT 9: COMMON SEPTIC TANK FOR THE COMPLEX.

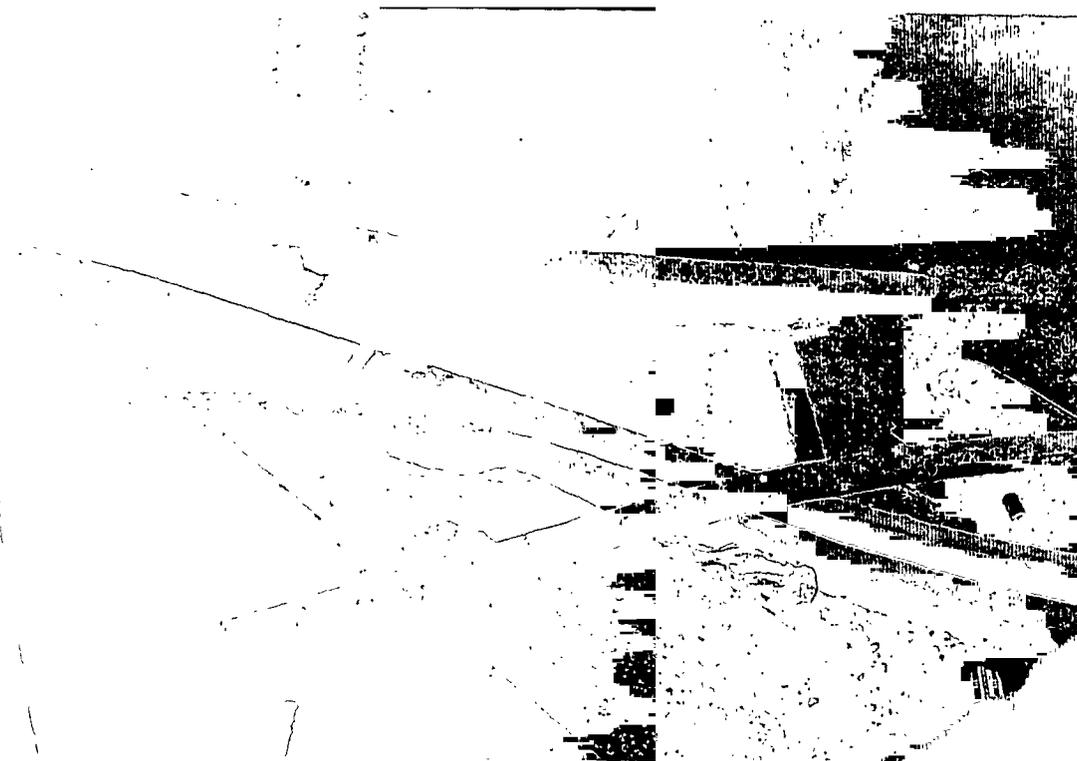


EXHIBIT 10: OPEN SEWAGE CHAMBER LIKELY TO BE CHOKED BY DEBRIS.

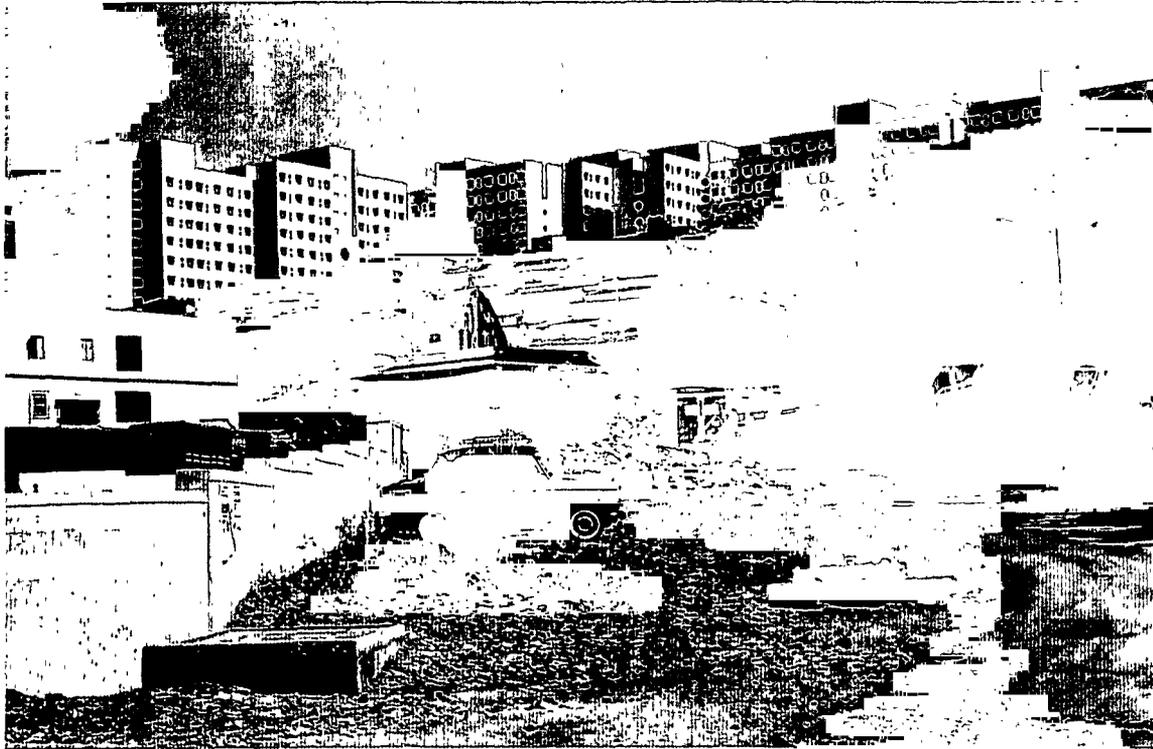


EXHIBIT 11: VIEW OF THE HILLTOP COMPLEX FROM THE LOWER LEVEL



EXHIBIT 12: REAR ELEVATION OF BUILDING NO. 29.

MINUTES OF MEETING HELD AT RESETTLEMENT AT DINDOSHI

PARTICIPANTS:

SOCIETY MEMBERS

ECON

Mrs. SARASWATI PANDURANG CHAVAN * Mr. HEMANT S THAKKER

Mr. RAVINDRA SONAWANE *

Mr. SINDHULA NIRANJAN *

Mrs. SMITA MAHTRE *

* Residents of Building No. 29. Committee is yet to be appointed. Hence, Office bearers were not available.

1. PAH's have been recently shifted from ROB sites on Jogeshwari -Vikhroli Link Road.
2. 38 families have been recently shifted to building no. 29 in December 2001.
3. 200 families are likely to be shifted from Milind Nagar adjacent to JVLR.
4. Shifting of these families is held up due to selection of these 200 families who have settled in Milind Nagar prior to 1995. SPARC is mediating between MSRDC and the PAPs from Milind Nagar
5. The other PAH's in Milind Nagar are found ineligible for alternate resettlement.
6. MSRDC has purchased 375 flats in the Shivshahi Punarvasan Prkalp Limited.
7. There is a central water tank at the foot of the hill, which receives water from Municipal Mains. From this tank, the water is pumped to central overhead tank at the complex. From the overhead tank, water is distributed to individual overhead tanks above each building.

8. GI downtakes are provided in each building to distribute the water in the Tenements.
9. The sewage flows in underground drain into common Septic Tank and Upflow Filter, overflow of which flows down into the low -lying area behind the Complex.
10. The Complex is situated on top of a hill inside film city Complex, behind Indira Gandhi Research Centre.
11. All buildings are well ventilated and have proper illumination.
12. Garbage is collected by residents and disposed to Municipal Disposal point at the base of the Complex.
13. PAH's have been accommodated in building no. 29.
14. Lifts have been commissioned and used by some residents to transfer their household wares and furniture. Lifts have been shut off on request from PAH's. They plan to operate it when this building is occupied completely, so that lift operating cost is distributed among all occupants and therefore more economical.
15. Compound wall for the Complex has been constructed but there is no fear for encroachment since other buildings are being constructed and Builder security arrangement exists at Site.
16. Electric supply and individual meters are provided for each tenement prior to occupation of the tenement. Meter Room is kept under lock and key to prevent unauthorized tampering.
17. Very few residents have got gas cylinders shifted from their earlier settlement. They have yet to get a transfer for their gas card or their ration cards to their new accommodation. Gas cylinder distributors are available at Santosh Nagar, which is at the foot of the hill. Some residents have kerosene stoves and they are anxious to get kerosene locally since their earlier ration shops are now quite far. Some residents still use firewood.
18. Internal telephone wiring has been provided, but very few residents have applied for telephone from MTNL. In fact, there is only one telephone amongst 38 residents of building no. 29. Most of the residents go to the neighbouring slum at Santosh Nagar for making a phone call.
19. They have not reached the stage of monthly maintenance charges. However, residents expect a monthly maintenance charge of about Rs. 450/- to Rs. 500/-.
20. Some Parents of children in college have rented accommodation in their old locality and will complete the academic year in that area. They will shift to their present accommodation in May or June 2002. Schools are

very far from the present site and children have applied for transfer to the Local Municipal School, which is about 2 kms from the place. Parents are still awaiting transfer of their children to local schools so that they can continue with their education.

21. Health facilities are not available nearby. Residents use private doctors at the neighbouring slum and are still unaware of whereabouts of hospitals since they have just come in.
22. Some Residents claim mosquitoes are there, since flats were unoccupied for one year. Also, in the initial period most of the residents dumped garbage from windows around the building. They have now realized their mistake and have cleaned the area. This should reduce mosquito problems.
23. Municipal water supply is available at site from Municipal mains, Since the Municipal mains tapping was a dead end for five years, the water received was reddish in colour and turbid.
24. PAH's have cleaned their overhead tanks and expect normal quality of water henceforth.
25. Till the tanks were cleaned they were using borewell water for drinking from the builder's borewell and Municipal water for other purposes.
26. The sewerage from the buildings flows by RCC pipe to Septic Tank and Upflow Filter treated sewage from the outlet overflows in the valley behind the Complex.
27. The Septic Tank has been commissioned and is of adequate size. As of now there is no indication of any operating problem.
28. Storm Water Drains are provided all round the building and is connected to the natural drainage down hill. Residents have not observed the place during monsoon. The drain seems to be properly designed and constructed and there does not seem to be a problem for storm water flows, except when the drains are choked by indiscriminate garbage dumping.
29. Residents used to dump garbage from their windows earlier, but now they have started collecting it individually from the occupied rooms and dispose it to Municipal collection point outside the Complex. MCGM garbage van collects the garbage from that point and disposes it in the MCGM disposal point.
30. Internal roads to the Complex are provided for access to the building. However, approach road is yet to be provided. As of now for construction purposes a steep access is available.
31. BEST buses are yet to come to the Complex. However, it is likely that a best bus service will start through the complex in about 5 to 6 months.

As of now residents walk 3 km to the nearest bus stop and station is another 4 to 5 kms away.

32. Air Quality is good due to hilly region. However, adjacent construction activity does generate some dust and smoke.
33. Noise: There is no noise during nighttime. However, some noise does exist due to construction activity in the daytime.
34. Individual water meters are not provided. Common meter is provided for the entire Complex and cost distribution would become complicated since PAH's from different backgrounds as well as private flat buyers would have to distribute costs among themselves.
35. Individual society is not yet formed and they have yet to establish the Apex Body.

CHAPTER 5

**COMMUNITY ENVIRONMENTAL
MANAGEMENT PLAN**

5.1 In chapter 4, Articles 4.4.1 addresses the concerns and issues alongwith their identified environmental impacts. The site-specific CEMP recommends mitigatory actions for each of the identified impacts and is presented in Annexure 5.1 This Annexure also mentions the agency responsible along with time frame and costs for implementation. These costs do not include a budget for expenses to be incurred for training programmes, public participation, departmental monitoring, consultant's fees, incidental expenses, sundries, etc. These costs are deemed to be included in the Final CEA prepared for the Project by MMRDA.

The site-specific CEMP cost in Dindoshi is Rs. 1,64,000/-.

5.2 The site-specific mitigatory actions are of a common nature since the issues / impacts identified are similar at each of the site. The recommendations can be successfully implemented if in addition, the following over all approach is adopted.

5.3 An Environmental Management Committee (EMC) needs to be formed immediately. EMC's should be formed with the help of the local NGO's. EMC should be a supplementary body to managing committee for the housing societies. The society is generally responsible for looking after the well being of the inhabitants, for payment of local taxes, and also for the operation and maintenance of various services provided with the Complex.

5.4 As a part of an education, awareness training and participation programme, the EMC's should be given a basic exposure and training by MMRDA through the NGOs to the technical background for the various urban services like water supply, sewerage system, solid waste management, storm water disposal etc. The technical background should include an understanding of the system, fixtures & fittings, machinery, suggested operation and maintenance of the system etc. The EMC's later should be given a maintenance schedule for the various urban services which

includes action expected from them, the agency responsible for the task, frequency of conducting the action and a budget for annual costs. A sample for maintenance schedule and tenement monthly maintenance costs is included for general guidance in Annexure 5.5 & 5.6. This could be developed further by the EMC's before implementation.

This awareness, education training programme (regarding the maintenance of the infrastructural facilities) should be circulated to all the EMC members who will in turn train the inhabitants of the Resettlement Sites. To help the EMC's, general guidelines for awareness and information of the residents are prepared in Annexure 5.2 in the form of Do's & Don'ts. A 'Synopsis' of these Do's & Don'ts is enclosed in local language for wider circulation and acceptance indicated in Annexure 5.3.

- 5.5 A general note on critical issues along with mitigatory actions on a new Resettlement Site is attached as Annexure 5.7 for the information of the MSRDC/MMRDA/EMC's/NGO's/Apex Body of the societies.
- 5.6 It may be helpful if MSRDC/MMRDA through the NGO's help the EMC's to formulate their annual budgetary requirement. These budget provisions will help to assess the amount to be charged monthly to each tenement.
- 5.7 As mentioned earlier, the process of activation of EMC's should be initiated immediately by MSRDC/MMRDA with the help of the local NGOs and they should be in place effectively within one year of the occupation of the new Resettlement Site. Until then, the monthly maintenance charges may be collected by the society on an adhoc terms based on a preliminary estimate worked out on experience of other similar societies in the vicinity. Detailed budget for functioning of the EMC's should be included in general budget provisions of the society and endorsed by the committee members as well as the general body (including EMC). The building societies should function in accordance to the norms laid down by Registrar of Housing Society, Govt. of Maharashtra. The "Registrar of housing

societies” may be requested by MSRDC / MMRDA / NGO’s to also conduct certain awareness/education programmes at new Resettlement Sites regarding their rules and regulations especially since the members come from slums and not used to staying in regular housing.

5.8 MSRDC / MMRDA shall monitor the effective implementation of the CEMP. For guidance, Annexure 5.4 gives a format enlisting monitoring indicators for each urban infrastructure parameter like water supply, sewerage, solid waste handling, etc. Corrective action wherever necessary will be taken to ensure that good housekeeping practices and local laws for environment parameters are complied with.

5.9 Conclusions:

PAH’s who were residing in slums have now been resettled at a regular Housing Complex with multi-storeyed buildings, which is a basic change of culture and style of living conditions.

To genuinely elevate the social, economic and environmental status of the PAH’s, an awareness education training and participation programme needs to be initiated immediately by MMRDA through the local NGO. The first step should be formation of EMC at each of the site and its activation within one year of resettlement. The successful implementation of the CEMP will result in improvements to the environmental as well as social and health status of the PAH’s.

ANNEXURE 5.1

DINDOSHI RESETTLEMENT SITE – CEMP

ANNEXURE 5.1 DINDOSHI RESETTLEMENT SITE

	PARAMETERS FOR ENVIRONMENTAL ASSESSMENT	IDENTIFIED ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATORY ACTIONS	AGENCY RESPONSIBLE FOR IMPLEMENTATION	*TIME-FRAME	COST IN Rs.
1	URBAN INFRASTRUCTURAL SERVICES WATER SUPPLY	Municipal water supply brought to site from nearby main. There is no separate meter for each buildings. The Municipal connection is at a dead end. The water received is in reddish in colour. Now the PAH'S have cleaned their tanks and expect quality of water to improve. Untill the tanks were cleaned, they used borewell water for drinking purpose.	Separate meters should be provided for each buildings.	EMC	C	24,000.00 (Rs.2000/-@ 12buildings)
			Testing of water samples to check quality.	EMC		10,000.00 (20sqm@Rs.500sqm)
			Adherence of maintenance schedule.	EMC	C	
2	SEWERAGE / AND SEWAGE DISPOSAL	The Sewerage from the buildings flow through a RCC pipe to Septic Tank Upflow Filter. The treated sewage from the Upflow Filter flows into the nullah behind the Complex. The Septic Tanks have been commissioned and are adequate. As of now, there are no indication of any operational problem.	Prevent dumping of solid waste in sewerage chambers.	EMC	C	10,000.00
			Awareness and education programme to be implemented.	EMC	C	10,000.00
			Prevent chokage.	EMC	C	5,000.00

* I IMMEDIATE - 0 - 6 MONTHS
 MT MID-TERM - 6 MONTHS - 2 YEARS
 LT LONG-TERM - 2 YEARS - 5 YEARS
 C CONTINUOUS

ANNEXURE 5.1 DINDOSHI RESETTLEMENT SITE

	PARAMETERS FOR ENVIRONMENTAL ASSESSMENT	IDENTIFIED ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATORY ACTIONS	AGENCY RESPONSIBLE FOR IMPLEMENTATION	*TIME-FRAME	COST IN Rs.
3	SOLID WASTES DISPOSAL	Residents used to throw garbage out of their windows but now have started collecting individually from the occupied room and dispose it to Municipal Collection Point outside the Complex. MCGM garbage van collects it from that point for disposal.	Provide garbage collection system in all buildings. Awareness and education programme. Regular collection of garbage for disposal.	EMC EMC EMC/ WARD OFFICE	I	50,000.00 (25 bins @Rs.2000/-/bin)
4	STORM WATER DISPOSAL	Storm water drains are provided around the buildings. Resident have not witnessed any flooding during monsoon. The drains appears to be properly designed and constructed there does not seem to be a problem for storm water drain except where the drains are blocked due to garbage disposed.	Prevent dumping of garbage in Storm Water Drain.	EMC	C	5,000.00
5	LIFTS	Lifts have been commissioned and used by some residents to transfer their household ware and furniture. Lifts have been shut off on request from PAH's. They plan to operate them when all the buildings are occupied. Lifts are neat and clean.	To be used judiciously to minimise power and operation costs. Lift to be restarted on increasing of occupancy of the buildings. Awareness and Education programme.	SPPL/NGO/EMC/MSRDC	I I	40,000.00 10,000.00

- * I IMMEDIATE - 0 - 6 MONTHS
- MT MID-TERM - 6 MONTHS - 2 YEARS
- LT LONG-TERM - 2 YEARS - 5 YEARS
- C CONTINUOUS

ANNEXURE 5.1 DINDOSHI RESETTLEMENT SITE

	PARAMETERS FOR ENVIRONMENTAL ASSESSMENT	IDENTIFIED ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATORY ACTIONS	AGENCY RESPONSIBLE FOR IMPLEMENTATION	*TIME-FRAME	COST IN Rs.
6	COMPOUND WALL	Compound wall for the Complex has been properly constructed. There is no fear of any encroachment since, other buildings are being constructed. The builder has provided security arrangements.	General alert and checks for security by EMC.	NGO / EMC	C	
7	ELECTRICITY	Electric supply is available at site. Individual meter are provided for each tenant prior to occupation itself. Meter Room is kept under lock and key to prevent unauthorised tampering.	Society/EMC will be require to prevent misuse and manage common Electricity.	NGO / EMC NGO / EMC	C C	
			TOTAL COST			1,64,000.00

- * I IMMEDIATE - 0 - 6 MONTHS
- MT MID-TERM - 6 MONTHS - 2 YEARS
- LT LONG-TERM - 2 YEARS - 5 YEARS
- C CONTINUOUS

ANNEXURE 5.2 A

**DO'S AND DONT'S TO BE CIRCULATED
AMONGST EMC**

ANNEXURE 5.2 A - DO'S / DON'TS TO BE CIRCULATED AMONGST

EMC

(Based on our experience of similar projects for Resettlement Sites)

I. Water Supply Systems:

1. Get both underground and overhead tanks cleaned and inspected every year.
2. Suction Pump shall be protected and lubricated regularly. Any defects noted during operation shall be promptly reported.
3. Any signs of leakage observed in the pipes shall be promptly attended to.
4. Overhead Tanks cover will be locked and overflow prevented.
Periodic cleaning shall be undertaken to prevent development of unhygienic/unhealthy conditions.

II. Sanitation:

1. Sewer chamber cover is to be protected and unauthorized opening and removal shall be prevented.
2. Sewer lines shall be maintained with the help of the local ward office of Municipal Corporation.
3. Vent pipes must be maintained clean and protected from birds, which make nests in the cowl.

III. Solid Waste:

1. Garbage shall be collected in each household and transferred to the bins provided below each building.
2. The EMC will arrange to collect garbage from every building and dispose it to a pre-identified Municipal garbage collection pick point.
3. Uncollected garbage shall promptly be reported to the concerned authority.
4. Shop owners and hotels will not be allowed to dump their garbage in the domestic garbage collection point.

IV. Storm Water Drain:

1. It is important to ensure that the sweeper sweeping the pathway does not sweep leaves/debris in the Storm Water Drain.
2. The Storm Water Drain shall be checked and cleaned prior to monsoon to prevent flooding.
3. There should not be any water/sewage flowing in the Storm Water Drain in dry season. If some person has made an illegal connection it should be promptly reported and diverted to the sewers.
4. Rainwater downtakes at the terrace levels shall be checked and cleaned prior to the monsoon to prevent accumulation of rainwater in the terrace.

V Street Lights:

1. The Street Lighting shall be protected from unauthorized tampering/tapping by the residents and outsiders.
2. Fused bulbs shall be promptly replaced by reporting to the maintenance staff.
3. Street Lights shall be switched off at sunrise to prevent wastage of power.

VI. Green Areas, Garden And Trees:

1. Leaves shall be removed from the area.
2. Plucking of leaves/flowers shall be controlled and discouraged.
3. The garden shall be protected from outside encroachers and anti-social elements.

ANNEXURE 5.2 B

**DO'S AND DONT'S TO BE CIRCULATED
AMONGST INHABITANTS**

ANNEXURE 5.2 B DO'S / DON'TS TO BE CIRCULATED AMONGST

INHABITANTS

(Based on our experience of similar projects for Resettlement Sites)

I. Water Supply Systems:

1. Keep area surrounding your water tank clean.
2. Keep water tank covers locked and do not allow people to dip or take water from the underground water tank.

II. Sanitation:

1. Toilets are to be used and maintained properly.
2. No other wastes shall be disposed in the toilet.
3. Garbage and debris shall not be allowed to enter the sewage chamber.
4. Water seal in the W.C. shall be maintained.
5. Cloth rags, broken glass, brooms etc. shall not be put into the toilets.
6. In case of chokage a licensed plumber or Municipal Authority shall be intimated to attend to the problems.

III. Solid Waste:

1. Garbage shall not be thrown in open spaces, below the staircase or out of the kitchen window.
2. If possible, Residents will segregate organic/inorganic the garbage prior to its disposal.
3. Animals shall not be allowed to enter the garbage bins in the building.
4. Garbage shall not be dumped into the Storm Water Drain or Sewers.

IV. Green Areas, Garden And Trees:

1. Garden must be kept clean and no litter shall be thrown in the area.
2. Garden shall be protected from stray cattle or animals.
3. Cutting of trees shall be strongly resented and immediately reported to the concerned authorities.

ANNEXURE 5.3

**A TRANSLATION OF 'SYNOPSIS' OF
ANNEXURE 5.2 A AND 5.2 B IN LOCAL
LANGUAGE**

अनुवृत्त

३ एम सी व राहेंवारांच्या राज्या माहिनाराठी प्रसृत
करव्यासाठी करावयाच्या/ न करावयाच्या कृतीची सूची

पाणी पुरवठा

- 1) पाण्याच्या साठवण टाकी सभोवतालचा परिसर स्वच्छ ठेवा.
- 2) वर्षातून एकदा जमिनीवरील व गच्चीवरील टाक्या साफ कराव्या व त्यांची पहाणी करावी.
- 3) पाण्याच्या टाकीची झाकणे कुलूप लावून बंद ठेवावी व जमिनीवरील टाकीतून कोणालाही पाणी काढून देऊ नये.
- 4) पाणी वर चढवण्याचा पंप सुरक्षित जागी ठेवावा. तसेच त्याला कायम वंगण करावे व काही दोष आढळल्यास ताबडतोब आवश्यक दुरुस्ती करण्यात यावी.
- 5) पाण्याच्या नळांमधून गळती आढळल्यास त्यांची दुरुस्ती ताबडतोब करावी
- 6) गच्चीवरील टाक्यांची झाकणे बंद ठेवणे आवश्यक आहे. तसेच ठराविक कालावधीनंतर त्या साफ कराव्या (वर्षातून दोन वेळा)

मलनिस्सारण

संडास स्वच्छ ठेवणे.

संडासमध्ये अन्य कचरा टाकू नये.

मलनिस्सारण घेंबरची झाकणे नीट ठेवावी व ती उघडी ठेवू नये.

मलनिस्सारण वाहिनीची डागडूजी आवश्यक भासल्यास महानगरपालिकेच्या मदतीने करून घ्यावी.

कचरा, राबिट, माती वगैरे गोष्टींनी मलनिस्सारण वाहिनी भरणार नाही याची काळजी घ्यावी.

वायुवांजनासाठी ठेवलेल्या पाईपांची नीट काळजी घ्यावी व पक्षी त्यावर घरटी करणार नाहीत हे पहावे.

संडासमधील कापडाचे बोळे, कागद जाणार नाहीत असे पहावे.

पाणी तुंबल्यास छप्पर किंवा महानगरपालिकेच्या सवधित खात्यास दुरुस्तीसाठी कळवावे

नकचरा

प्रत्येक घरातील घनकचरा एकत्रित करून ता उतारतीतील कचराकुंडीत टाकावा

घरातील कचरा इमारती सभोवतालच्या जागेत अथवा खिडकीमधून खाली भिरकावणे योग्य नाही

प्रत्येक इमारतीतील कचरा एकत्रित करून तो महानगरपालिकेने नियुक्त केलेल्या जागी नेण्याची व्यवस्था पर्यावरण व्यवस्थापन समितीने करावी.

प्रत्येक रहिवाशाने कचरा विभागनी करून म्हणजे घनकचराल काचेचे किंवा तत्सम अन्य सामान, ओले पदार्थ, अन्न असा वेगवेगळा करून टाकावा जेणेकरून त्याची विल्हेवाट लावणे सोईचे होईल.

प्रत्येक इमारतीतल कचराकुंडी तसेच उंदी यापासून सुरक्षीत ठेवणे.

कचरा पावसाळी पाण्याच्या गटारात किंवा मलनिस्सारण वाहिनीमध्ये जाणार नाही याची काळजी घ्यावी.

घनकचरा जर महापालिकेकडून उचलला गेला नसेल तर त्वरीत संबंधित खात्यास सूचित करावे.

दुकाने व हॉटेल यांचा कचारा वेगळा एकत्रित करावा व त्याची विल्हेवाट लावावी.

पावसाळी पाण्याची गटारे

रस्ते सफाई कामगारांची पावसाळी पाण्याच्या उघड्या गटारांमध्ये, राबिट, झाडांच्या पाळापाचोळा जाणार नाही याची काळजी घ्यावी.

पावसाळ्यापूर्वी सर्व पावसाळी गटारांची सफाई करण्यात यावी.

पावसाळी पाण्याच्या गटारांमध्ये मलनिस्सारण वाहिनीतील घाणपाणी जोडले जात नाही असे पहावे.

इमारतींच्या गच्चीवरून खाली येणारे पावसाळी पाण्याचे पाईप हे तपासून, साफ आहेत ना हे पावसाळ्यापूर्वी बघणे आवश्यक आहे.

स्तांवरील दिवे

रस्तांवरील दिव्यांच्या मधून अनधिकृतपणे कुठे जोडणी केली जात नाही हे लक्ष देऊन पहावे.

जे दिवे निकामी झाले आहेत ते त्वरित बदलण्यात यावे.

सुर्योदय होताच दिवे मालवण्यात यावे.

झाडे व बागबगीचा

बाग स्वच्छ राहिल व त्यामध्ये कचरा, कागदाचे कपडे, फळांची साले आदि टाकली जाणार नाहीत अशी काळजी घ्यावी.

झाडावरून पडणारी पाने काढून टाकावी.

रस्त्यावरील फिरणाऱ्या भटक्या जनावरांपासून संरक्षण करावे.

झाडावरील पाने अथवा फुले खुडण्यास मनाई करावी किंवा विशिष्ट भागापुरतीच मर्यादित करावी.

झाडे कापली जाणार नाहीत व कापणाऱ्याविरुद्ध त्वरित कडक कारवाई केली जाईल अशी व्यवस्था करावी

असामाजिक तत्वांपासून वागेचे संरक्षण करावे तसेच कुठेही अतिक्रमण होणार नाही याची काळजी घ्यावी.

ANNEXURE 5.4

**MONITORING INDICATORS AT DINDOSHI
RESETTLEMENT SITE**

**(TO BE FILLED UP EVERY MONTH
AND SUBMITTED TO MMRDA)**

ANNEXURE 5.4 - MONITORING INDICATORS OF POST CEMP ASSESSMENT

SR. NO.	SERVICE	ACTION REQUIRED	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	INFORMATION ON ACTION TAKEN	COMPLIANCE TO REQD. STDS./ GOOD HOUSEKEEPING STDS.
1	WATER SUPPLY	i) Check quality of water Samples to be analysed at external laboratory	EMC	Once a year (OR) as necessary		
		ii) Adequacy of pressure and supply hours.	EMC member/ MCBM ward office.	As and When necessary		
		iii) Check for any indication of leakages.	EMC Local Plumber.	Once a year		
2	SEWAGE AND SEPTIC TANK	i) Ensure that sewage flows smoothly from all branches.	EMC member with help of local plumber.	Once a year .		
		ii) Ensure all chambers are properly covered and no debris is pushed in the chambers.	EMC members with help of local plumber.	Once a year		
		iii) Keep vent shafts clear from birds nests specially cows which get choked with leaves and twigs collected by small birds.	EMC members with help of local plumber.	Once a year		

(TO BE FILLED UP EVERY MONTH
AND SUBMITTED TO MMRDA)

ANNEXURE 5.4 - MONITORING INDICATORS OF POST CEMP ASSESSMENT

SR. NO.	SERVICE		ACTION REQUIRED	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	INFORMATION ON ACTION TAKEN	COMPLIANCE TO REQD. STDS./ GOOD HOUSEKEEPING STDS.
		iv)	Septic Tanks shall be cleaned once in 4 years with the help of Municipal Boozer meant for cleaning Septic Tanks.	EMC/ local ward office to clean Septic Tank.	Inspect once a year		
3	STORM WATER DRAINS	i)	Ensure that the sweeper does not sweep leaves, debris etc. into the Storm Water Drain.	Society/EMC Members	Monthly		
		ii)	A pre-monsoon check of all Storm Water Drains shall be performed to ensure that there is no blockage in the drains.	EMC members	Yearly prior to rains and weekly during monsoon.		
		iii)	All storm water down takes from terraces of buildings shall be checked to prevent accumulation of rain water in terraces.	Society sweeper/EMC member/secretary of each building.	Yearly prior to rains.		
4	GARDEN AND TREES	i)	Periodic watering of garden.	Gardener under supervision of EMC member.	Weekly with extra precaution in summer.		

**(TO BE FILLED UP EVERY MONTH
AND SUBMITTED TO MMRDA)**

ANNEXURE 5.4 - MONITORING INDICATORS OF POST CEMP ASSESSMENT

SR. NO.	SERVICE	ACTION REQUIRED	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	INFORMATION ON ACTION TAKEN	COMPLIANCE TO REQD. STDS./ GOOD HOUSEKEEPING STDS.
		ii) Raking of leaves.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.		
		iii) De-weeding of garden.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.		
		iv) Plantations of new saplings in pre-monsoon period.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.		
5	SOLID WASTE AND GARBAGE	i) Check area around garbage bin is kept clean.	EMC Members			
		ii) Discourage direct throwing of garbage from houses.	EMC Members			
		iii) Encourage responsible behavior by awarding prizes to best kept surroundings.	Apex Body	Annually		

**(TO BE FILLED UP EVERY MONTH
AND SUBMITTED TO MMRDA)**

ANNEXURE 5.4 - MONITORING INDICATORS OF POST CEMP ASSESSMENT

SR. NO.	SERVICE	ACTION REQUIRED	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	INFORMATION ON ACTION TAKEN	COMPLIANCE TO REQD. STDS./ GOOD HOUSEKEEPING STDS.
		iv) Ensure transfer of garbage from individual bins to commons disposal point by trained staff.	Society Secretary/EMC members to supervise the hired staff.	Regular checks preferably everyday		
		v) Follow up with MCBM authorities for clearance of Garbage from collection point.	Apex Body/EMC			
		vi) Keep dogs/cattle and scavengers from spreading the garbage and creating ugly sights.	All society members. EMC Members	Red alert		

ANNEXURE 5.5

MAINTENANCE SCHEDULE – A SAMPLE

**ANNEXURE 5.5
MAINTENANCE SCHEDULE - A SAMPLE**

SR. NO.	SERVICE	ACTION	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	SUGGESTED ANNUAL COST Rs.
1	WATER SUPPLY	i) Check quality of water	Samples to be analysed at external laboratory.	Once a year	5,000.00
		ii) Adequacy of pressure and supply hours.	EMC member/ MCBM ward office.	As and When necessary	
		iii) Check for any indication of leakages.	EMC Local Plumber.	Once a year	5,000.00
2	SEWAGE AND SEPTIC TANK	i) Ensure that sewage flows smoothly from all branches.	EMC member with help of local plumber.	Once a year	2,000.00
		ii) Ensure all chambers are properly covered and no debris is pushed in the chambers.	EMC members with help of local plumber.	Once a year	5,000.00
		iii) Keep vent shafts clear from birds nests specially cowis which get choked with leaves and twigs collected by small birds.	EMC members with help of local plumber.	Once a year	1,000.00
		iii) Septic Tanks shall be cleaned once in a year with the help of Municipal Bouzer meant for cleaning Septic Tanks.	EMC/ local ward office to clean Septic Tank.	Once a year	10,000.00

**ANNEXURE 5.5
MAINTENANCE SCHEDULE - A SAMPLE**

SR. NO.	SERVICE	ACTION	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	SUGGESTED ANNUAL COST Rs.
3	STORM WATER DRAINS	i) Ensure that the sweeper does not sweep leaves, debris, etc. into the storm water drain.	Society/EMC Members	Monthly	1,000.00
		ii) A pre-monsoon check of all storm water drains shall be performed to ensure that there is no blockage in the drains.	EMC members	Yearly prior to rains and weekly during monsoon.	5,000.00
		iii) All storm water down takes from terraces of buildings shall be checked to prevent accumulation of rain water in terraces.	Society sweeper/EMC member/secretary of each building.	Yearly prior to rains.	2,000.00
4	GARDEN AND TREES	i) Periodic watering of garden.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.	15,000.00
		ii) Raking of leaves.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.	5,000.00
		iii) De-weeding of garden.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.	5,000.00
		iv) Plantations of new saplings in pre-monsoon period.	Gardener under supervision of EMC member.	Weekly with extra precaution in monsoon.	10,000.00
5	PATHWAYS	i) Pathways to be swept clean daily.	EMC members/local sweeper.	To be checked periodically	
		ii) Educate people to guard their pathways from encroachments and unauthorised disposal of garbage/debris in surrounding area.	Apex Body/GMC/Consultants		15,000.00

**ANNEXURE 5.5
MAINTENANCE SCHEDULE - A SAMPLE**

SR. NO.	SERVICE	ACTION	AGENCY TO BE RESPONSIBLE FOR THE TASK	FREQUENCY	SUGGESTED ANNUAL COST Rs.
6	STREET LIGHTING	i) To be protected from authorised tampering by residents and outsiders.	EMC Member / Electricity Supply Co.	General alert	
		ii) Fused bulbs to be replaced.	EMC Maintenance staff	As necessary	10,000.00
		iii) Switch off street lights at sunrise to prevent wastage of power.	EMC Operating staff	Daily	
7	SOLID WASTE AND GARBAGE	i) Segregation of waste by residents for disposal into garbage bins.	Training by EMC members/Consultants	Quarterly Programme	10,000.00
		ii) Check area around garbage bin is kept clean.	EMC Members		
		iii) Discourage direct throwing of garbage from houses.	EMC Members		
		iv) Encourage responsible behavior by awarding prizes to best kept surroundings.	Apex Body	Annually	5,000.00
		v) Ensure transfer of garbage from individual bins to common disposal point by trained staff.	Society Secretary/EMC members to supervise the hired staff.	Regular checks preferably everyday	
8	TELEPHONES	vi) Follow up with MCBM authorities for clearance of garbage from collection point.	Apex Body/EMC		5,000.00
		vii) Keep dogs/cattle and scavengers from spreading the garbage and creating ugly sights.	All society members. EMC Members	Red alert	
		Repairs of faulty telephones/lines will be managed by individual subscribers directly complaining to the supply company.	Subscriber MTNL	As and when necessary	
TOTAL					116,000.00

ANNEXURE 5.6

**TYPICAL TENEMENT WISE MAINTENANCE
COST**

ANNEXURE 5.6**TENEMENTWISE MAINTENANCE COST - A SAMPLE**

1	Total cost of maintenance (annual)	Rs. 116000.00
2	To be distributed over tenements	200 (typical)
3	Cost per tenement per year (1 divided by 2)	Rs. 580.00
4	Adding Administrative charges & overheads at 35% cost per tenement per year (3 x 1.35)	Rs. 783.00
5	Taxes per tenement per month (at concessional rate of 20% for the next ten years)	Rs. 135.00
6	Maintenance expense per tenement per month at rate of assuming 200 tenements (4 divided by 12)	Rs. 66.00
7	Operation & Maintenance Cost for Lifts per Tenement per month	Rs. 50.00
8	Total out goings per tenement per month maintenance expenses + lift maintenance + taxes (5 + 6 + 7)	189.00
	say	Approx Rs. 190.00

ANNEXURE 5.7

**CRITICAL PROBLEMS IN RESETTLEMENT
SITES – A GENERAL NOTE**

Critical problems along with its mitigatory actions relevant to new resettlement sites expected due to shifting of Project Affected Persons from unorganized, cramped settlements to developed buildings are as follows:

1. Non collection of refuse and garbage.
2. Garbage not disposed.
3. Leaking drain pipes.
4. Choked underground sewer lines.
5. Overflowing inspection chambers and gully traps.
6. Open spaces around the building are not maintained properly.
7. No proper storm water drain collection and drainage system / blocked storm water drains.
8. Bad condition of roads and streetlights due to proper maintenance.
9. Nuisance from shop owners or commercial establishments.
10. Plot maintenance of common amenities, garden, Balwadi, Welfare Centre, etc.
11. Removal of sludge from Septic Tank at specified intervals is not done.

PROPOSALS TO MITIGATE THE PROBLEMS

Non-collection And Disposal Of Garbage

At present these problems are prevalent in the hutments' due to very high density of huts, inadequate passages, lack of cleanliness, indiscriminate dumping of garbage all over the area, specifically in the storm water drains and low lying areas. This leads to putrefying of solids, fly nuisance and spread of diseases in the vicinity. It also causes sewer odour nuisance.

Proper garbage storage shall be planned for each building. Individual bins for each building must be provided. The residents shall be trained and coaxed into not throwing waste, refuse etc. from the windows, instead use the bins provided for each building. The area surrounding the bins shall be properly tiled and will be provided with proper drainage to prevent stagnation of water and development of unsightly conditions. Residents will be taught about the importance of clean surroundings and its indirect benefits of their health by welfare workers / NGO.

A community-based organization viz. the EMC would be formed to handle cases of default and enforce compliance among the residents a nominal contribution from each member shall be collected for handling the garbage.

Leaking Drain Pipes

Normally drain pipes leak because of various reasons:

1. Poor workmanship.
2. Chokage caused by rags, lemon peels, vegetable matter, animal bones and sanitary napkins inadvertently flushed in the line.
3. Attempts by inadequately trained people by piercing the pipe with iron rods to cause water to flow, these leaks flow on the surface of the building causing unsightly conditions and affect the buildings badly.

All attempts shall be made to educate the occupants in hygiene and do's and don't about use of personal toilets within their tenements. Adequately sized down takes and proper workmanship can reduce the problem substantially.

Similarly choked underground sewer lines is a problem caused due to inadequate sizing of sewers, insufficient slopes and indiscriminate dumping of garbage / debris into open chambers whose covers get stolen because of high

scrap value of cast iron covers. Fibre reinforced concrete covers for manholes will be provided. These covers are not likely to be removed since they have no scrap value. Hence this will stop indiscriminate dumping of garbage in the drains.

Similarly the problem of overflowing inspection chamber and gully traps is also caused by missing chamber covers and can be resolved as above.

Improper formation levels and inadequate storm water drains cause stagnation of water, other nuisance being dumping of solid waste into the storm water drain causes chokage and backing of water.

Proper design of formation levels, adequate velocities and capacity of storm water drains and formation of Apex Body to manage the complex and periodically clean the storm water drain will mitigate problems relating to improper drainage and flooding in the region.

Municipal gangs equipped with a Septic Tank bouzer are available on payment. Proper road access shall be provided near each Septic Tank to permit proper cleaning each year, similarly road, streetlight, open space, R.G. Balwadi Welfare Center. These shall be managed properly by the Apex Body formed by the members of community developers to maintain the society at a payment of charge by the members. The source of these charges could be a sinking fund created at the time of setting up of the society. However, stiff action should be taken for defaulters in terms of disposal of garbage on road, urination, spitting corners etc. These can be inculcated in the population by showing them the benefits of clean and aesthetic surroundings, and fresh air available to the residents with the help from EMC, CBO & NGO etc.

Detailed addressing of various environmental parameters, problems and mitigatory measures and identification of agencies responsible for it is addressed in the CEMP.