

EXECUTIVE SUMMARY

FOR

PROPOSED REDEVELOPMENT OF TRANSIT CAMP WITH TRANSIT, EWS & MIG TYPES TENEMENTS

ON LAND BEARING AT S.NO.113 (PT), CTS NO. 356 A (MHADA LAND)
KANNAMWAR NAGAR, VIKHROLI (E),
MUMBAI, MAHARASHTRA

PROJECT PROPONENT:

**MUMBAI HOUSING AND AREA DEVELOPMENT BOARD
(A MHADA UNIT)**

GRIHA NIRMAN BHAVAN, KALANAGAR,
BANDRA (E), MUMBAI- 400 051.

EXECUTIVE SUMMARY

1. INTRODUCTION

Mumbai Housing and Area Development Board (A MHADA Unit) has proposed redevelopment of Transit Camp with Transit, EWS & MIG Types Tenements on land bearing at S.No.113 (pt), CTS No. 356 A (MHADA Land) Kannamwar Nagar, Vikhroli (E), Mumbai, Maharashtra. The proposed project is a construction project which comprised of residential tenements and shops. This project contain environmental features like treatment of sewage through Sewage Treatment Plant and its reuse, Solid Waste Management, Rainwater Harvesting System, use of solar power and landscaping etc.

The land falls under CRZ-II. The project comes under the purview of the amended CRZ notification of the Ministry of Environment and Forest dated 1st January 2011 requires CRZ Clearance. In this regard, the proposed project is recommended for CRZ clearance in the 120th meeting of MCZMA held on 28th July, 2017.

The said project for public consultation is carried out under item no. 8 (v) as per the revised Coastal Regulation Zone (CRZ) amendment dated 6th January, 2011.

2. NEED OF PROJECT

The buildings in CRZ II area are in dangerous and dilapidated conditions. The redevelopment of these transit buildings is necessary and is permissible as per Notification on CRZ regulations issued on 6th January 2011.

3. IDENTIFICATION OF PROJECT PROPONENT

Maharashtra Housing & Area Development Authority is a State level Housing Authority having jurisdiction over entire state of Maharashtra, India. It is the statutory duty of MHADA to construct and make available houses to the families belonging to various income groups of the society at affordable rates. Housing or shelter is considered to be the important basic need of the human being. Thus the construction of houses under different categories with respect to the income limits is the main function of MHADA. Besides this, it undertakes development of the plots by providing infrastructure such as roads, water supply, drainage arrangement, electrification and other social facilities like commercial complexes,

clinics, SamajMandir hall, Balwadi. In addition to this it also carries out the function as a "Special Planning Authority" to develop new townships and other relevant developments.

4. BRIEF DESCRIPTION OF THE PROJECT

The proposed project is redevelopment of Transit Camp with Transit, EWS & MIG Types Tenements on land bearing at S.No.113 (pt), CTS No. 356 A (MHADA Land) Kannamwar Nagar, Vikhroli (E), Mumbai. The entire project is divided into Pocket I & Pocket II which further divided into CRZ and non CRZ area. Details are as follows;

TABLE 1: PROJECT DETAILS

Sr. No.	Particulars	Details			
		Pocket-I		Pocket-II	
		Non CRZ Area	CRZ Area	Non CRZ Area	CRZ Area
1	Total plot area (sq.mt)	26,918.53	28345.09	24,629.27	7,195.22
2	FSI area (sq.mt)	53718.96	75470.14	61848.70	20380.53
3	Non FSI area (sq.mt)	6694.06	11461.52	43132.10	15159.48
4	Total Built Up area (sq.mt)	60413.02	86931.66	104980.80	35540.01
		147344.68		140520.81	
5	Total wings (nos.)	22	15	21	3
6	Residential tenements(nos.)	1320	1228	1616	337
7	Shops	53	12	133	Nil
8	RG area provided (sq.mt)	4237.91		2844.40	
9	Parking provided (nos.)	677		573	

The proposed infrastructure works viz., water supply from Municipal Corporation of greater Mumbai (MCGM), electric supply from M/s. Reliance Energy Pvt. Ltd, sewage treatment through MBBR Technology, storm water drainage system, rain water harvesting system, firefighting, energy conservation measures, traffic management and communication networks etc. will be provided.

The total cost of the project is INR 789 Crores.

5. SITE LOCATION

The site under reference is situated at S.No.113 (pt), CTS No. 356 A (MHADA Land) Kannamwar Nagar, Vikhroli (E), Mumbai, Maharashtra. The proposed site is well approach to Eastern Express

Highway. The site falls in Jurisdiction of MCGM and situated in residential commercial zone as per sanction development plan of MCGM.

The Pocket I site lies between Latitude 19°7'18.45''N & Longitude 72°56'26.12''E. The Pocket II site lies between Latitude 19°7'3.86''N & Longitude 72°56'27.08''E.

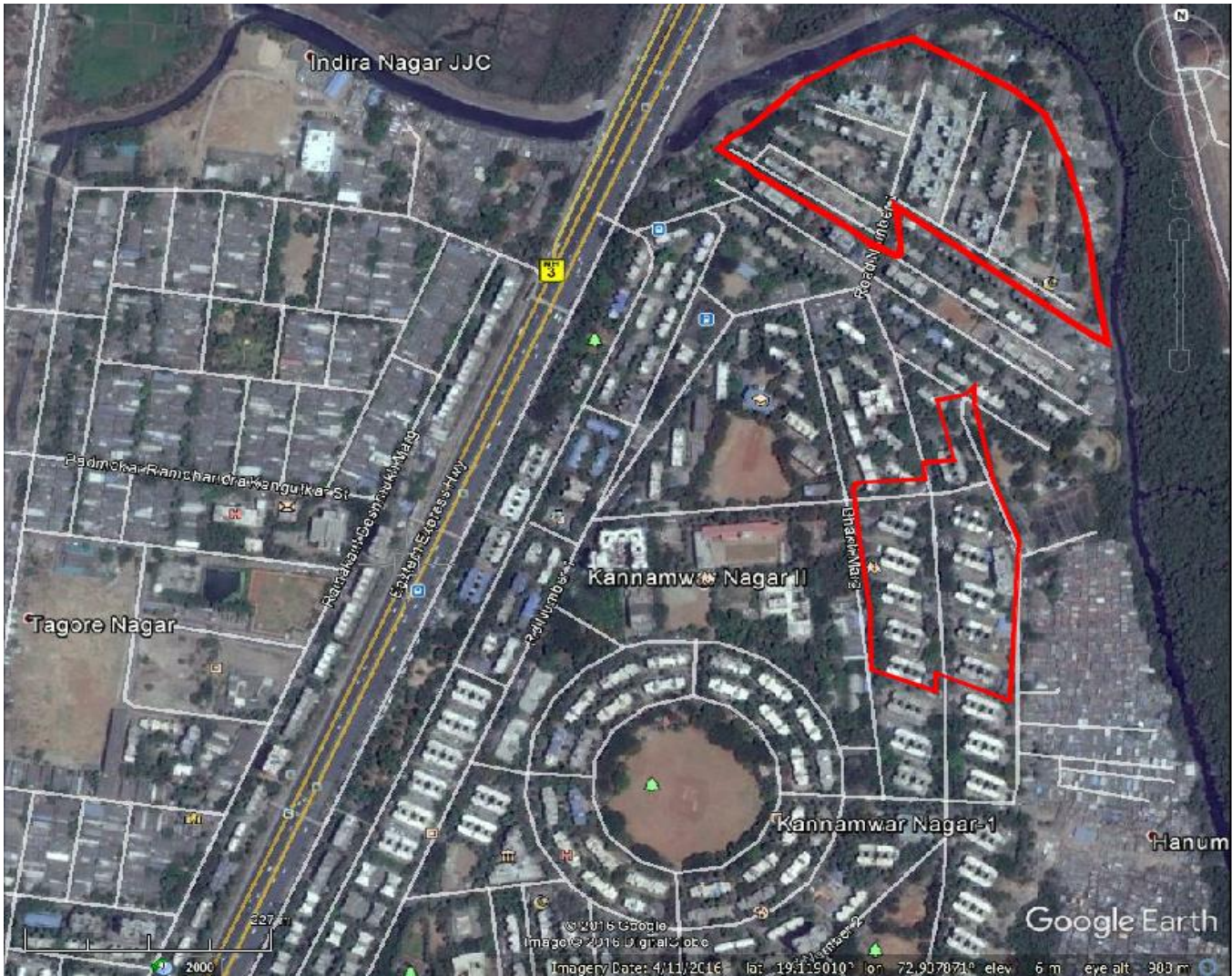


FIGURE 1: GOOGLE IMAGE

TABLE 2: SITE CONNECTIVITY

Sr. No.	Site	Name	Distance (km)
1	Nearest Railway Station	Vikhroli railway station	1.3
		Kanjurmarg railway station	4.4
2	Nearest Bus Depot	Kannamwar depot bus stop	1.9
3	Nearest Airport	Chhatrapati Shivaji International Airport	13.7

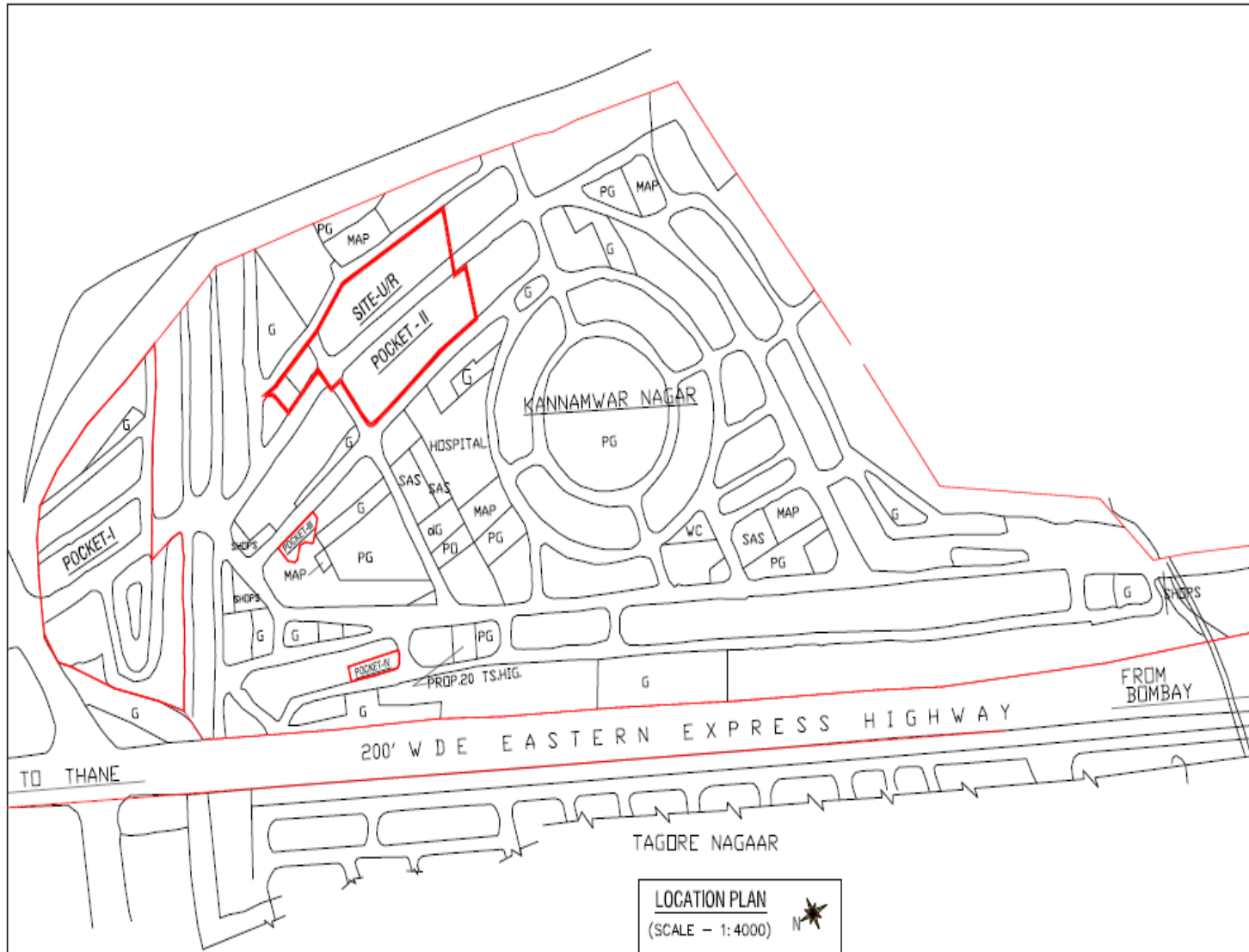


FIGURE 2: LOCATION PLAN

6. CRZ STATUS OF THE PROJECT

The project land under reference falls under CRZ-II.

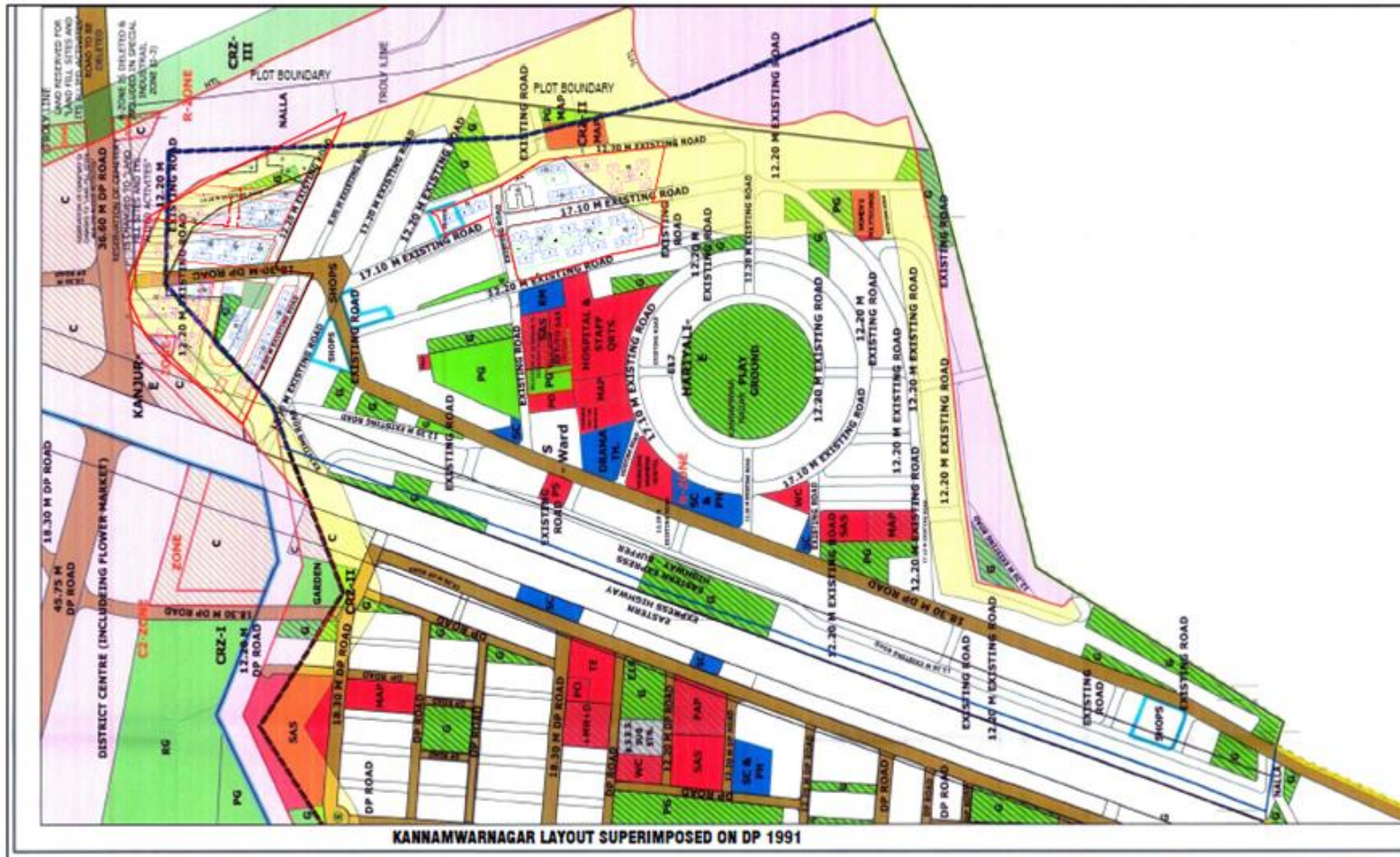


FIGURE 3: CRZ STATUS

7. PROJECT LAYOUT PLAN



FIGURE 4: LAYOUT PLAN - POCKET I

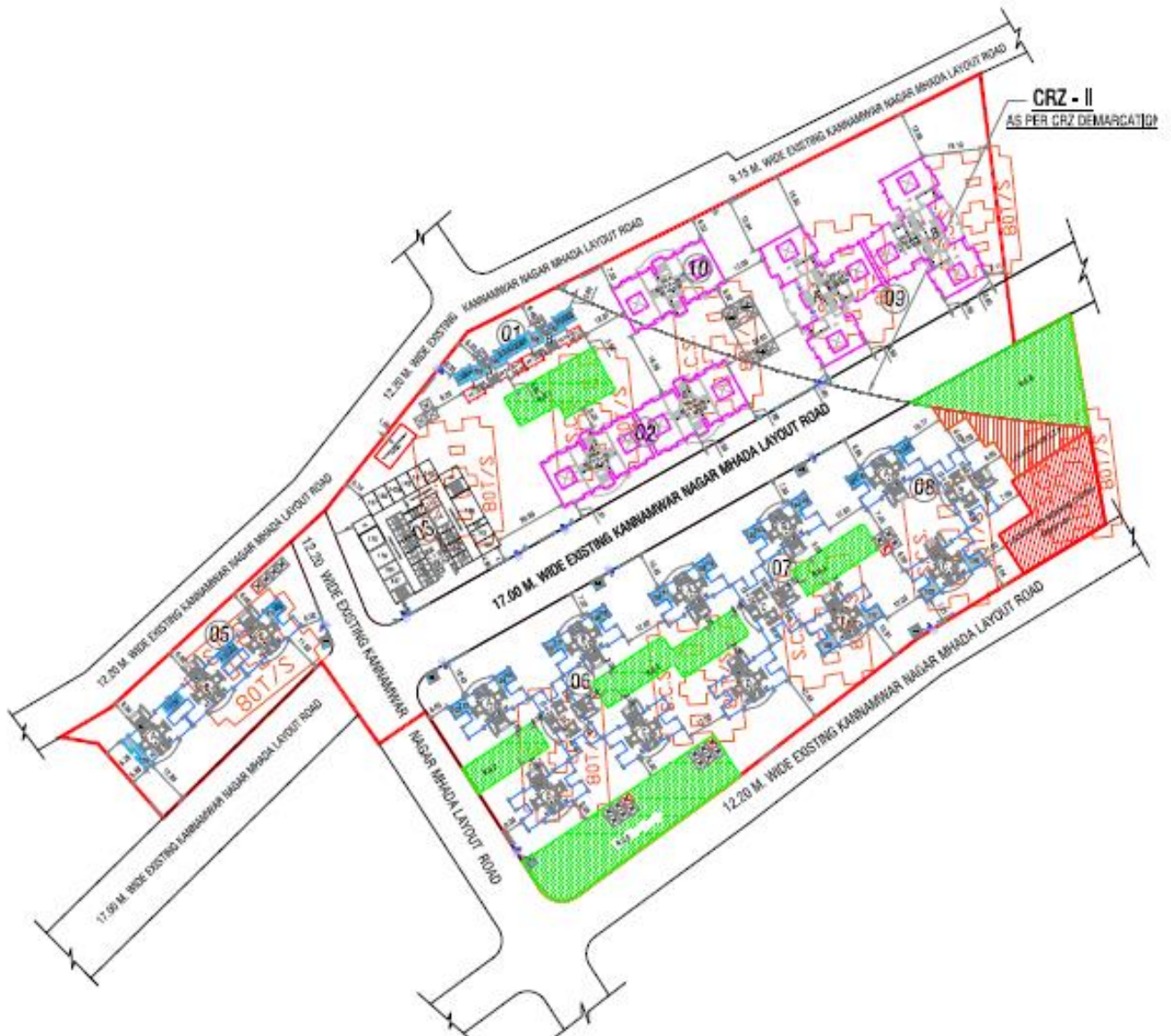


FIGURE 5: LAYOUT PLAN - POCKET II

8. IMPORTANT PROJECT COMPONENT

8.1 Water Requirement and Supply Source

The water requirement during construction phase will be supplied by tanker only for approximately few months. After commissioning of project the requirement will go up as the development takes place. The total water requirement during operation phase of project for pocket I and pocket II will be 3099 kld. Out of which fresh water requirement is 2036 kld and recycled water requirement is 1063 kld. The fresh water will be supplied from Municipal Corporation of Greater Mumbai whereas treated water from sewage treatment plant will be used for flushing and gardening purpose.

Details for Pocket I and II are as under;

TABLE 3: TOTAL WATER REQUIREMENT FOR POCKET I AND POCKET II

Particulars	Pocket-I		Pocket-II	
	Non CRZ Area	CRZ Area	Non CRZ Area	CRZ Area
Domestic	597 kld	553 kld	735 kld	151 kld
Flushing	301 kld	277 kld	374 kld	76 kld
Total	898 kld	830 kld	1109 kld	227 kld
Gardening	21 kld		14 kld	
Total	1749 kld		1350 kld	
Total (Pocket +Pocket II)	3099 kld			

TABLE 4: WATER BALANCE STATEMENT FOR POCKET I AND POCKET II

Sr. No.	Component	Occupant Load (nos.)	Criteria For Water Requirement		Water Requirement (lit/day)		Total (lit/day)
			Domestic	Flushing	Domestic	Flushing	
A	Pocket -I						
1	Non CRZ Area						
a	Residential Tenements (1320 nos.)	6600	90	45	594000	297000	891000
b	Shops (53 nos.)	159	20	25	3180	3975	7155
Total					597180	300975	898155
2	CRZ Area						
a	Residential Tenements (1228 nos.)	6140	90	45	552600	276300	828900
b	Shops (12 nos.)	36	20	25	720	900	1620
Total					553320	277200	830520
Total (1 +2)					1150500	578175	1728675
3	Gardening		4237.91 sq.mt	5 lit/sq. mt.	21189		21189
Total.....A							1749864 (1749 kld)

B	Pocket -II						
1	Non CRZ Area						
a.	Residential Tenements (1616 nos.)	8080	90	45	727200	363600	1090800
b	Shops (133 nos.)	399	20	25	7980	9975	17955
Total					735180	373575	1108755
2	CRZ Area						
a	Residential Tenements (337 nos.)	1685	90	45	151650	75825	227475
Total					750830	499400	1336230
3.	Landscaping		2844.40 sq.mt	5 lit/sq. mt.		14222	14222
TotalB							1350452 (1350 kld)
TotalA+B							3099 kld

8.2 Sewage Treatment and Disposal Facility

Sanitary wastewater will be generated from the proposed project. The total waste generated will be will be treated in sewage treatment plant based on MBBR technology. The treated water from sewage treatment plant will be reclaimed and used for flushing and gardening purpose that will result in minimum consumption of fresh water. The balance water will be disposed to sewer drains.

Details for Pocket I and Pocket II are as under;

TABLE 5:SEWAGE GENERATION TREATMENT AND DIPSOAL DETAILS FOR POCKET I AND POCKET II

Components	Pocket I	Pocket II
Sewage Generation	1382 kld	1068 kld
STP Capacity	1400 kld	1100 kld
Recycled Water from STP	1243	961
Sludge Generated	138	107
Excess water dispose to drain during non-monsoon	644	497
Excess water dispose to drain during monsoon	665	511

8.3 Storm Water Drainage System

There will be generation of roof top and surface run-off from the premises during monsoon season. The project will have proper storm water drainage facility. All along the road, storm water drains would be provided to collect and carry rain water within the premises during rains for suitable disposal. They would be adequately sized to prevent over flooding of the site. Storm water drains will be collect through network of storm drains from garden, parking areas, paved, unpaved area and roadways.

8.4 Rainwater Harvesting System

The water from terrace will be diverted through recharging pits and excess water will be passed through the proposed storm water drainage facility. Storm water from plot area will be collected in the rainwater harvesting pits provided for this purpose. Total 7 nos. of rainwater harvesting pits will be provided.

8.5 Power Requirement Supply Source

The power requirement during construction period will be about 1000 kW, which will be temporary nature. The power supply will be from M/s. Reliance Energy Pvt. Ltd. The power requirement during operation period for total connected load for pocket I and pocket II will be 9749.84 kW and total maximum demand load will be 5849.91 kW.

8.6 DG SET DETAILS

There is also a provision of D.G. sets, which will be used in emergency. 4 DG sets of capacity 250 KVA will be provided for Pocket I and 8 DG sets of capacity 250 KVA will be provided for Pocket II.

8.7 Energy Saving Measures

The following energy saving measures are proposed in the project.

- Use of T-5 28 watt Tube Lights instead of Tube Lights of 40 watts
- Lifts with use of VVVF Drive.
- Timer for switching on /off of common area lights.
- Alternate circuits for common area lights (through timer).
- Common lighting proposed on solar power.

8.8 Internal Road Network and Vehicle Parking

The layout plan of the proposed site has developed an internal road network in such a manner that it will not only cater to proposed residential building but also integrate the whole area of built masses and open spaces with a pedestrian dominated movement pattern. The entry points to the buildings have been worked out keeping in view the desired movement of vehicles. The total proposed parking for Pocket I is 677 nos. and Pocket II is 573 nos.

8.9 Green Belt Development

It is proposed to develop green belt area with various types of trees, plants etc. RG area details of pocket I and Pocket II is as follows;

TABLE 6: R.G. STATEMENT

Sr. No.	Particulars	Pocket I	Pocket II
1.	Net Plot Area	51084.50 sq.mt	31824.50sq.mt
2.	Required RG Area (8% Physical)	4086.76 sq.mt	2545.96 sq.mt
3.	Provided RG Area	4237.91 sq.mt	2844.40 sq.mt
4.	No. of Trees	639 nos.	398 nos.

8.10 Solid Waste Management

The total solid waste generated during construction phase includes excavated materials and top soil. Excavated materials will be used as filling material and leveling and remaining material will be disposed by covered trucks to the authorized sites through contractors. Top soil will be used for gardening.

The total solid waste generated during operation phase will be purely domestic and it can be categorized in to biodegradable and non- biodegradable solid waste. The total solid waste generated of pocket I will be 6416 kg/day and total solid waste generated of pocket II will be 4984 kg/day. Solid waste details of pocket I and Pocket II is as follows

TABLE 7: SOLID WASTE QUANTITY DETAILSFOR POCKET I AND POCKET II

Particulars	Pocket I		Pocket II	
	Non CRZ Area	CRZ Area	Non CRZ Area	CRZ Area
During Operation Phase				
Biodegradable Waste	1991 kg/day	1844 kg/day	2454 kg/day	506 kg/day
Non-Biodegradable Waste	1347 kg/day	1234 kg/day	1686 kg/day	338 kg/day
Total	6416 kg/day		4984 kg/day	
Total (Pocket I +Pocket II)	11400 kg/day			

TABLE 8: SOLID WASTE GENERATION CALCULATION FOR POCKET I AND II

Sr. No.	Component	Occupant Load (nos.)	Criteria for Solid waste Generation (Kg/day)		Solid Waste Generation (Kg/day)		Total (Kg/day)
			Wet Waste	Dry Waste	Wet Waste	Dry Waste	
A	Pocket -I						
1	Non CRZ Area						
a	Residential Tenements (1320 nos.)	6600	0.300	0.200	1980	1320	3300
b	Shops (53 nos.)	159	0.075	0.175	11	27	38
Total					1991	1347	3338
2	CRZ Area						
a	Residential Tenements (1228 nos.)	6140	0.300	0.200	1842	1228	3070
b	Shops (12 nos.)	36	0.075	0.175	2	6	8
Total					1844	1234	3078
Total.....A					3835	2581	6416
B	Pocket -II						
1	Non CRZ Area						
a.	Residential Tenements (1616 nos.)	8080	0.300	0.200	2424	1616	4040
b	Shops (133 nos.)	399	0.075	0.175	30	70	100
Total					2454	1686	4140
2	CRZ Area						
a	Residential Tenements (337 nos.)	1685	0.300	0.200	506	338	844
TotalB					2959	2023	4984
TotalA+B					6795	4605	11400

The waste segregation or sorting at its source will be practiced in order to encourage reuse/ recycling and to minimise the negative effects of the waste and increase its economic value.

- Separate bins will be placed to collect bio degradable and non – biodegradable waste. In the parking place and other open areas also dedicated bins will be placed.
- Daily collection of waste will take place from all the bins.
- Daily sweeping and collection of waste from roads and other common facility area would also be done daily in the morning by the same operator.
- The biodegradable waste will be processed in the organic waste converter for manure gardening and the non-biodegradable waste will be handed over to authorized agency/recycler

8.11 Manpower

The total manpower required during construction period will be about 200 workers, and other administrative staff will be about 50 nos.

8.12 Project Cost

The estimated project cost of the project is INR 789 Crores.

9. BASELINE ENVIRONMENT STUDY

The baseline environment studies have been carried out using primary and secondary data required for the project.

9.1 Ambient Air Quality

The baseline scenario is established based on the micrometeorology and ambient air quality monitoring carried out in the study area.

The average temperature recorded varied between 24°C to 33 °C. The average relative humidity was in the range of 46% to 68.0%.

To establish the baseline scenario of ambient air quality in the study area, ambient air quality monitoring was carried out at 8 locations. The results of ambient air quality monitoring presented in the Table 9.

TABLE 9: AMBIENT AIR QUALITY MONITORING

Parameters Station Code	Location								Limits
	Project Site 1	Project Site 2	Near Utkarsh Bal Mandir	Near Tagor Nagar	Near Creek Side Colony	Near Veekay English High school	Near Adarsh Nagar	Near Ishwar Kund	
Sulphur Dioxide $\mu\text{g}/\text{m}^3$	21.0	20.5	20.35	22.53	21.08	18.9	21.60	20.35	80
Nitrogen Dioxide $\mu\text{g}/\text{m}^3$	20.5	21.3	21.63	22.63	22.61	20.3	25.4	21.07	80
Particulate Matter (10) $\mu\text{g}/\text{m}^3$	62.0	60.4	70.83	93.33	92.71	61.7	64.0	66.67	100
Particulate Matter (2.5) $\mu\text{g}/\text{m}^3$	40.5	38.9	45.83	42.69	54.17	39.7	42.9	41.67	60
Ozone $\mu\text{g}/\text{m}^3$	24.3	25.5	24.53	27.51	24.53	23.6	22.8	28.92	100

Lead $\mu\text{g}/\text{m}^3$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1
Carbon Monoxide mg/m^3	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5	<0.5	<0.4	2
Ammonia $\mu\text{g}/\text{m}^3$	5.36	4.33	6.67	6.59	7.59	4.33	5.78	7.80	400
Benzene $\mu\text{g}/\text{m}^3$	<2.0	<2.0	<2.1	<2.1	<2.1	<2.0	<2.0	<2.1	5
Benzo(a)pyreneng/ m^3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1
Arsenic ng/m^3	<0.5	<0.5	<0.42	<0.42	<0.42	<0.5	<0.5	<0.42	6
Nickel ng/m^3	<0.5	<0.5	<0.91	<0.52	1.04	<0.5	<0.5	<0.82	20

All the other parameters are well below the permissible limits. The said project incorporates all the mitigation measures during the construction and operational phase thereby not deteriorating the existing air quality.

9.2 Noise Level

Hourly noise meter readings for the day time & night time noise levels were estimated at 8 locations. Equivalent noise levels calculated for various locations are given in Table 10

TABLE 10: NOISE LEVEL AT ALL LOCATIONS IN THE STUDY AREA

Location	Leq	
	Day	Night
Project site 1	58.90	48.36
Project site 2	57.62	49.35
Near UtkarshBalMandir	64.75	57.64
Near Tagor Nagar	64.13	57.69
Near Creek Side Coloney	65.9	59.78
Near Veekay English High school	60.04	55.18
Near Adarsh Nagar	60.49	57.69
Near IshwarKund	62.63	57.68

9.3 Water Quality

The nearest water body located close to the project site is the Thane Creek. Water sampling has been done to determine the existing quality of water around the project area and also to assess the impact due

to proposed project. Sampling has been done for physical, chemical and bacteriological parameters. The results are presented in the Table 11.

TABLE -11 ANALYSIS OF SURFACE WATER SAMPLES

Sr. No.	Parameters	Analysis Result
1	pH	8.10
2	Dissolved oxygen	4.95
3	Phosphates	0.84
4	Nitrate	1.53
5	Suspended Solids	892
6	Turbidity (NTU)	26
7	Silicate (SiO ₄ – Si)	31.1
8	TDS	18,700
9	Hardness	1,961
10	Calcium (Ca ²⁺)	784.4
11	Magnesium (Mg ²⁺)	478.4
12	Iron	0.79

All Parameters except pH and Turbidity in mg/L.

The water quality data indicates high level of dissolved salts clearly indicating tidal influence in the waters. The dissolved oxygen content is in the low - medium range (4-5 ppm). The suspended solids and turbidity of the water is high due to dredging activity in the creeks. The maximum DO is observed. Phosphate and Nitrate found high respectively.

Since the main source of water supply in the study area is provided through Municipal Corporation of Greater Mumbai water supply network. The fresh water requirement for domestic purposes will be supply by MCGM and recycled water from STP will be used for flushing and gardening purposes within project premises. The tanker water will be used during construction phase of the project. However, upcoming project will not affect these water bodies directly or indirectly.

9.4 Soil Quality

The subsurface profiles generally consist of fill overlying marine clay underlain by Bedrock.

9.5 Ecology and Biodiversity

The vegetation in the proposed site is poor. There are no sensitive flora and fauna in the project area.

The project being a construction based project, the impact of the project will be limited to the actual proposed site. The existing flora and fauna will not be adversely affected as the said project does not envisage any kind of air emissions, ground water pollution and noise pollution due to the project activities.

9.6 Socioeconomic Status

The infrastructure facilities in the study area are adequately available and the proposed project will not pose any additional burden on it. The study area comprises of railway stations, namely Vikhroli and Kanjurmarg railway station, nearest bus stop is Kannamwar nagar bus depot, residential & commercial complexes, schools etc. The study area also has adequate water supply from MCGM, and storm water drainage system.

The economy of the study area is fair and has proper impact on the population. Thus in totality the study area has a fair socio-economic status and it may go-up with such a project activity in the area.

10. ENVIRONMENTAL MANAGEMENT PLAN

TABLE 12: ENVIRONMENTAL MANAGEMENT PLAN-CONSTRUCTION PHASE

Sr. No.	Components	Impact Resources	Mitigation Measures
1	Air	<ul style="list-style-type: none"> • Construction activities • Transportation of construction materials • Use of DG set in case of emergency 	<ul style="list-style-type: none"> • Barricading sheets of adequate height shall be provided all around the project site during construction phase of the project. • Truck carrying raw materials will be covered by use of covering sheets so that no dust particles generated. • All material storages adequately covered to avoid dust emission. • Precautions will be taken to reduce the impact of the vehicular movement by trying to avoid the vehicular trips during peak hours. • Proper measures such as sprinkling of water on the ground and construction will be done at regular intervals to reduce the spreading of the dust particles. • DG emissions will be discharge through stack of adequate height as per CPCB. D.G sets will be enclosed in acoustic enclosures to avoid noise pollution.

			<ul style="list-style-type: none"> • Adequate parking provision and proper traffic arrangement for smooth traffic flow. • Tree plantation.
2	Noise	<ul style="list-style-type: none"> • Construction activities • Vehicular movement • Use of DG set 	<ul style="list-style-type: none"> • Proper maintenance of vehicular traffic in and around the project site. • Signboards along the approach roads to avoid unusual use of horns and also for avoiding idling noise. • DG set with acoustic enclosure shall be provided • Work carried out only during day time. • Ear plugs and ear muffs for workers.
3	Water	<ul style="list-style-type: none"> • Use of tanker water for construction purpose. 	<ul style="list-style-type: none"> • Proper management of channelization of water to avoid water logging at site. • No run-off water during construction phase will go outside the project area and will not enter in to the surrounding environment. • Suitable barrier will be used to protect the adjoining water body from the falling earth materials and dust raised to avoid sedimentation • Proper construction methodologies will be followed. • Sanitary and hygienic measures will be provided. • Adequate drinking water and sanitary facilities will be provided for construction workers at the site. • Provision of toilet for workers.
4	Land	<ul style="list-style-type: none"> • Construction activities • Land cleaning 	<ul style="list-style-type: none"> • Minimum cutting and filling involved in the project. • Preservation of top soil for gardening.
5	Solid Waste	<ul style="list-style-type: none"> • Construction waste and excavation materials 	<ul style="list-style-type: none"> • Provision of segregation and sorting of construction materials at site. • Excavated soil and rubble will be used as filling materials and levelling and remaining materials will be disposed by covered trucks to the authorized sites through contractors. • Use of excavated materials for levelling and backfilling.
6	Ecological Aspects	<ul style="list-style-type: none"> • Site cleaning during construction phase. 	<ul style="list-style-type: none"> • Tree plantation • Increase vegetation cover if possible.
7	Socio Economic Environment	<ul style="list-style-type: none"> • Workers at site during construction phase 	<ul style="list-style-type: none"> • Sourcing of construction materials from local vendors. • Preference for local labour for employment

			<ul style="list-style-type: none"> • Adequate drinking water facilities for workers. • Provision of toilets for workers. • Personal protective and safety equipments for workers.
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TABLE 13: ENVIRONMENTAL MANAGEMENT PLAN-OPERATION PHASE

Sr. No.	Components	Impact Resources	Mitigation Measures
1	Air	<ul style="list-style-type: none"> • Vehicular movement • Use of DG set (in case of emergency) 	<ul style="list-style-type: none"> • Adequate parking provision and proper traffic arrangement for smooth traffic flow. • Provision of separate entry and exit. Vehicular movements, signage's showing no parking area, way to parking, entry and exit will be displaced properly. • Use of CPCB approved, low sulphur fuel DG sets. • Proposer maintenance of DG sets shall be done. • Landscaping and tree plantation.
2	Noise	<ul style="list-style-type: none"> • Vehicular movement • Use of DG set (in case of emergency) 	<ul style="list-style-type: none"> • Adequate parking provision with signage's for proper traffic movement. • Well organized traffic management plan for smooth flow of vehicles to avoid congestion and honking. • Awareness in the people to avoid the honking. • Signboards along the approach roads to avoid unusual use of horns and also for avoiding idling noise. • Provision of DG set with acoustic enclosure for noise control. • Tree plantation which will act as external noise barrier for the residents.
3	Water	<ul style="list-style-type: none"> • Wastewater generation from the project. • Storm water runoff 	<ul style="list-style-type: none"> • Provision of water saving practices. • Water conservation using water efficient appliances. • Provision of sewage treatment plant based on MBBR technology. • Treated water from sewage treatment plant will be reclaimed Awareness in the residents about effective treatment of recycling of treated waste water and rainwater harvesting system. • Storm water drainage will be properly

			<ul style="list-style-type: none"> maintained. Provision of rainwater harvesting system
5	Solid Waste	<ul style="list-style-type: none"> Solid waste generation 	<ul style="list-style-type: none"> Solid waste generated from the flats will be stored in different colored bins and to be collected and segregated at source as biodegradable & non-biodegradable waste before transporting to the processing unit. The segregated organic waste will be transported to the processing unit and treated by Organic Waste Converter. The non-biodegradable waste will be segregated into recyclable and inert waste. The recyclable waste will be handled over to recyclers and while other inert waste will be handled over to authorized vendors for their disposal. Awareness campaign for residents for effective solid waste management and segregation practices.
6	Ecological Aspects	<ul style="list-style-type: none"> Tree plantation
7	Socio Economic Environment	<ul style="list-style-type: none"> Environmental and safety awareness programs for residents. Gardening job to locals

11. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) is aimed at mitigating the possible adverse impact of a project and ensuring the exiting environmental quality. The most reliable way to achieve the above objective is to incorporate the management plan into the overall planning and implementation of the project. The cost estimates for implementing Environmental Management Plan is given in Table below.

TABLE 14: EMP COST DURING CONSTRUCTION PHASE

Sr. No.	Particulars	Capital Cost (Lakhs)
1.	Site Safety (Barricading& dust suppression etc)	5
2.	Environmental Monitoring (Air, Noise, Water, Soil)	7
3.	Mobile Toilets	15
4.	Occupational Health (Medical Checkup, PPE & First Aid Kit)	6
Total		33

TABLE 15: EMP COST DURING OPERATION PHASE

Sr. No.	Particulars	Capital Cost (Lakhs)	O & M Cost (Lakhs)
1.	Sewage Treatment Plant	450	85
3.	Rain Water Harvesting System	14	2
4.	Solid Waste Management (OWC, Manpower, colored dustbins etc.)	125	30
5.	Energy Saving Measures	68.64	3.43
6.	Green Belt Development	30	5
Total		687.64	125.43

12.PROJECT BENEFITS

- The proposed redevelopment will provide safe residential accommodation to the people who are currently living in dilapidated buildings.
- It will provide employment opportunities to the local people in terms of labour during construction and services personnel during operational phase.
- The surrounding area will be developed from residential point of view.
- Influx of people is expected which will bring cultural mix.
- To offer an environment of natural and calm surrounding
- Proper designing of internal road network
- To implement all necessary environmental rules and regulations and finally
- To offer important policies of water conservation through rain water harvesting.
- Good sanitation facilities
- Adequate parking facilities to the tenements.
- To increase environmental aesthetic value with green belt, landscaped gardens, etc.
- Solid waste management system will be introduced which will help to improve the living conditions in and around the area.
- Plantation of fruit bearing trees, flowering trees will add beauty in the area also will attract the birds which will be the added advantage to the ecosystem.

13.CONCLUSION

The proposed project will have no adverse impact on the environment and surrounding areas of the project. All necessary pollution control measures will be planned for the proposed project and these are expected to meet the requirement of environment authorities.