

Ref.: RCCL/CC/107/2017-18

5th December 2017

The Member Secretary,
Expert Appraisal Committee (2) in the Infrastructure Sector
Ministry of Environment Forest and Climate Change,
Indiraparyavaran Bhavan, Jor Bagh Road,
New Delhi.

Subject : Regarding Environmental Clearance for our proposed Special Township Project Riverview City at Village – Kadamwakwasti, Tal – Haveli, Dist. Pune, Maharashtra by M/s. Riverview City Constructions Ltd.
Reference : Item No. 24.3.7 of 24th EAC Meeting
File No. 21.107/2017-IA-IA-III

Dear Sir,

This has reference to the above subject and the further discussions we had during the above mentioned meeting for our project. We wish to submit the following points in this regards;

Point No. (i):

Letter of permission from Indian Oil Corporation (IOC)/ Government with reference to the location in the vicinity of the I.O.C. installations.

Clarification/ Reply:

The nearest storage tank facility of **IOCL** is for Diesel and Petrol stock. The guidelines issued by CCOE which mentions to maintain the distance of **15 meters** from the storage shed for Petroleum Class A is strictly followed by the project. Relevant extract of work manual published by **PESO** is enclosed as annexure 01.

The nearest proposed building/ structure from the boundary of IOCL is **23.19 meters** (As per Standardized development control and promotion regulations for regional plan in Maharashtra, *DCPR RP*, attached with annexure) and the actual physical distance from the storage tank is **53.52 meters**. The plan showing the relevant distances is enclosed as annexure 02.

We have already approached IOCL for the NOC. The acknowledgement copy of the same is enclosed as annexure. We are also submitting an affidavit mentioning "*The proposed project location, both in terms of construction and ownership of land conforms to the guidelines of PESO regarding distance from Petroleum Storage installations*" as annexure 03.

Riverview City Constructions Ltd.

Registered Office :- Megaspaces, 13 Sholapur Bazar Road, Off East Street, Pune - 411001, India.
Tel :- 020-26342797, 26341940 Email : magari@bom5.vsnl.net.in Fax : 020-2634554

CIN : U45202PN2007PLC129440

Point No. (ii):

Details of the agreement of land and revenue sharing plan as agreed between the Developer and the farmers.

Reply:

Submitting herewith the working model for this township project:

This project is an **Integrated Township Project sanctioned under the State Integrated Township Policy by an amendment made in the Maharashtra Regional & Town Planning Act 43 of 2014** under for which we have obtained the **Locational Clearance from Urban development department, Maharashtra State**. It mentions the change in land use from **Agricultural Land to Integrated Township Project**.

Copy of Township Policy and Copy of the Locational Clearance is enclosed as Annexure 04 and 05 respectively.

The land is procured under the principal of **land pooling**. The farmers have contributed their respective lands together under **joint development agreement** with their own promoted company. Wherein every single **landowner is a stakeholder in direct proportion** to their land holding.

The value of the land is determined as a percentage of sale proceeds as and when occurred & distributed to all land owners in proportion of their land holdings. We as project proponent have already completed one Special Township Project with the name of **"Magarpatta City"** having total land area of 450 Acres and another ongoing Special Township Project with the name of **"Nanded City"** having total land area of 700 Acres on the similar pattern.

A draft of the Agreement between Riverview City Constructions Ltd. and Farmers is enclosed as Annexure 06.

Point No. (iii):

Necessary approval/ NOC from Railway Department shall be submitted.

Clarification/ Reply:

The project proponent would like to clarify herewith that no development or construction of any kind of structures has been planned within **30 meters** of the railway boundary.

Submitting herewith the plan showing the **30 meter setback** margin left from the railway boundary as Annexure 07. We also refer the DCPR for regional planning area **Clause No 6.2.12 and 11.4**, which clearly states that NOC from Railway Department is **not mandatory** if no construction of structures is planned to be built within **30 meters** of the railway boundary. The relevant extract is enclosed as Annexure 08

We have also applied to Central Railway for the NOC. They have issued us the letter stating "Railway issues 'No Objection Certificate' to the owners for the erection of their buildings / structures in the vicinity of railway land within 30m (100ft) from the existing railway boundary with certain conditions'. Copy of the same is enclosed as Annexure 09.

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Point No. (iv) :

A revision in Form 1 to include the proposal for Bio Medical waste Disposal also which have been subsequently proposed along with an impact assessment.

Clarification/ Reply:

Submitting herewith the Form 1 and 1 A along with the necessary annexure by updating the information related to Biomedical Waste and other information as per the EAC recommendations. Enclosed as Annexure 10.

Point No. (v):

Documents as regards land use permissions and conformity to the land acquisition act.

Clarification/ Reply:

The **Locational Clearance** showing the permission from **Urban development department, Maharashtra State** for the usage of land for Special Township Projects has been achieved. The letter for the same has been attached in the annexure 05.

Point No. (vi)

Location of the S.T.P. and an Environmental Impact of the STP on nearby areas.

Clarification/ Reply:

Proposed Riverview City Township will have a total Sewage treatment plant capacity of **26110 m³/day**. Treated water generated from STP's will be **23593 m³/day**.

Sewage Treatment plants are located at **4 different locations** considering the existing contour levels. As per guidelines of Pollution control board sewage treatment plants are proposed well beyond the High Flood line after **shifting one of the STP away** from the river bank. Sewerage layout is enclosed as Annexure 11.

Treated water from sewage treatment plant will be used for Flushing, Landscaping, HVAC, Dust suppression & Irrigation purpose, hence no excess treated water will be discharged into the river. Digested sludge from Sewage treatment plant will be used as manure for landscaping and gardening. All the excess treated water will be consumed within the project and no environment impact on surrounding areas has been anticipated.

Point No. (vii):

NOC from the District Administration for construction of Crematorium at the Project Site.

Clarification/ Reply:

We refer the **Integrated township policy note 7.3 Mandatory town level amenity, Point (g)** which mentions *"If the facility of Cremation Ground/ Burial Ground is available in the village where the Township is located in such case these requirements need not be insisted subject to NOCs of respective Gram Panchayat"*. Relevant extract is enclosed as annexure 12.

In our case we have obtained the permission from Grampanchayat Kadamwakwasti for using Cremation Ground of the village for our project. Copy of the same is enclosed as annexure 13.

Hence **now Crematorium will not be a part of our project**. Revised plan showing the same is enclosed as annexure 14

Point No (viii):

Clarification on the remarks of Irrigation Department letter dated 4th May 2010

Clarification/ Reply:

We have obtained the site specific remarks from the irrigation department enclosed as Annexure 15 along with its translation, wherein **Paragraph 2 line 4** they have clearly mentioned that **"the area is not coming within 500 meter distance from Maximum Flood line level of the reservoir of Water Resources Department's large irrigation project."** They have not mentioned any restrictions on the development of the project. We undertake to obey the conditions stipulated in the same.

We also refer to the clause No. 7.1.3 of Annexure B of Integrated township Policy, enclosed as Annexure 13, which mentions *"No construction shall be permitted on the lands within the HFL. Also on land in Hill Top & Hill Slope Zone and lands having slope equal to or more than 1:5 in the said Project, whether specifically marked as such on the Regional Plan or not. No development of any sort and activity involving cutting / leveling / filling shall be permissible on such lands. Provided that, it shall be permissible to use such lands for Plantation, Park, Garden purposes, Access road to township development with minimum cutting and other users as otherwise permissible in respective Regional Plans and the FSI of such lands shall be permissible to the extent as prescribed in Clause 7.2"*. Relevant extract is enclosed as annexure 16.

Being a Special township Project we are abided by this condition and will follow all the regulations laid down.

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Point No (ix):

An affidavit from the Board of directors that:-
May, 2010.

- a. The proposed location conforms to the directions of the NGT/other Honourable Courts as regards distance from aquatic bodies and their flood plains in terms of construction as well as ownership of land.
- b. The proposed project location, both in terms of construction and ownership of land conforms to the guidelines of PESO regarding distance from Petroleum Storage installations.

Clarification/Reply:

Submitting herewith the affidavit stating the above mentioned points as Annexure 17

Hope this information is in line with your requirement. We have now updated the above information in EIA as well. The same is enclosed as Annexure 18. We request you to consider our case for recommendation of Environmental Clearance.

Thanking You,

Yours Faithfully,

For Riverview City Constructions Ltd.



(Satish Magar)
Managing Director

Enclosed: As Above

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List of Annexure	
Annexure No.	Details
1	Extract of work manual published by PESO
2	Extract of Standardized development control and promotion regulations for regional plan in Maharashtra, DCPR RP.
3	Acknowledgement copy of the letter submitted to IOCL.
4	Township Policy
5	Locational Clearance
6	A draft of the Agreement between Riverview City Constructions Ltd. and Farmers
7	Plan showing the 30 meter setback margin left from the railway boundary.
8	DCPR for regional planning area Clause No 6.2.12 and 11.4
9	Letter from Central Railway for the permission.
10	Updated Form 1 and 1A
11	Sewerage layout
12	Extract of Integrated township policy note 7.3
13	The permission from Grampanchayat Kadamwakwasti for using Cremation Ground/ Burial Ground of the village
14	Revised Master plan
15	Irrigation NOC
16	Clause No. 7.1.3 of Annexure B of Integrated township Policy
17	Affidavit
18	Updated EIA

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platform, fill point and their safety distances within the boundary of the premises.

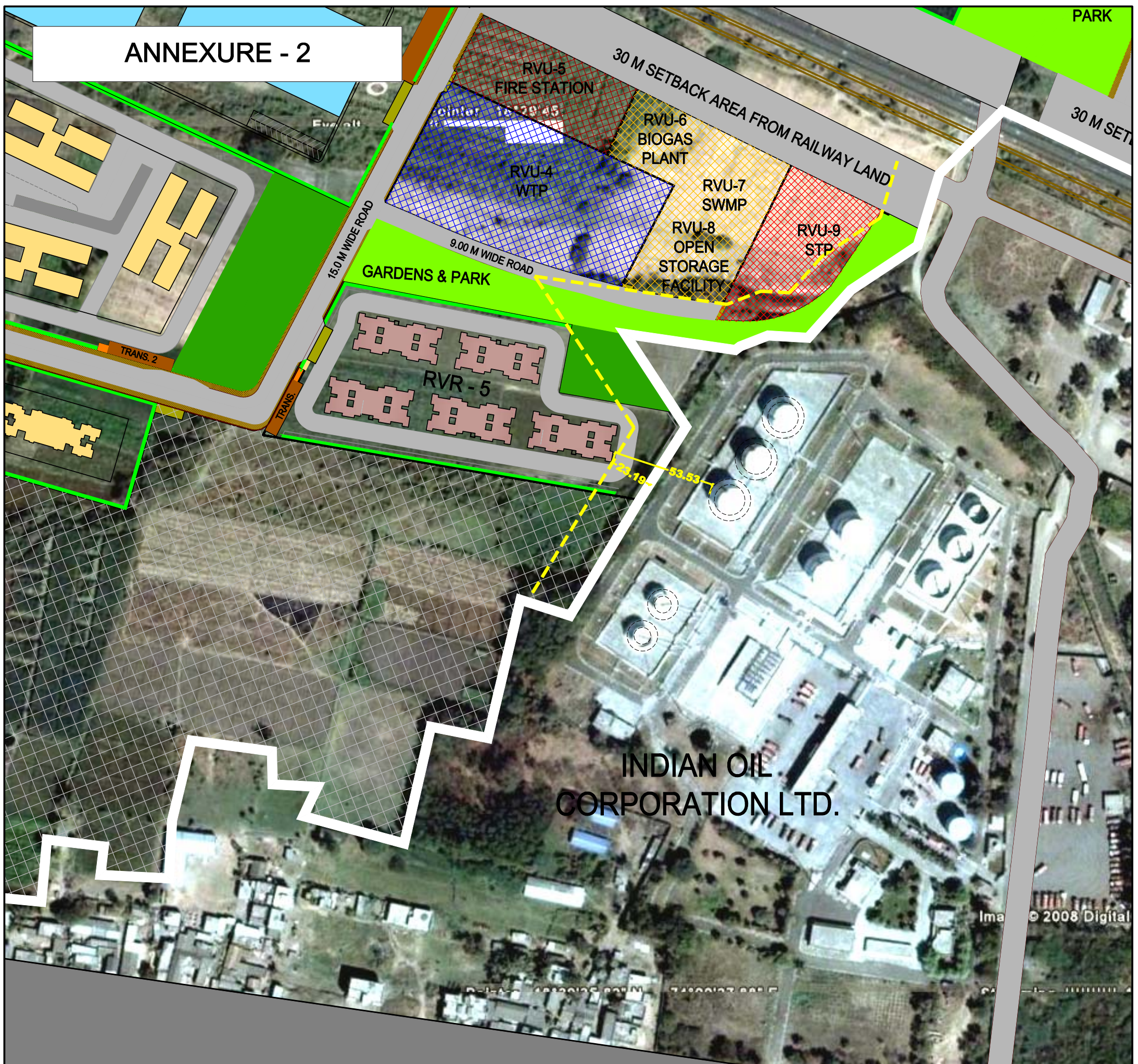
Note:

1. The following safety distances should be kept clear at all times from any storage shed to protected works as per **condition** of the licence as under :-

Licence capacity of storage shed	Distance to be observed From storage shed.		
Total of all classes of pet . Stored in the shed.	Pet.cl.A	Pet. cl.B	Pet.cl.C
.....			
Not Exceeding 2500 liters	6mt.	NA	NA
Exceeding 2500 litres but not exceeding 25000 litres.	7.5mt	NA	NA
Exceeding 25000 litres but not exceeding 50000 litres	9mt	3mt	NA
Exceeding 50000 litres but not exceeding 100000 litres	12mt	4.5mt	3mt.
Exceeding 100000 litres	15mt	6mt	3mt.
.....			

2. The construction of the godown/shed should be made from non-inflammable materials only. walls of brick-cement. Roof of RCC, Asbestos etc. door of iron etc. The trusses should be made of iron. The trusses should be made of iron.
3. The door of the godown should open outwards .
4. The height of the boundary wall/fencing should be 1.8mtrs.
5. The width of the main gate should be about 4 mtrs having provision for decanting tank lorry within the premises or/else the width of the main gate should not be more than 1.2mtrs.

ANNEXURE - 2



PLAN SHOWING MARGINS FROM INDIAN OIL CORPORATION LTD.

STANDARDISED DEVELOPMENT CONTROL AND PROMOTION REGULATIONS FOR REGIONAL PLANS IN MAHARASHTRA SANCTION VIDE GOVT.

NOTIFICATION NO- TPS-1812/157/CR 71/12/REC NO 34/12/UD 13/DT.21st November 2013 Clause no. 21.5.6 :

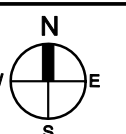
For Construction of industrial building zone of 23m wide shall be left from residential or incompatible zone, wherever necessary.



KEY PLAN

CLARIFICATION FOR POINT NO. i (MOM OF 24TH EAC MEETING HELD ON 30TH OCTOBER 2017)
RIVER VIEW CITY, PUNE

NORTH



Ref.: RCCL/CC/100/2017-18

8th November 2017

Shri. I. C. Patel
General Manager (Operations)
Indian Oil Corporation Limited
Bandra – Kurla Complex (BKC1)
Mumbai

Through

Shri. Gopalkrishna Panigrahi
Sr. Terminal Manager
Indian oil Corporation
Loni Kalbhor, Pune

Subject : NOC for setting up integrated Township Project called "Riverview City" at village
Kadamvakvasti, Taluka Haveli, District Pune
Reference: Gat Nos. 202, 1132, 1136, 1137, 1138, 1139 & 1140 is adjoining to your petrol
Depot.

Dear Sir,

We are setting up an Integrated Township Project namely 'Riverview City' at village Kadamvakvasti, Taluka Haveli, District: Pune which is spread over an area admeasuring 210.3951 Hectares i.e. approx.. 525.98 acres.

The Government of Maharashtra, Town planning Department has granted permission vide Notification no. 1813/392/12/CR-572/13/UD-13 dated 20/10/2015.

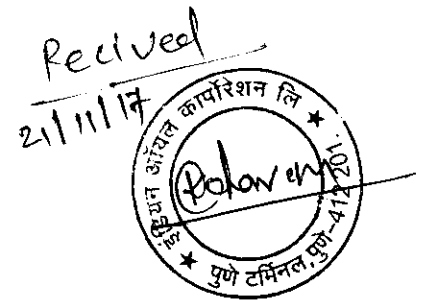
1. We have prescribed set back of 23 meters from the compound wall of the Depot based on the guidelines issued by PESO under Sec 7 Pt no. 2 note there after (copy enclosed)
2. We have applied for Environmental clearance from MOEF & CC who have asked for a NOC from the department.

Hence we request you to provide us the NOC at the earliest.

Thanking you,

With Best Regards,

(Satish Magar)
Managing Director



- Encl: 1. Copy of plan of Proposed Township
2. Copy of PESO guidelines
3. Letter from Expert Appraisal Committee from Environment department.
4. Note - platform, fill point and their safety distances within the boundary of the premises.

मंजूर प्रादेशिक योजना.

राज्यातील पुणे व कोकण विभागामधील मंजूर प्रादेशिक योजनांमध्ये विशेष नगरवसाहत प्रकल्पासाठीची सुधारित विनियम समाविष्ट करण्यासाठी महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम, १९६६ चे कलम २०(४) अन्वये फेरबदलाची अधिसूचना.

महाराष्ट्र शासन

नगर विकास विभाग,

मंत्रालय, मुंबई-३२.

शासन अधिसूचना क्रमांक : टिपीएस-१८१६/प्र.क्र.३६८/१५/२०(४)/नवि-१३

दिनांक : २६/१२/२०१६

सोबतची शासकिय अधिसूचना महाराष्ट्र शासन असाधारण राजपत्रामध्ये राज्यस्तरावर मध्यवर्ती पुरवणीमध्ये प्रसिध्द करण्यात यावी.

महाराष्ट्राचे राज्यपाल यांचे आदेशानुसार व नांवाने,

(संजय सावजी)

अवर सचिव, महाराष्ट्र शासन

प्रत:-

- १) मा.मुख्यमंत्री महोदयांचे सचिव, मंत्रालय, मुंबई.
- २) मा.राज्यमंत्री (नवि) महोदयांचे खाजगी सचिव, मंत्रालय, मुंबई.
- ३) मा. प्रधान सचिव (नवि-१) नगर विकास विभाग, महाराष्ट्र राज्य, मंत्रालय, मुंबई.
- ४) मा. सह सचिव तथा संचालक, नगर विकास विभाग, मंत्रालय मुंबई

प्रत उचित कार्यवाही करीता:-

- १) संचालक, नगर रचना, महाराष्ट्र राज्य, पुणे.
- २) महानगर आयुक्त, पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण, पुणे/ महानगर आयुक्त, मुंबई महानगर प्रदेश क्षेत्र विकास प्राधिकरण, पुणे.
- ३) सह संचालक, नगर रचना, पुणे / कोकण / नाशिक विभाग,
- ४) विभागीय आयुक्त, पुणे /कोकण/ नाशिक विभाग
- ५) जिल्हाधिकारी, मुंबई / पुणे / सांगली / जळगाव / रत्नागिरी /अलिबाग.
- ६) व्यवस्थापक, मध्यवर्ती मुद्रणालय, चर्नीरोड, मुंबई.

(त्यांना विनंती करण्यांत येते की, सोबतची शासकीय सूचना महाराष्ट्र शासनाच्या असाधारण राजपत्र मध्यवर्ती विभागामध्ये राज्यस्तरावर प्रसिध्द करून त्याच्या प्रत्येकी २५ प्रती या विभागास, पाठवाव्यात.)

- ७) कक्ष अधिकारी (नवि-२९) नगर विकास विभाग, मंत्रालय, मुंबई - यांना विनंती की सदरची सूचना या विभागाच्या संकेतस्थळावर प्रसिध्द करणेत यावी.
- ८) निवडनस्ती (नवि-१३).

अधिसूचना

महाराष्ट्र शासन

नगर विकास विभाग

मंत्रालय, मुंबई-३२

दिनांक : २६/१२/२०१६

महाराष्ट्र
प्रादेशिक
नियोजन व
नगर रचना,
अधिनियम,
१९६६

क्रमांक:- टिपीएस-१८१६/प्र.क्र.३६८/१५/२०(४)/नवि-१३ - ज्याअर्थी, शासनाच्या नगरविकास विभागाने, सोबतच्या अनुसूची-अ मध्ये नमूद केलेल्या प्रदेशांसाठीच्या प्रादेशिक योजनांना (यापुढे ज्यांचा उल्लेख “उक्त प्रादेशिक योजना” असा करण्यात आला आहे) महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम, १९६६ च्या (यापुढे ज्याचा उल्लेख “उक्त अधिनियम” असा करण्यात आला आहे) कलम १५ अन्वये वेळोवेळीच्या अधिसूचनांद्वारे (यापुढे ज्याचा उल्लेख “उक्त अधिसूचना” असा करण्यात आला आहे) मंजूरी दिली असून, उक्त प्रादेशिक योजना ह्या उक्त अधिसूचनांमध्ये विहित केलेल्या दिनांकापासून अंमलात आलेल्या आहेत;

आणि ज्याअर्थी, उक्त मंजूर प्रादेशिक योजनेमध्ये विशेष नगर वसाहती राबविण्यासाठी शासनाने विशेष नगर वसाहतीचे विशेष विनियम मंजूर केलेले आहे व तदनंतर त्यामधील काही नियम वेळोवेळी सुधारित केले आहे. तद्वतच शासनाने दि.२१/११/२०१३ रोजी अधिसूचनेद्वारे मंजूर केलेल्या प्रादेशिक योजनेच्या विकास नियंत्रण व प्रोत्साहनत्मक नियमावलीमधील प्रकरण क्र. ११/ विनियम क्र.४१ येथे विशेष नगर वसाहतीचे नियम समाविष्ट आहेत. (यापुढे ज्यांचा उल्लेख “उक्त विशेष नगर वसाहतीचे विनियम” असा उल्लेख करण्यात आलेला आहे);

आणि ज्याअर्थी, सध्याचे उक्त विशेष नगर वसाहतीचे विनियमाद्वारे विकसित होत असलेल्या प्रकल्पामधील उपलब्ध जमिनीचा तिच्या कमाल विकसन क्षमतेनुसार उपयोग करून घेणे, बाजारामध्ये किफायतशीर घरांचा पुरवठा वाढविणे, थेट परकीय गुंतवणुकीस आकृष्ट करणे शक्य व्हावे, नगर वसाहत प्रकल्पाच्या माध्यमातून शासनास कोणताही खर्च न करता स्मार्ट सिटी सारख्या समृद्ध वसाहती विकसित होणेकरीता, तसेच प्रकल्पाकरीता विनियमामध्ये व कार्यपद्धतीमध्ये स्पष्टता आणणे याकरीता उक्त विशेष नगर वसाहतीचे सध्याचे विनियमामध्ये सारभूत स्वरूपाच्या सुधारणा करून पुर्णतः नव्याने एकात्मिकृत धोरण व विनियम करणे आवश्यक असल्याची बाब शासनाच्या विचाराधीन आहे;

आणि ज्याअर्थी, उक्त बाबी विचारात घेतल्यानंतर व संचालक, नगर रचना, महाराष्ट्र राज्य, पुणे यांच्याशी विचारविनिमय करून मंजूर प्रादेशिक योजनेमध्ये वेळोवेळी मंजूर केलेले विशेष विनियम व दि.२१/११/२०१३ रोजी मंजूर केलेल्या विकास नियंत्रण व प्रोत्साहनत्मक नियमावलीमधील प्रकरण क्र. ११/ विनियम क्र.४१ येथे विशेष नगर वसाहतीचे समाविष्ट असलेले नियम (“उक्त विशेष नगर वसाहतीचे सध्याचे विनियम”) पुर्णपणे बदलून त्याऐवजी सोबतच्या अनुसूची-ब मध्ये सविस्तर वर्णन केल्याप्रमाणे नव्याने एकात्मिकृत नगर वसाहतीचे विशेष नियम समाविष्ट करणे आवश्यक झाले असून त्याकरीता उक्त प्रादेशिक योजनेमध्ये उक्त अधिनियमाचे कलम २० (२) अन्वये सुधारणा करणे आवश्यक आहे असे शासनाचे मत झाले आहे (यापुढे ज्याचा उल्लेख “प्रस्तावित फेरबदल” असा करण्यात आला आहे.);

आणि ज्याअर्थी, विशेष नगर वसाहत प्रकल्प ऐवजी एकात्मिकृत नगर वसाहत प्रकल्प असे संबोधण्याबाबत महाराष्ट्र प्रादेशिक व नगर रचना अधिनियम, १९६६ मध्ये महाराष्ट्र अधिनियम ४३/२०१४ दि.२२/०४/२०१५ पासून सुधारणा करण्यात आलेली असून यापुढे ज्याचा उल्लेख एकात्मिकृत नगर वसाहत प्रकल्प असा करण्यात आलेला आहे.

आणि ज्याअर्थी, उक्त अधिनियमाच्या कलम २० चे पोटकलम ३ मधील तरतूदीनुसार प्रस्तावित फेरबदल प्रस्तावाबाबत शासनाच्या नगर विकास विभागाची सूचना क्र. टिपीएस-१८१६/प्र.क्र.३६८/१५/२०(३)/नवि-१३, दि.०७/०६/२०१६ अन्वये आम जनतेच्या हरकती / सूचना मागविण्यासाठीची नोटीस महाराष्ट्र शासन राजपत्र, भाग-एक-मध्य उपविभागामध्ये दि.१३/०६/२०१६ रोजी पृ.क्र. १ ते १८ वर प्रसिध्द झाली आहे. प्रस्तावित फेरबदलाबाबत नोटीस प्रसिध्दीनंतर विहित मुदतीत प्राप्त होणाऱ्या सूचना / हरकतींवर संबंधितांना सुनावणी देण्याकरीता व शासनास अहवाल सादर करण्याकरीता नगर रचना विभागाचे संबंधित सह संचालक यांना प्राधिकृत करण्यात आले होते (यापुढे ज्याचा उल्लेख “उक्त अधिकारी” असा करण्यात आला आहे);

आणि ज्याअर्थी, उक्त अधिकारी यांच्या प्राप्त अहवालावर संचालक, नगर रचना, महाराष्ट्र राज्य, पुणे यांचा सल्ला घेतल्यानंतर **नव्याने एकात्मिकृत नगर वसाहतीचे विशेष नियम** समाविष्ट करण्यासाठीचा प्रस्तावित फेरबदल मंजूर करणे आवश्यक असल्याचे शासनाचे मत झाले आहे;

आणि ज्याअर्थी शासनाने राज्यातील पुणे जिल्हा प्रादेशिक योजना, सांगली-मिरज प्रदेश, जळगाव जिल्हा प्रदेश, रत्नागिरी सिंधुदुर्ग प्रदेश, रायगड प्रदेश, मुंबई महानगरप्रदेश या प्रादेशिक योजना **वगळून** उर्वरीत सर्व मंजूर प्रादेशिक योजनांसाठी एकात्मिकृत विशेष नगर वसाहतीचे सुधारीत धोरण शासन अधिसूचना क्र. : टिपीएस-१८१६/प्र.क्र.३६८/१५/२०(४)/नवि-१३, दि.०९/११/२०१६ अन्वये मंजूर केले आहे;

त्याअर्थी, सोबतच्या **अनुसूची-अ** मधील नमूद केलेल्या प्रदेशांसाठीच्या प्रादेशिक योजनांसाठी उक्त अधिनियमाचे कलम २० चे पोटकलम (४) व त्या अनुषंगाने प्राप्त असलेले अधिकाराचा वापर करून यापुर्वीचे वेळोवेळी मंजूर केलेले विशेष नगर वसाहतीचे विनियम व दि.२१/११/२०१३ रोजी मंजूर केलेल्या विकास नियंत्रण व प्रोत्साहनत्मक नियमावलीमधील प्रकरण क्र. ११/ विनियम क्र.४१ येथे विशेष नगर वसाहतीचे समाविष्ट असलेले नियम पुर्णपणे बदलून त्याऐवजी सोबतच्या **अनुसूची-ब** मध्ये सविस्तर वर्णन केल्याप्रमाणे **नव्याने सुधारीत एकात्मिकृत नगर वसाहतीचे विशेष नियमास** काही सुधारणासह अंतिम मंजूरी देण्यात येत आहे.

प्रस्तावित प्रस्तुत फेरबदलाची अधिसूचना त्यासोबतच्या **परिशिष्ट-ब** सह नागरिकांच्या अवलोकनार्थ कामकाजाच्या दिवशी कार्यालयीन वेळेत खालील कार्यालयात उपलब्ध करण्यात यावी :-

- १) संचालक, नगर रचना, महाराष्ट्र राज्य, पुणे,
- २) महानगर आयुक्त, पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण, पुणे,
- ३) महानगर आयुक्त, मुंबई महानगर प्रदेश क्षेत्र विकास प्राधिकरण, मुंबई,
- ४) सह संचालक, नगर रचना, पुणे/कोकण विभाग,
- ५) जिल्हाधिकारी, (संबंधित)

सदरहू सूचना शासनाच्या www.maharashtra.gov.in (कायदे / नियम) या संकेतस्थळावर प्रसिध्द करण्यात आली आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,

(संजय सावजी)
अवर सचिव, महाराष्ट्र शासन

अनुसूची-अ

(शासनाच्या नगरविकास विभागाकडील सूचना क्र. टिपीएस-१८१६/प्र.क्र.३६८/१५/२०(४)/
नवि-१३, दि.२६/१२/२०१६)

अ.क्र.	मंजूर प्रादेशिक योजनेचे नाव
१	पुणे प्रदेश
२	मुंबई महानगर प्रदेश
३	सांगली-मिरज प्रदेश
४	जळगाव भूसावळ प्रदेश
५	रत्नागिरी सिंधुदुर्ग प्रदेश
६	रायगड प्रदेश

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नांवाने,

(संजय सावजी)
अवर सचिव, महाराष्ट्र शासन

NOTIFICATION

GOVERNMENT OF MAHARASHTRA
Urban Development Department,
Mantralaya, Mumbai 400 032.
Date: 26/12/2016

**Maharashtra
Regional and
Town
Planning
Act, 1966**

No.TPS-1816/CR-368/15/20(4)/UD-13:- Whereas, the Government in Urban Development Department has sanctioned the Regional Plans for various Regions as mentioned in **Annexure-A** appended hereto (**hereinafter referred to as “the said Regional Plans”**) under Section 15 of the Maharashtra Regional and Town Planning Act, 1966 (**hereinafter referred to as “the said Act”**), vide various Notifications from time to time which have come into force, with effect from the dates as mentioned in the said Notifications;

And whereas, the Government has sanctioned modification to the said Regional Plan under Sub-Section (4) of Section 20 of the said Act, in respect of Regulations for Development of Special Township Projects (STP) and subsequently some of the provisions of the said STP Regulations have also been modified from time to time and the same Regulations have been inserted at chapter no. XI/Regulation No. 41 in the sanctioned Development Control and Promotion Regulation of the Regional Plan (**hereinafter referred to as “the said STP Regulations”**).

And whereas, it is under consideration of the Government that the present said STP Regulations will be modified substantially in order to utilise the maximum development potential of land, to increase the supply of affordable houses in the market, to attract foreign direct investment in the field of Special Township Project and to develop Smart Townships through privatization without any expenditure to Government and to bring clarity /simplification in the process of approval;

And whereas, in view of above, after consulting the Director of Town Planning, Maharashtra State, the Government is of the opinion that the said existing Regulations for Development of Special Township Projects (STP) and Regulation mentioned at chapter no. XI/Regulation No. 41 of the sanctioned Development Control and Promotion Regulation of the Regional Plan should be replaced by the new set of Regulation appended here with in **Annexure-B** and for this purpose it is necessary to modify the said STP Regulations of Special Township Project (hereinafter referred to as the said **proposed modification**) under Section 20(2) of the said Act;

And whereas, the words **Special Township Project** are replaced by an **Integrated Township Project** by the amendment made in the said act vide Maharashtra Act 43 of 2014 with effect from 22/04/2015 and henceforth referred to as an **Integrated Township Project**.

And whereas, pursuant to the above, a notice, bearing No.TPS-1816/CR-368/15/20(3)/UD-13, dated 07/06/2016., regarding the proposed modification under sub section (3) of the Section 20 of the said Act, was published which appeared in the Maharashtra Government Official Gazette, Supplement dated 13/06/2016 on page no 1 to 18 for inviting Suggestions and / or Objections from the general public and the concerned Divisional Joint Director of Town Planning was authorised as the ‘Officer’ (hereinafter referred to as the “said Officer”) by the Government to hear Suggestions and / or Objections and submit report to the Government;

And whereas, after considering the report submitted by the said Officer and consulting the Director of Town Planning, Maharashtra State, Pune, the Government is of the opinion that, it is necessary to sanction the proposed modification in respect of special regulation of Integrated Township Project appended here with in Annexure-B;

And whereas, Government vide Notification No. TPS-1816/CR-368/15/20(3)/UD-13, Dt.09/11/2016 has sanctioned the revised policy of Integrated Township **excluding** for the Regional Plan of Pune, Sangli-Miraj, Jalgaon, Raigad, Ratnagiri-Sindhudurga & Mumbai Metro Politan Region.

Now, therefore, in exercise of the powers conferred by sub-section (4) of section 20 of the said Act, the Government of Maharashtra hereby accord sanctions to the proposed modification with certain changes and replace all the said existing Regulations for Development of Special Township Projects (STP) Regulation mentioned at chapter no. XI/Regulation No. 41 of the sanctioned Development Control and Promotion Regulation of the Regional Plan sanctioned on dated 21/11/2013 by the new set of Special Regulation for Development of Integrated Township Project appended here with in Annexure-B

This Notification shall be made available for inspection to the general public during office hours on all working days at the following offices:-

- 1) Office of the Director of Town Planning, Central Building, Pune-411001.
- 2) Metropolitan Commissioner PMRDA.
- 3) Metropolitan Commissioner MMRDA.
- 4) Office of the Joint Director of Town Planning, Nashik / Nagpur / Aurangabad / Amravati / Division.
- 5) The Collector of the concerned district.

This Notification shall also be published on the Government website www.maharashtra.gov.in (कायदे व नियम)

By order and in the name of Governor of Maharashtra,

(Sanjay Saoji)
Under Secretary to Government

Annexure - A

Accompaniment to the Government in Urban Development Department Notification bearing No. TPS-1816/CR-368/15/20(4)/UD-13, dated 26/12/2016.

Sr.No.	Name of sanctioned Regional Plan
1.	Pune Region
2.	Mumbai Metropolitan Region
3.	Sangli-Miraj Region
4.	Jalgaon-Bhusaval Region
5.	Ratnagiri-Sindhudurga Region
6.	Raigad Region

By order and in the name of Governor of Maharashtra,

(Sanjay Saoji)
Under Secretary to Government

Annexure - B

SPECIAL REGULATION FOR DEVELOPMENT OF "INTEGRATED TOWNSHIP PROJECT (ITP)"

1. Applicability:-

These regulations shall be applicable to the areas under Regional Plans including areas under jurisdiction of SPAs and ADAs within Regional Plan sanctioned under the provisions of Maharashtra Regional and Town Planning Act, 1966 (hereinafter referred to as "the said Act"). These Regulations shall be applicable only after final sanction by Government under Section 20 (4) of the said act. Till then existing regulations shall remain in force.

Provided that, if the Development Control Regulations regarding development of Integrated Township Project for an area over which a Planning Authority /Special Planning Authority/Area Development Authority has been appointed or constituted or deemed to have been appointed are yet to be sanctioned, then in considering the application for permission, these regulations, shall be applicable, *mutatis mutandis*, till such Authority adopts the Regulations in this regard.

If the ITP falls within the jurisdiction of more than one authority, in such cases, Government will issue directives at the time of Locational Clearance regarding implementation of these regulations.

2. Requirements of Site:-

The area proposed for Integrated Township shall fulfill the following requirements:-

- i) Any suitable area having area of 40 hect. (100 Acres) or more at one place.
- ii) The area shall be one, contiguous, unbroken and uninterrupted. Provided that, such area if divided by one or more water courses (such as nalas, canals, etc.), existing or proposed roads of any width or by railways etc., shall be treated as one, contiguous, unbroken and uninterrupted, subject to condition that the Project Proponent/s shall construct necessary connecting roads or bridges as per site requirements at his own cost with due permission from concerned authorities. The Township Area may include Land, within the flood line, Hill Top & Hill Slope Zone as shown on Regional Plan subject to condition as mentioned in clause 7.1.3. However total of these areas shall be restricted to Maximum 40% of the total area under ITP.
- iii) The area shall have an access by means of an existing, or proposed road having minimum right of way of 18 m. In case of proposed road, such area shall have an access by existing road having width 12 m. or more only for the purpose of locational clearance of such project to be "Integrated Township Project" (ITP)

iv) Such area shall not include the area under:-

- a) Notified forest
- b) Water bodies like river, creek, canal, reservoir, etc. Mangroves, Tidal Zone, Mud Flats
- c) Lands belonging to Tribal
- d) Notified National Parks
- e) Defense Estates
- f) Cantonment Boards
- g) Eco-sensitive Zone/Area Notified under Environmental (Protection) Act, 1986
- h) Any restricted area.
- i) Quarry Zone, Notified SEZ, designated port/harbour areas, wildlife Corridor and biospheres reserves, Gaothan/Congested Area.
- j) The historical and archeological places notified under the relevant act.
- k) Any other area that may be declared by the Govt. of Maharashtra from time to time.

3. Ownership of Lands:-

The project proponent/s shall have the ownership of all the land parcels under project.
(**Explanation** – for this clause, ownership includes rights accrued vide one or more registered Development Agreement/s or Power of Attorney (PoA) for such development and disposal, on behalf of land owner/owners).

4. Permission and Declaration of Project by State Government:-

4.1 The Project Proponent/s shall apply to the State Government for obtaining permission and declaration of such project to be a “Integrated Township Project”. Such application shall be accompanied by the following attested documents in two sets:-

- a) Details of ownership of land viz. extracts of V.F.No. 7/12 or Property Register Cards, in original having date not more than six months prior to the date of submission. In case of rights accrued through registered Development Agreement or PoA, attested copies of such documents.
- b) Self-attested list of S.No./G.No./CTS showing name of owner as per record of rights, total area of such land parcel, area owned by the applicant in such land parcel, the name of person/ company owning the Development Rights, area proposed to be included in project from such land parcel.
- c) Part plan of sanctioned Regional Plan, showing all the lands falling in the project.
- d) No Objection Certificate from Water Resources Department in respect of lands falling in “Command Area” of any Irrigation Project.
- e) Village maps showing the lands falling in the project.
- f) Certificate from concerned Forest Officer not below the rank of Dy. Conservator of Forests, showing that the lands under project do not form part of and not included in reserved forest or protected forest or non-classified forest or not acquired under the provisions of the Maharashtra Private Forest (Acquisition) Act, 1975 and also, confirming that such lands do not form part of the Notified National Parks, prohibited area of Notified Wildlife Sanctuaries and Notified Bird Sanctuaries.
- g) Certificate from the concerned revenue officer not below the rank of Tahsildar, showing the lands under project do not include lands belonging to tribal.
- h) Certificate from the Director of Archaeological Department, Maharashtra State, showing that the lands under project do not include monuments notified by the Archaeological Department, Heritage buildings and Precincts. Such certificate should also mention the distance to be kept around such places, if any.
- i) Receipt of processing fee (non-refundable) paid, at the concerned branch office of the Town Planning Department, at the rate of Rs.5000/- per ha. for the current year with the yearly rise of Rs.500/- per ha. starting from the month of January every year.

4.2 On receipt of an application under Clause 4.1 above, the Government may, after consulting the Director of Town Planning, Maharashtra State, by notification in the *Official Gazette*, grant the locational permission and declare such project to be a “Integrated Township Project”, subject to such general and/or special conditions or, reject the application, under the provisions of Section 18(3) of the said Act, within a period of 90 days from the date of receipt of application or reply from the Project Proponent/s in respect of any requisition made by the Government, whichever is later.

(Explanation - In circumstances described in proviso of Clause 4.2, such grant of permission and declaration of project shall be made under the provisions of Section 18(3) read with Section 44(2) of the Maharashtra Regional and Town Planning Act, 1966)

4.3 Every such permission and declaration shall remain in force for a period of two years, if not applied for Letter of Intent under Clause 5, from the date of issue of Locational Clearance Notification and thereafter it shall lapse.

Provided that, the Director of Town Planning, Maharashtra State, Pune may, on application made by Project Proponent/s before expiry of the above period extend such period by two years in aggregate. Provided also that, it is not mandatory on Project Proponent/s to submit all the papers afresh as prescribed under Clause 4.1, however the affidavit regarding the ownership of land about any dispute shall be mandatory.

4.4 Such lapse shall not bar any subsequent application for fresh proposal.

4.5 The Director of Town Planning, Maharashtra State, on the request of Project Proponent/s, by notification in the Official Gazette, may grant to add or delete any area, not exceeding 25% of the total area under Locational Clearance, subject to condition that the remaining area shall not be less than 40 Hect. The permissible FSI and other parameters shall increase or decrease accordingly.

5. Letter of Intent (LOI) by the Collector:-

5.1 The Project Proponent/s shall apply to the Collector for obtaining the Letter of Intent for such project. Such application shall be accompanied by the documents as prescribed in Clause 4.1(a) & 4.1(b) and also the documents as may be directed by the Collector in respect of ownership only.

5.2 The Collector shall verify and satisfy himself that Ownership and Development Rights of all the lands under project are with the Project Proponent/s before issuing the Letter of Intent.

5.3 On receipt of an application under Clause 5.1 the Collector shall grant the Letter of Intent for the whole area or separately for any part thereof, which shall not be less than 40 Ha. at the first instance, subject to conditions as may be deemed fit, or reject the application, within a period of 45 days from the date of receipt of application or reply from the Project Proponent/s in respect of any requisition made by the Collector, whichever is later.

Provided that, in case of rejection, the Collector shall state the grounds for such refusal.

5.4 Every such Letter of Intent shall remain in force for a period of two year, if not applied for Development Permission under Clause 6, from the date of issue of Letter of Intent, unless renewed. Provided that, the Collector may, on application made by Project Proponent/s before expiry of the above period extend such period by two years in aggregate. Provided also that letter of intent granted by collector under earlier regulations may also be extended subject to other conditions of these regulations.

6. Master Layout Plan Approval by the Collector:-

6.1 The project proponent/s shall apply to the concerned Collector for obtaining the approval to the Master Layout Plan of the entire area as per Letter of Intent. Such application shall be accompanied by the documents in two sets as prescribed below:-

- a) Attested copy of Gazette Notification issued by the Government under Clause 4.2.
- b) Attested copy of Letter of Intent issued by Collector under Clause 5.
- c) Part plan of sanctioned Regional Plan, showing the lands under the Master Layout Plan.

- d) Village Map showing the lands under the Master Layout Plan.
- e) In case, project has no access from existing road having right of way of 18 m. then documents showing the ownership of Project Proponent/s in lands proposed for 18 m. wide access road.
- f) Bank Guarantee of requisite amount as prescribed in Clause 12.6
- g) Undertaking and Affidavit as may be prescribed by the Collector.
- h) Copies of Master Layout Plan with or without Building Plans in three sets with sign of owner/developer and architect.
- i) Contour map showing contour levels of lands under Master Layout Plan. Trueness of the contour shall be certified and attested by the surveying agency and the Project Proponent/s under their signature and seal.
- j) Coloured satellite image showing lands under Master Layout Plan.
- k) Phased Programme for development of infrastructure with amenities under project.

6.2 If the application is not accompanied by the documents mentioned in Clause 6.1, the Collector shall return the same to the Project Proponent/s immediately within 10 working days at his level only.

6.3 On receipt of application, complete in all respects, as prescribed under Clause 6.1, the Collector shall forward the same to the concerned Divisional Joint Director of Town Planning for technical consultation within 10 working days.

6.4 The office of the Divisional Joint Director of Town Planning shall send its remarks to Collector within two months from the receipt of proposal from the Collector or receipt of reply from the Project Proponent/s in respect of any requisition made by him, whichever is later. Such master layout approval will be given with the condition that project proponent will not commence work without environmental clearance. Such environmental clearance shall be submitted at the time of sanction to the building permission. Sanctioned master Plan layout alongwith complete set of drawings shall be endorsed to the concerned branch office of Town Planning Department, for the inspection purpose at the time of Occupancy Certificate.

6.5 Approval to the Master Plan:- The Collector shall grant approval to the master layout or reject the application, under Section 18 of the said Act, within one month from the receipt of reply from the Divisional Joint Director of Town Planning as mentioned in 6.4.

6.6 Approval to the building plan:- Detailed building permission under the master layout plan sanctioned as per clause 6.5 shall be granted by the Assistant Director of Town Planning/Town Planner of concerned Branch within 30 days from the receipt of the proposal from the project proponent as mentioned in 6.6.1.

6.6.1 - The Project Proponent/s shall apply to the concerned head of the Branch office of the Town Planning Department, for grant of building permission, alongwith all relevant documents and attested copy of Environment Clearance for the project from MoEF or the Authority empowered by the MoEF.

6.6.3 - The Project Proponent/s shall submit the certificate of Architect regarding completion of plinth stating that the construction of plinth is as per the approved building Plans to the concerned branch office of the Town Planning along with approved Plan. The Branch Office of the Town Planning verify the same. If it is found that the construction of plinth is not as per the building permission sanctioned, the said office shall reject such plinth checking certificate. In such circumstances, the Project Proponent/s shall demolish the said plinth and also the action against the Project Proponent/s and the concerned architect shall be initiated by the Collector/Appropriate Authority. If it is found that the construction of plinth is as per the building permission sanctioned, then grant the plinth checking certificate is not necessary-

7. Planning Considerations:-

7.1 Permissibility in respect of Zoning:-

7.1.1 Notwithstanding anything contained in any regulation for the time being in force, the project to be notified under this regulation may be permissible in any land-use zone/s of sanctioned Regional Plan, excepting areas mentioned in Clause 2(iv).

7.1.2 For the areas falling in zones, other than residential, commercial and U1 & U2 zone as per the sanctioned Regional Plan, the Project Proponent/s shall have to pay a premium for permitting project in such zones at the rates prescribed below:-

Sr.No.	Type of Zone	Premium Charges
a	Afforestation Zone, Hill Top & Hill Slope Zone as shown on Regional Plan subject to clause 2 (ii)	20 %
b	Public / Semi-public Zone, Industrial Zone	10 %
c	Agriculture/ No Development Zone/G1 zone and other zones excepting at Sr. No. a & b above	15 %

(Explanation: Premium charges shall be calculated by considering the agriculture land rate of the said land as prescribed in Annual Statement of Rates (ASR) without applying the guidelines. Out of total premium 20% shall be paid at the time of Locational Clearance, 20% paid at the time of letter of Intent, 20 % at the time of sanctioning of Master Layout Plan and remaining 40 % shall be in four equal installments per year)

7.1.3 No construction shall be permitted on the lands within the HFL. Also on land in Hill Top & Hill Slope Zone and lands having slope equal to or more than 1:5 in the said Project, whether specifically marked as such on the Regional Plan or not. No development of any sort and activity involving cutting / leveling / filling shall be permissible on such lands. Provided that, it shall be permissible to use such lands for Plantation, Park, Garden purposes, Access road to township development with minimum cutting and other users as otherwise permissible in respective Regional Plans and the FSI of such lands shall be permissible to the extent as prescribed in Clause 7.2.

7.2 Permissible Floor Space Index (FSI):-

7.2.1 Notwithstanding anything contained in any regulation for the time being in force, the basic permissible FSI for such project shall be 1.0, to be calculated on Gross Plot Area under Master Layout Plan without deducting any areas under the slopes, etc.

7.2.2 Further, additional built up area as mentioned below shall be permissible on payment of premium at the rate of 20 % of the weighted average land rate of the said land as prescribed in Annual Statement of Rates for the relevant year, without applying the guidelines therein. Such premium shall be paid at the time of Building permission.

Area under Township	Additional built-up area on payment of premium
40 hect and up to 200 Hector.	Upto 70 % of basic permissible FSI
More than 200 hec. and up to 500 Hector	Upto 80 % of basic permissible FSI
More than 500 hec. Hector	Upto 100 % of basic permissible FSI

7.2.3 Over and above the FSI as prescribed above, an additional FSI in lieu of construction of tenements for social housing shall be permissible as prescribed in Clause 9, without charging premium.

7.2.4 It shall be permissible to utilise the maximum permissible built-up area as prescribed above, anywhere in the area under sanctioned Master Layout Plan.

7.3 Mandatory Town-Level Amenities - Area and FSI Allocations:-

Master Layout Plan shall provide for town-level area and FSI allocation, to be kept at one or more places, as follows:-

a) Spaces for Recreation:-

Sr.No.	Particulars	Minimum Area Required	Conditions
i	Garden/s and Park/s	5% of Master Layout Area.(out of this 50% area may be allowed on Hill Top Hill Slope Zone)	Out of this at least 1000 sq. mt. area shall be kept open for Town Plaza/Town Square. Such area shall be kept open and may be allowed to be proposed at suitable places. Major public amenities/activities shall be cluster around this area.
ii	Play Ground/s	7.5% of Master Layout Area	Maximum 10% of area under Play Ground which may accommodate indoor games, stadiums and allied users only.

(Note – These spaces shall be exclusive of open spaces to be required at sector-level layouts)

b) Spaces for combined School/s (Primary School/s + High School/s) -

Sr. No.	Particulars	Minimum Area Required	Minimum Built-up Area required
i	for Master Layout area of 40 Ha.	5,000 sq.m.	5,000 sq.m.
ii	for Master Layout area more than 40 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	

Note-

a) The requirements prescribed above are by considering School to be run in double shift,

b) Requirement of plot area and built up area shall be exclusive of Play Ground spaces. Hence it is mandatory to show separate Play Ground adjoining to school building at the rate of 7 sq. m. / student.

c) Community Health Care Facilities:-

Primary and Secondary Health Care Facilities like Dispensary, Maternity Home, Hospital etc.

Sr. No.	Particulars	Minimum Area Required	Minimum Built-up Area required
i	for Master Layout area of 40 Ha.	1,000 sq. m.	1500 sq. m.
ii	for Master Layout area more than 40 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	

d) Community Market:-

Sr. No.	Particulars	Minimum Area Required	Minimum Built-up Area required
i	Mutton Market		
	for Master Layout area up to & inclusive of 200 Ha.	1000 sq. m.	As per requirement
	for Master Layout area more than 200 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	
ii	Fish Market & Vegetable Market		
	for Master Layout area up to & inclusive of 200 Ha.	1000 sq. m.	As per requirement
	for Master Layout area more than 200 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	

Note- Users mentioned in (i) & (ii) above may be clubbed together for convenience purpose, without altering the requirements in plot area and built-up area.

e) Public Assembly Facilities:- Town Hall and/or Auditorium including Library

Sr. No.	Particulars	Minimum Area Required	Minimum Built-up Area required
i	for Master Layout area up to & inclusive of 100 Ha	5000 Sq.mt	5000 Sq.mt
ii	for Master Layout area more than 100 hac. and up to 200 Ha.	10000 sq. mt.	10000 sq. mt.
iii	for Master Layout area more than 200 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	

f) Economic Activities:-

Economic activities including users such as Market, Multiplex, Mall, Information Technology & Information Technology enabled Services (IT & ITeS) including SEZs, Essential Shopping, Recreational Centers, Trade & Commerce, Education, Hospitals, Non-polluting Industries, Service Industries, Entertainment, Tourism, Star Category Hotels, Convention Centers, Gymnasiums, Socio-economic activities, such as workshop, hostel for Autistic persons and Mentally Retarded persons except independent residential tenements, etc. as per requirements.

Sr. No.	Particulars	Minimum Area Required	Minimum Built-up Area required
i	for Master Layout area of 40 Ha.	40000 sq mt	80000 sq mt
ii	for Master Layout area more than 40 Ha.	To be increased proportionately with increase in Master Layout area and be proposed at one or more locations, as per requirements.	

Note-

i) Users as mentioned in b, c, d, e & f may be clubbed together, in Economic Activities Component, subject to condition that, total built-up area should not be less than the summation of minimum required for all such users, irrespective of their individual plot area requirements.

ii) The required parking spaces for all such amenities as per norms shall be provided in same plot.

g) Public Utilities:-

For Master Layout area up to & inclusive of 200 Ha.

Sr. No.	Particulars	Minimum Area Required	Permissible Built-up Area
i	Fire Brigade Station-	3000 sq.m. or as prescribed by the Director of Fire Services, Maharashtra State/ Chief fire Officer of the concern Authority.	As per recommendations of the Director of Fire Services, Maharashtra State/Chief fire Officer of the concern Authority.
ii	Sewage Waste Management Project (SWMP)	4000 sq.m.	As per requirements
iii	Cremation Ground	2000 sq.m.	As per requirements
iv	Burial Ground	2000 sq.m.	As per requirements
v	Bus Station / Transport Hub	3000 sq.m.	
vi	Police Station	1000 sq.m.	
vii	Electric Sub-station	As per requirement	
viii	Other Public Utilities	As per requirement	
ix	Public Parking Facilities	As per prevailing DCR	
x	Solid waste management	As per requirement	

Note: i) If the facility of Cremation Ground/ Burial Ground is available in the village where the Township is located in such case these requirements need not be insisted subject to NOCs of respective Gram Panchayat .

ii) If Police Station is available within 1k.m. area from the proposed Township, then such facility need not to be provided.

h) Transport & Communication:-

i) The entire area of the project shall be well-knitted with proper road pattern, taking into consideration the linkages with existing roads within the project and outside area as well. All such roads shall be developed by the Project Proponent/s as per standard prescribed by the Indian Road Congress.

ii) The width of the -

- i) Classified Road should not be less than as may be prescribed by concerned public authority;
- ii) Main / Arterial / Ring Road should be minimum right of way of 18 mt.
- iii) Other Sub-Arterial roads, Collector streets, local streets, etc., shall be proposed as per the requirements to cater to the need of occupancies on such roads including for pedestrians.
- iv) Network of cycle track in entire Township area of minimum width of 3 meter shall be provided without clashing the vehicular traffic.

iii) It may be permissible for Project Proponent/s, to realign the Regional Plan Roads, and earlier existing roads passing through the project area, without changing the entry and exit points of such roads.

iv) All the Regional Plan Roads and all the Main / Arterial / Ring Roads, shall always be open for general public, irrespective of the fact that, they resides in the project or not.

General Note for Amenities (a) to (h):

i) The requirements prescribed above for items (a) to (f) are by considering FSI proposed for the project is only 1.0. If the FSI proposed is increased or decreased then the only built up area requirement shall be increased or decreased proportionately.

ii) The requirements prescribed above for items (g) are for Master Layout area up to & inclusive of 200 Ha. It shall be increased or decreased proportionately and may be proposed at one or more locations, as per requirements.

7.4 Residential Activities:-

Sr. No.	Particulars	Area	Built-up Area
i	Residential Activities (including lands required for social housing, infrastructure such as water storage, drainage and garbage disposal, etc.)	The land excluding the land required for purposes as shown 7.3 (a) to (h).	Remaining built-up area subject to minimum 60% of the total proposed built-up area.

8. Development Control Regulations:-

For those aspects which are not covered under this regulation, the prevailing provisions as prescribed in the Standardised Development Control and Promotion Regulations for Regional Plans in Maharashtra, shall apply *mutatis-mutandis*. The provisions of MoEF CRZ notifications amended from time to time shall also be applicable. However maximum height of building shall be allowed subject to provisions of National Building Code and Maharashtra Fire Prevention and Life safety measures Act 2006 and also any restriction imposed by Chief Fire Officer.

9. Social Housing:-

9.1 The Master Layout Plan shall provide sufficient space for construction of small tenements for persons from EWS and LIG categories (hereinafter referred to as the “Social Housing Component”), as a social responsibility with FSI as mention in Clause No 9.3. Out of this Social Housing Component 25 % FSI shall be utilised exclusively for construction of EWS tenements and remaining 75 % FSI shall be used for LIG tenements. Out of the total tenements constructed as Social Housing component, one third (1/3rd) tenements shall be kept for Rental Housing tenements which will be disposed on Rent only by the project Proponents.

9.2 Social Housing tenements shall be constructed with carpet area as specified by the MHADA for EWS and LIG category respectively.

9.3 The minimum Social Housing component shall be constructed at 15% of the Residential basic FSI of the area available for Residential Development as prescribed in Clause 7.4 (hereinafter referred to as the “Social Housing component”).

9.4 Social Housing tenements shall be constructed as per the general and special specifications prescribed by concerned unit of MHADA for their projects.

9.5 The Project Proponent/s, after getting commencement certificate of Social Housing component as mentioned above shall immediately intimate to MHADA regarding the numbers of Social Housing Component to be disposed by them to the allottee. Upon such intimation, MHADA within a period of six months, from the date of receipt of such intimation after following procedure of lottery system shall prepare the list of the allottee and forward it to the Project Proponent/s. The project proponent shall dispose of such EWS housing tenements to the allottees at the rate fixed by the MHADA from time to time.

Provided that if the MHADA is unable to provide the list of the allottee as mentioned above then the project proponent shall dispose of such social housing tenements in the market at the rate fixed by the MHADA from time to time.

9.6 Every Occupation Certificate for the regular tenements shall be granted only alongwith the Occupation Certificate in proportionate with Social Housing component.

9.7 Amalgamation of such Social Housing tenements shall not be permitted in any case.

9.8 The purchaser of tenement under social housing shall deposit an amount equivalent to 10% of the construction cost of tenement, as prescribed in Annual Statement of Rates prevailing at the time of occupation, with the Project Proponent/s as one-time maintenance deposit for onsite infrastructure maintenance.

9.9 The Project Proponent/s shall maintain the premises and common spaces outside the building/s of social housing including concerned all basic infrastructure and amenities, in good condition in the same manner with the maintenance of remaining area of the project.

9.10 The purchaser of tenement under social housing shall have to pay all the government taxes, duties like stamp duty, VAT, service tax, etc. at actual, to the Project Proponent/s, as per the requirement, from time to time.

10 Liability of Project Proponent/s:-

10.1 The entire project shall be an integrated one with all facilities within the boundaries of such project. All the on-site infrastructure i.e. internal roads, approach road, street lights, water supply and drainage system shall be mandatory and constructed / maintained in future by the Project Proponent/s. Proposed internal roads and Open Spaces in the layouts shall be used only for ITP.

10.2 The Regional Plan Roads & Reservations which are included in ITP shall be Developed by project proponent and after development made available to the general public. Such reservations may be allowed to shift within 500 mtrs (within Township Area Only) in consultation with Director of Town Planning M. S. Pune.

10.3 It shall be the responsibility of the Project Proponent/s to maintain all the infrastructure in good condition at his own cost and management, during and after completion of the project.

Provided that, the Project Proponent/s may handover the infrastructure, for maintenance purpose, only after the completion of the project, to the Urban Local Body, when constituted in the area comprised by the project.

10.4 Project Proponent/s shall mandatorily provide facilities for making the project SMART -

- i) the people residing in the project area, an efficient and timely public transportation system up to the nearest public transportation station/hub/depot/stand shall develop or tie with Government / Semi Government or private transport agency for such efficient public transportation. The number of buses and trips will be decided by MSRTC / Local Transport Authority.
- ii) Continuous unobstructed footpath of minimum 2 m. width on either sides of all street / roads width ROW 12 m. or more.
- iii) Dedicated and physically segregated bicycle track with a width of 3 mt. or more ,should be provided for entire Township Area.
- iv) Pedestrian friendly pathways, encouragement to non-motorized transport, intelligent traffic management, non-vehicle street / zones, smart parking, energy efficient street lighting visible improvement in the area i.e. replacing overhead electric wiring with underground wiring, encroachment free public areas,
- v) Generation of power through non-conventional energy sources like solar, wind and other shall be mandatorily provided with atleast 10% of total requirement;
- vi) energy management by adopting advanced technology like installing Solar Water Heating System, Solar Lamps/Lights in common areas, LED Lamps, auto-operated street lights, solar pumps, etc. all external lighting shall be of LED, Solar Water Heating System, Solar Lamp shall be compulsorily provided;
- vii) Effective water management by adopting water harvesting techniques like rain water harvesting, recycling of used water, metered water supply to the users under project, double plumbing pipeline .The recycled water shall be used for flush system, gardening, carwash and industrial use;
- viii) Effective safety & security measures like CCTV surveillance at strategic locations, centralized control room, etc.;
- ix) Smart and fast internet/broad band connectivity to all residence, e-governance online system for grievance redressed;
- x) Citizens participations in decision making about public community issues.
- xi) Real time environmental monitoring i.e. air pollution, noise pollution etc. shall be observed
- xii) e-DCR for building plans with BIM, 3-D maps on GIS of the utility services network and properties in the city, central command, control and emergency response center for all infrastructure facilities. Project Proponent/s shall also provide urban design concept plans along with Master Plan.
- xiii) It shall be obligatory on the part of Project Proponent/s to provide and be provided for, the infrastructure and green building norms that are necessary as per the guidelines as may be laid down by the Government, under the policy of development of ‘Smart City’ from time to time.

10.5 Project Proponent/s shall also mandatorily provide for:-

a) Water Supply - Safe and potable drinking water at the rate of 90 liters per capita per day, exclusive of requirement of water for firefighting and gardening purposes. The storage capacity of the same shall be at least 1.5 times of the actual required quantity as determined by expected population (Resident and Floating) and other uses. The Project Proponent/s would be required to develop proper internal distribution with double pipe plumbing and maintenance system along with smart metering and shall specially undertake rain water harvesting, groundwater recharging and waste water recycling within the project.

Provided that, the Project Proponent/s should not use groundwater as a source of water, to meet the above requirement.

b) Drainage and Garbage Disposal:- The Project Proponent/s shall make suitable and environment friendly arrangements for the disposal and treatment of sewage and solid waste generated in the project at source, as per the norms of the Maharashtra Pollution Control Board. The Project Proponent shall provide zero discharge in ITP for solid as well as liquid based.

The Project Proponent/s should provide facilities for water conservation by different means such as Rain Water Harvesting, Recycling of Waste Water, etc. and also set-up, in the project area itself, the Solid Waste Management Project (SWMP) with a sufficient capacity for processing of 100% garbage and solid waste so that it should be zero liquid discharge to city from the area.

c) Power:- The Project Proponent/s shall ensure continuous and quality power supply for the project area. The Project Proponent/s may draw the power from any existing supply system or may go in for arrangement of captive power generation with the approval from the concerned authority. If power is drawn from any existing supply system, the Project Proponent/s shall, before commencement of development, procure a firm commitment of power for the entire Township from the power supply company.

11 Occupancy Certificate and sale permission:-

11.1 Application for obtaining the Occupancy Certificate for project, in full or part shall be submitted by Project Proponent/s to the Collector. Such application shall be accompanied by -

- a) All the relevant documents alongwith coloured satellite image showing the area under Master Layout Plan;
- b) Documents showing compliance of the conditions prescribed while according sanctions from time to time;
- c) Appropriate declaration/s and undertaking/s made by the Project Proponent/s and his technical personnel's;
- d) Any other requirement as may be prescribed by the Collector.

11.2 On receipt of application as prescribed under Clause 11.1, the Collector shall forward the same to the concerned branch office of Town Planning Department for technical consultation, within 10 working days.

11.3 The concerned branch officer of the Town Planning Department shall send his remarks to the Collector within one month from the receipt of proposal from the Collector or receipt of reply from the Project Proponent/s in respect of any requisition made by him, whichever is later.

11.4 The Collector shall grant Occupancy Certificate or reject the application within one month from the receipt of reply from the concerned branch office of Town Planning Department.

11.5 The Collector, before issuing the Occupancy Certificate for the project as a whole, shall verify and satisfy himself about the completion of erection / development / construction of all the basic required infrastructure in Master Layout plan. In case, an application for part occupancy, such completion shall be as prescribed in phase programme.

12. General Stipulations:-

12.1 Development of basic infrastructure and amenities shall be completed by the Project Proponent/s to the satisfaction of the Collector either for whole or as per phases, of the project.

12.2 It shall not be mandatory for the Project Proponent/s to provide Amenity Space as otherwise required as per regulation of Regional Plan, if any.

12.3 The Project Proponent/s shall plant indigenous trees at the rate of at least 150 trees per ha. and maintain it properly. The certificate to that effect issued by the Deputy Conservator of Forest or an Officer nominated by him for this purpose shall be produced by Project Proponent/s at the time of application for Final Occupation Certificate under Clause 11.

12.4 In circumstances described in Clause-(1), all the powers and functions, that are supposed to be exercised by the Collector under this regulation shall be exercised by the Chief Officer / Chief Executive Officer of the concerned Planning Authority wherever applicable, excepting the powers to grant Letter of Intent under Clause-5 of this regulation.

Provided that, before grant or refusal to the Master Layout Plan, the Chief Officer / Chief Executive Officer of the Authority shall, consult the, concerned Divisional Joint Director of Town Planning as prescribed in Clause-6.3 and 6.4, if the Planning Officer posted in such Authority is below the rank of Joint Director of Town Planning, and to the concerned branch office of Town Planning as prescribed in Clause-6.6 and 11, if the Planning Officer posted in such Authority is below the rank of Assistant Director of Town Planning.

12.5 All the amounts of scrutiny fees, charges, premium etc. payable to the Government shall be deposited with the concerned Branch office of the Town Planning. In circumstances described in proviso of Clause 1 above, 50% of such amount shall be deposited with the concerned Branch office of the Town Planning, and 50% to the concerned Planning Authority.

12.6 The Project Proponent/s shall submit a bank guarantee of an amount equal to the 15% of estimated development cost required for development of the basic infrastructure such as roads, water supply, drainage & garbage disposal, installations for power supply, fire brigade station & fire engines. Such development cost be worked out as per respective phases taking into consideration the phased programme for development of infrastructure with amenities under project as submitted and as required under clause 6.1. Certificate regarding estimated development cost shall be produced by the respective Architect of the project.

12.7 The Project Proponent/s shall construct and maintain the Fire Station at their cost. The project proponent post a well-trained staff at fire station as per the recommendations of the Director of Fire Services, Maharashtra State/chief fire officer of the concerned Authority. The amount of all expenditure on such staff shall be the responsibility of the Project Proponent/s. After completion of fire station and as per requirement such fire brigade/station shall be

handed over to the nearest respective authority on the terms and condition decided by the respective authority and project proponent.

12.8 Developer shall complete the Integrated Township Project within 10 years from the approval to the master plan. However this period of completion may be extended by the Government subject to terms and conditions as may be decided by the Government considering the development of Township. Developer shall develop and maintain the infrastructure up to the completion of the ITP project. Within such period property tax shall be levied by the respective Grampanchayat at 50 % of normal rate as prescribed under the Grampanchayat Act. Respective Grampanchayat shall provide mandatory provisions like Birth and Death Registration Certificate etc. for the same period in such ITP. Provided that the utilities like fire brigade, police station/chauki etc. shall be handed over to the nearest respective authority on the terms and condition as may be decided by the respective authority.

12.9 A local Authority shall be formed under section 3 read with section 341 of the Maharashtra Municipal Council, Nagar Panchayat and Industrial Town ship Act 1965 according to population of such town ship. The newly formed respective authority shall take over the operation maintenance of infrastructure in the Integrated Township Project area with the previous approval of Government. However, if the area under ITPs merged in any Local Authority then operation and maintenance of infrastructure in such Integrated Township Project area shall be made by the respective Local Authority.

12.10 Licensing to the Project Proponent/s - The respective Authority shall provide licenses to the Project Proponent/s for telephone Connection, Power and other utilities in the Town ship area. After granting the license from the respective Authority, the project proponent/s shall provide utilities in the Town ship area as per the conditions laid down by the respective authority.

12.11 It shall be mandatory for the Project Proponent/s to provide atleast 9 mt. vide road to the land not owned by the project proponent which is surrounded by the Township Area

13. Special Concessions:-

13.1 Deemed conversion for Non-Agricultural (N.A.) Use:- The lands under approved Master Layout Plan shall be considered as deemed N.A. No separate permission shall be required under the provisions of Maharashtra Land Revenue Code, 1966.

13.2 Grant of Government land: - The Government land/s, if surrounded by the lands owned by the Project Proponent/s, may preferably be granted to the Project Proponent/s, as per the rules and regulations to that effect, by the Revenue and Forest Department of the State Government. Maximum 10% of the total area under township shall be allowed to be included in such township.

13.3 Concession in Stamp Duty:- For the first transaction, from Project Proponent/s to Purchaser, of any unit under any user, from approved Master Layout Plan or subsequent building plan under this Regulation, a concession to the extent of 50% of stamp duty as otherwise required under the Mumbai Stamp Act, shall be granted.

13.4 Exemption in payment of Development Charges:- The amount of Development Charges under sub-section (3) of Section 124F of the said Act shall be exempted to the extent of 50% for, institution of use or, change of use of any land or building or, development of any land or building, proposed for project undertaken by a Project Proponent/s under this Regulation.

13.5 Relaxation from Mumbai Tenancy and Agriculture Land Act:- The condition that, only the agriculturist will be eligible to buy the agriculture land shall not be applicable to the Project Proponent/s for purchasing agriculture land for Integrated Township under this Regulation.

13.6 Exemption from Ceiling for holding agriculture land:- The limit for holding agriculture land, stipulated in the Maharashtra Agricultural Lands (Ceiling and Holdings) Act, 1961 shall not be applicable to the Project Proponent/s for development of Integrated Township Project under this Regulation.

14. Transition Policy:-

14.1 It shall be permissible for the Project Proponent/s, to whom Special Township Project has already been notified, to -

a) continue such Integrated Township Project under the erstwhile regulations and for that limited purpose erstwhile regulations for Integrated Township Project shall remain in force; or

b) Apply for grant of Letter of Intent or Master Layout Plan as the case may be, under this regulation subject to payment of premium as prescribed in Clause 7.1 and 7.2, wherever applicable.

14.2 If in case as described in Clause 14.1(b), the construction of the project is on-going, it shall be permissible for the Project Proponent/s to opt for, this regulation subject to payment of premium as prescribed in Clause 7.1 and 7.2. Premium applicable as mention in clause 7.2 Social Housing Component as mention in clause 9 and economic activity as mentioned in 7.3 (f) shall be calculated on the difference of FSI permissible under clause 7.2 and FSI already sanctioned under erstwhile regulations.

15. Appeal: - Anyone aggrieved by an order passed under prevailing byelaws may within forty days of the date of communication of the order prefer an appeal to the Director of Town Planning, Maharashtra State, Pune. The appeal shall be cleared within 60 days.

16. Control by the State Government - Director of Town Planning M.S Pune is authorised on behalf of Government to monitor the Township Project and submit his report once in six months to Government.

By order and in the name of Governor of Maharashtra,

(Sanjay Saoji)
Under Secretary to Government

Ref.: RCCL/CC/54/2016-17

दिनांक: ३०/१२/२०१६

मा. प्रधान सचिव
नगर विकास विभाग,
मंत्रालय, मुंबई

विषय : मौजे कदमवाकवस्ती, ता. हवेली, जि. पुणे, येथील 'रिव्हरव्ह्यू सिटी' या
मंजुर एकात्मिकृत नगर वसाहत प्रकल्पाचे वाढीव क्षेत्रास **Locational**
Clearance मिळणेबाबत

संदर्भ १: महाराष्ट्र शासन नगर विकास विभाग मंत्रालय मुंबई यांचे कडील अधिसूचना क्र.

TPS/१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि - १३ दि. २०/१०/२०१५

संदर्भ २: शुध्दीपत्र TPS/१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि - १३ दि. १/६/२०१६

महोदय,

उपरोक्त मौजे कदमवाकवस्ती, ता. हवेली, जि. पुणे, येथील 'रिव्हरव्ह्यू सिटी' या एकात्मिकृत नगर वसाहत प्रकल्पास महाराष्ट्र शासन नगर विकास विभाग यांचे कडील उपरोक्त संदर्भीय क्र. १ अन्वये Locational Clearance प्राप्त झाले असून संदर्भ २ अन्वये शुध्दीपत्रक काढून एकुण १५५.००८६ हेक्टर क्षेत्रास Locational Clearance ला मान्यता मिळाली आहे, त्यास अनुसरून प्रस्तावित नगर वसाहत प्रकल्पाच्या हद्दी दर्शविणारा नकाशा आम्हास प्राप्त झालेला आहे.

सदरचे प्रस्तावित एकात्मिकृत नगर वसाहतीचे प्रकल्पास मा. पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण यांचे कार्यालयाकडून जा.क्र. मौजे कदमवाकवस्ती गट नं.१ ते २१ व इतर प्र.क्र. ४३७/१६/१७ दि.१/९/२०१६ अन्वये उद्देशपत्र प्राप्त झाले आहे.

सर्व प्रथम आम्ही महाराष्ट्र शासन नगर विकास विभाग मंत्रालय मुंबई यांचेकडे Locational Clearance मिळणेकामी दि.११/२/२००८ अन्वये अर्ज दाखल केला होता. सदरचे अर्जाचे अनुषंगाने मा. संचालक नगररचना महाराष्ट्र राज्य यांचे कार्यालयाने २०२.७५ हेक्टर क्षेत्रास Locational Clearance देणेची शिफारस त्यांचेकडील पत्र क्र.जा.क्र.प्रा. यो.पुणे/ विषेश नगर वसाहत / मौजे लोणी काळभोर / टीपीव्ही/१/४७८७ दि. १५/९/२००८ अन्वये नगर विकास विभागास केली होती.

५५५
३१/१२/२०१६
आद्यक लिपिक
नगरविकास विभाग
मंत्रालय, मुंबई ४०० ०३२

Riverview City Constructions Ltd.

Registered Office :- Megaspaces, 13 Sholapur Bazar Road, Off East Street, Pune - 411001, India.

Tel :- 020-26342797, 26341940 Email : magari@bom5.vsnl.net.in Fax : 020-2634554

CIN : U45202PN2007PLC129440

सदरचे अधिसूचीत नगर वसाहत प्रकल्पाचे क्षेत्रालगत मौजे कदमवाकवस्ती येथील गट नं. १०५ ते १२४ व १२६ ते १२९ यांचे एकुण क्षेत्र ३८.८७ हेक्टर असुन सदरचे क्षेत्र हे बिगर नगर परिषद विकास योजना लोणी काळभोरमध्ये समाविष्ट असुन शेती व ना-विकास विभागमध्ये सामील आहे.

सदरचे ३८.८७ हेक्टर क्षेत्राबाबत पुणे जिल्हा परिषद पुणे यांनी सदर जमीन शेती व ना-विकास विभागतुन वगळुन रहिवास विभागामध्ये समाविष्ट करणेसाठी महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम १९६६ चे कलम ३७(१) अन्वये कार्यवाही करुन त्यांचेकडील अहवाल, प्रधान सचिव नगर विकास विभाग मंत्रालय मुंबई यांचेकडे जा.क्र.जि.प./पंचा/५/कावि/१६८/०१५ दि.३१/१२/२०१५ अन्वये दाखल केला आहे. त्या अनुषंगाने मा.संचालक नगर रचना पुणे यांनी त्यांचेकडील पत्र क्र.वि.यो.लोणीकाळभोर / गट नं.१०५ व इतर /कलम ३७(१) /टीपीव्ही-१/४७२९/१६ दि.२४/८/२०१६ अन्वये, वैधानिक कार्यवाहीची पुर्तता होणेचे दृष्टीने जिल्हा परिषदेच्या सर्वसाधारण सभेचा अंतीम ठराव घेवुन सादर करणेबाबत जि.प.पुणे यांना कळविले होते. त्याप्रमाणे मा.जिल्हा परिषद पुणे यांनी त्यांचेकडील जिल्हा परिषद सर्व साधारण सभा दि.१४/९/२०१६ रोजीचे सभेतील विषय क्र.४७७ ठराव क्र.८६८ अन्वये अंतीम ठराव करुन, मा.संचालक नगर रचना म.रा. पुणे यांना सादर केला आहे.

तसेच सदरचे एकत्मिकृत नगरवसाहत प्रकल्पाचे लगत गट नं. १०८७ (भाग), १०८८(भाग), १०८९(भाग), १०९०(भाग), १०९१(भाग), १०९२, १०९३, १०९९, ११०० ते ११११, ११२५ ते ११३१, ११४१ (भाग), ११४२, ११४३, ११४४, ११४५, ११४६(भाग), ११४८ (भाग) मधील एकुण क्षेत्र ११.१२७ हेक्टर Truck Terminus व parking झोन मध्ये समाविष्ट आहे.

तसेच गट नं.२०२, ४००, ४०५, ४१९, ४४३, ४४८, ४६०, ४७१, ५२३, ५४३, ५५१, ५५२, ११३२/१, ११३२/२, ११३२/३, ११३६ व ११३७ मधील ५.३८९५ हे.क्षेत्र शेती व ना-विकास विभागामध्ये समाविष्ट आहे.

बिगर नगर परिषद लोणी काळभोर विकास योजनेमधील ३८.८७ हे व Truck Terminus Parking Zone मधील ११.१२७ हेक्टर व लगतचे ५.३८९५ हेक्टर क्षेत्र या पुर्वी संदर्भ क्र.१ व २ अन्वये प्राप्त झालेल्या Locational Clearance मधील १५५.००८६ हेक्टर या क्षेत्रामध्ये समाविष्ट (Add) करण्याबाबत सदरचा प्रस्ताव दाखल करीत आहे.

सदरचे प्रस्तावाचे मंजुरीनंतर रिव्हरव्ह्यू सिटी या एकत्मिकृत नगरवसाहत प्रकल्पाचे एकुण क्षेत्र २१०.३९५१ हेक्टर इतके होणार आहे.

प्रस्तावित वाढीव क्षेत्रातील जमिन मालकांनी आपापसात करार करून रिव्हर्व्यू सिटी कंस्ट्रक्शन कं. लि. ची स्थापना केली असून कंपनी मार्फत एकत्मिकृत नगरवसाहत प्रकल्प विकसीत करण्याचे ठरविले आहे. सदर बाबत Memorandum of Articles and Articles of Association ची प्रत सोबत जोडली आहे.

आपणास विनंती करणेस येते की मौजे कदमवाकवस्ती, ता.हवेली येथील रिव्हर्व्यू सिटी या एकात्मिकृत नगर वसाहत प्रकल्पामध्ये सोबत जोडलेल्या यादीमधील ५५.३८६५ हेक्टर क्षेत्रची वाढ (Addition) करून मिळणेचे आदेश व्हावेत.

सदर प्रस्तावासोबत खालीलप्रमाणे कागदपत्रे जोडलेली आहेत-

१. संदर्भ क्र. १ व २ अन्वये प्राप्त झालेली अधिसूचना
२. उद्देशपत्र
३. शासनाकडून प्राप्त झालेला Locational Clearance नकाशा
४. गट नंबरची यादी
५. नियोजित वाढीव क्षेत्राचा नकाशा
६. वन विभाग, तहसिलदार तलाठी जलसंपदा विभाग व पुरातत्व विभाग यांचे कडील दाखले
७. Memorandum of Articles and Articles of Association
८. जिल्हा परिषद पुणेयांचे कडील प्रस्ताव व ठराव
९. संचालक नगर रचना यांचेकडील दि. १५/९/२००८ रोजीचे शिफारसपत्र
१०. आपापसातील समजुतीचा करारनामा
११. ७/१२ उतारे (मुळ प्रती)

कळावे,

आपला,

रिव्हर्व्यू सिटी कंस्ट्रक्शन कं. लि. करीता

अधिकृत अधिकारी

Riverview City Constructions Ltd.

Registered Office :- Megaspaces, 13 Sholapur Bazar Road, Off East Street, Pune - 411001, India.
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CIN : U45202PN2007PLC129440

महाराष्ट्र शासन

जा.क्र.टिपीएस-१८१६/०३/प्र.क्र.२९/१७/नवि-१३

नगर विकास विभाग, मुख्य इमारत,

चौथा मजला, मंत्रालय, मुंबई-३२.

दिनांक : ३१/०३/२०१७.

प्रति,

✓ रिक्हरव्हु सिटी कन्स्ट्रक्शन लि.,
मेगास्पेस, १३ सोलापूर बाजार रोड, ऑफ इस्ट स्ट्रीट,
पुणे-४११ ००१.

विषय - प्रादेशिक योजना- पुणे.

एकात्मिकृत नगर वसाहत मौजे कदमवाकवस्ती (लोणीकाळभोर) ता. हवेली, जि.पुणे येथील नगर वसाहतीच्या वाढीव क्षेत्रास महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम, १९६६ चे कलम १८ तसेच कलम ४४(२) अन्वये लोकेशनल क्लिअरन्स मंजूरी मिळणेबाबत.

संदर्भ - १) शासन निर्णय क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३,
दि.२०/१०/२०१५.

२) शासन निर्णय क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३,
दि.०१/०६/२०१६.

३) अर्जदार रिक्हरव्हु सिटी कन्स्ट्रक्शन्स लि. तर्फे संचालक श्री. सतीश दत्तात्रय मगर (रिक्हरव्हु सिटी टाऊनशिप) यांचा शासनास दि.३०/१२/२०१६ रोजीचा सादर प्रस्ताव.

महोदय,

प्रस्तुत प्रकरणी मौजे कदमवाकवस्ती (लोणीकाळभोर) ता. हवेली, जि. पुणे येथील रिक्हरव्हु सिटी कन्स्ट्रक्शन्स लि. यांच्या एकात्मिकृत नगरवसाहतीच्या १५५ हे. क्षेत्रास संदर्भित क्र.१ अन्वये लोकेशन क्लिअरन्स दिलेले आहे. यानंतर संदर्भित क्र.३ अन्वये या नगरवसाहतीमध्ये ५५.३८६५ हे. क्षेत्र समाविष्ट करून त्यास दि.२६/१२/२०१६ रोजीच्या एकात्मिकृत नगर वसाहतीच्या सुधारित नियमावलीनुसार लोकेशन क्लिअरन्स देणेबाबत सादर केलेल्या प्रस्तावास काही अटीसह शासनाची मान्यता प्राप्त झाली आहे. या प्रस्तावाबाबत खालील प्रमाणे कळविणेबाबतचे मला आदेश आहेत.

सदर प्रकरणी लोकेशन क्लिअरन्स देणेपुर्वी अर्जदार कंपनीकडून दि.२६/१२/२०१६ रोजीच्या नियमावलीतील तरतूद क्र.४.१.(i) नुसार छाननी फी तसेच तरतूद क्र.७.१.२ नुसार प्रिमियम रक्कम संबंधित जिल्ह्याचे सहायक संचालक, नगर रचना यांचेकडे भरणा करणे आवश्यक आहे. विषयांकित प्रस्तावास लोकेशन क्लिअरन्ससाठी आवश्यक कागदपत्राची पूर्तता इरादापत्र घेणेपुर्वी अर्जदार करू न शकल्यास भविष्यात सदर रक्कम परत मिळणार नाही, याबाबीची कृपया नोंद घ्यावी. सबब, याबाबत संबंधित कार्यालयाशी संपर्क साधून विषयांकित प्रस्तावाबाबतची छाननी फी तसेच प्रिमियम रक्कम भरणा करणेची व्यवस्था करावी, ही विनंती. याप्रमाणे रक्कम भरणा झाल्यानंतर विषयांकित नगरवसाहतीचे वाढीव क्षेत्रास लोकेशन क्लिअरन्स देणेबाबतची कार्यवाही करणे शक्य होईल.

आपला,

(रा.म.पवार)

अवर सचिव, महाराष्ट्र शासन

प्रत:- सहायक संचालक, नगर रचना, पुणे शाखा, पुणे यांना माहितीस्तव व आवश्यक कार्यवाहीसाठी.

/- विषयांकित नगरवसाहतीमध्ये समाविष्ट करावयाच्या वाढीव क्षेत्राची यादी यासोबत जोडलेली असून त्यानुसार दि.१६/१२/२०१६ रोजीच्या नियमावलीतील तरतूदीनुसार देय होणारी छानणी फी तसेच सदर नगर वसाहतीच्या यापुर्वी मंजूर केलेले लोकेशन क्लिअरन्स तसेच सद्याचे समाविष्ट करावयाचे वाढीव क्षेत्र याप्रमाणे एकुण २१०.३९५१ हे. क्षेत्राबाबत उक्त नियमावलीतील तरतूद ७.१.२ नुसार देय होणारी प्रिमियमची रक्कम संबंधित कंपनीकडून भरणा करुन घ्यावी व त्यानंतर चलनाच्या स्वाक्षांकित प्रतिसह याबाबतचा अहवाल शासनास सादर करावा.

NOTIFICATION

**Government of Maharashtra
Urban Development Department,
Mantralaya, Mumbai-32.**

Date : 20/10/2015

Maharashtra
Regional and
Town Planning
Act, 1966.

No.TPS-1813/392/12/CR-572/13/UD-13:- Whereas, the Government in the Urban Development Department, vide its Notification No.TPS-1895/227/CR-26/95/UD-13 dated the 25th November, 1997, has sanctioned the Regional Plan for Pune District (hereinafter referred to as "the said Regional Plan") under Section 15 of the Maharashtra Regional and Town Planning Act, 1966 (hereinafter referred to as "the said Act."), which has come into force with effect from the 10th February, 1998;

And whereas, the Government of Maharashtra in the Urban Development Department, vide Notification No.TPS/1804/Pune RP D.C.R/ UD-13, dated the 16th November, 2005 and addendum No.TPS-1804/Pune RP D.C.R/UD-13/ Addendum, dated the 6th January, 2006, has amended the sanctioned Development Control Regulations for the said Regional Plan, under the provisions of sub-section (4) of Section 20 of the said Act, in order to incorporate the regulations for Development of Special Townships (hereinafter referred to as **"the said STP Regulations"**) and has further amended the said STP Regulations vide Notifications dated the 15th June, 2009, 1st January, 2014 and the 30th May, 2014;

And whereas vide amendmend in chapter III of Maharashtra Regional and Town Planning Act 1966 (Act 43),the Special Township Project are renamed as "Integrated Township Project" w.e.f date 22/04/2015.

And whereas the land owners by themselves came together and formed Riverview City Construction Ltd Company and gave development rights/consent in the form of Memorandum of association and articles of association to include their land for development of Special Township Project on their land;

And whereas, Shri. Satish Dattatray Magar Director, Riverview City Constructions Limited, (Riverview City Township) (hereinafter referred to as "the Applicant"), vide application dated the 11/02/2008, dt. 19/06/2008, dt. 11/08/2014, dt.03/04/2014 and thereafter finally vide application dated 13/07/2015 have submitted a proposal as per the provisions of sub-section (3) of Section 18 of the said Act and Regulation No.7(a) of the said STP Regulations, to the Government, for grant of Locational Clearance in respect of the lands admeasuring about 158.8466 Ha., from Village - Kadamwakvasti, Tal.Haveli, Dist.Pune for Development of a Special Township Project (hereinafter referred to as "proposed Integrated Town Ship Project"):

And whereas, as per the said Regional Plan, the lands under the **proposed Integrated Town Ship Project** are allocated partly to "Agriculture / No Development" Zone and partly in "90m. wide Regional Plan road proposal and Partly Designated for Bharat Petroleum and Partly for Truck Terminus and Parking;

And whereas the acquisition proceeding in respect of land designated for Bharat Petroleum Co. is withdrawn under section 48 of Land Acquisition Act 1894 vide Government in Revenue & Forest Department letter No. LPO-345/16/A3 dated 03/11/2011;



- 5) The Applicant shall be responsible for making provision for safe disposal of Solid Waste and effluents at his own cost, as per the criteria and norms decided by the Maharashtra Pollution Control Board and also subject to the provisions and rules under the relevant Act in this regard.
- 6) It shall be the responsibility of the Applicant to provide facilities required for Electricity Supply to the said Project as per Rule No.1.3(c) at his own cost. Also the respective Authority shall verify the permission and the firm commitment of Electric power supply for the entire Special Township Project from the concerned power supply company, before giving sanction to the Master layout plan as per Rule No.7(c).
- 7) The Applicant shall provide minimum 12 mt. access road, free of cost to the lands owned by other private persons, which are surrounded by the area under the said Integrated Town Ship Project.
- 8) All the proposals and designation of sanctioned Regional Plan shall be shown on the Master Plan of the Township
- 9) All the easement rights of the public regarding existing roads passing through the said Special Township Project shall be kept unaffected.
- 10) No construction shall be permitted on the lands having slope equal to or more than 1:5 in the said Integrated Town Ship Project, whether such lands are specifically marked as such on the Regional plan or not. No development involving cutting / leveling / filling shall be allowed on such lands to provide city level amenities like Play Ground, Gymnasium, Stadium etc. Also Floor Space Index (FSI) of such lands shall not be permissible.
- 11) The condition stipulated in the No-objection certificate issued by Archaeological Department shall be binding on the Applicant.
- 12) The concerned authority shall verify before issuing Letter of Intent that the Integrated Township Project shall not include Tribal land, Forest land & Government land. The applicant shall furnish NOC from Collector to that effect.
- 13) The Memorandum of Association and Articles of Association submitted by the Applicant Company, and Memorandum of Understanding given to Director of Company under the proposed Integrated Town Ship Project shall be verified by the Authority at their level before issuing Letter of Intent
- 14) It shall be the responsibility of owner to submit clearance from Collector, Pune regarding "New Tenure" lands if any included in the said Integrated Town Ship Project and shall be confirmed by the respective Authority before granting final sanction to the Master Lay-out Plan.
- 15) It shall be the responsibility of owner to submit clearance from Collector, Pune regarding lands having entries of bank recovery in the other rights which are included in the said Integrated Town Ship Project before granting final sanction to the Master Lay-out Plan.
- 16) The Applicant shall have to plan and earmark the lands at suitable location for public purpose reservations and also for basic infrastructure required for



[Signature]

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And whereas, the Water Resources Department of the State Government has given consent for executing the proposed Integrated Town Ship Project of the Applicant, subject to certain conditions;

And whereas, after consulting the Director of Town Planning, Maharashtra State, as well as after making necessary enquiries, the Government is of the opinion that contiguous lands, admeasuring about 156.2136 Ha., as specified in the Schedule-A appended hereto, (hereinafter referred to as the "said lands"), should be notified for the purpose of development as Integrated Town Ship Project;

And whereas it is expedient accordingly to designate the said lands on the said Regional Plan under the provisions of sub-section (3) of Section 18 read with Section 44(2) of the said Act as the lands earmarked for development as Integrated Town Ship Project, subject to the conditions specified hereinbelow;

Now, therefore, without prejudice to the provisions of the said Act, the Government, in exercise of the powers conferred under sub-section (3) of the Section 18 read with Section 44(2) of the said Act, hereby notifies the said lands, specifically described in Schedule-A appended hereto, as lands where execution of Integrated Town Ship Project is permitted and accordingly grants Locational Clearance to the same, subject to the following conditions:-

"Conditions :-

- 1) The Applicant shall obtain the Environmental Clearance from the Ministry of Environment and Forests (MoEF) of the Government of India and from the Appropriate Competent Authority before obtaining the Letter of Intent for above Integrated Town Ship Project. Also, the provisions of Environment Impact Assessment Notification, issued by the Ministry of Environment and Forests, of the Government of India from time to time, shall be binding on the Applicant.
- 2) The conditions stipulated from time to time by the Water Resources Department of the State Government and other concerned Departments shall be binding on the Applicant. Further the conditions mentioned in the No Objection Certificate / letter No. मु.अ./काग-२/प्रशा-६/(२४२)०२७४०, dated the 04/05/2010 of the Chief Engineer, Water Resources Department, Pune shall also be binding on the Applicant. Natural water sources and nalas passing through the said Project shall not be blocked.
- 3) It shall be the responsibility of the Applicant to provide water supply facility to the said project as per the Regulation No.1.3 (a), at his own cost. The NOC from Regional Head of the Water Resource Department and the conditions stipulated from time to time by the Water Resources Department shall be binding on the Applicant.
- 4) It shall be binding on the Applicant to submit proof of water availability (eg. Letter of sanction for water from the Water Resources Department) along with his application for sanction of Master Layout plan of the above Integrated Town Ship Project area under Regulation No.7(c).



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the population to be accommodated within the said Integrated Town Ship Project, as per the Regulations and shall plan and develop the same at his own cost.

17) The sanctioned Regulations of Integrated Town Ship Projects and any Corrections / Revisions / Directives / Orders etc. issued by the Government from time to time shall be binding on the Applicant.

18) No development shall be permissible on lands having width less than 20 mt.

19) If any document of ownership of lands included in the said Integrated Town Ship Project is found faulty or if any judicial proceedings arise regarding the said Integrated Town Ship Project in future then, it shall be the sole responsibility of the Applicant to deal with those proceedings at his risk and cost." Also Government may cancel the said Locational Clearance if required.

This Notification shall come into force on the date of its publication in the Maharashtra Government Gazette.

This Notification and "Schedule-A", shall be kept for inspection of the general public, during office hours on all working days at the following offices:-

- (1) Joint Director of Town Planning, Pune Division, Pune, Survey No.74/2, Sahakar Nagar, Sarang Society, Pune-411009.
- (2) Chief Executive Officer, Pune Metropolitan Regional Development Authority, New Administrative Building, Near Aakurdi Railway station, Pune-35.

This Notification shall also be published on the, Government web-site- www.maharashtra.gov.in.

By order and in the name of the Governor of Maharashtra,



(Signature)
(Sanjay Shoji)

Under Secretary to Government

"SHEDULE-A"

**Details of Notified Lands Under the Integrated Town Ship Project for M/s
Reverview city Constructions Limited at Village Kadamwak Vasti, Taluka Haveli,
Dist. Pune.**

Sr. No.	Gat No./ Hissa No.	Area as per 7/12 Extracts (Ha.)	Area under Town Ship (Ha.)
1	1	1.07	1.07
2	2	0.75	0.75
3	3	1.91	1.91
4	4	0.80	0.80
5	5	0.75	0.75
6	6	0.47	0.47
7	7	0.66	0.66
8	8	0.20	0.20
9	9	0.61	0.61
10	10	0.20	0.20
11	11	0.34	0.34
12	12	0.48	0.48
13	13	0.39	0.39
14	14	0.39	0.39
15	15	0.47	0.47
16	16	0.34	0.34
17	17	0.49	0.49
18	18	0.48	0.48
19	19	0.51	0.51
20	20	0.54	0.54
21	21	0.18	0.18
22	23	1.32	1.32
23	24	1.07	1.07
24	25	0.20	0.20
25	26	0.17	0.17
26	27	0.40	0.40
27	28	1.25	1.25
28	29	0.81	0.81
29	30	0.26	0.26
30	31	0.07	0.07
31	32	1.76	1.76
32	33	0.60	0.60
33	34	0.94	0.94
34	35	1.17	1.17
35	36	2.71	2.71
36	37	0.52	0.52
37	38	6.40	6.40
38	39	1.41	1.41



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Sr. No.	Gat No./ Hissa No.	Area as per 7/12 Extracts (Ha.)	Area under Town Ship (Ha.)
39	40	1.41	1.41
40	41	0.42	0.42
41	43	0.87	0.87
42	44	0.45	0.45
43	45	0.96	0.96
44	46	0.30	0.30
45	47	0.17	0.17
46	48	0.17	0.17
47	49	0.12	0.12
48	50	1.98	1.98
49	51	0.88	0.88
50	52	0.88	0.88
51	53	3.22	3.22
52	54	0.98	0.98
53	55	0.97	0.97
54	56	0.73	0.73
55	57	1.46	1.46
56	58/A	0.4075	0.4075
57	58/B	0.4075	0.4075
58	58/ C	0.4075	0.4075
59	58/D	0.4075	0.4075
60	59	0.05	0.05
61	60	1.63	1.63
62	61	1.66	1.66
63	62	1.66	1.66
64	63	1.09	1.09
65	64	1.00	1.00
66	65	1.04	1.04
67	66	0.30	0.30
68	67	0.30	0.30
69	68	0.30	0.30
70	69	0.60	0.60
71	70	0.20	0.20
72	71	0.20	0.20
73	72	0.41	0.41
74	73	0.61	0.61
75	74	0.31	0.31
76	75	0.31	0.31
77	76/2	1.62	1.62
78	77	0.47	0.47
79	78	3.88	3.88
80	79	0.59	0.59
81	80	2.48	2.48



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Sr. No.	Gat No./ Hissa No.	Area as per 7/12 Extracts (Ha.)	Area under Town Ship (Ha.)
82	81	0.67	0.67
83	82	0.56	0.56
84	83	1.74	1.74
85	84	1.36	1.36
86	85	0.02	0.02
87	86	2.03	2.03
88	87	2.24	2.24
89	88	2.30	2.30
90	89	1.44	1.44
91	90	4.08	4.08
92	91	3.05	3.05
93	92	1.42	1.42
94	93	2.07	2.07
95	94	0.40	0.40
96	95	0.77	0.77
97	96	1.60	1.60
98	97	0.93	0.93
99	98	0.89	0.89
100	99	0.46	0.46
101	100	1.30	1.30
102	101	1.49	1.49
103	102	0.16	0.16
104	103	0.76	0.76
105	104	0.46	0.46
106	407	0.03	0.03
107	483	0.45	0.45
108	509	0.36	0.36
109	511	1.30	1.30
110	520	0.52	0.52
111	540/1	2.006	2.006
112	540/2	2.007	2.007
113	540/3	2.006	2.006
114	541	1.80	1.80
115	1059	0.86	0.86
116	1060	0.49	0.49
117	1061	0.49	0.49
118	1062	0.48	0.48
119	1063	0.49	0.49
120	1064	1.79	1.79
121	1065	0.34	0.34
122	1066	0.26	0.26
123	1067	0.26	0.26
124	1068	0.03	0.03



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Sr. No.	Gat No./ Hissa No.	Area as per 7/12 Extracts (Ha.)	Area under Town Ship (Ha.)
125	1070	0.26	0.26
126	1071	0.25	0.25
127	1072	0.31	0.31
128	1073	0.30	0.30
129	1074	0.32	0.32
130	1075	0.39	0.39
131	1076	0.22	0.22
132	1077	0.32	0.32
133	1081	0.11	0.11
134	1082	0.09	0.09
135	1083	0.16	0.16
136	1084	0.15	0.15
137	1085	0.14	0.14
138	1086	0.07	0.07
139	1087 (Pt)	0.38	0.258
140	1088 (Pt)	0.18	0.153
141	1089 (Pt)	0.16	0.023
142	1090 (Pt)	0.18	0.033
143	1091 (Pt)	0.88	0.599
144	1137 (Pt)	1.07	0.789
145	1138	1.07	1.07
146	1139	0.89	0.89
147	1140	2.02	2.02
148	1141	2.00	2.00
149	1142	0.17	0.17
150	1143 (Pt)	0.17	0.062
151	1146 (Pt)	2.40	1.67
152	1147	0.08	0.08
153	1148 (Pt)	2.40	2.09
154	1149	1.20	1.20
155	1150 (Pt)	6.86	6.6176
156	1151	0.72	0.72
157	1152/1	0.405	0.405
158	1152/2	0.405	0.405
159	1153	1.52	1.52
160	1154	0.98	0.98
161	1155	0.44	0.44
162	1156	0.27	0.27
163	1158	0.14	0.14
164	1159	1.66	1.66
165	1160/1	0.40	0.40
166	1160/2	0.40	0.40



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Sr. No.	Gat No./ Hissa No.	Area as per 7/12 Extracts (Ha.)	Area under Town Ship (Ha.)
167	1160/3	1.18	1.18
168	1160/4	0.58	0.58
169	1160/5	0.58	0.58
170	1163	0.35	0.35
171	1164	0.25	0.25
172	1165	1.52	1.52
173	1166	1.53	1.53
174	1167	0.50	0.50
Total		158.599	156.2136

By order and in the name of the Governor of Maharashtra,



(Signature)
(Sanjay Saoji)
Under Secretary to Government

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**Maharashtra Regional and
Town Planning Act, 1966.**

**Notification under section
20 (4) of ..
Regional Regulations for
Development of Townships in
Area under Pune Regional
Plan.**

**GOVERNMENT OF MAHARASHTRA
Urban Development Department
Mantralaya, Mumbai 400 032.
Dated 16th November, 2005.**

No. TPS 1804/ Pune R.P.DCR/UD-13 :

Whereas Government has sanctioned the Regional Plan for Pune District Region (hereinafter referred to as "the said Regional Plan") vide Notification No. TPS 1895/227/CR-26/95/UD-13, dated 25th November, 1997 as per the provisions of section 15 of the Maharashtra Regional and Town Planning Act, 1966 (hereinafter referred to as "the said Act") which has come into force with effect from 10-2-1998.

And whereas, Development Control Rules of the said Regional Plan does not contain the provisions for Special Township;

And whereas, Public Housing has been one of the major concerns of policy planning. It has been realized that there is a need to incentivise investment by private sector in development of housing. With this in mind, Government of India announced its policy to permit 100% direct foreign investment for development of integrated towns. Government of Maharashtra in collaboration with Maharashtra Economic Development Council had organized an International Infrastructure summit in 2002. A concept paper was presented by the Urban Development, which was widely appreciated. **Consultations with planners, architects and developers were held and the** Government of Maharashtra finally approved the Special Township Scheme in the year 2004. The idea is to promote private investment in housing sector to facilitate housing at reasonable prices and also to create a hassle free atmosphere for investors. The new policy has to form a part of the existing DCR of Municipal Corporation/Councils and Development Control Regulations for regional plan areas.

And whereas, accordingly, Development Control Regulations (DCRs,) exclusively for Special Townships, (hereinafter referred to as "the said Regulations") have been prepared and it is proposed to incorporate the said Regulations, in the Development Control Regulations of all the Municipal Corporations, New Town Development Authorities, Special planning Authorities, Municipal Councils (hereinafter referred to as "the said Authorities") and also in the Development Control Regulations of all the Regional Plans of the State, by taking recourse to procedure laid down in Section 37 and 20 (as the case may be) of the said Act thereby modifying the relevant Development Plan/Regional Plan in as much as Regulations thereof are concerned (hereinafter referred to as "the said modification").

And whereas, under the powers conferred by sub-section (3) of section 20 of the said Act, Government in Urban Development Department had published a notice No. TPB 4302/2080/CR-215/02/UD-11 dated 21.8.2004 (hereinafter referred to as "the said notice") which appeared in Maharashtra Government Gazette Part-I, Pune Division on 4-11-04 at pages 2209 to 2216 in respect of Pune Regional Plan to invite suggestions/objections from the general public on the said modification and appointed the Dy. Director of Town Planning, Pune Division, Pune as an Officer to hear the suggestions/objections which may be received and submit his report on the same to Government.

And whereas, thereafter the said Act has been amended to include the provision for Special Township Project vide Maharashtra Act No. XXIII of 2005 which appeared in Maharashtra Government Gazette (Extra Ordinary) dated 19/5/05;

And whereas, since the said notice published by the Govt. was prior to the amendment to the said Act, Government withdraws the same and published a fresh notice no. TPS:1804/Pune R.P.DCR/UD-13 dated 24/6/2005 regarding the said modification under sub-section (3) of section 20 of the said Act which appeared in Maharashtra Government Gazette Part-I, Pune Division on 25th June, 2005 at pages 13 to 20 to invite suggestions / objections from general public;

And whereas, after consulting the Director of Town Planning, Maharashtra State Pune and after making necessary enquiries the Govt. is of the opinion that the said modification proposal is necessary and should be sanctioned with some changes;

Now therefore, in exercise of the powers conferred by sub-section (4) of section 20 of the said Act, the Government hereby finally sanctions the said modification proposal with some changes to the said Regional Plan and for that purpose amends the Urban Development Department Notification No. TPS 1895/227/CR-26/95/UD-13 dated 25th November, 1997.

NOTE :

- A) A copy of the sanctioned Regulations for Development of Special Township in area under Pune Regional Plan i.e. Schedule-A is kept open for inspection by the general public in the offices of the following officers for the period of one month:
- 1) Dy. Director of Town Planning, Pune Division, S.No. 74/2, 1st floor, Bank of Maharashtra Building, Sahakarnagar, Pune - 411 009
 - 2) The collector, Pune.
 - 3) Assistant Director of Town Planning, Pune Branch, 283, Narayan Peth, Pune 411 030.
- (B) This notification is available on Government web site www.urban.maharashtra.gov.in

SCHEDULE 'A'

**REGULATIONS FOR DEVELOPMENT OF
SPECIAL TOWNSHIPS IN AREA UNDER
PUNE REGIONAL PLAN**

A. GENERAL REQUIREMENTS:

1. APPLICABILITY: These Regulations would be part of Development Control Regulations of sanctioned Regional Plan Pune and applicable to the area under sanctioned Pune Regional Plan excluding the area under jurisdiction of Municipal Corporations, Municipal councils, Cantonment Boards and Pimpri Chinchwad New Town Development Authority, Maharashtra Industrial Development Corporation Eco-Sensitive area, if any declared by Government and Special Planning Authority, if any.

1.1 AREA REQUIREMENT: Any suitable area having sufficiently wide means of access (not less than 18 mt wide) can be identified for the purpose of development as "Special Township". The area notified under the Special Township shall be one continuous unbroken and uninterrupted and in any case shall not be less than 40 Ha (100 acres) at one place, which shall not include the area under notified forest, water bodies like river, creek canal, reservoir, Tribal lands, lands falling within the belt of 500 mt. from the HFL of major lakes, land falling in the command area of irrigation projects, land falling within the belt of 200 mt. from the historical monuments and places of Archeological importance, Archeological monuments, Heritage precincts and places, any restricted areas, notified National Parks, existing and proposed industrial zone, gaathan areas or congested areas.

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However, such special Township may include private land under Hill-Tops and Hill-Slopes Zones in Pune Metropolitan Region as well as Hill-Tops and Hill-Slopes Zones outside Pune Metropolitan Region, whether earmarked on Regional Plan or not and Afforestation Zones. The area of lands in such Hill-Tops and Hill-Slopes Zones and Afforestation Zones shall be maximum 40% of the gross area and such area shall be included in part of 50% area to be kept permanently open where no development activity shall be permissible under such townships. The said areas shall be developed for tree plantation as per the norms specified. However, for the purpose of calculation of FSI, such areas shall be excluded.

1.2 MANNER OF DECLARATION: Any area identified above and if found suitable can be Notified by Government in Urban Development Department by following procedure under section 20 read with section 18 of the Maharashtra Regional and Town Planning Act 1966 and also in such other manner as may be determined by it for the purpose of development as 'Special Township Project'.

1.3 INFRASTRUCTURE FACILITIES: The entire Township should be an integrated one with all facilities within the boundaries of declared townships. All the on site Infrastructure, i.e. roads, including R. P. roads, approach road, street lights, water supply and drainage system shall be provided and maintained in future by the developer till urban local body is constituted for such area and the developer shall also carry out development of amenity or proposals, if any designated in the Regional plan, in accordance with the prevailing regulations.

- (a) **Water Supply:** The developer shall be required to develop the source for drinking water (excluding the groundwater source) or secure firm commitment from any water supply authority for meeting the daily water requirement of minimum 140 liters per capita per day exclusive of requirement of water for fire fighting and gardening. The storage capacity of the same shall be at least 1.5 times of the actual required quantity as determined by expected population (Resident and Floating) and other uses. The developer would be required to develop proper internal distribution and maintenance systems and shall specially undertake rain water harvesting, groundwater recharging and waste water recycling projects within the Township.
- (b) **Drainage and Garbage Disposal:** The developer shall make suitable and environment friendly arrangements for the disposal and Treatment of sewage and solid waste as per requirements of Maharashtra Pollution Control Board. Recycling sewage for gardening shall be undertaken by the developer.

The developer shall develop Eco-friendly garbage disposal system by adopting the recycling and bio-degradation system in consultation with Maharashtra Pollution Control Board.

- (c) **Power:** The developer shall ensure continuous and quality power supply to township area. The developer may draw the power from any existing supply system or may go in for arrangement of captive power generation with the approval from concerned authority. If power is drawn from existing supply system, the developer shall before commencement of development, procure a firm commitment of power for the entire township from the power supply company.

1.4 ENVIRONMENT: The development contemplated in townships shall not cause damage to ecology. In no case it shall involve topographical changes, changes in alignment & cross section of existing water course, if any, in the scheme area or adjacent to scheme area. Environmental clearance shall be obtained from the Ministry of Environment and Forest, Government of India as per directions issued by the MOEF's notification dated 7th July 2004. The Township shall provide at least 20% of the total area as Park/Garden/Playground as mentioned in 4(f) below, with proper landscaping and open uses designated in the Township shall be duly developed by owner/developer. This amenity shall be open to general public without any restriction or discrimination.

2. SPECIAL CONCESSIONS:

- (a) **N. A. Permission:** Non-agriculture permission will be automatic. As soon as the scheme is notified, lands notified under Special Township area as per 1.2 will be deemed to have been converted into non-agriculture and no separate permission is required. Non-agriculture, assessment, however, will commence from the date of sanction of scheme as per Regulation No. 7(c).
- (b) **Stamp Duty:** The stamp duty rates applicable in Notified Special Township area shall be 50% of prevailing rates of the Mumbai Stamp Act.
- (c) **Grant of Government Land:** Any special Government land falling under township area shall be leased out to the developer at the prevailing market rate on usual terms and conditions.
- (d) **Relaxation from Mumbai Tenancy and Agriculture Land Act:** The condition that only the agriculturist will be eligible to buy the agriculture land shall not be applicable in Special Township area.

- (e) **Ceiling of agriculture land:** There shall be no ceiling limit for holding agriculture land to be purchased by the owner/developer for such Special Township project.
- (f) **Exemption from Urban Land (Ceiling and Regulation) Act, 1976:** Special Township Projects shall be exempted from the purview of Urban Land (Ceiling and Regulation) Act, 1976.
- (g) **Scrutiny Fee:** A Special Township Project shall be partially exempted from payment of scrutiny fee being levied by the Collector/Planning Authority for processing the development proposal on certain terms and conditions as may be decided by the Collector/Planning Authority.
- (h) **Floating FSI:** There will be floating FSI in the township. Unused FSI of one plot can be used anywhere in the whole township.
- (i) **Special benefits / concessions** in respect of Star Category Hotels, Hospitals and Multiplexes / Property Tax shall be provided.

3. **PLANNING CONSIDERATIONS:**

The Township project has to be an integrated township project. The project should necessarily provide land for following users.

- a) Residential
- b) Commercial
- c) Educational
- d) Amenity Spaces
- e) Health Facilities
- f) Parks, Gardens & Play Grounds
- g) Public Utilities.

4. **GENERAL NORMS FOR DIFFERENT LAND USES :**

The overall planning of the special townships shall be such that the project fairly meets with the specifications spelt out in the prevailing planning standards approved by Government. Further, the planning of Special Township shall take care of following land uses in particular.

(a) **Residential :** The residential area should be well defined in clusters or neighborhoods or in plotted development with proper road grid. Out of the total floor area proposed to be utilized which is permissible as proportionate to zoning of area under such township at least 60% of the area may be used for purely residential development and further out of the total floor area proposed to be utilized for residential development, 10% of the same shall be built for residential tenements having built up area up to 40 sq.mt.

(b) **Commercial:** The commercial area shall be properly distributed in hierarchical manner such as convenience shopping, community centre etc.

(c) **Educational:** Comprehensive educational system providing education from primary to secondary should be provided as per the requirement. The area allocation should be on projected population base and as far as possible the educational complex should not be concentrated at one place. All such complexes should have area adequate allocation for playground. Minimum area required for educational purpose shall be as per prevailing planning standards.

(d) **Amenity Spaces :** The area allocation for amenity space providing for amenities like market, essential shopping area, recreation centers, town hall, library etc; should not be less than 5% of gross area and should be evenly placed.

(e) **Health Facilities:** Adequate area allocation for health facilities for primary health should be provided for. Minimum area required for health facilities shall be as per prevailing planning standards.

(f) **Parks, Gardens and Play Grounds:** The township shall also provide at least 20% of the total area as Parks/Gardens/Play grounds. This should be exclusive of the statutory open spaces to be kept in smaller layout and should be distributed in all residential clusters. This 20% area should be developed by the developer for such purposes and kept open to all general public.

(g) **Public Utilities:** Appropriate area allocation should be provided for (a) Power receiving station/sub-station, (b) water supply system, (c) sewerage and garbage disposal system, (d) police station, (e) public parking, (f) cemetery/cremation ground, (g) bus station, fire brigade station and other public utilities as per requirements.

(h) **Transport and Communication :** The entire area of township shall be well knitted with proper road pattern, taking into consideration the linkages with existing roads within the township and outside area as well. All such roads shall be developed by the developer as per standard and road widths shall be as given below:

Classified Roads: as prescribed.

Main road/Ring road – 18 to 24 meter wide

Internal road-as per prevailing bye-laws applicable to Regional Plan subject to minimum road width of 9 mts

(I) **Service Industries:** In the Special Township area, lands required for commercial uses, Industrial uses, permissible in residential user, may also be earmarked. However, the predominant land use would be residential use.

NOTES:

- I. All the amenities referred to above shall be inclusive of designated amenities and Amenity space required as per regulations of Regional Plan.
- II. Regional Plan roads in the township area shall be developed and maintained by developer and the same shall be always open for general public without any restrictions there upon.
- III. Minimum parking shall be provided as per standardized DCR of 'A' Class Municipal Council provided that for hotel, restaurant, college, school, educational institute, educational classes, hospitals, polyclinics and diagnostic centers, offices, mangal Karyalaya, town hall, clubs, etc. on site parking shall be provided. For buildings having mixed users, in addition to regular parking area as mentioned above a space of 3.0 mt. wide strip along the road on front / side shall be provided for visitors parking.

5. DEVELOPMENT CONTROL REGULATIONS:

Prevailing Development Control Regulations of Sanctioned Regional Plan shall be applicable mutatis mutandis except those expressly provided in these Special Regulations.

5.1 Special Township in Residential, Residential with Agriculture / No Development Zone :

- (i) The total built up area/FSI of entire gross area of the Special Township in Residential Zone will be 1.00. The FSI for Agriculture/No Development Zone if any included in Special Township shall be 0.5. Total FSI in the Township will be in proportion to areas of different zones. There will be no limit of total built up area/FSI for the development of individual plots. Height of

building shall be as per prevailing Bye-laws as specified in Regional Plan. However, it may be increased subject to provisions of fire fighting arrangements with prior approval of Fire Advisor, Government of Maharashtra.

5.2. SPECIAL TOWNSHIP IN AGRICULTURE/NO DEVELOPMENT ZONE

- (i) Development of Special Townships Project in Agriculture / No Development Zone, Green Zone and Urbanizable Zone, contained in the Regional plan shall be permissible subject to conditions that 50% of the gross area of the project shall be kept open while the project of Special Township shall be executed on the remaining 50% land with gross built up area / FSI of 0.50 worked out on the entire gross area of the project. Further, while developing such projects, It would be obligatory on the part of the developer to provide and develop all the infrastructure facilities including sites required for public purposes as per the prescribed planning norms. As regards 50% of land which is required to be kept open, the same shall be made free of encumbrances and no development except town level open amenities shall be permissible thereon.
- (ii) All provision of Regulations except 4 (f) shall apply to the development of Township In Agriculture / No Development Zone.
- (iii) In case area Notified under Special Township falls in Residential Zone and partly in Agriculture / No Development Zone the provisions applicable to such scheme shall be proportionate to the area under the respective zoning as per sanctioned Regional Plan.

5.3 (i) In every Special Township proposal the structural designer of developer has to submit declaration with project report to Collector / Planning Authority about the construction of building as below :

"I have confirmed that the proposed construction in the scheme are as per norms as specified by Indian Standards Institute, for the resistance of earthquake fire safety & natural calamities".

- (ii) Upper and lower ground floor type construction shall not be allowed.
- (iii) The following shall not be included in covered area for built up area and F.S.I. calculations.
 - a) Area covered by the staircase rooms for stair flights of width 0.75 Mts. & above, in case of row housing & pent houses and duplexes, 1 mts. in case of residential building, 1.2 mts and above in case of commercial (mercantile) buildings, 2.00 mt and above in the case of public & semi-public building, subject to payment of premium in consultation with Town Planning and Valuation Department.
 - b) Area covered by lift room for a building with height up to 16 mts.
 - c) Stilt floor space (exclusively for parking space) constructed under building of maximum cleared height 2.4 mts and which shall be open at least from three sides.
 - d) Balcony or balconies of a minimum width of one mtr. may be permitted free of F.S.I. at any upper floor, subject to maximum of $\frac{1}{3}$ rd length of perimeter of building and such balcony projection shall be subject to the following conditions :
 - I) No balcony shall be allowed on ground floor.
 - II) Balcony or balconies shall be permitted to project in the marginal open space of not less than 3 mts in width.
 - III) Notwithstanding anything contained in any other laws, rules, regulations or bye-laws in force, a balcony shall not be permitted to be enclosed.
 - V) In Special Township schemes under Residential zone and No Development Zone trees at the rate of minimum 150 trees per ha and 400 trees per ha respectively shall be planted and maintained by the developer.
 - VI) Once the proposal for Special Township is submitted to the Government under Regulation No. 7 (A) no change of zone proposal in such Township area shall be considered by Government.

6. SALE PERMISSION:

It would be obligatory on the part of the developer firstly to provide for basic infrastructure and as such no permission for sale of plot/flat shall be allowed unless the basic infrastructure as per Regulation No. 1-3 is completed by the developer to the satisfaction of the Collector. In case the development is proposed in Phases and Sale permission is expected after completion of Phase wise basic infrastructure, such permission may be granted by the Collector. Before granting such sale permission may be granted by the Collector. Before granting such sale permission, developer has to submit undertaking about the basic infrastructure to be provided & completed phase wise by Developer. The plots earmarked for amenities, facilities and utilities shall be also simultaneously developed phase wise along with residential/allied development.

7. PROCEDURE:

- (A) **Locational Clearance:** The proposal for development of Special Township, along with the details of ownership of land or Development right of lands in the proposal scheme, site plan, part plan of sanction regional plan shall be submitted to Government in Urban Development Department alongwith a copy to Director of Town Planning, Maharashtra State, Pune Environment Department of Maharashtra State, Irrigation Department for grant of locational clearance. Upon receipt of such proposal, depending upon the merits of the case, locational clearance may be granted by Government u/s 18/2 of MR&TP Act, 1966 in consultation with the Director of Town Planning and Environment Department and other respective departments of the state Government within a period of 90 days from the date of receipt of the proposal & after completion of all prescribed procedure specified in Regulation No. 1.2 above and compliance of any such document as may be required by Government. This locational clearance will be valid for one year from the date of issue and if within such period the letter of intent and final approval is not taken or not applied for, such clearance / approval will stand lapsed unless it is renewed by Govt. for sufficient reasons. Application for renewal has to be made to Govt. before expiry of one year. **In that case these special Regulations shall not be applicable to the area under such scheme.**
- (B) **Letter of Intent:** Upon receipt of locational clearance from the Government, the developer shall submit the proposal in respect of Special Township to Collector, Pune along with the Environmental Clearance as mentioned in Regulation No. 1.4 for issue of letter of intent. The proposal shall contain ownership rights/development rights, document in respect of at least 50% of area under scheme and other particulars as decided and

directed by Collector, Pune with details of qualified technical staff and consultant in technical and law field. Letter of intent shall be issued within a period of 45 days from the date of receipt of the completed full and final proposal. The letter of intent shall be valid for six months unless renewed.

- (C) **(I) Final Approval :** The developer shall submit the layout plan of the entire township area, sector-wise detailed building plans, and details of phasing, for final sanction to the Collector, Pune. The developer shall also submit an undertaking and execute an agreement about development and maintenance of basic infrastructural amenities in future with bank guarantee of 15% of its development costs. The Collector, Pune shall conduct proper enquiry and ensure the correctness of title and ownership etc. Only after such verification, Collector, Pune shall grant approval to layout plan & sector wise detailed building plan in consultation with Deputy Director of Town Planning, Pune Division, Pune within the stipulated period on terms and conditions as may be determined by Collector & Deputy Director of Town Planning, Pune Division, Pune.

The period required by the Collector for Technical Consultation with Deputy Director of Town Planning, Pune Division, Pune shall not be computed.

Any one aggrieved by an order passed under prevailing Bye-laws may within forty days of the date of communication of the order prefer an appeal to the Director of Town Planning, Maharashtra State, Pune. The appeal shall be cleared within 60 days.

(ii) Every application shall be accompanied by:

- | | |
|---|---|
| (a) Ownership Document: | 7/12 Extract/Property Card, ownership right document in original with list of such documents. |
| (b) Extent: | Village maps showing the extent of area and authenticated measurement plan/gut book of the land in original and list of such documents. |
| (c) Authenticated copies of locational clearance and letter of intent, Environmental clearance where applicable | |
| (d) Layout and Building Plans:
(Prepared and signed by | i) Layout plan showing all details of area utilized under roads, open spaces for |

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concerned and Fire Officer of State Government.

iv) Application for occupation certificate or final completion certificate shall be submitted alongwith a declaration and undertaking by the developer and his structural consultant, Architect Town Planner as follows:

- i) We confirm that all buildings constructed in the scheme area are as per norms as specified by Indian Standard Institute for the resistance of earthquake, fire safety and natural calamities.
- ii) Work is done as per sanctioned plan.
- iii) Built up area and FSI consumed in scheme is as per sanctioned plan.
- iv) No balcony is enclosed.
- v) If it is found that extra built up area / FSI is consumed in the scheme at any time, it shall be demolished by developer at his own cost as directed by Collector, Pune.

9. Interpretation: If any question or dispute arises with regard to interpretation of any of these regulations, the matter shall be referred to the State Govt. The Govt. after considering the matter and if necessary, after giving hearing to the parties, shall give a decision on the interpretation of the provisions of the Regulations. The decision of Government on the interpretation of these Regulations shall be final and binding on all concerned.

Sd/-
(Ramanand Tiwari)
Principal Secretary to Government.

प्रादेशिक योजना - पुणे

मौजे कदमवाकवल्ली (लोणीकाळभोर), ता.हवेली, जि.पुणे
पेथील विशेष नगर वसाहतीच्या क्षेत्रास महाराष्ट्र प्रादेशिक
नियोजन व नगर रचना अधिनियम, १९६६ चे कलम १८(३) सह
कलम ४४(२) अन्वये लोकेशनल क्लिअरन्सला शुद्धीपत्रक
निर्गमित करणेबाबत.

महाराष्ट्र शासन

नगर विकास विभाग,

मंत्रालय, मुंबई-३२

शासन निर्णय क्रमांक:- टिपीएस-१८१३/३१२/१२/प्र.क्र.५७२/१३/नवि-१३

दिनांक : ०१/०६/२०१६.

शासन निर्णय :- सोबतची शासकीय अधिसूचना शुद्धीपत्रक महाराष्ट्र शासन राजपत्रामध्ये प्रसिध्द करावी.

महाराष्ट्राचे राज्यपाल यांचे आदेशानुसार व नांवाने,

Sanjay

Balkrishna

Saoji

(संजय सावजी)

अवर सचिव, महाराष्ट्र शासन

प्रत :-

१) मा.मुख्यमंत्री महोदय यांचे सचिव, मंत्रालय, मुंबई.

२) मा.राज्यमंत्री, नगर विकास यांचे खाजगी सचिव, मंत्रालय, मुंबई.

३) प्रधान सचिव (नवि-१) नगर विकास विभाग, महाराष्ट्र राज्य, मंत्रालय, मुंबई.

प्रति :-

१) संचालक, नगर रचना, महाराष्ट्र राज्य, पुणे.

२) विभागीय आयुक्त, पुणे विभाग, पुणे.

३) मुख्य कार्यकारी अधिकारी, पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण (PMRDA), पुणे.

४) सह संचालक, नगर रचना, पुणे विभाग, पुणे.

✓ ५) सहायक संचालक, नगर रचना, पुणे शाखा, पुणे.

त्यांनी प्रकरणी अधिसूचनेच्या अनुषंगाने अधिप्रमाणित करावयाचे प्रादेशिक योजनेचे भाग नकाशे ५ प्रतीत
शासनास विहित मार्गाने सत्त्वा सादर करावेत.

६) जिल्हाधिकारी, पुणे.

७) व्यवस्थापक, शासकीय मुद्रणालय, येरवडा कारागृह, पुणे ४११ ००६.

त्यांना विनंती करण्यात येते कि, सोबतची शासकीय अधिसूचना शुद्धीपत्रक महाराष्ट्र शासन राजपत्राच्या
पुणे विभागीय पुरवणी भाग एक मध्ये प्रसिध्द करून त्याच्या प्रत्येकी १० प्रती शासनास, संचालक नगर रचना,
महाराष्ट्र राज्य, पुणे, मुख्य कार्यकारी अधिकारी, पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण, आकुर्डी, पुणे, सह
संचालक, नगर रचना, पुणे विभाग, पुणे, सहायक संचालक, नगर रचना, पुणे शाखा, पुणे व जिल्हाधिकारी, पुणे यांना
पाठवाव्यात.

८) कक्ष अधिकारी (नवि-२१) नगर विकास विभाग, मंत्रालय, मुंबई.

त्यांना विनंती करण्यात येते की, सदरची अधिसूचना शुद्धीपत्रक या विभागाच्या वेबसाईटवर प्रसिध्द
करणेबाबत कार्यवाही करणेत यावी.

९) निवडनस्ती (नवि-१३).

शुद्धीपत्रक

महाराष्ट्र शासन
नगर विकास विभाग
मादाम कामर मार्ग,
हुतात्मा राजगुरु चौक,
मंत्रालय, मुंबई-४०० ०३२
दिनांक : ०१/०६/२०१६

महाराष्ट्र
प्रादेशिक
नियोजन व
नगर रचना
अधिनियम,
१९६६

क्रमांक:- टिपोएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३:- ज्याअर्थी, पुणे जिल्ह्याची प्रादेशिक योजना (यापुढे "उक्त प्रादेशिक योजना" असा उल्लेख करण्यात आला आहे) महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम, १९६६ (यापुढे "उक्त अधिनियम" असा उल्लेख करण्यात आला आहे) चे कलम १५ मधील तरतुदीनुसार शासनाच्या नगर विकास विभागाकडील अधिसूचना क्रमांक टिपीएस-१८१५/२२७/प्र.क्र.२६/१५/नवि-१३, दिनांक २५ नोव्हेंबर, १९९७ द्वारे मंजूर झाली असून ती दिनांक १० फेब्रुवारी, १९९८ पासून अमलात आली आहे;

आणि ज्याअर्थी, उक्त अधिनियमाचे कलम २० चे पोट-कलम (४) मधील तरतुदीनुसार शासनाच्या नगर विकास विभागाकडील अधिसूचना क्र.टिपीएस-१८०४/ पुणे प्रा.यो. विनिनि/नवि-१३, दिनांक १६ नोव्हेंबर, २००५ आणि पूरक पत्र क्र.टिपीएस-१८०४/पुणे प्रा.यो.विनिनि/नवि-१३/ पूरकपत्र, दिनांक ६ जानेवारी, २००६ द्वारे उक्त प्रादेशिक योजनेच्या क्षेत्रात उक्त प्रादेशिक योजनेच्या मंजूर विकास नियंत्रण नियमावलीमध्ये, विशेष नगर वसाहतीच्या विकसनासाठीची नियमावली (यापुढे "उक्त विशेष नगर वसाहतीची नियमावली" असा उल्लेख करण्यात आला आहे) अंतर्भूत केली आहे, आणि तद्नंतर दि.१५ जून, २००९ रोजीच्या व दि.१ जानेवारी, २०१४ व ३० मे, २०१४ रोजीच्या अधिसूचनांद्वारे उक्त विशेष नगर वसाहतीच्या नियमावलीमध्ये फेरबदल मंजूर केले आहेत;

आणि ज्याअर्थी, अर्जदार रिव्हरव्ह्यू सिटी कन्स्ट्रक्शन्स लि. तर्फे संचालक श्री. सतीश दत्तात्रय मगर (रिव्हरव्ह्यू सिटी राऊनशिप), (यापुढे ज्यांचा उल्लेख "अर्जदार" असा करण्यात आला आहे) यांनी उक्त अधिनियमातील कलम १८ चे पोट-कलम (३) नुसार व उक्त विशेष नगर वसाहत नियमावलीतील विनियम क्र.७ (अ) च्या तरतुदीनुसार मौजे कदमवाकवरीती (लोणीकाळभोर), ता.हवेली जि.पुणे येथील, सुमारे १५८.८४६६ हे. क्षेत्रावर विशेष नगर वसाहत प्रकल्प राबविण्यासाठी लोकेशनस क्लिअरन्स मंजूर करण्याबाबतच्या सादर केलेल्या प्रस्तावास शासनाने अधिसूचना क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३ दि.२०/१०/२०१५ अन्वये मंजूरी दिलेली आहे;

आणि ज्याअर्थी, दि.३०.०५.२०१४ रोजीच्या विशेष नगर वसाहतीच्या नियमावलीनुसार प्रादेशिक योजनेतील ट्रंक टर्मिनस साठी निर्देशित क्षेत्रावर विशेष नगर वसाहत अनुशेष नाही;

आणि ज्याअर्थी, प्रस्तुत विशेष नगर वसाहतीच्या अधिसूचीत क्षेत्रामधील ग ११४२.जं.व पूर्ण ११४३तः वागळूनगट , ११४६, ११४१.नं.व :मधील भागशा ११४८क्षेत्र (यापुढे ज्यांचा उल्लेख "उक्त क्षेत्र " असा करण्यात आला आहे) ट्रंक टर्मिनससाठी आरक्षित असलेल्या क्षेत्रात समाविष्ट आसल्याचे निदर्शनास आल्यानंतर प्रस्तुत विशेष नगर वसाहतीच्या अधिसूचीत क्षेत्रामधील उक्त क्षेत्र वागळणे आवश्यक असल्याचे शासनाने पता झाले आहे;

त्याअर्थी, आता उक्त अधिनियमाच्या कलम १८ चे पोट-कलम (३) सह कलम ४४(२) च्या तरतुदीप्रमाणे शासनास प्राप्त अधिकारात शासन निर्णय क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३ दि. २०/१०/२०१५ मधील अनुसूची "अ" मध्ये खालील प्रमाणे सुधारणा करून त्यास प्रस्तुत शुद्धीपत्रकाद्वारे मान्यता देण्यात येत आहे:-

"अनुसूची-आ"

या एवजी			अस वाचावे			शेरा
अ. क्र.	ग. नं.	टाऊनशिप मधील क्षेत्र (हे - आर)	अ. क्र.	ग. नं.	टाऊनशिप मधील क्षेत्र (हे - आर)	
१४८	११४१	२.०	१४८	११४१	१.८९४६	भागशः क्षेत्र वगळण्यात येत आहे.
१४९	११४२	०.१७	१४९	११४२	-	पूर्णतः क्षेत्र वगळण्यात येत आहे.
१५०	११४३ (पार्ट)	०.०६२	१५०	११४३ (पार्ट)	-	पूर्णतः क्षेत्र वगळण्यात येत आहे.
१५१	११४६ (पार्ट)	१.६७	१५१	११४६ (पार्ट)	१.२८२२	भागशः क्षेत्र वगळण्यात येत आहे.
१५३	११४८ (पार्ट)	२.०९	१५३	११४८ (पार्ट)	१.६१०२	भागशः क्षेत्र वगळण्यात येत आहे.

सदरह अधिसूचना शुद्धीपत्रक महाराष्ट्र शासन राजपत्रात प्रसिध्द झाल्याच्या दिनांकापासून अंमलात येईल.

सदरह शुद्धीपत्रक नागरिकांच्या अवलोकनार्थ कार्यालयीन वेळेत खालील कार्यालयात उपलब्ध ठेवण्यात यावी:-

- १) रुह संचालक, नगर रचना, पुणे विभाग, पुणे, ७४/२, सहकारनगर, सारंग सोसायटी, वॉक ऑफ महाराष्ट्र च्या वर, पुणे-९.
- २) मुख्य कार्यकारी अधिकारी, पुणे महानगर प्रदेश क्षेत्र विकास प्राधिकरण, आकुर्डी (P/MRDA कार्यालय इमारत), पुणे.

सदरह अधिसूचना शासनाच्या www.maharashtra.gov.in या वेबसाईटवर देखील प्रसिध्द करण्यात यावी.

महाराष्ट्राचे राज्यपाल यांचे आदेशानुसार व नावाने,

Sanjay
Balkrishna
Saoji
(संजय सावजी)
अवर सचिव, महाराष्ट्र शासन

CORRIGENDUM

Government of Maharashtra
Urban Development Department,
Mantralaya, Mumbai-32.
Date : 01/06/2016

Maharashtra
Regional and
Town
Planning Act,
1966.

No.TPS-1813/392/12/CR-572/13/UD-13:- Whereas, the Government in the Urban Development Department, vide its Notification No.TPS-1895/227/CR-26/95/ UD-13 dated the 25th November, 1997, has sanctioned the Regional Plan for Pune District (hereinafter referred to as "the said Regional Plan") under Section 15 of the Maharashtra Regional and Town Planning Act, 1966 (hereinafter referred to as "the said Act."), which has come into force with effect from the 10th February, 1998;

And whereas, the Government of Maharashtra in the Urban Development Department, vide Notification No.TPS/1804/Pune RP D.C.R/UD-13, dated the 16th November, 2005 and addendum No.TPS-1804/Pune RP D.C.R/UD-13/ Addendum, dated the 6th January, 2006, has amended the sanctioned Development Control Regulations for the said Regional Plan, under the provisions of sub-section (4) of Section 20 of the said Act, in order to incorporate the regulations for Development of Special Townships (hereinafter referred to as "the said STP Regulations") and has further amended the said STP Regulations vide Notifications dated the 15th June, 2009, 1st January, 2014 and the 30th May, 2014;

And whereas, Shri. Satish Dattatray Magar, Director, Riverview City Constructions Limited, (Riverview City Township) (hereinafter referred to as "the Applicant"), have submitted a proposal as per the provisions of sub-section (3) of Section 18 of the said Act and Regulation No.7(a) of the said STP Regulations, to the Government, for grant of Locational Clearance in respect of the lands admeasuring about 158.8466 Ha., from Village - Kadamwakvasti, Tal.Haveli, Dist.Pune for Development of a Special Township Project and the said Special Township Project has been approved by the Government vide Notification No. TPS-1813/392/12/CR 572/13/UD-13 dated 20/10/2015;

And whereas, as per the said STP Regulations dated 30th May, 2014, Special Township Project is not permissible on the land reserved for Truck Terminus and Parking in Regional Plan Pune;

And whereas the Government is of the opinion that it is necessary to delete the G.No. 1142 & 1143 fully and G. No. 1141, 1146 & 1148 partly which under the Truck Terminus reservation (hereinafter referred to as "the said area") from the said sanctioned Special Township Project and for that corrigendum is to be issued;

Now, therefore, the Government, in exercise of the powers conferred under sub-section (3) of the Section 18 read with Section 44(2) of the said Act, hereby issues corrigendum, as specifically described in Schedule-A appended to Notification of said Special Township Project vide No. TPS-1813/392/12/CR 572/13/UD-13 dated 20/10/2015;

Schedule "A"

Instead off			Read as			Remarks
Sr. No.	G. No.	Area under Town Ship (Ha.)	Sr. No.	G. No.	Area under Town Ship (Ha.)	
148	1141	2.0	148	1141	1.8946	Partly area is deleted
149	1142	0.17	149	1142	-	Fully area is deleted
150	1143(Pt)	0.062	150	1143(Pt)	-	Fully area is deleted
151	1146(Pt)	1.67	151	1146(Pt)	1.2822	Partly area is deleted
153	1148(Pt)	2.09	153	1148(Pt)	1.6102	Partly area is deleted.

This Corrigendum to Notification shall come into force on the date of its publication in the Maharashtra Government Gazette.

This Corrigendum to Notification shall be kept for inspection of the general public, during office hours on all working days at the following offices:-

- (1) Joint Director of Town Planning, Pune Division, Pune, Survey No.74/2, Sahakar Nagar, Sarang Society, Pune-411009.
- (2) Chief Executive Officer, Pune Metropolitan Regional Development Authority, New Administrative Building, Near Aankurdi Railway station, Pune-35.

This Notification shall also be published on the Government web-site-
www.maharashtra.gov.in.

By order and in the name of the Governor of Maharashtra.

Sanjay
Balkrishna
Saoji

(Sanjay Saoji)

Under Secretary to Government

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महाराष्ट्र शासन

जा.क्र.टिपीएस-१८१६/०३/प्र.क्र.२९/१७/नवि-१३

नगर विकास विभाग, मुख्य इमारत,

चौथा मजला, मंत्रालय, मुंबई-३२.

दिनांक : ३१/०३/२०१७.

प्रति,

✓ रिक्करव्हु सिटी कन्स्ट्रक्शन लि.,
मेगास्पेस, १३ सोलापूर बाजार रोड, ऑफ इस्ट स्ट्रीट,
पुणे-४११ ००१.

विषय - प्रादेशिक योजना- पुणे.

एकात्मिकृत नगर वसाहत मौजे कदमवाकवस्ती (लोणीकाळभोर) ता. हवेली, जि.पुणे येथील नगर वसाहतीच्या वाढीव क्षेत्रास महाराष्ट्र प्रादेशिक नियोजन व नगर रचना अधिनियम, १९६६ चे कलम १८ तसेच कलम ४४(२) अन्वये लोकेशनल क्लिअरन्स मंजूरी मिळणेबाबत.

संदर्भ - १) शासन निर्णय क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३,
दि.२०/१०/२०१५.

२) शासन निर्णय क्र. टिपीएस-१८१३/३९२/१२/प्र.क्र.५७२/१३/नवि-१३,
दि.०१/०६/२०१६.

३) अर्जदार रिक्करव्हु सिटी कन्स्ट्रक्शन्स लि. तर्फे संचालक श्री. सतीश दत्तात्रय मगर (रिक्करव्हु सिटी टाऊनशिप) यांचा शासनास दि.३०/१२/२०१६ रोजीचा सादर प्रस्ताव.

महोदय,

प्रस्तुत प्रकरणी मौजे कदमवाकवस्ती (लोणीकाळभोर) ता. हवेली, जि. पुणे येथील रिक्करव्हु सिटी कन्स्ट्रक्शन्स लि. यांच्या एकात्मिकृत नगरवसाहतीच्या १५५ हे. क्षेत्रास संदर्भित क्र.१ अन्वये लोकेशन क्लिअरन्स दिलेले आहे. यानंतर संदर्भित क्र.३ अन्वये या नगरवसाहतीमध्ये ५५.३८६५ हे. क्षेत्र समाविष्ट करून त्यास दि.२६/१२/२०१६ रोजीच्या एकात्मिकृत नगर वसाहतीच्या सुधारित नियमावलीनुसार लोकेशन क्लिअरन्स देणेबाबत सादर केलेल्या प्रस्तावास काही अटीसह शासनाची मान्यता प्राप्त झाली आहे. या प्रस्तावाबाबत खालील प्रमाणे कळविणेबाबतचे मला आदेश आहेत.

सदर प्रकरणी लोकेशन क्लिअरन्स देणेपुर्वी अर्जदार कंपनीकडून दि.२६/१२/२०१६ रोजीच्या नियमावलीतील तरतूद क्र.४.१.(i) नुसार छाननी फी तसेच तरतूद क्र.७.१.२ नुसार प्रिमियम रक्कम संबंधित जिल्ह्याचे सहायक संचालक, नगर रचना यांचेकडे भरणा करणे आवश्यक आहे. विषयांकित प्रस्तावास लोकेशन क्लिअरन्ससाठी आवश्यक कागदपत्राची पूर्तता इरादापत्र घेणेपुर्वी अर्जदार करू न शकल्यास भविष्यात सदर रक्कम परत मिळणार नाही, याबाबीची कृपया नोंद घ्यावी. सबब, याबाबत संबंधित कार्यालयाशी संपर्क साधून विषयांकित प्रस्तावाबाबतची छाननी फी तसेच प्रिमियम रक्कम भरणा करणेची व्यवस्था करावी, ही विनंती. याप्रमाणे रक्कम भरणा झाल्यानंतर विषयांकित नगरवसाहतीचे वाढीव क्षेत्रास लोकेशन क्लिअरन्स देणेबाबतची कार्यवाही करणे शक्य होईल.

आपला,

(रा.म.पवार)

अवर सचिव, महाराष्ट्र शासन

प्रत:- सहायक संचालक, नगर रचना, पुणे शाखा, पुणे यांना माहितीस्तव व आवश्यक कार्यवाहीसाठी.

/- विषयांकित नगरवसाहतीमध्ये समाविष्ट करावयाच्या वाढीव क्षेत्राची यादी यासोबत जोडलेली असून त्यानुसार दि.१६/१२/२०१६ रोजीच्या नियमावलीतील तरतूदीनुसार देय होणारी छानणी फी तसेच सदर नगर वसाहतीच्या यापुर्वी मंजूर केलेले लोकेशन क्लिअरन्स तसेच सद्याचे समाविष्ट करावयाचे वाढीव क्षेत्र याप्रमाणे एकुण २१०.३९५१ हे. क्षेत्राबाबत उक्त नियमावलीतील तरतूद ७.१.२ नुसार देय होणारी प्रिमियमची रक्कम संबंधित कंपनीकडून भरणा करुन घ्यावी व त्यानंतर चलनाच्या स्वाक्षांकित प्रतिसह याबाबतचा अहवाल शासनास सादर करावा.

JOINT DEVELOPMENT AGREEMENT

JOINT DEVELOPMENT AGREEMENT made and executed at Pune this day of _____ 2017.

BETWEEN

1. Mr./Mrs./M/s. _____, Age ____ years,
2. Mr./Mrs./M/s. _____, Age ____ years,
3. Mr./Mrs./M/s. _____, Age ____ years,
4. Mr./Mrs./M/s. _____, Age ____ years,
5. Mr./Mrs./M/s. _____, Age ____ years,

all residing at _____ and hereinafter collectively referred to as the **“OWNERS/FIRST PARTY”** (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include their respective heirs, executors and administrators).

.. OF THE ONE PART

AND

M/s. Riverview City Construction Limited, a limited Company registered under the Companies Act 1956, and having its Office at 13, Mega Space, Solapur Bazar Road, Pune 411001 hereinafter referred to as the **“DEVELOPER /SECOND PARTY”** (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include the said company, present board of Directors, their successors-in-title and assigns) through its duly authorised Director Mr. Satish Dattatray Magar, Age _____ years.

.. OF THE OTHER PART

WHEREAS all that piece and parcel of lands totally admeasuring _____ Hectare _____ Ares, situate at Village Mouje Kadamwakwasti, Taluka Haveli, District Pune and which are hereinafter referred to as the **"said property"** stands in the names and belongs to the Owners/First Party abovenamed and the same was their ancestral property, and according to the mutual understanding among the said Owners/ First Part, each of them holds, owns, use and enjoys specific defined individual share more particularly described in Schedule A-2 hereunder.

AND WHEREAS the said property forms part of the larger land described in Schedule hereunder and hereinafter.

AND WHEREAS the said property is not accruing any tangible return and the family of the Owners have grown and now comprising of several smaller HUF each having its members and for the greater benefit of the minors their education and marriage, the Owner/s out of legal necessity considered it desirous and expedient to grant the development rights and/ or dispose off the said property.

AND WHEREAS due to the urbanization and industrialization of the adjoining areas in and around the Village Kadamwakwasti and on account of better salaries and wages offered to farm labour in the industries it has become increasingly unviable for the owners to continue agriculture on the said property.

AND WHEREAS the owners of the agricultural lands of Gat Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58/A, 58/B, 58/C, 58/D, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76/2, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 126, 127, 128, 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1, 540/2, 540/3, 541, 543, 551, 552, 553, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132/1, 1132/2, 1132/3, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150(pt), 1151, 1152/1, 1152/2, 1153, 1154, 1155, 1156, 1158, 1159, 1160/1, 1160/2, 1160/3, 1160/4, 1160/5, 1163, 1164, 1165, 1166 & 1167, forming part of Village Mouje Kadamwakwasti in the vicinity of the said property realized that it is not possible / permissible for them individually to comply with the requirements of setting up an Integrated township on the basis of individual ownership and in order to avail benefits of Integrated Township Development collectively decided to approach the Government for the purpose of notifying the above referred lands by proposing an integrated Township Project incorporating provisions for all necessary reservations and obligations required under the relevant provisions of the Maharashtra Regional Town Planning Act, 1966.

AND WHEREAS the Owners of the said lands jointly and collectively sought the expertise of Mr. Satish Magar, for the purpose of development of the Integrated township project and to use his expertise and wherewithal to promote the necessary organization to implement the development and raise the requisite finance required therefore.

AND WHEREAS the DEVELOPER Company formed and registered under the Companies Act, 1956 was specifically incorporated by the Promoter Mr. Satish Magar along with other owners of the above referred lands for carrying out development of the above lands, under Riverview City Township Project under the Integrated Township scheme by construction of residential / commercial building thereon, sale/lease of the residential flats/ units, commercial units / SEZ's / IT parks, offices, godowns, showrooms etc., constructed thereon and as also construction development of Schools, hostels, Affordable and Rental Housing, recreational spaces, Hospitals, Playgrounds, Gardens, Roads and other infrastructure and users permissible under the Integrated Township Scheme and where under the aggregate shareholding of Mr. Satish Magar and/or the Magarpatta group of entities and/or his/their members, associates nominees and assigns shall at all times be 51% and that of all the Land Owners (pro-rata to their Landholding) shall be 49% (Forty nine percent).

AND WHEREAS, Shri. Satish Dattatray Magar Director, Riverview City Construction Limited, (Riverview City Township) vide applications dated 11/02/2008, dated 19/06/2008, dated 11/08/2014, dated 03/04/2014 and thereafter finally vide an application dated 13/07/2015 submitted a proposal as per the provisions of sub-section (3) of Section 18 of the Maharashtra Regional Town Planning Act and Regulation 7(a) of the Special Township Regulations, to the Government for grant of Locational Clearance in respect of the lands admeasuring about 158.8466 Hectares, from Village – Kadamwakvasti, Taluka Haveli, District Pune for Development of a Special Township Project.

AND WHEREAS as per the said Regional Plan, the above lands are allocated partly to “Agriculture / No Development Zone and partly in 90m wide Regional Plan road proposal and Partly Designated for Bharat Petroleum and Partly for Truck Terminus and Parking.

AND WHEREAS the Water Resources Department of the State Government has given consent for executing the **proposed** Integrated Township Project on the said lands subject to certain conditions specified therein;

AND WHEREAS the Government in the Urban Development Department, vide its Notification No. TPS-1895/227/CR-26/95/UD-13, dated the 25th November 1997, has sanctioned the Regional Plan for Pune District (hereinafter referred to as “**the said Regional Plan**”) under Section 15 of the Maharashtra Regional and Town Planning Act, 1966 (hereinafter referred to as “**the said Act**”), which has come into force with effect from the 10th February 1998;

AND WHEREAS as per the decision of Government of Maharashtra, Urban Development Department, Mantralaya, Mumbai dated 16th November 2005 having reference no. TPS 1804/Pune R.P.DCR/UD-13, the Government of Maharashtra sanctioned the “Regulations for Development of Special Townships” which were further amended vide Addendum dated 6th January 2006 bearing No. TPS 1804/Pune R.P.DCR/UD-13 and Notifications dated 15th June 2009, 1st January 2014 and 30th May 2014.

AND WHEREAS vide amendment in Chapter III of Maharashtra Regional and Town Planning Act, 1966 (Act 43), the Special Township Project are renamed as “Integrated Township Project” w.e.f. 22nd April 2015 and the new rules and regulations were amended in the new Integrated Township Policy dated 26th December 2016 having reference no. TPS-1816/CR-368/15/20(4)/UD-13 in the area under Pune Regional Plan, under the provisions of Maharashtra Regional and Town Planning Act, 1966.

AND WHEREAS so as to promote public housing by incentivizing investment by private sector in development of housing, the Government of Maharashtra has put forth the concept of self-sufficient “Integrated Township” consisting of residential units / flats, commercial units, educational institutions, amenities, health care facilities, parks, gardens, playgrounds, public utilities etc. which are to be exclusively developed , constructed and maintained by the Promoter / Developer of Integrated Township, as per the Township Regulations.

AND WHEREAS, after consulting the Director of Town Planning, Maharashtra State, as well as after making necessary enquires, the Government was of the opinion that contiguous lands being the Gat Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58/A, 58/B, 58/C, 58/D, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76/2, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 407, 483, 509, 511, 520, 540/1, 540/2, 540/3, 541, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1081, 1082, 1083, 1084, 1085, 1086, 1087(pt), 1088(pt), 1089(pt), 1090(pt), 1091(pt), 1137(pt), 1138, 1139, 1140, 1141, 1142, 1143(pt), 1146(pt), 1147, 1148(pt), 1149, 1150(pt), 1151, 1152/1, 1152/2, 1153, 1154, 1155, 1156, 1158, 1159, 1160/1, 1160/2, 1160/3, 1160/4, 1160/5, 1163, 1164, 1165, 1166 & 1167, forming part of Village Mouje Kadamwakwasti, admeasuring about 156.2136 Hectares, should be notified for the purpose of Development as **Integrated Township Project;**

AND WHEREAS it was expedient accordingly to designate the said lands on the said Regional Plan under the provision of sub-section (3) of the Section 18 read with Section 44(2) of the said Act as the lands earmarked for development as **Integrated Township Project**, therefore, the Government in exercise of the powers conferred under the said Act, permitted the said lands for execution of **Integrated Township Project** vide the Notification No. TPS-1813/392/12/CR-572/13/UD-13 dated 20/10/2015 granted Locational Clearance to the same, subject to the conditions specified therein.

AND WHEREAS the Government of Maharashtra vide Corrigendum dated 01-06-2016 has clarified that in view of the STP Regulation dated 30-05-2014 special Township Project is not permissible on the land reserved for Truck terminus and Parking in Regional Plan Pune.

AND WHEREAS accordingly the Government has deleted the Gat No. 1142 and 1143 fully and Gat Nos 1141, 1146 and 1148 partly from the said sanctioned Special Township Project and thereafter the area of the Integrated Township Project was revised to 155.0086 Hectares.

AND WHEREAS the DEVELOPER has also obtained the Letter of Intent No. MoKadamwakwasti/G.No.1to21&others/Pra.Kra.437/16/17 dated 01/09/2016 from PMRDA for the Gat Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58/A, 58/B, 58/C, 58/D, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76/2, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 407, 483, 509, 511, 520, 540/1, 540/2, 540/3, 541, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1081, 1082, 1083, 1084, 1085, 1086, 1087(pt), 1088(pt), 1089(pt), 1090(pt), 1091(pt), 1137(pt), 1138, 1139, 1140, 1141, 1146(pt), 1147, 1148(pt), 1149, 1150(pt), 1151, 1152/1, 1152/2, 1153, 1154, 1155, 1156, 1158, 1159, 1160/1, 1160/2, 1160/3, 1160/4, 1160/5, 1163, 1164, 1165, 1166 & 1167, forming part of Village Mouje Kadamwakwasti, admeasuring about 155.0086 Hectares, (hereinafter referred to as the “said land A-1 and more particularly described in the Schedule A-1), and the LOI was valid for a period of 6 months thereafter.

AND WHEREAS vide Letter No. Mokadamwakwasti / G.No.1to21&others / Pra.Kra437/16/17/1235 dated 03/03/2017 the Metropolitan Commissioner & CEO, PMRDA granted extension of 2 years from 01/03/2017 to the Letter of Intent.

AND WHEREAS there are certain areas bearing Gat Nos. 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 126, 127, 128, 129, 202, 400, 405, 419, 443, 448, 460, 471, 523, 543, 551, 552, 553, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132/1, 1132/2, 1132/3, 1136, 1137, 1141, 1142, 1143, 1144, 1145, 1146, 1148, forming part of Village Mouje Kadamwakwasti, totally admeasuring 55.3865 Hectares, (referred to as the said lands A-1a and more particularly described in the Schedule A-1a) which are allocated partly in 90 mtrs. wide Regional Plan road proposal and Partly for Truck Terminus and Parking. However, these lands are essential for the Township scheme since they are located in the middle of the Township (A-1) Schedule notified land and abutting the notified land, and within the Township Scheme and therefore if either separately developed OR held by third party would prejudice or compromise the aesthetics and title of the township scheme as a whole.

AND WHEREAS the Developers accordingly vide their Proposal dated 30/12/2016 applied to the Government for grant of Locational Clearance in respect of the said lands A-1a and the same was considered and sanctioned by the Urban Development Department, Government of Maharashtra vide their Letter No. TPS-1816/392/PraKra572/1313-Nav dated 06.05.2017 subject to the compliance of the conditions listed therein.

AND WHEREAS after compliance of the conditions the Developers, has also obtained the Letter of Intent No. _____ dated 01/09/2016 from _____.

AND WHEREAS the said land A-1 and A-1a totally admeasuring 210.3951 Hectares and hereinafter collectively referred to as the “said lands” are earmarked for development as the **Integrated Township Project “Riverview City”**

AND WHEREAS by virtue of such proposed/sanctioned development the entire area under the Notification for development as Integrated Township in the name of the Promoter Company, the present owners in order to avail benefits of Township Development Scheme and for the accrual of optimum benefits from the said property and in furtherance of their arrangement/contract for Joint Development with Developers for developing their land as part of Township Development as proposed and formalized hereunder.

AND WHEREAS the Developers are also in the process of developing the aforesaid Integrated township in pursuance of the aforesaid Notifications in

consonance with the owners of the said lands mentioned in the schedule A-1 and A-1a which are also notified alongwith.

AND WHEREAS the Owners and the Developers have mutually agreed and undertaken to develop the property admeasuring _____ Hectares ____ Ares bearing:

Gat No.	Hissa No.	Area (Hectares – Ares)

i.e. the said property and more particularly described in Schedule A-2 forming part of the said lands in pursuance to the Integrated Township policy declared by the Government of Maharashtra applicable thereto.

AND WHEREAS the various owners of the said lands described in the Schedule A-1 & A-1a have also separately agreed to and are intending to enter into separate arrangement of Joint Development agreement/s for the development of their respective portions/holdings in terms of the notification of the Government of Maharashtra since due to the non-feasibility of their collective availability it is considered expedient to contract with them either severally or in lots as per mutual convenience of all parties.

AND WHEREAS each of the Owners owns, holds, possess and are enjoying the land described in Schedule A-2 independently.

AND WHEREAS the area of the plot described in Schedule A-2 totally admeasuring _____ sq. mtrs. collectively owned by the owners abovenamed in their respective share and undertaken to be developed by the Developers in Joint Development alongwith the holding of the other owners of the said land (including the Owners hereinabove) and under which arrangement the pro-rata percentage holding and the respective share from the Joint Development of the owners herein is _____ % thereof and disbursable amongst the owners inter-se by Developers are as set out hereinafter therein indicating the percentage share of each of the co- owner vis-a-vis the said lands under the Integrated Township scheme.

AND WHEREAS the Owners are aware of the intention of the Developers as regards the development of the said Integrated township project for the lands more particularly described in the Schedule A-1 & A-1a written hereunder agree that the said property i.e. land described in the Schedule A-2 will also have to be

developed on the same and identical terms and conditions as that of the lands which are mentioned in Schedule A-1 and which are being developed by the Developers as an Integrated Township.

AND WHEREAS in terms of the due deliberations and discussions, the land owners have decided and agreed to grant rights to the Developers to implement the Integrated Township Proposal on their respective holdings as detailed above, which the Developers are going to develop on the said land being developed by the Developers as a Joint Development on the terms and conditions written hereunder and in accordance with the sanction to be accorded by the sanctioning authority and as a consequence the Developers in terms have undertaken to develop and to build upon the said property more particularly described in the Schedule A-2 in the form of an integrated township.

AND WHEREAS the construction and development of the Integrated Township envisages the development of the plots and/or construction of several residential and/or commercial complexes etc. and the subsequent sale/lease of the plots/units therein, however subject to the binding terms, rules and regulations under the Notification No. TPS-1813/392/12/CR-572/13/UD-13 dated 20/10/2015 of the Maharashtra Government, Corrigendum dated 01-06-2016 and Letter of Intent _____ and the modifications and amendments carried out from time to time by legislation and/or to the said notification and all these things being taken together construe the rights of the Land Owners being conferred on the Developers by these presents and which rights are hereinafter referred to as the said rights.

AND WHEREAS the Owners and the Developers have entered into this agreement of Joint Development of the said property as an integrated township on the terms and conditions hereinbelow enumerated.

NOW THIS INDENTURE WITNESSETH AS UNDER:

1. The Owners and the Developers have entered into this Joint Development and that the Developers shall undertake the implementation of the Integrated Township Scheme as sanctioned by the Authorities and utilize the said rights therefrom by developing the said property more particularly described in the Schedule A-2 written hereunder forming part of the said lands mentioned in the Schedule A-1 & A-1a written hereunder as an integrated Township project.
2. The Owners have a clear and marketable title to their property described in schedule A-2 i.e. the said property and hereby, inter alia, expressly declare, assure, warrant and represent as under:

- a. They are the only absolute Owners and have a clear and marketable title to the said property.
- b. The said property is not accruing any tangible return and the family of the Owners have grown and now comprising of several smaller H.U.F. each having its members and for the greater benefit of the minors, their education and marriage the Owners out of legal necessity considered it desirous and expedient to grant the development rights and or dispose of their ancestral property i.e. the said property.
- c. No other person/s have any share, right, title, interest, claim and/or demand in respect of the said Property or any part thereof.
- d. There are no other tenants, unauthorized occupants, trespassers or encroachments on the said property or any part thereof.
- e. There are no proceedings instituted by or against the Owners in respect of the said property or otherwise and/or pending in any court or before any authorities.
- f. There are no notices from any Government, Municipal Corporation or any other Public Body or authority or any notice under any law including the Land Acquisition Act, Town Planning Act, the Urban Land (Ceiling and Regulation) Act, 1976 or any other law have been served upon the owners in respect of the said property or any part thereof.
- g. The tenure of the said property is freehold.
- h. The Owners have not created or suffered to exist any mortgage, charge, lien or any encumbrances whatsoever and howsoever or on over the said property the property is not subject to any claim or demand, encumbrances, attachment or any process issued by any court or authority.
- i. The Owners have not created any easement or quasi-easement or any burden or restrictive covenant or condition or any covenant or condition adversely affecting the property described in the Schedule A-2 or development and/or re-development thereof and nobody have claimed any such right against the Owner relating to the said Property.
- j. There is no injunction/s or any other order from any court, Collector, Revenue Authority, Municipal Corporation or any other relevant or Taxation Authority or other dues dis-entitling or restraining the Owners from dealing with the said property.

- k. All rent rates, taxes, assessments, duties etc. payable by the Owners in respect of the said property have been paid upto date by them.
 - l. That from the date hereof, the Owners will not enter into any agreement or arrangement oral or written or have/shall otherwise enter into or conclude any negotiations for sale, development and/or re-development, transfer or otherwise with respect to the said property or any part/s thereof and nor shall accept any token or earnest money or deposit for the same.
 - m. There are no outstanding encumbrances, mortgages charges, liens, notices for acquisitions, requisition, set-back, easements, rights of tenants (protected or otherwise) or agriculturists or outstanding interest in or claim by any parties other than the Owners in respect of the said property.
 - n. That neither the Owners or their predecessors-in-title nor anybody claiming from or under any of them have or has granted any right of way, easement or license or created any other rights to or in favour of any person/s in over or in respect of the said property that no such rights have become effective by prescription or otherwise howsoever and that the owners or occupiers of the adjoining lands or their tenants or the public do not use or have lawful access to any part of the property for passing and re-passing between any points within the said property.
 - o. The Owners are aware that the Developers are desirous of developing an Integrated Township under the provisions of the Maharashtra Regional Town Planning Act, 1966, and the Rules and the Notification hereunder, and for such development requires the property described in the Schedule A-1, A-1a and A-2 to be independent contiguous parcel with clear and marketable title and free from all encumbrances;
 - p. the Owners have all necessary power and authority to execute this Agreement and to perform their respective obligations hereunder, including the right to convey the development rights and other interests in the property described in the Schedule A-2 to the Developers in accordance with the terms hereof.
 - q. The Developers have agreed to enter into this joint agreement on the strength and faith of the aforesaid declarations and representations made by the Owners and have agreed to pay consideration relying on the aforesaid declarations, representations.
3. On the basis of the declarations and representations made by the Owners as aforesaid, the Developers have undertaken the Development with the Owners

in respect of the Property described in the Schedule A-2 and It is clarified that, if any of the aforesaid declarations and representations turn out to be false or incorrect and/or the Owners having suppressed any material facts from Developers and/or anyone claim any right, title or interest in respect of the property described in the schedule A-2 or any part thereof through the Owners, the Owners shall

- a. defend such claims or demands at their own cost and shall indemnify and keep indemnified the Developers and all the persons claiming through them against such claim, demand, loss or damage that may be suffered by the Developers as well as all costs, charges and expenses that may be incurred by them to defend such claims or demand and
- b. make out a marketable title to the property described in the Schedule A-2 free from all encumbrances, doubts and claims and shall at their own costs and expenses obtain all necessary orders of the Courts in relation to the Property and get in all outstanding estates and clear all defects in the title encumbrances and claims by way of sale, exchange, mortgage, gift, trust, inheritance, possession, lease, lien, easement or otherwise. It is agreed that in the event the Owners fail and/or neglect to carry out any of their aforesaid or other obligations hereunder forthwith the Developers without prejudice to their other rights and remedies shall be entitled to clear at the owners cost, risk and responsibility all or any of such lacunas, claims and/or defect and appropriate/adjust the cost, expense and charges thereof from the consideration payable the Owners.

4. The Owners have on the execution of this Agreement delivered vacant and peaceful possession of the said property described in the schedule A-2 to the Developers exclusive use and occupation for joint development as contemplated hereunder with the following rights.

- a. to enter upon the property described in the schedule A-2;
- b. to put up or erect sign boards upon the property described in the schedule A-2 or any part thereof
- c. to apply for and obtain sanctions of the building plans etc. for development of the Property on the said land in terms of the Integrated township project and/or utilize TDR and/or paid FSI/Additional FSI that may be permitted by sanctioning Authority, obtain I.O.D., Commencement Certificates and all necessary permissions to construct building/structures;

- d. to commence, carry on and complete construction of the building / structures by themselves or through any building contractor, sub-contractor or agents. As per the sanctioned plans with such modifications, amendments, alterations or variations that may be required to be made from time to time;
- e. to amalgamate the said Property described in the schedule A-2 with any adjoining lands /properties described in schedule A-1 & A-1a.
- f. to sell/lease/grant on leave and license basis the flats/ offices/ other premises in the building/s or structure to be constructed on the said Property on such terms and conditions as may be thought fit by the Developers and for that purpose, enter into such agreements/writings as the Developers may think fit, and receive the price, income and profit there from and to appropriate the same to itself.

5. Simultaneously with the execution of this Agreement, the Owners have executed an irrevocable power of attorney in favour of the Developers and its nominees authorizing them to do all things, deeds and matters pertaining to all the development activities and for the purpose to approach the appropriate authority/ies including but not limited to the sanctioning Authority or any other body or in respect of any acts, deeds, matters and things which may be done or incurred by the Developers as also to sign all letters, applications, agreements, documents, court proceedings, affidavits, and such other papers as may be from time to time required in this behalf. The Owners shall also appoint an architect of the Developers' choice, and also submit the building plans prepared for sanction and apply for quotas, of all controlled building plans prepared for sanction and quotas of all controlled building material such as cement, steel etc. to the relevant authorities, the collector, the sanctioning Authority and all other authorities in connection with the building plan submitted and for the other establishment to be constructed by the Developers and/or nominees or assigns and sale thereof.

6. The Owners and the Developers hereto covenant that upon the execution of these presents:

- a. The Developers shall be entitled to prepare layout and building plans, relating to the property described in the schedule A-2 hereunder as an integrated Township on the said land modify and revise the same, obtain all sanctions, permissions from the concerned appropriate authorities to carry out and complete the building project on the said land as the Developers may deem to be fit and proper. The Developers shall be entitled to amalgamate the property with the adjoining pieces of lands or

with the pieces of lands situated near about the property and to carry out the composite scheme of construction on such amalgamated land or sanctioned sub-divisions through or with due sanctioning of the appropriate authority and pursuant thereto entitled to giving all undertakings indemnities guarantees prescribed under the Township Act.

- b. The Developers shall be entitled to take appropriate actions, steps and make and seek compliance, permissions, sanctions, approvals, exemptions under the provisions of all concerned enactments and the rules and regulations framed thereunder require if any, entirely at the discretion of the Developers for development and the construction of the building/s upon the property described in the schedule A-2.
- c. The Developers shall be entitled to call upon the Owners to extend co-operation and assistance by executing all such documents, deeds, confirmations letters, affidavits, declarations, Indemnities, authorities, licenses or any such or other documents for development of the property described in the schedule A-2.
- d. The Developers shall be entitled to enter into agreements of sale /lease, to sell/lease and otherwise transfer the developed plots/building/s and/or flat/s and other unit/s and also all rights the benefits including by way of TDR in the form of DRC and/or other forms of FSI/FAR accruing from the property or externally with the intending purchasers in the proposed building inter alia as contemplated under the provisions of the Maharashtra Ownership Flats Act, 1963 and/or other applicable statutes /legislation which may be constructed by the Developers in respect of the property described in the schedule A-2 on the said lands and shall also be entitled to do all such acts, deeds and things required in that behalf and also receive and appropriate all booking fees, advances, lease rentals, compensations, installment of costs and other monies, amounts and sums from prospective purchasers to the use of the Developers.
- e. The Owners agree and affirm that as a consideration of the Developers developing the property they i.e. the Developers are and shall be entitled to realise the sale/ lease proceeds on the property and from the sale/lease of the developed plots/flats/offices/parking spaces constructed thereupon for their exclusive benefits as also the Developers are hereby absolutely entitled to sign all agreements with their prospective purchasers for the developed plots / flats / offices/units and any other structure/s constructed on the property.

7. The Owners hereby agree and undertake that they shall:
- a. not in any way obstruct or prevent construction and development work carried out by the Developers and shall not omit or do any act, matters or things whereby the Developers shall be prevented from carrying out development/construction work as provided under this Agreement.
 - b. To resolve, pending litigation, notices, demand, enquiry/dispute if any, pending before any authority.
 - c. To pay and discharge all outgoings, ground rent, municipal taxes, rent, rates, water, electricity and other charges, in respect of the property described in the schedule A-2 upto the date of this Agreement and shall indemnify and keep indemnified the Developers from and against all claims and demands or defaults in payments that may be made in respect thereof.
8. The Owners agree and affirm that in case they receive any intimation communication direction from the competent authority of Government relating to the approved scheme including its implementation they shall recommunicate the same to the Developer forthwith, they shall assure that they have not done or omitted to do anything which are in contravention of the said approved scheme.
9. The Developers shall be entitled to proceed with the Development of the property described in the schedule A-2 by getting the layout, amalgamation, subdivision and/or building plans sanctioned from the Competent Authorities for the construction and other development work to be carried out on the property getting permission, sanctions, certificates, letter of intent, order etc. from the Appropriate Authority and other concerned and competent authorities for carrying out and completing the development and construction work on the property by utilizing the full and additional FSI/FAR that can be consumed or utilised on the property to the maximum extent permissible including FSI acquired by acquisition or purchase of TDR, and/or other forms of FSI/FAR from within the said property or externally selling and allotting shops, flats and other premises to prospective Purchasers thereof, form one or more co-operative Societies or Limited companies or Condominium as per the scheme framed by the Developers and execute one or more Deed of Conveyance/s in favour of such co-operative society or societies, Limited Companies or condominium of prospective Purchasers as per the schemes framed by the Developers in respect of the property described in the schedule A-2 or such parts or portions thereof.

9a. The parties hereto agree that any additional FSI acquired for consideration for construction upon the said property shall be paid by the Developers and the cost thereof shall be deducted from the share of the Owners.

10. Simultaneously with the execution of these presents the Owners have handed over to the Developers all the original title Deeds and other documents relating to the property described in the schedule A-2 for verification of their clear and marketable title and the Developers are hereby authorised to take all necessary steps to affect the due diligence in respect of the said property.

11. The Developers shall also be entitled to lease, mortgage including creating an equitable mortgage on the property described in the schedule A-2 with any bank or financial institution and/or individuals, funds etc. for raising the funds and to sell, lease, mortgage, the buildings / units, apartments or other residential / non-residential / units / components to be constructed in respect of the said the property/ on the said land to the Third Party purchasers and the Owners shall not have any objection to the same provided however that the Owners shall not be liable for the re-payment thereof and no lien/right shall be chargeable under any circumstances for the re-payment thereof on the other personal properties/assets of the Owners.

12. The Owners shall notwithstanding the execution of the Power of Attorney in favour of the Developers, as and when called upon by the Developers execute one or more Deed of Conveyance in respect of the property described in the schedule A-2 alongwith the building/s structure standing thereon in favour of the nominees of the Developers including Co-operative societies, Limited Companies or any other organisations that may be formed by the Developers.

13. It is agreed and understood that the share of each of the Owners in the sale proceeds of the construction on the total area of the land i.e. the said property shall be determined on the basis of computing the percentage share of the holding of the land Owner in the Integrated Township project by applying the formula as under:

$$\frac{\text{Area of the land described in Schedule A-2}}{\text{Aggregate Area of the land described in the Schedule A-1 and A-1a}} \times 100$$

= _____% share of the Owners holding in the Integrated township project.

On the basis of the said Percentage share-holding of each owner in the Integrated township (evaluated vis-à-vis his/ her/ their individual holding in co-relation to the aggregate area of the Integrated Township) the said consideration shall with reference to such share be payable as under:

Owners Share of consideration

30% of the Gross Sale Proceeds of
Built-up area constructed in the
Integrated Township

Development Company's Share

70% of the Gross Sale Proceeds of the
Built-up area constructed in the
Integrated Township

OR (IF APPLICABLE)

60% of the Gross Sale Proceeds of
The layout plots in the Integrated
Township in case plotting is
being implemented.

40% of the Gross Sale Proceeds of
The layout plots in the Integrated
Township in case Plotting is being
implemented.

**(Gross Sale Proceeds shall not include One-Time Maintenance amount, cost
of Parking/ Infrastructure, MSEDCL/ Utility Deposits and/or Connection
charges)**

The Owners confirm that the interest break-up amongst themselves of their
specific defined respective share/s is enumerated hereinbelow:

Name of Owners	Respective Area of Holding (H – Ares)	Respective % share vis-à-vis said land
Total		

However not withstanding anything contained to the contrary herein the parties stipulate that due to the advent and implementation of the Real Estate (Regulatory and Development) Act (the said Act) and pursuant whereto the enactment of the Maharashtra Real Estate (Regulation and Development) (Registration of real estate projects, Registration of real estate agents, rates of interest and disclosures on website) Rules, 2017 (the said Rules), the provisions thereof stipulate to a process to be followed in respect of the sale proceeds received from the sale of the units allocable to the Owners / First Party by way of consideration would be treated at par with the sale proceeds received by the Developers i.e. the Second Party herein from sale of their allocated units and accordingly a portion of the sale proceeds received by the Owner / First Party shall also be deposited by the Owners/ First Party in a separate designated Bank Account and be dealt with as per the process laid down / set out under the said Act and Rules and it has now been mutually agreed by and between the parties hereto that the arrangement arrived at as aforesaid shall be implemented accordingly to accede to the said Act and Rules.

The Parties hereto hereby agree to comply with all the compliances, orders, restriction, etc. as imposed respectively on the parties hereto under the provisions of The Real Estate (Regulation & Development) Act, 2016 and Maharashtra Real Estate (Regulation and Development) (Registration of real estate projects, Registration of real estate agents, rates of interest and disclosures on website) Rules, 2017.

However, any liability arising out of any defect-in-title or outstanding encumbrances on or in respect of the said property shall be exclusively on the First Party only.

It is specifically agreed that in case the area of the total land said property as mentioned in formula computation hereinabove under the Joint Development is either reduced or increased for whatsoever reason the percentage share of holding held by the respective Owners shall change pro-rata.

The Developers have paid a sum of Rs. _____/- (Rupees _____ only) to the Owner Nos. _____ as per their specific defined share on/before the execution hereof as under:

Amount	Favoring
Rs.	Owner No.

(the receipt of which the Owners jointly and individually acquit, release, acknowledge and discharge the Developers therefrom) and the said payment is made to the specific owner/s at the joint and collective direction of the Owners without the Developer being liable to see the application thereof and shall be appropriated towards the consideration of all the respective Co-owners in their respective share.

14. Notwithstanding anything contained to the contrary herein it is agreed by and between the parties hereto that the consideration in form of area is derived herewith on the basis of the area of the said property offered for Joint Development and therefore in case the area of the said property offered by the First Party hereunder is enhanced or reduced as the case may be and whereby the FSI/ FAR available for Joint Development is also proportionately enhanced/ reduced then in such eventuality the consideration payable to the first Party shall also stand proportionately enhanced/reduced.

The Parties hereto also agree to confirm that the First Party shall be bound to transfer any enhanced area to the auspices of the Joint Venture alone and the First Party is/are entitled to deal with the same in any other manner howsoever.

15. It is specifically agreed that during the continuance of this Agreement if any of the Owners who is a Party to this Agreement or any other Owner who has entered into similar type of agreement with the Developers transfers the land owned by him in favour of the Developers and/or its nominees/assigns for a mutually agreed consideration there shall be change in the percentage in sharing of the sale proceeds by the said Owner vis-a-vis the share of the Developer. The Developer/nominee/assign shall replace the owner to the extent of the said share and be entitled to pro- rata share attributable to land transferred as hereinabove provided.

16. It is expressly agreed by and between the Owners / Party of the First Part and the Developers that the land cost payable for a Project / Building / Phase etc. to the Owners shall be accrued and due only on obtaining Completion / Occupation Certificate from the relevant local authority for the related Project / Building / Phase etc. Till such Certificate is obtained by the Developers, all amounts paid by the Developers to the Owners shall be treated as “advance” towards Land cost.

17. The Developers shall be entitled to apply for and obtain any additional FSI as may be permissible in terms of the change in the rules by the sanctioning authority and any such additional FSI acquired for consideration for construction upon the said property as an integrated township on the said land shall be paid by the Developers and the cost thereof shall be deducted from the share of the Owners.

18. It is agreed between that parties that sole responsibility to open and operate Current Accounts in the Bank shall be of the Developers alone.

19. That Notwithstanding anything contained to the contrary in this agreement the Owners shall not at any time be entitled to terminate this agreement for any reason.

20. The Developers shall be entitled to amend all the rights held by them under this joint development agreement as per the township law and notification as prevailing and amended from time to time.

21. Further it shall be ensured by the Developers that the FSI/FAR eligible for the total land i.e. 210.3951 Hectares as per law in force from time to time

shall be fully commercially exploited subject only to aesthetic/planning consideration.

22. It is specifically agreed that wherever necessary, the Owners shall sign all the documents, applications, affidavits, appeals, suits, petitions, depositions/ statements, written statements, replies, indemnities, consents or any other documents as may be necessary to obtain necessary permissions for the purposes of carrying out the Integrated Township Development of the said land.

23. It is specifically agreed that the FSI available on the said property shall be utilized as far as possible at any place in the Integrated township as per the sole discretion and option of the Developer.

24. The present Agreement has been executed by the Owners for their own benefit as well as for the benefits of the other family members of the Owners including the minors and that no member of the family of the Owners shall be entitled to raise any claim of whatsoever nature in the property of the Owners described in Schedule 'A-2' and in case of any such claim or objection, the Owners undertake to indemnify the Developers and to remove and satisfy all such claims and objections at their own cost.

25. It agreed that during the course of carrying out the development of the said property if any accident of any nature takes place at the site or during the course of any work being carried out in pursuance of the development thereof outside the site, it shall be the responsibility and liability of the Developers to settle all the claims arising out of such accident and also to incur necessary expenditure in defending any such claim in any Courts of Law or before any Authority under any Law for the time being in force.

26. Similarly, it is further agreed that in case of any dispute of whatsoever nature arising out of the development of the project and arising out of the sale of the land/units/FSI etc. in pursuance of the agreement/s by the Developers with the prospective purchasers, save and except for the title related issues/disputes which shall be the responsibility of the Owners, it shall be the sole responsibility of the Developers to meet the said claims and to settle the disputes thereof and also to indemnify the Owners of the consequences of such disputes and to reimburse the expenditure incurred by the Owners in defending any such disputes.

27. The Developers have agreed to incur expenditure regarding Stamp Duty, Registration Fees and other incidental expenditure pertaining to the executing of this Agreement and other Agreements, Power of Attorneys, in pursuance of this Agreement. However, all costs by way of stamp Duty and Registration charges

etc as may apply to the documents / deeds, if any, required to convey and transfer the Owners entitlement hereunder either to themselves or their nominees / assigns shall be borne and paid by the Owner and /or such nominee / assignee as the case may be and shall be to their account.

28. The Developers shall be entitled to assign, transfer, sell etc. the benefits, rights etc. accrued to them on account of execution of this Joint Development Agreement to any third party. The Developers shall also be entitled to mortgage the rights accruing or accrued from the Joint Development agreement to any Financial Institutions or Banks individual funds etc. for raising financial assistance for the said project, without being required to obtain such consent from the Owners.

29. It is specifically agreed that by virtue of the execution of this Agreement, all the Agreements, minutes of meetings, Memorandum of Understandings, either in writing or oral entered into by and between the Developers and the Owners if any pertaining to the land of the Owners which are subject matter of this Agreement have been superseded by this agreement.

30. Force Majeure Clause: No party shall be liable for any failure to perform its obligations in connection with any action described in this Agreement, if such failure results from any act of God, Lightning, Aircraft Damage, Riot, strike and Malicious Damage, Terrorism Damage, war, civil unrest, storm Cyclone, Typhoon, Tempest, Hurricane, Tornado, Flood and Inundation Loss, earthquake, Impact Damage due to Railway, Bush Fire to extent of the damage.

31. This Agreement shall be subject to the Jurisdiction of the Courts at Pune only.

32. Stamp duty hereupon is affixed under article 25 of the Bombay Stamp Act (amended) on the market value of the property described in the schedule hereunder, aggregating to Rs. _____/- and Rs. 200/- towards Indemnity contained herein. Hence the total Stamp Duty affixed upon these presents is Rs. _____/-.

THE SCHEDULE A -1 ABOVE REFERRED TO:

ALL THAT PIECE AND PARCEL OF LANDS bearing Gat Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58/A, 58/B, 58/C, 58/D, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76/2, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 407, 483, 509, 511, 520, 540/1, 540/2, 540/3, 541, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1081, 1082, 1083, 1084, 1085, 1086, 1087(pt), 1088(pt), 1089(pt), 1090(pt), 1091(pt), 1137(pt), 1138, 1139, 1140, 1141, 1146(pt), 1147, 1148(pt), 1149, 1150(pt), 1151, 1152/1, 1152/2, 1153, 1154, 1155, 1156, 1158, 1159, 1160/1, 1160/2, 1160/3, 1160/4, 1160/5, 1163, 1164, 1165, 1166 & 1167, forming part of Village Mouje Kadamwakwasti, admeasuring about 155.0086 Hectares, within the limits of Gram Panchayat Samiti, Taluka Haveli, District Pune bounded as under:

ON OR TOWARDS THE:

NORTH :
SOUTH :
EAST :
WEST :

THE SCHEDULE A -1a ABOVE REFERRED TO:

ALL THAT PIECE AND PARCEL OF LANDS bearing Gat Nos. 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 126, 127, 128, 129, 202, 400, 405, 419, 443, 448, 460, 471, 523, 543, 551, 552, 553, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132/1, 1132/2, 1132/3, 1136, 1137, 1141, 1142, 1143, 1144, 1145, 1146, 1148, forming part of Village Mouje Kadamwakwasti, totally admeasuring 55.3865 Hectares, within the limits of Gram Panchayat Samiti, Taluka Haveli, District Pune bounded as under:

ON OR TOWARDS THE:

NORTH :
SOUTH :
EAST :
WEST :

THE SCHEDULE A-2 ABOVE REFERRED TO:

ALL THAT PIECE AND PARCEL OF LAND bearing Gat No. admeasuring _____ Hectare _____ Ares i.e. _____ sq. mtrs, situate at Village Mouje Kadamwakwasti, Taluka Haveli, District Pune is bounded as under:

ON OR TOWARDS THE:

NORTH :
SOUTH :
EAST :
WEST :

IN WITNESS WHEREOF the parties hereto have set their hands on the day and date first hereinabove mentioned.

SIGNED SEALED AND DELIVERED
by the abovenamed OWNERS

OWNERS

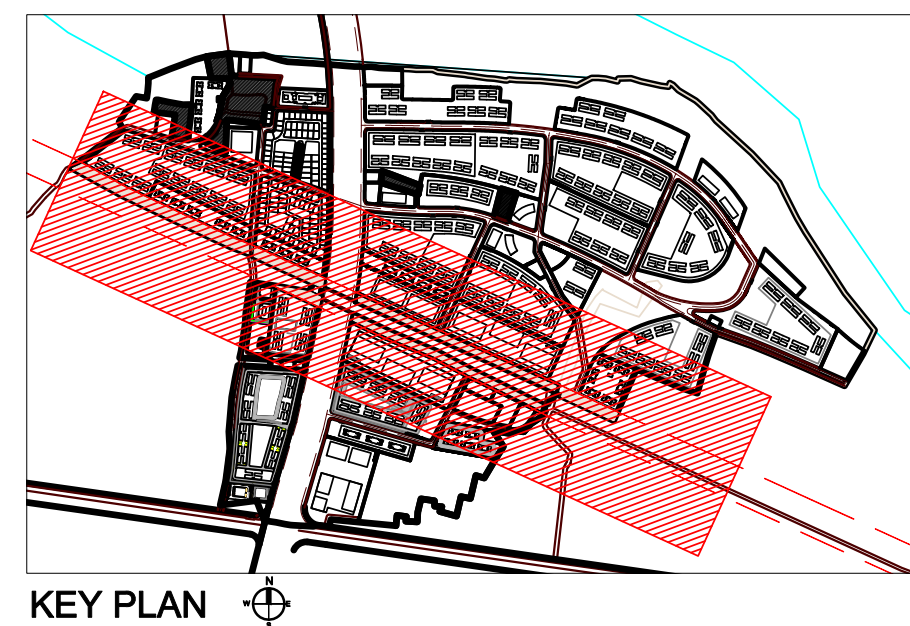
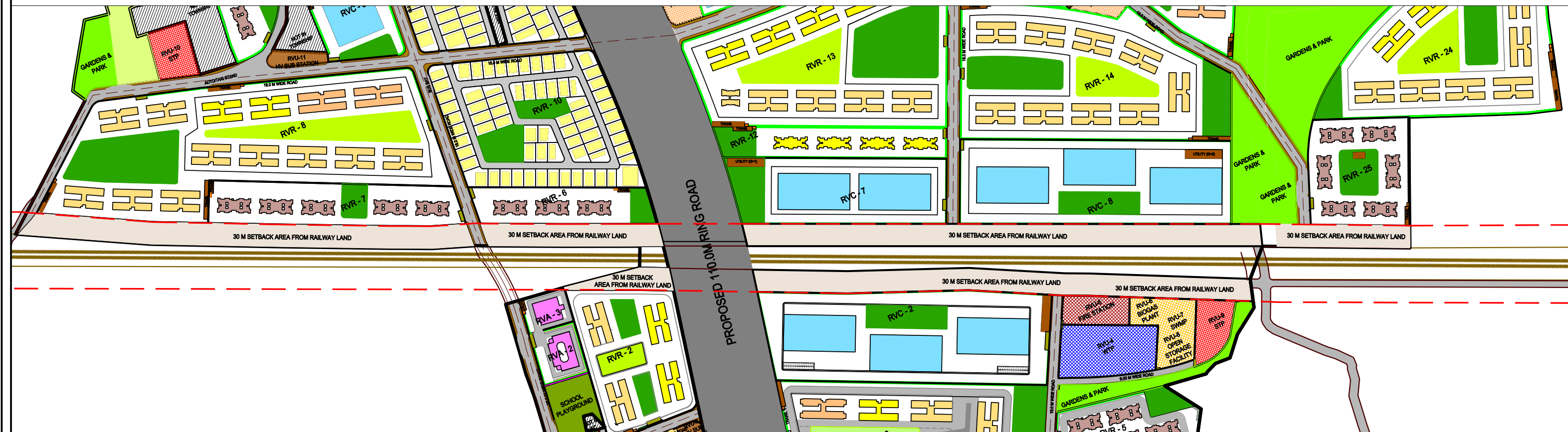
SIGNED SEALED AND DELIVERED
by the abovenamed DEVELOPER

DEVELOPERS

WITNESSES:

1.

2.



CLARIFICATION FOR POINT NO. iii (MOM OF 24TH EAC MEETING HELD ON 30TH OCTOBER 2017)
 RIVER VIEW CITY, PUNE



- (m) details of fire alarm system network;
- (n) location of centralized control, connecting all fire alarm systems, built in fire protection arrangements and public address system etc.
- (o) location and dimensions of static water storage tank and pump room alongwith fire service inlets for mobile pump and water storage tank;
- (p) location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers, CO₂ installation etc.;
- (q) location and details of first aid, firefighting equipment's / installations.

6.2.7 Service Plan:- Plans, elevations and sections of private water supply, sewage disposal system and details of building services, where required by the Authority, shall be made available on a scale not less than 1:100 in general and 1:1000 for layout.

6.2.8. Specifications - General specifications of the proposed constructions, giving type and grade of materials to be used, in the form given in Appendix A, duly signed by a licensed Architect / Engineer / Structural Engineer, as the case may be, shall accompany the notice.

6.2.9 Supervision - The notice shall be further accompanied by a certificate of supervision in the prescribed form given in Appendix B, by a licensed Architect/ Engineer/ Structural Engineer, as the case may be. In the event of the said licensed technical person ceasing to be employed for the development work, further development work shall stand suspended till a new licensed technical person is appointed.

6.2.10 Scrutiny Permit Fee:- The notice shall be accompanied by an attested copy of Receipt of payment of scrutiny Fee. The scrutiny fee shall be as decided by the Authority from time to time, subject to Government orders, if any.

6.2.11 Security Deposit Fee:- For ensuring faithful compliance of regulations and the directions given in the sanctioned plan and other terms and conditions, a security fee shall be charged at rates as specified by the Authority. The same shall be returned to the owner after the issue of full occupancy certificate for the building by the Authority.

6.2.12 No Objection Certificate:- In case of development / construction of buildings requiring clearance from the authorities like Civil Aviation Authority, Railways, Directorate of Industries, Maharashtra Pollution Control Board, District Magistrate, Inspectorate of Boilers and Smoke Nuisance, Defence Authorities, Maharashtra Coastal Zone Management Authority, Archeological Department etc., the relevant no objection certificates from these authorities, applicable to the occupancy, shall also accompany the application.

In case of a building identified in Regulation No.6.2.6.1, the building scheme shall also be cleared by the Fire Officer of the Local Authority or in absence of such officer from the Directorate of Maharashtra Fire Services.

6.2.13 Development Charges: Development charges wherever applicable under Section 124A of the Maharashtra Regional and Town Planning Act, 1966 shall be deposited with the Authority before issue of development permission/ commencement certificate. In case of revised permission where no development is carried out in pursuance of the earlier permission, amount of difference of development charges, if any, shall be levied and recovered.

- 11.2 Distance of site from Electric Lines:** No structure including verandah or balcony shall be allowed to be erected or re-erected or any additions or alterations made to a building on a site within the distance quoted in Table No. 3 below in accordance with the prevailing Indian Electricity Rules and its amendments from time to time between the building and any overhead electric supply line.

Table No. 3

Electric Lines	Vertically (m.)	Horizontally (m.)
(1)	(2)	(3)
(a) Low and medium voltage Lines and Service Lines.	2.5	1.2
(b) High voltage lines up to and including 33,000 V.	3.7	2.0
(c) Extra High voltage beyond 33,000 V.	3.7	2.0
	(Plus 0.3 m. for every additional 33,000 V. or part thereof)	(Plus 0.3 m. for every additional 33,000 V. or part thereof)
Note : The minimum clearance specified above shall be measured from maximum sag for vertical clearance and from maximum deflection due to wind pressure for horizontal clearance.		

11.3 Construction within blue and red flood line –

The construction within blue and red flood line along the river side may be permitted at a height of 0.50 m. above the red flood line.

11.4 Development within 30 m. from Railway boundary –

For any construction within 30 m. from railway boundary, No Objection Certificate from Railway Authority shall be necessary.

12.0 MEANS OF ACCESS

- 12.1** Every plot / building whether existing or proposed, shall have means of access as required in these Regulations.

- 12.2** Every person who erects a building shall not at any time erect or cause or permit to erect or re-erect any building which in any way encroaches upon or diminishes the area set apart as means of access.

12.3 Width of Means of Access:-

A) For Residential Development -The plots shall abut on a public means of access like street / road. Minimum width of access / layout road / internal road in any development proposal / subdivision / group housing shall be as given in Table No.4.

मध्य रेल

Central Railway

No. «PAW» NOC/DB/16



कार्यालय मंडल रेल प्रबंधक (कार्य)
पुणे

Office of the DRM (Works)
PUNE

Dt. 29.11.2017

To,
M/s. Riverview City Constructions Ltd.,
Megaspaces, 13, Sholapur Bazar Road,
Off East, Pune - 411001

Sub:- NOC for construction of building on plot bearing S. No.80,81,
82 etc.. of Kadamvakvasti and s. No. 124 ofloni Kalbhor
Adjacent to Railway land.

Ref:- Your letter no. RCCL/CC/106/2017-18 dt. 27.11.2017

With reference to above It is to inform you that as per extent policy, Railway issues "No Objection Certificate" to the owners for erection of their buildings/ structures in the vicinity of Railway land within 30m (100ft) from the existing railway boundary with certain conditions. If the proposed building is within 30m from the boundary of railway land, an application with relevant documents as per the enclosed format to be submitted to this office for issuing NOC.

संलग्नक:- As above

(Vikas Kumar)

Divisional Engineer (N),
Pune

मंडल इंजीनियर (उत्तर)

मध्य रेल पुणे

DIVISIONAL ENGINEER (North)
C. RLY.PUNE

FORM – 1 & 1 A

For

“ RIVERVIEW CITY”

AT

Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167

village Kadamvakvasti, Tal. Haveli, Dist. Pune, Maharashtra.

By

**M/s. Riverview City Constructions Ltd.
Pune**

FORM – 1

For

“ RIVERVIEW CITY”

AT

Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167

village Kadamvakvasti, Tal. Haveli, Dist. Pune, Maharashtra.

By

**M/s. Riverview City Constructions Ltd.
Pune**

APPENDIX - I
(See paragraph - 6)
FORM 1

(I) Basic Information

#	Item	Details
1.	Name of the project/s	“RIVERVIEW CITY”
2.	S. No. in the schedule	8 (b)
3.	Proposed capacity/ area/length/ tonnage to be handled/command area/lease area/number of wells to be drilled	Area of total plot : 21,03,951.00 m ² Net Plot Area: 19,46,951.00 m ²
4.	New/Expansion/Modernization	New
5.	Existing Capacity/ Area etc.	New project
6.	Category of project i.e. 'A' or 'B'	Category B1 Township project
7.	Does it attract the general condition? If yes, please specify.	Not Applicable
8.	Does it attract the specific condition? If yes, please specify.	Not Applicable
9.	Location	Village- Kadamwak vasti, Tal. Haveli, Dist. Pune, State - Maharashtra
	Plot/Survey/Khasra No.	Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167
	Villages	Kadamwak vasti
	Tehsil	Haveli
	District	Pune
	State	Maharashtra
10.	Nearest railway station Nearest airport	Loni railway station : 1 km Pune Airport : 21 km
11.	Nearest Town, city, District headquarters along with distance in kms.	Pune
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal address with telephone nos. to be given)	Grampanchayat Kadamwak vasti Sanctioning Authority : PMRDA
13.	Name of the applicant	M/s. Riverview City Constructions Ltd.
14.	Registered Address	“MEGASPACE”, 2 nd Floor, 13 Solapur Bazar Road, Off East Street , Pune- 411001
15.	Address for correspondence	M/s. Riverview City Constructions Ltd. “MEGASPACE”, 2 nd Floor, 13 Solapur Bazar Road, Off East Street , Pune- 411001
	Name	Shri. Satish Magar
	Designation (Owner/Partner/CEO)	Managing Director
	Address	M/s. Riverview City Constructions Ltd. “MEGASPACE”, 2 nd Floor, 13 Solapur Bazar Road, Off East

#	Item	Details
		Street , Pune- 411001
	Pin Code	411001
	E-mail	walsepatil@nandedcitypune.com
	Telephone No.	+91-9767101486
	Fax No.	--
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo-sheet.	Not applicable in this case.
17.	Interlinked Projects	No
18.	Whether separate application of interlinked project has been submitted?	Not applicable
19.	If yes, date of submission	Not applicable
20.	If no, reason	Not applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991?	Not applicable
22.	Whether there is any Government Order/Policy relevant/ relating to the site?	(i) Notification for Development of Townships, No. TPS 1816/CR-368/15/20 (4)/UD-13 dated 26.12.2016 (ii) Notification for Locational Clearance Dated 20.10.2015 and Amendment dated 01.06.2016, (iii) Application for revised locational clearance dated 30.12.2016 The copies are attached in the hard copy.
23.	Forest land involved (hectares)	No
24.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Order /directions of the Court, if any and its relevance with the proposed project.	No

Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.)

Plot History:

The plot is owned by M/s. Riverview City Constructions Ltd. It is to be developed as Integrated Township Project. Presently, plot is generally an open land, awaiting development, with few farm structures. The plot is located at village Kadamwakvasti, Loni Kalbhor, Pune, State - Maharashtra.

(II) Activity**1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	The plot under reference is in the Agricultural NDZ, DP area, Truck terminus & Parking zone and Industrial zone. However, now Locational Clearance is granted by Urban Development Department to erect Special Integrated Township Project.
1.2	Clearance of existing land, vegetation and building?	Yes	Land: nearly level. Vegetation: Tree census undertaken. Orientation planned to save maximum trees. Buildings: small huts and homes of villagers shall be demolished.
1.3	Creation of new land uses?	Yes	Township Development
1.4	Pre-construction investigation e.g. bore houses, soil testing?	Yes	Investigation done. Report is attached as Annexure 1 . Groundwater – available, but will not be tapped Sub surface strata – suitable for load bearing & vegetation
1.5	Construction works?	Yes	Special Integrated Township Project Development including Truck Terminus
1.6	Demolition works?	Yes	Nominal. small huts and homes of villagers shall be demolished.
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Majority workers in construction phase will be day workers coming from nearby villages. For some workers, labour camp with facilities like drinking water, toilets etc. shall be provided.
1.8	Above ground building, structures or earthworks including linear structures, cut and fill or excavations	Yes	Nearly level ground. Cutting – filling nearly balances. Top soil used for greening. Excavation in the form of rubble will be partly used for back filling and as substructure for roads.
1.9	Underground works including mining or Tunneling?	No	--

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.10	Reclamation works?	No.	--
1.11	Dredging?	No	--
1.12	Offshore structures?	No	--
1.13	Production and manufacturing processes?	No	This is an integrated Township project.
1.14	Facilities for storage of goods or materials?	Yes	During construction phase temporary storing facilities shall be created to store the construction raw material.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<u>Construction Phase:</u> (a) Liquid effluent: Mobile toilets Solid waste: Segregation. Bio-degradable waste shall be used for composting. Non-biodegradable waste: sold to authorized recycler. <u>Operation Phase:</u> (a) Liquid effluent: STP. Wastewater shall be recycled for flushing, HVAC and gardening. For hospital, pre-treatment will be done before sending it to STP. (b) Solid waste: Segregation. Bio-degradable waste shall be used for biogas and vermi-composting. Non-biodegradable waste: sell to authorized recycler. Biomedical waste: shall be sent to authorized agency. E-waste, battery waste: shall be sent to authorized agency. STP sludge shall be used as manure
1.16	Facilities for long term housing of operational workers?	No	--
1.17	New road, rail, or sea traffic during construction or operation?	Yes	No new rail or sea traffic. For construction phase: using existing approach road. For operation phase: 18 m wide approach road shall be provided
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	Yes	90 m wide Ring Road is also proposed by State Govt.
1.19	Closure or diversion of existing transport routes or infrastructure leading to	No	--

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	changes in traffic Movements?		
1.20	New or diverted transmission lines or pipelines?	Yes	Electrical Power and Water supply will be received from Govt. Sources.
1.21	Impoundment, damming, culverting, realignment or other change of the hydrology of watercourses or aquifers?	Yes	Nominal as trenching of Nala.
1.22	Stream crossings?	Yes	By culverting on local stream.
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	From surface water source
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	There is no existing lake water body on plot. There will be no disturbance made in natural drains, except minor trenching of water course will be done to facilitate the flow. Rainwater harvesting will be done to recharge the groundwater.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	<u>Construction phase:</u> There will be transport of construction materials. Precautions will be taken to reduce the impact of the vehicular movement by trying to avoid the vehicular trips during peak hours. <u>Operation Phase:</u> Material transport will be limited. Personnel transport will be streamlined through wide roads and gates. <u>Decommissioning:</u> No such consideration.
1.26	Long-term dismantling or decommissioning or restoration works?	No	--
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	--
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Since this is a development of Integrated Township, there is influx of people, both residential & floating.
1.29	Introduction of alien species?	No	--
1.30	Loss of native species or genetic diversity?	No	--
1.31	Any other actions?	No	--

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or ion short supply):

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
2.1	Land especially undeveloped	Yes	The plot under reference is in the Agricultural NDZ, DP

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	or agricultural land (ha)		area, Truck terminus & Parking zone and Industrial zone. However Now the locational clearance has been obtained and it is to be developed as Special Integrated Township Project. Total Plot area 21,03,951.00 m ² and Net Plot Area is 19,46,951.00 m ² .
2.2	Water (expected source & competing users) unit : KLD	Yes	During Construction Phase : - For workers: 83.5 m³/ day (Tankers/ Grampanchayat). (51 m³/ day for domestic and 32.5 m³/day for flushing) - For Construction: 100 m³/ day. (Depending on construction activity) (Tankers/recycled water from STP) During Operational Phase : Source: Govt. Irrigation Department Fresh For Residential, utilities and Commercial 17,704cum/d (approx.) Gardening: 2728 m ³ / day (approx.) (Recycled) HVAC: 10300 m ³ / day (approx.) (Recycled) Other: 527 m ³ / day (approx.) (Recycled) Flushing For Residential, utilities and Commercial 9901 m ³ / day (approx.) (Recycled) The dried sludge is used as manure.
2.3	Minerals (MT)	No	(only like stone aggregate and soil)
2.4	Construction material – stone, aggregates, and / soil (expected source – MT)	Yes	Quantity : As per requirement Stone aggregates demand will be met from the clay/soil generated after excavation and from open market Sources: The material required for construction activities shall be procured from company's authorized / approved vendors only. The vendor's performance will be monitored periodically. In case of urgency or non-availability of materials from authorized/approved vendors, it will be procured from the open market.
2.5	Forests and timber (source – MT)	Yes	Timber required for doors sourced from local suppliers.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	During Operational Phase: Source: MSEDCL Connected Load: 342.916 MW Maximum Demand: 158.943 MW Adequate capacities of DG sets will be provided.
2.7	Any other natural resources (use appropriate standard units)	Yes	- Using solar hot water generation through solar heater. - Solar PV cells shall be provided for street lighting.

3. Use, storage, transport, handling or production of substances or materials, which would be harmful to human health or the environment or raise concern about actual or perceived risks to human health.

Sr.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate
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No.			quantities / rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	Integrated Township project for residential/office/Parking use
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	-
3.3	Affect the welfare of people e.g. by changing living conditions?	No	--
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	All responsible care taken.
3.5	Any other causes	No	--

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Top soil will be used for greenery.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Total solid waste Generation:-99831 Kg/Day Dry Waste: 37169 Kg/ day Wet waste: 62662 Kg/day For wet waste, biogas shall be provided. Dry waste shall be handed over to authorized recycler. Plastic waste shall be handled and disposed off as per Plastic Waste Management Rules, 2016. Pyrolysis system is provided for non-recyclable plastic. E-waste shall be managed, handled and disposed off as per E-Waste (Management) Rules, 2016. Battery waste shall be handled as per rules.
4.3	Hazardous wastes (as per Hazardous waste Management Rules)	Yes	No asbestos is used. DG Set Waste oil shall be stored & given to the authorized agencies Biomedical waste kg/d: Total biomedical 29 , Non infectious : 21, Infectious:3, Hazardous 5 kg The noninfectious waste will be segregated from hospital. The infectious shall be sent to the authorized agency. Dried sludge

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
			from ETP of the hospital handed over to the authorized agency.
4.4	Other industrial process wastes	No	--
4.5	Surplus product	No	--
4.6	Sewage sludge or other sludge from effluent treatment.	Yes	Dewatered sludge from STPs is used as manure for the plants.
4.7	Construction or demolition wastes.	Yes	Construction and debris waste shall be managed, handled and disposed off as per Construction and Demolition Waste Management Rules, 2016. Care also will be taken for RMC plant.
4.8	Redundant machinery or equipment.	No	This is a new project
4.9	Contaminated soils or other materials.	No	--
4.10	Agriculture wastes.	No	--
4.11	Other solid wastes.	No	--

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	CPCB approved D.G. Sets will be used during power failure. Stacks will be provided as per norms.
5.2	Emissions from production processes	No	--
5.3	Emissions from materials handling including storage or transport	Yes	Marginal. Fugitive dust emission due to handling and loading - unloading activities is envisaged during construction. Frequent water sprinkling will be done to minimize the fugitive emissions. Transportation will be through covered trucks.
5.4	Emissions from construction activities including plant and equipment.	Yes /	Marginal. The project may cause rise in dust levels during construction phase. Precautions would be taken to reduce dust generation during construction phase. • RMC use will eliminate the handling of cement, sand and concrete thus dust emission will be minimized. • RMC use will also reduce the trucks trips. • Tarpaulins will be used to cover trucks carrying debris. • Water sprinkling will be done at regular intervals to reduce dust generation.
5.5	Dust or odours from handling of	Yes	Dust generation will be controlled as

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	materials including construction materials, sewage and waste		described above. Proper ventilation will be provided for STPs. No cess pool formation during disposal. Biogas will be covered and used only for organic solid waste treatment.
5.6	Emissions from incineration of waste	Yes	Scrubber shall be provided for pyrolysis plant used for plastic management.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	--
5.8	Emissions from any other sources	No	--

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers.	Yes	For control of noise following measures shall be adopted: • Properly maintained equipment with mufflers will be used. • High noise generating construction activities would be carried out only during day time. • Workers working near high noise construction machinery would be supplied with ear muffs/ear plugs. • Tree barrier shall be provided • DG Sets shall be provided with acoustic enclosures.
6.2	From industrial or similar processes.	No	--
6.3	From construction or demolition.	Yes	Noise Pollution Control : Construction Phase: Noise pollution will be due to operation of machinery as well as transportation vehicles. This may cause nuisance to the nearby area. Following precautions shall be taken to control noise pollution : • High noise generating construction activities would be carried out only during day time. • Installation, use and maintenance of mufflers on equipment. • Workers working near high noise

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
			construction machinery would be supplied with ear muffs/ear plugs.
6.4	From blasting or piling.	Yes	There will be no blasting. Piling will not be driven by hammers, but will be only screwed by rotation.
6.5	From construction or operational traffic.	Yes	During Construction phase: There will be transport of materials for construction work. Precautions will be taken to reduce the impact of the vehicular movement such as vehicular trips which will not be at peak traffic hours. Separate entry gate shall be provided for each sector. Smooth roads shall be provided. Operation Phase : The proposed project being Township, the source of air and noise pollution is vehicular noise only. The vehicular parking shall be restricted only in the adequate parking area provided, which will help in reducing noise and air pollution due to vehicular movement. The project proponent has done plantation which is helping to reduce the noise level and enhance air quality. PUC will be insisted. Bus service will be provided.
6.6	From lighting or cooling systems.	No	--
6.7	From any other sources.	No	--

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, costal waters or the sea:

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials.	Yes	Hazardous Waste Management Plan is enclosed as an Annexure 2

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge).	Yes	Recycling and reuse within the premises for flushing, HVAC, Gardening, sprinkling etc. Excess treated water from STP will be left in natural stream as per CPHEEO guidelines on Sewerage and Sewage Treatment System, 2013. Standards for discharge of effluent in inland surface water as per EP Act shall be followed. The Effluent generated from the Hospital shall be given Primary treatment and then transferred to STP for further treatment.
7.3	By deposition of pollutants emitted to air into the land or into water.	Yes	Dust will be generated during construction phase from earthworks and movement of vehicles. Appropriate fugitive dust control measures, including water sprinkling of exposed areas and dust covers for trucks, will be provided to minimize any impacts. DG exhaust will be discharged at stipulated height by providing adequate stack height to the DG sets
7.4	From any other sources.	No	--
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	--

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	--
8.2	From any other causes.	No	--
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, and cloudburst)? we	Yes	The structure of the building shall be designed as per IS codes for zone III. There is no history of such a disaster in the area under reference. From flood point of view, we are taking care of Red and Blue line of the adjacent Mula-Mutha River. However, a Disaster Management

			plan is enclosed. Annexure 3
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9. Factors which should be considered (such as consequential development) which could lead to environmental effected or the potential for cumulative impacts with other existing or planned activities in the locality

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
9.1	Lead to development of supporting, utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment etc) • Housing development • Extractive industries • Supply industries • Other	Yes	It is a township development project. Water supply, roads, power supply, waste or waste water treatment facilities are planned with respect to the up-coming development to make the township self-sufficient.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	--
9.3	Set a precedent for later developments	Yes	As the project involves a mixed use development, there will be generation of employment during Construction and Operation phase.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	Impacts on water availability. (This eventuality is avoided due to assured Govt. supply and our efforts of recycling). Storm water drainage. (Natural water courses will not be obstructed and in fact streamlined.) Availability of electricity. (Govt. source. Solar energy will also be provided to reduce the use of electricity. LED lights shall be used to reduce energy consumption). Traffic congestion. (Schools will be provided within premises. Convenience Stores will also be made available. Office towers may become useful for employment. Satisfactory parking area shall be provided. Wide and smooth roads. Bus bays will be provided.

(III) Environmental Sensitivity

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	There is a government petrol/diesel pipeline crossing our area. As per their rules, no structure to be constructed within 5 m. 15 m road access to be provided for maintenance/monitoring
2	Areas which are important or sensitive for ecological reasons – Wetlands, watercourses other water bodies, costal zone, biospheres, mounting, forests	Yes	Discipline for blue and red line will be observed on Mula Mutha River, which is adjacent to the project.
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	--
4	Inland, costal, marine or underground waters	Yes	Mula-Mutha River abutting to the site. Discipline for blue and red line will be observed on Mula Mutha River
5	State, national boundaries	No	--
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Yes	Solapur highway near site Railway line from within the site Proposed Ring Road from within the site
7	Defense installations	Yes	Pune Cantonment Board : 13 km Head Office of Southern Command: 13 Km Air Force Station: 12 Km
8	Densely populated or built-up area	Yes	Pune City 14 Km
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	This is a township project and school, hospital, shopping facilities will be provided within the premises. Following facilities are outside of premises. DSK International School 1 km MIT campus 1 Km Shivam Hospital 1 Km VishwaRaj Hospital 2.6 Km Vatsalya childcare clinic 4 km. Responsible care is taken.
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	No	--
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	No	--
12	Areas susceptible to natural hazard which could cause the project to preset environmental problems (earthquakes, subsidence, landslides, erosion, flooding)	No	We do not foresee any earthquake, subsidence or landslide. However from flood point of view, we are taking care of Red and Blue line of

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	or extreme or adverse climatic conditions)		the adjacent Mula-Mutha River.

(IV). Proposed Terms of Reference for EIA studies:

EIA studies will be conducted as per the guidelines given by MoEF

DECLARATION

"I hereby give an undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost."

Date: 01/02/2017

Place: Pune

For M/s. Riverview City Constructions Ltd.



Director

Riverview City Constructions Ltd.

Registered Office :- Megaspice, 13 Sholapur Bazar Road, Off East Street, Pune - 411001, India
Tel :- 020-26342797, 26341940 Email : megarc@boom5.vsnl.net.in Fax : 020-2634554
CIN : U45202PR12007PLC129440



FORM-1 A

1	LAND ENVIRONMENT Attach panoramic view of the project site and the vicinity	
1.1	Will the existing landuse get significantly altered from the project that is not consistent with the surroundings? (Proposed landuse must conform to the approved Master Plan/ Development Plan of the area. Change of landuse if any and the statutory approval from the competent authority be submitted). Attach Maps of (i) site location (ii) surrounding features of the proposed site (within 500 meters) (iii) The site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans	Yes. • The plot under reference is in the Agricultural NDZ, DP area, Truck terminus & Parking zone and Industrial zone. However, now Locational Clearance is granted by Urban Development Department to erect Integrated Township Project., at village Kadam wak wasti, , Tal. Haveli, Dist Pune, Maharashtra. • Following maps/ drawings are enclosed as - Site Location map – Annexure 4 - Map of 500 m around – Annexure 5 - Contour Plan – Annexure 6 - Conceptual Plan – Annexure 7
1.2	List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.	• Total Area of Plot: 21,03,951.00 m² • Area under development: 19,46,951.00 m² • Built up area: 57,93,958.00 m² (FSI : 38,98,837 m² and Non-FSI: 18,95,821 m²) 160 buildings with 36,347 tenements One 100 beds hospital Three schools 19 Commercial buildings Police station, Fire Brigade and other utilities The details are provided in Annexure 8 • Fresh Water Consumption: 17,704 m³/day • Power Requirement: Needful power will be supplied by the local authority during construction & operation phase. This is available from the State Government Agency. Connected Load: 342.916 MW Maximum Demand: 158.943 MW • Connectivity: 1. Nearest Air Port: Pune Approx. 21 Km 2. Nearest Railway Station: Loni 1km 3. Nearest Highway NH 65 – adjacent • Community Facility: Amenity & open space will be provided in this Special integrated

		Townships as per Local Rules and community requirements like library, fire station, police station, post office, restaurant, market, essential and convenient shops, hospital with 100 beds, primary and secondary schools, multi-purpose town halls. • Parking Needs: Parking will be provided as per Development Control Rules of Local Authority
1.3	What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing landuse, disturbance to the local ecology).	The existing facilities adjacent to the proposed site are from the village of Kadamwak wasti. Our project is not likely to disturb or overload the same, because we propose to provide many amenities by ourselves in the closest proximity, with modern considerations. Impacts on present amenities: <u>Open Space</u> Only marginal, because we shall have our own large open space which is more attractive and near than existing outside open space. <u>Community facilities</u> Only marginal, because we shall have our own refined facilities like public transport, medical aid, post, police station, repair shops, retail convenient shops etc. which will be more attractive and near than the existing facilities outside. <u>Land-use</u> This will be beneficial impact. Presently only rain-fed coarse crop is taken. This activity will give recharged groundwater and compost on one hand and market for village agricultural proceeds, milk-milk products, vegetables will encourage farming. Tree census will be taken and maximum will be saved or compensated.
1.4	Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given).	<u>Erosion</u> Erosion is not a serious problem. The rains are moderate and spread over all the four monsoon months. The topography is not steep. Lawns and greenery provided will reduce the rain run-off coefficient. Roof rain harvesting is designed and will be implemented, reducing the concentration further. <u>Subsidence</u> Subsidence is not a serious problem. The region is with volcanic Deccan trap foundation. It has good load bearing capacity. Surrounding area is not waterlogged or low lying. <u>instability</u> Instability is not a serious problem. Erosion control steps are taken. This is not a concave site.

		Seismic class as per BIS is satisfactory and accordingly design is made. Subsidence is not apprehended. <u>Soil</u> Soil is supportive for greening drive. The soil cover however is not very deep. There is good foundation on Deccan trap or hard murum boulder below. Slope analysis. Angle of repose is more for the top soil, progressively reducing as we go deep. <u>Vulnerability</u> Vulnerability to subsidence. Less. The region is with volcanic deccan trap foundation. It has good load bearing capacity. Surrounding area is not waterlogged or low lying. <u>Seismicity</u> Seismic class as per BIS is satisfactory and accordingly design is made. Class III is expected. As per the Seismic Zoning Map of India Pune region falls under Zone- III. Stability Certificate, as per prevalent IS Code will be obtained for these buildings from registered Consulting Structural Engineer considering the seismic forces and wind forces etc.
1.5	Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)	Minor training of water courses will be done. Reasons (1) Orientation done to avoid encroaching on nalla alignment, (2) Plinth foot- print area is very small, thus leaving nallas away, (3) There is no incremental discharge. In fact it is reduced due to our efforts of roof and road rain water harvesting as per CPCB design and groundwater recharge. The rest is trained through well designed storm water drains.
1.6	What are the quantities of earthwork involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)	Earthwork: Excavation is done carefully. The top fertile soil is removed separately and stacked separately for further use in landscaping-gardening. The lower strata earth is either separately for further use in landscaping or for filling the plinths, road substructure, leveling low lying areas, or bunding the erosion. Neat depots will be kept. The excess is transported out regularly to our other site. In case any special soil is required to be imported, the same will be procured from authorized vendors who will be advised to remediate the land there. If still excess, remaining material will be disposed by covered trucks to the authorized sites. Expected excavation Quantity: black cotton soil approx. 1403075 m³ Other: 728704 m³

1.7	Give details regarding water supply, waste handling etc during the construction period	Water • For workers: 83.5 m³/ day (Tankers/ Grampanchayat). (51 m³/day for domestic and 32.5 m³/day for flushing) • For Construction: 100 m³/ day. (Depending on construction activity) (Tankers) Mobile toilets will be provided for workers and sewage will be taken care of by the vendor. Construction will need labors force. However, due to mechanization such number is substantially reduced. Majority of work is done in day time with people coming from nearby villages. Only limited force will be kept in labor camp. For their children crèche is arranged. For the camp and construction water is supplied and waste removed. Wastewater Quantity: Will get generated from the domestic water input to a tune of about 65-75%. From the construction purpose however, water will not reappear because it is consumed in preparation of concrete mix or for maturing of concrete, plaster, floor etc. Treatment and Disposal: Mobile toilets shall be provided for labors and sewage will be taken care of by the vendor. Solid Waste There will be two types of solid waste, one originated from workers and another originated from construction job. The former type will be removed for composting and later will be reused as construction debris for secondary usage as mixed with sand-aggregate. It can be also used at bottom of landscaping.
1.8	Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)	There are no low lying areas in the vicinity where drainage is traditionally getting accumulated. There are some small patches, which will be filled by our construction debris and topped by soil. There is no other disturbance. There is no wetland area in the vicinity.
1.9	Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)	[1] Const. debris Excavation stuff, demolition, waste sand, waste mortar, brick-bats Segregation, pulverization Low-land leveling, secondary concrete, below roads, and landscaping Estimated quantity 18250 cum over the period of

		all phases. Not likely to cause health hazard. [2] Const. waste Reinf. MS Scrap, empty gunny bags, packing material, Segregation, Send to re-rollers, sold to vendors. Estimated quantity 2275 MT (MS Scrap) over the period of all phases. Not likely to cause health hazard. [3] Camp waste Waste food, misc. rejects. Segregation, Local compost, landfill. Not likely to cause health hazard. Wastes generated by Construction labours will be segregated into biodegradable and non-biodegradable. Wet waste will be treated on-site. Dry waste shall be sent to recycler. Biodegradable garbage = 337.5 kg/day Non-biodegradable garbage = 187.5 kg/day Total = 525 kg/day
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2	WATER ENVIRONMENT																						
2.1	Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement met? State the sources & quantities and furnish a water balance statement	<u>During Construction Phase –</u> For Workers: 83.5 m³/ day For Construction : From Tankers : 100 m³/ day <u>During Operational Phase –</u> Table No.11: Total Water Requirement & Source <table border="1"> <thead> <tr> <th>Use</th><th>Quantity m³/day</th><th>Source</th></tr> </thead> <tbody> <tr> <td>Domestic</td><td>17,704</td><td>Irrigation Department Mutha R B Canal</td></tr> <tr> <td>Flushing</td><td>9901</td><td>STP treated sewage</td></tr> <tr> <td>Gardening</td><td>2728</td><td>STP treated sewage & Irrigation Department Mutha R B Canal</td></tr> <tr> <td>HVAC</td><td>10300</td><td>STP treated sewage</td></tr> <tr> <td>Other</td><td>527</td><td>Tanker</td></tr> <tr> <td>Total</td><td>41160</td><td></td></tr> </tbody> </table>	Use	Quantity m ³ /day	Source	Domestic	17,704	Irrigation Department Mutha R B Canal	Flushing	9901	STP treated sewage	Gardening	2728	STP treated sewage & Irrigation Department Mutha R B Canal	HVAC	10300	STP treated sewage	Other	527	Tanker	Total	41160	
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		Non-monsoon season: <pre> graph TD Source[Irrigation Department - Mutha R B Canal] -- 17704 --> Domestic[Domestic 17704] Source -- 9901 --> Flushing[Flushing 9901] Source -- 2728 --> Garden[Garden 2728] Source -- 10390 --> HVAC[HVAC other 10390] Domestic --> Sewage[Sewage Generation 24835 Available for Recycling 23593] Flushing --> Sewage Flushing -- 9901 --> Junction(()) Garden -- 2728 --> Junction HVAC -- 10390 --> Farmers[For Farmers 137] Junction -- 23019 --> Dust[For dust suppression 437] Junction -- 137 --> Farmers </pre> Source : From Irrigation Department Mutha Right Bank Canal All quantities are in m³/day.																					
2.2	What is the capacity (dependable flow or yield) of the proposed source of water?	When the Authorities have given sanction for the quantity of supply, they base it on the dependability calculations. Therefore adequacy is ensured for all the time. No groundwater is proposed to be tapped. In emergency tankers may be available.																					
2.3	What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)	Source Quality <table border="1"> <thead> <tr> <th>Parameter</th><th>Sample</th><th>Limit</th></tr> </thead> <tbody> <tr> <td>Appearance</td><td>Clear</td><td></td></tr> <tr> <td>Odor</td><td>Odorless</td><td></td></tr> <tr> <td>pH</td><td>7.5</td><td>6.5-8.5</td></tr> <tr> <td>Chlorides</td><td>54</td><td>250</td></tr> <tr> <td>Nitrates</td><td>3.7</td><td>45</td></tr> <tr> <td>Total Hardness (as CaCO₃)</td><td>118</td><td>300</td></tr> </tbody> </table> The source sample is acceptable. Further treatment shall be done at our water works including Filtration and disinfection. Drinking water quality of Class A as per Indian Standard (IS 10500 – 2012)	Parameter	Sample	Limit	Appearance	Clear		Odor	Odorless		pH	7.5	6.5-8.5	Chlorides	54	250	Nitrates	3.7	45	Total Hardness (as CaCO ₃)	118	300
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2.4	How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)	Total treated water available for recycling is 24,835 m³/day Secondary requirements are met from recycled water: - Flushing : 9901 m³/day - Gardening : 2728 m³/day - HVAC: 10300 m³/day - Other: 527m³/day Excess treated water from STP will be left in natural stream as per CPHEEO guidelines on Sewerage and																					

		Sewage Treatment System, 2013.																																
2.5	Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)	No, there will not be any diversion of water of others supply. Our water source is surface water as granted by official study of River Mutha. It is controlled by Government dept. of irrigation. They sanction quota after considering as to- Who others are drawing water from this same source, and Whether our drawing will interfere in their routine																																
2.6	What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)	Sewage generation from project will be 24,835 m³/day and will be treated in separate full-fledged Four Sewage Treatment Plants of combined capacity 26,110 m³/day. Treated sewage will be reused for flushing, HVAC and gardening. <u>SEWAGE QUALITY:</u> Table: Raw & Treated Sewage Quality <table><tr><th rowspan="2"></th><th rowspan="2">Details</th><th colspan="2">Values</th><th rowspan="2">Values</th></tr><tr><th>Raw</th><th>Treated</th></tr><tr><td>1</td><td>pH</td><td>6.0– 8.5</td><td>7.0– 8.0</td><td>--</td></tr><tr><td>2</td><td>Total Suspended solids</td><td>200- 250</td><td><10</td><td>mg/lit</td></tr><tr><td>3</td><td>Chemical Oxygen Demand</td><td>500- 600</td><td>50</td><td>mg/lit</td></tr><tr><td>4</td><td>Biochemical Oxygen Demand,3 day, 27 °C</td><td>250-300</td><td>< 10</td><td>mg/lit</td></tr><tr><td>5</td><td>Oil & Grease</td><td>60</td><td>< 5</td><td>mg/lit.</td></tr></table> Treatment in STPs and reuse of treated sewage for flushing, HVAC and gardening. Excess treated water from STP will be left in natural stream as per CPHEEO guidelines on Sewerage and Sewage Treatment System, 2013. Standards for discharge of effluent in inland surface water as per EP Act shall be followed. The Effluent generated from the Hospital shall be given Primary treatment and then transferred to STP for further treatment. The dried sludge is used as manure.		Details	Values		Values	Raw	Treated	1	pH	6.0– 8.5	7.0– 8.0	--	2	Total Suspended solids	200- 250	<10	mg/lit	3	Chemical Oxygen Demand	500- 600	50	mg/lit	4	Biochemical Oxygen Demand,3 day, 27 °C	250-300	< 10	mg/lit	5	Oil & Grease	60	< 5	mg/lit.
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2.7	Give details of the water requirements met from water harvesting? Furnish details of the facilities created.	Water harvesting <table><tr><th>#</th><th>Components</th><th>Managed as</th></tr><tr><td>1</td><td>Roof</td><td>CPCB type upper ground water recharge</td></tr><tr><td>2</td><td>Pavements</td><td>CPCB type upper gravity</td></tr></table>	#	Components	Managed as	1	Roof	CPCB type upper ground water recharge	2	Pavements	CPCB type upper gravity																							
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			injection ground water recharge	
		3	Lawn, Field	Storm water drain well designed
		The new discharge is lower than earlier. Roof water sent for storage in upper layer moisture will reduce need of greenery water. Groundwater is recharged, but not tapped.		
2.8	What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?	Total Runoff from the project site: Prior to Development = 1823 m³/min Total Runoff from the project site: After Development = 1952 m³/min Hence Incremental Run off = 1952-1823=129 m³/min Capacity of external storm water drains is sufficient to take the runoff from the site. Land-use Pattern (operation phase) Land use surface change: Previously the entire land was barren or rain-fed cultivation. Now the surface is changed with under (1) roof, (2) Roads, & pavement's, (3) lawn and vegetation cover and None barren as earlier position. Incremental rain runoff quality-wise is now in fact reduced after assured Roof and Road rainwater harvesting. Quality of rain runoff generated in this area previously was more turbid due to erosion of open field. Quality of rain runoff after changed surface now, is less turbid due to good housekeeping on roads, oil-grease traps en-route and in open field covered with lawn and vegetation less of soil by erosion as SS. Rain runoff quality-wise is improved and quantity-wise reduced. As a natural corollary new runoff will reduce cause of flooding, as well as water-logging Capacity of external storm water drains is sufficient to take the runoff from the site. Management plan for Flood is as follows : • Storm water drain shall be cleaned at regular interval. • Mapping the areas within or leading to or out of the buildings that will be water logged, flooded or isolated due to the flood. • The areas will be marked after completion of the project (as final ground levels etc. will be available after completion).		

2.9	What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)	Groundwater exists in this area historically. The earlier occupiers were using the same. However it is decided that for this project another dependable Government approved source is selected for permanency. The wells are shown on 7/12 extract documents. Groundwater table is at 6 m to 12 m below surface in normal times. It is recharged both naturally as well as by our roof rain water harvesting efforts • Ground Water table will increase due to proposed recharge Pit / Bores • There will not be ground water tapping
2.10	What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)	During construction work, the paving blocks may be fixed along roads, open spaces, by keeping narrow distance between the blocks with removal of Black Cotton soil below. This will facilitate Murmic soil section below for recharging purpose and its further movement underground. Hydrogeology study report is attached as Annexure 1.
2.11	How is the storm water from within the site managed?(State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)	Peak runoff after development : 129 m³/min Storm water drain: 1. Construction of Filter Pits of 2Mt. X2Mt. X2Mt. dimensions. The Pits may be constructed along storm water drain line, keeping a distance of 15 to 20 Mt. between the Pits. The initial storm water will get accommodated in the Pits and the excess, if any, will drain away further. (While constructing the Pits, upper thin layer of Black Cotton soil may be removed.) a. It is expected that during the storm water, the Pits will get filled in and during the dry spell, they will get empty. (i.e. recharge) During the subsequent rain spell, the Pits will again get filled up and thus, the cycle continues. b. There is no relationship between the availability of water and No. of Pits to be constructed. It is as per the financial outlay and as proposed by the Proponent. However, more the No. of Pits, more are the benefits. 2. In some Pits, bore of 25Mt. may be drilled at the bottom so that, the percolating water will have direct access to the Aquifer section below. 3. The existing dug wells/bore wells in the area may be utilized as a source of recharge with implementation of Roof Top Rain water harvesting measure with appropriate filter media.

2.12	Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	- During construction phase, temporary mobile toilets shall be used. Hence there will not be unsanitary conditions around the project site. - Regular segregation and disposal of solid waste generated by these workers shall be as per municipal corporation's practices. - First aid and medical facilities will be provided to all the concerned people working on the site. - Proper housekeeping will be maintained throughout the premises. - Construction will need labor force. However, due to mechanization such number is substantially reduced. Majority of work is done in day time with people coming from nearby villages. Only limited force will be kept in labor camp (100 tenements). The average labor force is expected to be around 200- 300 numbers.																										
2.13	What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)	- Wastewater generation: 24,835 m3/Day Treatment with MBBR Technology - Facilities for recycling: Flushing, Gardening - Disposal: (a): Sludge 2483 Kg/Day – Use as manure (b): Surplus Treated waste water: Disposed off as per norms <table><tr><th colspan="2">Water</th></tr><tr><td>particulars</td><td>Remarks</td></tr><tr><td>Source</td><td>Refer answer to Q # 2.1 above</td></tr><tr><td>Quantity</td><td>Refer answer to Q # 2.1 above</td></tr><tr><td>Water work</td><td>Provided incl disinfection</td></tr><tr><td>Tanks & distribution</td><td>Provided incl dual pipes</td></tr><tr><td>laboratory</td><td>Arranged analysis.</td></tr></table> <table><tr><th colspan="2">Wastewater</th></tr><tr><td>particulars</td><td>Remarks</td></tr><tr><td>Quantity generated</td><td>Refer answer to Q # 2.6 above</td></tr><tr><td>Quantity recycled</td><td>Refer answer to Q # 2.6 above</td></tr><tr><td>Treatment</td><td>Biological Oxidation and part for tertiary treatment</td></tr><tr><td>Tanks & distribution</td><td>Refer answer to Q # 2.6 above</td></tr></table>	Water		particulars	Remarks	Source	Refer answer to Q # 2.1 above	Quantity	Refer answer to Q # 2.1 above	Water work	Provided incl disinfection	Tanks & distribution	Provided incl dual pipes	laboratory	Arranged analysis.	Wastewater		particulars	Remarks	Quantity generated	Refer answer to Q # 2.6 above	Quantity recycled	Refer answer to Q # 2.6 above	Treatment	Biological Oxidation and part for tertiary treatment	Tanks & distribution	Refer answer to Q # 2.6 above
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2.14	Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.	- Recycling of treated sewage use for flushing, HVAC and gardening. - Color coding for dual plumbing system shall be done as per standard practices. <table><tr><td>Use Station</td><td colspan="2">Recycle plumbing system</td></tr><tr><td></td><td>Required?</td><td>Proposed?</td></tr></table>	Use Station	Recycle plumbing system			Required?	Proposed?																				
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		Residents flushing	Yes	Yes	
		Residents general use	No		
		Floating, Visitors, Staff: flushing	Yes	Yes	
		Floating, Visitors, Staff: general use	No		
		Fire Fighting- make-up	No		
		A.C. make-up	Yes	Yes	
		Greening drive inside	Yes	Yes	
		Any other (land Irrigation, bi-lateral)	Yes	Yes	
3.	VEGETATION				
3.1	Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with its unique features, if any)	Description of existing local flora & its biodiversity is observed. No especially unique feature is observed. This project, being a simple domestic activity without involvement of chemicals- pesticides-hazards does not threatens it. In fact on the contrary, on hitherto less attended land, this project is making greenery with many species planted and groundwater recharged by roof rain harvesting and by lowering the possibility of erosion. Trees and shrubs and lawns are planted more than the statutory requirements.			
3.2	Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)	In construction phase precautions are taken of not disturbing the vegetation while leveling, cleaning or excavation. The tree survey was undertaken for the project area. The buildings will be aligned to avoid cutting of existing trees to the extent possible. Out of existing 3300 trees, 361 will be retained, 2390 trees can be transplanted, 236 will be cut and 298 will either be cut or retained. For each tree cut/transplanted, 3 additional trees shall be planted to avoid negative impact on biodiversity Except on old fields' dividing bunds. Some are more in the form of bushes and dwarf trees. Majority of these are saved by proper orientation of buildings. Whatever cannot be avoided, it will be our endeavor to transplant the same carefully. What cannot be transplanted or cannot survive will be compensated as per rules.			
3.3	What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc along with a layout plan to an appropriate scale)	Tree plantation shall be done as per norms laid down by Govt. Trees of various varieties shall be planted for the proposed development. The beautification proposal will comprise of Tree and shrubs plantation, Landscaping and creating water bodies. This is done as per CPCB Publication on Green-belt. Soil is preserved during excavation for plantation as also the other materials and boulders for base. Biodiversity is maintained by selecting a number			

		of species with different heights, canopies, importance and ornamental features. Botanical nameplates will be provided. Water is in plenty as recycled after treatment of wastewater. Organic fertilizer by own compost is used. Application of pesticide will be stopped two months before monsoon months. This will create desirable beneficial impacts and will help in mitigation of air pollutants, noise, odor, green gas, and inconvenience to birds. It is proposed to plant 31560 number of trees (of all varieties) in due course as well as lawn.
4.	FAUNA	
4.1	Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.	Description of existing local fauna as observed is noted. No especially unique feature is observed. This project, being a simple domestic activity without involvement of hazards, and having a very small size away from forests or habitat, does not threaten it. No barrier is created. This activity is neither displacing any terrestrial fauna nor displacing any corridor of fauna movement. The site is away from surface water body and harm to fish is not foreseen. Question of developing fish ladder does not arise here.
4.2	Any direct or indirect impacts on the avifauna of the area? Provide details	On the background mentioned above, in fact on the contrary, on hitherto less attended land, this project is making greenery with many species planted and groundwater recharged by roof rain harvesting and by lowering the possibility of erosion. Trees and shrubs and lawns are planted more than the statutory requirements. Instead of displacing, presence of avifauna is anticipated. This will be a positive direct impact. With the help of University department, ready nest planting might take some shape here.
4.3	Prescribe measures such as corridors, fish ladders etc to mitigate adverse impacts on fauna	The land is not coming in the migration route or does not intercept any corridor of fauna movements. The site is only on one side of the surface water body and harm to fish not foreseen. Question of developing fish ladder does not arise here. There will not be any negative impact
5	AIR ENVIRONMENT	
5.1	Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)	Background air quality values of the general area are found to be satisfactory for parameters of SPM, SO ₂ , NO _x , in all the directions from the site (maybe except some local reasons.) there are none industrial process emissions. No stone quarries. Composting is away and barricaded. No cause for fugitives. Clean fuel, electricity and solar will be utilized and encouraged. Vehicles traffic is streamlines so as to experience least accelerating- decelerating, by smooth roads, well-timed signals, no parking on roads. No burning of garden trash, using it for mulching or composting.

		Street cleaning shall be done before dawn. Thus Dispersion values for traffic source do not cause any anxiety. Increase will be marginal and insignificant. The plinth footprint area is kept very low and hence substantial natural ventilation prevents any formation of heat island. AVERAGE AMBIENT AIR QUALITY AROUND THE PROJECT SITE Period: Oct – Dec 2016 Table No.14: Average Ambient Air Quality at Project Site <table><tr><th>PM-10 µg/m³</th><th>PM-2.5 µg/m³</th><th>SO₂ µg/m³</th><th>NO_x µg/m³</th><th>CO Mg/m³</th><th>Mont h</th></tr><tr><td>67</td><td>34</td><td>23</td><td>27</td><td>1.9</td><td>Nov 16</td></tr><tr><td>69</td><td>36.5</td><td>21</td><td>26.5</td><td>2.0</td><td>Dec 16</td></tr><tr><td>72</td><td>37</td><td>22.5</td><td>29</td><td>1.5</td><td>Jan 17</td></tr></table>	PM-10 µg/m ³	PM-2.5 µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO Mg/m ³	Mont h	67	34	23	27	1.9	Nov 16	69	36.5	21	26.5	2.0	Dec 16	72	37	22.5	29	1.5	Jan 17
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5.2	What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters	In absence of any industrial activity or stone crushing, there is no cause for generation of dust, smoke, odorous fumes, or hazardous gasses and in turn any impact of such releases. Meteorological conditions are generally found favorable, without any inversion. During construction phase, Dust, Particulate Matter is the main pollutant, which may be generated during construction activities. But as the building is at advance stage of construction, dust generation is not anticipated as a major source. Other emission sources are intermittent and include emissions of SO₂ NO_x and CO from materials transport of heavy vehicles on site etc. Proper upkeep and maintenance of vehicles, sprinkling of water on roads and construction site are some of the measures that would reduce the impact during construction phase. Sources of Air pollution During Operational phase • The gaseous emissions from vehicles • Emissions from DG sets while in operation only during power failure Mitigation Measures: • The traffic congestion will be avoided by proper parking arrangement and maintaining smooth traffic flow • Regular PUC checkup for vehicles • CPCB approved DG sets only will be used. Proper maintenance of DG sets shall be done and Low sulphur fuel shall be used.																								
5.3	Will the proposal create shortage of	The site is well connected to the existing road network																								

	parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site	outside and new wide approaches are feasible. 90 m Ring road is also recently proposed by the Government, which is adjacent. This infrastructure does not cause any bottleneck. Precautions are taken at entry-exist, with wide semi-circular set-back and guiding traffic guards at junction. There is adequate Parking space inside the campus and no choking of street-sides on that count expected. As sufficient place is provided inside with comfort, residents and visitors will not be required to cause inconvenience to others by parking elsewhere.
5.4	Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category	All internal roads and feeder roads are well planned, to reach at all places with ease (in the range of widths from 12 m to 24 m. Bicycle tracks, footpaths, jogging tracks are also provided. The length, width, and area of each category will be detailed. The total ROW (Right Of Way) incl. side shoulder are and appurtenant comes to about 10% Consideration of illumination, road dividers, side plantation, noise mounds/berms, signaling system, Tire repair and help-shops; are prepared in conception. No heavy illumination to disturb the birds.
5.5	Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above	Traffic noise & vibrations. Sources & mitigation: Vision is walk to work to school i.e. walk to destination rather than travel. Thus transportation is reduced. Bicycle jogging, walkway strips will be provided. Schools, college, recreation, culture, market, mall, museum, eateries, offices, convenient retail shops inside or in close vicinity. Still estimated, and parking provided. Had not these amenities provided inside, the numbers and kilometerage would have been manifolds more. PUC insisted. Tree barrier is also provided for sobering effect of noise and dust. We also propose public bus route here.
5.6	What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details	• DG sets will be operated only in case of Power failures during operational phase. • DG sets will have in-built acoustic enclosure to reduce the noise of DG sets while in operation. Plantation of trees would act noise barrier & will reduce the noise level. • The pollutants like RSPM, SO₂, that may arise from emission from DG set will be discharged through vent of proper size. • Stacks of proper height and strong foundation shall be provided
6.	AESTHETICS	

6.1	Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?	The project is on the near level ground and gently sloping. It is surrounded by normal land-use. It does not obstruct view, Scenic amenities or special Landscape. In fact, this project exhibits greenery with canopy and ornamental consideration. Common Green (City level green) shall be kept open between River and the project for aesthetics. A strip of land adjoining the river is not included in the project.
6.2	Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?	The project is coming up on hitherto unused land or on the land used for the same purpose as is intended now (albeit with quality difference). There are no heritage structures in influence area. As such, no question of adverse effects on any structure has arisen. All precautions will be taken to mitigate the impact due to water, air, and noise pollution during construction and operation phase. Environment Management Plan is prepared and shall be implemented along with Environment Monitoring Programme.
6.3	Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out	This is a normal development with standard architectural treatment. No local consideration of Urban influencing form is found having a relevancy.
6.4.	Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.	The project is coming up on the land used for the same purpose as is intended now (albeit with quality difference). There are no anthropological, archeological, artifacts sites nearby in influence area. As such, no question of adverse effects on any such site has arisen.
7.	SOCIO-ECONOMIC ASPECTS	
7.1	Will the proposal result in any changes to the demographic structure of local population? Provide the details.	Presently the concerned local village demographic structure is such that the ratio of number of Female to 1000 male, persons residing per household, persons in parsonage in the age-group of 0 to 6, all indicates a need of standard housing, and employment avenues. There is no R & R problem involved. With the advent of this project a more stable society and demographic structure, with better literacy and better healthful housing is expected as a change for better. There will be continuous source of income to the hardworking villagers for various supplies to the new residents. Since this is a development of Integrated Township there is influx of 2,54,735 nos. of people out of which 1,81,735 nos. is residential & 72,700 nos. is floating population.
7.2	Give details of the existing social infrastructure around the proposed project.	The village is agro-based. As per census, the Non-workers percentage is high. Whosoever are working, majority are on agricultural activities. The land cannot increase. Hence more avenues for livelihood are necessary. Our activity in proposed township will help

		them. This will increase literacy level, communication facilities, security and health status. School, Colleges, Hospitals, Markets, etc. are in proximity.
7.3	Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?	[a] Local community We have made a survey by interview & find that this proposed activity is acceptable to the local community. They realize that our presence will help them to have amenities without any nuisance. [b] Sacred places There is no heritage place in 10 km area. For small local sacred places, we shall help for renovation and “Jirnoddhar”. [c] Cultural values It is found that culturally both are not diverse, the existing community and new population. Thus no disturbance expected in cultural values of any. We shall support their fairs and festivals. In fact new citizenry of this Riverview will appreciate this.
8.	BUILDING MATERIALS	
8.1	May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)	We shall be using standard list of building material, and their use is inevitable. Some of them have high embodied energy like cement, steel. Glass etc. however it will be seen that Cement will have ingredients of pozolonic ash, steel will have some percent as scrap raw material recycled and use of glass is minimal. Our efforts will be in selecting energy efficient material in club house etc wherever feasible. Cement and steel has very long life span, over which the embedded energy be divided. Material, as a policy, will be procured from the nearest vicinity as possible. Construction materials from nearest source are chosen to minimize energy consumption for transportation.
8.2	Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	Transportation will be by trucks, tankers, dumpers or special vehicles (like ready-mix concrete carrier). Trips are estimated to be about 5000 numbers as (a) Spread over for the work phases of Excavation, Infrastructure, construction, Finishing (b) Spread over a staggered period of 80-84 months or more (c) Handling will be more by mechanical means for achieving speed and lowering accidents. The trips will be dovetailed. Dust and noise will get generated by the trips. However, nuisance is avoided by our mitigation measures as – • Bringing material Just In time (JIT), and no

		unnecessary storage. • Loading-unloading near the work by planning and separate gates provided • Watering, bins, covers, parapets provided to the max extent possible. • Watering the roads, and roads to be level. • The construction material will be carried in properly covered vehicles. • All the contractors / Vendors will be instructed to use vehicles having PUC certificates. • Security staff presents at site will supervise loading and unloading of material at site. • Construction material will be stored at identified site/ temporary go-downs at site. • Internal roads will be maintained in good conditions with regular sprinkling of water 5 meter high sheets will barricade the periphery of the Plot.
8.3	Are recycled materials used in roads and structures? State the extent of savings achieved?	• For substructure of road beds, construction debris will be useful. For watering at the time of compaction, our treated wastewater will be useful. • Recycled material will be used in the form of reinforcement, cement, metal and aluminum. At least 5% of the total building material used in the project will be recycled material. • Pozalona Portland cement shall be used which already contains 15% Fly ash
8.4	Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project	Total solid waste Generation:-99831 Kg/Day Dry Waste: 37169 Kg/ day Wet waste: 62662 Kg/day • Segregation of biodegradable and non biodegradable shall be done at source by means of provision of two garbage bins with different color. • The non biodegradable garbage shall be handed over to Authorized Agency/ appointed Town Management for disposal. • Biodegradable garbage shall be treated in common solid waste management plant. • Manure will be used for Gardening. • The collection, transportation, treatment and disposal of MSW will be serviced by the Authorized Agency/ Contractor appointed by town management. • The sludge generated from sewage treatment plant will be dried and can be used as manure for gardening purposes. • Bio-medical waste and e-waste shall be handed over to authorized agency.

		Plastic waste will be subjected to pyrolysis within the premises.																				
9.	ENERGY CONSERVATION																					
9.1	Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?	- Source: MSEDCL - Back-Up Source :- D G Sets will provided Connected Load: 342.916 MW Maximum Demand: 158.943 MW Our ways of use minimization are Solar system harnessing, LED lamps, variable speed pumps, separate AC system, terrace gardening, water conservation, energy efficient gadgets, installing programmable on –off timers and sensors for low buildings at some places and imparting awareness etc. Following Energy conservation measures are proposed for energy savings: - Solar water heater. - Efficient lighting fixtures like LED are proposed - Efficient motors & pumping system, Efficient lifts Roof, wall & glass U value to meet energy performance criteria.																				
9.2	What type of, and capacity of, power back-up to you plan to provide?	DG sets of adequate capacity shall be provided																				
9.3	What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	For residential: Use of glass is minimal & hardly 10% of the exterior surface will be covered with glass, having low solar radiation. If required solar film will be used on the glass. Double glazed extra-white glass 55.2 (11mm) will be used having characteristics as <table><tr><td>Light Transmittance</td><td>65%</td></tr><tr><td>Light reflection</td><td>18%</td></tr><tr><td>Solar factor</td><td>59%</td></tr><tr><td>U-value</td><td>5.6 to 5.8 W/m2k</td></tr><tr><td>Haze</td><td>>90%</td></tr></table> For commercial – Curtain glazing with high performance glass will be used. Double glazed glass (DGU) will be used. <table><tr><td>Light Transmittance</td><td>28%</td></tr><tr><td>Light reflection</td><td>18%</td></tr><tr><td>Solar factor</td><td>17%</td></tr><tr><td>U-value</td><td>2.8 W/m2k</td></tr><tr><td>Haze</td><td>>90%</td></tr></table>	Light Transmittance	65%	Light reflection	18%	Solar factor	59%	U-value	5.6 to 5.8 W/m2k	Haze	>90%	Light Transmittance	28%	Light reflection	18%	Solar factor	17%	U-value	2.8 W/m2k	Haze	>90%
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9.4	What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.	Passive architecture - Use of solar heater - Use of Photovoltaic lamps, inside & external - Lighting Roof - No unnecessary high luminance																				

		• Use efficient luminaries, control gear & lamps • Use effective lighting control • Good design to reduce running cost & reduce internal heat gains 4. Use daylight As wherever feasible • Maximize the use of natural lighting through design. • The roof shall be insulated so that there will not be direct heat gain to sunlight. • U' value will be about = $0.409 \text{ w/m}^{20}\text{C}$
9.5	Does the layout of streets & buildings maximise the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details.	Provided for street garden lighting, emergency lighting, hot water. Layout of roads and buildings maximize the solar energy devices potential by orientation. We plan to achieve the capability to give reasonable quantity of hot/warm water per person of the entire resident's colony township here. Solar lights will be used for area lighting.
9.6	Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?	Shading is considered to reduce heating and provided by way of canopies, concrete grills, roof garden, and building orientation (planning to maximize the shading of walls on the east and the roof). Energy saving potential is tapped as per para 9.5 above. It is proposed to insulate the roofs of for proposed building to minimize the heat gain and in turn saving the electricity. U value of the roof $0.409 \text{ w/m}^{20}\text{C}$
9.7	Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.	Energy efficiency • Use of Pre-cooled fresh air • Use short length ducts • DG Sets with auto-changeover • Water cooled chillers for air conditioning • Use of R 134 refrigerant. No ozone depletion & low global warming • Adequate Natural Ventilation will be provided wherever required. Energy Conservation Following Energy conservation measures are proposed for Energy Saving: • Use of LED in the Common Passages and for general lighting with automatic time controller. • Use of Transformers and Motors of high efficiency. • Use of Electronic Ballasts. • Use of Solar Power for water heating and area lighting
9.8	What are the likely effects of the	Creation of heat island and inversion considered. The

	building activity in altering the micro-climates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?	impact due to large greenery is favorable with biodiversity maintained as also the ecological chain. Garden & lawn prevents dust SPM, keeps soil moist, and keeps temperature moderate. As considerable part of total area is open with very low foot print there is very liberal natural ventilation with no cause for creation of heat island. Temperature helps in good dispersal of gases/dust with no tendency of inversion layer lowering down.
9.9	What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R values of the individual components.	Such building material will be used with its corresponding desirable bracket of U values and R values each to have proper thermal characteristics of buildings envelope (a) Roof, (b) external walls, and (c) fenestration. Glasses available are (i) Single Glazing with different substrates 6 mm thick, with U values as 5.6 W/sqm K, and (ii) Single Glazing with different substrates 6 mm thick, with U values as 2.83 W/sqm K, and (iii) Double Glazing low E0 with different substrates 6 mm thick, with U value as 2.8 W/sqm K • It is proposed to insulate the roofs of these buildings to minimize the heat gain and in turn save the electricity. • U value of the roof 0.409 w/m²°C
9.10	What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	Following Fire protection utility services shall be implemented in this project. • External & Internal Fire Hydrant System • Pumping System – Hydrant & Sprinkler. • Fire Fighting Tank Capacity • Automatic Sprinkler System • Portable Fire extinguishers. Precautions & safety measures against fire hazards are taken as per Insurance Rules and Good practices per specifications. Emergency plan (DMP) prepared and enclosed. Mock drills proposed. Fire station shall be provided within the Township premises.
9.11	If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.	Glass is not proposed to be used as wall material. For details on glass please see Q. 9.3 above Glass shall be used only for windows.
9.12	What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration	Design shall be based on passive architecture.
9.13	To what extent the non-conventional energy technologies are utilised in the overall energy	Non-conventional energy used = Solar energy Renewable energy used = Biogas Energy saving expected by 5 to 6%

	consumption? Provide details of the renewable energy technologies used.	• Maximize the use of natural light through design. • Solar lights will be used for water heating and area lighting.
10.	ENVIRONMENT MANAGEMENT PLAN The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire	The Environment Management Plan Attached as Ewould consist of all mitigation measures for each activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire. This will be site-specific, monitorable and auditable.

Environment Management Plan

The Environment Management Plan would consist of all mitigation measures for each activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the

environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

ENVIRONMENTAL IMPACT AND MANAGEMENT PLAN FOR THE PROJECT

EMP for Construction Phase

Sr. no.	Environmental Component	Activity	Impacts	Precautionary measures
1	Ambiant Air Quality & Noise level	• Site Clearance • Excavation • Construction of Structures • Heavy vehicle traffic • Use of DG Set • Open burning of waste	• Increased level of dust & other air pollutants • Increased Noise level.	For controlling air pollution : • Water Sprinkling • Cover on trucks • Use of RMC instead of preparing concrete at site • Vehicles with valid PUC • DG sets: CPCB approved low sulphur fuel. For controlling noise pollution : • Barricades along the periphery of the site. • Ear Plugs for Labourers • D.G. sets CPCB approved • No noisy work in night shifts. • Using electrically operated construction equipment.
2	Water	• Use of fresh water for Construction activity / labours • Wastewater generation • Disposal of site Run off into SWD • Water logging	• Stress on the water supply in the vicinity • Sedimentation, • Pollution of nearby water courses. • Unhygienic condition for surrounding residents.	• Use of tanker water for construction. No burden on municipal supply • Provision of temporary toilets for labour. • Precaution to avoid water logging during construction • Use of treated water from completed phases

3	Soil	• Preconstruction and excavation debris • Storage of construction material / chemicals • Transportation of hazardous material • Residual paints Solvents/bituminous material etc. operation / maintenance Generation of garbage by labour	• Loss of good fertile soil • Soil erosion, Soil contamination due to mixing of construction material/ accidental spillage of chemicals /oils	• Recycle of Debris as far as possible in construction area. • Disposal of debris to authorized sites/ recognized landfill sites • Proper and Separate storage of construction material • Storage of all petroleum products on impervious layers viz. concrete. • Transportation, storage and handling, disposal of HW as per their guidelines and handing it over to authorized agencies. • Use of electrically operated machinery. • Segregation of waste at Source
	Even after taking precautions if soil is found to be contaminated, it shall be removed and disposed off to authorized site.			
4	Ecology	• Site clearance, Construction of structures, cutting of trees	• Disturbing natural flora and fauna • Loss of vegetation from chemical spills from vehicles	• Plantation of local tree species on the Periphery of site • Plantation of trees will start in mid of construction phase. • Regulation of vehicular trips and speed and proper maintenance of machinery.

5	Safety & Hygienic Measures	Construction work Labor	• Positive impact : Employment generation • Safety and hygiene at site may be affected during construction	• Adequate drinking water, toilet and bathing facilities. • Regular analysis of drinking water. • Personal protective and safety equipment will be provided. • First aid facility. • Regular health check up • Regular pest control at site. • Educational and awareness programme for safety measures.
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EMP for Operation Phase

Sr. no.	Environmental Component	Activity	Impacts	Precautionary measures
1	Ambient Air Quality & Noise level	Increased vehicular trips, Use of DG sets	• Traffic • congestion • Air pollution • Increase in • noise level	• Adequate Parking provision; well organized traffic management plan for Smooth flow of vehicles. • Regular PUC check-up for vehicles. • DG sets: As per CPCB norms, Proper Maintenance, Use of Low sulphur fuel. • Acoustic Enclosures for DG sets • Plantation of trees will reduce air pollution and also act as noise buffer.
2	Water	• Increased Demand of natural water, • Generation of waste water	• Stress on existing water supply,	• Use of water saving practices • Adoption of dual

		Increased paved structure	- Pollution of water bodies - Increased run off from site.	flush system - Rain water harvesting - Plantation of less water consuming trees. - STP is planned and treated sewage will be used for secondary requirements like flushing, HVAC and gardening.
3	Land	- Solid waste generation. - Transportation of hazardous material. - Increased paved structure	- Improper disposal of waste, - accidental spillage of hazardous chemicals leads to soil contamination - Increased run off from site.	- Waste minimization recovery and reuse - Segregation at source for all solid waste streams - Recycling of dry garbage - Treatment of wet garbage by vessel composting and its use as manure - Use of dried STP sludge as manure - Transportation, storage and handling, disposal of HW as per their guidelines and handling it over to authorized agencies. - Strom water drainage of adequate capacity.
	Even after taking precautions if soil is found to be contaminated, it shall be removed and disposed off to authorized site			
4	Ecology	Introduction of new tree species	- Disturbing natural flora and fauna - Increased exposure to anthropogenic activities.	Plantation of local tree species.

5	Safety & Hygienic Measures	Development of new land use, influx of people	• Stress on all utilities, risk and danger due to natural and manmade disaster • Positive impact: Employment generation	• Emergency preparedness plan and Disaster management plan will be Prepared and explained with the help of local NGO's and surrounding people and authority.
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Note: Environmental monitoring plan will be prepared based on Environmental management Plan. All environmental parameters will be studied as and when required and based on analysis result mitigation measures will be implemented.

-SHODH-

(GROUND WATER, ROCK FORMATION, ARTIFICIAL RECHARGE, WATER CONSERVATION)

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WATER SURVEYS AND DEVELOPMENT AGENCY (GOM)

A REPORT ON THE HYDROGEOLOGICAL INVESTIGATIONS AT KADAMWAK WASTI, TALUKA- HAVELI, DISTRICT- PUNE.

INTRODUCTION:-

Geology plays important role in the occurrence and movement of ground water. The surface as well as sub-surface geological formation decides the scope for ground water development and possibility of artificial recharge in the Aquifer system at a particular depth. The Hydro geological characteristics can be well understood from the existing Dug wells/Bore wells in a particular area. (Ground water withdrawal structures) The Hydro geological studies helps in understanding the overall ground water scenario and further scope for strengthening the Aquifer system by adopting appropriate Water Conservation Measures.

In order to understand the technical aspects enumerated above, investigations were carried out between 16-01-2017 to 18-01-2017 at Kadamwak Wasti, Taluka-Haveli, and District-Pune. The Project area

measures 21, 03951 Sq. Mt. and is being developed by Riverview City Construction Ltd.

The investigations were conducted in two parts, viz. (A) Hydro geological and (B) Geophysical, (Electrical Resistivity)

The data obtained has been interpreted and analyzed and the findings are discussed in the present report.

(A)HYDRO GEOLOGICAL:-

Field traverses were taken over the entire Project area to study topography, geology and hydrological conditions. These aspects have relevance with the occurrence and movement of ground water and also strengthening the Aquifer system. This also helps in understanding the overall hydro geological conditions of the area. The observations are as below.

(i)Topography:-

Topographically the Project area is situated in almost a plain terrain with a land sloping in northern direction, adjoining Mula Mutha River. Not much ups and downs are observed during the field traverses. The southern part of the area is comparatively slightly elevated (height of 546 Mt. above M.S.L.) from where; the land has a gentle slope in northern direction. (527 Mt. above M.S.L.) The east central part indicates slightly elevated land mass, however, overall a drop of about 20 Mt. is observed.

(ii)Geology:-

The area is covered with Deccan Trap Basaltic rock formation. Products of weathered Basalt could be observed in the area. Black

Cotton soil followed by highly weathered Basalt (i.e. Murum) is commonly noticed in the fields. In the adjoining parts of the River, (North) moderately weathered fractured Basalt could be seen at the surface. In the western parts, weathered vesicular zeolitic Basalt is observed. The surface exposures of Basalt appear favorable from ground water recharging point of view.

The Basaltic lava flows are normally horizontally disposed over a wide stretch. The flows have layered sequences with varying thickness. The water bearing properties of these flows depend upon the intensity of weathering and fracturing/jointing, which provides availability of open space within the rock for storage and movement of ground water. The thickness of weathering varies up to 20 Mt. The vesicular zeolitic Basalt along with, fractured/jointed Basalt forms important Aquifer system in the area, which is justified by the presence of dug wells and bore wells.

(iii)Hydrology:-

Hydrological characteristics are well understood from the existing dug wells/bore wells in the area. During the survey, 11(eleven) dug wells were examined, along with the bore wells at places. The wells are showing good performance as 90% irrigation is for Sugarcane. The seasonal crops like, Bajara, Wheat, vegetables are also taken up.

The dug wells are ranging in depth from 8Mt. to 15 Mt. with a diameter of 6 Mt. to 10 Mt. The wells are installed with the Electric Motors, majority 5 HP capacity. The wells are functioning in summer months also. The water levels at the time of visit were ranging from 6 to 12 Mt. The minimum yield of the wells varies from 210 to 225 KLPD during winter season and 80 to 100 KLPD during summer season.

The depth of the bore wells couldn't be measured precisely as these are installed with pumps of 5 HP capacities. The reported depth of the bore wells is about 60 Mt.

For irrigation purpose, Lift schemes from Mula Mutha River also exist. (River at half a Kilometer from the Project area) The water spread in the fields from the Lift schemes helps in ground water recharging.

As a part of water conservation, at many places, sprinkler irrigation system has been installed.

The area being covered with Deccan Trap Basalt and considering the performance of existing dug wells, the trend of water levels can be predicted as below.

Pre Monsoon- 12 to 15 Mt. below ground level.

Post Monsoon- 4 to 6 Mt. below ground level.

(Details of wells examined are appended)

RATE OF INFILTRATION-

The area is covered with Black cotton soil. The measured constant infiltration rate for ploughed Black Cotton soil is 1.60 cm/hr.

(Reference- Research paper by student of Department of Civil Engineering, Bharati Vidyapeeth Deemed University, College of Engineering, Pune-43, also F.A.O. document on Infiltration rate and Infiltration test.)

(B) GEOPHYSICAL (Electrical Resistivity)

In order to ascertain the physical properties of rock below surface, Geophysical investigation was carried out. For establishing the

continuity of geological formations over the area, Vertical Electrical Soundings were taken at various places. In all 9 (nine) such soundings were conducted. The data obtained has been interpreted and analyzed and on the basis of which, geological logs have been prepared. (Appended) The findings are as below.

1. The Basalt rock has appreciable thickness of weathering (Murum) ranging in thickness from 3 to 8 Mt.
2. Low resistivity values are recorded; this may be due to moisture content of the soil.(wetness)
3. The resistivity values appear to be quite fluctuating at places. This may be due to soft formation immediately followed by comparatively hard formation below and Vis-a Vis. However; it is compatible with the Aquifer characteristics.
4. The Black Cotton soil has average thickness of about one meter. This is followed by Murum.
5. The weathered fractured/jointed Basalt, as well as, vesicular zeolitic Basalt is the principle Aquifers having good potential.
6. The vesicular zeolitic Basalt appears predominant in the southern part. As we approach in the northern direction, jointed Basalt becomes predominant with fractured Basalt to certain extent.
7. In the eastern, northeastern and western directions, vesicular zeolitic Basalt appears to be more in thickness.
8. The western part of the area is covered with comparatively hard vesicular zeolitic Basalt.
9. The area bears multi Aquifer system. The existence of potential Aquifer is justified by the existing dug wells and bore wells in the area.

10. The area appears favorable for ground water recharging purpose.
11. There is a scope for water conservation, which will help in further strengthening the Aquifer system and benefiting the area in situ and on regional scale.

QUANTIFICATION:-

(a) Availability of water at the site.

$$\begin{aligned} &= \text{Area (Sq.Mt.)} \times \text{Rainfall (Mt.)} \\ &= 21,03,951 \text{ Sq. Mt.} \times 0.60 \text{ Mt. (600 mm)} \\ &= 12,62,390 \text{ CUM} \\ &= 1.2 \text{ MCM} \end{aligned}$$

(b) Water that can be accommodated in the Aquifer.

$= \text{Area of Aquifer (Sq.Mt.)} \times \text{water table fluctuation (Mt.)} \times$
Specific Capacity of Aquifer.

$$\begin{aligned} &= 8,42,000 \text{ Sq. Mt.} \times 10 \text{ Mt.} \times 0.03 \\ &= 2,52,600 \text{ CUM} = 0.25 \text{ MCM} \end{aligned}$$

From the above it will be seen that, out of total availability of water, 20% is getting accommodated in the Aquifer and rest contributing to run off and evaporation to certain extent. This can be utilized for the purpose of water conservation.

Now, the Aquifer is dynamic in nature and as such, ground water continues to move under gravity up to the extension of Aquifer or up to the place where, its withdrawal takes place through dug wells/bore wells. As such, there always exists scope for accommodating additional recharge. Along with the natural ground water recharge, the artificial

recharge (Induced recharge) will get accommodated along the horizontal disposition of the Aquifer system.

RUNOFF CALCULATIONS-

Runoff is calculated on the basis of Area statement, as below.

Rainfall intensity considered as 65 mm/hr.

Sr.No.	Type	Area in Sq. Mt.	Run off Coeff.	Flow-CUM/min
Flow prior to commencement of Project				
1	Project area	21, 03,951	0.80	1823
Flow after implementation of Project				
1	Ground coverage	10,43,350	1	1130.29
2	Road area	2,41,760	1	261.90
3	Green area	5,12,157	0.50	277.41
4	Paved area	3, 06,684	0.85	282.40
	Total			1952

RECOMMENDATIONS:-

On the basis of Hydro geological investigations, following are the recommendations for Water Conservation purpose.

1. Construction of Filter Pits of 2Mt. X2Mt. X2Mt. dimensions. The Pits may be constructed along storm water drain line, keeping a

distance of 15 to 20 Mt. between the Pits. The initial storm water will get accommodated in the Pits and the excess, if any, will drain away further. (While constructing the Pits, upper thin layer of Black Cotton soil may be removed.)

It is expected that during the storm water, the Pits will get filled in and during the dry spell, they will get empty. (i.e. recharge) During the subsequent rain spell, the Pits will again get filled up and thus, the cycle continues.

There is no relationship between the availability of water and No. of Pits to be constructed. It is as per the financial outlay and as proposed by the Proponent. However, more the No. of Pits, more are the benefits.

2. In some Pits, bore of 25Mt. may be drilled at the bottom so that, the percolating water will have direct access to the Aquifer section below.
3. The existing dug wells/bore wells in the area may be utilized as a source of recharge with implementation of Roof Top Rain water harvesting measure with appropriate filter media.
4. During construction work, the paving blocks may be fixed along roads, open spaces, by keeping narrow distance between the blocks with removal of Black Cotton soil below. This will facilitate Murmic soil section below for recharging purpose and its further movement underground.

QUANTIFICATION OF RECHARGE:-

An attempt has been made to quantify the induced recharge as below.

It's not an easy job, especially, for the Basaltic rock terrain. This is due to its anisotropic nature as far as occurrence and

movement of ground water is concerned. However, it could be as follows; in addition to the natural ground water recharge.

Filter Pit Dimension-2Mt. X2Mt. X2Mt.

Quantification would be-2Mt. X2Mt. X1Mt. (1Mt. Filter media.)
= 4 CUM (one time filling)

Now, during Monsoon period, 5 to 6 days in a month are such, when the rainfall is more than 5 mm, which is useful for recharging purpose. Thus, in a total Monsoon period of 120 days, there would be such 25 days. Therefore, the quantity of recharge would be-

$$4\text{CUM} \times 25 = 100 \text{ CUM (For on Pit)}$$

Additional quantity would be available depending upon No. of Filter Pits.

In addition to above, bore at the bottom of Pit will produce additional recharge benefits.(i.e. accelerated recharge) The flooding of existing dug wells with the help of Roof Top Rain water harvesting will further strengthen the Aquifer system.

CONCLUSIONS:-

1. The Project site is located in almost a plain terrain with principle slope in northern direction, adjoining River.
2. The area is covered with Deccan Trap Basalt rock.
3. Most of the area indicates Black Cotton soil at the surface, followed by Murum.
4. The fractured/jointed Basalt, vesicular zeolitic Basalt is the main Aquifers having wide spread in the area.
5. There exists potential Aquifer system in the area. This is justified by the existing dug wells/bore wells.

6. The area bears multi aquifer system at shallow, intermediate and deeper depths. The dug wells and bore wells are functioning even in summer months.
7. The Aquifer is quite sustainable in accommodating additional recharge through water conservation measures.
8. The water conservation measures, as suggested, would help in strengthening the Aquifer at local as well as at regional level.
9. The soil moisture retention can be ensured throughout the year with survival of plantation.

(DILIP SATBHAI)

HYDRO GEOLOGIST.

Annexure 2

ENVIRONMENTAL MANAGEMENT PLAN FOR HAZARDOUS WASTE

Construction Phase:

Environmental Management Plan for Hazardous Waste Generation

Experienced and responsible sub-contractors will be employed for the works like:

(1) Road surfacing and (2) painting.

Sr. No.	Source of Hazardous Waste Generation	Mitigation Measures
1	Leakages and spillage oil or fuel	* Contaminated soil if any shall be disposed off to Authorized Disposal Site. *Chemicals shall not be allowed to leach into the soil.
2	Residual Paints/Solvents	Empty cans of paint and solvent will be removed from site by the sub-contractor.

Other hazardous wastes, if any, shall also be handled in the similar way through authorized dealers only.

Operational Phase:

Sr. No.	Source of Hazardous Waste Generation	Management / Disposal
1.	Waste Oil from D.G Sets	Waste oil will be handed over to authorized recyclers.
2.	Biomedical Waste	Shall be handed over to authorized Biomedical waste processor.



ANNEXURE – 3
DISASTER MANAGEMENT PLAN

Local flood	Increase in the Finished Ground Level as part of construction stage to prevent rain water accumulated on surrounding areas to enter into the project area.
	Provision of adequately sized storm water drains to discharge the storm water from the project area into the external storm water drainage system. External Storm water system is sufficient to cater to this additional discharge.
Earthquake	As per the Seismic Zoning Map of India, Pune region falls under Seismic Zone-III. The structural design is certified for Seismic Zone – 3 for earthquake resistant design of structures.
Lightening	Provision of Lightning arrestor
Fire	All necessary active & passive Fire Protection Measures shall be provided to the building
Power failure	Provision of DG sets
Terrorist/ Bomb Threat	Manual Security & CCTV at Project Main Entry Point Controlled Entry for all Vehicular Entry activity, Boom Barriers, Manual Security & CCTV Screening at Project Main Entry Point.

RISK ASSESSMENT

CONSTRUCTION PHASE

1 Risk assessment and Vulnerability analysis of possible disasters

Risk assessment study deals with identifying and evaluating the magnitude of impending risks to which the neighboring population is exposed due to occurrence of accidents involved in the project construction and development.

Hazard Identification: Physical, Chemical, Mechanical, Electrical, Vibration & occupational health hazards during construction phase

Risk of body injury, Injury to eyes, fatal accident, Fire and explosion, Hearing loss etc.

▪ **Are you using (Tick Boxes)**

- | | |
|---|---|
| ☒ plant/equipment | ☒ scaffolding |
| ☒ portable electrical equipment | ☒ ladders |



☒ hazardous substances
machinery

☒ lifts/hoists/cranes /load shifting

▪ **Does the project/task involve (Tick boxes)**

☒ using tools/equipment with
moving part(s)
☒ using tools/equipment that
vibrate
☒ working with x-rays ,or lasers
☒ electrical wiring
☒ asbestos removal
☒ welding
☒ hazardous waste
☒ excavation / trenches (>1.5m)

☒ working around electrical installations
☒ working near traffic
☒ working at a height (>3m)
☒ working in isolation.
☒ working in a confined space
☒ manual handling
☒ repetitive or awkward movements
☒ lifting or moving awkward or heavy objects
☒ demolition work

▪ **Is there (Tick boxes)**

☒ noise
☒ dust/fumes/vapours/gases
☒ extreme temperatures
☒ risk of fire/explosion

☒ slippery surfaces/trip hazards
☒ poor ventilation/air quality
☒ a poorly designed work area for the project/task

Vulnerability analysis: During Construction Phase:

	Air Pollution	Water Pollution	Noise Pollution	Soil Pollution	Occupational Hazard
A. Material Handling:					
Cement	+H	+M	-	+M	+M
Steel	-	-	+	-	+L
Sand	+L	-	-	-	+M
Stone	-	-	+M	-	+L
Plywood dust	-	-	+M	-	+L
Glass	-	-	-	-	+M
Hardware	-	-	-	-	+L
Paint /varnish Colour	-	+H	-	+M	+M
B. Construction Machinery					
JCB Excavation	+M	-	+H	-	+L
Tower crane	+H	-	+M	-	+H
Material Lift	-	-	+M	-	+H

Risk Factor:

+ : Positive
- : Negative
L : Low
M : Medium



H : High

2. Mitigation Measures & preparedness

For any projects/tasks that present a high or extreme risk, a Safe Work Method Statement must be completed.

- *Note how you will control the risk following the priorities listed to the right. This may include controls like redesigning the workplace, using guards or barriers, ventilation, using lifting equipment or personal safety equipment.*

1. Installing Safety net for height fall
2. Keep the hazard and people apart
3. Change work methods
4. Conducting induction training, safety training & mock drills.
5. Use personal protection

- *Note any specific risk assessments required for high-risk hazards. Check whether any hazards noted in step 2 require further assessment or action*

- ☒ hazardous substance risk assessment
- ☒ confined spaces risk assessment
- ☒ test and tag electrical equipment
- ☒ sound level test
- ☒ Inspection of scaffolding

- *Note Permits/Licenses/Registration required*

- ☒ Demolition work
- ☒ Friable asbestos removal
- ☒ Electrical wiring
- ☒ Ionizing radiation sources
- ☒ RMC pumps
- ☒ registers for chemicals, Personal protective Equipment, training, ladders, lifting gear

- *Note certificates of competency/licenses for operators*

- ☒ Scaffolding
- ☒ Pesticide application
- ☒ Rigging
- ☒ Crane operation
- ☒ Load shifting machinery operation
- ☒ Hoist operation

- *Note emergency systems required*

- ☒ first aid kit
- ☒ Fire control
- ☒ extended first aid kit
- ☒ remote communication mechanism
- ☒ emergency stop button
- ☒ BMS System
- ☒ additional emergency procedures

Table: Risk and Mitigation measures

Sr. No.	Operations	Risk	Mitigation Measures
1.	Construction/material Hoists	Personal injury Accidents	Only approved hoist to be used by trained employees with safe area



cs

ly

1

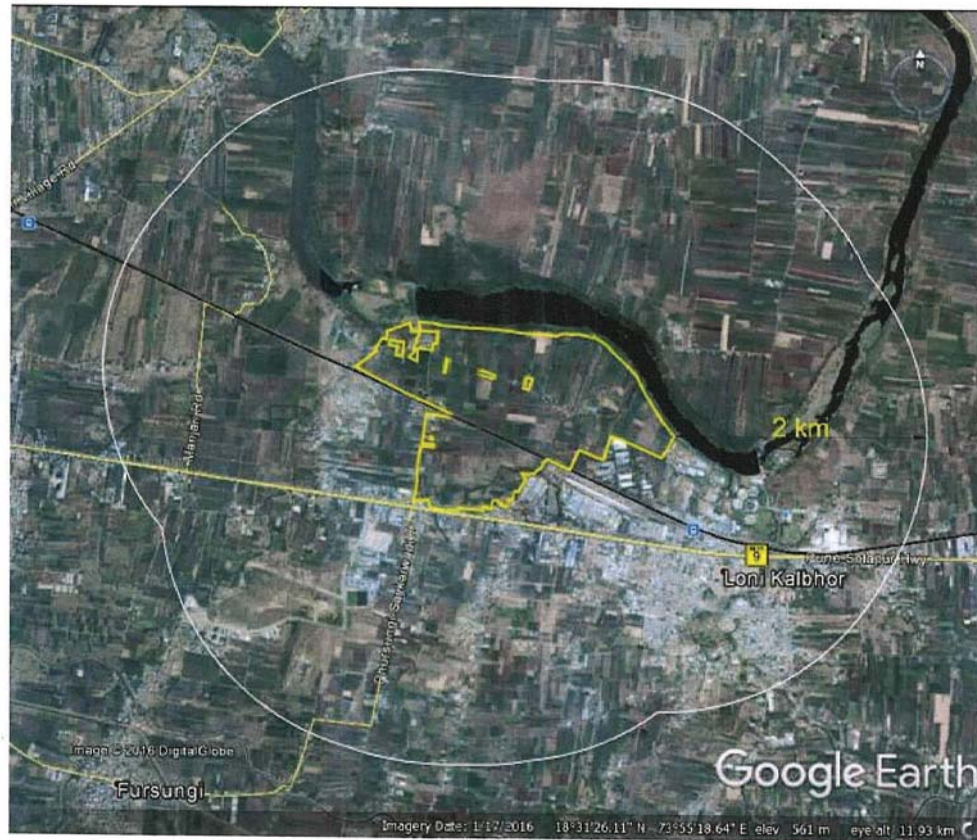
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Annexure 4 – Google Image



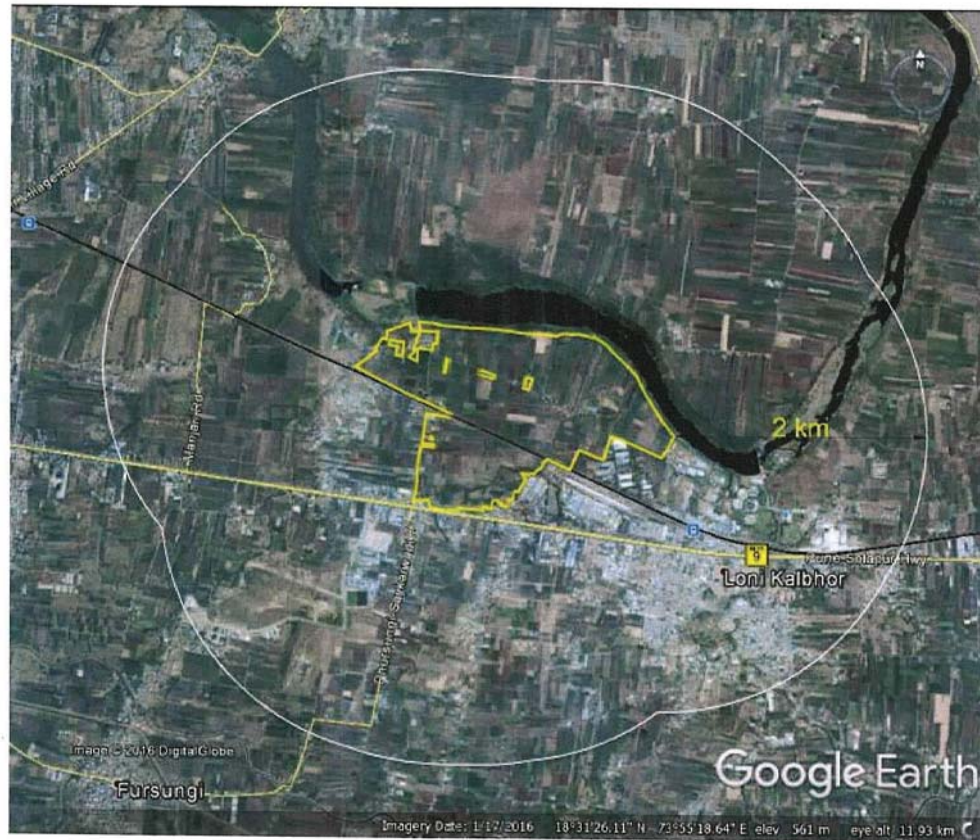
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Annexure 5 – Google Image 2 Km



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Annexure 5 – Google Image 2 Km



[Handwritten signature]



LEGEND:

1/1

TOWNSHIP BOUNDARY

RAILWAY LINE

AREA NOT IN POSSESSION

PROPOSED ROAD

RING ROAD

CITY PLAYGROUND

GARDENS & PARK

SCHOOL PLAYGROUND

SECTOR LEVEL GREEN

COMMERCIAL BUILDINGS

AMENITIES BUILDINGS

TYPE 5

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TYPE 1

POLICE ST.

FIRE STATION

STP

WTP

SUB STATION

earmarked location for truck terminus

BIOGAS/OPEN STORAGE FACILITY/SWMP

BUS TERMINUS/PUBLIC PARKING/AUTO/TAXI STAND

TITLE -

PROPOSED MASTER LAYOUT

PROJECT -

RIVERVIEW CITY AT VILLAGE KADAMVAKVASTI, PUNE

NAME OF OWNER

SATISH MAGAR
MANAGING DIRECTOR
RIVERVIEW CITY
CONSTRUCTION LTD

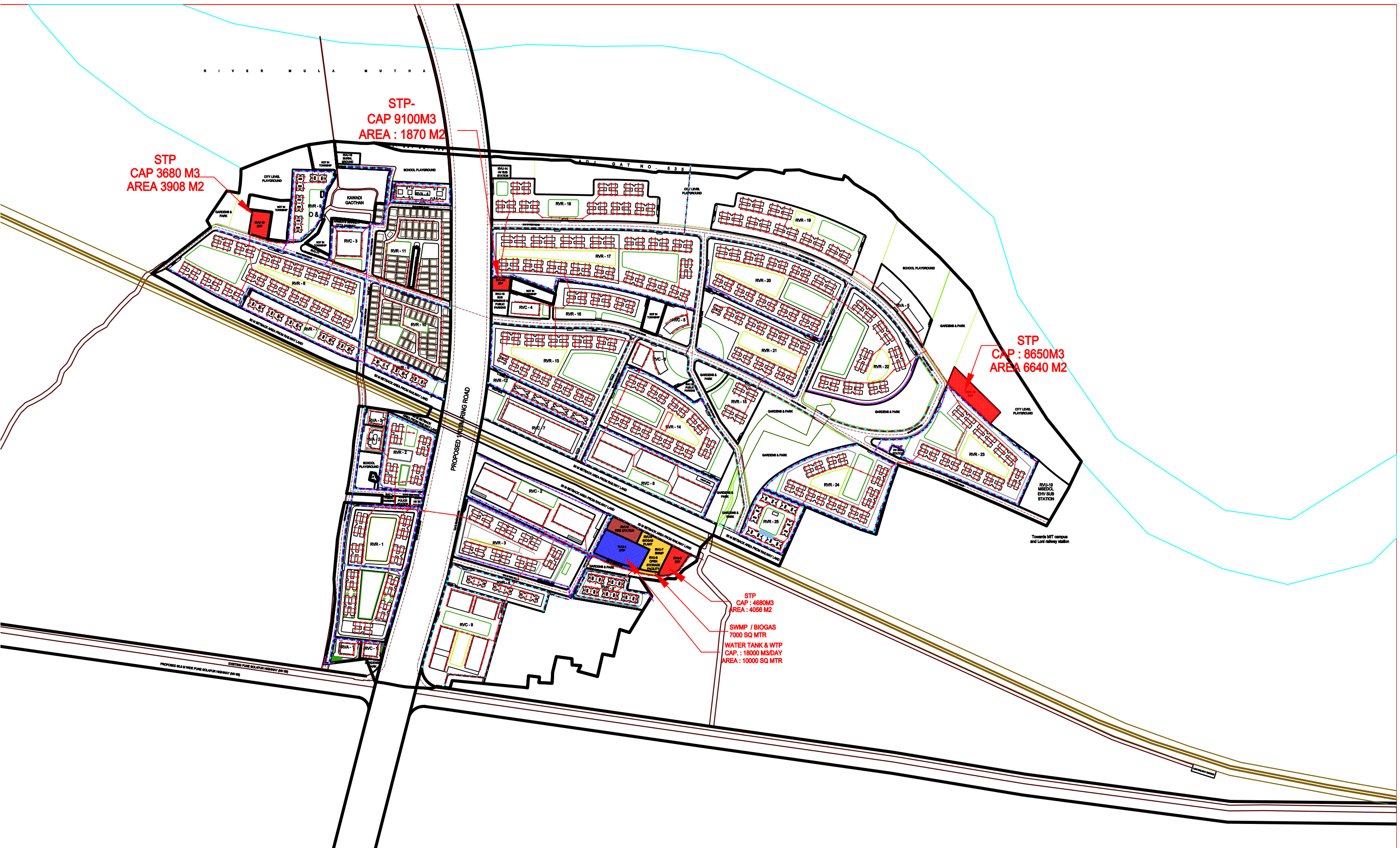
NAME OF CLIENT : RIVERVIEW CITY CONSTRUCTION LTD.

DATE : 23/11/2017

SCALE : 1:3500

SIGNATURE

JOB NO.



STP-
CAP 9100M3
AREA : 1870 M2

STP
CAP 3680 M3
AREA 3908 M2

STP
CAP : 8650M3
AREA 6640 M2

STP
CAP : 4680M3
AREA : 4056 M2
SWMP / BIOGAS
7000 SQ MTR
WATER TANK & WTP
CAP : 18000 M3/DAY
AREA : 10000 SQ MTR

Note-

i) Users as mentioned in b, c, d, e & f may be clubbed together, in Economic Activities Component, subject to condition that, total built-up area should not be less than the summation of minimum required for all such users, irrespective of their individual plot area requirements.

ii) The required parking spaces for all such amenities as per norms shall be provided in same plot.

g) Public Utilities:-

For Master Layout area up to & inclusive of 200 Ha.

Sr. No.	Particulars	Minimum Area Required	Permissible Built-up Area
i	Fire Brigade Station-	3000 sq.m. or as prescribed by the Director of Fire Services, Maharashtra State/ Chief fire Officer of the concern Authority.	As per recommendations of the Director of Fire Services, Maharashtra State/Chief fire Officer of the concern Authority.
ii	Sewage Waste Management Project (SWMP)	4000 sq.m.	As per requirements
iii	Cremation Ground	2000 sq.m.	As per requirements
iv	Burial Ground	2000 sq.m.	As per requirements
v	Bus Station / Transport Hub	3000 sq.m.	
vi	Police Station	1000 sq.m.	
vii	Electric Sub-station	As per requirement	
viii	Other Public Utilities	As per requirement	
ix	Public Parking Facilities	As per prevailing DCR	
x	Solid waste management	As per requirement	

Note: i) If the facility of Cremation Ground/ Burial Ground is available in the village where the Township is located in such case these requirements need not be insisted subject to NOCs of respective Gram Panchayat .

ii) If Police Station is available within 1k.m. area from the proposed Township, then such facility need not to be provided.

h) Transport & Communication:-

i) The entire area of the project shall be well-knitted with proper road pattern, taking into consideration the linkages with existing roads within the project and outside area as well. All such roads shall be developed by the Project Proponent/s as per standard prescribed by the Indian Road Congress.

ii) The width of the -

- Classified Road should not be less than as may be prescribed by concerned public authority;
- Main / Arterial / Ring Road should be minimum right of way of 18 mt.
- Other Sub-Arterial roads, Collector streets, local streets, etc., shall be proposed as per the requirements to cater to the need of occupancies on such roads including for pedestrians.
- Network of cycle track in entire Township area of minimum width of 3 meter shall be provided without clashing the vehicular traffic.



स्थापना : ६/१२/१९६३

ग्रामपंचायत कदमवाकवस्ती

ता. हवेली, जि. पुणे. ४१२ २०१, फोन न. ०२० २६९१३६३२/ २६९१३०१३

श्री. पी. एस. देसाई
ग्रामविकास अधिकारी

श्री. बाबासाहेब बाळासाहेब काळभोर
उपसरपंच

श्री. नंदु कैलास काळभोर
सरपंच



दिनांक : १०/११/२०१७

ना हरकत दाखला

ग्रामपंचायत कदमवाकवस्ती, ता. हवेली, जि. पुणे. यांजकडुन दाखला देण्यात येतो की,
रिव्हरव्ह्यू सिटी कन्सट्रक्शन लिमिटेड कदमवाकवस्ती, ता. हवेली, जि. पुणे. हे एकात्मिक गृहप्रकल्प
निर्माण करत आहेत.

भविष्यकाळात जर आपल्या गृहप्रकल्पामधील रहिवाशांचे निधन झालेस त्यांचा मृतदेह कदमवाकवस्ती
ग्रामपंचायत हद्दीतील स्मशानभूमीमध्ये अत्यंविधी करणेस ग्रामपंचायतीची काही हरकत नाही.

सबब दाखला मागितलेवरुन दिला असे.


ग्राम विकास अधिकारी
ग्रामपंचायत कदमवाकवस्ती
ता. हवेली, जि. पुणे

Translated from Marathi to English

Symbol
Save the girl child

Symbol of Golden Jubilee Year

Establishment: 06/12/1963

GRAMPANCHYAT KADAMVAKVASTI

Taluka Haveli, Dist. Pune 412201 Phone No. 020 26913632 / 26913013

Mr. P.S. Desai Village Development Officer	Mr. Babasaheb Balasaheb Kalbhor Deputy Village Head	Mr. Nandu Kailas Kalbhor Village Head
Out ward no.		Date: 10/11/2017

[THE SEAL GRAM
PANCHYAT
KADAMVAKVASTI]

NO OBJECTION CERTIFICATE

This is to certify by Gram Panchyat Kadamvakvasti , Taluka Haveli, District Pune that, the Riverview City Construction Limited, Kadamvakvasti, Taluka Haveli, District Pune is creating an integrated housing project.

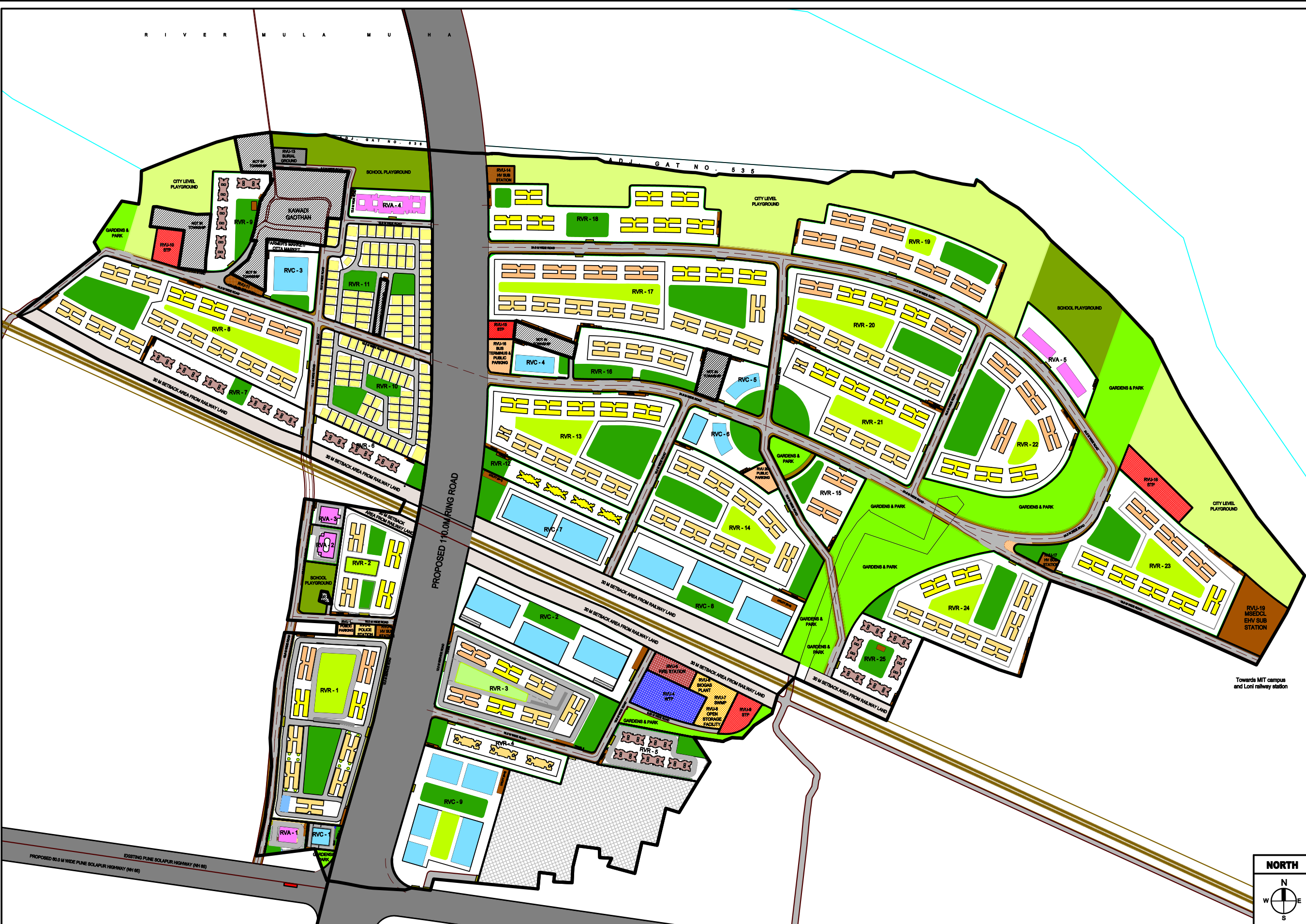
In the future, if a resident of your housing project died the Gram Panchayat do not have any objection to perform the funeral rites of the dead body into the crematorium within the limits of Gram Panchyat

Therefore the certificate is issued upon demand.

Sd/-

Village Development Officer
Gram Panchyat Kadamvakvasti
Taluka Haveli, Dist. Pune





LEGEND:

1/1

TOWNSHIP BOUNDARY

RAILWAY LINE

AREA NOT IN POSSESSION

PROPOSED ROAD

RING ROAD

CITY PLAYGROUND

GARDENS & PARK

SCHOOL PLAYGROUND

SECTOR LEVEL GREEN

COMMERCIAL BUILDINGS

AMENITIES BUILDINGS

TYPE 5

TYPE 4

TYPE 3

TYPE 2

TYPE 1

POLICE ST.

FIRE STATION

STP

WTP

SUB STATION

earmarked location for truck terminus

BIOGAS/OPEN STORAGE FACILITY/SWMP

BUS TERMINUS/PUBLIC PARKING/AUTO/TAXI STAND

TITLE -

PROPOSED MASTER LAYOUT

PROJECT -

RIVERVIEW CITY AT VILLAGE KADAMVAKVASTI, PUNE

NAME OF OWNER

SATISH MAGAR
MANAGING DIRECTOR
RIVERVIEW CITY
CONSTRUCTION LTD

NAME OF CLIENT : RIVERVIEW CITY CONSTRUCTION LTD.

DATE : 23/11/2017

SCALE : 1:3500

SIGNATURE

JOB NO.

मुख्य अभियंता, जलसंपदा विभाग, पुणे
महाराष्ट्र कृष्ण खोरे विकास महामंडळ, पुणे
सिंचनभवन, मंगळवार पेठ, बारणे रोड, पुणे-४११०११.

जा.क्र.मुअ/काअ.२// प्रशा-६/ (२४२)
प्रति,

No 02740

दिनांक :- 4 MAY 2010

मा.सचिव (जसं)
जलसंपदा विभाग, मंत्रालय,
मुंबई-३२

(लक्षवेध : श्री.र.श्री.कुलकर्णी, कार्यकारी अभियंता व पदसिध्द अवर सचिव)

विषय : मीजे कदमवाकवस्ती, ता.हवेली, जि.पुणे येथील विशेष नागरी प्रकल्पास नाहरकत प्रमाणपत्र देणेबाबत

संदर्भ : शासन पत्र क्र.सकीर्ण-१००८/(४६/०८)/लपा-१ दि.१८.३.२००८

उपरोक्त संदर्भाधीन शासन पत्रान्वये प्रमोटर रिव्हरव्यू रिटी कन्स्ट्रक्शन लि. यांनी त्यांचे पत्र दिनांक ११.२.२००८ नुसार मीजे कदमवाकवस्ती, ता.हवेली जि.पुणे येथे एकुण २०४.४६ हे. क्षेत्रामध्ये प्रस्तावित विशेष नगर वसाहतीस ना हरकत प्रमाणपत्राची मागणी महाराष्ट्र शासनाकडे (नगर विकास विभाग) केली असून त्याची प्रत जलसंपदा विभाग, मंत्रालय, मुंबई यांना दिली आहे. सोबत प्रस्तावित क्षेत्राची यादी, महत्तम पूर रेषेत येणा-या क्षेत्राचा तपशिल व नकाशा जोडला आहे.

महाराष्ट्र शासन राजपत्र नगर विकास विभाग, मंत्रालय, मुंबई दिनांक १६.११.२००५ व महाराष्ट्र शासन जलसंपदा विभाग, मंत्रालय, मुंबई यांचे परिपत्रक क्र.२००७/(१७०/२००७) सिव्ही (म) दि.८.१०.२००७ नुसार प्रस्तावित विशेष नगर वसाहत प्रकल्पाच्या क्षेत्राची पाहणी केली असून सोबतच्या यादीनुसार २०४.४६ हे. क्षेत्रामध्ये प्रस्तावित विशेष नवनगर वसाहतीबाबत असे दिसून आले की, सदर क्षेत्र जलसंपदा खात्याच्या मोठे पाटबंधारे प्रकल्पाच्या जलाशयाचे महत्तम पूर पातळी पातळी पासून ५०० मी.अंतरात येत नाही.

२/ प्रस्तावित विशेष नवनगर प्रकल्पाचे क्षेत्रात अधिसूचीत नदी, नाले, खाडी, व कालवा येत नाहीत. परंतु सदर वसाहतीचे २५ हेक्टर क्षेत्र मुळा मुठा नदीचे महत्तम पूर रेषा (निषेधक रेषा) व ३४ हे.क्षेत्र नियंत्रक पूर रेषेमध्ये येत आहे.

३/- प्रस्तावित विशेष नगर वसाहतीचे क्षेत्र खडकवासला प्रकल्पाचा जुना मुठा उजवा कालव्याच्या लामक्षेत्रात येत आहे. तथापि सद्यस्थितीत जुना मुठा उजवा कालवा दुरुस्ती अभावी बंद असल्याने बरेचसे लामधारक त्यांचे शेतजमिनीस मुळा मुठा नदीवरील उपसा सिंचनाद्वारे सिंचन करीत आहे.

उपरोक्त शासन राजपत्र व परिपत्रकातील सूचनेनुसार खालील अटीच्या अधीन राहून ना हरकत प्रमाणपत्र देणेत येत आहे.

- १) प्रस्तावित विशेष नगर वसाहत प्रकल्प क्षेत्रात येणारे नैसर्गीक नाल्याचे पाण्याचे मार्ग वुजविले/वळविले जाणार नाहीत ह्याबाबत भविष्यात खातरजमा करणे आवश्यक राहिल. सदर बाब शासन निर्धारित करेल. त्या सक्षम प्राधिकरणाकडून तपासून घेणे व संस्थेवर बंधनकार राहिल.

- २) बांधकामाच्या वेळी किंवा प्रत्यक्षात वसाहतीचा वापर सुरु झालेनंतर जवळपासच्या नदी/नाले/कालवे व नैसर्गीक प्रवाहात कोणत्याही प्रकारचा कचरा, राखरोडा इ. सोडणे किंवा टाकता येणार नाही.
- ३) सदरच्या नागरी वसाहतीचे सांडपाणी आवश्यक ती प्रक्रिया करून शासनाचे नियमानुसार सोडणेत यावे, जेणे करून नदी/नाल्याचे पाणी दूषित होणार नाही.
- ४) प्रस्तावित विशेष नगर वसाहत प्रकल्पास पाणी वापरासाठी पाण्याच्या उपलब्धतेबाबत सक्षम स्तरावरून प्रमाणपत्र घेणे बंधनकार राहिल. सदर योजनेसाठी पाणी उपलब्ध करून देणे जलसंपदा विभागास बंधनकारक नाही.

५) प्रस्तावित विशेष नवनगर वसाहतीचे २०४.४६ हेक्टर क्षेत्रांपैकी नकाशात दर्शविल्याप्रमाणे २५ हेक्टर क्षेत्र हे निषेधक क्षेत्र/निषेधित क्षेत्र/नियंत्रित क्षेत्रात येते. त्यांपैकी नकाशात दर्शविल्याप्रमाणे २५ हेक्टर हे निषेधक क्षेत्र (निषेधक पुररेबा/निषेधक रेषाखालील) असल्याने त्यामध्ये कोणत्याही प्रकारचे बांधकाम करता येणार नाही. उर्वरित (२०४.४६ - २५) = १७९ हे. क्षेत्र हे नकाशात दर्शविल्याप्रमाणे नियंत्रित क्षेत्रात (निषेधक रेषा व नियंत्रित पुररेबा/निषेधक रेषा व तांबड्या रेषेमधील) येत असल्याने शासन परिपत्रक क्र.एफडी/६६/९०८९/२४३/८९ दि.२३.९.८९ मधील मार्गदर्शक सूचनेनुसार सदर क्षेत्राचा उपयोग करणे बंधनकारक राहिल. प्रस्तावित वसाहतीमध्ये बांधकाम सुरु करणेपूर्वी प्रस्तावित क्षेत्रावर (लाल व निळी पुररेबा) निषेधक पुररेबा व नियंत्रित क्षेत्रात जलसंपदा खात्याकडून मंजूर करून घेणे संस्थेवर बंधनकारक राहिल.

६) प्रस्तावित विशेष नवनगर वसाहतीचे क्षेत्र हे पूर्वाभासून जुना मुठा सजेवा कालव्यावरून व संधारितीत मुठा मुठा नदीवरील उपसा सिंचन पध्दतीने सिंचित होते. त्यास्तव जलसंपदा खात्याने शेतीसाठी पाणी परवाने दिले आहेत. म्हणून सदर क्षेत्रातील (गटांची) पाणीपट्टीची थकबाकी भरणे संस्थेवर बंधनकारक राहिल.

७) सदर वसाहतीचे क्षेत्र खडकवासला प्रकल्पाच्या लाभक्षेत्रात येत असल्याने शासनाच्या वत्कालीन प्रसूत नियमानुसार सिंचन पुनर्स्थापनेचा खर्च भरणे संस्थेवर बंधनकारक राहिल.

सोबत १) क्षेत्राची मादी १

२) लाल व निळी रेषा दर्शक नकाशा } १
क्षेत्राच्या तपशिलासह

स्थ.प्र.वर भा.मु.अ.यांची सही असे.

(सु.व.गुणे)
सहाय्यक मुख्य अभियंता
जलसंपदा विभाग पुणे

प्रत : मा. सचिव (ज.स.) नगरविकास विभाग, मंत्रालय, मुंबई यांना माहितीसाठी सावित्र सादर.
सहसचिव : श्री.रामदेव आवर सचिव, (न.वि.१३)

प्रत : अतिरिक्त अभियंता, पुणे, पाटबंधारे मंडळ, पुणे यांना मंडळाचे यंत्र जा.क्र.पुणे/वि.सि.म.शा/खपा/२२/२०००
दिनांक २६.९.२०१० अन्वये प्राहितीस्त्व रवाना.

२/- जुना मुठा सजेवा कालव्याच्या लाभक्षेत्रातील विशेष नगर वसाहतीसाठी येणा-या क्षेत्राच्या तपशिल सादर करावे.

Translated from Marathi to English

Chief Engineer, Water Resources Department, Pune
Maharashtra Krishna Valley Development Corporation, Pune
Sinchan Bhavan, Mangalwar Peth, Barne Road, Pune - 411011

Outward No:- KA.2//Prasha-6/(242)/No. 2740

Dated:- 4 May 2010

To,
Hon. Secretary (WR)
Water Resource Department, Mantralaya,
Mumbai - 32

Attention: Mr. R.S. Kulkarni, Executive Engineer and ex officio Upper Secretary)

Subject: Issue of No Objection Certificate for special township project at Village Kadamvakvasti, Tal. Haveli, Dist. Pune.

Reference: Government letter No. Sankirna-11008/(46/08)/LaPa-1 Dated 18.3.2008

Promoter Riverview City Construction Ltd., under their above mentioned in reference letter dated 19.02.2008 seeking No Objection Certificate (NOC) for the proposed Special Township Project in the area of 204.46 hectare at village Kadamvakvasti, Tal. Haveli, Dist. Pune has given copy of the same to the Water Resource Department, Ministry Mumbai. Along with this, the list of proposed areas, details of the area coming in the Maximum Flood Line and plan has been attached.

According to the Maharashtra government gazette Urban Development Department, Mantralaya dated 16.11.2005 and Maharashtra government Water Resources Department, Mantralaya, Mumbai circular no. 2007/(170/2007)/SinVya (M) dated 8.10.2007 area of the proposed Special Township Project has been surveyed and as per the annexed list it is found in the proposed Neo Township Project in 204.46 hectare area that, the area is not coming within 500 m. distance from the Maximum Flood Line level of the reservoir of the Water Resources Department's large irrigation project.

2/ the river, nullah, creeks and canals are not notified in the proposed Special Neo Township Project area. But 25 hectare area of the township is coming in Maximum Flood Line of Mula Mutha River (Restricted Line) and 34 hectare area is coming in Controlling Flood Line.

3/ the proposed special township area is coming under the command area of Khadakwasala Project's Old Mutha Right Canal. However, in the present circumstances since Old Mutha Right Canal is closed for want of repairs most of the beneficiaries are irrigating their farm lands on the Mula Mutha River by the uptake irrigation.

No Objection Certificate is being granted subject to the terms and conditions of the instructions in the Government Gazette and Circular as mentioned above.

- 1) In order to ensure that the natural water channels in the proposed Special Township Project will not be driven / diverted, it will be necessary to verify in future. This matter will be decided by the government. Verifying it from the competent authority and be bound by the organization.

B. V. Girdhari



Translated from Marathi to English

2.

- 2) At the time of construction or actual use of township, any kind of trash, debris etc. can not be dropped or dumped in the near by Rivers / Nullahs / Canals and natural streams.
- 3) To get rid of waste water in the township, process should be done in accordance with the rules of the government, so that water / river water will no be contaminated.
- 4) The proposed Special Township Project will have to obtain certificate from the competent authority for availability of water for water use. It will not be mandatory for the Water Resource Department to make available water for the project.
- 5) As shown in the plan of 204.46 hectare area of the proposed neo township, 25 hectare area is covered in restricted 34 hectare area. Out of that as shown in the plan, 25 hectare of the prohibited area (under the prohibited structure/blue line), and no construction can be made in it. The remaining (24-25) 9 hectare area is in the control area (in the prohibited line and the controlled flood line / blue and red line) as shown in the plan, Government Circular no. FDW/1089/243/89 SiVya (Works) dated 21.9.89. It is mandatory to use this area as per the guidelines. Before starting the construction of the proposed township, on the proposed area (Red and Blue Flood Line) Prohibited Flood Line and Control Plan it will be mandatory to get it approved from the Water Resources Department.
- 6) The proposed Special Neo Township area is already irrigated by the Old Mutha Right Canal and in the present day on the lift irrigation system of the Mula Mutha River. For that Water Resource Department has given water licenses for agriculture. Therefore, paying arrears of water tax in the area (of groups) will be mandatory to the organization.
- 7) Since the area of the township is falling within command area of the Khadakwasala Project, it will be mandatory for the organization to pay irrigation reestablishment expenses according to the prevalling rules of the government.

Enclosed: 1) List of areas -1
2) Plan showing red and blue line
With area particulars } 1

Original is signed by Hon. C.E.

Sd/-

(S.V. Gunge)

Assistant Chief Engineer

Water Resources Department, Pune

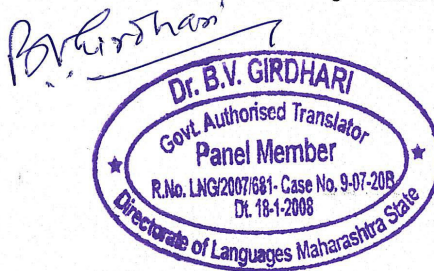
Copy: Hon. Secretary (W.R.) Town Planning Department, Mantralaya, Mumbai

- Humbly submitted for information.

Attention: Mr. Ranade, Upper Secretary (TP-13)

Copy: Superintendent Engineer, Pune, Irrigation Board, Pune --Forwarded for information in accordance with Board's letter No. Out ward no. PuPaMi/ViSiMaSha/KhPavi/22/2000 dated 26.2.2010

2/ Submit the particulars of area coming under Special Township in Old Mutha Right Canal command area.



7. Planning Considerations:-

7.1 Permissibility in respect of Zoning:-

7.1.1 Notwithstanding anything contained in any regulation for the time being in force, the project to be notified under this regulation may be permissible in any land-use zone/s of sanctioned Regional Plan, excepting areas mentioned in Clause 2(iv).

7.1.2 For the areas falling in zones, other than residential, commercial and U1 & U2 zone as per the sanctioned Regional Plan, the Project Proponent/s shall have to pay a premium for permitting project in such zones at the rates prescribed below:-

Sr.No.	Type of Zone	Premium Charges
a	Afforestation Zone, Hill Top & Hill Slope Zone as shown on Regional Plan subject to clause 2 (ii)	20 %
b	Public / Semi-public Zone, Industrial Zone	10 %
c	Agriculture/ No Development Zone/G1 zone and other zones excepting at Sr. No. a & b above	15 %

(Explanation: Premium charges shall be calculated by considering the agriculture land rate of the said land as prescribed in Annual Statement of Rates (ASR) without applying the guidelines. Out of total premium 20% shall be paid at the time of Locational Clearance, 20% paid at the time of letter of Intent, 20 % at the time of sanctioning of Master Layout Plan and remaining 40 % shall be in four equal installments per year)

7.1.3 No construction shall be permitted on the lands within the HFL. Also on land in Hill Top & Hill Slope Zone and lands having slope equal to or more than 1:5 in the said Project, whether specifically marked as such on the Regional Plan or not. No development of any sort and activity involving cutting / leveling / filling shall be permissible on such lands. Provided that, it shall be permissible to use such lands for Plantation, Park, Garden purposes, Access road to township development with minimum cutting and other users as otherwise permissible in respective Regional Plans and the FSI of such lands shall be permissible to the extent as prescribed in Clause 7.2.

7.2 Permissible Floor Space Index (FSI):-

7.2.1 Notwithstanding anything contained in any regulation for the time being in force, the basic permissible FSI for such project shall be 1.0, to be calculated on Gross Plot Area under Master Layout Plan without deducting any areas under the slopes, etc.

7.2.2 Further, additional built up area as mentioned below shall be permissible on payment of premium at the rate of 20 % of the weighted average land rate of the said land as prescribed in Annual Statement of Rates for the relevant year, without applying the guidelines therein. Such premium shall be paid at the time of Building permission.

Area under Township	Additional built-up area on payment of premium
40 hect and up to 200 Hector.	Upto 70 % of basic permissible FSI
More than 200 hec. and up to 500 Hector	Upto 80 % of basic permissible FSI
More than 500 hec. Hector	Upto 100 % of basic permissible FSI



महाराष्ट्र MAHARASHTRA 2017

AF 627646

अनु.क्र. 2/2/8 दि. 13 NOV 2017 मु.शु.रकम. 500/-
Understating

दस्तावा प्रक.

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Riverview City Constructions Ltd.

- 7 NOV 2017

Pune-1.

MoEF, New Delhi
Bohai

जिलेश हरदत्तचंद गोधी
परवाना क्र. 22099309
824, सेंटर स्ट्रीट, पुणे-411009.



AFFIDAVIT

We M/s. Riverview City Constructions Ltd. are planning to develop an Integrated Township Project with the name of "Riverview City" at Village Kadamvakvasti, Taluka Haveli, District Pune, Maharashtra.

Handwritten signature/initials.

Handwritten signature/initials.



We here by submit an affidavit as follows:

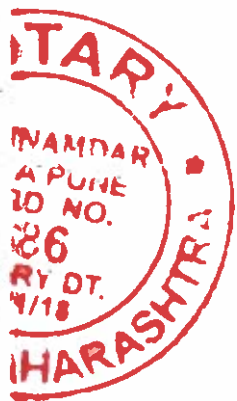
- The proposed location conforms to the directions of the NGT/ other Honourable Courts as regards distance from aquatic bodies and their flood plains in terms of construction as well as ownership of land.
- The proposed project location, both in terms of construction and ownership of land conforms to the guidelines of PESO regarding distance from Petroleum Storage installations.
- We shall obtain the NOCs / permissions required to be obtained during project execution and follow all the conditions stipulated through the same.

For Riverview City Constructions Ltd.

Name of the Board of Director

:

Signatures



1. Mr. Satish Dattatray Magar

:

2. Mr. Umesh Dattatray Magar

:

3. Mr. Ishaan Umesh Magar

:

Date : 16th November 2017
Place: Pune



BEFORE ME

SAYED SULTAN S. INAMDAR
Advocate & Notary
State of Maharashtra
AT SERIAL NUMBER

1383/17

16 NOV 2017

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

For

“Riverview City”

BY

M/s. Riverview City Constructions Ltd.

AT

**At Village-Kadamwakwasti, Tal- Haveli,
Dist- Pune, State - Maharashtra**

PREPARED BY



**Environmental Consultancy & Laboratory
Lab Gazetted by MoEF & CC – Govt. of India
NABET Certificate No.: NABET/EIA/1417/RA010**

Unit No. 224, 225, 206, Jai Commercial Complex,
Eastern Express Highway, Opp. Cadbury Factory, Khopat, Thane(w) 400601
Tel.: 022-25342776/25380198
Email: pune@ultratech.in
Website: www.ultratech.in

**December 2017
(Revision 2 as per 24th EAC Reply)**

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CHAPTER 1 INTRODUCTION

1.0 Introduction:

The site is located at Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167, village Kadamvakvasti, Tal. Haveli, Dist. Pune, State - Maharashtra.

As per the Environment Impact Assessment (EIA) Notification dated 14th September 2006 and its subsequent amendments, the proposed project falls under 'Category A' with project or activity type number '8(b)', which require preparation of EIA Report to obtain Environmental Clearance from the Expert Appraisal Committee (EAC), New Delhi.

1.1 Identification of Project and Project Proponent:

The Proposed Integrated Special Township is located at village Kadamvakvasti, Tal. Haveli, Dist. Pune, State – Maharashtra, where the Project Proponent and 176 original Land Owners have come together to implement this as Joint Venture Development.

The Project involves development of 160 residential buildings, 19 commercial buildings, 3 Schools, 1 Hospital and required Public Utilities. This will provide healthful dwellings to 36,347 tenements. The Project cost is Rs 5941.06 Crs.

Table 1.1: Project Brief

Name of Project	“Riverview City”
Name, contact number & address of Proponent	M/s. Riverview City Constructions Ltd. “MEGASPACE”, 2 nd Floor, 13 Solapur Bazar Road, Off East Street, Pune- 411001 Contact Number: 9767101486
Name, contact number & address of Consultant	M/s. Ultra-Tech (Environmental Consultancy & Laboratory) Saudamini Commercial Complex, Building C-3, 2nd Floor, Right Bhusari Colony, Paud Road, Kothrud, Pune 411038 Tel.: 91-20-2586106/109 Email : pune@ultratech.in Website : www.ultratech.in
Total Plot Area	2,103,951.00 m ²
Total FSI Area	38,98,837 m ²
Total Construction Built up Area	57,93,958 m ²
Litigation pending	No.

1.2 Objectives and Scope of EIA Study:

EIA integrates the environmental concerns in the developmental activities so that it can enable the integration of environmental concerns and mitigation measures in project development. EIA can often prevent future liabilities or expensive alterations in project design.

The study area is considered to be the area within 2 km radius of the site for Environmental monitoring while for studying the environmental sensitivity a radius of 10 km is considered.

In order to get an idea about the existing state of the environment, various environmental attributes such as meteorology, air quality, water quality, soil quality, noise level, ecology and socio-economic environment are studied /monitored by an accredited Functional Area Expert. Environmental baseline monitoring has been carried out during October to December 2016 and is used to identify potential significant impacts.

The scope of the study broadly includes:

- a. Description of the project and associated works together with the requirements for carrying out the proposed development
- b. Establishing the baseline environmental and social scenario of the projects and its surroundings.
- c. Identification and description of the elements of the community and environment likely to get affected by the project.
- d. Identification, prediction and evaluation of environmental and social impacts during the construction and operation phase of the project.
- e. Studying the existing traffic load, prediction of the increment in traffic due the project and to suggesting the management plan for the same
- f. Conservation of resources
- g. Designing and specifying the monitoring and audit requirements necessary to ensure the implementation and the effectiveness of the mitigation measures adopted.
- h. Evaluation of proposed pollution control measures and delineate environmental management plan (EMP) outlining additional control measures to be adopted for mitigation of adverse impacts. Delineation of post-project environmental quality monitoring programme is to be pursued by M/s. Riverview City Constructions Ltd.

1.3 Applicable Environmental Regulations:

With respect to prevention and control of environmental pollution, the following Acts and Rules of Ministry of Environment and Forest, Government of India govern the proposed an expansion & modernization Project:

- EIA Notification dated 14.09.2006 as amended
- Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988
- Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987
- Environment (Protection) Act, 1986 amended in 1991 and Environment (Protection) rules, 1986 and amendments thereafter
- The Noise Pollution (Regulation and Control) Rules, 2000 as amended
- Solid Waste Management Rules, 2016
- Construction and Demolition Waste Management Rules, 2016
- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016
- E-waste Management Rules, 2016
- Plastic Waste Management Rules, 2016

1.4 Terms of References (ToR) and Their Compliances

Terms of References to conduct EIA studies have been granted by Expert Appraisal Committee (Infra-2) vide ToR letter No.21-107/2017-IA.III dated 2nd June 2017. We have submitted ToR correction letter dated 09.06.2017 to MoEF & CC regarding conduction of Public Hearing and Baseline monitoring period . The case was presented in 22nd EAC Meeting and the points are complied with. The list of compliance points is given as follow;

Table 1.2: ToR Compliance and EAC Compliance

SN	Content	Reference	Remarks
A	ToR points		
1	Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images.	Chapter 3	Land use – Land cover map of 10 Km radius around project area is provided and distribution is given.
2	Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.	Chapter 2, 3	Details are provided. No Wildlife sanctuaries/ eco-sensitive places/ biosphere reserves within 10 km. However, patches of Reserved Forest are found within 10 Km
3	Examine baseline environmental quality along with projected incremental load due to the project.	Chapter 3	Baseline monitoring results are provided. Parameters are within acceptable limit.
4	Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.	Chapter 3	Baseline monitoring results are provided. Parameters are within acceptable limit.
5	Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area.	Chapter 2	Contour of site and area within 10 Km radius provided. Land is generally plane. Site has sloe towards North
6	Submit the details of the trees to be felled for the project.	Chapter 4	Out of existing 3300 trees, 361 will be retained, 2390 trees can be transplanted, 236 will be cut and 298 will either be cut or retained. For each tree cut/transplanted, 3 additional trees shall be planted to avoid negative impact on biodiversity.
7	Submit the present land use and permission required for any conversion such as forest, agriculture etc.		Presently the land is used for agriculture and industrial purpose. However, Locational Clearance by Urban Development Department, State of Maharashtra by Notification of Special Township bearing No. TPS-1813/392/12/CR-572/13/UD-13 dated

SN	Content	Reference	Remarks
			20.10.2015, supported by corrigendum TPS-1813/392/12/CR-572/13/UD-13 dated 01.06.2016. This is based on parent Notification on Special Township No.TPS-1816/CR-368 /15 /20(4)/UD-13 promulgated on 26.12.2016 and further amended by Letter No. TPS/1816/03/CR 29/17/UD-13 dated 31.03.2017.
8	Submit Roles and responsibility of the developer etc. for compliance of environmental regulations under the provisions of EP Act.	Chapter 6, 9	Hierarchical model of roles and responsibilities is defined and presented
9	Ground water classification as per the Central Ground Water Authority		As per CGWA, Taluka Haveli is considered Safe zone.
10	Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.	Chapter 4	Water balance and treatment of raw and wastewater is provided. STP shall use MBBR system and shall be installed as per requirements
11	Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.	Chapter 4	Rain water harvesting pits shall be dug as per necessity. Details are provided
12	Examine soil characteristics and depth of ground water table for rainwater harvesting.	Chapter 3, Annexure 2	Soil analysis is provided in chapter 3. Geohydrology report is attached as Annexure 2
13	Examine details of solid waste generation treatment and its disposal.	Chapter 4	Solid waste generation and treatment details are provided.
14	Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption	Chapter 5	11.62% saving will be achieved. Details are provided. Biogas shall also be used for power saving
15	DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details	Annexure 3	Air modeling is run and report is attached as Annexure 3
16	Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.	Annexure 1	Detailed traffic analysis as attached as Annexure 1
17	A detailed traffic and transportation study should be made for existing and	Annexure 1	

SN	Content	Reference	Remarks
	projected passenger and cargo traffic.		EMP and DMP is prepared for both construction and operation phases.
18	Examine the details of transport of materials for construction which should include source and availability.	Annexure 1	
19	Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.	Chapter 6, 7, 9	
20	Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.	Chapter 7	
B	EAC Reply – 22nd EAC		
1.	The impact of the project on the River	Chapter 4	Impacts on river studied due to different activities.
2.	The conformity of the project to regulations as to the minimum distances from flood plains and the restrictions on ownership rights of land if any abutting rivers.	Chapter 2	We have obtained the site specific remarks from the irrigation department enclosed as Annexure 9. They have marked the red line and blue line on the village map and certified copy of the same issued to us enclosed as Annexure 10. We undertake to obey the conditional stipulated in the same.
3.	The conformity of the project to any Court Orders regulating minimum distances to be maintained from the rivers	--	We undertake to follow all the rules enforced by Irrigation Department & Govt. of Maharashtra related to the minimum distances to be maintained from the rivers. There is no Court Order for the same. We also refer to the section 11.1 of DCPR for regional plan area which mentions “If the site is within a distance of 9m from the edge of water mark of a minor water course (like nallah) and 15 m from the edge of water mark of a major water course (like river shown on Development Plan or village /city survey map then the owner of the property may be permitted by the Authority or Collector to restrict and or to realign the same within the same land along with cross section as determined by the Authority or Collector”. Relevant extract is enclosed as Annexure 11 . We have planned the development accordingly. Submitting herewith a plan showing the riverside portion superimposing Blue Line on the same along with the sections marked on

SN	Content	Reference	Remarks
			different locations as Annexure 12
4.	Railway line is also passing through the project area. Necessary approval/ NOC from Railway Department shall be submitted	--	We would like to submit herewith that we have not planned to have any structures within 30 m of the railway boundary. A plan showing the same is enclosed as Annexure 13. We also refer the DCPR for regional plan area Clause No 11.4 which mentions that the railway NOC is required only if any structures are planned to build within the 30 m of the railway boundary. The relevant extract is enclosed as Annexure 14.
5.	Detailed plan for biomedical waste disposal	Chapter 4	Detailed biomedical Waste Management Plan is included. NOC from PASSCO for disposal of solid waste is enclosed as Annexure 15
6.	Details of restrictions if any prescribed by the IOC/ Government for development activities near L.P.G. storage tanks	--	Nearest depot of IOCL is for Diesel and Petrol storage. We have referred to the guidelines issued by CCOE which mentions to maintain the distance of 15 m from the storage shed for Petroleum Class A. Relevant extract of work manual published by PESO is enclosed as Annexure 16. Our nearest distance from the boundary of IOCL is 23.19 m. The plan showing the same is enclosed as Annexure 17.
7.	An assessment of the cumulative impact of all development and increased inhabitation being carried out or proposed to be carried out by the project or other agencies in the core area, shall be made for traffic densities and parking capabilities in a 05 kms radius from the site under different scenarios of space and time. A detailed traffic management and a traffic decongestion plan drawn up through an organisation of repute and specialising in Transport Planning shall be submitted	Annexure 1	Detailed traffic analysis as attached as Annexure 1
8.	Excess treated water will be examined for reuse through roadside plantations, in forestry or for dust suppression in consultation with the local Body concerned and /or the Forest Department. A report should be submitted.	Chapter 2	We have re-worked the water requirement for entire project area. We shall be treating the entire sewage generated within project through STP of Capacity 26210 m3. The same will be reused within site for flushing (9901), gardening including road side plantation (2728), HVAC makeup (10390) and dust suppression (437). If excess treated water is generated, the

SN	Content	Reference	Remarks
			same will be given to the farmers (137). No untreated / treated sewage will be discharged in the river.
C	EAC reply – 24th EAC		
1.	Letter of permission from Indian Oil Corporation (IOC)/ Government with reference to the location in the vicinity of the I.O.C. installations.	annexure 18	Refer Point No 6 of 22nd EAC reply. We have already approached IOCL for the NOC. The acknowledgement copy of the same is enclosed as annexure. We are also submitting an affidavit mentioning “ <i>The proposed project location, both in terms of construction and ownership of land conforms to the guidelines of PESO regarding distance from Petroleum Storage installations</i> ” as annexure 18.
2.	Details of the agreement of land and revenue sharing plan as agreed between the Developer and the farmers.	Chapter 2	Submitted the working model for this township project in Pont
3.	Necessary approval/ NOC from Railway Department shall be submitted.	Annexure 19	They have used us the letter stating “Railway issues ‘No Objection Certificate’ to the owners for the erection of their buildings / structures in the vicinity of railway land within 30m (100ft) from the existing railway boundary with certain conditions’. Copy of the same is enclosed as Annexure 19.
4.	A revision in Form 1 to include the proposal for Bio Medical waste Disposal also which have been subsequently proposed along with an impact assessment.	Submitted form 1 & 1 A	Updated and Submitted along with the reply.
5.	Documents as regards land use permissions and conformity to the land acquisition act.	Annexure 4 & 5	The Locational Clearance showing the permission from Urban development department, Maharashtra State for the usage of land for Special Township Projects has been achieved. The letter for the same has been attached in the annexure ----- -.
6.	Location of the S.T.P. and an Environmental Impact of the STP on nearby areas.	Chapter 4	Proposed Riverview City Township will have a total Sewage treatment plant capacity of 26110 m3/day . Treated water generated from STP’s will be 23593 m3/day . Sewage Treatment plants are located

SN	Content	Reference	Remarks
			at 4 different locations considering the existing contour levels. As per guidelines of Pollution control board sewage treatment plants are proposed well beyond the High Flood line after shifting one of the STP away from the river bank. Sewerage layout is incorporated in EIA. Treated water from sewage treatment plant will be used for Flushing, Landscaping, HVAC, Dust suppression & Irrigation purpose, hence no excess treated water will be discharged into the river. Digested sludge from Sewage treatment plant will be used as manure for landscaping and gardening. All the excess treated water will be consumed within the project and no environment impact on surrounding areas has been anticipated.
7.	NOC from the District Administration for construction of Crematorium at the Project Site.		We refer the Integrated township policy note 7.3 Mandatory town level amenity, Point (g) which mentions “<i>If the facility of Cremation Ground/ Burial Ground is available in the village where the Township is located in such case these requirements need not be insisted subject to NOCs of respective Gram Panchayat</i>”. Relevant extract is enclosed as annexure 20. In our case we have obtained the permission from Grampanchayat Kadamwakwasti for using Cremation Ground of the village for our project. Copy of the same is enclosed as Annexure 21. Hence now Crematorium will not be a part of our project. Revised plan showing the same is submitted in EIA.
8.	Clarification on the remarks of Irrigation Department letter dated 4th May 2010		We have obtained the site specific remarks from the irrigation department enclosed as Annexure 9 along with its translation, wherein Paragraph 2 line 4 they have clearly mentioned that “the area is not coming within 500 meter distance from Maximum Flood line level of the reservoir of Water Resources Department’s large

SN	Content	Reference	Remarks
			irrigation project.” They have not mentioned any restrictions on the development of the project. We undertake to obey the conditions stipulated in the same. We also refer to the clause No. 7.1.3 of Annexure B of Integrated township Policy, enclosed as Annexure 13, which mentions “<i>No construction shall be permitted on the lands within the HFL. Also on land in Hill Top & Hill Slope Zone and lands having slope equal to or more than 1:5 in the said Project, whether specifically marked as such on the Regional Plan or not. No development of any sort and activity involving cutting / leveling / filling shall be permissible on such lands. Provided that, it shall be permissible to use such lands for Plantation, Park, Garden purposes, Access road to township development with minimum cutting and other users as otherwise permissible in respective Regional Plans and the FSI of such lands shall be permissible to the extent as prescribed in Clause 7.2</i>”. Relevant extract is enclosed as annexure 22. Being a Special township Project we are abided by this condition and will follow all the regulations laid down.
8.	An affidavit from the Board of directors that:- a. The proposed location conforms to the directions of the NGT/other Honourable Courts as regards distance from aquatic bodies and their flood plains in terms of construction as well as ownership of land. b. The proposed project location, both in terms of construction and ownership of land conforms to the guidelines of PESO regarding distance from Petroleum Storage installations.		Submitting herewith the affidavit stating the above mentioned points as Annexure 23

CHAPTER 2 PROJECT DESCRIPTION

2.0 General

The Proposed Integrated Special Township is located at village Kadamvakvasti, Tal. Haveli, Dist. Pune, State - Maharashtra.

The project comprises of 160 residential buildings containing 36,347 number of tenements and having floors in the range of 9 to 31 floors. This is supported by 3 primary and secondary school buildings, 19 commercial building, one 100-bedded hospital and public utilities. The Project cost is Rs 5941.06 Crs.

2.1 Description of Project

The site is within the limits of Grampanchayat Kadamwakvasti, Pune. The project site is an area declared as Integrated Special Township having granted Locational Clearance by Urban Development Department, State of Maharashtra by Notification of Special Township bearing No. TPS-1813/392/12/CR-572/13/UD-13 dated 20.10.2015, supported by corrigendum TPS-1813/392/12/CR-572/13/UD-13 dated 01.06.2016. This is based on parent Notification on Special Township No.TPS-1816/CR-368 /15 /20(4)/UD-13 promulgated on 26.12.2016 and further amended by Letter No. TPS/1816/03/CR 29/17/UD-13 dated 31.03.2017.

This project is an **Integrated Township Project**, under the Amendments of Maharashtra Regional & Planning Act 1966 Township Act, 1966(Act 43) for which we have obtained the **Locational Clearance from Urban development department, Maharashtra State**. It mentions the change in landuse from **Agricultural Land to Integrated Township Project**.

Copy of Township Policy and Copy of the Locational Clearance is enclosed as Annexure 04 and 05 respectively.

The land is procured under the principal of **land pooling**. The farmers have contributed their respective lands together under **joint development agreement** with their own promoted company. Wherein every single **landowner is a stakeholder in direct proportion** to their land holding.

The value of the land is determined as a percentage of sale proceeds as and when occurred & distributed to all land owners in proportion of their land holdings. We as project proponent have already completed one Special Township Project with the name of **“Magarpatta City”** having total land area of 450 Acres and another ongoing Special Township Project with the name of **“Nanded City”** having total land area of 700 Acres on the similar pattern.

The total plot area under Locational Clearance is 21,03,951.00 m². It shows the Gat numbers and area of the proposed project. The area statement is given below in Table 2.1.

Table 2.1: Area Statement

Project details	Integrated Township
Total Plot Area	21,03,951.00 m ²
Deductions	1,57,000 m ²
Net Plot	19,46,951 m ²
Total Proposed Built-up area As per FSI	38,98,837 m ²
Total Construction Built- up Area	57,93,958 m ²

Project Proposal	160 buildings with 36,347 tenements One 100 beds hospital Three schools 19 Commercial buildings Police station, Fire Brigade and other utilities
------------------	--

Table 2.2 shows land distribution for various purposes.

Table 2.2: Breakup of Plot area Statement

Details	TOWNSHIP
	Plot Area (in m ²)
Residential	9,98,369.00
Commercial	2,07,769.00
Educational	30,662.00
Health Facilities	4,774.00
Utilities	64,000.00
Township Roads	2,41,759.02
Ring road	1,57,000.00
Truck terminus parking area	66,762.00
Gardens & Parks	1,06,540.00
City level Play ground	1,76,886.00
School Play ground	49,429.98
Total Area	21,03,951.00

The project is divided in the sectors for development purpose. There are total 25 residential sectors (RVR 1 - 25), four education - sectors (RVA 2, 3, 4 & 5), nine commercial sectors (RVC 1 – 9) and one health sector (RVA 1). The project proposal is given as:

Table 2.3: Building Height & Configuration

Description	Type	No. of Bldgs.	Configuration	No. of floors	No. of Tenements
Residential					
RVR1	2 BHK TYPE 1	5	P+22	22	880
	2.5 BHK	2	P+P+STILT+22	22	352
	3 BHK TYPE 1	2	P+P+STILT+30	30	480
RVR2	2 BHK TYPE 2	2	P+22	22	352
	2.5 BHK	2	P+30	30	480
RVR3	3 BHK TYPE 2	2	P+P+STILT+30	30	480
	2.5 BHK	2	P+P+STILT+22	22	352
	2 BHK TYPE 2	3	P+P+STILT+22	22	528
RVR4	2 BHK TYPE 3	3	P+P+STILT+31	31	744
RVR5	1 BHK	5	P+14	14	840
RVR6	1 BHK	3	P+9	9	324
RVR7	1 BHK	5	P+14	14	840
RVR8	2 BHK TYPE 1	10	P+P+STILT+31	31	2480
	2.5 BHK	2	P+P+STILT+31	31	496

	3 BHK TYPE 1	2	P+P+STILT+31	31	496
RVR9	1 BHK	4	P+11	11	528
RVR10	BUNGALOWS				70
RVR11	BUNGALOWS				65
RVR12	1.5 BHK	4	P+31	31	992
RVR13	2 BHK TYPE 1	4	P+P+STILT+31	31	992
	2 BHK TYPE 4	1	P+P+STILT+31	31	124
	2.5 BHK	5	P+P+STILT+31	31	1240
RVR14	2 BHK TYPE 1	9	P+P+STILT+31	31	2232
RVR15	3 BHK TYPE 1	2	P+31	31	496
RVR16	2 BHK TYPE 1	3	P+P+STILT+31	31	744
RVR17	2 BHK TYPE 1	9	P+P+STILT+31	31	2232
	3 BHK TYPE 1	4	P+P+STILT+31	31	992
	2.5 BHK	3	P+P+STILT+31	31	744
RVR18	2.5 BHK	8	P+31	31	1984
RVR19	3 BHK TYPE 1	7	P+31	31	1736
RVR20	2 BHK TYPE 1	5	P+P+STILT+31	31	1240
	2.5 BHK	3	P+P+STILT+31	31	744
	3 BHK TYPE 1	2	P+P+STILT+31	31	496
RVR21	2 BHK TYPE 1	3	P+P+STILT+31	31	744
	2 BHK TYPE 4	1	P+P+STILT+31	31	124
	2.5 BHK	4	P+P+STILT+31	31	992
RVR22	3 BHK TYPE 1	4	P+P+STILT+31	31	992
	2.5 BHK	3	P+P+STILT+31	31	744
RVR23	3 BHK TYPE 1	3	P+P+STILT+31	31	744
	2.5 BHK	5	P+P+STILT+31	31	1240
RVR24	2 BHK TYPE 1	6	P+P+STILT+31	31	1488
	2.5 BHK	2	P+P+STILT+31	31	496
RVR25	1 BHK	6	P+14	14	1008
TOTAL		160			36347
Education					No. of Students
RVA 2	Primary School	1	G+3	4	780
RVA 3	Assembly Hall	1	G	1	
RVA 4	Primary & Secondary School	1	G+3	4	2550
RVA 5	Primary & Secondary School	1	G+3	4	3435
TOTAL		4			6765
Commercial					
RVC1					
Shopping Center		1	G+2	3	
Ground Floor Area	940				
First Floor Area	930				
Second Floor Area	930				
RVC2					

IT Park		3	P+P+9	9	
Typical Floor Area	4739				
RVC3					
Shopping Center		1	P+5	5	
Typical Floor Area	4000				
RVC4					
Office Complex		1	P+5	5	
Typical Floor Area	2250				
RVC5					
Shopping Center		1	P+7	7	
Typical Floor Area	1600				
RVC6					
Shopping Center		1	P+7	7	
Typical Floor Area	1450				
Shopping Center		1	P+7	7	
Typical Floor Area	1600				
RVC7					
Office Complex		2	P+P+9	9	
Typical Floor Area	4739				
RVC8					
Office Complex		3	P+P+9	9	
Typical Floor Area	4739				
RVC9					
COMMERCIAL COMPLEX					
Typical Floor Area	2780	2	P+8	8	
Typical Floor Area	3600	1	P+P+8	8	
Typical Floor Area	2400	1	P+P+8	8	
Typical Floor Area	1600	1	P+P+12	12	
TOTAL		19			
Health Facilities					
RVA 1	Hospital	1	LG+UG+5	6	100 Beds
TOTAL		1			
Public Utilities					
Public Parking 3 Nos.	Biogas plant		EHV sub station		
Police station	Solid waste management plant		Bus station		
HV sub station 4 Nos.	STP 4 Nos		Fire brigade station		
WTP	Burial ground & Cemetery				

Table 2.4: Sector Area and Occupancy

Sector No.	Plot Area	Typology	Population
Residential - Phase 1			
RVR1	63,392.00	2 BHK Type 1	4400
		2.5 BHK	1760

		3 BHK Type 1	2400
RVR2	28,192.00	2 BHK Type 2	1760
		2.5 BHK	2400
RVR3	47,583.00	3 BHK Type 2	2400
		2.5 BHK	1760
		2 BHK Type 2	2640
RVR4	16,161.00	2 BHK Type 3	3720
Residential - Phase 2			
RVR8	75,675.00	2 BHK Type 1	12400
		2.5 BHK	2480
		3 BHK Type 1	2480
RVR10	41,850.00	Bungalows	350
RVR11	41,530.00	Bungalows	325
Residential - Phase 3			
RVR12	12,935.00	1.5 BHK	4960
RVR13	62,520	2 BHK Type 1	4960
		2 BHK Type 4	620
		2.5 BHK	6200
RVR14	58,400.00	2 BHK Type 1	11160
RVR15	15,450.00	3 BHK Type 1	2480
RVR16	26,200.00	2 BHK Type 1	3720
RVR17	91,115.00	2 BHK Type 1	11160
		3 BHK Type 1	4960
		2.5 BHK	3720
RVR18	43,115.00	2.5 BHK	9920
RVR19	43,040.00	3 BHK Type 1	8680
RVR20	62,230.00	2 BHK Type 1	6200
		2.5 BHK	3720
		3 BHK Type 1	2480
RVR21	52,300.00	2 BHK Type 1	3720
		2 BHK Type 4	620
		2.5 BHK	4960
RVR22	58,300.00	3 BHK Type 1	4960
		2.5 BHK	3720
RVR23	61,745.00	3 BHK Type 1	3720
		2.5 BHK	6200
RVR24	51,825.00	2 BHK Type 1	7440
		2.5 BHK	2480
Social Housing			
RVR5	16,181.00	1 BHK	4200
RVR6	13,135.00	1 BHK	1620
RVR7	18,615.00	1 BHK	4200
RVR9	17,110.00	1 BHK	2640
RVR25	21,300.00	1 BHK	5040

Total	76,285.00		181735
Spaces For School			
RVA 2	4,582.00	Primary School	858
RVA 3	3,000.00	Assembly Hall	1667
RVA 4	9,380.00	Primary & Secondary School	2805
RVA 5	13,700.00	Primary & Secondary School	3779
Total	30,662.00		9108
Spaces For Community Health Care Facilities			
RVA 1	4,774.00	Hospital	100
Total	4,774.00		100
Spaces For Economic Activities & Public Assembly Facilities			
RVC1	3,236.00	Shopping Center	623
			56
RVC2	48,713.00	IT Park	12795
			1280
RVC3	12,820.00	Shopping Center	4000
			400
RVC4	6,350.00	Office Complex	1125
			113
RVC5	8,180.00	Shopping Center	2133
			224
RVC6	13,330.00	Shopping Center	1933
			203
		Shopping Center	2133
			224
RVC7	27,170.00	Office Complex	8530
			853
RVC8	43,570.00	Office Complex	12795
			1280
RVC9	44,400.00	Commercial Complex	4448
			2880
			1920
			1920
		Staff For Shopping Centers	1117
Total	207,769.00		62,984
Space For Public Utilities			
RVU1	790.00	Public Parking	96
RVU2	1,000.00	Police Station	45
RVU3	800.00	HV Sub Station 1	15
RVU4	10,000.00	WTP	36
RVU5	4,000.00	Fire Brigade Station	45
RVU6	7,000	Biogas Plant	54
RVU7		Solid Waste Management Plant	
RVU8			

RVU9	4,056.00	STP 1	18
RVU10	3,715.00	STP 2	18
RVU11	1,400.00	HV Sub Station 2	15
RVU12	Relocated to Village Panchayat	Cremation Ground	00
RVU13	2,000.00	Burial Ground & Cemetery	30
RVU14	6,685.00	STP 3	18
RVU15	1,870.00	HV Sub Station 3	15
RVU16	3,150.00	Bus Station & Public Parking	40
RVU17	864.00	HV Sub Station 4	15
RVU18	7,230.00	STP 4	18
RVU19	12,125.00	EHV Sub Station	15
			508
Total Non-Residential Population			72,685
Total Residential Population			181,735

2.2 Site Selection and Site Description

2.2.1 Site Selection Basis

This project is a Joint Venture of original land owners, who approached the proponent M/s Riverview City Construction Ltd. Thus, the land is fully available for the project, without any R & R problems. It was examined if any of the land owners was from Adivasi Category, and it was found none is so. Sustainable site has to be selected. PP considered this basically as follows-

2.2.2 Site Selection Criteria

Selection of site is an important issue for such type of venture. In order to be faithful to the job, the project proponents PP kept the following objective before them while selecting a site –

- Water source to be adequate, reliable and independent, without disturbing water supply source of nearby villagers.
- Power Supply to be available.
- Be well connected with road and Rail network for comfort of Residents and Visitors, but not too near.
- Be well connected with Rail network and independent road so that material transportation will not cause risk to local people.
- Land be of gentle slope, suitable for designing, drainage of sanitary waste water and storm water.
- Land be of gentle slope, suitable for designing optimum earthmoving to balance cutting and filling. This will minimize resultant earthmoving quantity, commensurate machinery, dust, noise and transport nuisance.
- Soil be of satisfactory quality to support the greening drive and support beautification – landscaping (creating no or low need of bringing soil from outside fields).
- Transportation be avoided in detouring, due to nearness of offices/ shops (to some extent).

- Possibility of having adequate land for planned labour camps during Construction phase (which possibly can be used for housing Low Income Group/ service cadre people in Operation phase).
- The site should not come in high-flood zone, CRZ or in environmentally fragile area.
- No forestland be involved.
- Taken public opinion during Socio-economic survey.
- Already Urban Development Department has found this site accepted by people.
- Possible to design more open spaces by minimal footprints to minimize site disruption
- Final evaluation done by employing Delphi Technique as suggested by NEERI and MoEF.

The selection is so made of 210.3951 Hectares of Kadamwakvasti village.

2.2.3 Site Description

Proposed project is a Special Township development project in Kadamwakvasti village Pune, bearing Gat No. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167.



Fig. 2.1: Google Image of Proposed Project site

The land is located at 542 m above MSL. At four corners of site shown above, the Latitudes and Longitudes are assessed.

SN	Direction	Latitudes	Longitudes
1	North	18°30'19.22" N	74° 0'35.07" E
2	East	18°29'50.91"N	74° 1'11.33"E
3	South	18°29'32.41"N	74° 0'0.93"E
4	West	18°30'7.05"N	73°59'44.81"E

The site is surrounded on the 4 directions by the following:

East: Open Plot and MIT Institute beyond

South: Open Plot and Highway beyond
 West: Open Plot
 North: Forest strip and Mula-Mutha River beyond
 This location is seen in Google map below.



Fig.2.2: Google Map of Proposed Project

The basic amenities nearby are given below:

Table 2.5: The proximities to the basis amenities

S. No.	Amenities	Name	Distance (km)
1	Bus Depot	Hadapsar Bus Depot	6.6 Km
2	Highway	NH 65	0.1
3	Airport	Pune	12.5
4	School	Angel High School	0.2
		Kidzee Pre-school	3.5
		MIT	2.8
		Applebee International School	4.0
		DSK School of Design	1.0
5	Bank	Pune Gramin Bank	0.5
		Union Bank	1.4
6	Post office	Loni Kalbhor	3.3
7	Fire Station	Amanora Fire Station	11.0
8	Police Station	Fursungi Police Station	8.3
9	Market /mall	Mahalaxmi Super Market	2.0
		Loni Market	3.2
10	Hospital	Shivam Hospital	0.2
		Raikar hospital	2.3

The new development appears congenial with existing status and various amenities are within the approachable range avoiding long distance travel. In addition, 13 amenities will be provided within the campus.

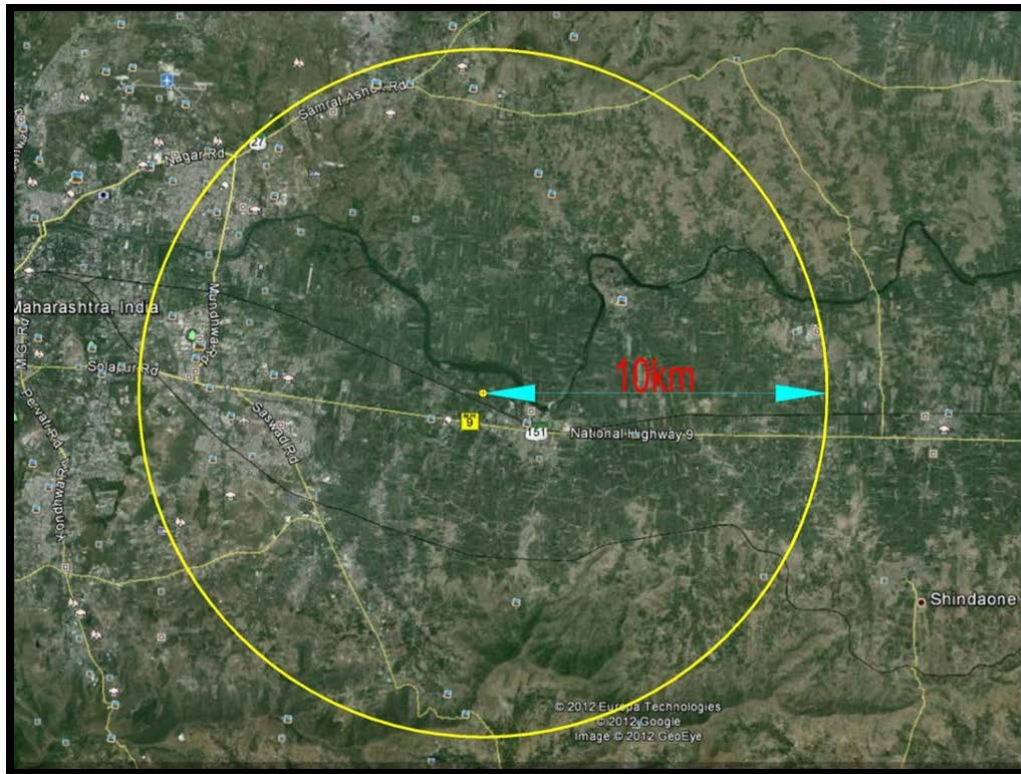


Fig. 2.3: 10 Km Radius Google Image

Within 10 Km of the site, most area is rural. Pune city is on west side of the project, not in this 10 Km study area.

2.2.5 Land Utilization

The toposheet of the area is given below in fig. 2.4.

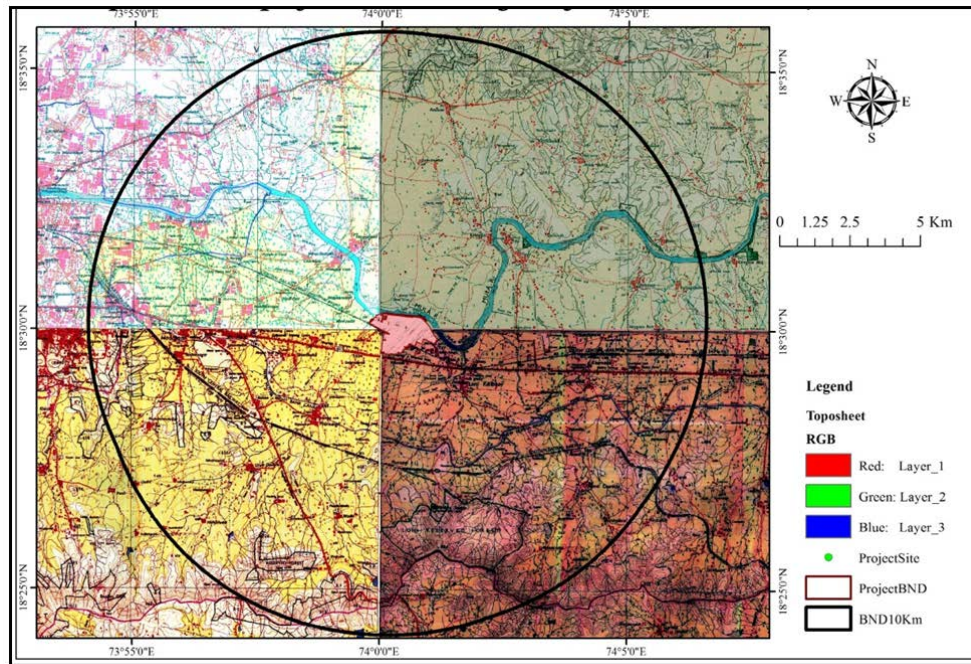


Fig.2.4: Toposheet map around the Project site at 10 km

In our selected site, there is no forest land. However a forest strip is adjoining between river Mula-Mutha and our site. Other patches are also seen at a distance of 5-10 Km, but are on up-gradient.

Two contour maps are shown below, one immediate 2 Km area and other for 10 km study area, to facilitate judging the slope and drainage pattern.

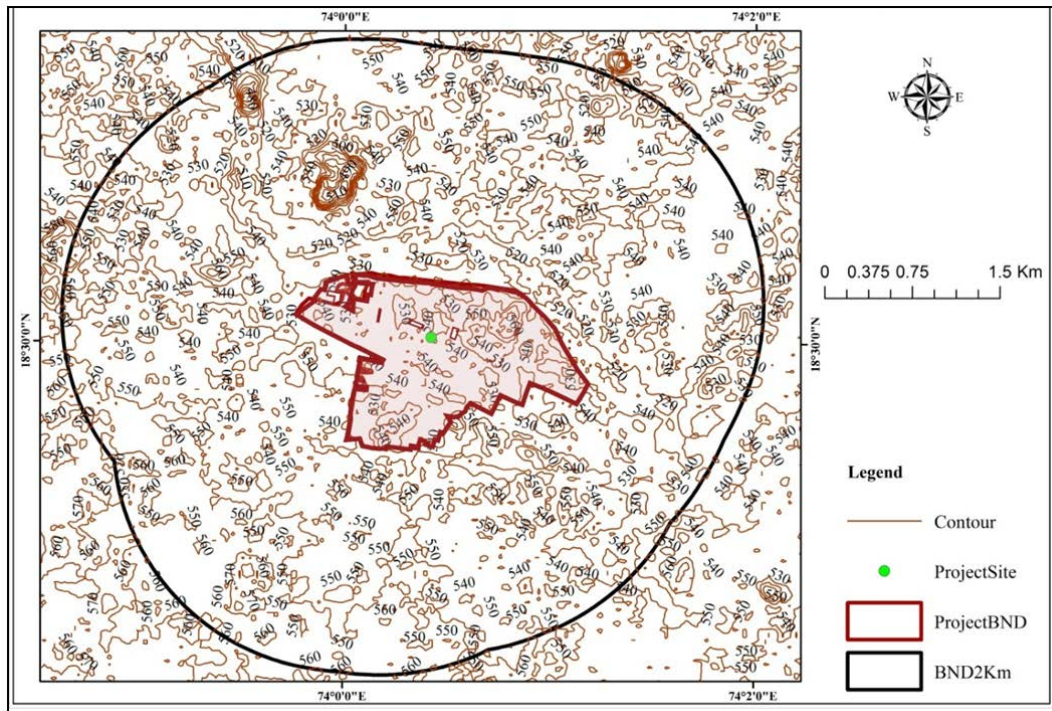


Fig. 2.5: Contour Map for 2 Km Radius

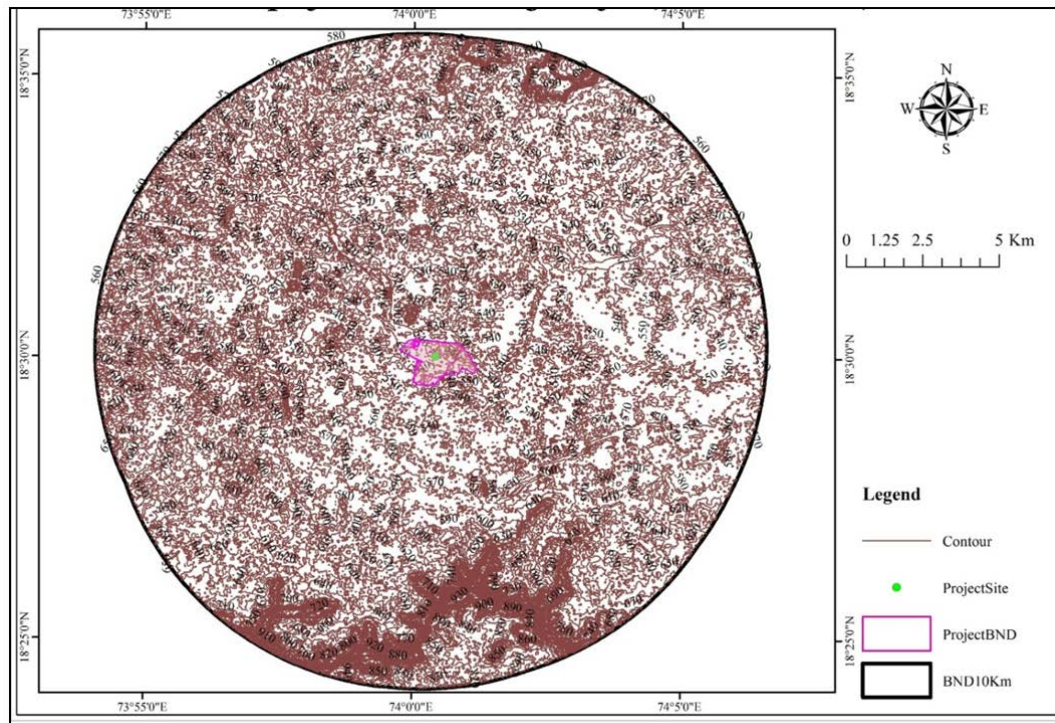


Fig.2.6: Contour Map for 10 km Radius

A third contour map is also plotted for our site itself and shown below.

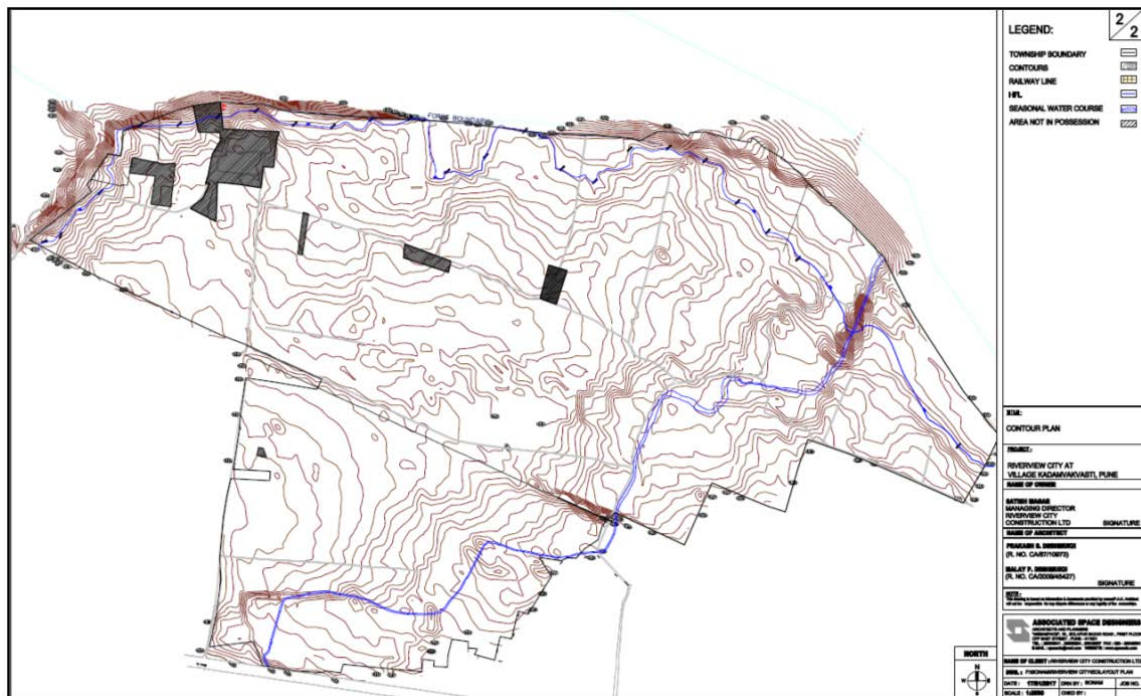


Fig. 2.7: Contour Map of the Site

The Highest contour level is 546 m and Lowest is 528 m and the slope is nearly 1:100, from South towards North.

Taking the existing contours in consideration, orientation is made for our project. Sector-wise master layout is given below in Fig. 2.8; showing different sectors, RG area, Roads, Ameities, Services and City Level Green area.



Fig. 2.8: Master Layout

2.2.6 Photographs of Site

Photographs of site are given below in plates.

	
Open Space available at Site	
	
Approach Road	
	
Existing Agricultural Land	Abutting Mula-Mutha River

2.3 WATER REQUIREMENT

2.3.1 During Construction Phase

Source: Potable water Tanker

Table 2.6: Water Requirement during Construction Phase

Type	Workers	Domestic m ³ /day	Flushing m ³ /day	Total m ³ /day	Total Sewage m ³ /day
Day Workers	300	6	7.5	13.5	12.15
Labour Camp	1000	45	25	70	63
Total	1300	51	42.5	83.5	75.15

2.3.2 During Operation Phase:

Source: Irrigation Department (Mutha Right Bank Canal)

Table 2.7: Water Requirement during Operation Phase

Use	Quantity m ³ /day	Source
Domestic	17,704	Irrigation Department Mutha R B Canal
Flushing	9901	STP treated sewage
Gardening	2728	STP treated sewage & Irrigation Department Mutha R B Canal
HVAC	10300	STP treated sewage
Maintenance vehicle wash & Bio Gas plant	90	STP treated water
For Dust Suppression on roads with in Township	437	STP treated water
Total	41160	

Note: Criteria For Water Requirement as per National Building Code (NBC) -2005:

Residential: For domestic uses considered 90 L/day and for flushing considered 45 L/day per head.

Commercial Day Staff: For domestic uses 20 L/day and for flushing 25 L/day per head.

Halls and visitors: For domestic uses 5 L/day and for flushing 10 L/day per head.

Other heads are calculated as follows:

LOSSES IN COOLING TOWER:

Drift Loss = 0.005 % of circulating water flow

Evaporation Loss = 1 % of 6 °C Δ T or 10 °F Δ T

No. of Concentration = E+B+D

B + D

If concentration = 3, then B = E – D / 2

where E = Evaporation loss; B = Blow Down; D = Drift loss For calculation purpose normally COC is taken as 3.

Then Blowdown Loss, $B = 1 - 0.005 / 2 = 0.495 \%$

Make up water Requirement = $E + B + D = 1 + 0.005 + 0.495 = 1.7\%$ of water circulating flow rate.

Proposed 33500 TR capacity water cooled centralised chilled water system the Make up cooling water in open circuit of condenser / cooling tower (Taken approx 1.7 percentage of water flow circulating) would required 10300 m³/day.

Township comprises of Road network of about 10770 mtrs length. It is proposed to have dust suppression for Road area.

Water requirement for Dust suppression will be

9 mtr wide road	:	127.07 mtr x 9 mtr x 0.002 m	=	2.29 m ³ /day
12 mtr wide road	:	420.45 mtr x 12 mtr x 0.002 m	=	10.09 m ³ /day
15 mtr wide road	:	598.65 mtr x 15 mtr x 0.002 m	=	17.96 m ³ /day
18 mtr wide road	:	4552.06mtr x 18 mtr x 0.002 m	=	163.87 m ³ /day
24 mtr wide road	:	5072.02mtr x 24 mtr x 0.002 m	=	243.46 m ³ /day

Total 437.67 m³/day

WATER BALANCE DURING NON MONSOON PER DAY BASIS

All quantities m³/day

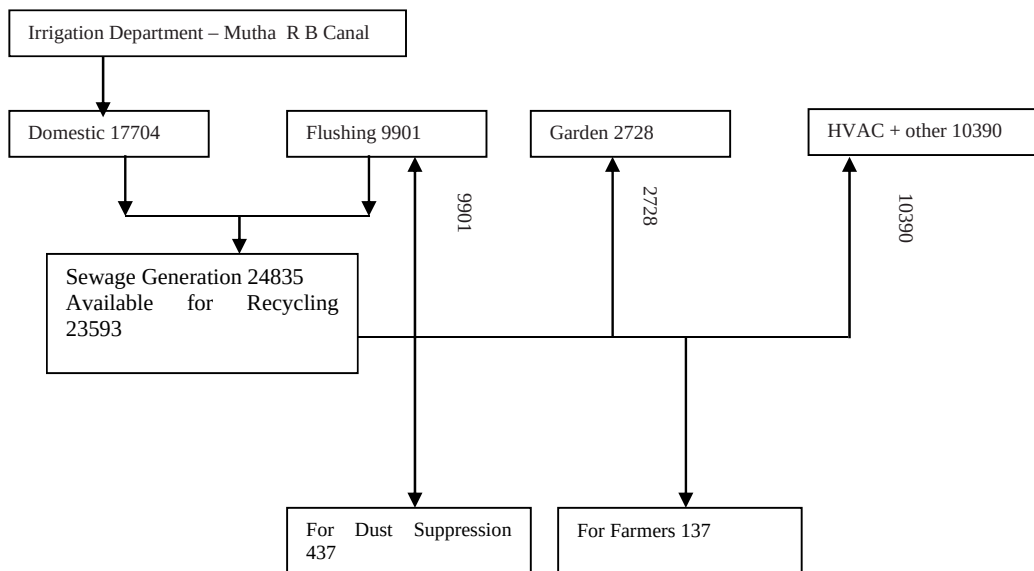


Fig. 2.9: Water Balance

Total water requirement = 41,160 m³/day

Net fresh water requirement = 17,704 (from Irrigation Department). We have obtained water supply NOC from Irrigation Department with required quantity.

Treated sewage available for recycling = 23,593 m³/day

After recycling treated sewage for gardening (2728), flushing (9901), HVAC & Other (10390) the balance will be used for Dust Suppression (437) and excess if any shall be given to the farmers (137). We have obtained water supply NOC from Irrigation Department with required quantity. We undertake to follow all the rules enforced by Irrigation Department & Govt. of Maharashtra related to the minimum distances to be maintained from the rivers. There is no Court Order for the same.

2.4 WASTEWATER GENERATION AND MANAGEMENT

2.4.1 Sewage Generation, Collection, Treatment and Disposal

Table 2.8: Sewage Generation

Sr. No	Description	Quantity of Sewage generated(m ³ /day)	Treatment/ Disposal
1.	Construction Phase	76	Mobile Toilets will be provided which will be periodically cleaned by authorized vendors.
2.	Operation phase	24,835	We shall be treating the entire sewage generated within project through STP of Capacity 26210 m ³ . The same will be reused within site for flushing (9901), gardening including road side plantation (2728), HVAC makeup (10390) and dust suppression (437). If excess treated water is generated, the same will be given to the farmers (137). No untreated / treated sewage will be discharged in the river.

The generated sewage will be collected by gravity through pipe network to STP and thereafter will be transferred till final disposal line.

2.5 ENERGY REQUIREMENT

During Construction Phase

Source of electricity: MSEDCL

Adequate Power will be supplied during the construction Phase.

During Operational Phase:

Source of electricity: MSEDCL

Table 2.9: Power Requirement of the Project

Connected Load	3,42,916 kW
Maximum Demand	1,58,943 kW
D.G. Set	126 Nos. ranging from 15 kVA to 1000 kVA

Power backup:

- The low sulphur fuel generators will be provided with stacks as per CPCB norms that will help in reduction of sulphur content thereby improving the quality of air.
- DG sets: 126 Nos. ranging from 15 kVA to 1000 kVA capacities shall be provided for use in case of power failure only.

Table 2.10: DG Set Details

Sr. No	Description	Connected Load	DG Set Rating	No of DG Sets
A	RESIDENTIAL			
1	RVR -1	675	250	3
2	RVR -2	300	160	2
3	RVR -3	525	250	2
4	RVR -4	225	250	1
5	RVR -5	250	200	1
6	RVR -6	150	160	1
7	RVR -7	250	250	1
8	RVR -8	1,050	250	4
9	RVR -9	200	200	1
10	RVR -10	0	0	0
11	RVR -11	0	0	0
12	RVR -12	300	320	1
13	RVR -13	750	250	3
14	RVR -14	675	250	3
15	RVR -15	150	160	1
16	RVR -16	225	250	1
17	RVR -17	1,200	250	5
18	RVR -18	600	320	2
19	RVR -19	525	250	2
20	RVR -20	750	250	3
21	RVR -21	600	320	2
22	RVR -22	525	250	2
23	RVR -23	600	320	2
24	RVR -24	600	320	2
25	RVR -25	300	320	1
	Total	11,425		46
B	Community and Health Care			
1	RVA -1	600	320	2
2	RVA -2	150	160	1
3	RVA -3	383	380	2
4	RVA -4	517	380	2
	Total	1,650		7
C	Economic Activities and Public Assembly Facilities			
1	RVC -1	280	320	1
2	RVC -2	12,795	1,000	13
3	RVC -3	2,000	1,000	2
4	RVC -4	1,125	380	3
5	RVC -5	1,120	380	3
6	RVC -6	2,135	1,000	2
7	RVC -7	8,530	1,000	9
8	RVC -8	12,795	1,000	13

9	RVC -9	11,168	1,000	12
	Total	51,949		58
D	Public Utilities			
1	Public Parking	15	15	1
2	Police station	25	25	1
3	HV sub station 1	-		
4	WTP	270	320	1
5	Fire brigade station	125	125	1
6	Biogas plant	50	50	1
7	Solid waste management plant	50	50	2
8	STP 1	425	500	1
9	STP 2	425	500	1
10	HV sub station 2	-	-	
11	Cremation ground	10	15	1
12	Burial ground & Cemetery	10	15	1
13	STP 3	425	500	1
14	HV sub station 3	-	-	
15	Bus station & Public parking	50	50	1
16	HV sub station 4	-	-	
17	STP 4	443	500	1
18	EHV sub station	-	-	
19	Public parking	25	25	1
	Total	2,398	2,740	15
	GRAND TOTAL	65,049		126

Energy saving measures:

- All the pumps shall have minimum 60% efficiency.
- Energy meters shall be installed to monitor the energy consumption for – External lighting, treated water pumping, municipal water pumping, common area etc.
- Use of LED, Solar PV and Solar water heating system for energy saving.

The following Energy Conservation methods are proposed in the project. The same are enlisted below:

Table 2.11: Energy savings

Sr. No	Description	Consumption per month by Users
1	Residential	2,49,71,520
2	Commercial	1,24,67,760
3	Amenities	3,96,000
4	Amenities	3,11,040
5	Grand Total	3,81,46,320
6	Savings due to Use of LED	3,35,472
7	Savings due to Solar Water Heating system	40,97,190
8	% Savings	11.62%

2.6 WASTE GENERATION AND MANAGEMENT

2.6.1 Generation during construction phase:

Table 2.12: Solid Waste Generation during Construction Phase

Type	No. of workers	Criteria for Solid Waste Generation			Solid Waste Generation Kg/day		
		Total (Kg/Person/day)	Non-bio degradable	Bio-degradable	Non-bio degradable	Biodegradable	Total
Day Workers	300	0.25	70%	30%	52.5	22.5	75
Labour Camp	1000	0.45	30%	70%	135	315	450

Hazardous waste: There will be separate storage for Hazardous wastes like empty paint containers, waste oil etc., out of which waste oil will be sold to the authorized recycler and empty paint containers will be sent to common hazardous waste management and handling site.

Table 2.13: Construction Waste Management Plan

#	Description	Unit	Estimated	Used	Reappeared	% of waste	Remark
1	Concrete waste	m ³	762469	751942	10527	1.4%	ground filling and levelling at site
2	Waste steel bars	MT	87772	86475	1297	1.5%	Reused by Manufacturer
3	Broken bricks waste	Nos	4454198	4324464	129734	3.0%	ground filling and levelling at site
4	Broken tiles	m ²	1852000	1811247	40753	2.3%	Road filling / levelling
5	Broken glass	m ²	255419	244420	10999	4.5%	Sales
6	Aluminium waste	Kg	2329356	2283683	45674	2.0%	Sales
7	M.S metal scrap	Kg	1006095	986368	19727	2.0%	Sales
8	Empty Cement bags	Bags	386846	38685	348162		Sales

2.6.2 Generation during Operational Phase

Table 2.14: Solid Waste Generation during Operation Phase

S N		Occupancy	Criteria for Solid Waste Generation			Solid Waste Generation (Kg/day)		
			Total Kg/ Person/day	Non-Biodegradable	Biodegradable	Non-Bio degradable	Biodegradable	Total
1.	Residential	181735	0.45	30%	70%	24534	57247	81781
2	Floating	72,200	0.25	70%	30%	12635	5415	10130
	Total					37169	62662	99831

The project proponents have proposed provision for segregation and collection of biodegradable & non-biodegradable waste within the premises. The solid waste will be segregated into biodegradable

and non-biodegradable at source and then transferred to Solid Waste Management location for further segregation and treatment.

- The total quantity of solid waste is estimated to be 99831 kg/day of which 62662 kg/day biodegradable and 37169 kg/day non-biodegradable).
- Biodegradable & Non-Biodegradable waste will be segregated at source and will be stored separately. Non-biodegradable waste like paper, metal, glass, plastic / rubber, rags etc. shall be sold to authorized vendors. Miscellaneous non-biodegradable waste shall be handed over to “Sant Gadgebaba Swayamrojgar Sanstha” which is an authorised agency to collect and dispose municipal solid waste. We have obtained letter from them for disposal of non-biodegradable waste.
- We have also identified authorized E-waste Collector for disposal of E-waste generated from our project.
- Biomedical waste of 29 Kg/day will be generated from hospital component. Out of which 21 Kg will be non-infectious, 3 Kg will be infectious and 5 Kg will be hazardous. This biomedical waste shall be handed over to authorized waste collector.

2.7 GREEN BELT DEVELOPMENT

About 4,54,673 m² will be maintained as greenbelt on ground. 33045 no. of trees are proposed for the project and list of trees proposed to be planted on ground is given below:

Table 2.15: RG Area Statement

Sectors	Trees	Lawn	Shrub	Green Area
Residential	8530	5124.95	20923	116450
Health	95	23	95.5	955
Commercial	3870	1038	4152	32874
Truck Ter.	450			
Utilities	4465		4395	4395
Garden	6255	7488	29822	74577
City level PG	5700			172071
School	485			2500
School PG	655			2500
Twn. Road	2540			48351
Total	33045	13673.95	59387.5	454673

Table 2.16: List of Proposed Trees to be Planted in Green Belt

Botanical name	Common name	Significance
<i>Acacia nilotica</i>	Babul	It is larval host for butterfly common grass yellow.
<i>Acacia suma</i>	Kadar	Native
<i>Albizia procera</i>	Kinhai	It is larval host for butterflies- common grass yellow, three spot grass yellow
<i>Amoora rohituka</i>		Native
<i>Annona reticulata</i>	Custard apple- Sitaphal	Native
<i>Anoegissus acuminata</i>	Dhawada	Attracts insects while flowering. Planted for restoration.
<i>Achras sapota</i>	Chickoo	Native
<i>Bauhunia purpurea</i>	RaktaKanchan	

Botanical name	Common name	Significance
<i>Bauhinia racemosa</i>	Apta	It is larval host for butterfly. Common emigrant.
<i>Butea monosperma</i>	Palas	Used in afforestation of saline and water logged regions. It is larval host for butterflies- common emigrant, gram blue, pea blue, dark cerulean, common
<i>Calophyllum inophyllum</i>	Undi	Flowers attract Honey bees.
<i>Careya arborea</i>	Kumbha	It is larval host to butterfly grey count. Fruits favoured by wild animals.
<i>Caryota urens</i>	Fishtail palm	It is larval host for butterflies indian palm bob, Giant
<i>Cassia fistula</i>	Bahawa	It is larval host for butterflies like common emigrant, common grass yellow, three spots grass yellow, mottled
<i>Cocos nucifera</i>	Nariyal	Native
<i>Cordia dichotoma</i>	Bhokar	Attracts many fruit eating birds. Hardy and sturdy species. Drought tolerant.
<i>Crateva adansonii</i>	Varun	It is larval host for butterflies psyche, striped albatross, great orange tip
<i>Dalbergia lanceolaria</i>	Phashi	Attracts many insects while flowering. Nitrogen fixing tree, can be suitable for restoration.
<i>Dalbergia latifolia</i>	Shisam	It is larval host for butterflies chestnut streaked sailer, short banded sailer
<i>Diospyros peregrina</i>	Tembhurni	Fruits are readily eaten by birds.
<i>Delonix regia</i>	Gulmohor	Native
<i>Erythrina stricta</i>	Pangara	Attracts lots of birds during flowering.
<i>Ficus benghalensis</i>	Banyan	It is larval host for butterflies like common indian crow, double branded crow, silver streak blue. Profusely fruiting trees attract a lot of fruit eating birds.
<i>Ficus elastic</i>	Rubberfig	Native
<i>Ficus hispida</i>	Kalumbar	It is larval host for butterflies like common indian crow, double branded crow. Profusely fruiting trees attract a lot of fruit eating birds.
<i>Ficus microcarpa</i>	Nandruk	It is larval host for butterflies like double branded crow. Attracts many birds while fruiting.
<i>Ficus racemosa</i>	Umbar	It is larval host for butterflies like common indian crow, double branded crow, silver streak blue. Profusely fruiting trees attract a lot of fruit eating birds.
<i>Ficus religiosa</i>	Pimpal	It is larval host for butterflies like common indian crow, double branded crow, silver streak blue. Profusely fruiting trees attract a lot of fruit eating birds.
<i>Garcinia indica</i>	Kokum	Evergreen tree good for creating perennial greenery.
<i>Gmelina arborea</i>	Gambhari	Good for plantation for restoration.
<i>Haldina cordifolia</i>	Hedu	Native

Botanical name	Common name	Significance
<i>Heterophragma quadriloculare</i>	Waras	Attracts many insects while flowering.
<i>Holarrhena pubescens</i>	Kuda	It is larval host for butterfly common indian crow.
<i>Lagerstroemia microcarpa</i>	Nana	It is larval host for butterflies western centaur oak blue, large oak blue. Attracts bees and butterflies.
<i>Lagerstroemia reginae</i>	Tamhan	It is larval host for butterfly large oak blue.
<i>Madhuca longifolia</i>	Chndava	Flowering attracts many insects.
<i>Mangifera indica</i>	Mango	Fruits are eaten by wild animals. It is larval host for butterfly common baron.
<i>Mesua ferrea</i>	Nagchapha	Important species in cores or interior of forest.
<i>Michelia champaca</i>	Champak	
<i>Mimusops elengi</i>	Bakul	Fruits are eaten by animals.
<i>Mitragyna parvifolia</i>	Kalam	It is larval host for butterfly commander.
<i>Murraya koenigii</i>	Kadhipatta	It is larval host for butterflies like lime, common
<i>Neolamarckia cadamba</i>	Kadamb	Broad leaved trees attracts many birds and insects while flowering and fruiting.
<i>Nyctanthes arbor-tristis</i>	Parijata	Attracts many insects while flowering.
<i>Peltophorum ferrugineum</i>	Peela gulmohor	
<i>Pongamia pinnata</i>	Karanj	It is larval host for butterflies Chestnut streaked sailer, dark cerulean, common cerulean, common banded awl.
<i>Pterocarpus marsupium</i>	Bija	Attracts many bees while flowering.
<i>Putranjiva roxburghii</i>	Jivanputra	Fast growing.
<i>Salix tetrasperma</i>	Walunj	It is larval host for butterfly common leopard.
<i>Sapindus laurifolius</i>	Risha	It is larval host for butterfly indigo flash.
<i>Saraca asoca</i>	Sita ashok	It is larval host for butterfly common cerulean
<i>Saraca indica</i> (<i>Polyalthia longifolia</i>)	Ashoka tree	
<i>Schleichera oleosa</i>	Kusumtree	It is larval host for butterflies: malayan, forget me not, western centaur oak blue, common hedge blue.
<i>Spondias pinnata</i>	Ambada	Fruits attracts birds
<i>Syzygium cumini</i>	Jambhul	Attracts many birds while fruiting. Good for plantation in restoration.
<i>Tamarindus indica</i>	Chinch	Fruits are favoured by wild animals. Good for shade, reduces temperature.
<i>Terminalia tomentosa</i>	Ain	Favored by many bees and Butterflies while flowering.
<i>Terminalia catappa</i>	Indian almond	
<i>Thespesia populnea</i>	Bhend	It is larval host for butterfly Chestnut streak edsailer.
<i>Trema orientalis</i>	Kharal	Favored by birds while fruiting. A sturdy, fast growing plant

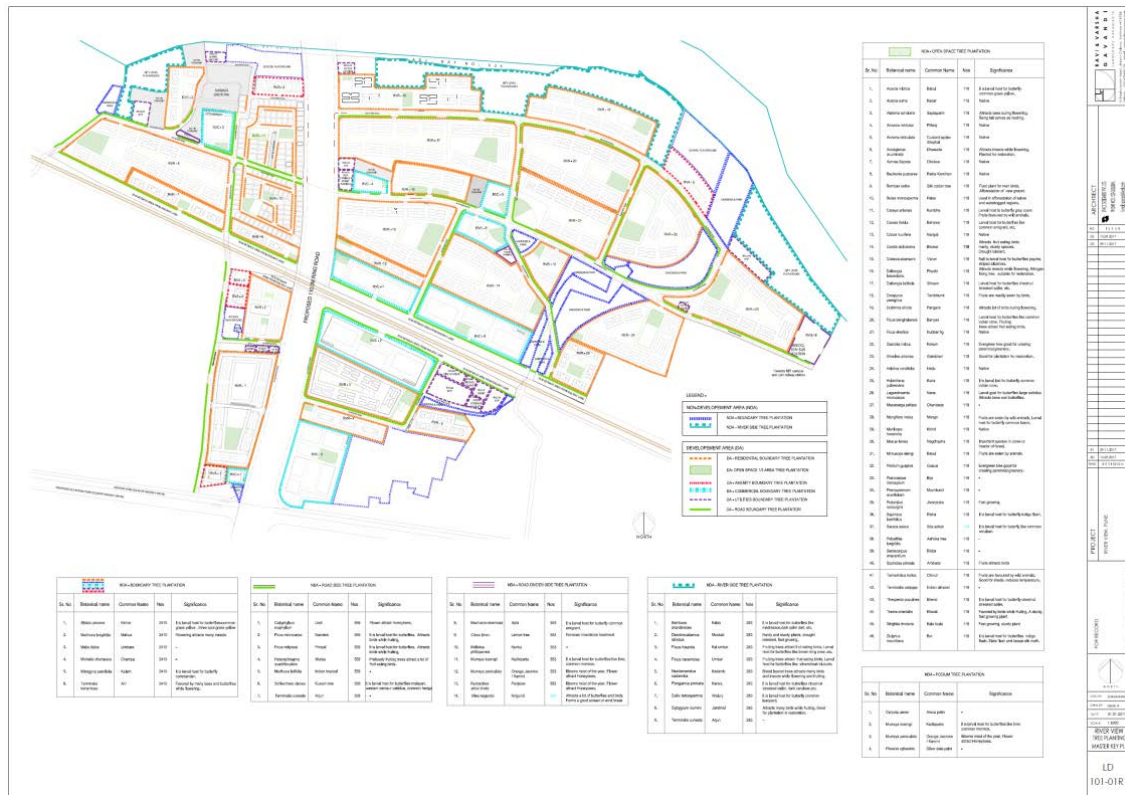
Botanical name	Common name	Significance
<i>Vitex negundo</i>	Nirgundi	Attracts a lot of butterflies and birds. Forms a good screen or wind break.
<i>Wrightia tinctoria</i>	Kalakuda	Fast growing, sturdy plant
<i>Ziziphus mauritiana</i>	Bor	It is larval host for butter flies Chestnut streaked sailer, banded blue pierrot, dark pierrot, indigo flash. Slate flash and tussar silk moth.

Table 2.17: List of Proposed Shrubs to be Planted in Green Belt

Botanical name	Common name	Significance
<i>Acacia concinna</i>	Shikakai	Monkeys and sambar greedily eat greenpods. It is larval host for butterfly common grass yellow.
<i>Adhatoda vasica</i>	Adulsa	Flowers favored by bees and sunbirds.
<i>Bambusa arundinacea</i>	Kalak	It is larval host for butterflies like madrasace, dark palm dart, con joined swift, indian ace, common red eye, chestnut bob
<i>Caesalpinia bonducella</i>	Sagargota	It is a larval host for butterflies-common grass yellow, plains cupid.
<i>Cassia auriculata</i>	Tarwad	It is a larval host for butterfly mottle demigrant.
<i>Cassia callosa</i>	Karwi	It is a larval host for butterflies like chocolate pansy, common spotted flat, Malabar spotted flat, tamil
<i>Dendrocalamus strictus</i>	Meskati	Most hardy and sturdy plants, Drought resistant, fast growing. Can be used for making fast green cover. Clumps also act as good hiding places for fauna.
<i>Gardenia resinifera</i>	Dikamali	Associated species in forest composition.
<i>Ixora coccinea</i>	Dewhari	Important under shrub.
<i>Plumbago zeylanica</i>	Chitrak	It is a larval host for butterfly zebra blue.
<i>Vetiveria zizanioides</i>	Wala	Very useful in restoration activities for soil and moisture conservation.
<i>Woodfordia fruticosa</i>	Dhayati	Tubular flowers attract birds as it contains lot of

Table 2.18: List of Climbers to be planted in Green Belt

Botanical name	Common name	Significance
<i>Argyreia nervosa</i>	Elephant creeper	Native
<i>Asparagus racemosus</i>	Shatavari	Native
<i>Jasminum malabaricum</i>	Kusar	Attracts many insects while flowering



The tree survey was undertaken for the project area. The buildings will be aligned to avoid cutting of existing trees to the extent possible. Out of existing 3300 trees, 361 will be retained, 2390 trees can be transplanted, 236 will be cut and 298 will either be cut or retained. For each tree cut/transplanted, 3 additional trees shall be planted to avoid negative impact on biodiversity.

2.8 TRAFFIC MANAGEMENT

Table 2.19: Parking Details

FOR RESIDENTIAL		PARKING REQUIRED			PROPOSED PARKING		
Sector	No. of Flats	Cars	Scooter	Cycles	Cars	Scooter	Cycles
RVR1	1712	856	3424	3424	1646	3424	3424
RVR2	832	416	1664	1664	549	1664	1664
RVR3	1360	680	2720	2720	1750	2720	2720
RVR5	840	0	1575	1575	0	1575	1575
RVR4	744	372	1488	1488	372	1488	1488
RVR6	324	0	607.5	607.5	0	608	608
RVR7	840	0	1575	1575	0	1575	1575
RVR8	3472	1736	6944	6944	1736	6944	6944
RVR9	528	0	990	990	0	990	990
RVR 10	70	70	70	70	70	70	70
RVR 11	65	65	65	65	65	65	65
RVR12	992	496	1984	1984	496	1984	1984
RVR13	2356	1178	4712	4712	1178	4712	4712

FOR RESIDENTIAL		PARKING REQUIRED			PROPOSED PARKING		
RVR14	2232	1116	4464	4464	1116	4464	4464
RVR15	496	248	992	992	248	992	992
RVR16	744	372	1488	1488	372	1488	1488
RVR17	3968	1984	7936	7936	1984	7936	7936
RVR18	1984	992	3968	3968	992	3968	3968
RVR19	1736	868	3472	3472	868	3472	3472
RVR20	2480	1240	4960	4960	1240	4960	4960
RVR21	1860	930	3720	3720	930	3720	3720
RVR22	1736	868	3472	3472	868	3472	3472
RVR23	1984	992	3968	3968	992	3968	3968
RVR24	1984	992	3968	3968	992	3968	3968
RVR25	1008	0	1890	1890	0	1890	1890
TOTAL	36347	16471	72117	72117	18464	72117	72117
For Commercial		Parking Required			Proposed Parking		
Sector	Built Up Area m ²	Cars	Scooter	Cycles	Cars	Scooter	Cycles
RVC1	4,101	42	168	168	42	168	168
RVC2	209,846	1919	7677	7677	1919	7677	7677
RVC3	157,379	300	1200	1200	300	1200	1200
RVC4	209,846	169	675	675	169	675	675
RVC5	22,621	168	672	672	168	672	672
RVC6	12,527	320	1281	1281	320	1281	1281
RVC7	12,477	1280	5118	5118	1280	5118	5118
RVC8	23,904	1919	7677	7677	1919	7677	7677
RVC9	143,139	1675	6701	6701	1675	6701	6701
TOTAL	795,840	7792	31169	31169	7792	31169	31169
For Education		Parking Required			Proposed Parking		
Sector	Built Up Area m ²	Cars	Scooter	Cycles	Cars	Scooter	Cycles
Primary School	3,500.00	35	70	70	35	70	70
Assembly Hall	1,000.00	10	20	20	10	20	20
Primary & Secondary School	11,500.00	115	230	230	115	230	230
Primary & Secondary School	15,500.00	155	310	310	155	310	310
Total	31,500.00	315	630	630	315	630	630
For Health Facility		Parking Required			Proposed Parking		
Sector	Built Up Area m ²	Cars	Scooter	Cycles	Cars	Scooter	Cycles
Hospital	7,346	90	225	225	90	225	225
Total		90	225	225	90	225	225

Table 2.20 Net Parking Requirement

Net Total For All Land Uses	Cars	Scooter	Cycles
Required Parking	24533	104006	104006
Proposed Parking	26526	104006	104006

2.9 Manpower Requirement and Labour Camp Details

The project involves a large construction and will be spread over considerable time period. Systematic approach is taken so that a disciplined development will take place. The various officers will be engaged with specific responsibilities for security, safety, accident prevention, electrical planning, construction, landscaping, environmental considerations, careful storages and coordination. These officers will be supported by Managers and Section Officers of various faculties. Indicative Organization Chart is enclosed to show this construction management.

For actual work, machineries and experienced sub-contractors will be engaged, depending on the phase of construction such as Infrastructure Development, Roads, Water Supply, Wastewater and Solid Waste consideration including civil and mechanical work, superstructure of buildings, plumbing and piping, tiling and painting operations. It is estimated that on an average, 1300 persons will be engaged, 50% of them being unskilled but experienced. The workers will be of two classes namely day workers and some will be camping at site. The labour camp will house around 1000 workers.

The construction site shall be provided with sufficient and suitable mobile toilet facilities for construction workers to allow proper standards of personal hygiene. Water taps will be provided in the labour camps, but it will be seen that spilled water will be directed towards collection sump first and to the treatment scheme next. The sewage generation is felt substantial (as in this bulk case), even a sophisticated mode of treatment like package sewage treatment plant will be considered. Such plant may be so sized that it may become useful later on, when the construction labour vacates the site and regular incumbents enter. This can be in modules. Some cooking fuel shall be supplied to the camp, so that they will not attempt to cut tree-branches for this purpose. Regular medical help shall be available to them including snake bite precautions. Crèche shall be also provided.

The details are given in chapter 4 in respect of construction phase water requirement, wastewater generation, solid waste management and Environmental Management Plan. The labour camp details are worked out and tabulated below:

Table 2.21: Labour Camp Details

Sr.No.	Description	Details
1	Approx. Number of labour	1300
2	Number of units	600
3	Type of Structure	PreFab Structure
4	Constructed toilets	WCs 60 nos.(Gents-40 nos & Ladies-20nos.)
5	Drainage System	Mobile toilets of adequate quantity. Regular cleaning and disposal by external agency
6	Water	Potable water for drinking, normal water for toilets
7	Crèche and school	Shall be Provided
8	First aid Room	Shall be Provided
9	Electrical supply	Shall be Provided for all units

Sr.No.	Description	Details
10	House keeping	Adequate staff shall be arranged for daily cleaning of the premises
11	Security	Adequate round the clock security staff(guard & supervisor) will be deployed
12	Pest Control	Fogging & Mosquito control will be done periodically
13	Transport	Labours will be provided transport facility by company if the distance to work site is more.
14	Garbage collection	Garbage will be collected on daily basis, it will be treated through bio composting or bio gas process. Dry waste shall be collected by authorized agency

Safety for workers is of utmost importance and Project Proponent has proposed the following guidelines.

Introduction:

Safety is a primary concern for human survival and development. Construction safety is an eternal theme of the construction project. It not only concerns the worker's happy family life but also concerns national economic development and stability and unity of the society. The world over construction has been recognized as one of the most hazardous activity.

The Potential Hazard for workers in construction includes:

- Falls (from Height)
- Material Fall from height
- Trench collapse
- Scaffold collapse
- Electric shock and arc flash / arc blast;
- Failure to use proper personal protective equipment and
- Repetitive motion injuries.

Responsibilities of Everyone at Site:

- To take all suitable measures to do the work safely.
- Take care of employees working under their supervision/guidance.
- Follow correct and safe method of execution.
- Eliminate hazard at site brought into notice by safety representative.
- Cooperate with safety representative.
- Give tool box talks to the employees every day before starting of work.
- Avoid environment pollution arising from work activity.
- Ensure the implementation of required safe working practices.

The company staff working at site shall wear safety shoes.

Identity card, safety card and whistle shall be carried in working hrs.

Excavation:

- Proper precaution (Work Permit) shall be taken prior to excavation. Heavy equipment shall be kept sufficient away from the excavation trench.
- Ensure proper barricading (cordoning off, of the excavation area) at least 1.5 mtr. with specific symbols, barricading tapes or traffic chains with traffic cones.

- In the event of any service (electrical cables, telephone cables, water pipes, sewages pipes etc.) encountered during excavations should be immediately brought to the notice of the concerned person.
- Proper illumination should be provided during night, for deep excavated area.
- Always ensure use of minimum two proper ladders adequately firmly secured to using to get in & out of excavations.
- Do not permit to climbing up or down the sides of excavation.
- Excavation should be done in 'V' shape.

Piling:

- Only competent person should be allowed to operate the Rig, Concrete pump.
- All cranes must be operated by the licensed, authorized and competent persons only.
- All pile holes to be covered at all times after boring by suitable material and should be barricaded.
- Excavated muck to be disposed off on daily basis.
- Housekeeping to be done on regular basis.
- Reinforcement yard to be at separate place.
- Pile cages to be carried with suitable equipment and properly secured so that it should not fall.
- Concrete should be poured in only required quantity
- All cranes should have rigger cum banks man.
- Bucket should be changed with regular procedure (that is do not support bucket with hand while replacing)
- No person should go inside the pile which has diameter less than shoulder width plus 10cm. and must check availability of toxic gases, oxygen and should use the tripod method with life line, safety belt, and one observer.
- Pile load test is to be carried out as per design and approved methodology.
- For higher load the lever of the pressure gauge should be pumped from the opposite direction to hose connection.
- Pile load pressure gauge should be tested by competent person and must ensure for correct operation.
- Inspect piling machine for firm grounding and satisfactory working of brake and clutch.
- Ensure that piles are properly secured while lifting
- Workers should wear tight fitting clothes while working around pile driving equipment.

Working At Heights:

- Safety belt (full harness body) shall be worn by all people working especially outer side, on walkways of building, while working at height above 3 m. It should be tied properly to a wall panel hole or firm support before start the work.
- Strong & stable platform / scaffolding is required for all work above a height of 2 m.
- Ladder can be used for short duration work up to a maximum height of 4 m.
- Platform & scaffolding at a height of more than 3 m should have guardrails on all open sides.

Walk Ways Brackets:

- Double guard railing to be provided to walk ways brackets & properly tied by binding wire with bracket sockets.
- Width of working platform shall be 600 mm. Maintain by M.S. walk ways & firmly tide by binding wire with brackets.
- Aluminum panels should not be kept in vertical position on walk ways brackets.

- Upper brackets height should be increase by square pipe above the exiting floor.
- On existing floors, upper & lower walkways brackets should be covered by breaded net in vertical position. It will travel along the brackets up to top floors.
- Walkways should be properly tied or locked by binding wire with brackets.
- Distance between two brackets must be 1 m to periphery building.

Ladder & Work Bench:

- Use the correct ladder for the task.
- Avoid using ladders with metallic components near electrical work and overhead power lines.
- Ladder should be placed vertical by making an angle of 65 degree with the ground.
- All ladders & work bench used shall be in good condition & adequate strength; Base plate should be fixed at the leg of work bench (3x3 inch).
- Every ladder should be securely fixed at top & bottom.

Safe & Sufficient Access

- Safe & Sufficient access for every place shall be provided & maintained, Proper light should be provided on staircase on every floors.
- Adequate & suitable lighting shall be provided for all working place approaches, staircase, dangerous opening & deep excavated area.

Stairways:

- Stairways, treads and walkways must be free of dangerous objects, debris and materials.
- Slippery conditions on stairways and walkways must be corrected immediately.
- Make sure that treads cover the entire step and landing.
- Provision of anti-slip strips at edges of treads
- Stairways having four or more risers or rising more than 30 inches must have at least one handrail.

Shuttering & De-Shuttering Work:

- Carpenter must wear a full harness, helmet & oil resistance hand glove while shuttering / de-shuttering on outer side.
- External aluminum wall panel end beam, long pin & wedge pins should not be kept on walk ways brackets in vertical position.
- External aluminum wall panels should be kept in horizontal position on walk ways while applying the shuttering oil.

Open Ducts & Lift Openings:

- Open to sky ducts, attached terrace & corridor duct shall be covered by safety net & lift opening covered by M. S. mesh.
- All openings and sides of buildings from which a worker might fall should be adequately covered or barricaded.
- Lift shaft shall be fully covered by M.S. walk ways on existing floors. & its opening covered by M.S. mesh with shade nets on every floors.

Steel Shifting/Lifting/Handlings:

- While carrying steel by tractor from steel yard to site, tie the bundles with trolley by rope.
- Do not allow to seat labours in trolley with loaded steel. (ring in steel).

- While steel lift by manually from ground floor to above floors, bundle should be tied properly on both ends & use required P.P.E. safety belt, helmet & hand gloves, shoes.
- Steel bundle should not make more than three steel bars,
- Fire duct can be used for lift the straight bar if possible.
- While steel lift by Mini Crane use round buckets and for rings use square bucket.

RMC- (Transit Mixer):

- All transit mixture should have reverse horn provision.
- Reflective jacket to be provided to all labours for concreting.
- Concreting pump toe to be guarded by traffic cone with traffic chain.
- Transit mixture driver should have authentic license.
- RMC pipes should bring through staircase.
- To erection work of pipes, use full harness body.
- Transit mixture motor should be guarded / covered.

Concrete Pumping System:

- Concrete pumping workstation should be provided with overhead covers.
- Pumping should be laid on adequate supports and secured to prevent movement.
- Pipelines should not be attached to temporary structures such as scaffolds & form work supports as the forces and movements may affect their integrity.
- For Horizontal lines support at every 5 m.
- For vertical line it must be every 6 m.
- Pipe connectors particularly those installed at height should be secured against dislodgement. Pipeline should be checked for leakages and the couplers should be properly tightened to avoid spillage and movement.
- While cleaning the pipeline using a ball always ensures that a ball catcher is provided to catch the ball and any concrete pieces.
- Ensure that persons are at safe distance while cleaning operation is being carried out.
- During concreting work shade net to be fixed outer side at height a distance 1 metre. to concreting pour.

Concrete Vibrator:

- Vibrator unit shall be completely enclosed and belt transmitting the power of unit adequately guarded.
- Electrically operated compaction vibrators shall be totally enclosed and shall be protected against over loads by suitable overload relays and shall be effectively earthed.
- Ensure that sufficient length of cable is provided to the vibrator.
- Ensure electric starters are fixed firmly on the stand.
- While needle is inserted in the vibrator, ensure needle rod is firmly locked.
- Ensure that proper lubrication of needle inner core is done.

The Project Proponent will refer to all the provisions prescribed in labour related acts like :

- Minimum Wages Act 1948,
- Contract Labour (Regulation & Abolition) Act 1970
- Inter-State Migrant Workmen (Regulation of Employment & Conditions of Services) Act 1979

- The Building and other construction workers (Regulation and Employment of Service)Act, 1996
- The Building and other construction workers Welfare Cess Act 1996.

2.10 Project Implementation Schedule

This is a big project and hence will have to be distributed in phases of implementation. This is indicated below.

Table 2.22: Phase-wise break-up of Construction Schedule

Description	Phase 1	Phase 2	Phase 3	Phase 4
Time Period	2017-21	2021-25	2025-30	
Residential	RVR 1 – RVR 5	RVR 6 – RVR 11	RVR 12 onwards	
Commercial	RVC 1 & RVC 2	RVC 3	RVC 4 – RVC 8	RVC 9
Education	RVA 2, RVA 3	RVA 4	RVA 5	
Health	RVA 1			
Public Utilities	All Utilities as per requirement in different phases			

It may thus be seen that the work will be homogenized. There will be some overlap as shown but no lapse or lag period. The continuity helps in retaining the trained workforce and environmental protection with uniform low load can be capably handled rather than make and break with changed staff and workers. The machinery maintenance of running earthmovers is better. This is especially important from the point of controlled noise generation and oil-grease hazards. This is especially important for us as the residents coming to stay in first phase should not get a nuisance when 2ndphase work is continued. Orientation of buildings too will be done accordingly.

2.11 Chapter Conclusion:

Every human activity creates a change in the environment. More complex an activity, the impact is more significant, needing a careful pre-planning. However, a study is made here with the same emphasis as if it was a big Industrial project. Materials and methods, approach and technique are the fundamental considerations and these are discussed. Cognizance of laws, guidelines on site selection are taken. An objective is kept that this EIA be useful for many decision-makers. The scope of EIA process and EIA document is fixed at this stage itself so that further work will follow its path.

CHAPTER 3 DESCRIPTION OF THE ENVIRONEMENT

3.0 Introduction

Environmental baseline data for study area has been collected during October to December 2016.

Primary Data Collection

Ambient air quality

Noise Level

Groundwater and Surface water quality

Soil quality

Land use pattern

- Flora and Fauna
- Socio-economic conditions

Secondary Data Collection

- Flora and Fauna
- Socio-economic conditions
- Sensitive areas such as forests, sanctuaries, places of historical, archaeological and tourist importance
- Land use pattern

3.1 Land Environment

The study area is considered to be the area within 2Km radius of the site for Environmental monitoring while for studying the environmental sensitivity a radius of 10 km is considered.

3.1.1 Site Topography and Geographical Location of site:

The Proposed Project is at Kadamwakvasti, Taluka Haveli, District Pune, State – Maharashtra.

Total area of the plot is approx. 21,03,951 m²

Latitude : 18°30'1.45"N

Longitude : 74° 0'25.55"E

Tehsil : Haveli

District : Pune

State : Maharashtra

a. Drainage Map:

Drainage layer, which was generated after scanning the thematic manuscripts, was edited for line the errors. Two different layers were made separately for line drainage. Drainage order was given to all the drain lines in the layer's. Strahler method of ordering was used for giving order to drainage. Whenever two drains of any order joined the order of next drain was increase by one. The area shows not much of undulating topography thus it shows the dendritic drainage patterns.

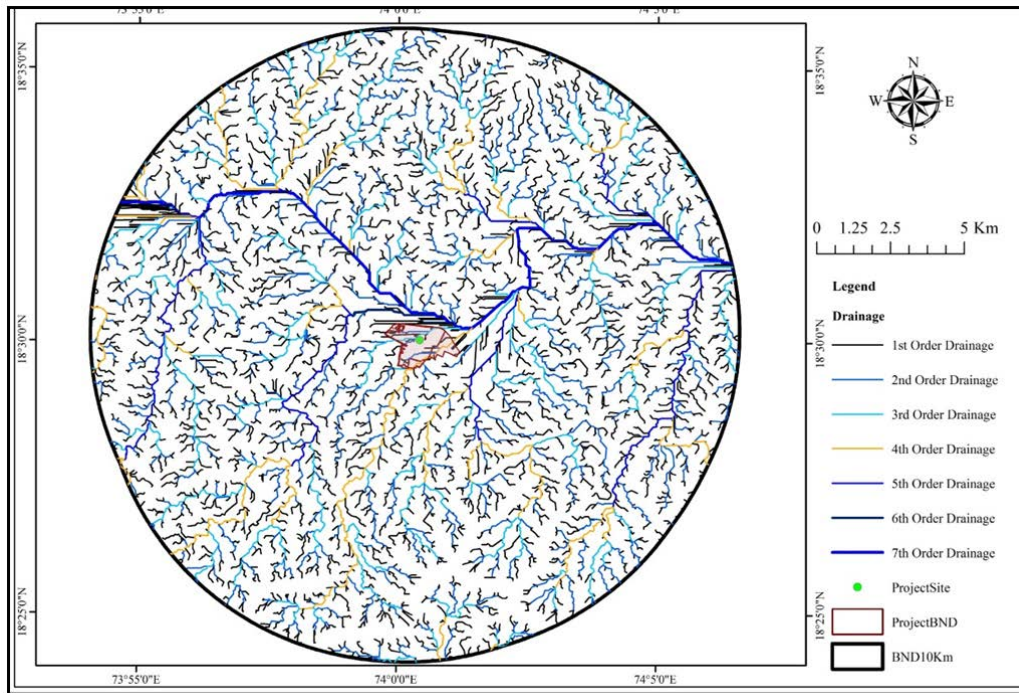


Fig. 3.1: Drainage map of 10 km radius area around Project site

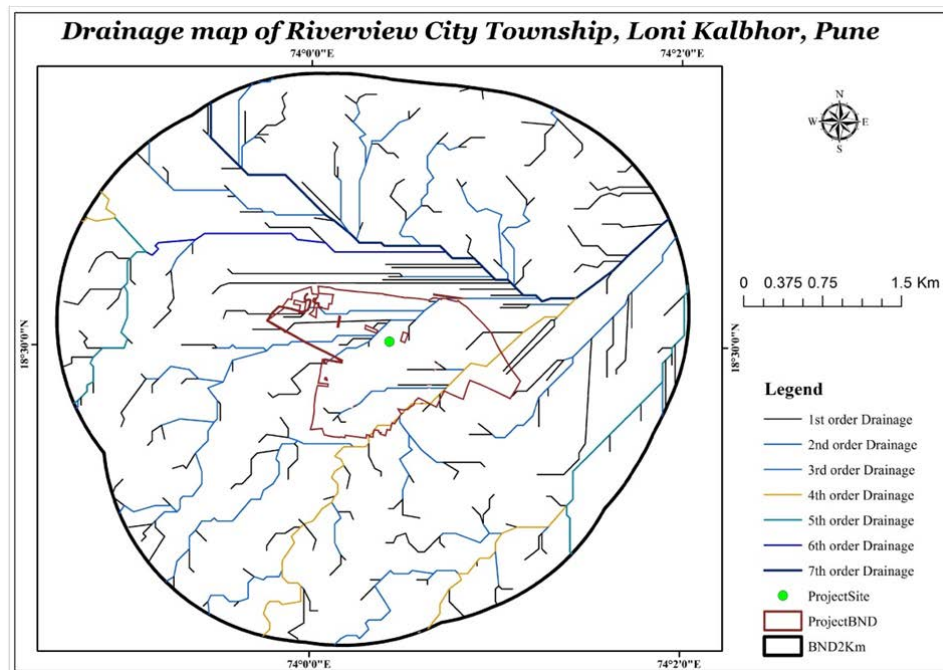


Fig. 3.2: Drainage map of 2 km radius area around Project site

b. Seismicity:

Seismic zone map was initially based on the amount of damage suffered by the different regions of India because of earthquakes. Following are the varied seismic zones of the nation,

- Zone - II: This is said to be the least active seismic zone.
- Zone - III: It is included in the moderate seismic zone.
- Zone - IV: This is considered to be the high seismic zone.
- Zone - V: It is the highest seismic zone.

Proposed project and Study Area comes under Seismic Zone III.

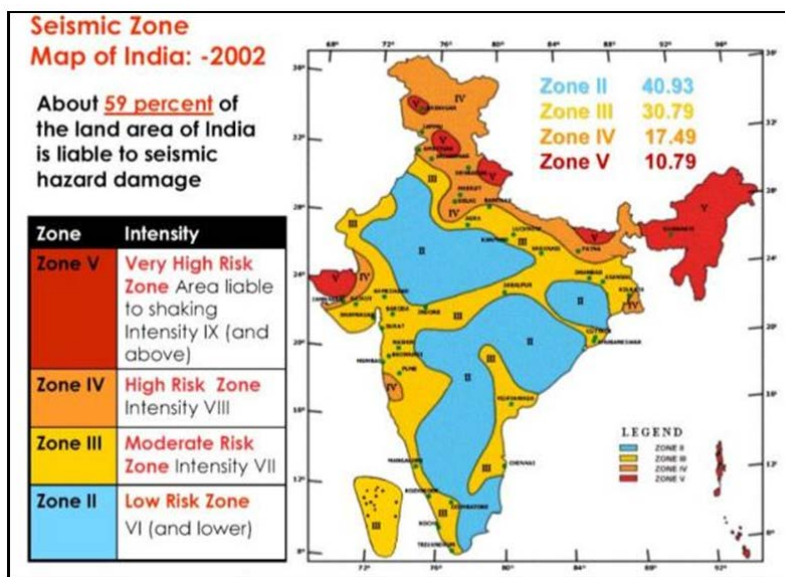


Fig 3.3: Seismic Zone Map of India

3.1.2 Land Use Land Cover

Land use is characterized by the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. Definition of land use in this way establishes a direct link between land cover and the actions of people in their environment. The following examples are a further illustration of the above definitions:

"Grassland" is a cover term, while "rangeland" or "tennis court" refer to the use of a grass cover; and "Recreation area" is a land use term that may be applicable to different land cover types: for instance sandy surfaces, like a beach; a built-up area like a pleasure park; woodlands; etc. Land cover is the observed (bio) physical cover on the earth's surface. When considering land cover in a very pure and strict sense, it should be confined to the description of vegetation and man-made features. Consequently, areas where the surface consists of bare rock or bare soil are land itself rather than land cover. Also, it is disputable whether water surfaces are real land cover. However, in practice, the scientific community usually includes these features within the term land cover.

Land Use/Land cover for 10 km radius from project site were delineated based on the Landsat-ETM Data dated 3rd February 2016; the land use/Land cover classes are categorized based on the ground trothing and site visit. The land is classified in Agriculture, Builtup Land, Fallow Land, Forest Vegetation, Open Land, and Water body etc. classes detailed distribution of units showing in the below map, table and graph.

Table 3.1: Land use/ Land cover Statistics of the Ten Square Km Area

Classes	Area in Sq. Km.	Area in %
Agriculture	114	30
Barren Land	16	4
Built-up Land	148	39
Fallow Land	3	1
Open Land	99	26
Water body	3	1
Total Area	381	100

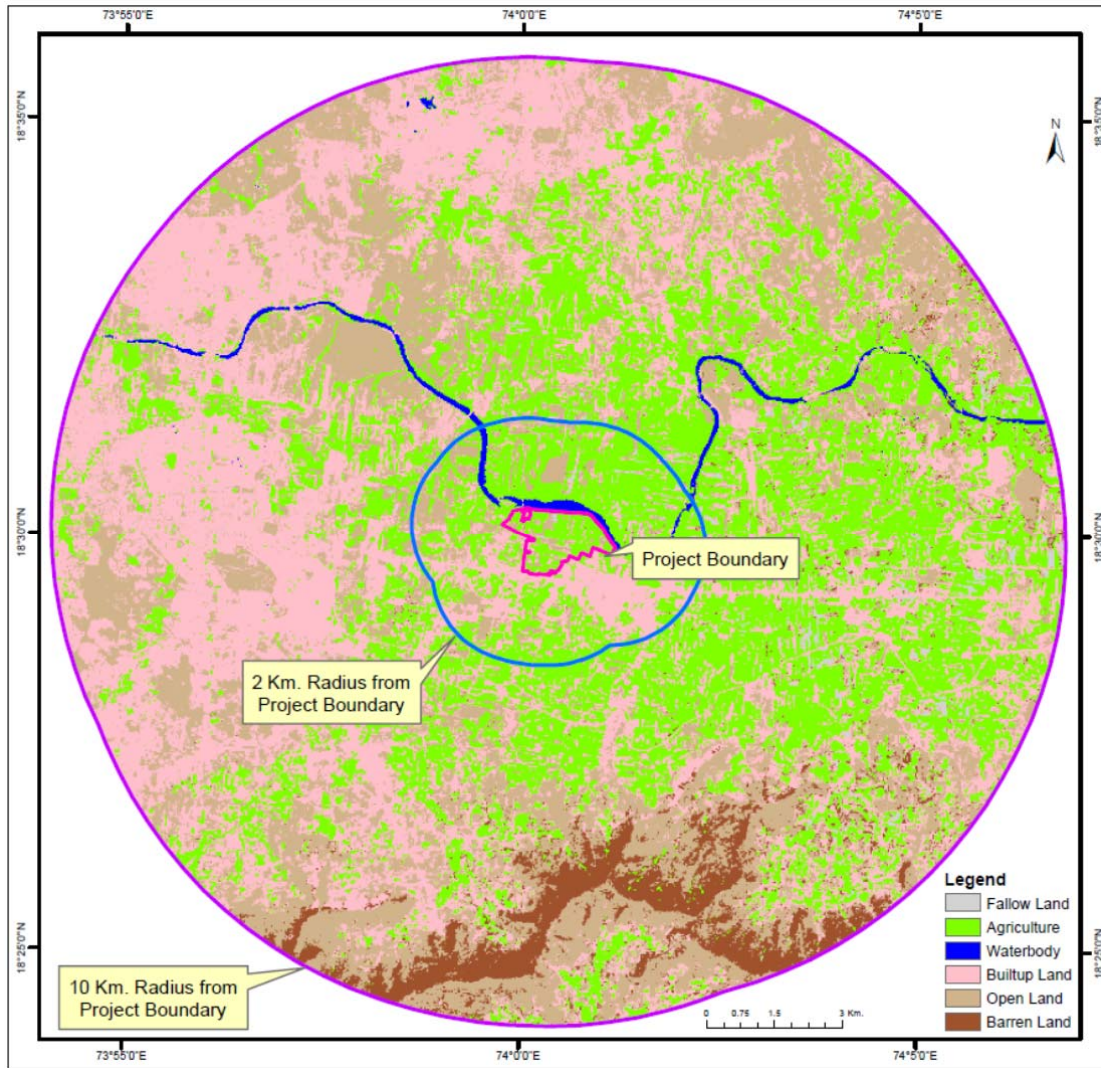


Fig. 3.4: Land Use Map of 10 Km

Table 3.2: Land use/ Land cover Statistics of the Ten Square Km Area

Classes	Area in Sq. Km.	Area in %
Agriculture	15	53
Barren Land	0	0
Built-up Land	8	30
Fallow Land	0	1
Open Land	4	14
Water body	1	3
Total Area	28	100

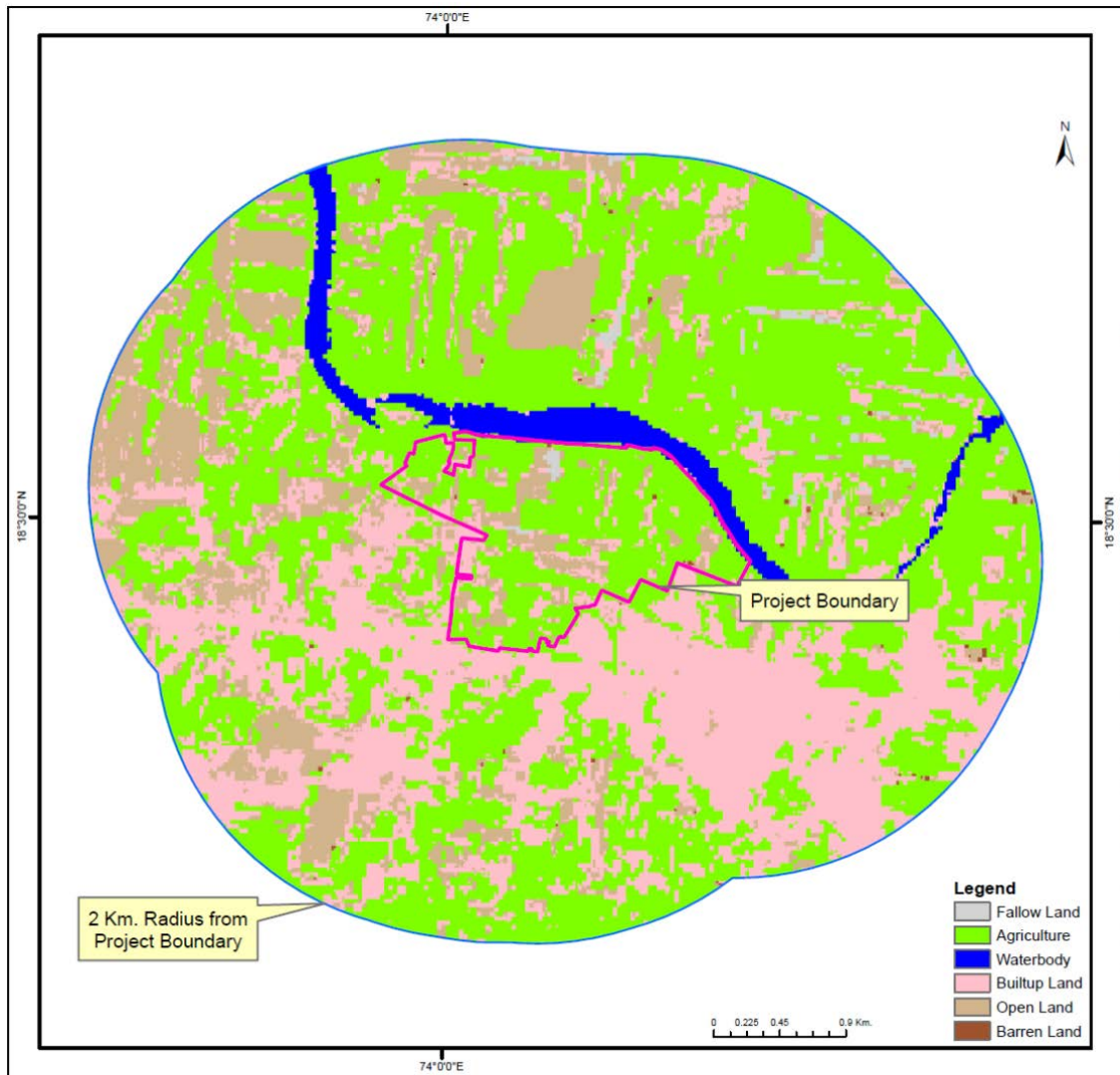


Fig. 3.5: Land Use Map of 2 Km

Description of the Land Use Classes of the study area:

Built up Land:

It is defined as an area of human habitat developed due to non-agriculture use. The built-up land in 10 km radius from project site comprises of villages, towns, panchayat and revenue villages that include buildings, Industries, factories, transport, communications, utilities in association with water and vegetation. Out of total area, 148 sq. Km area comes under built-up land class.

Agriculture and Vegetation:

The vegetation class use is a function of land productivity and land utilization practices over a period of time. It is an area within the notified forest boundary bearing an association of predominantly of trees and other vegetation types capable of producing timber and other forest produces. These lands are generally occupying the topographically high regions. This land use/land cover class (Agriculture Vegetation, forest vegetation and mangroves area) in the study area covered 114 sq. km. area under Agriculture Vegetation. This is 30% out of area.

Water Bodies:

This category comprises areas with surface water, either impounded in the form of ponds, lakes, Ocean and reservoirs or flowing as streams, rivers, canals etc. These are seen clearly on the satellite

image in blue to dark blue or cyan color depending on the depth of water. These areas were identified and mapped as water bodies; this unit is spatially distributed in 1 sq. km area. 3% of study area is covered by Mula-Mutha River.

Fallow Land, Barren Land and Open Land:

Open land described as degraded land which can be brought under vegetative cover with reasonable effort and which is currently under-utilized and land which is deteriorating due to lack of appropriate water and soil management or on account of natural causes. Wastelands can result from inherent/imposed constraints such as, by location, environment, chemical and physical properties of the soil or financial or management constraints. Within study area most of area comes under Open Land class which is 99 sq. km. (26 %) out of area.

Fallow land is a piece of land that is normally used for farming but that is left with no crops on it for a season in order to let it recover its fertility is an example of land that would be described as fallow. Out of total area 3 sq. km area found under this class. Which is 1 % of total area. 16 Sq.Km area found under barren land which is found in patches.

3.1.3 Physiography and Soil Types:

Generalized sub-soil profile for the investigated area is described below. The substratum can be classified in layers as described below. The stratification at site may not be in the same order as listed below.

Layer I: Brownish salty clay with gravels

Layer II: Completely disintegrated rock recovered as sandy gravel

Layer III: Highly to moderately weathered porphyritic basalt with white & green in flings (RQD<25%)

Layer IV: Slightly to moderately weathered porphyritic/amygdaloidal basalt with white & green infillings (RQD>25%)

Determination of soil quality at the project site is important because biological productivity including plant and animal health is dependent on the soil which will ultimately be responsible for overall environmental quality of the area. Soil sampling was done to further establish the baseline characteristics and to assess the anticipated impacts due to proposed project. Soil samples have been collected from the project site.

Sampling Frequency: Once at project site

Sampling equipment: Sample collection is done manually using hammer and container tube for collecting undisturbed top soil.

Sampling Results: The soil analysis methodology and results are given below.

Table 3.2: Soil Sampling Results

Parameter	On Project Site	1Km Towards N side from site	500 m Towards NE side from project site	UNIT
Colour	Light Brown	Brown	Dark Brown	-
Bulk Density	1035	1061	1050	kg/m ³
pH	8.3	8.0	7.8	--
Electrical Conductivity	0.294	0.151	0.192	mS/cm
Moisture Content	21.8	12.4	12.9	%
Organic Matter	1.8	1.7	1.5	%
Total Organic Carbon	1.02	0.98	0.8	%
Cation Exchange Capacity	21.4	45.3	21.4	meq/100g
Water Holding Capacity	59.4	54.7	66.6	%
Calcium as Ca	32	32	48	mg/kg
Magnesium as Mg	48	38	1061	mg/kg

Sodium as Na	69	32	52	mg/kg
Potassium as K	4	4	7	mg/kg
Sulphates as SO ₄ ²⁻	33	20	48	mg/kg
Chlorides as Cl ⁻	126	97	167	mg/kg
Exchangeable Calcium as Ca	0.158	0.143	0.133	mol/kg
Exchangeable Magnesium as Mg	0.237	0.104	0.129	mol/kg
Exchangeable Sodium as Na	0.288	0.017	1.630	mol/kg
Exchangeable Potassium as K	0.010	0.010	0.008	mol/kg
Available Nitrogen as N	544	284	234	kg/ha
Available Phosphorous as P ₂ O ₅	50	213	66	kg/ha
Available Potassium as K ₂ O	374	373	435	kg/ha
Cadmium as Cd	<0.5	<0.5	<0.5	mg/kg
Chromium as Cr	106	115	139	mg/kg
Copper as Cu	251	269	256	mg/kg
Cobalt as Co	69	60	71	mg/kg
Parameter	On Project Site	1Km Towards N side from site	500 m Towards NE side from project site	UNIT
Nickel as Ni	53	61	69	mg/kg
Lead as Pb	12	14	16	mg/kg
Manganese as Mn	906	1062	1061	mg/kg
Zinc as Zn	142	141	147	mg/kg
Iron Fe	55759	69080	72134	mg/kg

Parameter	1.25 Km Towards E side from site	1 Km Towards SE side from site	700 m Towards S side from site	UNIT
Colour	Brown	Brown	Brown	-
Bulk Density	1019	1067	1084	kg/m ³
pH	8.3	8.8	8.2	--
Electrical Conductivity	0.264	0.321	0.385	mS/cm
Moisture Content	5.7	18.5	17.7	%
Organic Matter	1.8	1.4	1.3	%
Total Organic Carbon	1.0	0.8	0.8	%
Cation Exchange Capacity	37.5	12.1	38.4	meq/100g
Water Holding Capacity	64.8	60.1	53.7	%
Calcium as Ca	79	64	48	mg/kg
Magnesium as Mg	993	905	58	mg/kg
Sodium as Na	63	133	70	mg/kg
Potassium as K	9	7	6	mg/kg
Sulphates as SO ₄ ²⁻	69	66	139	mg/kg
Chlorides as Cl ⁻	87	165	117	mg/kg

Exchangeable Calcium as Ca	0.281	0.370	0.533	mol/kg
Exchangeable Magnesium as Mg	0.064	0.148	0.208	mol/kg
Exchangeable Sodium as Na	0.551	1.936	1.568	mol/kg
Exchangeable Potassium as K	0.006	0.008	0.010	mol/kg
Available Nitrogen as N	176	231	321	kg/ha
Available Phosphorous as P ₂ O ₅	149	240	51	kg/ha
Available Potassium as K ₂ O	474	393	468	kg/ha
Cadmium as Cd	<0.5	<0.5	<0.5	mg/kg
Chromium as Cr	146	190	219	mg/kg
Copper as Cu	214	236	255	mg/kg
Cobalt as Co	80	59	49	mg/kg
Nickel as Ni	52	57	51	mg/kg
Parameter	1.25 Km Towards E side from site	1 Km Towards SE side from site	700 m Towards S side from site	UNIT
Lead as Pb	2.8	<10	12	mg/kg
Manganese as Mn	993	905	954	mg/kg
Zinc as Zn	129	105	139	mg/kg
Iron Fe	52984	61036	82670	mg/kg

Parameter	400 m Towards W side from project site	1.2 Km Towards NW side from project site	UNIT
Colour	Dark Brown	Brown	-
Bulk Density	1041	1058	kg/m ³
pH	8.0	8.6	--
Electrical Conductivity	0.169	0.301	mS/cm
Moisture Content	11.8	15.8	%
Organic Matter	1.3	1.2	%
Total Organic Carbon	0.7	0.7	%
Cation Exchange Capacity	17.4	41.5	meq/100g
Water Holding Capacity	49.6	64.8	%
Calcium as Ca	63	79	mg/kg
Magnesium as Mg	29	38	mg/kg
Sodium as Na	85	79	mg/kg
Potassium as K	4	20	mg/kg
Sulphates as SO ₄ ²⁻	160	35	mg/kg
Chlorides as Cl ⁻	58	78	mg/kg
Exchangeable Calcium as Ca	0.345	0.316	mol/kg

Exchangeable Magnesium as Mg	0.138	0.202	mol/kg
Exchangeable Sodium as Na	1.042	0.040	mol/kg
Exchangeable Potassium as K	0.012	0.005	mol/kg
Available Nitrogen as N	258	115	kg/ha
Available Phosphorous as P ₂ O ₅	277	191	kg/ha
Available Potassium as K ₂ O	448	777	kg/ha
Cadmium as Cd	<0.5	<0.5	mg/kg
Chromium as Cr	140	150	mg/kg
Copper as Cu	261	233	mg/kg
Cobalt as Co	71	80	mg/kg
Nickel as Ni	56	79	mg/kg
Lead as Pb	16	<10	mg/kg
Manganese as Mn	961	1039	mg/kg
Zinc as Zn	139	126	mg/kg
Iron Fe	67205	56681	mg/kg

Conclusion: From the soil sampling results, the heavy metal concentration is within the prescribed limits. Soil is suitable for construction and habitation.

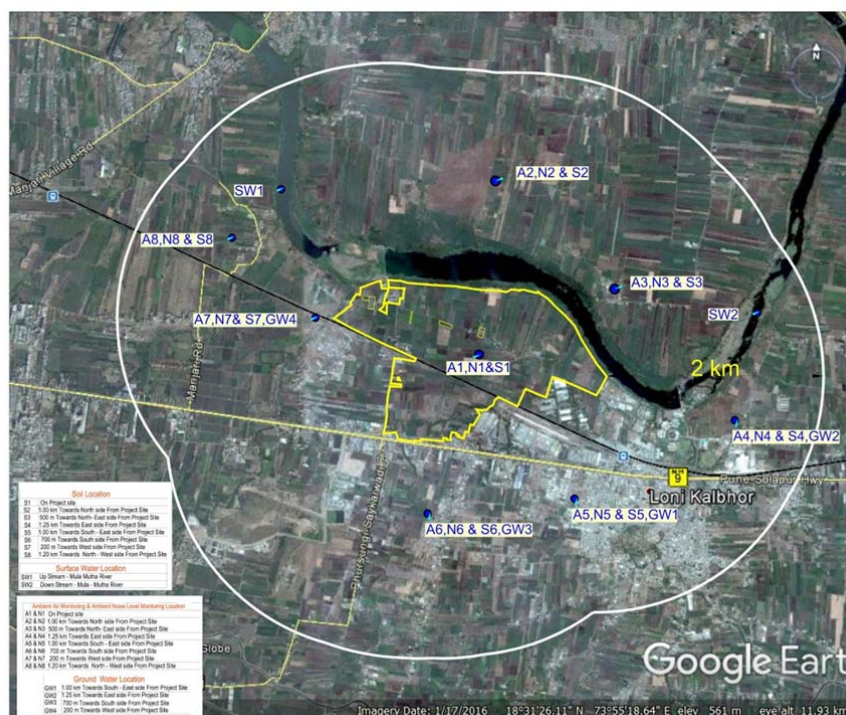


Fig. 3.6: Sampling Locations for Baseline Monitoring

3.2 Water Environment

The main source of water supply for the project is through Irrigation department water supply network. Rainwater collection, recycling of treated sewage and water tankers will be used as an alternative source of water and would be used to meet the requirement of the activities.

3.2.1 Surface water:

Mula-Mutha River, which is one of the important rivers in Pune district flows within 10 Km from the project site.

Table 3.3: Surface Water Monitoring Results

Sr. No.	Parameter	Up Stream-Mula Mutha River	Down Stream-Mula Mutha River	Unit
1.	Colour	BDL[DL=5]	BDL[DL=5]	Hazen
2.	Odor	Agreeable	Agreeable	-
3.	Temperature	27.2	27.4	⁰ C
4.	Turbidity	6.8	4.6	NTU
5.	pH*	7.5	7.4	-
6.	Electrical Conductivity*	520	490	μS/cm
7.	Total Dissolved Solids*	322	308	mg/L
8.	Total suspended Solids*	14	10	mg/L
9.	Total Hardness as CaCO ₃ *	212	204	mg/L
10.	Ammonical Nitrogen as NH ₃ -N*	BDL[DL=2]	BDL[DL=2]	mg/L
11.	Nitrates as NO ₃ ⁻ N	2.06	1.86	mg/L
12.	Phosphates as PO ₄ ³⁻	3.45	3.44	mg/L
13.	Biochemical Oxygen Demand (27 ⁰ C, 3Days)	8.6	5.5	mg/L
14.	Chemical Oxygen Demand*	44	36	mg/L
15.	Dissolved Oxygen*	4.8	5.2	mg/L
16.	Potassium as K	2.5	1.9	mg/L
17.	Sodium as Na	28.4	24.6	mg/L
18.	Calcium as Ca*	50	51	mg/L
19.	Magnesium as Mg*	21	18	mg/L
20.	Carbonates (CO ₃ ⁻²) as CaCO ₃	BDL[DL=1]	BDL[DL=1]	mg/L
21.	Bicarbonates as (HCO ₃ ⁻) as CaCO ₃	199	195	mg/L
22.	Chlorides as Cl ⁻ *	47	41	mg/L
23.	Sulphates as SO ₄ ²⁻	40	42	mg/L
24.	Fluoride as F ⁻	0.57	0.62	mg/L
25.	Boron as B	0.1	0.1	mg/L
26.	Iron as Fe*	BDL[DL=0.5]	BDL[DL=0.5]	mg/L
27.	Zinc as Zn*	BDL[DL=0.1]	BDL[DL=0.1]	mg/L
28.	Total Coliform Bacteria	1600	1600	MPN/100 ml
29.	<i>Fecal coliform</i>	70	34	MPN/100 ml
30.	<i>E. Coli</i>	Present	Present	-

Conclusion: The surface water samples are compared with Water Quality Standard for best designated usage by CPCB. Above water samples comes under “Category D”; which is useful for ‘Propagation of Wild life and Fisheries’.

3.2.2 Groundwater:

Geology plays important role in the occurrence and movement of ground water. The surface as well as subsurface geological formation decides the scope of ground water development and possibility of artificial recharge in the Aquifer system at a particular depth. The hydro geological characteristics can be well understood from existing Dug wells / Borewells in a particular area. The investigations were

conducted in two parts, viz a. Hydro geological and b. Geophysical (Electrical Resistivity). The details of groundwater results are attached as annexure.

(A) Hydro-Geological :

Field traverses were taken over the entire Project area to study topography, geology and hydrological conditions. These aspects have relevance with the occurrence and movement of ground water and also strengthening the Aquifer system. This also helps in understanding the overall hydro geological conditions of the area. The observations are as below.

(i) Topography:-

Topographically the Project area is situated in almost a plain terrain with a land sloping in northern direction, adjoining Mula Mutha River. Not much ups and downs are observed during the field traverses. The southern part of the area is comparatively slightly elevated (height of 546 Mt. above M.S.L.) from where; the land has a gentle slope in northern direction. (530 Mt. above M.S.L.) The east central part indicates slightly elevated land mass, however, overall a drop of about 16 Mt. is observed.

ii) Geology:-

The area is covered with Deccan Trap Basaltic rock formation. Products of weathered Basalt could be observed in the area. Black Cotton soil followed by highly weathered Basalt (i.e. Murum) is commonly noticed in the fields. In the adjoining parts of the River, (North) moderately weathered fractured Basalt could be seen at the surface. In the western parts, weathered vesicular zeolitic Basalt is observed. The surface exposures of Basalt appear favorable from ground water recharging point of view.

The Basaltic lava flows are normally horizontally disposed over a wide stretch. The flows have layered sequences with varying thickness. The water bearing properties of these flows depend upon the intensity of weathering and fracturing/jointing, which provides availability of open space within the rock for storage and movement of ground water. The thickness of weathering varies up to 20 Mt. The vesicular zeolitic Basalt along with, fractured/jointed Basalt forms important Aquifer system in the area, which is justified by the presence of dug wells and bore wells.

(iii) Hydrology:-

Hydrological characteristics are well understood from the existing dug wells/bore wells in the area. During the survey, 11(eleven) dug wells were examined, along with the bore wells at places. The wells are showing good performance as 90% irrigation is for Sugarcane. The seasonal crops like, Bajara, Wheat, vegetables are also taken up.

The dug wells are ranging in depth from 8Mt. to 15 Mt. with a diameter of 6 Mt. to 10 Mt. The wells are installed with the Electric Motors, majority 5 HP capacity. The wells are functioning in summer months also. The water levels at the time of visit were ranging from 6 to 12 Mt. The minimum yield of the wells varies from 210 to 225 KLPD during winter season and 80 to 100 KLPD during summer season.

The depth of the bore wells couldn't be measured precisely as these are installed with pumps of 5 HP capacities. The reported depth of the bore wells is about 60 Mt.

For irrigation purpose, Lift schemes from Mula Mutha River also exist. (River at half a Kilometer from the Project area) The water spread in the fields from the Lift schemes helps in ground water

recharging. As a part of water conservation, at many places, sprinkler irrigation system has been installed. The area being covered with Deccan Trap Basalt and considering the performance of existing dug wells, the trend of water levels can be predicted as below.

Pre Monsoon- 12 to 15 Mt. below ground level.

Post Monsoon- 4 to 6 Mt. below ground level.

Rate of Infiltration-

The area is covered with Black cotton soil. The measured constant infiltration rate for ploughed Black Cotton soil is 1.60 cm/hr.

(Reference- Research paper by student of Department of Civil Engineering, Bharati Vidyapeeth Deemed University, College of Engineering, Pune-43, also F.A.O. document on Infiltration rate and Infiltration test.)

(B) Geophysical (Electrical Resistivity)

In order to ascertain the physical properties of rock below surface, Geophysical investigation was carried out. For establishing the continuity of geological formations over the area, Vertical Electrical Soundings were taken at various places. In all 9 (nine) such soundings were conducted. The data obtained has been interpreted and analyzed and on the basis of which, geological logs have been prepared. (Appended) The findings are as below.

1. The Basalt rock has appreciable thickness of weathering (Murum) ranging in thickness from 3 to 8 Mt.
2. Low resistivity values are recorded; this may be due to moisture content of the soil.(wetness)
3. The resistivity values appear to be quite fluctuating at places. This may be due to soft formation immediately followed by comparatively hard formation below and Vis-a Vis. However; it is compatible with the Aquifer characteristics.
4. The Black Cotton soil has average thickness of about one meter. This is followed by Murum.
5. The weathered fractured/jointed Basalt, as well as, vesicular zeolitic Basalt is the principle Aquifers having good potential.
6. The vesicular zeolitic Basalt appears predominant in the southern part. As we approach in the northern direction, jointed Basalt becomes predominant with fractured Basalt to certain extent.
7. In the eastern, northeastern and western directions, vesicular zeolitic Basalt appears to be more in thickness.
8. The western part of the area is covered with comparatively hard vesicular zeolitic Basalt.
9. The area bears multi Aquifer system. The existence of potential Aquifer is justified by the existing dug wells and bore wells in the area.
10. The area appears favorable for ground water recharging purpose.
11. There is a scope for water conservation, which will help in further strengthening the Aquifer system and benefiting the area in situ and on regional scale.

Ground water sampling was done to further establish the baseline characteristics and to assess the anticipated impacts due to project. Ground water sample has been collected from the project site. Drinking water within the study area will be supplied by Irrigation department during constructional and operational phases of the project. Other requirements of water during constructional phase will be met by water tankers. The parameters selected for analysis of ground water are based on the guidelines given by Central pollution Control Board (CPCB) for ground water bodies (Ref: Guidelines for Water Quality Monitoring by CPCB, Refer to Table 1, Pg-14).

When the results were compared with the standard IS 10500:2012, the characteristics of both ground and drinking water were well within the prescribed limits.

Table 3.4: Groundwater Monitoring Results

Sr. No.	Test Parameter	1 KM Toward SE Direction From Site	1.25 KM Towards E Direction From Site	700 M Towards S Direction From Site	200 M Towards W Direction From Site	IS 10500: 2012 Std.	Unit
1.	Colour*	BDL[DL=5]	BDL[DL=5]	BDL[DL=5]	BDL[DL=5]	--	Hazen
2.	Odor*	Agreeable	Agreeable	Agreeable	Agreeable	--	-
3.	Temperature	26.8	26.2	27.0	27.5	--	⁰ C
4.	Turbidity*	1.0	1.2	1.2	1.8	1	NTU
5.	pH	7.8	7.5	7.8	7.9		-
6.	Electrical Conductivity	658	612	826	568	--	µS/cm
7.	Total Dissolved Solids	365	408	420	352	500	mg/L
8.	Total Hardness as CaCO ₃	265	285	328	267	200	mg/L
9.	Ammonical Nitrogen as NH ₃ -N	BDL[DL=0.1]	BDL[DL=0.1]	BDL[DL=0.1]	BDL[DL=0.1]	0.5	mg/L
10.	Nitrates as NO ₃ ⁻ -N	2.08	5.8	5.8	1.61	45	mg/L
11.	Phosphates as PO ₄ ³⁻	BDL[DL=0.01]	BDL[DL=0.01]	BDL[DL=0.01]	BDL[DL=0.01]	--	mg/L
12.	Biochemical Oxygen Demand (27 ⁰ C, 3Days)	BDL[DL=2]	BDL[DL=2]	BDL[DL=2]	BDL[DL=2]	--	mg/L
13.	Chemical Oxygen Demand	10	10	7	12	--	mg/L
14.	Dissolved Oxygen	4.9	5.2	4.9	5.0	--	mg/L
15.	Potassium as K*	4.8	3.6	8.2	2.5	--	mg/L
16.	Sodium as Na*	36.5	32.7	51.7	25.1	--	mg/L
17.	Calcium as Ca	51	29	93.1	46	75	mg/L
18.	Magnesium as Mg	38	48	37	38	30	mg/L
19.	Carbonates (CO ₃ ⁻²) as CaCO ₃ *	BDL[DL=1]	BDL[DL=1]	BDL[DL=1]	BDL[DL=1]		mg/L
20.	Bicarbonates as (HCO ₃ ⁻) as CaCO ₃ *	232	268	289	215		mg/L
21.	Chlorides as Cl ⁻	50	55	83	28	250	mg/L
22.	Sulphates as SO ₄ ²⁻	42	36	105	59	200	mg/L
23.	Fluoride as F ⁻	0.58	0.42	0.42	0.32	1	mg/L

24.	Boron as B	BDL[DL=0.1]	BDL[DL=0.1]	BDL [DL=0.1]	BDL[DL=0.1]	0.5	mg/L
25.	Iron as Fe	BDL[DL=0.0 6]	BDL[DL=0.0 6]	BDL [DL=0.06]	BDL[DL=0.06]	0.3	mg/L
26.	Zinc as Zn	BDL[DL=0.02]	BDL[DL=0.02]	BDL [DL=0.02]	BDL[DL=0.02]	5	mg/L
27.	Total Coliform Bacteria*	1000	BDL[DL=2]	700	BDL[DL=2]	0	MPN/ 100 ml
28.	<i>Fecal coliform*</i>	18	BDL[DL=2]	10	BDL[DL=2]	0	MPN/ 100 ml
29.	<i>E. Coli*</i>	Absent	Absent	Absent	Absent	Absent	-

Conclusion:

- Values for parameters Total Hardness as CaCO₃ and Magnesium as Mg are exceeded at all location when compared with Drinking Water Standards IS 10500:2012.
- Turbidity parameter exceeds at all location except location 1 (1 KM Toward SE Direction From Site)
- Calcium as Ca parameter are within limit at all location except location no.3 (700 M Towards S Direction From Site)
- Total Coliform Bacteria* & Fecal coliform* parameters are within limit except location no. 1 & location no.3 (respectively 1 KM Toward SE Direction From Site & 700 M Towards S Direction From Site)

3.3 Air Environment

Climate

The climate of Pune is dry. The cold season from November to February is followed by the hot season lasting up to early June. The periods from early June to about the beginning of October constitute the southwest monsoon season. The Succeeding period up to November is the post-monsoon or transition season.

Wind

Winds are in generally light to moderate with an increase in force during the monsoon season. Winds are variable in direction during October. Winds during November and December are generally calm or blow mainly from the east or southeast. In the rest of the year the winds are mainly from directions between southwest and northwest, the south-westerlies and westerlies being more common during the late summer and monsoon seasons than before that period.

Cloud Cover

During the monsoon season the skies are generally heavily clouded or overcast. During the rest of the year the skies are mostly clear or lightly clouded. However, in the cold season, for brief spells of a day or two, occasionally, passing western disturbances cause cloudy weather. In the latter part of the summer season, especially the afternoons, clouding increases.

Rainfall

The average annual rainfall in the district is 800 mm. About 87 per cent of the annual normal rainfall in the district is received during the monsoon months June to September, July being the rainiest month

generally. Some rainfall, mostly in the form of thundershowers is received during the pre-monsoon months of April and May and during the Post-monsoon months.

Humidity

During the monsoon season the humidity is usually between 70 and 80 per cent on the average. The humidity is comparatively less in the rest of the year. Mornings are generally more humid than the afternoons. Summer afternoons with less than 30 per cent humidity are the driest.

3.3.1 Meteorology

Meteorological data for 2014 of Loni Kalbhor, Dist. Pune

The parameters for which data have been collected are:

- Wind speed
- Wind direction
- Temperature
- Relative humidity
- Cloud cover

3.3.2 Metrological Data

Sampling Locations:

The locations for Ambient Air Quality Monitoring were decided based on the guidelines given in EIA manual from MoEF. The purpose is to ascertain the baseline pollutant concentrations in ambient air at residential areas & near road areas.

Results of Ambient Air Monitoring

Methodology and detailed results of ambient air monitoring are given in **Annexure VII. Summary of the results is given below in Table 3.5.**

Table 3.5: Average Ambient Air Quality around the Project Site

AMBIENT AIR QUALITY MONITORING					
STATION – I: ON PROJECT SITE					
Week	PARAMETERS				
	PM-10 µg/m ³	PM – 2.5 µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³
OCTOBER 2016					
I ST	72	32	12	19	
	70	28	15	22	0.6
II ND	65	25	11	18	
	68	30	14	25	
III RD	62	27	18	20	
	68	25	11	17	
IV TH	70	32	16	25	0.8
	68	30	12	20	
NOVEMBER 2016					
I ST	65	31	16	22	
	70	35	18	25	0.5
II ND	68	28	20	28	
	62	26	12	19	
III RD	72	34	15	20	
	64	30	17	24	
IV TH	70	32	19	22	0.7
	66	29	21	25	

DECEMBER 2016					
I ST	64	38	18	27	
	67	33	12	20	0.6
II ND	69	40	15	21	
	74	42	17	24	
III RD	65	38	20	25	
	68	32	14	22	
IV TH	60	43	12	20	0.9
	57	40	15	25	
Average	67	33	15	22	0.66
Min.	57	25	11	17	0.5
Max.	74	43	21	28	0.9
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

STATION – II: 1 KM TOWARDS NORTH SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM -2.5 $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NOx $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	55	25	11	20	
	59	28	15	22	0.5
II ND	62	30	12	25	
	57	24	14	22	
III RD	60	26	12	19	
	65	29	16	21	
IV TH	58	25	11	24	0.6
	60	28	12	20	
NOVEMBER 2016					
I ST	52	26	15	19	
	56	29	11	21	0.7
II ND	60	31	18	25	
	55	22	12	20	
III RD	58	27	11	18	
	52	25	13	20	
IV TH	50	22	15	17	0.5
	54	24	12	19	
DECEMBER 2016					
I ST	58	27	11	27	
	62	30	15	23	0.8
II ND	60	28	13	35	
	55	25	18	30	
III RD	59	27	13	27	
	61	29	20	29	

IV TH	57	25	14	24	0.6
	55	22	15	29	
Average	58	26	14	23	0.62
Min.	50	22	11	17	0.5
Max.	65	31	20	35	0.8
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NO_x ($\mu\text{g}/\text{m}^3$)	CO (mg/m³)
Industrial, Residential & Other area	100	60	80	80	4

STATION – III: 500 METERS TOWARDS NORTH EAST SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM – 2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NO_x $\mu\text{g}/\text{m}^3$	CO mg/m³
OCTOBER 2016					
I ST	58	27	12	19	
	62	30	15	22	0.6
II ND	60	29	11	25	
	55	22	16	20	
III RD	56	26	12	27	
	59	25	12	26	
IV TH	61	30	11	20	0.8
	53	28	13	18	
NOVEMBER 2016					
I ST	53	26	11	19	
	57	26	13	22	0.5
II ND	51	21	12	20	
	59	29	15	19	
III RD	55	25	11	18	
	60	29	12	20	
IV TH	54	24	16	22	0.7
	58	26	11	17	
DECEMBER 2016					
I ST	55	27	13	20	
	58	29	15	22	0.6
II ND	60	25	11	18	
	52	22	15	23	
III RD	50	23	12	21	
	53	21	14	19	
IV TH	55	24	11	20	0.5
	58	27	12	22	
Average	56	26	13	21	0.62
Min.	50	21	11	17	0.5
Max.	62	30	16	27	0.8
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5	SO₂	NO_x	CO

		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4
STATION – IV:1.25 KM TOWARDS EAST SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM – 2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NOx $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	65	30	18	25	
	70	33	20	28	0.7
II ND	62	25	15	20	
	59	26	22	26	
III RD	61	25	16	21	
	65	30	17	23	
IV TH	67	32	12	19	0.6
	59	27	15	24	
NOVEMBER 2016					
I ST	57	22	12	19	
	60	30	15	21	0.9
II ND	55	25	11	20	
	59	29	16	22	
III RD	61	27	18	25	
	62	30	12	24	
IV TH	55	25	14	23	1.0
	60	29	16	21	
DECEMBER 2016					
I ST	62	26	16	23	
	58	22	12	26	0.5
II ND	65	29	15	21	
	68	31	11	20	
III RD	70	33	17	19	
	72	29	19	22	
IV TH	67	27	15	28	1.1
	65	25	20	24	
Average	63	28	16	23	0.8
Min.	55	22	11	19	0.5
Max.	72	33	22	28	1.1
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

STATION –V: 1 KM TOWARDS SOUTH EAST SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM – 2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NOx $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	70	32	18	26	
	72	35	20	29	0.9
II ND	65	28	19	30	
	60	25	23	29	
III RD	68	36	25	28	

	71	38	20	26	
IV TH	67	35	24	29	1.2
	63	30	26	30	
NOVEMBER 2016					
I ST	69	27	20	27	
	72	36	25	32	1.5
II ND	70	34	23	29	
	64	30	26	30	
III RD	67	33	18	26	
	63	29	21	29	
IV TH	65	27	24	30	1.2
	71	38	27	32	
DECEMBER 2016					
I ST	75	36	22	29	
	72	30	18	26	1.0
II ND	67	25	25	32	
	69	28	24	30	
III RD	62	25	19	25	
	67	29	23	29	
IV TH	70	36	20	26	1.8
	64	35	21	27	
Average	68	32	22	29	1.3
Min.	60	25	18	25	0.9
Max.	75	38	27	32	1.8
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NO_x ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

STATION -VI: 700 METERS TOWARDS SOUTH SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM - 2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NO_x $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	70	35	19	27	
	65	32	22	30	0.8
II ND	72	40	20	25	
	67	29	23	27	
III RD	69	32	19	24	
	71	37	22	28	
IV TH	62	29	17	20	1.2
	66	33	19	27	
NOVEMBER 2016					
I ST	73	40	21	29	
	69	35	27	32	0..7
II ND	75	37	19	22	
	65	30	21	29	
III RD	70	32	18	20	

	62	29	22	30	
IV TH	65	34	20	22	0.5
	68	38	19	23	
DECEMBER 2016					
I ST	61	27	15	19	
	57	25	19	24	1.0
II ND	55	23	21	28	
	62	29	18	23	
III RD	65	28	20	29	
	70	35	19	20	
IV TH	61	29	17	28	0.6
	67	25	20	24	
Average	66	32	20	25	0.78
Min.	55	23	15	19	0.5
Max.	75	40	27	32	1.2
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NO_x ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

STATION -VII: 200 METERS TOWARDS WEST SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM - 2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NO_x $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	62	29	15	21	
	59	25	18	23	0.8
II ND	55	22	16	25	
	57	25	19	22	
III RD	61	28	21	27	
	62	25	17	22	
IV TH	58	22	15	20	0.5
	65	30	12	19	
NOVEMBER 2016					
I ST	58	22	13	21	
	61	29	17	25	0.9
II ND	57	25	14	19	
	60	28	15	24	
III RD	62	22	16	20	
	65	27	11	18	
IV TH	58	27	17	23	1.1
	60	31	12	20	
DECEMBER 2016					
I ST	59	24	14	21	
	62	28	18	23	0.5
II ND	57	22	16	25	
	65	31	20	27	
III RD	61	29	17	25	
	58	23	13	18	

IV TH	59	27	18	24	0.7
	64	30	20	24	
Average	60	26	16	22	0.75
Min.	55	22	11	18	0.5
Max.	65	31	21	27	1.1
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NO_x ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

STATION -VIII: 1.20 KM TOWARDS NORTH WEST SIDE FROM PROJECT SITE					
Week	PARAMETERS				
	PM-10 $\mu\text{g}/\text{m}^3$	PM -2.5 $\mu\text{g}/\text{m}^3$	SO₂ $\mu\text{g}/\text{m}^3$	NO_x $\mu\text{g}/\text{m}^3$	CO mg/m^3
OCTOBER 2016					
I ST	60	28	18	22	
	55	24	20	27	0.6
II ND	58	29	21	29	
	61	30	19	24	
III RD	57	25	15	19	
	53	22	12	17	
IV TH	59	26	16	21	0.5
	62	29	20	23	
NOVEMBER 2016					
I ST	59	25	16	19	
	62	31	19	23	0.9
II ND	66	30	13	20	
	58	25	12	18	
III RD	55	22	19	25	
	60	28	15	21	
IV TH	57	24	12	19	0.5
	60	29	11	17	
DECEMBER 2016					
I ST	59	27	12	20	
	62	30	15	22	0.9
II ND	55	25	11	18	
	58	29	16	25	
III RD	62	30	14	22	
	68	35	12	19	
IV TH	65	32	11	18	0.8
	60	29	12	17	
Average	60	28	15	21	0.7
Min.	53	22	11	17	0.5
Max.	68	35	21	29	0.9
Permissible Limits		As Per National Ambient Air Quality Standards (NAAQS)			
Location Category	Parameters 24 hourly				1 hourly
	PM-10 ($\mu\text{g}/\text{m}^3$)	PM-2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	NO_x ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Industrial, Residential & Other area	100	60	80	80	4

The permissible standards are as per National Ambient Air Quality Standard (NAAQS) issued by Central Pollution Control Board (CPCB) is B-29016/20/90/PCI-I dated November 18, 2009.

Ambient Air Quality analysis results:

- All the parameters were found to be within the desired limits specified by CPCB.

3.4 Noise Environment

Noise can affect human health and behaviour. Construction equipment and road traffic are the major sources of noise. Baseline noise data of the project area and the neighbourhood habitat areas was ascertained to establish existing conditions of ambient noise in the project site.

3.4.1 Monitoring Methodology of Noise Level

Methodology for monitoring of noise levels is given in **Table 3.6**

Table 3.6: Monitoring Methodology of Noise

Env. Component	Sampling location	Sampling Parameter	Sampling Frequency	Sampling equipment
Ambient Noise levels	5 locations	Decibels – dB (A)	Hourly reading for 24 hours at each location	Noise Level Meter

3.4.2 Noise Level Results

Noise readings were taken at locations 2 Km around the project site. The summary of the results is given below in Table 3.7.

Table 3.7: Noise level Monitoring Location and Readings

LOCATION	STN-I	STN-II	STN – III	STN – IV
TIME (HRS)	AMBIENT NOISE LEVEL READING in dB (A)			
06:00	43.2	45.2	46.7	48.2
07:00	45.7	46.7	46.9	49.1
08:00	46.2	49.2	48.2	49.7
09:00	49.5	50.5	48.7	50.5
10:00	51.7	50.9	49.5	50.8
11:00	52.3	51.4	49.9	52.7
12:00	51.9	52	50.8	52.9
13:00	53.6	52.7	52.7	54.1
14:00	52.7	53.5	53.2	55.2
15:00	54.6	52.4	54.5	56.1
16:00	51.4	56.4	52.2	57.8
17:00	53.2	57.9	51.1	59.2
18:00	52.7	53.4	50.8	60.1
19:00	53.9	50.7	50.6	53.4
20:00	52.7	51.3	50.4	52.5
21:00	52.1	49.5	50.7	51.8
DAY Leq	51.1	51.5	50.4	53.4
22:00	44.2	42.9	46.9	46.8
23:00	42.7	41.7	44.7	45.1
00:00	41.8	41.2	43.8	43.8
01:00	41.5	40.5	42.5	43
02:00	40.9	40.9	42.1	42.5
03:00	40.8	41.3	41.2	42.1

04:00	39.6	39.5	40.7	41.7
05:00	38.9	38.7	39.8	41.2
NIGHT Leq	41.3	40.8	42.7	43.3

- Note: - 1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 06.00 a.m.
3. Station I: On Project Site
4. Station II: 1 Km towards North Side from Project Site
5. Station III: 500 M towards North East Side from Project Site
6. Station IV: 1.25 Km towards East Side from Project Site

LOCATION	STN – V	STN – VI	STN – VII	STN – VIII
TIME (HRS)	AMBIENT NOISE LEVEL READING in dB (A)			
06:00	50.7	49.7	48.7	44.7
07:00	51.6	50.6	48.2	48.5
08:00	52.2	51.4	48.8	50.2
09:00	52.7	53.6	49.2	52.7
10:00	53.5	55.4	49.7	52.9
11:00	56.8	56.2	50.5	58.5
12:00	56.2	55.2	51.4	59.1
13:00	57.1	57.2	52.3	56.4
14:00	57.4	56.5	53.4	56
15:00	56.5	55.2	52.5	55.8
16:00	54.7	53.4	52	52.4
17:00	55.9	54.6	51.9	52
18:00	53.6	55.1	51.6	51.5
19:00	53.2	53.2	50.2	51
20:00	53	52.7	49.8	51.2
21:00	52.7	51.6	48.6	50.7
DAY Leq	54.2	53.9	50.6	52.7
22:00	51	46.2	46.2	45.7
23:00	47.6	46	44.2	43.2
00:00	43.8	45.7	41.7	42.5
01:00	43.2	44.8	40.2	41.2
02:00	42.5	44.2	40.1	40.8
03:00	41.6	43.7	39.8	40.5
04:00	41.1	41.2	39.5	39.6
05:00	40.7	40.7	38.2	39
NIGHT Leq	43.9	44.1	38.1	41.6

- Note: - 1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 06.00 a.m.
3. Station V: Kadam Wasti (South East Side from Project Site)
4. Station VI: 700 m towards South Side from Project Site
5. Station VII: 200 m towards West Side from Project Site
6. Station VIII: 1.2 km towards North West Side from Project Site

Table 3.8: Ambient Noise Levels Standards Specified By CPCB

Category Of Area	Limits in dB (A) L_{eq}	
	Day Time (6 AM – 10 PM)	Night Time (10 PM – 6 AM)
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Result: From the analysis we can interpret that Equivalent Noise levels (L_{eq}) are within the noise level standards prescribed by CPCB.

3.5 Biological Environment

3.5.1 Objectives

The present study was undertaken with the following objectives:

- To assess the nature and distribution of vegetation in and around the project site
- To evaluate the distribution of animal life spectra, including avifauna and butterflies, available in this area
- To ascertain whether the proposed project will have any adverse impact on the ecology in and around project areas, and suggest mitigation measures, if needed

3.5.2 Study Area

The proposed project is located at. Kadamwakwasti Village, Taluka -Haveli, Dist- Pune, As per guidelines of MoEF for Environmental Impact Assessment, pertaining to Township and area development projects, total study area is restricted up to 10Km periphery from the project site, of which primary data need to be collected from the area up to 2 Km periphery, while remaining 8Km will be represented by secondary data. The data up to 2 Km were generated with reference to topography, land use, habitats, flora and fauna etc. All observations were undertaken in December 2016 at selected sampling locations

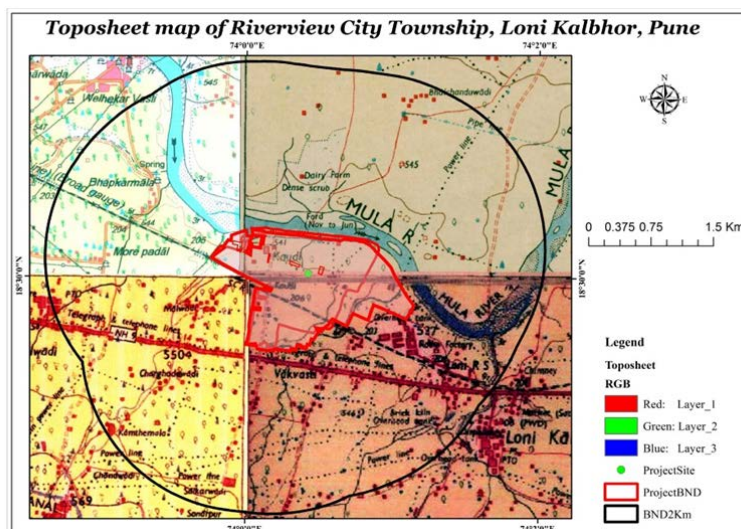


Fig 3.7: Study area for Biological Environment

3.5.3 Methodology

- Primary data have been collected within project site as well as up to 2km from project site
- Identified vegetation patterns at different locations through GIS map and physically surveyed representative sites
- Different types of animals, including avifauna, available in this area, have been recorded
- Secondary data, up to 10 Km boundary from the project site have been collected from literature, forest department, and discussions with local people & NGOs

3.5.4 Agriculture:

The people in the district grow Kharif, Rabbi and perennial cash crops. Most predominant crops are groundnut and sugarcane. Additionally, wheat, coarse cereals, maize, rice, masur, arhar, gram etc. are also cultivated.

In fruits, guava and mango are very famous. A lot of green vegetables too are grown in the area. In the district, some crops are taken where water is available throughout the year. These are **Sugarcane, Beetle leaves, Banana, Peru, Papai, Lemon etc.** Sugarcane is developing in places where it is assured to lift for sugar mills.



Plate: Sugercane (*Saccharum officinarum*) field in study area.



Plate : Banana (*Musa Paradica*) field in study area

3.5.5 Area up to 2 km surroundings of the project site

A. Terrestrial Ecology:

Flora: The floristic survey reveals that the area up to 2 km surroundings of the project site project site possesses different varieties of flora (**Table 3.9**) such as:

Trees: The area shows abundance of *Pongamia pinnata*, *Acacia nilotica*, *Azadirachta indica*, *Pithecellobium dulce*, *Ficus racemosa* etc.

Shrubs: *Vitex negundo*, *Lantana camara*, *Cassia tora* etc.

Herbs: *Ageratum conyzoides*, *Celosia argentia*, *Tridax procumbens* etc.

Table 3.9: Presence of vegetation in up to 10 km surroundings of the project site

	Botanical Name	Common Name	Family
Trees			
1.	* <i>Acacia catechu</i>	Khair	Mimosaceae
2.	* <i>Acacia nilotica</i>	Babhul	Mimosaceae
3.	<i>Aegle marmelos</i>	Bel	Rutaceae

4.	<i>Annona squamosal</i>	Sitaphal	Annonaceae
5.	* <i>Azadiracha Indica</i>	Neem	Maliaceae
6.	<i>Bauhinia racemosa</i>	Apta	Leguminosae
7.	<i>Butea monosperma</i>	Palas	Papilionaceae
8.	<i>Cordia dichotoma</i>	Bhokar	Boraginaceae
9.	<i>Dalbergia sissoo</i>	Shisam	Papilionaceae
10.	<i>Erythrina indica</i>	Pangara	Papilionaceae
11.	<i>Eucalyptus sp.</i>	Nilgiri	Myrtaceae
12.	<i>Ficus arnottiana</i>	Pipal or Peempal	Moraceae
13.	* <i>Ficus benghalensis</i>	Vad / Banyan	Moraceae
14.	* <i>Ficus racemosa</i>	Umbar	Moraceae
15.	<i>Ficus retusa</i>	Nandruk	Moraceae
16.	<i>Ixora arborea</i>	Lokhandi	Rubiaceae
17.	<i>Leucaena leucocephala</i>	Subabhul	Mimosaceae
18.	<i>Limmonia Species</i>	Kavath	Rutaceae
19.	* <i>Mangifera indica</i>	Mango	Ancardiaceae
20.	<i>Moringa oleifera</i>	Shevga	Moringaceae
21.	* <i>Melia azaderach</i>	Neem	Meliaceae
22.	<i>Phyllanthus embelica</i>	Awala	Euphorbiaceae
23.	<i>Pongamia pinnata</i>	Karanj	Papilionaceae
24.	* <i>Pithecellobium dulce</i>	Manila tamrind	Fabaceae
25.	<i>Prosopis juliflora</i>	VediBabhul	Mimosaceae
26.	<i>Prosopis spicigera</i>	Shami or Soundad	Mimosaceae
27.	<i>Sapindus laurifolius</i>	Ritha	Sapindaceae
28.	<i>Strychnos potatorum</i>	Kajra	Noganiaceae
29.	<i>Syzigum cumini</i>	Jambhul	Myrtaceae
30.	* <i>Tamarindus indica</i>	Chinch	Caesalpiniaceae
31.	<i>Tectona grandis</i>	Sag	Verbenaceae
32.	* <i>Zizipus mauritiana</i>	Bor	Rhamanaceae
Shrubs			
33.	<i>Carissa carandas</i>	Karvand	Apocynaceae
34.	* <i>Cassia tora</i>	Takala	Caesalpiniaceae
35.	* <i>Euphorbia neriifolia</i>	Nivdung	Euphorbiaceae
36.	<i>Euphorbia tirucalli</i>	Sher	Euphorbiaceae
37.	* <i>Helicteres isora</i>	Murudseng	Sterculiaceae
38.	* <i>Lantana camara</i>	Ghaneri	Papilionaceae
39.	<i>Ocimum basilicum</i>	Ran tulas	Labiatae
40.	* <i>Vitex negundo</i>	Nirgudi	Verbenaceae
Herbs			
41.	* <i>Achyranthes aspera</i>	Aghada	Amranthaceae
42.	<i>Datura fastuosa</i>	Dhotra	Solanaceae
43.	<i>Lagenaria vulgaris</i>	Dudhani	Cucurbitaceae
44.	<i>Amaranthus tenuifolius</i>	Ghol	Amranthaceae

45.	<i>Corchorustrilocularis</i>	Kaduchinch	Tiliaceae
46.	* <i>Celosia argentea</i>	Kurdu	Amranthaceae
47.	* <i>Calatropisprocera</i>	Rui	Asclepiadaceae
48.	* <i>Cleome viscosa</i>	Tilvan	Capparidaceae
49.	* <i>Tridax procubens</i>	Tantani	Compositeae
Grasses			
50.	* <i>Andropogon contortus</i>	Kusaligavat	Gramineae
51.	* <i>Andropogon pumilus</i>	Gondval	Gramineae
52.	<i>Andropogon triticeus</i>	Bhalekusal	Gramineae
53.	<i>Cenchrus ciliaris</i>	Anjan grass	Gramineae
54.	* <i>Cynodon dactylon</i>	Harali	Gramineae
55.	* <i>Cyperus rotundus</i>	Nagarmotha	Gramineae
56.	<i>Ischaemum pilosum</i>	Kunda	Gramineae
Climbers			
57.	* <i>Abrus precatorius</i>	Guni	Papilionaceae
58.	<i>Capparius zeylanica</i>	Waghoti	Capparidaceae
59.	<i>Cardio spermum Sp.</i>	Kapalphadi	Sapindaceae
60.	* <i>Tinospora Cordifolia</i>	Gulvel	Menispermaceae

Agricultural crops

SN	Common Name	Botanical Name	Family
1.	Ambadi	<i>Hibiscus cannabinus</i>	Malvaceae
2.	Bajri	<i>Pennisetum typhoides</i>	Gramineae
3.	Batata (Potato)	<i>Solanum tuberosum</i>	Solanaceae
4.	Bhat (Paddy)	<i>Oryza sativa</i>	Gramineae
5.	Chavali	<i>Vigna sinensis</i>	Papilionaceae
6.	Chillies	<i>Capsicum sp.</i>	Solanaceae
7.	Cotton	<i>Gossypium hirsutum</i>	Malvaceae
8.	Erand	<i>Ricinus communis</i>	Euphorbiaceae
9.	Gram	<i>Cicer arietinum</i>	Papilionaceae
10.	Groundnut	<i>Arachis hypogaea</i>	Papilionaceae
11.	Jawar	<i>Sorghum vulgare</i>	Gramineae
12.	Karadai	<i>Carthamus tinctorius</i>	Compositeae
13.	Karale	<i>Guizotia abyssinica</i>	Compositeae
14.	Maka (Maize)	<i>Zea mays</i>	Gramineae
15.	Matki	<i>Phaseolus contifolia</i>	Gramineae
16.	Mug	<i>Phaseolus aureus</i>	Papilionaceae
17.	Sugarcane	<i>Saccharum officinarum</i>	Gramineae
18.	Til	<i>Sesamum indicum</i>	Pedaliaceae
19.	Tomato	<i>Lycopersicon lycopersicum</i>	Solanaceae
20.	Tur	<i>Cajanus cajan</i>	Papilionaceae
21.	Udid	<i>Phaseolus mungo</i>	Papilionaceae
22.	Watana	<i>Pisum sativum</i>	Papilionaceae
23.	Wheat	<i>Triticum sativum</i>	Gramineae

Source: *Species recorded by Ultratech team upto 2 km. Secondary data in consultation with Forest Dept officials and records in forest working plan Pune

Fauna:

Methodology

Field observations of fauna were carried out. The commonly available mammals, amphibians, reptiles, butterflies, dragonflies and damselflies within 2km surroundings were enumerated. The method followed for avifauna survey has been outlined in respective section.

As per record of Forest Department Pune, mammals, avifauna, reptiles and amphibians are available in the study area (**Table 3.10**). Fauna were recorded from the region through interaction with the local people and secondary data were obtained from working plan and consultation with forest department officials. Birds were studied by direct observation with the help of “Olympus 10 x 50 DPS I” binocular and were identified by adopting available literature (Grimmett *et al.* 1998).

Table 3.10: List of Dominant Fauna Observed in Study Area

SN	Name	Scientific Name	Conservation status as per Wildlife (Protection) Act (1972)
1	Mammals		
2	*Common langur (Wanar)	<i>Semnopithecus entellus</i>	Not enlisted
3	Common mongoose (Mongoose)	<i>Herpestes edwardsi</i>	Sch – IV
4	*Indian hare (sasa)	<i>Lepus nigricollis</i>	Sch – IV
5	Indian porcupine	<i>Hystrix indica</i>	Sch – IV
6	Jackal (Kolha)	<i>Canis aureus</i>	Not enlisted
7	Indian fox	<i>Vulpes bengalensis</i>	Sch – II
	Reptilia		
1	Banded krait (Manyar)	<i>Bungarus caeruleus</i>	Sch – IV
2	Cobra (Nag)	<i>Naja naja</i>	Sch II
3	*Chameleon (Sarda)	<i>Chameleon zeylanicus</i>	Sch II
4	Bengal monitor Lizard (Ghorpad)	<i>Varanus bengalensis</i>	Sch II
5	*Indian Starred Tortoise (Kasav)	<i>Geochelone elegans</i>	Sch – IV
6	Russel’s Viper (Ghonas)	<i>Viper russelli</i>	Not enlisted
	Birds		
1	*Baya (Weaver bird)	<i>Ploceus philippinus</i>	Sch – IV
2	Black drongo (Kotwal)	<i>Dicrurus adsimilis</i>	Sch – IV
3	Blue rock pigeon (Parwa)	<i>Columba livia</i>	Sch – IV
4	*Brahminy myna	<i>Sturnus pagodarum</i>	Sch – IV
5	Cattle egret (Gaibagla)	<i>Bubulcus ibis</i>	Sch – IV
6	Common babbler	<i>Turdoides caudatus</i>	Sch – IV
8	Crow Pheasant (Bharadwaj)	<i>Centro puseinsensis</i>	Sch – IV
9	Golden oriole (Haldya)	<i>Oriolus oriolus</i>	Sch – IV
10	*House crow (Kawla)	<i>Corvus splendens</i>	Sch – V
11	House sparrow (Chimni)	<i>Passer domesticus</i>	Not enlisted
12	I*ndian myna (Salunki)	<i>Acridotheres tristis</i>	Sch – IV
13	Jungle crow (Domkawla)	<i>Corvus macrorhynchos</i>	Sch – V
14	Koel (Kokila)	<i>Eudynamys scolopacea</i>	Not enlisted

15	Large pied wagtail (Parit)	<i>Motacilla maderaspatensis</i>	Sch – IV
16	*Little egret (Bagla)	<i>Egretta garzetta</i>	Sch – IV
17	*Redvented bulbul (Bulbul)	<i>Pycnonotus cafer</i>	Sch – IV
18	*Redwattled lapwing (Titwi)	<i>Vanellus indicus</i>	Sch – IV
19	Rose ringed parakeet (Popat)	<i>Psittacula krameri</i>	Sch – IV
20	Spot bill duck (Badak)	<i>Anas poecilorhyncha</i>	Sch – IV
21	Spotted owlet (Pingla)	<i>Athene brama</i>	Sch – IV
22	White breasted kingfisher	<i>Halcyon smyrnensis</i>	Sch – IV
23	White throated munia	<i>Lonchura malabarica</i>	Sch – IV
	Butterfly		
1	*Blue Mormon	<i>Papilio polymnestor</i>	Not enlisted
2	Plain Tiger	<i>Danaus chrysippus</i>	Not enlisted
3	*Common Crow	<i>Euploea core</i>	Not enlisted
4	Common Sailer	<i>Neptis hylas</i>	Not enlisted
5	*Common Grass Yellow	<i>Eurema hecabe</i>	Not enlisted
6	Lime butterfly	<i>Papilio demoleus</i>	Not enlisted
7	Blue pansy	<i>Junonia orithya</i>	Not enlisted
8	Common Emigrant	<i>Catopsilia pomona</i>	Not enlisted

Source *Species recorded by Ultratech team upto 2 km. Secondary data in consultation with Forest Dept officials and records in forest working plan Pune

a) Mammals

Common langur, Common mongoose and Rabbit are permanently present in the study area. Among domestic mammals, cow, buffaloes, sheep, goat, donkey, dog and pig were observed. None of these mammals are endangered (Schedule I) as per Wildlife (Protection) Act 1972.

b) Reptiles

Altogether 6 sp. of reptiles were found, of which *Chameleon zeylanicus* was encountered at various places in study area.

c) Avifauna

During the survey, 7 species of birds were noticed. The dominant birds were Indian Myna , Bulbul, House crow, etc. It has been observed that the majority of birds were insectivorous in habit preferring insects, worms and arachnids. None of these birds are endangered (Schedule I) as per Wildlife (Protection) Act 1972 (**Table 3.10**).

d) Insect Diversity

Insects serve as useful indicators of forest biodiversity and are responsible for a large part of the complex interconnections that characterize forest ecosystems. The agricultural activities, perennial sources of water and the nearby forest area had made suitable habitat for the aquatic and terrestrial insects. It was observed that the insects of order Lepidoptera, Odonata were abundantly seen. Different types of butterflies, which act as pollinators, from various families were located. A few like Blue Mormon, Common grass yellow (*Eurema sp.*), Common Indian crow (*Euploea sp.*) etc.were found in the area.

3.5.6 Park and Sanctuaries

No National Park and Sanctuary is present within 10 km from the proposed site.

3.5.7 Aquatic

Methodology

Water sample within 2km periphery were collected from Mula - Mutha river River . To enumerate phytoplankton, unfiltered surface waters were collected from the water bodies and immediately fixed in Lugols Iodine solution so as to prevent adverse effects of light and temperature which might cause rapid decay of organisms. Further microscopic analysis was undertaken in laboratory. For zooplankton, desired volumes of water were filtered through plankton net having mesh size of 75 μ to represent all the available groups. Drop count method for the analysis were followed, as prescribed in APHA (1995).

a) Phytoplankton

Phytoplankton counts, recorded in Mula- Mutha river, are presented in **Table 3.11**. Total algal population was observed 1340 No/ ml. Altogether 19 genera of phytoplankton were recorded (**Table 3.12**). Amongst 3 groups, Cyanophyceae is dominant. In Cyanophyceae group, *Microcystis* sp. and *Anabaena* sp. were dominant while in Chlorophyceae, *Scenedesmus* sp. and *Chlamydomonas* sp. outnumbered others.

Table 3.11: Enumeration of Phytoplankton in Mula Mutha River

SN	Name of sampling locations	Phyto plankton (No/ ml)	Percent composition of algal groups			SWI
			Cyano-phyceae	Chlro-phyceae	Bacillario-phyceae	
1	Mula - Mutha River (Near Loni Kalbhor)	1340	75	24	1	0.89

Ranges of Shannon Wiener Diversity Index

- <1: Indicate poor productive water
- 1-3 Indicate medium productive water
- >3 Indicate good productive water

Table 3.12: Phytoplankton genera observed in Mula Mutha River

SN	Genera
Chlorophyceae	
1.	<i>Ankistrodesmus</i> sp.
2.	<i>Chlamydomonas</i> sp.
3.	<i>Chlorococcum</i> sp.
4.	<i>Closterium</i> sp.
5.	<i>Crucigenia</i> sp.
6.	<i>Desmidium</i> sp.
7.	<i>Scenedesmus</i> sp.
8.	<i>Staurastrum</i> sp.
Cyanophyceae	
1.	<i>Aphanocapsa</i> sp.
2.	<i>Anabena</i> sp.
3.	<i>Chroococcus</i> sp.
4.	<i>Microcystis</i> sp.
5.	<i>Oscillatoria</i> sp.
Bacillariophyceae	
1.	<i>Cyclotella</i> sp.
2.	<i>Navicula</i> sp.
3.	<i>Nitzschia</i> sp.
4.	<i>Surirella</i> sp.

5.	<i>Synedra</i> sp.
6	<i>Fragilaria</i> sp.

b) Zooplankton

Zooplankton counts, recorded at different sampling stations, are presented in **Table 3.13**. Density of zooplankton was 1520 No/m³. Only three groups were recorded of which Cladocera followed by Copepoda dominated over Rotifera.

Table 3.13: Enumeration of Zooplankton in Mula -Mutha River

Zooplankton					
Sample No.	Sampling locations	Zooplankton (No/m ³)	Percent composition of zooplankton in groups		
			Rotifera	Cladocera	Copepoda
1	Mula - Mutha River(NearLoni Kalbhor)	1520	20	50	30

Table 3.14: Zooplankton genera observed in Mula -Mutha River

SN	Zooplankton
	Rotifera
1	<i>Brachionus</i> sp.
2	<i>Dicantophorus</i> sp.
3	<i>Keratella</i> sp.
	Copepoda
4	Nauplius larva.
	Cladocera
5	<i>Alonella</i> sp.
6	<i>Bosmina</i> sp.
7	<i>Moina</i> sp.

3.4.8: Fish Fauna:

Extensive survey was undertaken by Wagh and Ghate (2002) and Chandanshive *et al.* (2004), regarding fresh water fish fauna of Mula- Mutha River. The common list of fishes observed in the river is presented in **Table 3.15**.

Table 3.15: List of fishes recorded in Mula -Mutha River

SN	Fishes
1.	<i>Acanthocobitis moreh</i>
2.	<i>Amblypharyngodon mola</i>
3.	<i>Aorichthys seenghala</i>
4.	<i>Barilius bendelisis</i>
5.	<i>Catla catla</i>
6.	<i>Cirrhinus fulungee</i>
7.	<i>Cirrhinus mrigala</i>
8.	<i>Cirrhinus reba</i>
9.	<i>Crossocheilus latius latius</i>
10.	<i>Cyprinus carpio</i>

11.	<i>Danio aequipinnatus</i>
12.	<i>Danio devario</i>
13.	<i>Garra mullya</i>
14.	<i>Gonoproktopterus kolus</i>
15.	<i>Gonoproktopterus thomassi</i>
16.	<i>Heteropneustes fossilis</i>
17.	<i>Labeo ariza</i>
18.	<i>Labeo boggut</i>
19.	<i>Labeo calbasu</i>
20.	<i>Labeo porcellus</i>
21.	<i>Labeo rohita</i>
22.	<i>Lepidocephalus guntea</i>
23.	<i>Mystus bleekeri</i>
24.	<i>Mystus cavasius</i>
25.	<i>Nemacheilus anguilla</i>
26.	<i>Nemachilichthys ruppelli</i>
27.	<i>Notopterus notopterus pallas</i>
28.	<i>Parapsilorhynchus tentaculatus</i>
29.	<i>Puntius amphibius</i>
30.	<i>Puntius chola</i>
31.	<i>Puntius jerdoni</i>
32.	<i>Puntius ticto</i>
33.	<i>Rasbora daniconius</i>
34.	<i>Rita pavimentatus</i>
35.	<i>Rohtee ogilbii</i>
36.	<i>Salmostoma boopis</i>

Source: Chandanshive *et al.* (2007), Zoos Print Journal 22(5):2693-2694; Shinde, S. E. *et al.* (2009), World J. Zoology 4 (3):176-179.

Area between 2 km and 10 km

Forest

According to Champion and Seth (1967), forest type of study area is classified as mixed deciduous forest. As per discussions and records of Range Forest Offices, Pune, and supported by land use map, the study area is having patches of reserved forests in various blocks at different directions within 5 to 10km from the project site. The list of forest blocks and their distances from project site are presented in **Table 3.16**.

Table 3.16: List of forest blocks within 10 km radius of project site

SN	Forest	Direction	Distance (km)
2	Loni RF	South	7.5
3	Reserved Forest	South	8.0
4	Reserved Forest	SSW	9.0
5	Reserved Forest	SW	8.5
6	Reserved Forest	WSW	6.5
7	Reserved Forest	WSW	7.0
8	Reserved Forest Near Mohammadwadi	WSW	8.0
9	Reserved Forest Near Hadapsar	W	9.0
10	Reserved Forest Near Kesnand	N	9.0
11	Reserved Forest	ENE	6.5

12	Reserved Forest	ENE	8.0
13	Reserved Forest	ENE	10

3.6 Socio-economic Environment

Land Use Pattern

This includes all land classified as forest under any legal enactment dealing with forest or administered as forests. Whether State – owned or private and wooded or simply maintained as forest land. Within the forest area itself there may be occasionally cultivated patches or grazing lands, but such areas too are shown under column 14 as forests .The process of land grants and effecting relevant charges in the basic records of survey and settlement are somewhat protracted and time consuming, Therefore the information based on records is in some cases at least, likely to be different when compared with the actual field situation.

The total forest area of the district is shown in column 14 of village Directory Statement. The forest area in the district is distributed among 1133 villages accounting for 61.44 percent of the villages in the district. The total area under forests in this district is about 169709 .88 hectares and social forestry area is about 1588 .74 hectares as per the position in 1989. Among the 14 tehsils of district Ambegaon accounts for one sixth of the total forest area of the district .The forest produce are divided into two main classes, major and minor. The chief major forest produce is timber and firewood. The chief minor forest produce are Apta and Tembhurni leaves (useful in Bidi manufacturing) in addition to Babul, Tarwad, Barks, Hirda, Honey and wax etc.

Irrigated and Un- irrigated Land.

All the agricultural lands when added together would correspond to the net area sown plus the current and other fallow land. Permanent fallow or “culturable waste” lands are those lying uncultivated as fallow for more than 5 years in succession. The concept of irrigation implies the existence of source of water supply within a reasonable distance and an arrangement to regulate the supply of water according to the day –to - day needs of the crops raised in these fields. Naturally, therefore all areas which are cultivated under purely rain fed conditions are treated as un irrigated lands.The irrigated area is distributed into 1001 villages out of a total of 1844 inhabited villages accounting for 54.28 percent of the total villages in 89 villages irrigation is done by well only. The area irrigated by “rivers” and other sources account for 3.41 percent and 9.43 percent of the total irrigated area respectively .The other used for irrigated are government canals (19.47%) wells (2.16%) Well with electricity (63.32%) and tanks (0.20%) and Lakes (0.76%) Table 18.2 shows the details in respect of area irrigated by various sources. Within the district total cultivable area is 65.17 per cent of the total area.

Table 3.17: Present Land-Use Pattern

#	Particulars	District	Haveli tehsil
1	No. of villages	1866	102
2.	No. of Towns	25	3
2	Total area sq km	15643	1336.27
3	Forest area hect	169709.88	7864
4	Area irrigated hect	194200	8267.17
5	Area un-irrigated hect	777600	49975

6	Culturable waste land hect.	32,918	2477
7	Land put to non agricultural use	64000	4091
8	Barren and uncultivable Land (hectare)	1,04,226	14804

(Source: District Environmental Atlas of Pune District)

From the above it may be seen that-

- The Tehsil covers 5.78 % of the number of villages of the District. This shows that there is substantial urban land use.
- The Tehsil covers 7.25. % of the area of the District. This shows that, among 14 Tehsils, this is one of the major Tehsils, by land use consideration.
- The Tehsil covers 5.12% of the forest area of the District. This shows that, this is not one of the major Tehsils, by forest land use consideration.
- The Tehsil covers only 4.25 % of the area irrigated by source, of the District. This shows that, among 14 Tehsils, this is one of the poorest served Tehsils, by this land use consideration. The efforts in right direction pre-independence and post-independence engineering are responsible for this good outcome.
- The ratio of un irrigated to total area in the Tehsil is 37.3%, while the same figure for the area of the District is 49.7 %. This needs to be improved.

Agriculture:

The people in the district grow Kharif, Rabbi and perennial cash crops. Most predominant crop is groundnut and sugarcane. In addition wheat, coarse cereals, maize, rice, masur-arhar gram is taken.

In fruits Guava and mangoes are very famous. A lot of green vegetables too are grown in the area.

As there is only limited assured water supply, Rabbi crop is possible only partially. Wherever, there is only single crop and that too on limited land, the farmers are poor.

In the district, some crops are taken where water is available for all the months. These are **Sugarcane, Beetle leaves, Banana, Peru, Papai, Lemon etc.** Sugarcane is developing in places where it is assured to lift for sugar mills.

In Mawal and Mulshi, Kamod rice is grown in Kharif while on the eastern side Jowar is taken. There is a limitation due to water availability and soil type.

As a result of poverty and low purchasing power of the farmers, they appear to enter into a vicious circle. The fertilizer consumption is insignificant on the crop land. The use of pesticide/ insecticide is not popular. The crops grown can hardly support the people for the entire year. The situation is now improving, though largely depends on Rains.

Irrigation:

Although, the district gets rains, major part of it all gets washed out due to sloping terrain. The individual land holding is small. Irrigation and communication facilities are scanty. In some tehsils the situation is better. This Tehsil depends on other modes of livelihood and not on cultivation alone, as reflected in Employment. Pune area is not a conventional earthquake-prone area.

Human Settlement

This section discusses the baseline scenario of the socio-economic environment in the study area and anticipated impacts of the proposed expansion of the township project on the socio-economic environment. The issues under focus in this topic are demographic pattern, economic activity, education and literacy profile, etc. The assessment attempts to predict and evaluate the future impacts of the proposed project on socio-economic environment.

Background of the Project:

The project site is located in village: Kadamwak vasti Tal: Haveli Dist: Pune being located in a under developing area with very few new housing and commercial projects have just started there in last five years.

Pune District: Basic Information

Pune District is situated in Maharashtra. The district has a geographical area of 15642 sq. km. and is administratively divided into 5 sub divisions and 14 talukas. As per 2011 census it has a population of 9.4 million representing 8.38% of the state population and is the fourth most populous district in the country. The district has a population density of 603 persons per sq. km. Its population growth rate over the decade 2001-2011 was 30.34%. Pune district has a sex ratio of 910 females for every 1000 males, and a literacy rate of 87.19%. There are around 1,866 villages in the district with 43 towns.

Table 3.18: Demographic Attributes for Pune District (2011)

1.	Area	15642 sq. km.
2.	Population	9.4 million
3.	Decadal Growth rate	30.34%
4.	Male population	5 million
5.	Female population	4.4 million
6.	Density of population (persons per sq. km.)	603
7.	Sex Ratio (females per 1000 males)	910
8.	Literacy	87.19
9.	Male literacy	92.72 %
10.	Female literacy	81.13 %
11.	Urban Population	60.89%

Source: Primary Census Abstract, Census of India 2011

Study area

The study area for socio economic assessment was defined as an area within 2 km radius around the proposed project site as per the statutory requirement of the Ministry of Environment & Forest. Designation of impact zone is based on the EIA guidance manual. As mentioned earlier, the project site is in the Haveli Taluka of Pune District. There are 2 villages in 2 km radius of the project site. There are no towns or cities in the study area. The location is essential rural with moderate in habitation. The nearest city of Pune is 15 km from the project site towards west.

Socio-economic environment of the study area

The description of the socio-economic environment of the study area is based on the secondary sources such as census books, official websites. The census data has been analysed with respect to various demographic and socio-economic parameters for the study area and the results are represented below.

Baseline Status

The data is collected and analysed using secondary sources viz. Census records, District Statistical Abstract, Official Document etc. on following parameters for the study region.

- Demographic structure
- Infrastructure resource base
- Economic attributes
- Health status

The demographic profile, infrastructure facilities and socio-economic condition is being described under different classifications in the following section.

Demographic Profile

Summary of demographic structure with reference to population, household, literacy, community structure and employment are presented in this section. As per 2011 Census, the total population of the study area is 41,757 with 21,769 males and 19,988 females. The demographic status of the study area is shown in Table 3.19.

Table 3.19: Demographic Characteristics of the Study Area

Villages	No. of Households	Total Population	Sex Ratio	Literacy	% of SC	% of ST	average size of household
Kadamwak vasti	4194	19239	916	82.66	21.15	1.09	5
Loni kalbhor	4720	22518	920	82.82	14.17	1.45	5
Total	8914	41757	918	82.75	17.38	1.29	5

There are 8,914 households in the study area and the average size of household is 5 members per household in the study area. The dependent population below 6 years is 5,678 (13.60% of the total population) in the study area.

Sex Ratio

The sex ratio of the study area is 918 females per 1000 males, which is more or less same to the sex ratio of Pune district i.e. 915 and lower than the sex ratio of the state i.e. 929 females per 1000 males. The child sex ratio for the study is only 825 female children per 1000 male children which is very low and shows grim perspective for the future.

SC & ST Population

According to the 2011 census, the ratio of scheduled caste population in the study area to the total population is 17.38% and scheduled tribe population is 1.29%. The overall percentage of scheduled caste and scheduled tribe population of the study area is low. Together they constitute about 18.67% of total population of the study area.

Literacy Rate

In the study area the average literacy rate is 82.75%. The female literacy rate is low in the study area, which is 76.08% as compared to the male literacy rate, which is 88.97%. The female literacy rate is poor as compared to the male literacy in the study area. The literacy rate of Pune district is 86.15% and literacy rate of Maharashtra State is 82.34%, the literacy rate in the study area is low as compared to the literacy rate of Pune district.

Economic Activity

As per the Census 2011, the workforce in the study area is 17299 which constitute 41.13% of the total population of the study area. The male workers constitute 70.76% and female workers constitute 29.24% of the total workers. The total workers comprise of 16126 main workers and 1173 marginal workers.

Main workers¹ constitute 93.22% of the total workers. The remaining 6.78% are marginal workers². The study area has high majority of main workers. Among the main workers, male main workers are 72.41% and female main workers are only 27.59%. As the area is rural in nature and predominant workers are absorbed in farming related activities thus there is high proportion of male main workers.

¹ Main workers were those who had worked for the major part of the year preceding the date of enumeration i.e., those who were engaged in any economically productive activity for 183 days (or six months) or more during the year.

² Marginal workers were those who worked any time at all in the year preceding the enumeration but did not work for a major part of the year, i.e., those who worked for less than 183 days (or six months).

Table 3.20: Status of working population in the study area

Study Area	Work Participation rate	Total Workers and Types of Workers			
		Total workers	Main workers	Marginal Workers	Non Workers
Total	41.13%	17299	16126	1173	24458

The relative importance of the main spheres of economic activity is gauged from the pattern of distribution of total workers according to broad fourfold classification namely, cultivators, agricultural labour, household industry workers and other economic activities. As evident from Fig. 3.5, in the study area, cultivators (20%) and agricultural labour (20%) together constitute 40% of the total workers, while the other workers are high (57%) to total workers. It reflects that other worker category which includes all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc are the dominant workforce in the study area as compared to the agricultural workers which are only 40% of the total workers.

Although the area is rural in nature but its proximity of Pune Metropolitan Area and the MIDC industrial area is the pull factor behind the high number of other workers in the study area. The other workers dominant in the study area are mostly male workers as compared to the female workers.

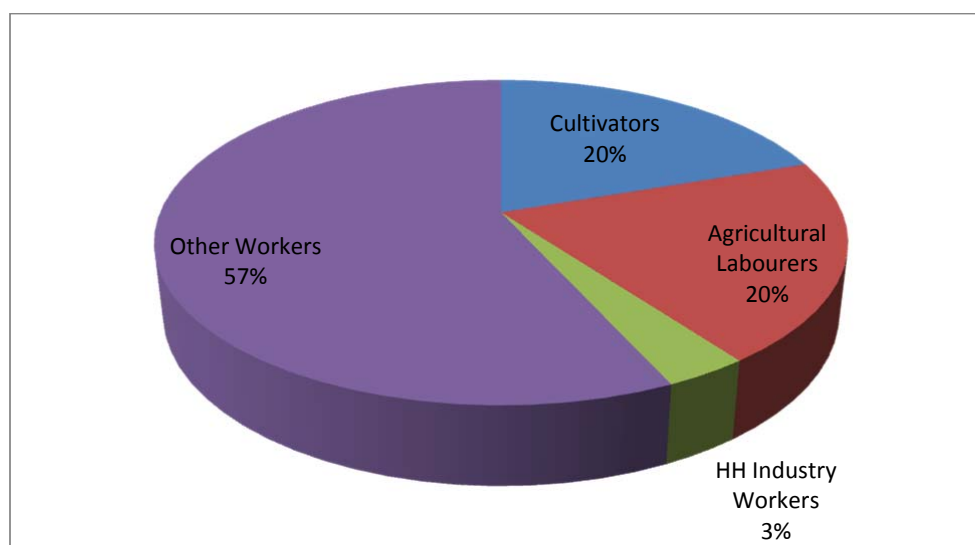


Fig 3.8: Percentage Distribution of Workers in the Study Area

Socio Economic Survey

Socio economic survey was undertaken in a sample of the Kavdigaon village in the Kadamwak vasti gram panchayat of the study area to collect the socio-economic baseline data and analyse the basic infrastructure available which reflects the quality of life of the study area.

The project site visit and observation has been used tool for collecting data about people and processes as part of qualitative research. Special care was taken to observe prevailing socio-economic condition in the sample village and also assess awareness opinion and reaction of the inhabitants about the project.

Village – Kavdigaon

Kavadi is a small village near Pune skirting. It comes under Kadamvak vasti Gram panchayat and is very close to the project site. There were only 30-40 households in the village which belong to farming community.

The village has one govt Marathi medium middle school from class 1 to 7 and anganwadi for small kids. For higher studies some students go to Loni kalbhori which is only 2-3 km from the village. Pune is the nearest town with college and high school for further education. There is no health care facility available in the village. The villagers for health care prefer to go to Loni kalbhori which has private health care facilities.

Most of houses in the villages are pucca and very small numbers of houses are semi-pucca. All the households in the village have power supply facility for domestic use and are using LPG as cooking fuel as well as other purposes, whereas 40% are using firewood as cooking fuel. Major source of drinking water comprises of MJP scheme water supply through pipeline, distributed by the gram panchayat.

Majority of households have individual toilet facility, thus no open defecation is there. The gram panchayat has also built the community toilets for the poor people. Approach road to the village is pucca whereas internal road network is semi pucca and somewhere paved.

Majority of population is not aware of the project. The project should improve the basic infrastructure of the villages around the project. They were of the opinion that project would improve the health care facilities which is the prime need of the villagers.

In general, the people in the study area are satisfied. However, they expect that project should provide employment to local people.

Existing Infrastructure in the Study area

This section analyses the infrastructure facilities like water supply, roads, markets, banks, post offices, schools and electrification in the study area. The study area is on the Pune – Hyderabad Highway as well as the main Pune – Solapur Railway. The Mula-Mutha River passes close to the project site. Given the good transport links, the electrical giant Philips once had a plant near the village Loni. The project site is a location near to the nature, having ancient temple of Ramdara about 2-3 km. It has all the basic amenities at a close distance like schools, markets, hospitals and railway station.

Educational facilities

Besides Zilla parishad schools and other prominent schools in the study area are available for school education such as Vishwashanti Gurukul, Prithviraj Kapoor Memorial High School and Junior College, Angel High School & Junior College, St. Theresa High School, Kanya Prashala, Rainbow International School, The Innovera School.

The study area also has higher education institutions such as S.B.G. Kalbhori Arts Commerce & Science College, MAEER's MIT Institute of Design, Maharashtra Academy of Naval Education & Training, MIT School of Film and Television, Angel College of Science. Also, Pune city at a distance of 10-15 km is a renowned educational centre with many top colleges with numerous discipline and schools providing quality education.

Health care facilities

Excellent health care facilities are available in the study area. There Primary Health Centre (PHC) in Loni kalbhori village is of very good quality and one of the few PHC in Maharashtra to be accredited by NABH. Besides the public health care facility, the study area has a number of private hospitals, both big and small as well as small clinics. Some of the key private hospitals are VishwaRaj Hospital, Shivam Hospital (Multispecialty and Accident Care Centre), Raikar Hospital, Anand Hospital,

Rajaram Borkar Hospital, Chintamani Hospital, Yamunai Hospital & Maternity Home, Amrutvel Childrens Hospital etc.

Post and Telegraph facility is available in the study area. Although phone connections are available in most of the villages but people tend to use mobile phones for communication.

Drinking water is not a problem as most of the villages and towns have the facility of tap water and well water. Water is also sourced from wells & supplied under the supervision of the gram panchayat. Although supply is good but there could be shortage in the summer months. .

Transport & Connectivity in the study area is good as it is located on the National Highway No. 9 connecting Pune to Hyderabad via Solapur and Pune Daund Railway line. The project site is very close to the highway and the highway provides both public (MSRTC, PMPML buses) and private (auto, tempo) travel options for the commuters. Loni railway station is located 1-2 km from the project site and daily 7 set of passenger trains stop at Loni, providing the travel option to the commuter.

Pune is big city, is primarily connected with the rest of India by railways and road. All villages and town (100%) are enjoying power supply facility for all the purposes.

Historical/Archaeological/Cultural Site

No cultural heritage site (temple, mass bathing site during religious festivals, etc) is located close to the project site that could be affected during the construction stage.

Industries

Pune is one of the advanced districts of the state. Adequate transport facilities contribute to this. Pune has all types of facilities- rail, road and air. There are 7 sugar mills, and many pharmaceutical, automobile, and cloth mills. As high as 10% of factories and workers of the state, are from this district alone. Both MIDC and Co-op Industrial sectors have opened Industrial areas.

The important Small scale industries are agricultural tools, pumps, engine, cloth, medicine, rubber-plastic items, soap, nylon, biscuits, electrical appliances, vessels and wooden toys. Pimpri is known from many years for penicillin factory, Mundhawa for paper, Talegaon Dabhade for glass. Junnar has hand-paper making, woolen weaving, Junnr and Khed has oil mills, bidi making, rope making and poultry.

In this area there are no **Minerals** of any economic significance. What one gets is nly the building material from Deccan trap origin and minor disintegrated murum.

Transport System

District has road, rail and air travel facility. 68.44% villages or 80.23% villagers have some communication facility available. Next to Pune city tehsil, Baramati with 94.64% villages served is the best and Junnar tehsil with 21.21 is poorest. Villager with higher population gets the roads quickly. Roads have acted as a pull factor for development and upliftment of the area.

Table 3.21: Roads

#	Type of Road	State PWD	ZillaParishad	Municipal Body	Total
I. Surface wise					
1	Cement Concrete	23	--	12	35
2	Black Topped	1553	356	767	2676
3	Water Bound Macadam	568	2526	80	3174
4	Others	178	4236	43	4457

	Total	2322	7118	902	10342
II.	Category wise				
1	National Highway	311	--	50	361
2	State Highway	61	--	--	61
3	Other State Highway	1194	53	27	1274
4	Major District Road	754	1798	2552	5104
5	Other District Road	2	2042	2044	4088
6	Village Road	--	3225	1	3226
7	Other Developmental Road	--	--	805	805
	Total	2322	7118	902	10342

Mumbai-Bangalore and Mumbai-Hyderabad Highways pass via Pune. Of the roads 17% are National and 27% are State Highways. Almost all the villages are connected by either kaccha or good road. 59.56% of rural population is served by pucca roads, especially near urban centers. 92.19% of bigger villages (having population more than 5000) are connected by pucca road.

Heritage

From this center of activity we have to check whether any sensitive station is nearby as to get affected by this activity. Archaeological Karla caves and Bhaje caves are away and so are Monuments (Sinhgad Fort, Shivneri Fort, Chakan Ground Fort, Raigad Fort, Torna Fort, Tungi Fort, or Tecona Fort). There is no Port and Airport Lohogaon will not get affected. From Religion point, there are many Stations in this District such as Dehu, Alandi, Bhimashankar temple, Sopandeo Samadhi Saswad, Khandoba Temple Jejuri, AshtaVinayak Temple Morgaon, AshtaVinayak Temple Ranjangaon, AshtaVinayak Temple Ozar, AshtaVinayak Temple Theur, AshtaVinayak Temple Lenyadri etc. but these are away. Hill Station, Lonavala and Arvi satellite Station too are at a distance. As all these sensitive points are well outside the influence zone and as nature of activity is not complex or chemical oriented, the proposed activity is not capable of creating any significant effect, let alone adverse.

Environmental Problems

In this District, there are organized industries in industrial estates developed by Government agency MIDC Maharashtra Industrial Development Corporation at many places and notably at Pimpri-chinchwad and Bhosari. Municipal industrial estate is at Hadapsar and so also a few Co-operative estates. Both the Municipal corporations of Pune and Pimpri-Chinchwad and three Cantonment Boards of Dehu road, Khadkee and Pune are riparian. The wastewaters of all these enter into this riverine system of IndrayaniPawnaMulaMutha, which ultimately leads to R. Bhima. The Municipal Corporations especially have not developed cent percent sewage collection and treatment. As a result, the stretch near Pune is classified as Class A-4 water i.e. not fit to use as source for human consumption drinking water. The other problems like industrial air pollution is not a sensitive issue here, but the vehicular air pollution is. There is a large number of vehicles in this agglomeration, which aggravates this problem. Municipal solid waste is a problem common to all local bodies of the State.

This New Township, however, would like to contribute to the solution of these problems in three ways, which will at least aim at not increasing the existing problems, in spite of such big establishment undertake here. For this, this Township will:

1. Collect its own sewage-sullage and treat it for greening, where large number of trees are planned to be planted.
2. The Concept of Township being "Walk to Desired Place", transportation is reduced and corresponding vehicular pollution is avoided.

3. The Organic part of the MSW generated here will be fully composted aerobically and used on our own greenery, and remaining made available to neighboring farmers.

This Township, thus, will try to ease the environmental problems here.

3.7 Chapter Conclusion:

In the third Chapter, the new activity and its environment friendly nature is examined. The present environmental setting is discussed in this Chapter. The new activity alters the land use planning for better, fits in present Government Policy and other related matters are shown. The existing environment (both natural and man-made) is discussed by collective information from many sources. Statistics is provided for various media such as air, noise, water, solids, soils and biology. Present social and economic status is discussed and to what extent, if any, it is sensitive is found out. Proponent of New Construction Township Project is already socially accepted organization and is committed to the ecological restoration and maximizes social benefits. The community development and rehabilitation efforts as may be reasonably expected will be undertaken.

CHAPTER 4

ANTICIPATED IMPACT AND MITIGATION MEASURES

4.0 Introduction

The main objective of this chapter is to identify the environmental impacts due to the project and suggest mitigation measures to avoid anticipated negative impacts of the proposed activity during the construction and operation phase.

Impacts can be classified as direct, indirect and cumulative impacts. These can be further subdivided for convenience and clarity to positive and negative impacts, random and predictable impacts, local and widespread impacts, temporary and permanent impacts, long term and short term impacts, reversible and non-reversible impacts.

The mitigation measures are anticipated by identifying pollution sources characteristics, quantification and prediction during construction and operation phase

The impacts are identified by anticipating the changes that might take place due to the existing activities at the project site. Further, mitigation measures are suggested to maintain the status of environment as described in the baseline study.

The project would create impact on the environment in two distinct phases.

- During the construction Phase which may be regarded as temporary or short term.
- During the Operation phase needing perpetual attention

4.1 Land Environment

4.1.1 During construction phase

Anticipated Impacts may cause due to:

- Storage of construction material/chemicals
- Compaction of soils by earth moving equipment
- Erosion and modification of surface
- Accidental spillage of materials leading to soil contamination.

Mitigation Measures are proposed to make impact low

- All material storages in covered standard store room
- Storage as per material specifications/type, with all precaution of fire norms and leakages
- Proper covering for to prevent damages due to water seepages at go downs especially Cement, Plywood etc.
- Avoiding spillage of waste oil from DG sets by collecting it in a container before handing it over to the authorized recycler approved by CPCB
- Separate area for Hazardous materials and duly cordoned off.
- The solid waste generation due to workers dwelling on the site will be segregated and will be disposed to local body
- Check dams built near construction sites can reduce the quantity of eroded soil particles reaching free-flowing streams or lakes
- Construction plan taking into account the contour of land
- Development of green belt to stop erosion

- Proper selection of sub-contractors working in good faith
- Efforts for avoiding all accidents.

4.1.2 During Operation Phase

Anticipated Impacts may cause due to:

- Domestic wastewater from households mixing with soil
- Domestic solid waste from households mixing with soil

Mitigation Measures are proposed to make impact low

- Segregation and collection of biodegradable & non-biodegradable waste.
- Biodegradable waste will be treated in biogas.
- Non bio-degradable garbage shall be handed over to Authorized agency for disposal.
- Avoiding spillage of waste oil from DG sets by collecting it in a container before handing it over to the authorized recycler approved by CPCB
- Providing Sewage Treatment Plant
- Use of dried STP sludge as manure

4.2 Water Environment:

The source of water is from irrigation Department, which is an assured Surface water source. This is adequate for our purpose. We are not required to tap any ground water as source. The water that will be received from Department of Irrigation Source will be first fully treated in our water works and disinfected. It will be distributed by providing ESR and GSR (Elevated and Ground Service Reservoirs, as may be required). The treated water quality will be fit for drinking purpose as per Indian Standard Specifications.

4.2.1 During Construction Phase

In this period, we shall take water from Potable water Tankers.

Anticipated Impacts may cause due to

- Fluctuating water demand during construction phase for site preparation, water spraying for dust suppression, for construction activities, curing, domestic and other water requirements for labour and staff onsite
- Waste water disposal by construction labour and staff can lead to pollution.
- Water logging creates unsanitary conditions and mosquito breeding at site

Mitigation Measures are proposed to make impact low

- Wastage of water used for construction curing shall be avoided by spraying of water instead of free-flow, making small bund on slab under curing
- Curing chemicals shall be used
- Concrete surface shall be covered with thick cloth/ gunny bags to save water
- Proper management of channelization of water to avoid water logging at site
- No contaminated water will leave the site without treatment. Prefabricated STP shall be provided for labour camp with disinfection as a last step.
- For the rain water there will be a pre-treatment of sedi- flotation before leaving the property. This will avoid escaping oil & grease as well as solid load.

Mobile STP details and disposal

Package sewage treatment will be in place for sewage developed from Labour camp. Capacity of plant will be 80 m³/day. Sewage treatment plant will be of MBBR technology. Recycled water from the STP plant will be used for Construction curing & gardening. Digested dry sludge will be used as manure.

4.2.2 During Operation Phase

In this period, we shall take raw water from Irrigation Department.

Anticipated Impacts may cause due to

- Lowering the infiltration capacity and increased run off.
- Water logging in the low lying areas.
- Stress on existing water supply & generation of waste water.
- Water-borne diseases may appear if sub-standard water is supplied
- Soil contamination due to mixing of untreated sewage

Mitigation Measures are proposed to make impact low

- A full-fledged Water Works for purification of raw water as received from Irrigation Department is provided including filtration and disinfection. Details are given below.
- Use of water efficient technologies to reduce water consumption.
- Water supply will be controlled by providing pre-paid meters
- Collection of sewage in controlled conduits so as to avoid any contamination of soil
- Treatment of waste water into Sewage Treatment Plant, recycling of treated sewage water for HVAC, flushing and gardening. Details are given below.
- Provision of storm water drainage (SWD) system with adequate capacity & proper maintenance of storm water drainage. Details are given below.
- Storm water management (by Rainwater Harvesting) to minimize runoff & erosion. Details are given below.
- Paving blocks on footpaths, parking, walkways and around the building

1) Water Treatment Plant (WTP)

Raw water is first treated in Water Treatment Plant before distribution. WTP of 18 MLD capacity is proposed for the project. Total 3 Modules (6 MLD x 3 = 18.0 MLD of such size & capacity is proposed for Layout planed with 36,347 tenements, Commercial building & amenities as prescribed in Township Layout

Design Basis:

The water treatment plant is proposed on following raw water analysis. We have separately mentioned parameter for raw water from source & treated water after this plant. The raw water will be obtained from canal originated from Khadakwasala Water dam reservoir.

The plant is designed for a total flow of 6000 m³ / day X 3 Modules (18.0 MLD). Plant flow considered is 375 m³/hr & 16 hrs. working is considered. Two streams of 188 m³/hr are considered, which will give us flexibility with design & operation.

Table 4.1: WTP Inlet-Outlet Parameters

Parameter	Raw Water	Treated Water	As per IS10500-2012
Turbidity	25 NTU	less than 1	Less than 1
TDS	100 - 150	100 - 150	< 500 mg/l
Calcium (Ca)	< 75	< 75	< 75 mg/l
Chloride (Cl)	100	<100	<250 mg/l
Residual Chlorine	0.0	<0.2	<0.2 mg/l
Iron (Fe)	0.1	0.1	<0.3 mg/l
Magnesium (Mg)	<30	<30	<30 mg/l
Total Hardness (CaCO ₃)	70 - 100	<200	<200 mg/l
E-coil	Present	Absent	Absent

Treatment scheme:

The raw water from the dam channel source comes by pumping to the inlet chamber. With cascade effect in chamber dissolved oxygen is increased in the water. Water then passed through measuring weir to ensure water flow. Measured water further led to the Flash mixer, through channel. Flash mixer is a high speed mixer which mixes the coagulation chemical like PAC & Alum instantly. Then it goes into Flocculator. Flocculator is a slow speed mixer. In the flocculation chamber flocks are formed to enhance the settling process which is accomplished in the next unit i.e. Secondary settler.

The secondary settler has hopper bottom. The water after coagulation is fed to the settler from bottom side & travels upwards. The surface area is increased by placing specific modules at inclined angle so that the contact time & surface area with water is increased. The flocks formed after coagulation slide down the inclined modules into the hopper bottom & clear liquid overflows into the clear water sump through collection troughs. The flocks settle at the bottom & form sludge. The concentrated sludge will be removed periodically.

The intermediate sump receives the water from settler. This water is further pumped to the Pressure sand filter. Here the turbidity, suspended matter is totally removed.

Then the water goes to the activated carbon filter where odor, color and left out organic matter are removed. The outlet of activated carbon filter falls into the storage tank. The liquid chlorine is dosed online to remove the traces of bacteria after filtration process. This water is further supplied to all neighborhoods.

The sand filter & carbon filters are proposed to backwashed periodically on the basis of differential pressure monitoring due to clog up with impurities. The backwashing of filters is enhanced by using air scouring facility provided with plant.

The online ORP meter is proposed so as to ensure that sufficient chlorine is given to the water in distribution network.

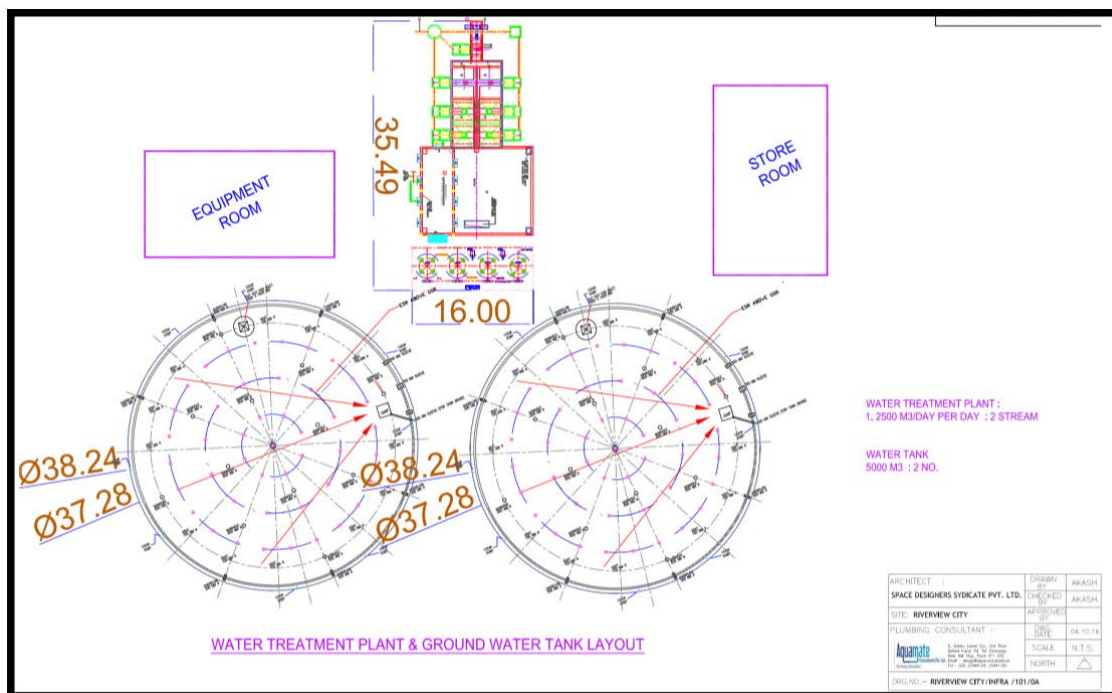


Fig. 4.1: Sample Design of Water Treatment Plan

2) Sewage Treatment Plant (STP)

The plant is designed to treat Sewage generated having following characteristics.

Nature of Waste Water: Sewage

Operating Period: 18 hrs /day

Technology: MBBR

Table 4.2: Inlet & Outlet Parameters of STP

SN	Characteristics	Inlet	Outlet	Unit
1	pH	6 – 9	7 - 8	
2	COD	500 – 600	< 30	mg/lit
3	BOD(3 days @ 27 0C)	300	< 10	mg/lit
4	TSS	200 – 300	< 5	mg/lit
5	Total Nitrogen	120	<50	mg/lit
6	Nitrates	15 – 16	<10	mg/lit
7	Dissolved PO4	13 – 15	<5	mg/lit
8	E-coli	Present	Absent	
9	Oil & Grease	20-30	<10	mg/lit

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in Sewage itself) removes or degrade the organic matter present in the Sewage & at the end clean water is available for the non-potable usage.

1. Pre – Treatment

A) Screening: This is the first unit of the plant in which large or floating materials in the sewage gets arrested and blockage or choking of the downstream equipment can be avoided. This arrested material will be removed manually and then will be disposed off suitably.

B) One Automatic Mechanical Screen is also provided.

C) Oil & Grease trap: Domestic sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes. To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed of properly.

D) Equalization: To absorb variation in quantity and quality of sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank, continuous air agitation is provided. If at site, septic tank is provided then collection tank as well as air agitation is not required. This tank will be closed with R.C.C. slab and vent will be provide this arrangement is for smell and above this slab office, laboratory and panel room is provided.

2. Secondary Treatment

Anoxic Tank: Anoxic tank is provided for de-nitrification process where Nitrogen removal takes place without supply of oxygen in anoxic condition.

Biological Treatment: This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which micro-organism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved. Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks. To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

Clarifier: Gravity overflow from the bioreactor is collected in the clarifier. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank.

Disinfection

3. Sludge dewatering system:

Sludge disposal system: Settled sludge from clarifier will be removed by pumping to the sludge thickener.

4. Decanter: Alfa Laval make decanter centrifugal will be provided for sludge separation.

5. Tertiary treatment: Secondary treated water will be further passed through sand media filter followed by activated carbon filter. Filtered water will be collected in the Treated water Storage tank from where it will be for desired non potable application. Backwashed water from filters will return back to equalization tank.

6. Ozonator: Supernatant from clarifier, flow by gravity to the ozonator. To disinfect the harmful bacteria in the treated water as well as to remove the refractory organics from treated water, in this tank oxygen is dosed with the help of ozonator.

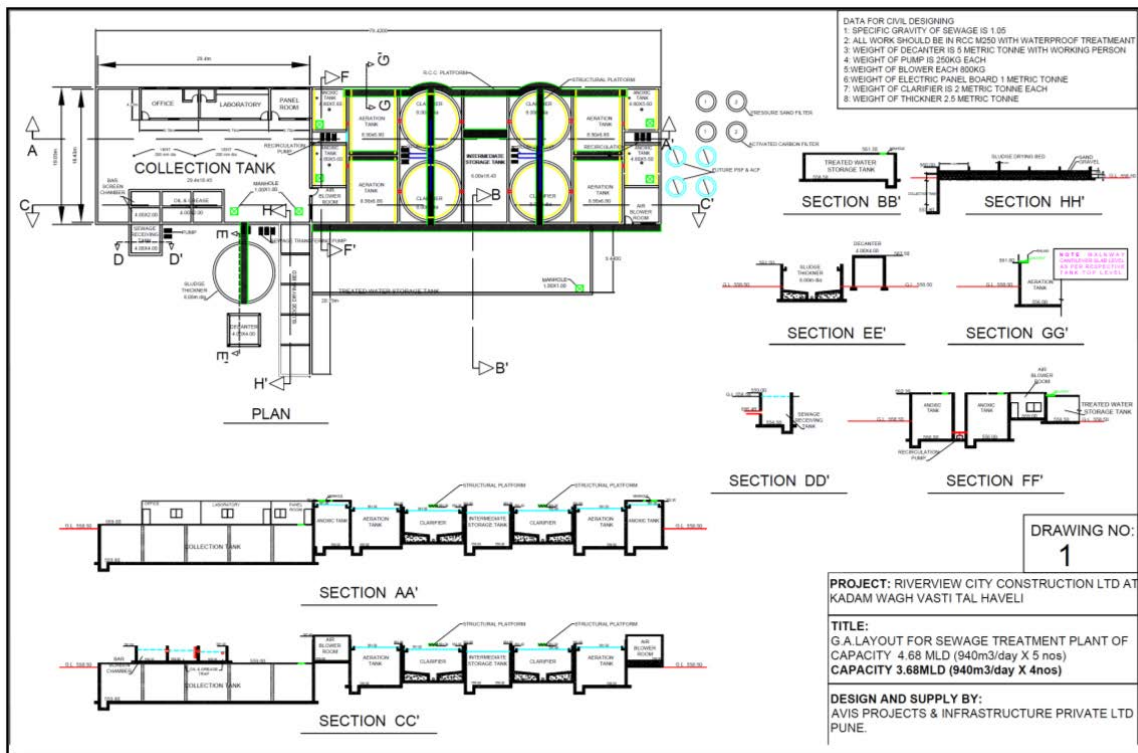
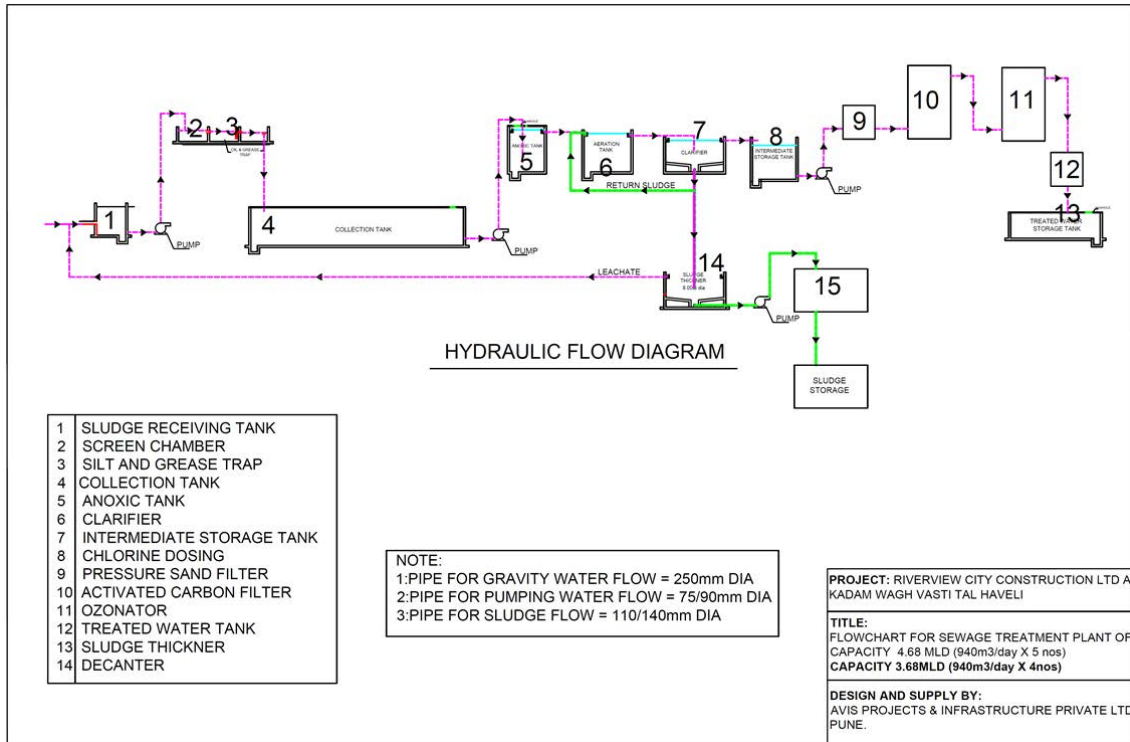


Fig.4.2: Typical STP Flow Sheet with Typical STP Diagram

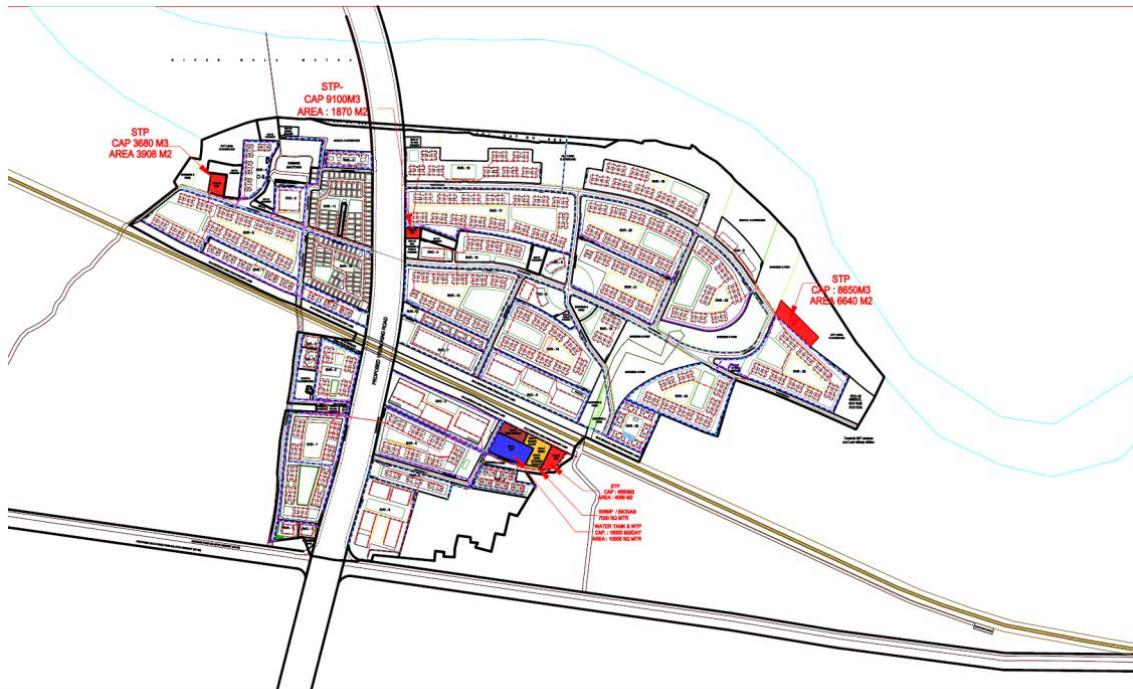


Fig. 4.3: Sewerage Layout

Disposal of Excess Treated Water

We shall be treating the entire sewage generated within project through STP of Capacity 26210 m³. The same will be reused within site for flushing (9901), gardening including road side plantation (2728), HVAC makeup (10390) and dust suppression (437). If excess treated water is generated, the same will be given to the farmers (137). No untreated / treated sewage will be discharged in the river and No impact is expected on river.

4.2.3 Storm Water Management

Availability of water at the site.

$$\begin{aligned}
 &= \text{Area (m}^2\text{)} \times \text{Rainfall (m)} \\
 &= 21,03,951 \text{ m}^2 \times 0.60 \text{ m (600 mm)} \\
 &= 12,62,390 \text{ m}^3 \\
 &= 1.2 \text{ MCM}
 \end{aligned}$$

(b) Water that can be accommodated in the Aquifer.

$$\begin{aligned}
 &= \text{Area of Aquifer (m}^2\text{)} \times \text{water table fluctuation (m)} \times \text{Specific Capacity of Aquifer.} \\
 &= 8,42,000 \text{ m}^2 \times 10 \text{ m} \times 0.03 \\
 &= 2,52,600 \text{ m}^3 = 0.25 \text{ MCM}
 \end{aligned}$$

From the above it will be seen that, out of total availability of water, 20% is getting accommodated in the Aquifer and rest contributing to run off and evaporation to certain extent. This can be utilized for the purpose of water conservation.

Storm water generated from the project site shall be collected through collection chambers and will be routed through RWH recharge system further the overflow shall be disposed off to the designated internal storm water channels / pipes. The final discharge of the storm water shall be passed through the bed of high transpiration species which consist of the species like *Typha cana*, *Hedychium*,

Colocasia, etc. This will ensure safe rainwater discharge to river. For gardening and tree plantation organic manure and pesticides shall be used to avoid entry of pollutants into river.

4.2.4 Water Saving

Rainwater Harvesting

This is designed as per CPCB Publication. The site has 600 mm rainfall with wet month as July (30 %) and wet days are about 10. Thus, the maximum wet day with a factor of safety as 2, we have rains on that day as 27 mm. The rain water harvesting is planned, on Q= CIA basis.

Table 4.3: Run off Water Quantity

Sr. No.	Type	Area in Sq. Mt.	Run off Coeff.	Flow-CUM/min
Flow prior to commencement of Project				
1	Project area	21, 03,951	0.80	1823
Flow after implementation of Project				
1	Ground coverage	10,43,350	1	1130.29
2	Road area	2,41,760	1	261.90
3	Green area	5,12,157	0.50	277.41
4	Paved area	3, 06,684	0.85	282.40
	Total			1952

- On the basis of Hydro geological investigations, proponent proposes to build Filter Pits of 2m X 2m X 2 m dimensions keeping a distance of 15 to 20 m between the Pits
- The initial storm water will get accommodated in the Pits and the excess, if any, will drain away further.
- In some Pits, bore of 25 m may be drilled at the bottom so that, the percolating water will have direct access to the Aquifer section below.
- The existing dug wells/bore wells in the area may be utilized as a source of recharge with implementation of Roof Top Rain water harvesting measure with appropriate filter media.
- During construction work, the paving blocks may be fixed along roads, open spaces, by keeping narrow distance between the blocks with removal of Black Cotton soil below. This will facilitate Murmic soil section below for recharging purpose and its further movement underground.

4.3 Air Environment

4.3.1 During Construction Phase:

Anticipated Impacts may cause due to

- Increased level of dust and other air pollutants due to demolition, transportation, building construction and other related activities
- Emissions from vehicles carrying building material as well as the construction machinery
- Emissions from DG sets

Mitigation Measures are proposed to make impact low

- Water sprinkling on site for dust suppression
- Vegetation like row of trees as barrier, shrubs, lawns etc. as detailed below.
- Use of covering sheets for trucks carrying construction material to prevent air borne dust.
- All material storages adequately covered to avoid dust / particulate emissions
- Adequate parking provision and proper traffic arrangement for smooth traffic flow
- Insistence for construction vehicles to have PUC Certificate.
- Use of DG sets as per CPCB norms.
- On-Road- Inspection for black smoke generating machinery
- Promotion of use of cleaner fuel
- Proper selection of sub-contractors working in good faith

4.3.2 During Operation Phase

Anticipated Impacts may cause due to

- Emission from vehicular movement
- Emission from D.G sets
- Emissions from sewage & solid waste.

Mitigation Measures are proposed to make impact low

- Adequate parking provision and proper traffic arrangement for smooth traffic flow.
- Mathematical Modeling exercise is undertaken to predict the possible impact and found to be in acceptable range. This will be monitored regularly.
- Use of DG sets as per CPCB norms.
- Proper maintenance of DG sets shall be done. Stacks will be provided with the formula $H = 0.2 \times \sqrt{kVA}$, above roof
- Plantation of trees around the site, with thick plantation near the boundaries and on roadsides.
- Emphasis on evergreen, pollution resistant trees
- On-Road- Inspection for black smoke generating machinery
- Promotion of use of cleaner fuel
- Insistence for vehicles to have PUC Certificate.
- Speed limit for internal roads within sectors
- Roads will be properly maintained

Air Modeling is done for DG Set and fugitives.

Table 4.4: Comparative Account of Present and Operation Scenario

Parameters	Concentrations			NAAQS* ($\mu\text{g}/\text{m}^3$)
	Baseline ($\mu\text{g}/\text{m}^3$)	Change ($\mu\text{g}/\text{m}^3$)	Resultant ($\mu\text{g}/\text{m}^3$)	
PM₁₀ (24hr average)	67	08	75	100
PM_{2.5} (24hr average)	33	09	42	80
NOx (24hr average)	22	30	52	80
CO (1hr average)	660	450	1110	4000

*NAAQS – National Ambient Air Quality Standards, 2009

Detailed Report with GLCs is attached as Annexure 3.

4.4 Noise Environment

Quantification of Impacts on Noise Environment:

Baseline Data for Noise Levels:

This project is for proposed construction project, Riverview City, located in Tal. Haveli, Dist. Pune. It can be observed that baseline noise levels are lower than the allowable CPCB limits at all locations surrounding the project site within distances of 1000 meters from the project boundary. Therefore, noise monitoring was done within distances of 200~1000 meters from the construction project site.

Sr. No.	Location	Leq Day (dB)	Leq Night (dB)	Distance from Project Boundary (meters)	CPCB Limit for Leq Day (dB)	CPCB Limit for Leq Night (dB)
1	Project Site	56.9	57.3	0	55	45
2	Towards West	50.6	38.1	200	55	45
3	Towards North East Side	50.4	42.7	500	55	45
4	Towards South	53.9	44.1	700	55	45
5	Towards East	53.4	43.3	1250	55	45

Baseline noise levels were observed to be lower than the allowable CPCB limit for residential area at all noise monitoring locations. Due to the noise levels being lower around the project boundary, the impact due to the construction activity is likely to be larger.

Impact Due to Construction Activity:

This is a proposed construction project. Most of the sources of noise are only going to be present at the project site during the construction phase. Following are the major sources of noise identified from the list of machinery to be used during the construction phase, received from the project proponent. Only the sources of noise with noise levels above 80~85 dB are considered in this list.

- 1) Tower Cranes (Large Static Crane) - < 85 dB
- 2) Excavators/JCB/Dumpers/Loaders/Jack Hammers – 90 dB Each
- 3) Concrete Pumps – 95 dB
- 4) Concrete Plant – 90~100 dB
- 5) Batching Plant – 1 No. (100 dB)
- 6) Construction/Material Hoists - 85 dB
- 7) DG Sets (Multiple) – 85~88 dB Each.
- 8) Compressors (Electric and Diesel) – 90 dB

Compressors: Air compressors, be it Screw Compressors or Reciprocating Compressors, generate noise levels above 100 dB even if they are electric driven or engine driven. Engine Driven compressors are bound to make even more noise due to the diesel engine.

Compressors with pre-installed Acoustical Canopy should be chosen so that the noise generated at the source itself is lesser than 85 dB.

Batching Plant: The batching plant contains several different sources, the collective noise level of which may rise to 100 dB. Following are the several different sources present in a batching plant.

- a) Truck and front end loader engine noise
- b) Hydraulic pumps
- c) Conveyor belts
- d) Air valves
- e) Filters
- f) Alarms
- g) Compressors
- h) Swinging, scrapping and loading devices

Mitigations: 1. The contractor should carefully choose the above equipment in order to meet with the CPCB Norms. 2. Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise. 3. Valves should be covered with Removable Acoustical Blankets. 4. The contractor should choose controlled operating hours for noisy activities such as delivery, loading unloading etc.

Concrete Pumps: Concrete Pumps, usually Diesel Engine Driven, generate noise levels exceeding 100 dBA during its operation. The operation of Concrete Pumps is usually continuous for duration of 6~8 Hours when operated. However, concrete pumps would not be operated everyday, but only when there would be the construction of Concrete Slabs. Noise levels of this source need to be reduced to at least 70 dBA, for which 30 dBA Transmission Loss Rating Acoustic Enclosures are suggested for this source of noise.

De-watering Pumps: De-watering pumps, can generate noise levels exceeding 90 dB. Small close-fitted Acoustic Enclosures with 10 dB Transmission loss Rating are recommended for the De-watering pumps.

Noise Modelling Study:

A Noise modelling study was conducted to quantify the impact on the local noise environment during the construction phase of any particular Residential/commercial project. Noise levels within the distances of 200~700 meters from the local project site were measured, and quantified impact was predicted as a result of construction activity onto the local noise environment (Leq Day) over the baseline noise levels. Below is the result of the Noise Modelling study.

Noise Modelling Study								
S.No.	Noise Generating areas	Noise level at source (dBA)		Anticipated Noise level (dBA)				
				Towards West	Towards North East Side	Towards South	100m	150m
		(at 1 meter dist)	Distance from project site (m)	200	500	700	100	150
1	JCB / Earth Moving Machinery / Jack Hammer	95		49.0	41.0	38.1	55.0	51.5
2	Compressor (Electric and Diesel)	100		54.0	46.0	43.1	60.0	56.5
2	Concrete Pumps	95		49.0	41.0	38.1	55.0	51.5
3	DG Set	90		44.0	36.0	33.1	50.0	46.5
	Cumulative Noise Levels			56.4	48.4	45.5	62.4	58.9
	Attenuation due to Green belt and other mitigations			10.0	10.0	10.0	10.0	10.0
	Existing Noise Levels (day-time)			50.6	50.4	53.9	55.0	55.0
	Cumulative Noise Levels (DAY)			52.0	50.7	54.0	56.9	55.9

From the Noise Modelling study, increase of approximately 1.4 dB was predicted at 200 meters towards West of the project site. At 500 meters, approx.. 0.3 dB of increase is predicted and towards South, at 700 meters, 0.1 dB of increase is predicted over the baseline noise levels. At all 3 of these locations the noise levels would still be within the allowable CPCB limits even considering this increase. 2 Assumed readings were taken, one at 100 meters, and one at 150 meters from the project

site, with noise levels equal to that of CPCB limits for residential areas. At the assumed readings, approximately 1.9 dB of increase is predicted at 100 meters from the project boundary and approx.. 0.9 dB of increase is predicted within 150 meters, which are acceptable and negligible. This analysis is done assuming that the Noise level of the mentioned sources is going to be 85~100 dB at the Boundary of the project site, where as in actual, the machinery will be installed well within the boundary of the Plot, and other sound sources e.g. Ventilation system etc. are going to be installed inside the constructed building, because of which there will additional attenuation and hence the SPL measured at the boundary of the project because of the machinery involved in this project is going to be much lower than what is considered in this report. This Analysis is done for the absolute worst case scenario for the Noise Environment.

Operational Phase:

Operational Phase								
S.N o.	Noise Generating areas	Noise level at source (dBA)	Distance from project site (m)	Anticipated Noise level (dBA)				
		(at 1 meter dist)		Towards West	Towards North East Side	Towards South	100m	150m
				200	500	700	100	150
1	STP (Blowers, Pumps)	100		54.0	46.0	43.1	60.0	56.5
2	DG Sets	90		44.0	36.0	33.1	50.0	46.5
3	Vehicular Movement	80		34.0	26.0	23.1	40.0	36.5
	Cumulative Noise Levels			54.4	46.5	43.6	60.5	56.9
	Attenuation due to Green Belt and acoustic enclosure			20.0	20.0	20.0	20.0	20.0
	Existing Noise Levels (day-time)			50.6	50.4	53.9	55.0	55.0
	Cumulative Noise Levels (DAY)			50.7	50.4	53.9	55.1	55.1

Discussion of impact during operational Phase:

1. During operational phase, the only sources going to be present at the project site are the DG Sets, the Sewage treatment plant which would have multiple Blowers, Pumps etc., the combined noise of which is assumed at 100 dB, and the vehicular movement, the noise contribution of which is minimal.
2. During the operational phase, 0.1 dB of increase is predicted at West side, at a distance of 200 meters. At 100 and 1500 meters, 0.1 dB of increase is predicted. Beyond 250 meters, no increase is predicted during the operational phase.
3. However, although the increase appears to be of 0.1 dB at distances of 100 meters or so, at closer distances, such as in the buildings right next to the STP plant, higher noise levels may be observed which may trouble the residents. Therefore, Acoustical Enclosures with 30 dB Transmission Loss Ratings are recommended for the Blowers of the STP.
4. Contribution due to vehicular movement is likely to be even less than 80 dB, and it would be significant only during morning and evening peak hours, hence no mitigations are required for this source of noise.

Summary of Quantified Impacts from Noise Modelling Study:

1. During the Construction Phase, Maximum increase in Sound Pressure Level was predicted at 0.3~1.4 dB at a distance of up to 200 meters from the project site. 0.3 dB of increase was predicted at 500 meters from the project boundary.
2. During the operational phase, up to 1.1 dB of increase in SPL is predicted within 150 meters distance.
3. Mitigations Measures as listed below should be implemented for avoiding any potential impact on the Noise Environment.

Table 4.5: Noise Mitigation Measures:

Sr.	Machinery / Equipment Description	Predicted SPL at 1 meter distance	Mitigations Required
1.	JCB / Earth Moving Machines / Excavators / Dumpers / Jack Hammers	85~95 dB	The JCB/Proclaim machines or Earth moving machines make Noise Levels of up to 85 dB when measured at 1 meter distance from the machine. When multiple machines are running simultaneously, the SPL can go up to 95 dB. This is an unavoidable source of noise which cannot be attenuated by any means. However, this source has been already considered In the Noise Modeling study, and its impact will not make any significant difference on the Noise Environment. For the people working in the near field of these equipment, 85 dBA is a perfectly safe noise level for continuous noise dose of up to 8 hours.
2.	Concrete Mixers / Concrete Plant	85~90 dB	The SPL for Concrete Mixer or even Transit mixers / Concrete Plant is approximately measured at 85~95 dB at 1 meter distance. Although there are multiple number of Concrete Mixer, not all of the mixers are going to be present at the same location of the project site location at once, and hence this is not one of the major sources of noise for the project site. There are no mitigations necessary for this source of noise.
3.	Concrete Pump / De-watering Pumps	95 dB	Noise Levels of up to 95 dB may be generated due to the Concrete Pumps running on Diesel Engines. Concrete Pumps with preinstalled Acoustical Enclosures / Canopy should be preferred for the Project. The operating hours of the Concrete pump should be selected during the daytime, because of high noise levels are generated during the night, it is observed that in absence of other noise sources during the night, the sound travels further, and may affect the sensitive areas nearby.
4.	DG Sets (Multiple Nos.)	<85 dB	Diesel Generator Sets are supposed to have Sound Pressure Levels of

			lesser than 75 dBA when measured at 1 meter distance. However, these DG sets are not going to be kept close to one another. The DG Sets of 1000 KVA and 2000 KVA Capacity are recommended with a minimum Transmission Loss Rating of 30 dBA. The
5.	Batching Plant (1 No.)	100 dB	Batching plant consists of multiple number of different sources of noise, which we need to be dealt with separately. Mitigations : 1. The contractor should carefully choose the above equipment in order to meet with the CPCB Norms. 2. Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise. 3. The contractor should choose controlled operating hours for noisy activities such as delivery, loading unloading etc.
6.	Tower Crain / Material Hoist	85~90 dB	The lifting mechanism of the Tower Crane or the builders hoist usually have very low noise levels of less than 75 dBA. However they are usually powered by Diesel Engines in order to make them portable, and hence the noise of the diesel engine itself can exceed 90 dBA. Therefore following mitigations should be implemented : 1. 1. Acoustical Canopy for the Diesel Engine running the portable hoists/cranes to be installed with TL Rating of 30 dB.
7.	Additional Mitigations / Cares to take	N/A	1. Sound Reflective barriers to be installed at the boundary of the project site. 2. All people working in the vicinity of the Equipment/Machinery with Sound Pressure Levels higher than 95 dB should wear protective ear plugs to avoid permanent hearing damage.

4.5 BIOLOGICAL ENVIRONMENT

Tree census work was undertaken. It was found that there are currently 3300 no. of standing trees of various heights and girths. Taking their position into consideration, orientation of buildings were considered to the extent possible.

1. Probable Impact

There are few trees, shrubs, herbs and on project site. Due to lack of proper habitat, animal biodiversity, including insects, is meager. During construction, certain trees and shrubs will also be removed, resulting in deterioration of biodiversity.

Mitigation

Biodiversity will be increased by developing green belt in an area of about 454673 m² by plantation of varieties of trees and shrubs, besides a remarkable area of grassland development. Plantation within the project site will remarkably enhance biodiversity of flora and fauna.

2. Probable Impact

Due to construction activities and movement of vehicles, particulate matters in the surrounding air will be increased. Particulate matter in a form of dust may affect photosynthesis, respiration, transpiration and allow penetration of phototoxic gaseous pollutants in plants. Dusts at the levels of 2.5 to 104 µg/m³ usually block stomata, thereby reducing photosynthesis, degradation of chlorophyll-a etc. Similar effects have been reported for mango trees (*Mangifera indica*) at 4.5 to 30.0 µg/m³ of dust. The average baseline levels of particulates of PM 2.5 & PM10, up to a distance of 2km in the surrounding air of the project site are about 33 and 67 µg/m³ respectively. It thus, appears that the trees in the locality or in the city are already in stress due to activities other than the proposed project. Planted trees within the project site by the proponent, will be at better condition as compared to surrounding areas.

Mitigation

The standard stipulated by CPCB for PM 2.5 is 60 µg/m³ (annual average) and the same, based on the epidemiological studies, is recommended as 10 µg/m³ (annual) by WHO. Thus predicted levels of particulate matters are well within the limits. As a precautionary measure, certain measures must be adhered to minimize the dust levels.

- Sprinkling of water and fine spray from nozzles at regular intervals to suppress the dust.
- Use of covering sheets to prevent dust dispersion from the vehicles, used for carrying construction materials at site.
- Use of covering sheets for covering construction materials, stored at site.
- Vehicles having pollution under control certificate should be allowed to play in the site

3. Probable Impact

Nocturnal insects are strongly attracted to light sources that emit large amounts of UV radiation (blue fluorescent lights, black lights and mercury lamps). Behaviors, such as flight and mating are inhibited in such insects that are exposed to bright light at night. Light toxicity occurs when the retinas of compound eyes of an insect are exposed to UV radiations, damaged and structurally degenerated. Insects gather around these lamps at high densities instead of navigating naturally.

Moths (Lepidoptera) are the major nocturnal pollinators of a diverse range of plant species in diverse ecosystems across the world. Artificial night lighting might in turn affect the provision of pollination by moths.

Mitigation

Unless essential; excessive light during night hours should be strictly avoided. Use of yellow lights is suggested in open areas.

4. Probable Impact

The project proponent has a plan to treat sewage and use the treated sewage for green belt in an area of 454673 m². No sewage will be discharged to municipal sewers without affecting water quality and biota of natural resources.

Mitigation

Treated sewage must be thoroughly checked with special reference to BOD, COD, TDS, Total coliform & Fecal coliform prior to utilization in green belt.

Details of Trees to be Felled or Transplanted

The tree survey was undertaken for the project area. The buildings will be aligned to avoid cutting of existing trees to the extent possible. Out of existing 3300 trees, 361 will be retained, 2390 trees can be transplanted, 236 will be cut and 298 will either be cut or retained. For each tree cut/transplanted, 3 additional trees shall be planted to avoid negative impact on biodiversity.

4.6 Socio-Economic Environment:

The setting up of any kind project would undoubtedly include significant impact on socio-economic and cultural life of the people in the project area. Here, an attempt is made to visualize and discuss such tentative impacts likely to be induced by the project with the residents. The likely impacts due to project activity are described below:

Anticipated Impacts may cause due to

- There could be influx of workers during construction phase, which could put pressure on key local infrastructure which is already inadequate.
- As it is a development of Special Township there would be influx of people, both residential and floating population, thus increasing the density of the population.
- The construction activity could lead to increased nuisance level from air emissions and noise due to transportation of material and equipment as well as labourers. There is also likely to be temporary traffic impacts like accidents, diversions or blockage of access etc. due to narrow roads during construction activity.
- The construction activity will also result in water logging in mud pockets and there could be apparent degradation of the water and air quality.
- Lack of hygiene and adequate sanitation facilities at construction site could create health ailments.

Mitigating Measures are proposed to make impact low

In order to mitigate the adverse impacts likely to arise in the surrounding area due to proposed project activity, it is necessary to formulate an effective mitigation plan. The Project Proponent has planned on following lines:

Before Commencing and During Initial Phase:

- Communication with the local community should be institutionalized and done on a regular basis. The forum could provide opportunities to discuss local critical issues and prepare programmes of mutual benefits

- Information regarding the proposed development plan, community programmes etc. should be communicated to the local community in the simpler understandable form
- As per the expectations of the local people, project authorities should organize guidance centre for youths, technical education centre and training programme.
- Part of PR (Public Relations work) will be useful

Construction Phase:

- Project proponent proposes to take appropriate steps to keep environment clean and healthy during construction phase, so that neighbours will be safe.
- Provision of adequate drinking water, toilet and bathing facilities should be made available on project site to the workforce so that they will not encroach on other sources.
- Water shall be sprinkle/spread to suppress dust during construction phase to control air pollution and thereby avoid adverse health impact.
- Proper living condition with appropriate facilities for residential labours should be provided.
- Proper Training and awareness programme should be carried out so that the workers understand the importance of wearing the personal protective equipment.
- During the construction phase, there would be growth in indirect jobs and business opportunities to the local and people such as contractors, transporters and raw material suppliers etc. due to the proposed development in the area.
- A multiplier effect will be felt on the creation of indirect employment through the local community establishing small shops like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores, grocery stores etc.

Operation Phase:

- The project collectively will need a pool of watchmen, gardeners, sweepers, plumbers, fitters, STP operators, lift operators and solid waste collectors. Preference should be given to local people for all this.
- The township management should help in promoting local people for livelihood commensurate with their will, skill and abilities by utilizing the minimum amount.
- There would be upgradation of existing local infrastructure, where there would be improvement of access due to widening of the main road and improvement of transport services in the surrounding villages of the project.
- The project would provide a 100 bed hospital, which would benefit the project residents as well as the nearby villages.
- A primary school of Class 1 to 5 and two primary + secondary school of Class 1 to 10. More than 6,000 students from the project site as well as nearby villages could be benefitted.
- The project would also provide commercial space consisting of destination centre which includes market for daily needs, IT Park and offices which would provide better livelihood space to the people.
- Besides these, the project also provides town hall, library, cremation ground, burial ground, fire station, police station, substation etc.
- The amenities mentioned above would not only benefit project population but also would benefit the population residing in the nearby villages.
- In the operations phase, the project would provide job opportunities in the organized and unorganized sector. There is likely to be increased demand for security, kitchen help, need for drivers etc;
- Self- employment options for individuals possessing vocational or technical training skills like electricians, welders, fitters etc., which are likely to be sourced locally for the maintenance of the township.
- A multiplier effect will be felt on the creation of indirect employment through the local community establishing small shops like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores, grocery stores etc.

More details on Socio-economic environment in the study area are stated in Chapter 3.

4.7 Solid Waste Generation

Solid waste will be generated of three classes namely (1) Solid waste due to construction day workers and labour camp, (2) Solid waste due to excavation component of construction, (3) Solid waste due to regular construction and (4) The Municipal Solid Waste (MSW) as generated after occupation. This is discussed.

(1) Solid waste due to construction day workers and labour camp: 1300 number of workers will be fluctuating as per the constructions in hand. Total 525 Kg waste shall be generated from construction workers per day. 337.5 Kg will be Biodegradable waste and 187.5 Kg will be non-biodegradable waste.

The environmental cell will keep a special watch on sanitation. The solid waste will be collected every day and segregated into Biodegradable and non-biodegradable waste classes. Biodegradable waste, which is a major component will be subjected to composting and will be used as manure for tree plantation. Non-biodegradable waste shall be collected by authorized vendor for due disposal.

(2) Solid waste due to excavation component of construction

This will have two types of soil, namely a top soil which will be useful to support crops and lower soil consisting of murum, soft rock etc. which will have different usages.

- i. Top Soil is expected to be 1013250 m³. This is analyzed and found to be suitable for green belt. Thus, it will be preserved for the same purpose and will be used for open spaces and road side mounts to do plantation. These mounts will, to some extent act as sound barriers once plantation is done on top of it
- ii. Excavation will go deeper to support the superstructure and will comprise of murum, boulders and soft rock. This is expected to be 506625 m³. This will be reused for ground filling, Plot & Plinth leveling and internal roads at construction site. The orientation of buildings with reference to contours is so adjusted that there is no surplus excavator stuff for disposal outside the premises.

(3) Solid waste due to regular construction

Considering the further construction of superstructure, finishing job and utilities, there will be some wastage appearing as solid waste. This should be taken care of.

The vendors are also identified for recycling of the material. List of authorized vendors is given below:

Table 4.6: Authorized vendors

SN	Description	Unit	Scrap Vendor
1	Scrap Steel 8to 32mm	Kg	Gopalani Scrap /Poona Scrap Traders/Gajalaxmi Steel Scrap
2	Tyres	Nos	KedarTyres
3	Aluminum	Kgs	Gopalani Scrap /Poona Scrap Traders/Sana/Ajay Scrap
4	Plywood	Kgs	Sana Scrap Center/Anushka Scrap Centre
5	Empty Bag Pop & Cement bags	Nos	Thakkar Kishor
6	Electrical wires and material	Kgs.	Gopalani Scrap /Gurudatta Metal mart/Poona Scrap
7	PVC & Plastic		Sana Scrap/Shree Sai Scrap/Gopalani Scrap
8	MS &Gi Scrap		Sana Scrap/Ajay Scrap/Gopalani Scrap
9	Scrap Glass	Kgs	Alfa Scrap/Maharashtra Recycle Ind

(4) The Municipal Solid Waste (MSW) as generated after occupation

Total 99831 Kg waste shall be generated during operation phase per day. 62662 Kg will be Biodegradable waste and 37169 Kg will be non-biodegradable waste.

Collection:

The project proponents have proposed provision for collection of biodegradable & non-biodegradable waste at the source. Two colour coded bins shall be provided to each tenement for biodegradable and non-biodegradable waste. These bins will be collected from door to door and will be transported through dedicated trucks to the Solid Waste Management Plant (SWMP) collection and segregation section.

Segregation:

- **Process/ Methodology:**

The collected biodegradable solid waste is sent to Biogas plant for treatment (and to get burnable gas and non-conventional renewable energy). Non-Biodegradable component is further segregated in 6 appropriate categories namely (i) Glass (ii) plastic / rubber (iii) metal (iv) papers (like cardboard, packing etc.) (v) rags and (vi) Miscellaneous etc. Waste from Categories (i) to (v) will be sold to the authorized vendor. Letter has been received for collection and disposal of miscellaneous waste from “Sant Gadgebaba Swayamrojar Seva Sah Sanstha Maryadit”.

- **Location:** Segregation area is provided inside Solid Waste Management Plant, as shown below in Master Plan.

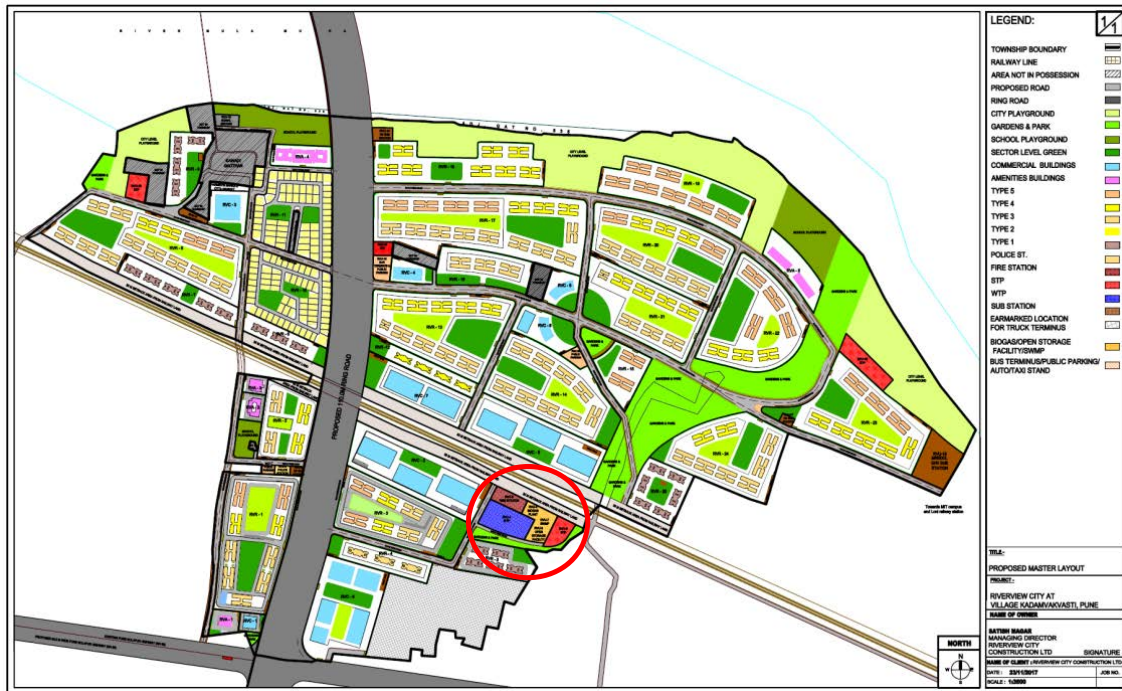


Fig 4.4: Master Plan showing SWMP

Biogas Unit:

Biogas units shall be installed in the project for treatment of Biodegradable waste in the modules of 5 T.

- Location: Near SWMP
- ❖ The total wet waste generation is 63 T
- ❖ The anaerobic digestion of segregated organic food waste will be taken up phase wise as the waste generation increases.

Table 4.7: Biogas Details

	Phase 1	Phase 2
	5 TPD	10 TPD (5 TPD x 2 Nos.)
Waste Management Plant Capacity	Approx. 5 ton per day of Segregated Food waste	Additional 5 ton per day of Segregated Food Waste i.e. total 10 Ton per day of Food Waste
Biogas Generation	Approx. 350 - 400 cum/day	Approx. 700 - 800 cum/day
Equivalent Electricity	Approx. 480 – 550 electrical units per day	Approx. 940 - 1080 electrical units per day
Organic Manure Generated	Approx. 165 Ton per annum (which will be removed periodically)	Approx. 330 Ton per annum (which will be removed periodically)
Water Required	Approx. 5 - 6 cum /day	Approx. 10 - 12 cum /day
Liquid Organic Overflow	Approx. 10 cum/day (70% - 75% will be recycled back to save on fresh water)	Approx. 20 cum/day (70% - 75% will be recycled back to save on fresh water)

Principle

The basic concept of design is based on a process known as Up-flow Anaerobic Sludge Blanket (UASB) developed by Dr. Lettingah in the Netherlands and specifically modified by MAILHEM® ENGINEERS Pvt. Ltd., Pune, for the waste containing high percentage of suspended solids.

Block Diagram for the Proposed Renewable Energy Device (Biogas Plant) for Segregated Organic Food Waste

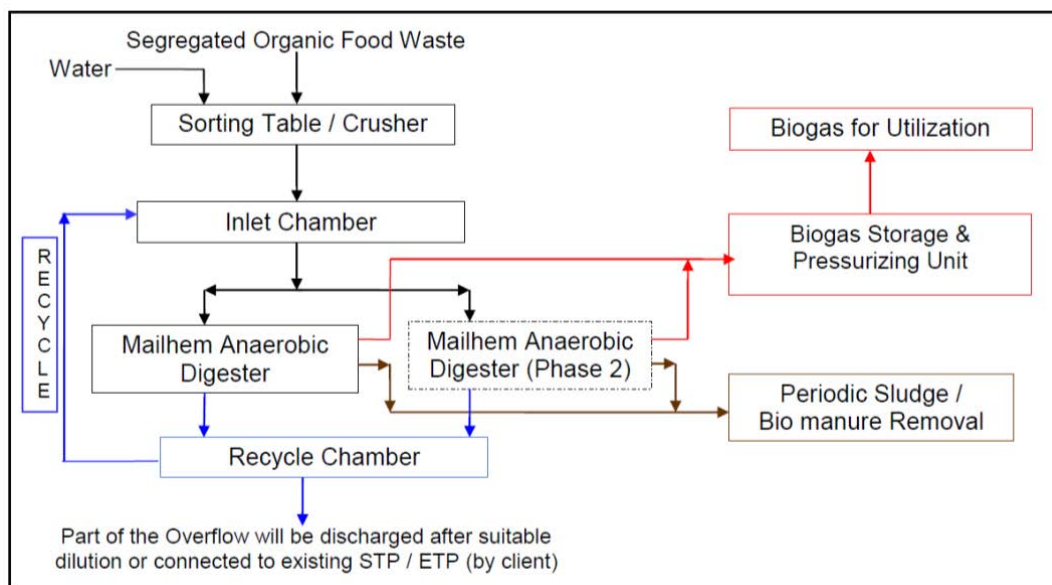


Fig. 4.5: Biogas Flow Sheet

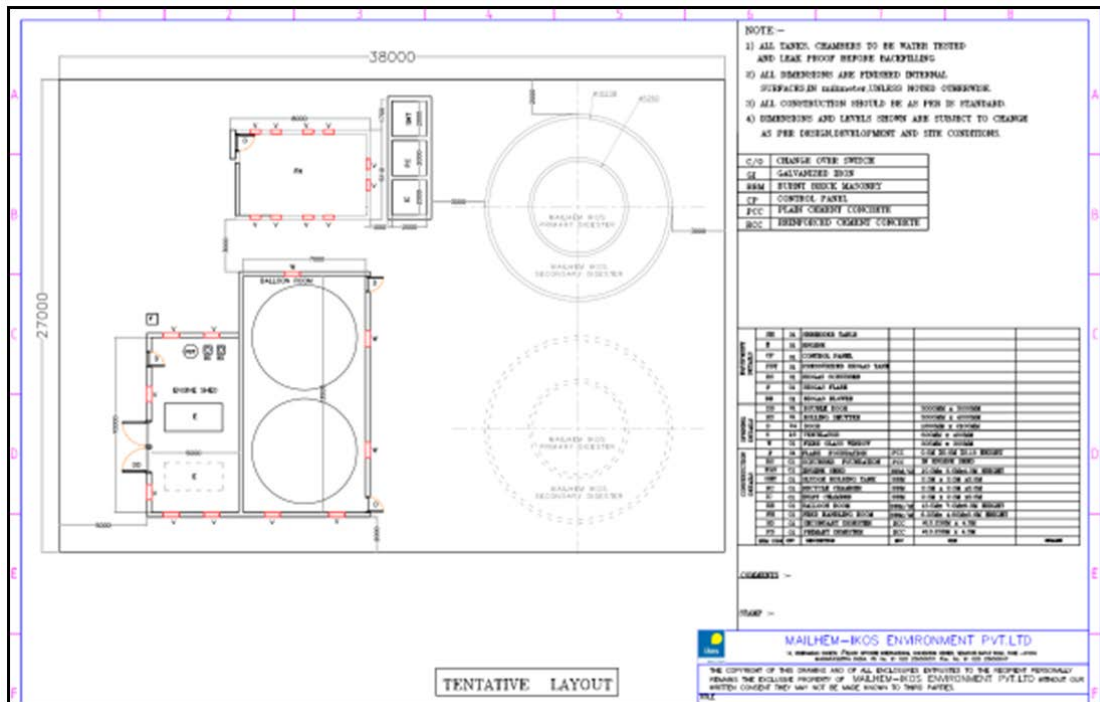


Fig. 4.6: Biogas Layout

Basic Biomethanation Project Description

- ❖ The Segregated Organic Food Waste will be brought to the plant site.
- ❖ The waste is further crushed using crusher along with suitable quantity of fresh or recycled water to form slurry in the inlet cum recycle chamber.
- ❖ The slurry from the inlet chamber is then fed to the Mailhem® Anaerobic Digester.
- ❖ The Mailhem® Anaerobic Digester has internal proprietary modules. It has internal baffles, partitions and launders for anaerobic treatment.
- ❖ In the Mailhem® Anaerobic Digester, the segregated organic food waste will be converted to Biogas, Organic Manure and Liquid Organic Overflow.
- ❖ The Biogas generated from the anaerobic digester will be collected in biogas holder, cleaned and pressurized to be fed into 100% biogas genset for power generation.
- ❖ Part of the liquid organic overflow is recycled to the inlet cum recycle chamber for slurry preparation to save on fresh water use while the remaining will be used for bio-composting of garden waste.
- ❖ The sludge is removed periodically from the bottom of the digester and can be used as good organic manure.
- ❖ If the Biogas is not in use, it would be necessary to flare the same to the atmosphere as the authorities do not permit letting out to the atmosphere.
- ❖ Thus, this process will be based on a **“Zero Garbage Disposal”**.

A designated space is allocated for solid waste management facility away from River. The area will be paved and channelized properly to contain the waste water generated due to washing or cleaning activity, if any from the site. It will be collected in a sump and further transferred to STP for treatment.

4.8 E-waste Management

Various types of electrical and electronic wastes (computers, CDs, etc.) may be generated. Provision shall be made for proper storage of E-waste prior to disposal to SPCB approved recyclers. We have already identified M/s Sayma E-Waste solutions as registered E-waste recycler for the project.

4.9 Biomedical Waste

The Township has hospital component, which shall be developed during Phase 1. A detailed Biomedical waste Management Plan including Collection, Management, Handling and Disposal of Biomedical Waste to be generated in Proposed Hospital in Riverview City is given herewith;

PURPOSE

(i) To enable Proposed Hospital to smoothly implement the Biomedical Waste (Management & Handling) Rules 2016, notified under the Environment Protection Act by the Ministry of Environment, Forest & Climate Change (Government of India) to manage the waste generated in the hospital.

(ii) To help Proposed Hospital to develop a comprehensive plan for Hospital waste Management in terms of segregation, collection, transportation, storage and disposal of hazardous waste, including infectious waste and chemical waste.

SCOPE

This is applicable to hazardous waste (infectious waste, chemical waste) generated in the entire Hospital.

RESPONSIBILITY

Hospital Waste Management Committee, Hospital Infection Control Committee & Housekeeping Department

PROCEDURE

Handling of Waste and Hazardous Material

- (1) The Infection Control Committee shall be responsible for the definition of infectious waste and shall be responsible for developing guidelines concerning the handling or disposal of infectious waste.

Categories of Biomedical Waste

BMW are categorized as under:

Category No. 1: Human Anatomical Waste

This contains human tissues, organs, body part etc.

Category No.2: Animal Waste

Animal tissues, organs, body parts, carcasses, bleeding parts, fluid, blood and experimental animals used in research

Category No.3: Microbiological and Biotechnology Waste

Waste from laboratory cultures, stocks or specimens of microorganism, live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research laboratories, Waste from production of biological, toxins, dishes and devices used for transfer of cultures.

Category No. 4: Sharps Waste

Needles, syringes, scalpels, blades, glass etc. that may cause puncture and cuts

Category No. 5: Discarded Medicines and Cytotoxic Waste

Waste comprising of outdated medicines, contaminated and discarded medicines

Category No. 6: Soiled Waste

Items contaminated with blood, body fluids, including cotton, dressing, soiled plaster casts, lint, bedding and other material contaminated with blood

Category No. 7: Infectious Solid Waste (Disposable and Plastic)

Waste generated from disposable items, other than the waste sharp such as tubing, catheters, UV sets etc.

Category No. 8: Chemical Waste

Chemical used in production of biological, chemical used in disinfection as insecticides etc.

SEGREGATION OF WASTE

- (i) It should be done at the source of generation of Biomedical Waste e.g. all patient care activity areas, diagnostic service areas, operation theatres, labour rooms, treatment rooms etc.
- (ii) The responsibility of segregation should be with the generator of Biomedical Waste i.e. Doctors, nurses, Technician etc. (Medical & Paramedical personnel) The biomedical waste should be segregated as per categories applicable mentioned above
- (iii) Collection of Hospital waste should be done in following colour coded containers (preferably foot operated or with swing lids) or with respective colour coded bags.
 - a. Yellow, Red, Cardboard box, Puncture proof can with Biohazard sign
 - b. Black & Transparent without Biohazard sign
- (v) Separate Puncture proof Containers should be used for each of the following:
 - Metallic sharps including needles, scalpels and blades in a puncture proof can with 1% hypochlorite solution
 - Needles to be burned with needle burner before discarding in a puncture proof container.
 - Glass vials, broken glass, ampoules in a puncture proof cardboard box
- (vi) When filled, such containers should be sealed with tape and placed in appropriate labeled waste boxes for proper disposal. Filled biohazard bags should be removed to designated waste area as frequently during the day as necessary to avoid buildup. At the end of each day or after a spill, all work surfaces will be disinfected with 1% sodium hypochlorite solution

COLLECTION OF BIOMEDICAL WASTE

(i) Color code for collection of Biomedical waste should be as under:

Category	Type of Container	Colour
1 Human Anatomical Waste	Plastic Bag	Yellow
2 Animal Waste	Plastic Bag	Yellow
3 Microbiology and Biotechnology Waste	Plastic Bag	Red
4 Waste Sharp	Puncture Proof Container	Red
5 Discarded Medicines and Cytotoxic Waste	Plastic Bag	Yellow
6 Soiled Waste	Plastic Bag	Yellow
7 Infectious Solid Waste	Plastic Bag	Red
8 Chemical Waste (Solid)	Plastic Bag	Blue

(ii) Location of Containers

All containers, having different coloured polythene bags should be located at the point of generation of waste i.e. near OT tables, injections rooms, diagnostic service areas. The colour of containers/plastic bags used for collection of segregated Biomedical waste should be identifiable.

(iii) Labelling

All the bags/ containers must be labelled at the place of generation before transportation from the generation site. Biohazard labeled bags must be used to dispose off all potentially contaminated samples: blood tubes, specimen containers, pipettes, pipette tips, reaction vessels, stoppers, etc.

(iv) It will be ensured that waste bags/ containers are effectively secured and filled up to only 3/4 capacity and removed from site of generation regularly and timely.

Specific Information:

(i) Certain categories of waste, which may require pre-treatment (decontamination/ disinfection) at the site of generation such as plastic and sharp material etc. should be removed from the site of generation only after treatment

(ii) Containers/ bins used for the segregation of biomedical waste should be washed and disinfected with 1% hypochlorite solution on a weekly basis.

(iii) Liquid wastes should be disinfected by chemical treatment at the areas of generation using 1% Sodium hypochlorite solution for a contact period of 30 minutes and then discharged into drains/sewers.

(iv) Expired drugs should be kept in a separate envelope with details of the drug including date of expiry and batch number which should be placed in yellow bag and handed over to the concerned authority(PASSCO) for final disposal

(v) The rooms where potentially infectious waste is stored are identified by signage with the biohazard symbol

(vi) **Blood and body fluids in easily emptiable containers, such as suction canisters, may be carefully emptied into utility sinks, or commodes in a manner that minimizes splashing and splattering. The containers should then be discarded in red infectious waste bags.**

- (vii) Pathologic waste including tissues, placentas, organs, body parts that are removed during surgery should be bagged and placed in a designated yellow waste bag labelled and handed over to contracted biohazard waste disposal company i.e. PASSCO for final disposal.
- (viii) Trace contaminated cytotoxic drug waste includes items used to prepare drugs, items used to clean areas and Empty bags, vials, IV tubing, etc. from patient rooms where drug is administered. These items should be placed in a securely closed yellow bag labeled and handed over to BMW Management Agency "PASSCO" for disposal. (NOTE: Sharps may not be discarded in cytotoxic waste liners)
- (ix) General waste should be transported to common area from where it shall be handed over to domestic waste carriers.
- (x) Non-infectious general waste like kitchen waste, garden waste, flowers etc. shall be treated locally in OWC or by composting

Transportation within Hospital

- (i) Within hospital waste routes must be designated to avoid the passage of waste through patient care area
- (ii) MPW should collect the biomedical waste twice daily from each ward/ department in the hospital in a dedicated covered wheeled trolley to a central storage site on ground floor from where it shall be handed over to the authorized agency (PASSCO) for the final disposal. A daily record of the same should be maintained.
- (iii) Separate time should be earmarked for transportation of biomedical waste to reduce chances of its mixing with general waste
- (iv) Trolleys or carts should be thoroughly cleaned and disinfected in the event of any spillage

Safety Measures

- (i) All the sanitation workers engaged in the handling and transporting should be made aware of the risks involved in handling the biomedical waste and should be well trained in handling biomedical waste.
- (ii) All the generators of biomedical waste should adopt universal precautions and appropriate safety measures while doing therapeutic and diagnostic activities and also while handling the Biomedical waste. All waste handlers should be provided with a complete protective gear (cap mask, goggles, apron, gloves and boots) which should be used while handling waste.
- (iii) Drivers, collectors and other handlers must be aware of the nature and risk of the waste. Written instructions should be provided regarding the procedures to be adopted in the event of spillage/accidents.
- (iv) Workers should be protected by vaccination against hepatitis-B.

TRAINING

- (i) The Proposed Hospital will have well planned awareness and training programme for all categories of personnel to make all medical, paramedical and administrative staff aware of Biomedical Waste (Management And Handling) Rules 2016 and the

responsibilities of different categories of personnel therein to adopt safe hospital waste management practices

- (ii) Training should be conducted category-wise in an appropriate language/medium and in acceptable manner with more emphasis on training modules applicable to that category of personnel.

We have also obtained the NOC from PASSCO for our project site, the authorized organization for biomedical Waste Collection & Disposal. NOC is Enclosed.

4.10 Hazardous Solid Waste

This is residential colony. Its solid waste is covered by Municipal Solid Waste (Management & Handling) Rules 2000. Renew the Hazardous Waste Authorization under Part II-Section 3-sub-section-ii of the Hazardous Wastes (Management, Handling and Transboundary movement) Amendment rules 2008 as amended till date, in its Rule No. 2(e) has stated certain exemptions, in which inter alia MSW or municipal establishments are not covered as Hazardous. As such, what this complex or the parent Pune Municipal Corporation are obliged to do is as Municipal Solid Waste-Non-Hazardous.

Although this is as, the Project Proponents feel their responsibility towards identification & mitigation of the menace of Hazardous Waste, camouflaged within Municipal Solid Waste.

The Hazardous Waste will originate at two periods namely A) during construction & B) during operation later.

A) During construction phase we may come four Hazardous Waste described below-

Table 4.8: Hazardous Waste

#	Cat	Description	Precautions	Disposal
1	3.1	Oily residue in barrels, tins	This will arise from Diesel storages tanks, & barrels in the premises of contractors operating earth moving machineries & DG Sets.	Instructed to carefully handle oil, send to remove the authorised processor
2	13.5	Tar storage tank residues	This will be during construction phase. Inventory will be kept minimum & JIT (just in time) principle shall be followed in purchasing. We may reconsider to use RCC roads rather than bitumen	As above
3	21.1	Waste from use of paints-pigments	Only during construction phase. Inventory will be kept minimum & JIT (just in time) principle shall be followed in purchasing.	As above

B) During operation phase we may come across following Hazardous Waste described below-

#	Cat	Description	Quantity	Precautions	Disposal
1	3.1	Oily residue in barrels, tanks	25 lit/day	This will arise from Diesel storages tanks, & barrels in the premises of DG Sets, Shop-lanes & eateries.	Carefully removed & sent to reprocesses
2	-	CFL, e-waste like AA batteries, Mobile batteries etc.	-	This waste will be collected separately at source	Sent to authorised E-waste recycler

No Asbestos shall be used. Tar will be used only in construction phase. Transformer oil will be handled by MSEDCL. There will be no Chromium sludge from cooling towers as no biocide is being used, Waste from use of paints-pigments will be only during construction phase.

The cat refers to category number as per Renew the Hazardous Waste Authorization under Part II-Section 3-sub-section-ii of the Hazardous Wastes (Management, Handling and Transboundary movement) Amendment rules 2008 as amended till date. However, these are not originating from processes & hence are covered as MSW.

Thus precautions shall be taken for waste minimization, inventory control, JIT (just in time) & disposal.

Mitigation

It may thus be seen that Control measures are proposed to be taken with full precautions about the municipal, bio-medical as well as hazardous solid waste to minimize its menace.

4.11 Conclusion:

The impact is minimized because all DC Rules are faithfully obeyed.

This location is inside the purview of Notification on **Integrated Township** promulgated by Government of Maharashtra in Urban Development Department, bearing No. TPS-18 /CR-3 /1 /20(4)/UD-13 dated 26.12.2016 and amended by Letter No. TPS/1816/03/CR 29/17/UD-13 dated 31.03.2017. All the Conditions will be strictly followed.

CHAPTER 5 ALTERNATIVE TECHNOLOGIES

5.0 General

The standard ToR expects that alternatives should be considered from Conventional building construction, especially regarding building material, energy source and traffic options within the area. This is considered.

5.1 Building Materials

Government desires that fly ash may be considered as building material. This theme is adopted at some selected applications as follows:

- Pozzolona Portland Cement shall be used which contains 15% Fly ash.
- Fly ash can also serve as performance improver in our other constructions involving OPC(Ordinary Portland Cement)
- For road pavement HVFAC (High volume Fly Ash Concrete) will be tried for mass concrete
- For pavement construction, roller compacted concrete with fly ash is planned
- For low-lying area development, fly ash will help
- As a source of micro-nutrients/ soil amendment in green belt, fly ash will be used.
- Use of pre-cast thin lintels, use of ferro-cement – sun shed cum lintel will be examined.
- The steel manufactured by re-rollers will be preferred.
- For doors and window frames, timber is not proposed to be used.
- In case during the course of this construction which is a long period, if some environment friendly material comes in the market, same will also be encouraged in our construction.

In addition to this,

- Construction materials from nearest source are chosen to minimize energy consumption for transportation.
- The construction material will be carried in properly covered vehicles.
- All the contractors / Vendors will be instructed to use vehicles having PUC certificates.
- Security staff presents at site will supervise loading and unloading of material at site.
- Construction material will be stored at identified site/ temporary go downs at site.
- Internal roads will be maintained in good conditions with regular sprinkling of water 5-meter high tin sheets will barricade the periphery of the plot

5.2 Consideration for Construction

Salient features that will be considered while construction are as follows:

- Minimal disturbance to existing landscape and site conditions
- Use of non-toxic and recyclable material
- Efficient use of water and water recycling
- Use of energy efficient and eco-friendly equipment to the extent possible
- Machineries to be based on electrical energy rather than DG Sets.
- Building orientation to take advantage of solar access, shading, natural lighting and contours
- Demolition debris to be re-used.
- Biogas will be constructed to use regular solid waste
- Use of glass will be limited.
- Balconies will be open, preferably from three sides
- Non-conventional renewable energy is used.

5.3 Energy & Energy Conservation

The Government MSEDCL has assured us for supply of needful electrical energy. For this purpose, a dedicated substation and transformers will be provided. The details considered for EHV 220/22 kV are:

- The 220/22 kV substation will be have an LILO arrangement with tap off from PRM (Pune Ring mains).
- The tap off point location / arrangement will be decided in consultation with the MSETCL authorities.
- The 220/22 kV substation will have 3 transformers of 50 MVA each and will have 4 outgoing feeders per transformer. This is shown in enclosed drawing .
- The Internal power distribution network proposed for the Riverview City is of 11kV.
- The complete internal power distribution will be through the underground XLPE Insulated, round wired armoured cables.
- There are total Three Substations planned for the distribution of the Power for the Riverview City.
- The details for the Substation and the associated load centers are as tabulated below.

Table 5.1: Details of Sub-stations

Sr. No.	Description	Sector Name
1	Substation No. 1	RVR-1,RVR-2,RVR-3,RVR-4,RVR-5,RVA-1 RVA-2,RVA-3,RVC-1,RVC-2
2	Substation No. 2	RVR-6,RVR-7,RVR-8,RVR-9,RVR-10,RVE- 11,RVR-13,RVA-4 RVC-3,RVC-7
3	Substation No. 3	RVR-12,RVR-14,RVR-15,RVR-16,RVR- 17,RVR-18,RVR-21,RVC-4,RVC-5,RVC-6
4	Substation No. 5	RVR-19,RVR-20,RVR-22,,RVR-23,RVR- 24,RVR-25,RVA-5,RVC-8

- The 11kV power will be stepped down to 415V level using the number of distribution Transformers at various neighbourhoods. All the DTC's will be interconnected using the SF6/Air insulated Ring Mains Unit.
- The entire 22kV, 11kV and 415V network will be created through underground cables routed through trench.
- More details and Concept Note is explained in Annexure 8.

Proponent has decided to make provision for Energy Saving ab-initio as (1) LED light fixtures for the common areas, Landscape area and also for the street lighting and (2) Using Solar power for water heating and PV cells

1) LED Light Fixtures

The details are worked out and explained in Annexure 8. Summary of energy saving for Residential, Commercial, Special Amenities and Street Lights achieved will be 45,561 units per day.

As compared with conventional CFL lighting, the conservation is 11.62%. The details are enclosed in Table 5.1.

(2) Solar Power

Solar power can be used by two ways namely (i) for Common Area Lighting and (ii) providing hot water to the tenements, as Pune region is well suited for this.

- **Common Area Lighting**

It is proposed to use Solar Power for the common area power requirements. The solar power will be used with the net metering provisions this will enable to export the power to grid in event of excess power generation. Considering the connected load and anticipated power requirement during the day time the tentative roof top solar power plant capacities are calculated. The detailed capacity of roof top solar power plant is as tabulated below.

The anticipated power generation through the roof top Solar power plant will be 21,77,400 Units per year. This is calculated considering the output of solar power plant @ 1,20,000 Units per year per MW.

The summary of solar plant capacity for common area is given below:

Table 5.2: Summary of Solar Plant Capacity

SN	Particulars	Solar Plant Capacity (kW)
1	Total for Residential	4,570
2	Total for Commercial	6,070
3	Total for Amenities	650
4	Total for Public Utilities	954
	Grand Total	12,244

Total Energy Saving:

It is proposed to use LED light fixtures for the common areas, Land scape area and also for the street lighting. The details of energy saving achieved as tabulated below.

Table 5.3: Energy Saving

Sr. No	Description	Consumption per month by Users
1	Residential	2,49,71,520
2	Commercial	1,24,67,760
3	Amenities	3,96,000
4	Amenities	3,11,040
5	Grand Total	3,81,46,320
6	Savings due to Use of LED	3,35,472
7	Savings due to Solar Water Heating system	40,97,190
8	% Savings	11.62%

Biogas generated shall also be used as alternate energy source.

5.4 Transportation

Road Network is pre-planned both for internal traffic within the township as well as connected to nearest Pune-Solapur Highway and 110 meter proposed Ring Road.

This will be useful both during construction for loads of raw material and construction machinery as well as after occupation. The Road Hierarchy is kept as arterial, sub-arterial street collector and local streets as per UDPFI Guidelines. Traffic calming is designed near the schools and hospital zone by providing speed humps, space for vehicles at entrance gate and road signs. Parking facilities are also provided as per standard practice. The summary of Traffic Analysis is explained in Annexure 1.

5.5 Conclusion:

In any human activity there are always possibilities of finding various options. This project decided to examine and adopt such options that will be both environment friendly and best suited for healthful living environment. Various are considered. A final selection is thus arrived.

CHAPTER 6 ENVIRONMENTAL MONITORING PROGRAM

6.0 Monitoring Program:

A monitoring program has been detailed out in which the frequencies of measurement, the planned location of measurement and detailed budgets are listed.

The environmental monitoring program includes following:

- Ambient air quality
- Monitoring of exhausts from DG sets
- Noise level monitoring
- Water quality monitoring
- Wastewater Analysis

The MoEF & CC approved laboratory is appointed for the environmental monitoring during construction and operation phases. There will be one record section for recording all the sampling frequencies and analysis reports.

6.1 Air & Noise Monitoring:

➤ During Construction Phase:

The ambient air quality for the parameters PM₁₀, SO₂, PM_{2.5} and NO_x shall be monitored quarterly. During construction phase, the major air pollutant of prime concern is PM₁₀ as impacts of other emissions such as SO₂, NO_x & CO will not be significant because the nature of sources is such that the emissions are distributed spatially and as well as temporal. Dust emissions from construction activities shall require comprehensive mitigation measures as explained in detail in the EIA report.

The noise level shall be checked during construction activities. The noise level shall be recorded by the project proponents themselves and record shall be kept for daily readings. The location shall be selected in the area where there are chances of high noise levels. The noise emitted from heavy duty construction equipment during construction period being high shall require occupational preventive measures and temporary noise barriers for noise attenuation.

The water supplied by Tankers generally is of good quality but still to ascertain its quality as a precaution it shall be checked quarterly for physicochemical and bacteriological parameters.

➤ During Operation Phase:

The ambient air quality for the parameters RSPM, SO₂, NO_x and Noise levels shall be monitored quarterly as per guidelines at five different locations within the project site to ascertain that they are within the prescribed limits. There will be provision of total 5nos. of DG sets during power failure. The emissions from these DG sets are only limited while they are in operation. In this area the chances of power failure are very remote. Still the emissions of DG sets shall be monitored as per guidelines quarterly by taking test run of DG sets.

During operational period to control emissions from DG sets, stack heights of DG sets shall be as per CPCB guidelines. With regards to concern from vehicular emissions, the exhaust emissions due to rise in peak hour traffic will be mitigated by adopting traffic management measures and permitting vehicles having valid PUC. As this is being an expansion project the ambient air quality is being regularly monitored on site and the results are found to be within limits of CPCB standards.

During operational period the major noise pollution source will be DG sets and surrounding traffic

activity. In order to prevent adverse noise exposure to the occupants, optimal mix of mitigation measures such as low noise generation units, acoustic enclosures, and plantation of trees as noise barriers all around the project boundary has been planned.

6.2 Water & Wastewater Management & Analysis

The water supplied by Irrigation Department generally is of good quality as a source but still to ascertain its quality Water Treatment unit is installed for purification. As a precaution it shall be checked quarterly for physicochemical and bacteriological parameters. Water conservation shall be done with the help of collecting rain water and using it for domestic purpose and thereby minimizing requirement of fresh water from Irrigation Department.

Treatment of waste water in Sewage Treatment Plants and its reuse for secondary requirements like flushing, gardening, etc. is committed in this project thereby avoiding water pollution. Total four STPs are proposed.

Storm water drainage shall be adequately designed to take the runoff. These drains shall have silt and oil and grease traps to avoid pollution of water in drains outside the plot. Proper maintenance of storm water drainage shall be done to avoid choking of drains and flooding on site.

6.3 Environmental Monitoring Plan with Budgetary Allocation

During construction and operation phase the environmental monitoring is done regularly as per the statutory conditions as explained in section 6.1

The budgetary allocation for environmental monitoring plan for construction and operation phase of the project is as explained in Table 6.1.

Table 6.1: Environmental Monitoring Plan with Costing During Construction Phase

Sr. No.	Item	Parameters	Frequency	Location	Total (Lakh Rs) Per annum
1.	Ambient Air Quality	PM _(2.5) , PM ₍₁₀₎ , CO, SO ₂ & NO _x	Quarterly	At major construction area (6 locations)	2.64
2.	Noise Level	Equivalent Noise Level dB(A)(A)	Daily	At major construction area (6 locations)	1.10
3.	Water Analysis	Physical, Chemical and Bacteriological Parameters	Monthly	At Source	0.84
Total					4.58

During Operation Phase

Table 6.2: Environmental Monitoring Plan with Costing (Per Annum)

#	Monitoring	Parameters	Freq.	Cost/Yr. (Lakh Rs.)
1	Ambient Air quality	PM10,PM2.5,SO2, NOX	Half yearly	1.10
2	Noise Level	Equivalent noise level	Half yearly	
3	Exhaust from DG Set	SPM, SO2, NOx	Half yearly	0.12
4	Drinking Water	pH, Temperature, EC, Turbidity, Total dissolved solids, Calcium, Magnesium Total hardness, Chlorides, Sulphates, Nitrates, DO, COD, BOD, Iron, Zinc Manganese (Physico- chemical and bacteriological parameters as per the source and utilization of water)	Quarterly	0.56
5	Rain Water Harvesting	pH, Temperature, EC, Turbidity, Total dissolved solids, Calcium, Magnesium Total hardness, Chlorides, Sulphates, Nitrates, DO, COD, BOD, Iron, Zinc Manganese (Physico- chemical and bacteriological parameters as per the source and utilization of water)	4 times a year during monsoon	0.28
6	Sewage from STP	pH, BOD,COD ,TSS TDS	Quarterly	3.26
8	Manure	pH, Conductivity, Colour, Bulk Density, Organic Carbon, Total Nitrogen as N ,Total Phosphate as P2O5,Total Potash as K2O, C:N ratio, Moisture Content	Yearly	0.40
		Total		5.72

Samples also will be monitored periodically at storm water and RWH.

6.4 Conclusion:

It is proposed to frame an Environmental Monitoring programme both in Construction and Operational stages to monitor the effectiveness of the mitigation measures by judging the impact on environment. A separate budget is proposed for the same as also a dedicated Cell. A transparent approach will be kept with documentation and Reporting with statistical treatment to the data. **Checklist of Statutory Obligations** will be maintained and compliance with it will be monitored.

CHAPTER 7 ADDITIONAL STUDIES

7.0 INTRODUCTION

This chapter covers Risk Assessment Studies for the construction and operation phase, the safety precautions that have to be taken during construction phase and the Disaster Management Plan and Emergency Preparedness Plan Onsite and Offsite.

7.1 RISK ASSESSMENT

STEP 1: DEFINE THE PROJECTS/TASKS
--

a) What we shall be using is:

- plant/equipment
- portable electrical equipment
- pressure vessels/boilers
- hazardous substances
- scaffolding
- ladders
- lifts/hoists/cranes/rigging/load-shifting machinery

b) What our project/task will involve

- using tools/equipment with moving part(s)
- using tools/equipment that vibrate
- electrical wiring
- welding
- hazardous waste
- excavation / trenches (>1.5m)
- working around electrical installations
- working at a height (>3m)
- working in isolation.
- working in a confined space
- manual handling
- repetitive or awkward movements
- lifting or moving awkward or heavy objects

c) What our project is not likely to involve:

- working with x-rays ,or lasers
- working near traffic
- asbestos removal
- heavy demolition work
- Poor ventilation/air quality
- A poorly designed work area for the project/task

d) What may be the possible situation involving the following?

- Noise
- Dust/fumes/vapours/gases
- Hot temperatures
- Risk of fire/explosion
- Slippery surfaces/tripping hazards

During Construction Phase:**3: ASSESS THE RISK**

	Air Pollution	Water Pollution	Noise Pollution	Soil Pollution	Occupational Hazard
A. Material Handling:					
Cement	+M	-	-	+M	+M
Steel	-	-	+	-	+M
Sand	-	-	-	-	-
Stone	-	-	-	-	+L
Wood	-	-	--	-	-
Glass	-	-	-	-	+M
Hardware	-	-	-	-	-
Colour	-	+H	-	+M	-
B. Construction Machinery					
Rotary Driller	+L	-	+L	-	+L
Mixers	+M	-	+M	+L	+M
Excavator	+L	-	+L	-	+H
Material Lift	-	-	+L	-	+H

Risk Factor:

- + : **Positive**
 - : **Negative**
 L : **Low**
 M : **Medium**
 H : **High**

4: CONTROL THE RISK

For any projects/tasks that present a high or extreme risk, a Safe Work Method Statement must be completed.

a) Note how you will control the risk following the priorities listed to the right. This may include controls like redesigning the workplace, using guards or barriers, ventilation, using lifting equipment or personal safety equipment.

1. Eliminate the hazard
2. Keep the hazard and people apart
3. Change work methods
4. Use personal protection

b) Note any specific risk assessments required for high-risk hazards. Check whether any hazards noted in step 2 require further assessment or action

- ☒ hazardous substance risk assessment ☐ confined spaces risk assessment
☐ test and tag electrical equipment ☐ sound level test

c) Note Permits/Licenses/Registration required

- ☒ Demolition work ☒ Friable asbestos removal

[√] Electrical wiring
[√] Pressure vessels

[x] Ionizing radiation sources
[√] registers for chemicals, Personal protective Equipment, training, ladders, lifting gear

d) Note certificates of competency/licenses for operators

[√] Scaffolding
[√] Rigging
[√] Load shifting machinery operation
[x] Pesticide application
[√] Crane operation
[√] Hoist operation

e) Note emergency systems required

[√] first aid kit
[√] extended first aid kit
[x] emergency stop button
[√] additional emergency procedures
[√] Fire control
[x] remote communication mechanism
[x] others

7.2 DISASTER MANAGEMENT PLAN

Disaster is a threat to Environment and Society. Disaster Management Plan (DMP) deals with the preparations to reduce the impacts of Natural and Man-made disasters. Recent rise in the incidence of disasters has alerted us regarding the need of pre-planned DMP which will aim at providing effective and timely relief during disaster through organized manner.

Emergency prevention through good design, operation, maintenance and inspection are essential to reduce the probability of occurrence and also making the occupiers aware of what to do in case of any emergency. The overall objective of a disaster management plan is to make use of the combined resources created or available at the site and/or off-site services to achieve the following:

- Prevent Disasters
- Minimize the effects of the accident on people and property;
- Initiate the rescue and medical treatment of casualties;
- Safeguard other people
- Evacuate people to safe areas with care
- Inform and collaborate with statutory local and state authorities;
- Provide credible information to news media;
- Bring the incident under control;
- Preserve relevant records and equipment for the subsequent enquiry into the cause and circumstances of the emergency;
- Investigate and take steps to prevent recurrence of similar incidents.

DMP follows the Basic structure as shown in Figure 6.1

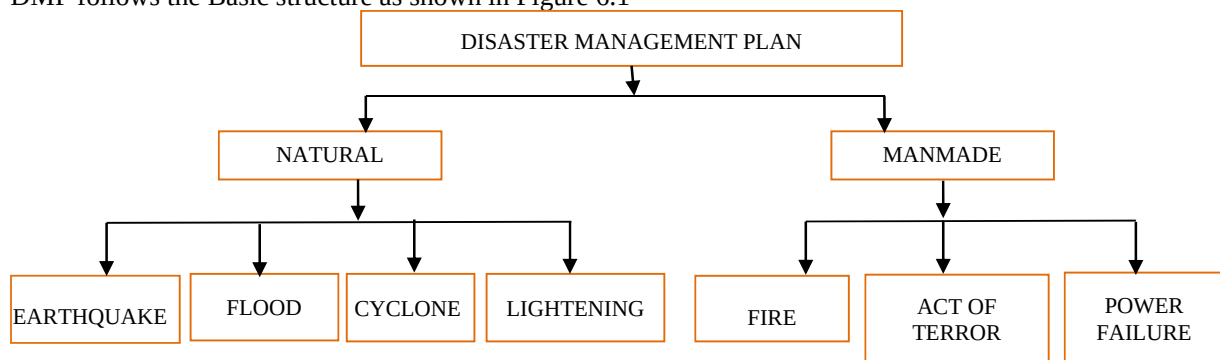


Fig. 7.1: Basic Structure of DMP

7.2.1 Natural Disaster

A. Earthquake:

Seismic Environment & Precautions

As per the Seismic Zoning Map of India, Pune region falls under Seismic Zone-III. The structural design shall be certified as per IS code 456-2000 Plain & reinforced concrete – code of practice IS 1893 – 2002, criteria for earthquake resistant design of structures.

B. Floods:

Particularly in this district, due to nearness of water bodies chances are to get flooded by accumulation of water from heavy rainfall. Following precautions would be taken by the proponent to manage flood disasters:

- a. Storm water system would be checked and cleaned periodically.
- b. Mapping the areas within or leading in or out of the building that will be water logged, flooded or isolated due to the flood. The areas will be marked after completion and before occupation of the project (as final ground levels etc. will be available after completion).
- c. Basements are not provided in this project.
- d. Dewatering pumps shall be installed at vulnerable locations.

C. Cyclones:

Cyclones are caused by atmospheric disturbances around a low-pressure area distinguished by swift and often destructive air circulation. They are usually accompanied by violent storms and bad weather.

There is no history of any cyclone in this area. However in such an instance the occupants should be advised to stay in the shelter in tightly secured windows and doors. The glass of windows etc. should be covered with paper/cardboards to avoid glass breaking due to flying objects outside.

D. Lightning:

Lightning is an atmospheric electrostatic discharge accompanied by thunder which typically occurs during thunderstorms and sometimes during volcanic eruptions or dust storms. It often leads to physical damage to the building and occupants. It can also lead to short circuits, failure of power supply and fire.

Lightning arrestor systems shall be provided for buildings in this project to abate the impact of lightning hazard.

7.2.2 Man-Made Disaster

A. Fire:

Fire could take place through various means; one of them is through electrical fire. Hence, all the electrical works and material of the building would adhere to the standards. Regular maintenance and audit of the electrical systems would be carried out by external auditors.

Fire alarm would be installed. The functioning of these fire alarms would be checked periodically by security manager. A report of the same would be submitted to safety manager. The same report must be submitted to PP for necessary action. The occupants/residents of the proposed buildings would undergo mock fire drills. These mock drills would be conducted by qualified staff (e.g. fire brigade). Fire extinguishers would be placed in every floor. All occupants/residents would be given training on how to use these fire extinguishers. Fire extinguisher equipment would be evaluated periodically to ensure that it is in working conditions by security manager. If any faulty equipment is observed then it would be repaired or replaced by Society. Proper evacuation plan would be chalked out for the building. The map for the evacuation plan would be provided to all the occupants.

As a township, this project has provision of its own Fire station within the premises, supported by Fire Tenders and trained staff.

Firefighting measures:**For Residential Buildings:-****Hydrant System**

- Overhead Storage of 10000 / 20000 litres to required building.(As per Fire NOC / NBC / Maharashtra Fire Act)
- 1 No. of Booster pump for Fire.
- 1 No. of Wet-riser.
- Single Headed Hydrants shall be provided at each Landing Level.
- The System shall be fully charged.
- Automatic sprinkler system in each building having height 45mtr & above

For Commercial Building:-**Hydrant System**

- Underground Storage of 50,000 liters for each building (As per Fire NOC / NBC / Maharashtra Fire Act)
- Single zone is proposed for all buildings.
- 1 No. of Electrical driven Multi-stage, Single-outlet Fire Pump & 1 No. Main diesel engine driven.
- 1 No. of Multi-stage, Single-outlet Jockey Pump and same head as above for common Fire Pump room
- 1 No. of Booster pump for Fire on the terrace.
- 1 No. of Wet-risers.
- Double Headed Hydrants shall be provided at each Landing Level.
- The System shall be fully charged.
- Overhead storage of 10,000 / 20,000 liters to required buildings. (As per Fire NOC / Fire Act)

Fire Alarm System

- Main Conventional Analogue Fire Alarm Panel
- Conventional Control Zone Module
- Conventional Monitor Module
- Conventional Manual Call Point
- Fault Isolator Module
- Cabling
- Repeater Fire Panels at strategic locations

Fire Appurtenances

- Fire Extinguishers
- Fire Buckets

Sprinkler System

- Single zone is proposed for all buildings.
- Sprinkler Pump will be provided.

a. Response Sequence during Fire:**i. Person noticing the fire should attempt to isolate and extinguish the fire with the available equipment and Inform or arrange to inform the security regarding the:**

- Location of the fire
- Material of burning
- Extent of fire
- Callers name and number

“A proper code of communication shall be maintained wherein the caller makes sure that the message has been conveyed to the right person”.

ii. Security or the coordinators will

- Respond to the scene of the incident.
- Arrange to send the necessary firefighting equipment to the scene of the incident.
- Extinguish the fire with the available equipment.
- Ensure closure of gates immediately to regulate traffic in such a way that free movement of outside assistance like fire tenders, ambulance etc is available.
- Security will cordon off the area and local city fire fighting staff should be notified for further assistance.
- All the occupants will need to stop their operations/ work, switch off lights, fans, machines etc. All persons should assemble to refuge or designated area for fire and hazardous situation.

iii. Reporting and Follow up System

- All cases of fire occurrence, no matter how small, must be reported promptly to the Security for further action to avoid such incident.
- Fire extinguishing equipment once used, should not be returned to its location without it is being recharged/ certified fit by the security.
- All fire extinguishers after use should be laid horizontally to indicate that they have been exhausted.

b. Refuge Area :

The Refuge Area will have the following resources available:

- i. Copies of the Disaster Management Plan.
- ii. Layout Plan of the complex.
- iii. Information regarding Safety Equipment, Fire Fighting material.
- iv. A list of important telephone numbers like those of neighboring police station, Fire Brigade, Hospitals etc.
- v. First - Aid Kit.
- vi. Communication equipment - Internal and External telephones and other communication equipment.
- vii. A separate evacuation plan shall be adopted for evacuation of patients in the hospital

In addition to many of the above measures an attempt will be made to add any site specific steps and manpower based instruction. Instruction should be in multiple languages including “Marathi and Hindi”. The communication equipment will be checked periodically to ensure that they are functional.

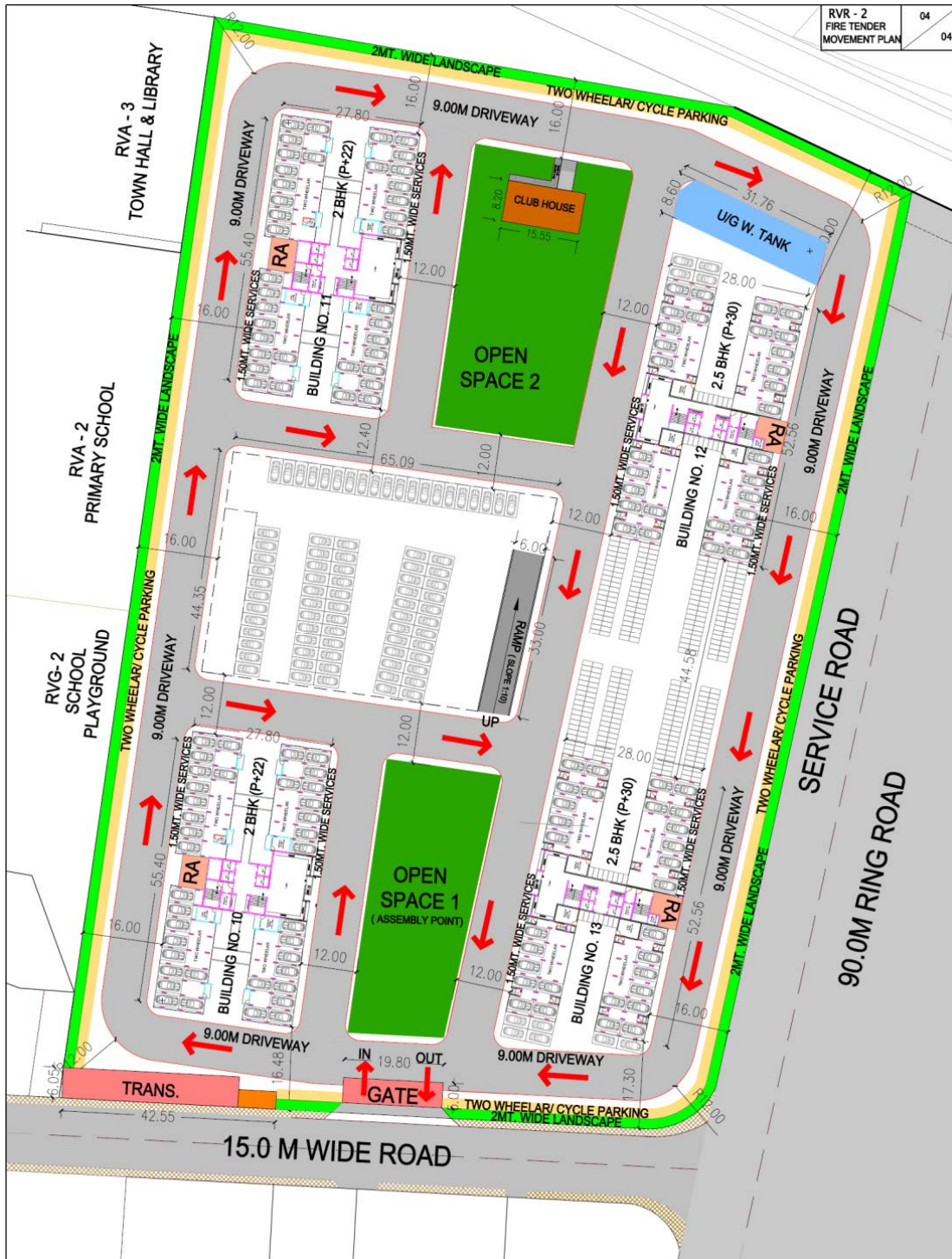
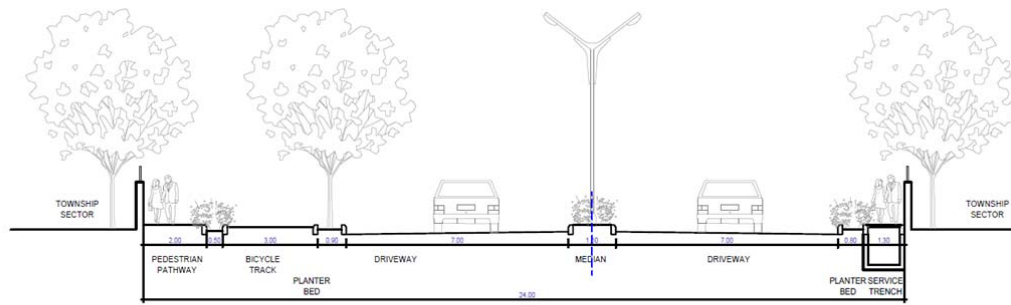
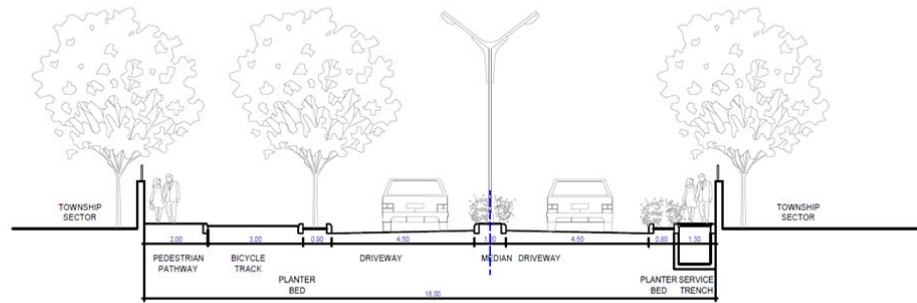


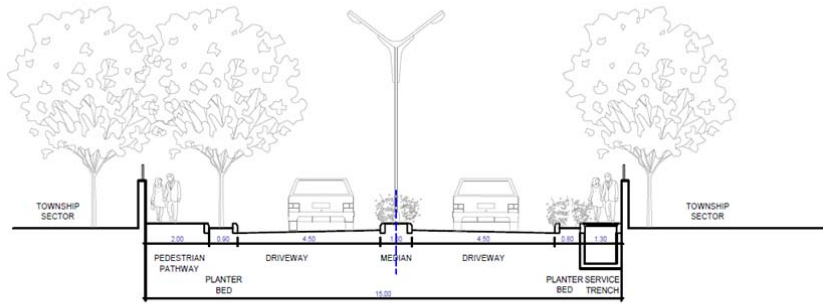
Fig. 7.2: Typical Fire Engine Movement Layout



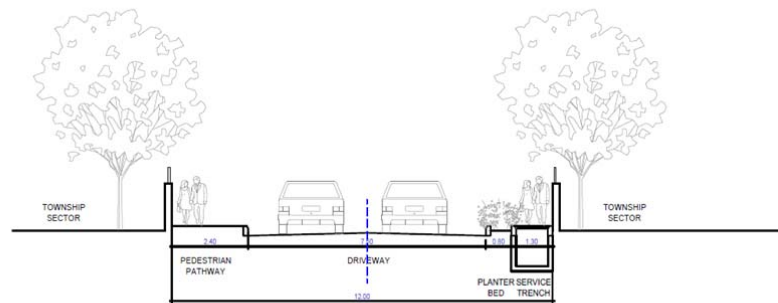
SCHEMATIC SECTION OF 24 M WIDE INTERNAL ROAD



SCHEMATIC SECTION OF 18M WIDE INTERNAL ROAD



SCHEMATIC SECTION OF 15M WIDE INTERNAL ROAD



SCHEMATIC SECTION OF 12M WIDE INTERNAL ROAD

Fig. 7.3: Road Section for Vehicle Movement

B. Act of terror:

After completion of this project even if each building shall have its own security services, precautions should also be taken at individual level

C. POWER FAILURE:

Power failure is a short- or long-term loss of the electric power to an area. Failure of electrical power to a building will have a serious impact on its operations, particularly if the failure occurs during normal operating hours when the building is fully occupied.

a. Causes of Power Failure:

There are many causes of power failures in an electricity network which are caused by either of the following faults:

i. Manmade / Technical Fault

- Faults at power stations,
- Damage to electric transmission lines, substations or other parts of the distribution system,
- Short circuit,
- Overloading of electricity mains.
- Collision of person or object with utility poles or power transformers,
- Human error in operating equipment within the building or outside (such as at the utility company supplying the power), or malicious tampering.

ii. Natural Events.

Natural events include storms, floods, and earthquakes, lightning.

b. Types of Power Failure:

Power failures are categorized into three different phenomena, relating to the duration and effect of the failures:

- i. A transient fault is a momentary (a few seconds) loss of power typically caused by a temporary fault on a power line. Power is automatically restored once the fault is cleared.
- ii. A brownout or sag is a drop in voltage in an electrical power supply.
- iii. A blackout refers to the total loss of power to an area and is the most severe form of power outage that can occur.

c. Effects of Power Failure:

- i. Loss of visibility
- ii. Safety is at risk.
- iii. Stoppage of elevators.
- iv. Computer memory loss and equipment damage.
- v. Stoppage of working of Fire fighting system.
- vi. Stoppage of working of building utilities like water pumps, Sewage treatment plants etc.
- vii. Loss of comfort.

i. Mitigation plan:

Buildings have emergency and standby power systems to provide safety and comfort to building occupants during interruptions in their normal power supply.

ii. Diesel Generators

DG sets will be installed to provide emergency power to all common services in case of power supply failure. All the common services i.e. Utilities, lighting in common areas and Lifts will be considered to provide emergency power supply. When power supply failure is sensed, the DG sets will start automatically and feed to the services connected. The recommended 126 DG sets shall be provided

iii. Provision of Independent electrical circuits for critical equipment as per Norms

Also as per specific requirement of Firefighting department the Electric supply for Fire pumps, booster pumps, sprinkler pumps will be on independent circuit.

iv. Uninterruptible power supply (UPS)

Uninterruptible power supply, also uninterruptible power source, UPS or battery/flywheel backup is an electrical apparatus that provides emergency power to a load when the input power source, typically the utility mains, fails. A UPS differs from an auxiliary or emergency power system or standby generator in that it will provide instantaneous or near-instantaneous protection from input. Even if DG sets are provided as power backup a UPS is typically used to protect computers, data centers, telecommunication equipment or other electrical equipment where an unexpected power disruption could cause injuries, fatalities, serious business disruption or data loss.

7.2.3 Offsite Disaster Management Plan

Safeguard Requirements for Natural and Manmade Disasters:

List of nearest clinics and hospitals shall be maintained for medical emergency as also any other eventuality. The table below will be ready and will be distributed to all members within the building and later for off-site plan to neighborhood. These information need to be updated every six months before safety drills. The information thus updated should also be shared with occupants.

Off-site plan addresses all issues which can have impact out-site of the site. Off-site Emergency Plan has many components which need to be in place for effective plan
Detailed DMP Report is provided as Annexure.

7.3 Hydro-geological Investigation Survey

The Hydro-geological survey has done for the proposed site. Kindly refer **Annexure 2**

The report, inter-alia shows following observations;

- Area is having potential aquifer system.
- From the ground point of view, area can be divided into upper reaches.
- The development & augmentation of groundwater resources is more favourable at lower reaches.
- At upper reaches, percolation through recharge pits may help in retaining soil moisture & partly contributing ground water recharge towards valley portion.
- The existing bore well can be utilized the source of recharging.

7.4 Traffic Assessment

The proposed development is intended for Residential & Commercial development comprising of Residential Apartments, Club House, convenient shopping, primary school, offices, IT Park, Town Hall and Hospital. The details are provided in Annexure 1.

7.5 ECBC Compliance

7.5 Conclusion

Having analyzed the Project so far, in this Chapter it is shown that this project will meet the public acceptability (now and in future) as the proponent has kept cordial and pollution-free relations around. Whatever are the possible risks due to unforeseen act or events are apprehended now and a Management Plan prepared. Any damage to structures of Heritage importance can create sensitive situation. This is studied and results entered. Society needs such development based on the statistics assembled. It is seen that no R & R efforts are freshly required as the land is in peaceful possession of the Proponents.

CHAPTER 8 - PROJECT BENEFITS

It is seen that the Project is aimed to fulfill the objective of Sustainable Development. It will certainly improve social status. In what way and to what extent this will reach is submitted herein below.

8.1 Improvements in the physical infrastructure

This Project will improve the physical infrastructure of this area.

- It will not disturb the existing pattern of drainage, though the building construction is massive. The orientation is so made not preventing the natural flow of rain water. There will neither be any inundation nor any erosion. As roof rain harvesting is proposed, there will not be any incremental run-off causing floods downstream. The nearby nalla is trained by good civil engineering practice and hence physical infrastructure will improve.
- Rainwater harvesting will improve the groundwater table. On the other hand no groundwater is consumed by us as we are either dependent on authorized surface water source or on recycled wastewater after full treatment. The enhanced groundwater will be indeed useful to the surrounding farmers who are in the vicinity. The green crops in their fields on such groundwater will improve the physical infrastructure.
- Many visitors and goods come to the township that arrives by road. Many residents go out using the road. All the labour force will come by road. Thus we shall have to maintain the roads in good conditions. Road connectivity thus will improve. This improved physical infrastructure will be an added facility to the community for surface transport.
- Greening drive in the premises is massive and will give a pleasant look to the land. It will absorb some portion of the CO₂ produced by fuel burning (utilities). For greening fresh water is not proposed to be used. The treated wastewater will be recycled and its CNPK contents will be useful as nutrients. Canopy of trees will arrest dust fugitive SPM as well as the noise.
- When we are developing our own tree plantation, concept of bio-diversity will be kept in mind. This will need many species. These will be made available to us only through nursery. Nursery once so established will be useful in turn for others too who need. The nursery available with us may inspire others to plant more trees in this area in their compounds. This physical infrastructure will be kept available to them.
- Whether by a particular activity the physical infrastructure is improving or deteriorating is best judged by the change in prevailing land prices. Generally the land prices get appreciated based on two factors namely (1) the comfort that it offers and (2) the occupation that it serves. On both these counts, this project activity is desirable. This consideration is also reflected when the people are contacted to know about their opinion on the new venture here.

8.2 Improvements in the social infrastructure

This Project will improve the social infrastructure of this area.

1. It will not disturb the existing pattern of social relations and democratic set up. In the District similar projects are already running their units over the years. These are not only running with efficiency but are running with no disturbance from the local people. Local people have even encouraged the expansion of such residence-cum-workplace. This mainly because they are accepted by local culture, without any disturbance to the existing pattern of social relations or hierarchy. Likewise the same Gram Panchayat continues with same members and it gets support from this unit and the unit gets encouragement from the Panchayat. The peoples' democratic set up is undisturbed. This township will not be a burden to Gram panchayat as it is self reliant.

2. It is evident from a short history of last 5-6 years that the Zilla Parishad has become somewhat stronger since the inception of similar units in the district here. The proponent's management consists of good-meaning people. They will employ proper sons of the soil without discrimination, wherever feasible. The buildings of the unit have significant ratable value and substantial raw material comes into the premises from local body. The Proponent's management keeps the transparent account. This will further enhance with diversification and the Panchayat will have a continued benefit of taxes and cess.
3. The residents will have daily needs of milk, vegetables, eggs, fruits, which for such large number of tenements may come to rupees 8-10 lakhs per day. If the local farmers and poultry owners take the initiative of entrepreneurship, they will be benefited. Citizens will also encourage them as this will be a fresh supply. The demand may go on increasing.
4. The rural economy is found generally dwindling because farmers depend only on one single source of livelihood namely conventional agriculture. With support of funds and amenities by our help, perhaps they will have more purchasing power and more use of domestic animals. The increased greenery and farming with support of the grass production can increase and animal husbandry will enhance. Buffalos, sheep and poultry can be a good business and work for ladies and elderly persons.
5. Upliftment of rural sector is slow because of lack of amenities and facilities. If there is a nucleus of industry or steady support of money-flow, such utilities can come to that area and sustain. By presence of similar units, already we are seeing the availability of Banking services and Government Post Office. With the advent of unit like ours, these services will be used more and more advance facilities will come to the horizon. Fire fighting tenders will be now more easily available as also the Police Protection.
6. In the study zone of 10 km radius, there was previously hardly any purchasing power and people had hardly any materials for sale. As a result even weekly bazaar markets were very scanty. It is now foreseen that there will be a well disciplines bazaar in the vicinity either to sell or purchase the needed commodities, without waiting for weekly bazaar or walking over there. The agricultural implements, agro-chemicals and vehicles will be in more demand and village grown milk products, vegetables and agricultural proceeds can be for sale.
 - Society and this Project are interdependent. Project gets strength from the villagers and they get livelihood and amenity support. Both of them can get better future. To maintain this continuity, this is based on "Symbiosis", as also timely funds. The town residents will need help like drivers, house-maids, equipment repairers etc. The township management will also need help like watch and ward, gardeners, drivers, plumbers, electrical fitters, repairers. This work force can also come from local village, if such skill is developed.
7. Time management is of importance especially in industrialized community though may not be so in nearly agriculture oriented society. In rural background much of the time and energy is wasted in reaching from one place to another. This is due to lack of swift mode of transport. By the presence of this project, number of vehicles in this area will generally improve (both private and public-owned). This will help shorten the time reaching destination and utilize it for some fruitful productive work. As people will more know about the importance of time, more vehicles will come on the roads.
8. Education level goes along with flow of funds and avenue of livelihood. Dependence on Government subsidy also goes along with political stability of the area. The level of education and literacy (especially rural and women) is very poor, needing improvement. This activity by this Proponent will certainly play a catalytic role in this.
9. Likewise the health level goes along with flow of funds and avenue of livelihood. Dependence on Government institutes like PHC (Primary Health Centre) also goes along with political stability of

the area. The level of health and medication (especially children and women) is very poor, needing improvement. This activity by this Proponent will certainly play a catalytic role in this. In addition to this, the Project itself is accommodating a hospital with O. P. D. facilities.

10. Health awareness and economic independence may also help in Family Planning decision-making.
11. What is stated above about the human health is equally true about animal husbandry and veterinary assistance. This may improve now.
12. Living in harmony is an important aspect of the society. This can happen only if all the components are comfortably placed. Persons engaged in their respective vocation and accruing job satisfaction leads to this. This will become possible by this venture.
13. It may not be out of place if we point out that the sister concerns of **TI** have already demonstrated their interest in community development. The group is associated with local social bodies, educational institutes, credit societies and developmental societies. The corporate social responsibility initiatives are focused on employees, the community around its facilities and the environment. Running of the activities include
 - Running of community centers which employ the wives of the employees, where they are provided vocational training to make them self-sufficient and uniforms and hand gloves stitched by them can be used here.
 - Activities conducted by the employees focus on three groups: women, senior citizens and underprivileged children wherein each department in the company adopt an institution around here. These are schools, old age homes and remand homes.
 - Unit will actively support the efforts of primary education to children of economically weaker section of society.
 - On the environment front active drives of tree plantations across villages and training lectures in-house undertaken
 - Construction of Hospital, Shopping Centre and Community Hall.

8.3 Employment potential – skilled, semi-skilled and unskilled

The Project and its supporting activity need many types of people right from manual to managerial strength, in a pyramid. The raw material carting may need unskilled workers with people on tractors tankers, trucks and tractor repairers as skilled ones. So in construction and Town administration activity all three types i.e. skilled, semi-skilled and unskilled people are required. The overall potential including the garages, loading-unloading actions, eateries, small shop owners is substantial. The local people can get a good share out of this. In the higher management, science and technology prevails and there some outsiders will have to be engaged at least for the time being. If the second generation local people acquire that skill, they too will be able to fill the gap and accrue benefit of higher jobs. If the activity becomes stable by that time, perhaps expansion in further phases may become possible further and then employment availability may further enhance.

It can be stated that by this activity employment potential is certainly increasing in all walks of life – skilled, semi-skilled and unskilled

8.4 Other tangible benefits

Both tangible and non-tangible benefits will result from this activity and many of those are described above. Apart from direct employment, many other benefits will accrue like

- Erosion control by nalla training, terracing and bunding
- Flood control by rain-water arresting, and harvesting
- Groundwater level enhancing by recharging
- Time saving by quicker transport

- Aesthetics improvement by general greening with emphasis on biodiversity
- Availability of nursery facilitates plantation
- Preference to raw material and goods (both phases construction and occupation) purchase goes to local neighboring place
- Developed economy strengthens democratic set-up.
- Strengthened democratic set-up will bring weightage to secure better school-subsidy and health-institutes from Government
- Developed economy brings with it literacy and healthful living.
- Improved safety-security in surrounding with better Law and Order.
- The benefits accrued by the Project Proponent will partly pass to the neighbours, original plot holders
- Symbiosis and sustainable development will be the ultimate objective.

8.5 Chapter Conclusion

All these social benefits will come in reality by Project like this.

CHAPTER 9 ENVIRONMENT MANAGEMENT PLAN (EMP)

9.1 Need:

Environmental management is a crucial segment of Township project **RV-City**. Management of **RV-City**, in view of the global concept of sustainable development has kept a policy to do their best. Therefore, preparation of Environmental Management Plan is a must to fulfill bifocal aspect of the statutory compliance as well as that of social concern. Social concern too is further bifocal namely the answerability to own **RV-City** citizen as well as to be congenial to the neighbouring village. Care is taken to keep this EMP (1) site-specific, (2) Implementable and (3) Auditable. Logic is provided to keep the scope of accommodating further expectations.

9.2 Objectives:

- To arrive at Environmental Management Philosophy
- To provide support of Money, Men and Material for success
- To fix responsibility by defining the components of environmental management.
- To fix responsibility of legal components of environmental management.
- To write Emergency Preparedness & Response Plan.
- To prepare as a check, schedule for monitoring and compliance.
- To cover all the above aspects for the construction phase, and
- To establish a watchdog committee voluntarily with an ultimate aim of compliances.

9.3 Environment Management Philosophy:

For designing this, the structure as well as hierarchy are both important.

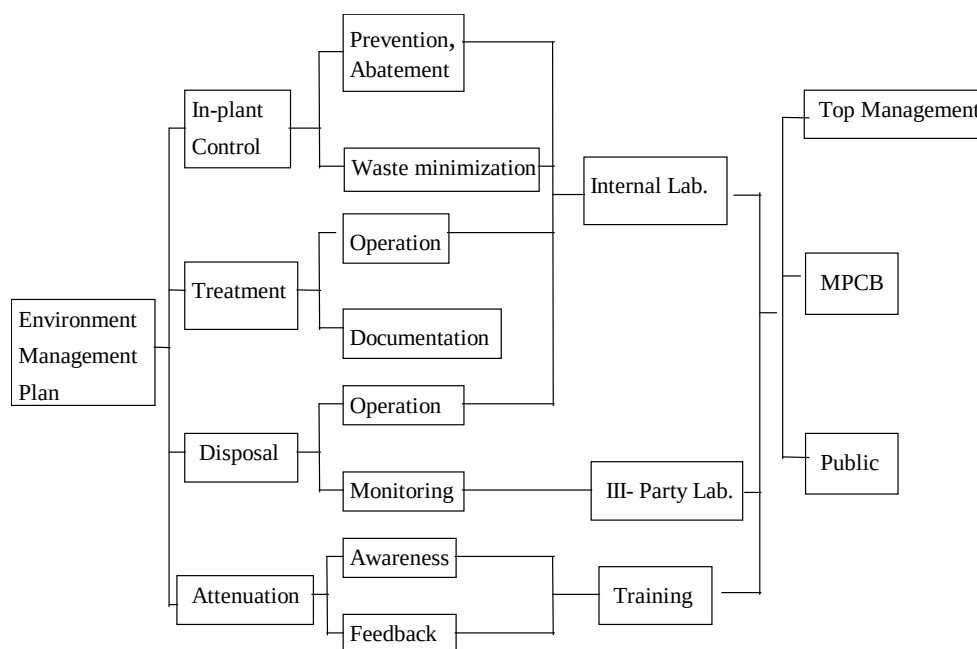


Fig. 9.1: Structures

RV-City is aware that environmental management is not a job, which can be handled without a careful planning. The success lies if three components are simultaneously present viz. (1)

management support, (2) efficiency of the environment management cell and (3) acceptability of resulting environmental quality, both by Authorities and by Public. A structure of this plan and hierarchy of process flow for environmental management is prepared and enclosed as logics, which is self-explanatory. **RV-City** will adopt this structure and hierarchy, which is akin to principles and practice. Therefore this Plan has considered the expectations given by the publication of Administrative Staff College of India, Hyderabad, ToR specified by the expert SEAC of Maharashtra and will be modified further to encompass the conditions that may be prescribed in the final Environmental Clearance and Consent to establish as well as future other expectations. The scope for modification of this EMP is characterized by following logic.

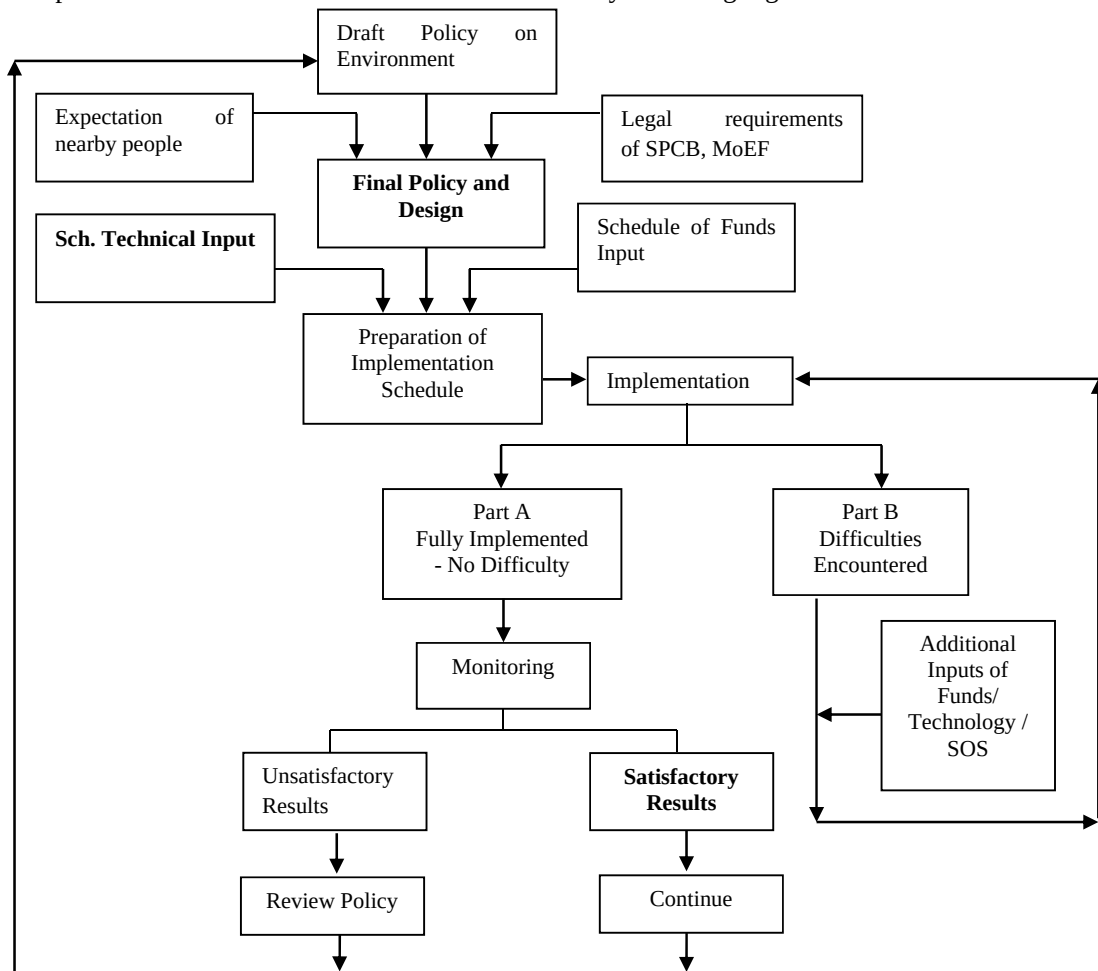


Fig. 9.2: EMP Hierarchy

9.4 Support of Money, Men and Material

For achieving success basic is the management will. It is ensured here in this **RV-City**. This is reflected in providing the required Organization, Environmental Funds to run it and facilities to assist it. So is provided as EM Cell –

9.4.1 Environment Management Cell:

Such massive work cannot be conceived unless a framework of men, material and money is specially earmarked. This is done by establishing a Environment Management Plan first and the an Environment Management Cell. The cell shall be backed by the highest person of the Organisation.

The structure:

Table 9.1: Environment Management Cell

#	Level	Designation	Purpose
1	Highest	RV-City Managing Director	Policy
2	Top	RV-City Technical Director	Guide
3	Executive	VP Environment	Supervise
4	Manager	Chief Civil Engineer	Job A
		Chief Environment Engineer *	Job B
		Medical Officer	Job C
5	Technical	Various Levels	Implement

The Jobs are described below:

Table 9.2: Job of Environment Management Cell

#	Job of & Job	Facet	Aspects
1	Chief Civil Engineer. Job A	Construction Phase	Material waste minimisation, labour camp sanitation, Noise, oil-grease and vibration nuisance control, accident prevention.
		Post-construction	Remediation of ugly sites, leakages and maintenance
2	Chief Environment Engineer. Job B	Air	Car census, PUC control, ODS control, Noise & Odour mitigation, Dust control
		Water	Water budget, O & M of Water Purification and Wastewater Treatment Plants.
		Solid waste	Segregation, Collection, Composting, Carting
		Greening	Tree Census, Tree Planting, Lawn Development, Storm water, Agri. Return water, Control on use of pesticides, nursery
		Monitoring	Field observations, laboratory tests, interpretation & Reporting
		Public relations & Press	Documentation, Updating, rehabilitation, training, Meetings, Rapport
3	Medical Officer. Job C (Only during Construction Phase)	Occupational Health	Routine surveillance, prevention, accident relief, Snake bite remedies.
		Veterinary	Stray dog Control, Pest Control

The staff working under CEE (Chief Environmental Engineer) shall be as follows:

Table 9.3: EMC Personnel

Level	Sub-Level	Section	Designations	
CEE	Office	Management	Administrative officer AO	
			Accounts Officer CAO	
			Public Relations Officer PRO	
		Technical	Deputy CEE	
			Training Officer TO	
			Statistical Officer SO	
			Field	Zonal Officers ZO
				Ward Officers WO
				Sanitary Inspectors
	Horticultural		Horticulturist	
			Assistant Horticulturists	
			Gardeners	
	Monitoring	Laboratory	Senior Scientific Officer SSO	
			Scientific assistants SA	
			Lab Assistant	
		Field	Samplers	
			Mobile Lab Operator	
Plus other attendant staff like clerks, peons, driver, storekeeper etc.				

The personnel required to man this cell as stated above, may be tailored according to need. As long as the activity is of smaller scale the jobs can be combined and entrusted to lesser number of people.

Table 9.4: Monitoring Schedule

Sr. No.	Environmental Monitoring	Parameters	Frequency	Location
1	Ambient Air quality	PM10, PM2.5, SO ₂ , NO _x , CO	Quarterly	Total 6 Stations around periphery of the site.
2	Noise Level	Equivalent noise level	Daily	Total 5 Stations around periphery of the site.
3	Exhaust from DG Set	SPM, SO ₂ , NO _x	Quarterly	Stack of DG set.
4	Drinking Water	pH, Temperature, EC, Turbidity, Total dissolved solids, Calcium, Magnesium Total hardness, Chlorides, Sulphates, Nitrates, DO, COD, BOD, Iron, Zinc Manganese (Physico- chemical and bacteriological parameters as per the source and utilization of water)	Quarterly	Domestic water tank

9.4.2 Environmental Funds

Table 9.5: Funds for Environment Management

Particulars	Set Up Cost Rs. in lacs	OMRR Cost (Rs. Lacs / Year)
STP cost (Incl. Pumping)	4175	1428
Rain water harvesting	105	10.00

Environmental monitoring	MoEF approved laboratory	83.82
Solar water heating	3237.00	33.00
Gardening (Incl. Transplantation)	574	57.4
Solid waste management	53	8
WTP cost	1500	657
Disaster Management Cell	12.47	2.5
Total	9692.47	2279.72

OMRR is operation, maintenance, repairs & replacement.

9.5 Components of Environmental Management (Site – Specific)

9.5.1 Air Environment:

- Monitor the consented parameters at ambient stations, regularly.
- Monitor the work zone at various stations to satisfy the corporate requirements for health and environment.
- Maintain a record of running of DG (diesel generating) sets
- Monitor the stacks or vents fitted to sections, of raw material, cookery and DG power plants.
- Monitor the vehicles by PUC test.
- When on-line estimation micro-processor is established, arrange to display the findings at agreed pre-determined locations in the Town.
- **Site-specific:** There are (1) stacks fitted to 126 numbers of DG Sets, (2) large exhaust fans fitted to community kitchens, (3) disinfecting chemicals dosing in water works and STP. These stations especially be visited and remarked so placed in daily documentation record.

9.5.2 Water Environment:

- Install water meters, take readings routinely, record in the register and check to avoid water wastage. If wastage is more report to the management for caution & correct
- Check the quality of water at selected places at ESR, GSR and few taps.
- Keep a daily watch on pH, TSS, TDS, BOD, COD of the units to ensure good treatment of waste water into Sewage Treatment Plants and especially at its reuse points as for flushing, gardening, road washing, A.C. system, car washings, fire-tanks make up and on Cane-farm.
- Ensure the network of connection to rain water harvesting units; maintain its sanitation and documentation.
- To keep a watch on storm water drainage system for any abnormality as to its siltation, entry of dropping leaves, hampering of carrying capacities: and if found quickly arrange the rectification.
- Surface water disposal will be through pipes and masonry channel covered with RCC slab. This will be collected through catch basins located outside the build area. Storm water drains will be finally connected to the municipal Storm water Drain
- Located on the road. RCC Hume pipes will be used for draining the surface water drain. To ensure that a pre-treatment is given to the roof collected rain water before recharging it in ground water.

- The parameters & analysis are based on the guidelines given by Central pollution Control Board (CPCB)
- Measures are taken to segregate the sub-streams of effluent as per their characterization.
- Monitor the storm-water at the point where natural stream is entering our premises from outside. Erect a screen where found necessary and remove the screenings.
- Water conservation is accorded high priority in every section of the activity.
- Keep record of wastewater returned back to fire-fighting make-up, flushing, lake make-up process and to gardening, both the quantity and quality details.
- Monitor fertilizers, pesticide, at return water from gardens and Lawns
- Monitor N and P, coli form, with BOD in streams, lakes.
- **Site specific:** In all four STPs are provided for capacity of 26090 MLD. Separate area is provided and be maintained with good house-keeping. 100 number of Rain water Harvesting pits of capacity 2.00m X 2.00 m X 1.00 m CMD each will be provided. Keep documentation of it.

9.5.3 Solid waste:

- Monitor MSW location-wise, split-wise (as organic, inert, paper-packing, rubber, glass, miscellaneous)
- Monitor biogas site environment. (Water, groundwater, leachates, air, soil, up-gradient-down-gradient, upwind-downwind)
- Monitor garden sweepings and dry leaves. Use as mulching, no burning.
- Excess sludge will be dewatered in a filter press & dried sludge will be used as manure.
- Manure generated from Biogas can be used within premises..
- **Site Specific:** Solid waste final storage-segregation shed, loading dispatch platforms, bio-digesters, and authorized recycler

9.5.4 Aesthetic (Noise & Odour) Environment:

- Monitor the ambient noise level and work zone noise level to conform the stipulated norms.
- Creation of awareness for noise attenuation and mitigation program.
- To prepare & get approved a regular Noise monitoring schedule & stations from the MPCB.
- Diesel Generator Sets are supposed to have Sound Pressure Levels of lesser than 75 dB(A) when measured at 1 meter distance. However, these DG sets are not going to be kept close to one another. The DG Sets are recommended with a minimum Transmission Loss Rating of 30 dB(A).
- To ensure smooth flow make provision of proper parking arrangement, traffic management plan and queuing at the gets.
- To ensure from the landscape architect to select various varieties of trees and shall be planted which shall act as natural Noise barriers.
- The monitoring are based on the guidelines given by Central pollution Control Board (CPCB)
- Monitor the ambient Odour level and work zone Odour level by sensing (organolyptic).
- Creation of awareness for Odour attenuation and mitigation program
- **Site Specific:** there are 126 DG Sets. Check their vibrations-absorbing rubber-clad foundations, acoustic enclosures.

9.5.5 Biological Environment:

- Special attention is planned to maintain green belt in and around the Amenities premises.
- Adequate provisions are made to facilitate daily watering of all plants and lawns. Special attention provided during summer to ensure that the green belt does not suffer from water shortage. Watering not to be excessive.
- Development & maintenance of green belt to be considered as a priority issue.
- Return water collection, treatment and reuse under watch.
- The site is almost barren land. There is a need to have plantation and development of lawns.
- Ensure maintenance of lawn & Tree plantation with provision of work force, tools & watering arrangement.
- The trimming to be conducted routinely & especially at the advent of monsoon to avoid power failure due to this reason
- Dropping leaves to be collected & used for mulching & not to burn openly.
- To see that Proper landscaping is designed by the landscape architect that are of native species, having good canopy capable of barricading noise, wind borne dust and suitable to absorb the treated waste water with a no. of species of biodiversity.
- In order to enhance biodiversity by attracting caterpillars, butterflies, other animals, including avifauna in the area, there is a need to plant certain varieties of plants under green belt development scheme. Accordingly, depending on preference, it is recommended to plant *Albizia lebbeck*, a larval host plant of green grass yellow butterfly, *Butea monosperma* for common pea blue, *Cassia fistula* for spotless grass yellow, *Ficus retusa* for common Indian crow and *Saraca ashoka* for common cerulean butterfly. To attract beneficial honeybees and other insects through sweet scent, common nectar and pollen rich plants like, *Azadirachta indica*, *Pongamia pinnata* etc. are suggested to include in green belt area.
- **Site specific:** tree census is made. There are 3300 Number of trees. Out of existing 3300 trees, 361 will be retained, 2390 trees can be transplanted, 236 will be cut and 298 will either be cut or retained. Cut and transplanted numbers will be compensated three times and further the proponent has to plant 31560 trees.

9.5.6 Work-zone Comfort Environment:

- a. Monitor the work zone temperature levels.
- b. Monitor the work zone humidity.
- c. Examine the health of staff workers and keep record.

9.5.7 Socio- Economic Environment:

- The operators and workers be continuously trained in various aspects of ESH (Environment, Safety and Health).
- The managers and officers involved in Environment Management Cell shall undergo refresher workshop and upgradation of information on various environmental issues.
- The township authority shall help in promoting the activities related to environmental awareness in nearby villages and visitors.
- The township authority shall help in promoting local people for livelihood commensurate with their will, skill and abilities
- Health Statistics will be assembled, compiled and displayed.

- Environmental status will be displayed.
- The proposed project does not involve any displacement of inhabitants and so issues like resettlement and rehabilitation does not figure in the study. Ota system market is kept on weekly bases. Its sanitation be done on immediately next shift.
- There was a growth in indirect jobs and business opportunities to the local and surrounding people such as, transporters and raw material suppliers, supervisor, security guard due to the proposed project in the area
- The proposed residential development will provide housing structures with appropriate amenities, adequate sanitation facilities as well as firefighting and safety measures to the community people. Besides, commercial shops, playground, club house, garden and amenity space will be make available within the project.
- Improvement in Changes in the aesthetic quality of the locality/area
- Improvement in internal infrastructure facilities in the area

9.6 Legal responsibility of environmental cell.

Checklist of Statutory Obligations: There are a number of environmental statutes required to be attended to by the project proponent. **RV-City** has prepared a checklist of these obligations, which facilitates the obedience of the laws of land. These are advised to **RV-City** as follows:

1. The Consents, whether under the Water Act or under the Air Act, are normally issued for a fixed validity period. Please check whether the Consent is valid. If the same is expiring, it is better to apply for a fresh renewal atleast thirty days prior to the expiry date.
2. The Consent normally describes the items of manufactured products with quantity. One should see that, the described framework is not overstepped. In case, there is any likely hood of such increase, it will be worthwhile to obtain permission for the same. At least a letter to that effect be posted to the relevant board officer.
3. The Consent lays down a condition as to the volume and rate of discharge of effluents both for domestic as well as the industrial activity. By daily and hourly checks at the measuring devices, this be ascertained. Please do not forget to immediately make a record in the daily log-book.
4. A condition laid down for the treatment and disposal is of extreme importance. For this purpose, ETP or ECE is provided by the industry. There should be a continuous performance evaluation of these gadgets, so as to always remain inside tolerance limits. In case, you are exceeding the limits in certain parameters it is better to bring it on your internal record. The exceedance be discussed with the consultant, your production group and well-meaning Board authorities to seek guidance. Perhaps solution may be found in any or all of the following steps:
 - Characterization of raw effluents/emissions.
 - Attempting in-plant controls.
 - Operation, maintenance, repairs and replacement of the ETP, ECE.
 - Retrofit equipment to the existing plant.
5. Disposal is the last ditch battle. Disposal, dispersion, dilution, diversion, therefore, has to be planned very methodically and operated efficiently. This is a place where more reliable staff is required to be deployed. Any untoward incidence be reported.
6. Please check that the storm water and effluents do not get mixed. Keep the terminal manhole clean and always hospitable to facilitate taking of sample by the Board officials. Also check that no effluent is admitted in the channel down-stream of the terminal manhole, which means all the effluent, finally should pass via the terminal manhole only.

7. Monitoring aspects are always very crucial. For operating the plant, certain parameters be constantly checked. However, it will be a good practice to check monthly all the parameters through standard and approved laboratories. The result so obtained be routinely informed to the board offices. In case there is a water body in the vicinity, it is advised to take periodically samples from it. This applies both to the surface water as well as ground water. The findings will either give you a confident satisfaction or may give you a timely warning for improvement in the treatment or more so in the disposal system.
8. Although the environmental audit statement is required to be submitted on annual basis, it is better to keep the board progressively informed every quarter about efforts of pollution control and environment protection.
9. The industry should device their own format for a daily logbook recording of the running of their ETP or ECE. If the format is found to be satisfactory by trial and error it is better to finalise it and get printed. A printed format shows your conscious efforts towards the goal of pollution control, whenever any inspection takes place.
10. Please open an inspection book and make it a point that the visiting inspector, irrespective of their grades, gives some remark in the inspection book. If the remarks are favorable it shows your diligence and gives you an encouragement. If some of the remarks are unsatisfactory, it at least gives you an early opportunity to improve. The remark, in any case, gives a framework for improvement. Do not take inspection visit as a burden and indeed take it an opportunity for improvement. The compliance of the unsatisfactory remarks be shown during next inspection. This is a better way to brighten your image. This diligence becomes helpful to you even in the court case.
11. In case, there is an unfortunate accident, unforeseen act or event by which pollutants are excessively released into the environment, the same be brought immediately to the notice of the board and other concerned agencies. This will enable you to get experienced timely help from them. Your burden gets shared. Synergistic effects can be predicted by an overview.
12. In case, you feel aggrieved by any conditions imposed in the Consent, approach the board immediately for discussion, or thereafter prefer an appeal timely. Therefore, read the Consent carefully as soon as you receive the same.
13. The Water Cess Act, 1977, is applicable to certain specified industries. In case your industry is covered, the regular returns be submitted. Water meters be installed, whether the industry is covered or not under the Cess Act. Also check from time to time whether the class of your industry, which may not be presently specified, has since got covered under the Cess Act.
14. The Cess amount be paid as per assessment orders and record maintained.
15. In case you feel aggrieved by excessive cess assessment or non-sanction of rebate, the appeal is preferred in time that is within 30 days. And in case, you are late in doing this, at last submit with reasons for the delay.
16. The Government or Board while giving site clearance or Consent normally puts a condition of plantation of trees. Otherwise also, planting trees within the compound gives a good demonstration of your plant performance. A better practice is to select about three varieties and density be about 1000 trees per acre of the 33% of the available open land. The species selected be tough and tolerant for your type of environment.
17. An unsafe working and the environmental pollution generally goes hand-in-hand. Therefore, the obligations under the Factories Act be scrupulously followed and record maintained.

18. There are certain responsibilities regarding the hazardous waste. These can be summarized as follows:
- a) Identification of quantity, constituents and compatibility of hazardous waste, being generated during the activity.
 - b) Proper labeling and marking of containers, which are used for store, transport, or disposal of hazardous waste.
 - c) Use of appropriate containers for storage and transport.
 - d) Furnishing of information regarding the waste, its nature, its hazards, antidotes, and non-compatibility etc. to the persons who either transport, treat, store or dispose off the waste.
 - e) Use of authorized operator agency system to ensure the proper disposal of hazardous wastes and to streamline the treatment and disposal.
 - f) Training of personnel for handling and proper storage of such categorized waste.
 - g) Identify a transporter specialized in such wastes, and the practice of hexplicate manifest (gate-pass) be followed.
 - h) Submission of reports to MOEF & CC and SPCB.
 - i) To provide safety measures for handling of hazardous waste.
 - j) In case of an unforeseen act or event in transit occurs, the transporter should immediately report to the nearest police station about
 - The accident, and
 - The clean-up measures.
 - k) He should also report to SPCB on the Form prescribed by the Hazardous Waste (Management and Handling) Rules, 1989 and the Annexure-XI of the guidelines issued by the Central Government.
 - l) A container be opened for a short duration while receiving the hazardous material in it and while removing out from it, or otherwise it must always be kept closed in storage yard.
 - A container be opened or handled so carefully and slowly as not to rupture/damage the container.
 - Always keep in spare some empty, clean and sturdy containers handy and immediately available.
 - Inspect the filled and stored containers every day and if any found in bad condition transfer the contents to a good container immediately but carefully.
 - Keep a daily record of your custody.
 - m) Documentation is always a matter of evidential value. No job is complete unless paper work is complete. Occupier/generator should carefully note this, and following be developed.
 - Gate-pass when waste leaves the factory by a transport towards the treatment facility. Keep the receipts.
 - A receipt of material as signed by the facility Operator as a manifested colour coded copy is preserved for three years.
 - Analyze the out-going waste and keep the results for three years from the date of dispatch.
 - Daily record of waste generation be maintained:
 1. Quantity and points of generation.
 2. Physical state and chemical constituents.
 3. Hazardous waste category as per E.P.Rules of 1989.

4. Hazardous waste class, as per Motor Vehicle Rules of 1989.
 5. Certify internally, the limit of 90 days and storage of ten tons.
 6. Quarterly returns to State PCB, on prescribed format.
 7. Annual returns to State PCB, on Form 4.
 8. Accident returns to State PCB, on Form 5.
- n) Under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, the immediate duties can be summarized as:
- To forecast the possible situations of major accidents.
 - To design steps in advance to avoid accidents and its consequences including cascading effect.
 - To educate the related workers to stand to such occurrence.
19. The occupier should not merely do the above job, but also make a show of his work. Occupier is best advised to inform the concerned authorities and agencies, as to his preparing documents like risk analysis, emergency plan, safety training, avoidance of major accidents, health plan, etc.
20. Under the Motor Vehicle Act, as amended in 1988, certain responsibilities are required to be fulfilled. The intending consignor is duty bound by Rule 131, to supply the transport owner full information about the dangerous and hazardous chemicals being transported to enable the owner and driver to:
- a) Comply the requirements on classification, labeling, preventive precautions, updating emergency information panel, and proper reporting to the police.
 - b) Be aware of the risks created to health and safety of persons and environment by the dangerous and hazardous goods being transported.
21. Under the Public Liability Insurance Act, 1991 the industrial manager is advised to check some important activities, such as:
- a) Owner should take out one or more insurance policies.
 - b) He should take out such policies before he starts handling any hazardous substances. If he has existing activities involving hazardous substances, he should take the cover early as the rule had become applicable from 1st April, 1992
 - c) The policies should always be kept renewed and alive.
 - d) The amount insured shall not be less than the paid capital. Check this from time to time by taking a review of your position (but shall not exceed Rs.50 Crores).
 - e) General Insurance Corporation or similar agencies may be able to throw more light, if approached.”

In addition there will be constant additions of new Acts and amendments. Watch is to be kept.

9.7 Emergency Preparedness & Response Plan.

There are various possible emergencies in construction activity and accordingly responsibility will be handled as

Table 9.6: Possible Emergency & Response

Possible emergency	Responsible persons
- Collapse of temporary structure	- Chief controller
- Collapse of slab, columns, and works	- EPR Controller
- Fire in labour camp or site office	- EPR Leader
- Persons falling from height	- EPR Team members
- Material (brick-steel) falling from height	- Firefighting Squad

- Abrupt heavy rain washing the area - Case of earthquake - Case of riots or mobs - Disease strikes (as cholera, malaria etc.) - Spillages of oil, cement etc.	- First Aid Squad - Rescue Evacuation squad - Labour supervisor - Security officer - Plumbing chief
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Table 9.7: Emergency Response Management Plan

#	Emergency	Action
1	Collapse of temporary structure	• Declare emergency by sounding siren, activate team • Barricade affected area, restrict entry, evacuate to Assembly Point. • Take head count • Carry stretchers to endanger site. • Rescue persons trapped under debris • Call for ambulance, carry first aid box • With responsible person send to nearest hospital. • When emergency is over, declare so by siren • Announce everyone to attend normal work. • Report & record action taken • Note what improvements are needed.
2	Fire in labour camp or site office	• Declare emergency by sounding siren, activate team • Rush to that area with fire fighter • Commence extinguishing the fire. • Call external fire brigade if necessary. • Carry stretchers to endanger site. • Rescue persons trapped in fire • Stop vehicle movement (except emergency vehicles) • Take head count • Call for ambulance, carry first aid box • With responsible person send seriously injured to nearest hospital. • When emergency is over, declare so by siren • Announce everyone to attend normal work. • Report & record action taken • Note what improvements are needed.
3	Persons falling from height	• Giving exact location, call for ambulance • Reach the scene forthwith • Carry stretchers to endanger site. • Give first aid to injured person • With responsible person send the injured to nearest hospital. • Report & record action taken • Note what improvements are needed.
4	Material (brick-steel) falling from height	• Declare emergency by sounding siren, activate team • Carry stretchers to endangered site. • Take head count • Call for ambulance, carry first aid box. Use it. • With responsible person send to nearest hospital. • When emergency is over, declare so by siren • Announce everyone to attend normal work. • Report & record action taken • Note what improvements are needed.
5	Abrupt heavy rain washing the area or spillage.	• Declare emergency by sounding siren, activate team • Evacuate all to Emergency Assembly Area, at a higher altitude

		• Take head count.
6	Case of earthquake	• Declare emergency by sounding siren, activate team • Evacuate all to Emergency Assembly Area, smooth & fast. • Immediately on normalcy take up search operation • Extinguish fire, if any • Report & record action taken • Note what improvements are needed.
7	Case of riot/ mob	• If small gathering of 10-20, discuss with them & call security • If mob of 20-40, call supervisor & extra security. Also call respective sub-contractor & settle • If mob over 50 workers, isolate them from others in the work station. Call police if out of control
8	Diseases (Diereoha, Jaundice, Cholera, Malaria etc)	• Clean all water tanks • Send water samples for tests • Disinfect water with care • Canteens not to keep food open • Arrange medical facility & awareness
9	Terrorist attack (bomb threat, gun-fire, suicide attack)	• Alert security guards, informing possible weapon • Keep infrastructure ready like wireless, transport, ambulance • Contact police control room
10	a. Cement slurry	• Collect and reuse the cement slurry • Dilute slurry by spraying water • Use PPE like gum boot, hand gloves
	b. Heavy rain	• Keep handy, plastic sheet/ tarpaulin to cover area being concreted. • Stop concreting activity • Cover electrical equipment • Restrict vehicle speeds • Protect drainage line

9.8 EMP for the construction phase

In this particular case, this phase is very important. It will continue for a long time, in the developmental stage. The component will commence from site preparation.

1. Site Preparation:

The clearance of site may involve the movement of soil. No major leveling operations are envisaged, though at places this will be encountered. During dry weather conditions it is necessary to control dust nuisance created by excavation and transportation activities. Although the proposed built-up area is of considerable volume, it is spread over in 2 villages. As such at each site it is of low requirement, and this problem should not be insurmountable. Else at some sensitive locations, water sprinkling will be resorted to.

2. Sanitation:

a. Labour Camps:

The construction site shall be provided with sufficient and suitable toilet facilities for construction workers to allow proper standards of personal hygiene. These facilities shall be connected to a septic tank and maintained to ensure minimum or no environmental impact. Water taps will be provided in the labour camps, but it will be seen that spilled water will be directed towards collection sump first and to the treatment scheme next. Where the sewage generation is felt substantial, even a sophisticated mode of treatment like package plants, bio-disc, or Activated Sludge Plant may be considered. Such plant may be so sized that it may become useful later on, when the construction labour vacates the site and regular incumbents enter. This can be

in modules. Some cooking fuel shall be supplied to the camp, so that they will not attempt to cut tree-branches for this purpose. Regular medical help shall be available to them including snake bite precautions

b. Noise.

Though the noise effect on the nearest inhabitants due to construction activity will be negligible (as at present there are no residents to begin with), it is advisable that on site workers using high noise equipment adopt noise protection devices like earmuffs. Noise sources are heavy earth moving and construction machineries, air compressors and DG Sets. Proper oiling, maintenance, non-vibrating sturdy foundations and closed rooms shall be provided to minimize the effects.

c. Construction Equipment and Waste:

It shall be ensured that both gasoline and diesel powered construction vehicles are properly maintained to minimize smoke in the exhaust emissions. The vehicle maintenance area shall be located in such a manner to avoid sources by accidental spillage of oil. Unauthorized dumping of waste oil should be prohibited. Wastes shall be disposed off at an approved site.

d. Storage of Hazardous Material:

The following hazardous materials may be used for site preparation and construction activity. These shall be stored as per international standards.

1. Explosives for rock blasting (This is not proposed)
2. Petrol and diesel
3. LPG
4. Painting materials
5. Asbestos products are avoided.

e. Site Security:

Construction site is a potential hazardous environment. To ensure that the local inhabitants and stray cattle are not exposed to these hazards, the site shall be secured by fencing and manned entry points. It will be fully illuminated.

f. Land Environment:

An inventory shall be prepared of standing trees and bushes of significance. To prevent unauthorized felling of trees by construction workers for their fuel needs it will be ensured that the contractor provides fuel to them. The construction workers will be educated on importance of maintaining the existing trees.

g. Vacating the Site and Camp:

When a time will come of vacating the site and shifting the labour camps, special operation squad will be pressed into service. The site will be remediate for fitting in the natural environment, debris shall be removed, oil-soaked soil excavated and carted out suitably and refilled with virgin soil, landscaping will be commenced, spilled paints if any are taken care of. No ugly sign or hazardous situation shall be left back.

It is worthwhile repeating the responsibilities once again as –

A. Water Regime

Install water meters, take readings routinely, record in the register and check to avoid water wastage. If wastage is more report to the management for caution & correct. Mobile toilets shall be install for construction workers and staff etc. to look after its operational & maintenance, take periodical sample to assess the quality, record & report for any abnormality & rectification. Keep a daily watch to avoid sanitation / drains, & good housekeeping. Sedimentation of outside drains avoided by using screens

and silt traps. To examine proper management of channelization of water to avoid water logging at site.

B. Solid Waste

All material storages in covered standard store room. Storage as per material specifications/type, with all precaution of fire norms. Proper covering for to prevent damages due to water seepages at godowns especially Cement, Plywood etc. Segregated garbage will be handed over to Authorised vendor. The empty drums of paints, pesticides & tubes are scraped & collected at one place & handed over to Authorized recyclers.

C. Soil

Excavation be at down-wind spot with respect to dwellers. Avoid excavation during high windy day & heavy monsoon day. Anticipate where the excavation is going to commence and in advance take a laboratory test of its top soil to ensure whether it is capable to support tree plantation. If yes, provide separate place to have a depot of such top soil to be used in due course & see that it is so used. Make proper calculation as to where this excess excavation should be used either within the premises or off site or as disposal. This to be quantified in consultation with subcontractor in advance. Anticipate the rains and see that no water logging takes place as also a need to keep traps on storm water drain. Proper management of landscape and the ecology of the site would be vitatogive a pleasing aesthetic and visual impact both for residents while at the same time minimizing negative impacts on the land and ecological environment.

D. Noise

To prepare & get approved a regular Noise monitoring schedule & stations from the MPCB. To make provision of ear plugs for construction labour and staff & insist its use. There shall be no noisy work in night shifts, without any special permission. To ensure Provision of barricades along the periphery of the site. To obtain guidance from the suppliers & maintain acoustic enclosure for DG sets. The contractor should carefully choose the equipment in order to meet with the CPCB Norms. Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise. Valves should be covered with Removable Acoustical Blankets. The contractor should choose controlled operating hours for noisy activities such as delivery, loading unloading etc.

E. Socio Economic

During Initial Phase of the project, information regarding the proposed development plan should be communicated to the local community in the form of booklets and audio-visuais. Provision of adequate drinking water, toilet and bathing facilities should be made available on project site for construction labours. Water shall be sprinkle/spread to suppress dust during construction phase to control air pollution and thereby avoid adverse health impact. Proper living condition with appropriate facilities for residential labours should be provided. Proper Training and awareness programme should be carried out so that the workers understand the importance of wearing the personal protective equipment. First aid and medical facilities as Proper precaution to prevent any accident and Provision of masks to workers that can prevent inhalation of dust.

9.9 Watchdog committee & Audit

To audit the work done by the Cell under this EMP, a high power watch dog committee will be set up which will have a power of sudden spot inspections, checking of documents and listening to complaints if any. This committee will supervise over the monitoring and

environmental management cell as may be necessary, generally over the following facets of works:

1. Permit management
2. Construction management
3. Treatment and emission management
4. Transport management
5. Disposal management
6. Monitoring
7. Documentation
8. Law enforcement

Inter alia the committee will see the compliance of conditions laid in Environmental Clearance and Consent, such as

Table 9.8: Consent Compliance

S.#	Condition Regarding	Mode of Compliance
1	Quantity of Effluent	To be measured daily and in-plant control. Not to exceed any time
2	Quantity of Sewage	To be measured periodically. Not to exceed
3	Total water input	To be measured daily. Repair meters. Not to exceed. Make break-up as per usages. Fill monthly Cess returns. Pay as per assessment
4	Quality of Effluents	By running ETP in correct fashion. Monitor. Report
5	Disposal	Not over application. No percolation, no spillages. Monitor.
6	Ambient	Keep monitoring.
7	Noise levels	Check foundation for vibrations, Tree plantation
8	Solid Waste	Quantity to be measured & record kept. To plan for agencies for segregation, compost sites, compost hardware.
9	Environ. Audit	To be complied every year before 30 th Sept., as also the ESR Environmental status report
10	Inspections	Inspection Book to be opened. Instructions given by MPCB visiting officer to be complied and reported.
11	Service industries	To forecast what type of industries may be required in Tourism Centre and approach MPCB
12	Building material	To forecast such requirement and apply

9.10 Chapter Conclusion:

The immediate earlier Chapter had indicated as to what steps are designed in the working of new project. This, however, is required to be manned properly. Unless an EMP is prepared in advance, as like production campaign the environmental protection will not automatically happen. For such EMP, fixing of objectives is the first step and ensures its implementation is the last step. This is designed in this Chapter and we have a commitment from the higher management to strict to this design. This will meet the objectives of fulfilling the legal requirements and not causing any hardships to people.

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CHAPTER 10 NEW TOWN MANAGEMENT

10.1 Introduction:

This is a new town getting established here. This is not a mere construction job work. There are normally five types of constructions,

- (1) “Build only on contract basis”, “**B**”,
- (2) “Build and Transfer” or “**BT**”,
- (3) “Build, Operate and Transfer” or “**BOT**”,
- (4) “Build, Own and Operate” or “**BOO**” or
- (5) “Build and Operate” or “**BO**”.

The present proposal fits in type (5) of above i.e. the Project Proponents PP will arrange for the land procurement, preparing master plan, getting approval from controlling Authorities like Town Planning, Pune Municipal Corporation and Maharashtra Pollution Control Board, actual construction of utilities, facilities and amenities, leasing out or saling out the properties and then maintaining –managing the Town thereafter perpetually. **River-View-City** is of this category of “**BO**”. The management will be thus like what a local body works. This is exactly what the Government in Urban Development Department UDD intends or expects from private participation where the Government, Semi- Government housing Boards, Improvement Trusts or Municipal Corporation are not able to reach.

The promoters have put in considerable pre-operative efforts of creating this new concept, developing the nucleus, searching sites, ranking them environmentally, selecting proper land, assembling proper team of architects, civil engineers, landscape designers, services and environmental engineers, administration and management, finance, Law and Public Relations PR.

The Promoters are experienced in the line of developing lands, constructions, tourism, automobiles and general administration. The track record is good. The Promoters will try to make this scheme too a success, though this concept of bringing into reality a New Town is of recent origin.

10.2 Citizenery Relations

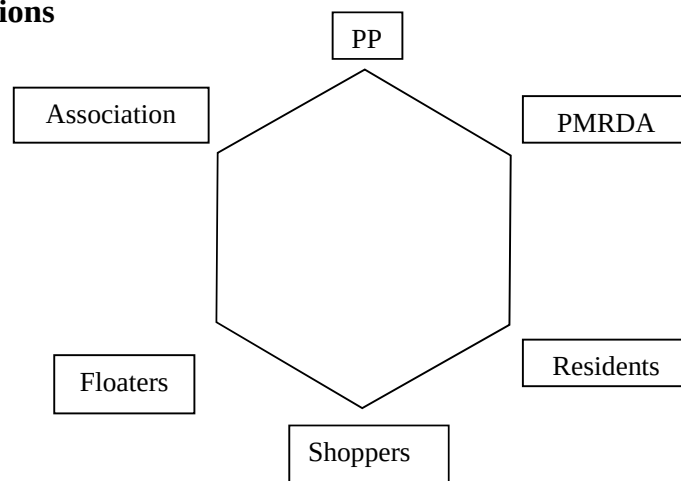


Fig. 10.1: Citizenery Relations

This Township will consist of many players. It will almost form a **Hexagon** with sides of

1. Project Proponents who have initiated the Project,
2. The PMRDA under whose territorial jurisdiction this is situated and who have passed the Master Plan,
3. The Residents citizen who have purchased/ leased their dwellings here almost for lifetime,
4. The Shopkeepers or owners of commercial/ recreational establishments who have gathered here to serve the resident-citizen, or those who have Offices here
5. The floaters that may come only occasionally or may be daily to attend offices or businesses, and
6. The Associations of respective Groups, which too is a democratic process.

The ultimate objective will be a congenial and compatible community, or unity in diversity.

10.3 Employment here

One of the objectives of this Township is **“Walk to Workplace”**, or in other words the workplace or job opportunities be near to the residences. The Project Proponents PP, therefore proposed employment prospects within the new town by designing enough space to accommodate maximum number of offices or service centres. Some jobs will be open with the PP to run the Township and some with the trade and commerce people located within the Township. This is about the present generation. But next generation too will need jobs or means of livelihood. Whether these will be possible?

The Promoters have designed this New Township where they have purposely provided space for residence as well as for offices. This was a vision, so that employers will appreciate if their office staff stays in the vicinity to have them available for more time or more concentration or both. At the same time, staff is happy that the office is in the vicinity, where journey both ways is saved. This saves time, money, probability of transport accidents and keep them fresh. Promoters wish to have as many offices to come here as maybe possible. Therefore as much as 20.77 hect of land is earmarked to have CBD and commercial shops (Central Business District CBD), which in turn will provide some employment opportunities. Employment is possible also in the trade sector. Retail and local shops. This implies that in both these together, some employees are likely to be accommodated here. The trend of more employers preferring this arrangement of “Walk to Work” may soon increase in future. The objective of promoters will be considerably satisfied and many people will get accommodated in this township.

The problem of employment in the neighborhood is thus well covered for the present generation. The question is then for the next generation. Within the families of 181735 residents, there will be children population. These can be split-up in groups as (1) in the age group of not attending the school, -- say 0 to 6 years, (2) in the school or college going age group and (3) the youths who have completed the education and are in occupation. The children from second group will complete their education in the coming decade and will need an opportunity of employment. Some of them will be accommodated in turn-over (retirements and recruitments) and some in increased trade and business within this Township. The Township management too needs staff. The natural preference will be to select such ones who are staying near. Thus some prospect exists for the employment within the New Town to dependents of the residents. The quantum, however, depends on many future factors.

10.4 Cost

The **Township** needs dwellings, amenities, facilities and utilities. To have these, capital expenditure is incurred and to operate the same recurring cost is involved. The former is provided by PP as promoter and for the later i.e. **running cost** the PP will support as OA operating agency. This will include payments like Electrical Power bills, water purchased from Irrigation Department, Purification/ disinfection, storage and water distribution cost, maintenance of sewer lines, operation of Sewage Treatment Plants STP (Operation, Maintenance, Repairs and Replacements OMRR), methodical disposal, nursery and greening drive, management and handling of Solid Waste, Air Pollution control measures and maintenance, Monitoring the qualities of environmental aspects like groundwater, surface water, storm water, ambient air, noise and odour, Laboratory with its glassware and chemicals, administrative and accounts expenses, guards and security forces-equipments-transport, street sweeping and illuminations, running of schools, medical facilities, parks and gardens, sport complexes, firefighting mock drills and preparedness, documentation, complaint attendance etc.

Meeting the running cost: The running cost will be spent for the wellbeing of the Township beneficiaries. The beneficiaries, logically, should pay this for such advantage. Residents are beneficiaries for their accommodations, for their kids' schooling, for nearness to other facilities (recreation, health and security). Commercial traders and shop owners are benefited by the accommodations, secured clientele and facilities (illumination, nearness and safety). Visiting floating population is benefited for the ease of facilities like getting quality goods, standard recreation, access to parks and gardens at reasonable hours. The employers who have rented/owned offices here have advantage that many of their staff can reside in the vicinity, and also of good quality environment including unhindered electricity. On the other hand, residents create sewage wastewater, shop-keepers create solid waste, vehicles create air pollutants and collectively all generate noise. The Town-keeper has to take care of the pollution by mitigation for the benefits of those who in the first place are creators of the pollution. The funds are necessary and this can come from the principle of "User to Pay" and "Polluter to Pay".

As this is an accepted fact, the point is as to how much the beneficiary will have to contribute. At the present standards of living the nearest municipal corporation i.e. Pune Municipal Corporation PMC, levies the taxes and charges on the basis of ratable value or on square foot basis of the apartment. That will be paid.

For maintaining the Township one time charges are proposed to be taken from the residents and the Management will be done completely.

This is only an indicative discussion and an interim one only to show that the township will be a self reliant one without depending on Government, and it will be without hardship to the residents.

10.5 Administration:

Administration will have its foundation on certain assumptions such as **River-View-City New Township** promoters will continue to manage the township, taxes will be paid to local

body and maintenance charges to **RVCP agency**, the overall contribution of resident citizens here will not be burdensome as compared with other nearby citizens. Poonites, Law and Order situation will be dealt with State Authorities, and this Operating Agency will be responsible for its environment to SPCB, CPCB, Environment Department of State and MoEF.

The Promoters, with all due permits from various Government Departments, propose to develop and construct a quality establishment here. They are not looking towards this project as BT but as BO i.e. not build and Transfer to the flat owner as is normally done, but Build and Operate this as a Town by themselves keeping permanent relations with the occupying flat owners. The New Township is named as **“River-View-City”** and on completion a Managing Committee will be entrusted the job of administration on day to day and month to month basis. As such administration will be an involved, complex and multi-disciplinary work with specialization. A separate dedicated Company is proposed to be constituted (the name and style of which is being finalized and mentioned here as Operating Company **“OA”** for brevity).

Job of **OA** will be to maintain and operate the **“River-View-City” (RV-City)** on a disciplined footing as any efficient Municipal Corporation should run. The staff structure will have similar hierarchy and delegated powers. The finance will be raised from charges as discussed above and shall be adequate for day to day working, repairs and replacements, Government dues, contingencies, and facing any emergencies (natural or man-created). An IAS type Commissioner level person will be appointed at top echelon for a professional working of the **OA** so that **RV-City** should become an exemplary local body, keeping on muster devoted people with knowledge of technology and psychology both. Central office and Ward offices will be constructed. Repair team will be handy to attend quickly the small points like leaking taps, choking of a gutter branch, possible short-circuiting, failure of a single street tube-light, cutting of an unwieldy tree branch, distribution of nursery plant, advice on private gardening and many similar ones. The working will be largely computerized. As we expect enlightened people taking participation in **RV-City** (whether in residency, office sector, commercial, educational, recreational, health institutions), we expect that it will develop a smooth running of the **RV-City**. Already we have an indicator of peoples’ confidence in this proposed **OA**, as they are enquiring on commencement of the project.

OA will keep good relations with others as (1) Group of residents, (2) Group of amenity runners (like school, community centre, transport agency, health institute, small shoppers, recreation merchants etc), (3) Group of office space-holders, (4) Government Departments (like Revenue, Home, Police, Urban Development, Municipal Administration Department, various Technical Departments of Roads- Railways, PWD, Water, Health Services of Zilla Parishad), the Local Gram Panchayat and with Environmental Authorities. This co-ordination will be done by routine periodical high power meetings of a Watch Dog Committee WDC. In Management of **RV-City** there will be four major wings viz. Administration, Technical, Legal, and Public Relations. A person of high caliber with municipal experience shall head each of these Wings and work with imagination.

Table 10.1: Administration Interface

#	RV-City	Sector	Dept/ Organization
1	RV-City Wings of - Administration - Technical - Legal - Public Relations	Government	Forest Deptt
2			Irrigation Deptt
3			Groundwater Agency
4			Revenue Deptt
5			Urban Development Deptt
6			Town Planning Deptt
7		Semi-Government	Zillah Parishad
8			State Pollution Control Board
9			Pune & Pimpri Municipal Corporations
10			Near Gram Panchayat
11		Non-Government	Non Government Organizations
12			Peoples' Representatives Corporators, MLA, MP.
13			Tribals and local community
14			Clients
15			Press

- All statutes to be studied. Checklist of conditions prescribed in all permits, licenses, consents, NOCs that are obtained from various departments to be prepared and compliance to be commenced. Periodical returns, forms to be filed in time.
- Inviting Inspectors of various departments to be periodically invited to show the working, trace the mistakes, obtain guidance, rectify and report.
- Corridors of dialogue and communication shall be kept open with the Resident-Citizenry, peoples' Representative, NGOs, Public Interest Groups so that any social suffering, grievances shall not become a complaint, complaint becoming a conflict and conflict becoming a litigation.
- The interface proposed is as given in above table.

Within the general Administration will be a component dealing with Matters Environmental. For this an Environmental Management Cell EMC will be established to follow certain Environment Management Plan EMP. This is covered specifically in Chapter 7.

10.6 Success Indicators

The success of the sincere and honest efforts the PP is putting in, will be judged by various indicators, such as –

- Before the first phase venture is complete, second phase booking commences
- When people of first phase come to stay in township, and next phase booking is busy
- No complaints from Government, semi-Government or Non Government Departments or Organizations
- Statistics of Health, Safety and Environment is without blemish.
- There is no surplus and no deficit accounting and Auditing Certificate is satisfactory
- The School results to be excellent
- Other Promoters come to seek our advice.

- Demonstration to others for Rainwater harvesting, Environmental Status Report, Groundwater Recharging, sand-substitute ash, building materials from ISO 14001 certified units, plastic-free market, care for disabled etc.

10.7 Chapter Conclusion

This is a Build and Operate “BO” proposal rather than Build and Transfer “BT” proposal. As such the responsibility is manyfold on Proponents both as promoters and as operating agency. This imparts much comfort to residents and to the Municipal Corporation. The management will be done methodically with experts at helm of affairs. Good Public Relations will be maintained and all statutory provisions strictly followed, and reported. Success Indicators are devised. Documentation and Statistics shall be maintained. Health, Safety and Environment matters will be kept without any blemish. The management will be responsible to have equality culturally.

CHAPTER 10 -SUMMARY AND CONCLUSIONS

10.1 Introduction

The project “Riverview City” is located at Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167, village Kadamvakvasti, Tal. Haveli, Dist. Pune, State - Maharashtra.

The site is within the limits of Grampanchayat Kadamwakvasti, Pune. The project site is an area declared as Integrated Special Township having granted Locational Clearance by Urban Development Department, State of Maharashtra by Notification of Special Township bearing No. TPS-1813/392/12/CR-572/13/UD-13 dated 20.10.2015, supported by corrigendum TPS-1813/392/12/CR-572/13/UD-13 dated 01.06.2016. This is based on parent Notification on Special Township No.TPS-1816/CR-368 /15 /20(4)/UD-13 promulgated on 26.12.2016 and further amended by Letter No. TPS/1816/03/CR 29/17/UD-13 dated 31.03.2017.

As per the Environment Impact Assessment (EIA) Notification dated 14th September 2006 and its subsequent amendments, the proposed project falls under 'Category B1' with project or activity type number '8(b)', which require preparation of EIA Report to obtain Environmental Clearance from the Expert Appraisal Committee (EAC), New Delhi.

10.2 PROJECT DESCRIPTION

i) Location and Settings:

The project site is located at Gat nos. 1 to 21, 23 to 41, 43 to 57, 58/A to D, 59 to 75, 76/2, 77 to 124, 126 to 129, 202, 400, 405, 407, 419, 443, 448, 460, 471, 483, 509, 511, 520, 523, 540/1 to 3, 541, 543, 551 to 553, 1059 to 1068, 1070 to 1077, 1081 to 1093, 1099 to 1111, 1125 to 1131, 1132/1 to 1132/3, 1136 to 1149, 1150 (part), 1151, 1152/ 1 & 2, 1153 to 1156, 1158, 1159, 1160/ 1 to 5, 1163 to 1167, village Kadamvakvasti, Tal. Haveli, Dist. Pune, State - Maharashtra.

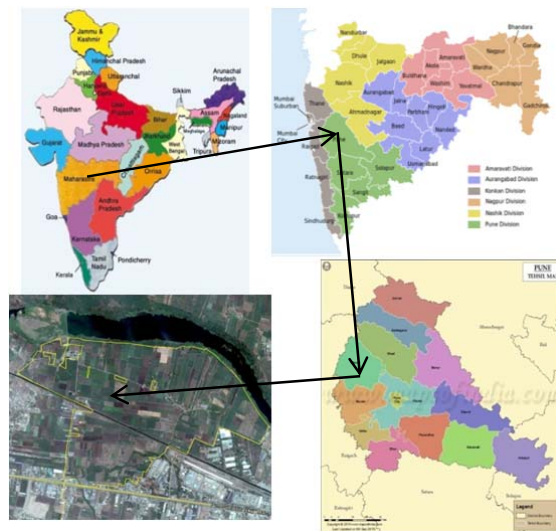


Fig. 10.1: Project Location

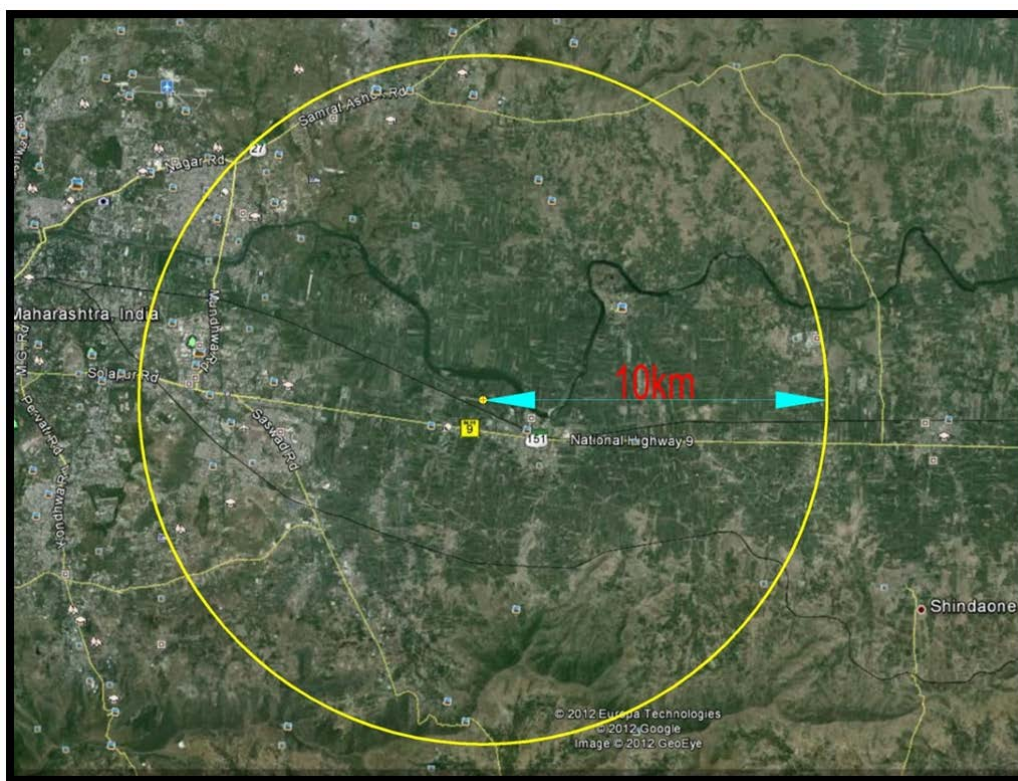


Fig. 10.2: Study Area Map of 10 km from site

ii) Development Strategy, phasing of the project:

Table 10.1: Project Proposal

Description	Type	No. of Bldgs.	Configuration	No. of floors	No. of Tenements
Residential					
RVR1	2 BHK TYPE 1	5	P+22	22	880
	2.5 BHK	2	P+P+STILT+22	22	352
	3 BHK TYPE 1	2	P+P+STILT+30	30	480
RVR2	2 BHK TYPE 2	2	P+22	22	352
	2.5 BHK	2	P+30	30	480
RVR3	3 BHK TYPE 2	2	P+P+STILT+30	30	480
	2.5 BHK	2	P+P+STILT+22	22	352
	2 BHK TYPE 2	3	P+P+STILT+22	22	528
RVR4	2 BHK TYPE 3	3	P+P+STILT+31	31	744
RVR5	1 BHK	5	P+14	14	840
RVR6	1 BHK	3	P+9	9	324
RVR7	1 BHK	5	P+14	14	840
RVR8	2 BHK TYPE 1	10	P+P+STILT+31	31	2480
	2.5 BHK	2	P+P+STILT+31	31	496
	3 BHK TYPE 1	2	P+P+STILT+31	31	496
RVR9	1 BHK	4	P+11	11	528

RVR10	BUNGALOWS				70
RVR11	BUNGALOWS				65
RVR12	1.5 BHK	4	P+31	31	992
RVR13	2 BHK TYPE 1	4	P+P+STILT+31	31	992
	2 BHK TYPE 4	1	P+P+STILT+31	31	124
	2.5 BHK	5	P+P+STILT+31	31	1240
RVR14	2 BHK TYPE 1	9	P+P+STILT+31	31	2232
RVR15	3 BHK TYPE 1	2	P+31	31	496
RVR16	2 BHK TYPE 1	3	P+P+STILT+31	31	744
RVR17	2 BHK TYPE 1	9	P+P+STILT+31	31	2232
	3 BHK TYPE 1	4	P+P+STILT+31	31	992
	2.5 BHK	3	P+P+STILT+31	31	744
RVR18	2.5 BHK	8	P+31	31	1984
RVR19	3 BHK TYPE 1	7	P+31	31	1736
RVR20	2 BHK TYPE 1	5	P+P+STILT+31	31	1240
	2.5 BHK	3	P+P+STILT+31	31	744
	3 BHK TYPE 1	2	P+P+STILT+31	31	496
RVR21	2 BHK TYPE 1	3	P+P+STILT+31	31	744
	2 BHK TYPE 4	1	P+P+STILT+31	31	124
	2.5 BHK	4	P+P+STILT+31	31	992
RVR22	3 BHK TYPE 1	4	P+P+STILT+31	31	992
	2.5 BHK	3	P+P+STILT+31	31	744
RVR23	3 BHK TYPE 1	3	P+P+STILT+31	31	744
	2.5 BHK	5	P+P+STILT+31	31	1240
RVR24	2 BHK TYPE 1	6	P+P+STILT+31	31	1488
	2.5 BHK	2	P+P+STILT+31	31	496
RVR25	1 BHK	6	P+14	14	1008
TOTAL		160			36347
Education					
					No. of Students
RVA 2	Primary School	1	G+3	4	780
RVA 3	Assembly Hall	1	G	1	
RVA 4	Primary & Secondary School	1	G+3	4	2550
RVA 5	Primary & Secondary School	1	G+3	4	3435
TOTAL		4			6765
Commercial					
RVC1					
Shopping Center		1	G+2	3	
Ground Floor Area	940				
First Floor Area	930				
Second Floor Area	930				
RVC2					
IT Park		3	P+P+9	9	

Typical Floor Area	4739				
RVC3					
Shopping Center		1	P+5	5	
Typical Floor Area	4000				
RVC4					
Office Complex		1	P+5	5	
Typical Floor Area	2250				
RVC5					
Shopping Center		1	P+7	7	
Typical Floor Area	1600				
RVC6					
Shopping Center		1	P+7	7	
Typical Floor Area	1450				
Shopping Center		1	P+7	7	
Typical Floor Area	1600				
RVC7					
Office Complex		2	P+P+9	9	
Typical Floor Area	4739				
RVC8					
Office Complex		3	P+P+9	9	
Typical Floor Area	4739				
RVC9					
COMMERCIAL COMPLEX					
Typical Floor Area	2780	2	P+8	8	
Typical Floor Area	3600	1	P+P+8	8	
Typical Floor Area	2400	1	P+P+8	8	
Typical Floor Area	1600	1	P+P+12	12	
TOTAL		19			
Health Facilities					
RVA 1	Hospital	1	LG+UG+5	6	100 Beds
TOTAL		1			
Public Utilities					
Public Parking 3 Nos.	Biogas plant				EHV sub station
Police station	Solid waste management plant				Bus station
HV sub station 4 Nos.	STP 4 Nos				Fire brigade station
WTP	Burial ground & Cemetery				Cremation ground

The area statement for the project is as follows:

Table 10.2: Area Statement

Project details	Integrated Township
Total Plot Area	2,103,951.00 m ²
Deductions	1,57,000 m ²
Net Plot	19,46,951 m ²
Total Proposed Built-up area As per FSI	38,98,837 m ²

Total Construction Built- up Area	57,93,958 m ²
Project Proposal	160 buildings with 36,347 tenements One 100 beds hospital Three schools 19 Commercial buildings Police station, Fire Brigade and other utilities

10.3 DESCRIPTION OF ENVIRONMENT:

i) Study Area:

The report is prepared, based on the model TOR given in Environmental Impact Assessment Guidance Manual for building construction by Ministry of Environment & Forests (MOEF& CC), standard TOR published by MoEF&CC vide order dated 10/04/15 and project specific TOR given vide ToR letter No.21-107/2017-IA.III dated 2nd June 2017. Study included area of 10 km radius around the project site.

Table 10.3: Environmental Sensitive Places within 10 Km

SN	Environmental Sensitive Places	Direction	Aerial distance (in km) from Plot boundary
1	Mula – Mutha River	North	Abutting
2	Loni RF	South	7.5
3	Reserved Forest	South	8.0
4	Reserved Forest	SSW	9.0
5	Reserved Forest	SW	8.5
6	Reserved Forest	WSW	6.5
7	Reserved Forest	WSW	7.0
8	Reserved Forest Near Mohammadwadi	WSW	8.0
9	Reserved Forest Near Hadapsar	W	9.0
10	Reserved Forest Near Kesnand	N	9.0
11	Reserved Forest	ENE	6.5
12	Reserved Forest	ENE	8.0
13	Reserved Forest	ENE	10

ii) Methodology for classification of the Study Area:

Further classification of the study area for generating the baseline data is as per Guidance Manual for Building, Construction projects approved by MoEF for preparation of EIA report. This is tabulated as follows:

Table 10.4: Methodology for classification of the Study Area

No.	Study Area	Type of Baseline data collection
1.	Project Site	Type of data: Primary Attributes: Ambient air quality, Ground water, Surface water, Noise levels, Flora, Fauna, Socio economic aspects, Traffic studies.
2.	Area with angular distance of 2 Km surrounding the project site	Type of data : Primary Attributes: Ambient air quality, Surface water, Flora, Fauna, Noise levels, Traffic study.

3.	Area with angular distance of 2 Km up to 10 km surrounding the project site	Type of data: Secondary data from various reliable sources. Attributes: Meteorological data, Surface water bodies, Flora, Fauna, Socio economic aspects, Land environment. Note: Whenever the secondary data is not available primary data collection to be done for the respective attribute.
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iii) Generation of Baseline Data:

Baseline data generation with respect to air quality, noise level and soil quality in the study area was carried out by conducting primary sampling / field studies during October to December 2016.

Sr. No	Attributes	Project Site to 2 Km radius	2 Km to 10 km radius from Site	Results/ Major findings and Interpretation of Baseline Data																																																																																			
1	Air Environment																																																																																						
i	Ambient air quality	Primary data collected Sampling Locations : Project site and 8 other locations within 2 Km radius of the project site Period: October to December 2016.	--	<table><tr><th>Station Code</th><th>AAQM Station</th><th>PM₁₀ (24hr.) (µg/m³)</th><th>PM_{2.5} (24hr.) (µg/m³)</th><th>SO₂ (24hr.) (µg/m³)</th><th>NOx (24hr) (µg/m³)</th><th>CO (mg/m³)</th></tr><tr><td>Permissible AAQ Standard (CPCB)</td><td>Resi., Ind., rural area & other area</td><td>100</td><td>60</td><td>80</td><td>80</td><td>4</td></tr><tr><td></td><td>Sensitive</td><td>100</td><td>60</td><td>80</td><td>80</td><td>4</td></tr><tr><td></td><td>Locations</td><td>Average</td><td>Average</td><td>Average</td><td>Average</td><td>Average</td></tr><tr><td>AQ1</td><td>Project Site</td><td>67</td><td>33</td><td>15</td><td>22</td><td>0.66</td></tr><tr><td>AQ2</td><td>1 KM Towards North From Site</td><td>58</td><td>26</td><td>14</td><td>23</td><td>0.62</td></tr><tr><td>AQ3</td><td>500 m Towards NE From Site</td><td>56</td><td>26</td><td>13</td><td>21</td><td>0.62</td></tr><tr><td>AQ4</td><td>1.25 KM Towards East From Site</td><td>63</td><td>28</td><td>16</td><td>23</td><td>0.8</td></tr><tr><td>AQ5</td><td>1 KM Towards SE From Site</td><td>68</td><td>32</td><td>22</td><td>29</td><td>1.3</td></tr><tr><td>AQ6</td><td>700 m Towards South From Site</td><td>66</td><td>32</td><td>20</td><td>25</td><td>0.78</td></tr><tr><td>AQ7</td><td>200 m Towards West From Site</td><td>60</td><td>26</td><td>16</td><td>22</td><td>0.75</td></tr></table>							Station Code	AAQM Station	PM ₁₀ (24hr.) (µg/m ³)	PM _{2.5} (24hr.) (µg/m ³)	SO ₂ (24hr.) (µg/m ³)	NOx (24hr) (µg/m ³)	CO (mg/m ³)	Permissible AAQ Standard (CPCB)	Resi., Ind., rural area & other area	100	60	80	80	4		Sensitive	100	60	80	80	4		Locations	Average	Average	Average	Average	Average	AQ1	Project Site	67	33	15	22	0.66	AQ2	1 KM Towards North From Site	58	26	14	23	0.62	AQ3	500 m Towards NE From Site	56	26	13	21	0.62	AQ4	1.25 KM Towards East From Site	63	28	16	23	0.8	AQ5	1 KM Towards SE From Site	68	32	22	29	1.3	AQ6	700 m Towards South From Site	66	32	20	25	0.78	AQ7	200 m Towards West From Site	60	26	16	22	0.75
Station Code	AAQM Station	PM ₁₀ (24hr.) (µg/m ³)	PM _{2.5} (24hr.) (µg/m ³)	SO ₂ (24hr.) (µg/m ³)	NOx (24hr) (µg/m ³)	CO (mg/m ³)																																																																																	
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AQ5	1 KM Towards SE From Site	68	32	22	29	1.3																																																																																	
AQ6	700 m Towards South From Site	66	32	20	25	0.78																																																																																	
AQ7	200 m Towards West From Site	60	26	16	22	0.75																																																																																	

				AQ8	1.2 Km Towards NW From Site	60	28	15	21	0.7
				After tabular representation of Ambient Air quality it can be observed that: All the parameters were found to be within the desired limits specified by CPCB.						
ii	Noise Level	Primary data collected Sampling Locations : Project site and 8 other locations within 2 Km from project site	--	Station Code	AAQM Station	Zone	Day Leq	Night Leq		
				STN1	Project Site	Residential	51.1	41.3		
				STN2	1 KM Towards North From Site	Residential	51.5	40.8		
				STN3	500 m Towards NE From Site	Residential	50.4	42.7		
				STN4	1.25 KM Towards East From Site	Industrial	53.4	43.3		
				STN5	1 KM Towards SE From Site	Residential	54.2	43.9		
				STN6	700 m Towards South From Site	Residential	53.9	44.1		
				STN7	200 m Towards West From Site	Residential	50.6	38.1		
				STN8	1.2 Km Towards NW From Site	Residential	52.7	41.6		
				Ambient noise levels during day time and night time were observed to be within the Standard limits as specified by CPCB.						
iii	Meteorologic al Data	--								
2	Water Environment									
i	Surface water	No source of surface water was observed within the project site	--	Monitoring was done and results presented in Chapter 3.						

		boundary and within 2 Km radius from project site.				
ii	Ground water	Ground water source was found in the project site.	--	In comparison with Drinking water standards IS10500:2012, all parameters are within limit except coliform		
3	Land Environment					
i	Contour and Drainage Pattern of the site and surroundings	Contour plan of project site and surrounding Drainage Map of 2 Km km radius from the project site	The project site is slightly contoured			
ii	Land use	GIS Study for Landuse/Landcover details of 10 km radius Date of Pass: 2017-13-4	The land use of the study area: (10 km): Nine different land use/land cover classes have been identified in the area under study.			
			Sr. No.	Class Name	Area (Ha)	Area (%)
			1	Waterbody	397.26	1.07
			2	Agriculture Land	8244.09	22.16
			3	Current Fallow	4056.03	10.90
			4	Long Fallow	2605.77	7.00

				<table><tr><td>5</td><td>Vegetation</td><td>2513.7</td><td>6.76</td></tr><tr><td>6</td><td>Open Scrub</td><td>9413.82</td><td>25.31</td></tr><tr><td>7</td><td>Built-up Land</td><td>5756.49</td><td>15.47</td></tr><tr><td>8</td><td>Barren Land</td><td>4123.62</td><td>11.09</td></tr><tr><td>9</td><td>Stone Quarry</td><td>88.29</td><td>0.24</td></tr></table> <table><tr><th>Classes</th><th>Area in Sq. Km.</th><th>Area in %</th></tr><tr><td>Agriculture</td><td>114</td><td>30</td></tr><tr><td>Barren Land</td><td>16</td><td>4</td></tr><tr><td>Builtup Land</td><td>148</td><td>39</td></tr><tr><td>Fallow Land</td><td>3</td><td>1</td></tr><tr><td>Open Land</td><td>99</td><td>26</td></tr><tr><td>Waterbody</td><td>3</td><td>1</td></tr><tr><td>Total Area</td><td>381</td><td>100</td></tr></table> PROJECT: _____ CLIENT: _____ TITLE: LULC Map ULTRA-TECH Environmental Consultancy & Laboratory Jee Commercial Complex, Eastern Express Highway, Kharipat, Thane (W), Thane West, Thane, Maharashtra 400607, India	5	Vegetation	2513.7	6.76	6	Open Scrub	9413.82	25.31	7	Built-up Land	5756.49	15.47	8	Barren Land	4123.62	11.09	9	Stone Quarry	88.29	0.24	Classes	Area in Sq. Km.	Area in %	Agriculture	114	30	Barren Land	16	4	Builtup Land	148	39	Fallow Land	3	1	Open Land	99	26	Waterbody	3	1	Total Area	381	100
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iii	Soil analysis	Primary data collected Sampling Location:	--	Results of soil analysis show the soil is not polluted.																																												

		Project site		
4	Socio – Economic Environment	Primary data on project site	For Demographic details of Kadamwakwasti, Pune Source : 'Census of India' 2011	Major Findings of the social impact assessment • The project would provide commercial and business centre with good infrastructure leading to better business activities. • The construction activity would provide indirect jobs and business opportunities to the local people. • During construction period local skilled and unskilled laborers would have an opportunity for employment. • Post project would generate long term employment in building maintenance.
5	Biological Environment	Primary data collected Period: January to March 2017	The data pertaining to flora and fauna have been collected based on discussions with concerned officials, local people and NGOs.	Terrestrial a) Flora The detailed list of flora found within the study area is provided in Chapter 3. b) Fauna Wild Animals: No wild animals are sighted, as per views of local people. Domestic Animals: The domestic animals in the study area mostly comprises of goat, buffalo, dog and cow. Avifauna: None of these birds are endangered (Sch I) as per Wildlife (Protection) Act 1972. Conclusion: Flora ❖ There are no wildlife sanctuaries / National parks located within study area. ❖ Over all the study area shows plants of 83 species including crops Fauna ❖ Amongst them, the class insect, comprising of 17 species of butterflies is predominant in the study area. The butterflies like common emigrant, common grass yellow, common Indian crow etc. were prevalent mostly within 2 Km surroundings. Barring common Indian crow (Sch – IV), none of other butterflies are enlisted in Schedule I through V under Wild Life (Protection) Act 1972. ❖ No large wild mammalian fauna was recorded within the study area. Total 82 bird species

			were recorded. Aquatic ❖ Within this area there is rivers like Mula - Mutha.
6	Traffic study	Traffic survey was carried out for Traffic density / pattern : (survey done by M/s. ULTRATECH Environment consultancy & laboratory.	• Riverview City has proposed a development of Integrated Township at Kadamwakwasti, Pune • Traffic analysis is attached as Annexure 1
7	Water	Source: Irrigation Department	Fresh water requirement: 17,704 KLD Flushing: 9901 KLD, Gardening: 2728 KLD, HVAC 5084 KLD. Wastewater generated 24,835 KLD. Raw Water Treated in WTP. Wastewater shall be treated in STP using MBBR Technology
8	Solid Waste		Total Waste generation: 99831 Kg/day. Biodegradable 62662 Kg/day and Non-biodegradable: 37169 Kg/day Biodegradable treated in Biogas Plant. Non-biodegradable shall be handed over to authorized recycler. Biomedical to PASSCO

10.4 Anticipated Environmental Impacts and Mitigation Measures:

i. Air Environment:

During construction phase, the major air pollutant of prime concern is PM₁₀, PM_{2.5} as impacts of other emissions such as SO₂, NO_x, CO will not be significant because the nature of sources is such that the emissions are distributed spatially and as well as temporal. Dust emissions from construction activities shall require comprehensive mitigation measures and best construction practices are explained in detail in the EIA report.

During operational period to control emissions from DG sets, stack heights of DG sets shall be as per CPCB guidelines. With regards to concern from vehicular emissions, the exhaust emissions due to rise in peak hour traffic will be mitigated by adopting traffic management measures and permitting vehicles having valid PUC.

As this is being an expansion project the ambient air quality is being regularly monitored on site.

ii. Noise Environment:

The noise emitted from heavy duty construction equipment during construction period being high shall require occupational preventive measures and temporary noise barriers for noise attenuation.

During operational period, Proper parking arrangement, traffic management plan for smooth flow of a vehicle by reducing noise pollution. In order to prevent adverse noise exposure to the occupants, optimal mix of mitigation measures such as low noise generation units, acoustic enclosures, and plantation of trees as noise barriers has been planned. Noise modeling studies have been done for the prediction of impacts and explained in detail in chapter 4.

Water Environment:

Raw water will be treated in WTP. Treatment of sewage will be done in Sewage Treatment Plant and it will be reused for secondary requirements like flushing, gardening, HVAC and others. Provision of RWH pits Provision of oil & grease trap and desilting chamber for storm water drain at regular intervals

iii. Land Environment :

The project is an integrated township development, as there are excavation activities of proposed work has been carried out. The wastes generation during construction phase shall be disposed in environmental friendly manner with due care and precautions.

iv. Biological Environment:

Provision of 454673 m² area as greenbelt on ground. Plantation of ~33000 nos. of trees is proposed.

v. Socio-economic Environment:

➤ Positive Impacts:

- The project would provide commercial and business centre with good infrastructure leading to better business activities.
- The construction activity would provide indirect jobs and business opportunities to the local people.
- During construction period local skilled and unskilled laborers would have an opportunity for employment.
- Post project would generate long term employment in building maintenance and ancillary services.

10.5 ENVIRONMENTAL MONITORING PROGRAMME:

During Construction and operation Phase Ambient Air Quality, Exhaust from DG Set, Noise Level, Water Analysis and Sewage Analysis has been regularly done at the locations and frequencies specified in the statutory guidelines. Outside MOEF approved Laboratory will be appointed for the regular monitoring.

10.6 ADDITIONAL STUDIES:

Additional studies which are carried out are as follows:

- Risk Assessment and Disaster Management Plan
- Traffic Analysis
- Noise Modeling
- Air Modeling

Identification of Hazards has been carried out for the construction and operation phase, the safety precautions that have to be taken during construction phase and the Disaster Management Plan, Emergency Preparedness Plan Onsite and Offsite and Carbon footprint analysis has been reported in the Chapter 6 of the EIA Report. Specific reference is given to the three components i.e. the fire protection measures, flood prevention measures and earthquake resistance of the buildings. The hierarchy of the responsibilities handled by emergency preparedness and the sequence of the operations is explained in detail and the assembly points during evacuation and route of evacuation are clearly marked on the plans.

Emergency prevention through good design, operation, maintenance and inspection are aimed in this project to reduce the probability of occurrence and consequential effect of such eventualities. The Emergency Response Plan (ERP) shall be practiced to make use of the combined resources at the site and outside services to achieve the following:-

- Localize the emergency
- Minimize effects on property and people
- Effective rescue and medical treatment
- Evacuation

10.7 PROJECT BENEFITS:

A	SOCIO ECONOMY
1	During the construction phase there would be growth in indirect jobs and business opportunities to the local and nearby people such as contractors, transporters and raw material suppliers etc.
2	As this is an Integrated Township, the project will have positive impact on the economic development of the region in terms of employment opportunities.
3	Post project will generate long term additional employment in building maintenance and ancillary services for local population
B	TREE PLANTATION AND LANDSCAPING
1	Plantation of 33000 nos. of trees on ground level is proposed.
2	Pleasing aesthetic and visual impact
3	Provide tolerance to air pollutants like PM ₁₀ , PM _{2.5} , SO ₂ , NO _x and CO.
4	Trees act as natural noise buffers
C	WATER SAVING AND WASTE WATER MANAGEMENT
1	For proposed construction, Tanker water will be used.

2	By using various water saving practices like use of water efficient plumbing fixtures, dual flushing cisterns etc. bringing down the per capita water consumption compared to the present use
3	Reducing storm water runoff by collecting the rain water from terraces and reducing the load on city storm water drains.
D	ENERGY SAVING
1	Provision of Solar panels for street lighting, solar heaters for proposed building
2	Maintenance of energy saving measures of existing building and it saves approx. 11.62% of energy by using conventional measures
3	Various energy saving measures shall be used to save the energy for proposed building, by using conventional
E	SOLID AND HAZARDOUS WASTE MANAGEMENT
1	For Proposed Phase: All necessary precautions will be taken to prevent nuisance and hazards from the solid waste, hazardous waste, E - waste during construction phase and subsequently after commissioning of the project. In order to achieve this, Construction Waste Management, Solid Waste Management, Hazardous and E Waste Management shall be practiced.
2	During construction phase Biodegradable and non-biodegradable waste from workers will be handed to authorized vendors.
F	ENVIRONMENTAL MONITORING and ENVIRONMENTAL MANAGEMENT PLAN
1	Environmental monitoring is being carried out regularly thereby ensuring the baseline quality, implementation of mitigation measures and control of environmental pollution
2	Environmental Management Plan and its judicious implementation with operation and maintenance of environmental facilities and insurance of proper budgetary allocations for a long term benefits to the project and surrounding areas.

10.8 ENVIRONMENTAL MANAGEMENT PLAN:

Adequate environmental management measures need to incorporate during the entire planning i.e. during construction (for proposed building 2) and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area. The EMP's that will be put into place consist of those during construction and operating stages of the project and includes the following elements:

- Water Conservation
- Sewage Treatment and Operation and Maintenance
- Solid Waste Management
- Air Pollution Control and Management
- Noise Level Control and Management
- Storm Water Management
- Plantation and Landscaping
- Management of Social Issues, Occupational, Safety and Health issues
- Energy Conservation
- Emergency Response Plans for Emergency Scenarios
- Environmental Monitoring
- Environmental Management System

For the effective and consistent functioning of the project, an Environmental Management System (EMS) need to establish at the site. The following part of EMS components:

- Environmental Policy
- Objectives and Targets
- Structure and Responsibility
- Emergency Planning

- Environmental Monitoring Program
- Operation of and Maintenance of Environmental Management Facilities like STP, Rain Water Harvesting, Solar Systems, Landscape Development, Solid Waste Management System
- Non-conformance and Corrective and Preventive Action
- Short term and long term budgetary provisions for the EMP
- Submission of six monthly report to Regional office, MoEF for compliance of conditions in Environmental Clearance

Budgetary allocation for Environment Management: is given as follows.

Total expenditure envisaged on Environment Management:

During Operation Phase total set up cost: Rs. 9692.47 Lacs and Operation and Maintenance cost shall be Rs. 2279.72 Lacs/year

10.9 CONCLUSION:

Being an expansion of Residential development, the project will have positive impact on the economic development of the region in terms of employment opportunities.

Based on the environmental assessment, the associated potential adverse environmental impacts can be mitigated to an acceptable level by adequate implementation of the measures as stated in the EIA and EMPs.

CHAPTER 11 DISCLOSURE OF CONSULTANT ENGAGED

This EIA report [Form I & IA or EIA in case of construction projects] is prepared on behalf of the proponents, taking inputs from proponent's office staff, their R & D wing, Architects, Project Management Professionals etc. by Environmental Consultants M/s Ultra-Tech Environmental Consultancy & Laboratory, Thane-Pune, who have been accredited by QCI-NABET vide official memorandum of MoEF dated 30th September 2011.

ENVIRONMENTAL CONSULTANTS ORGANIZATION

ULTRA-TECH ENVIRONMENTAL CONSULTANCY & LABORATORY [Lab Gazetted by MoEF – Govt. of India] not only give environmental solutions for sustainable development, but make sure that they are economically feasible. With innovative ideas and impact mitigation measures offered, make them distinguished in environmental consulting business. The completion of tasks in record time is the key feature of Ultra-Tech. A team of more than hundred environmental brigadiers consists of engineers, experts, ecologists, hydrologists, geologists, socio-economic experts, solid waste and hazard waste experts apart from environmental media sampling and monitoring experts and management experts, strive hard to serve the clients with up to mark and best services.

Ultra-Tech offers environmental consultancy services to assist its clients to obtain environmental clearance for their large buildings, construction, CRZ, SEZ, high rise buildings, project projects and industries covering sugar and distilleries from respective authorities. Ultra-Tech is in the process of getting QCI-NABET final accreditation for its EIA organization.

Ultra-Tech also provide STP/ETP /WTP project consultancy on turn-key basis apart from Operation and Maintenance of these projects on annual contract basis. Also, having MoEF approved environmental laboratory, Ultra-Tech provide laboratory services for monitoring and analysis of various environmental media like air, water, waste water, stack, noise and meteorological data to its clients all over India and abroad.

CREDENTIALS

- State of Art Environmental Laboratory & Trained Manpower, Gazetted by MoEF& CC.
- Environmental Advisor for Municipal Corporation.
- Affiliated to Indian Green Building Council (IGBC), Hyderabad.
- Affiliated to United States Green Building Council (USGBC), US.
- Environmental Consultants for Federation of All India Textile Manufacturing Association (FAITMA)
- Environmental Consultants for All India Lead Manufacturing Association.
- NABET, Quality Council of India, Accreditation for EIA is obtained.
- ISO 9001:2008, Quality Management System implemented

HONORS

We are honoured by the following reputed firms for our unflagging quality environmental & consultancy and monitoring services.

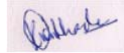
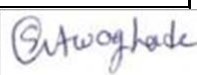
- **TECHNICAL CONSULTANT OF CRISIL, MUMBAI**
For Common Effluent Treatment Plant issues in Gujarat, India
- **TECHNICAL CONSULTANT OF FAITMA, MUMBAI**
[Fed. of All India Textile Manufacturer's Associations] For Environmental issues
- **TECHNICAL CONSULTANCY SERVICE, PUNE**
For Environmental Quality Monitoring Services at Panvel-Karjat Rail-way Project
- **RASTRIYA CHEMICALS & FERTILIZERS, MUMBAI**
For Ambient Air Monitoring in nearby villages

ISO 9001:2008 CERTIFICATION

ULTRA-TECH is one of the leading environmental consultancy and laboratory services providing companies and is ISO 9001:2008 certified with effect from 26th March, 2011.

All it means that ULTRA-TECH is certified for offering High Quality Environmental Services aiming at customer satisfaction. Its quality policy reflects its obligation to serve their customers at the best of their skills and to go extra mile to attain and exceed the expectations of valuable customers with an additional responsibility of contributing to the drive of turning this universe into green universe. Continuous efforts to enhance the specific skills which are critical to acquire is making ULTRA-TECH to attaining Excellency in providing environmental clearances through impact assessment.

LIST OF EIA COORDINATOR, FUNCTIONAL AREA EXPERTS & ASSOCIATES

S. No	Name of sector	Name of project	Name of Client	Name of EIA Coordinator	Functional Area Experts involved		
					FA	Name/s	
1	Constructi on 8 (B1)	“Rivervie w City” by M/s. Riverview City Constructi ons Ltd.	M/s. Riverview City Constructio ns Ltd.	Ms. Sampada Shidid 	AP	Mr. Shekhar Tamhane	
					AQ	Mrs. Anjali Singam	
					WP	Mrs. Deepa Tamhane-Karnik Ms. Sampada Shidid	 
					EB	Mr. T. K. Ghosh	
					SE	Mr. Kishore Wankhade	
					MSW	Mrs. Deepa Tamhane-Karnik Ms. Sampada Shidid	 
					SC	Dr. Ramteke	
					LU	Mr. Swapnil Awaghade	
					NV	Mr. Chintan Athalye	

Team Members

1	Ms. Bharati Chavan
2	Mr. Prasad Khedkar
3	Mr. Utkarsh Mukkannawar
4	Mr. Akshay Kulkarni
5	Mrs. Padmini Shinde

Laboratory

Ultra-Tech (Environmental Consultancy & Laboratory), Lab Gazetted by MoEF& CC.

List of Annexure

No.	Particulars
1.	Traffic Impact Study
2.	Hydro-Geology Report
3.	Air Modeling Report
4.	Township Policy
5.	Locational Clearance
6.	Water Permission
7.	Disaster Management Plan
8.	Concept Note for Electricity and Energy Conservation
9.	Site specific remarks from the irrigation department
10.	Certified copy of the village map demarcating the red line and blue line
11.	Section 11.1 of DCPR for regional plan area
12.	Plan showing the riverside portion superimposing Blue Line on the same along with the sections marked on different locations
13.	A plan showing no structures within 30 m of the railway boundary
14.	DCPR for regional plan area Clause No 11.4
15.	NOC from PASSCO
16.	Extract of work manual published by PESO
17.	The plan showing the distance of the planned development from the boundary of IOCL
18.	Acknowledgement copy of the letter submitted to IOCL.
19.	Letter from Central Railway for the permission.
20.	Extract of Integrated township policy note 7.3
21.	The permission from Grampanchayat Kadamwakwasti for using Cremation Ground/ Burial Ground of the village
22.	Clause No. 7.1.3 of Annexure B of Integrated township Policy
23.	Affidavit

Note: Due to heavy size of Annexures we will submit Annexures along with the hard copy.