

BEFORE NATIONAL GREEN TRIBUNAL

AT WESTERN ZONAL BENCH PUNE

ORIGINAL APPLICATION NO. 100 OF 2020

IN THE MATTER OF:

UDAYSANKAR SAMUDRALA

...APPLICANT

-VERSUS-

UNION OF INDIA & ORS.

.....RESPONDENTS

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THROUGH
(NITESH RANJAN & UTKARSHA SHARMA)

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Filed on: 05.07.2021
New Delhi

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REJOINDER ON BEHALF OF THE APPLICANT TO THE REPLY

AFFIDAVIT FILED ON BEHALF OF THE RESPONDENT NO. 1.

1. The captioned Application has been filed under Section 14 of the National Green Tribunal Act, 2010 seeking intervention of this Hon'ble Tribunal to direct the 1 to 5 to take effective action to stop further construction, development or change of nature and character of the site of the purported funicular ropeway project at Jivdani Temple being done by at the instance of respondent No. 4. The application also raises the issue of non-implementation of various environmental laws , more particularly non implementation

of the Forest (Conservation) Act, 1980, the Environment (Protection) Act , 1986, and the Environmental Impact Assessment Notification, 2006 , which has led to adverse effects of climate change across the country.

PRELIMINARY SUBMISSIONS/ OBJECTIONS

2. On 18th June 2021 the Applicant was served with a copy of the reply affidavit affirmed by one Suresh Kumar Adapa on 01.06.2021 on behalf of the respondent no. 1 (hereinafter referred to as the said affidavit).
3. At the outset, it is stated that the said affidavit is not in correct form and as such cannot be looked into by this Hon'ble Tribunal. Save what are the matter of record and what is specifically admitted hereafter, each and every allegation contained in the said affidavit is denied and disputed.
4. The applicant states that the said affidavit has been filed by the respondent no. 1 belatedly and in violation of the order of this

Hon'ble Tribunal. This Hon'ble Tribunal had by its order dated 24.12.2020 directed the answering respondent to first look into the matter, secondly, take action if a violation was found and thirdly submit such report to this Hon'ble Tribunal before 17.03.2021. An action was to be taken if a violation was discovered by the respondent no. 1 and this was to be completed by 24.02.2021 in compliance with the order dated 24.12.2020 passed by the Hon'ble Tribunal. By filing the said affidavit at a belated stage and that too without taking any action, as directed, the respondent no. 1 has blatantly disregarded the order passed by this Hon'ble Tribunal.

PARA-WISE REPLY

5. With respect to the statement made in Paragraph Nos. 1 and 2 of the said affidavit, save what are the matters of record, each and every allegations contained therein is denied and disputed. It is submitted that the said Suresh Kumar Adapa has affirmed the said affidavit on behalf of the respondent no. 1. However, no authorization whatsoever has been provided and as such on this score alone the affidavit need not be looked into by this Hon'ble Tribunal.

6. With reference to the statements made in Paragraph Nos. 3 to 5 of the said affidavit, save what are the matter of record, each and every allegation contained therein is denied and disputed.
7. With reference to the statements made in Paragraph Nos. 6 to 10 of the said affidavit, save what are the matter of record, each and every allegation contained therein is denied and disputed. It is denied that in compliance of the direction of the Hon'ble Tribunal vide order dated 24.12.2020, the answering respondent has examined the matter in detail or at all. This Hon'ble Tribunal had specifically directed the respondent no. 1 to look into the matter and take action against the respondent no. 4 in the event there was a failure in compliance with the environmental laws of the country. Such action was to be completed by the respondent no. 1 within a period of 2 months i.e. latest by 24.02.2020. Further, an action taken report was to be submitted by the respondent no. 1 to this Hon'ble Tribunal by or before 17.03.2021. However, the respondent no. 1 has

blatantly disregarded the order of this Hon'ble Tribunal and has been in contumacious violation thereof. Such inaction on the part of the respondent no. 1 is not only mala fide but also reeks of bias towards the respondent no. 4 and arbitrariness. It is further denied that Sri. Jivdani Devi Sansthan was granted any environmental clearance on 17.09.2009 or that the construction work had started or that due to change in the technology such work has stopped at the site. In this regard, it is stated that the environmental clearance granted on 17.09.2009 was for a Mono Cable Pulsated Fixed Grip Passenger Ropeway and was granted to the erstwhile contractor M/s. Damodar Ropeway & Infra Limited for a period of 5 years only. The environmental clearance so granted, stood expired by efflux of time on 16.09.2014.

The entire works pertaining to the Funicular Ropeway has been carried on by the respondent no. 4 without any environmental clearance, more so in total disregard for the environment. It is also stated that during the tenure of the first environmental clearance dated 17.09.2009, no work whatsoever was done at the funicular

ropeway site as will be evident from the balance sheets of the respondent no. 4 for the year 2017-18, 2018-2019 and 2019-20. In the balance sheet of 2017-18 the opening balance against Funicular Ropeway (WIP) has been shown as nil till 01.10.2017 therefore no work in funicular ropeway was done before 01.10.2017. The entire work under the Funicular Ropeway mechanism ensued only in the financial year 2017-18 and was carried on in the years 2018-19 and 2019-20. Between 01.10.2017 and 31.03.2020, a sum of Rs. 21,90,87,177/- was spent by the respondent no. 4 in the construction of the funicular ropeway project. It is of utmost importance to note that till date, there was no Environmental Clearance granted for the project. In this connection, a copy of the balance sheet of the respondent no. 4 for the financial year 2017-18, 2018-2019 and 2019-20 are collectively annexed hereto and marked as **Annexure "A"**.

8. With reference to the statements made in Paragraph No. 11 to 17 of the said affidavit, save what are the matters of record, each and every allegation contained therein is denied and disputed. It is

stated that no certificate compliance report as stated in the Paragraph No. 11 of the affidavit was ever issued by respondent no. 1 nor could this have been issued in light of the fact that the earlier environmental clearance dated 17.09.2009 stood determined on 16.09.2014 and moreover, was granted to a separate contractor for a different kind of ropeway project. The present funicular ropeway at the project site is fundamentally different from the construction which was envisaged under the environmental clearance dated 17.09.2009. The said environmental clearance was granted for a Monocable Pulsated Ropeway which is an Aerial Ropeway and would have minimum effects on the Flora and Fauna of the forest land where the project is situated, but the present project is a Funicular Ropeway project which runs on rail tracks laid on the ground of the forest land requiring substantially more construction and adversely effects its Flora and Fauna. Such construction could in no way have been initiated without a valid environmental clearance.

It is further stated that a public hearing took place on 30.12.2020 at the project site was chaired by the officials of the respondent authorities as well as the officials of the Maharashtra Pollution Control Board. The manner in which this public hearing was done is shady to say the least. When the officials attended the project site to host the public hearing, they witnessed that an entire ropeway project on rail tracks was already in place, however, no notice was made about this fact. Public Hearing is to be conducted prior to initiation of any kind of construction for obtaining prior Environmental Clearance. The EIA Notification, 2006 does not envisage a post construction Environment Clearance. As such, not only the respondents, but also the officials have by conducting the public hearing on 30.12.2020, made a mockery of the Environmental laws of the country. This only leads the applicant to believe that the public hearing was a concocted one. A true copy of the Minutes of the Meeting dated 30.12.2020 is annexed hereto and marked as **Annexure "B"**.

9. The statement made in paragraph 14 of the said affidavit that no proposal from PP for grant of environmental clearance have been submitted so far, is specifically denied as it is contrary to the records. In fact, the project proponent has submitted its' application for environmental clearance on 01.03.2021. A true copy of the application dated 01.03.2021 is annexed hereto and marked as **Annexure "C"**. Such application for environmental clearance was in fact listed on PARIVESH. A Member Secretary of Infrastructure of Miscellaneous project & CRZ submitted a query on 04.04.2021, a Screen shot whereof is annexed hereto and marked as **Annexure "D"**. Denoted below is a list of queries raised by the Member Secretary:
- a) Please specify the status of stage 1 of the forest clearance.
 - b) As per NGT order, the construction of facility amount of violation. Please specify the status of physical progress of facility since 2009.

The queries raised by the Member Secretary were un-answered by the project proponent for over a month and as such the application for environmental clearance got delisted from PARIVESH on 05.05.2021. A copy of the relevant excerpt taken from PARIVESH is annexed hereto and marked as **Annexure "E"**. The project proponent was unable to answer these queries in since the entire construction of the funicular ropeway project was done after 2017 in complete disregard for the environmental laws of the country.

It is specifically denied that in compliance of the direction of the Hon'ble Tribunal vide order dated 24.12.2020, the answering respondent has directed its Regional Office to inspect the site and submit a report. In this regard, it is stated that this Hon'ble Tribunal had directed the answering respondent to first look into the matter, secondly, take action if a violation was found and thirdly submit such report to this Hon'ble Tribunal before 17.03.2021. An action was to be taken if a violation was discovered by the respondent no. 1 and this was to be completed by 24.02.2021 in compliance with the

order dated 24.12.2020 passed by the Hon'ble Tribunal. However, the respondent no. 1 directed its Regional Office to carry out a site inspection and submit a factual report on 28.05.2021, i.e., after a period of 5 months from the date of the order. The respondent no. 1 has attempted to mock the dicta of this Hon'ble Tribunal in failing to comply with its order dated 24.12.2020 not only in letter but also in spirit. The respondent no. 1 has placed incorrect facts on record only to mislead the Hon'ble Tribunal. The applicant has time and again issued more letters to the respondent no. 1 requesting them to comply with the order of this Hon'ble Tribunal but to no avail. Copies of the communication issued by the applicant in this regard are collectively annexed hereto and marked as **Annexure "F"**.

10. It is disappointing to note that since December-January, 2020, the project proponent has been commercially operating the ropeway project under the garb of 'trial runs' and the authorities including respondent no. 1 have turned a blind eye towards the illegalities carried on by the respondent no. 4 without any explanation. It

appears that such behaviour of the respondent no. 4 is emanating from a joint conspiracy between the project component and the respondent no. 1. A copy of the ropeway ticket issued by the respondent no. 4 for Funicular Passenger Ropeway is annexed hereto and marked as **Annexure "G"**. Such ropeway tickets are issued in the form of a donation slip since the respondent no. 4 is well aware of the fact that unless the environmental clearances are obtained, it cannot start commercial operations. Also annexed in this regard, is a copy of the photographs taken at the site of the project showing that the project has been completed and has been commercially operated under the garb of 'trial runs' marked as **Annexure "H"**. Hereinbelow is a YouTube video link that further shows the funicular ropeway in operation at Jivdani and the ticket mechanism alongwith the views of the surrounding area:

<https://youtu.be/idNwNOHMjB0>

11. The respondents have been in continuous violation and derogation of the environmental laws of the country and have severe distress

the flora and fauna of the area surrounding Jivdani Temple. Such violations are continuing till date.

12. It is submitted that the respondent authorities have been made a mockery of the environmental laws of country and have taken law into their own hands to take action as they deem fit.
13. The statements and submissions made in the main application and those mentioned in the I.A. No. 42 of 2021 are reiterated and the applicant states that the I.A. No. 42 of 2021 be treated as a part of the instant rejoinder.
14. The applicant is deeply concerned for the environment and as such submits that this Hon'ble Court intervenes and puts an end to the unchecked adventure set forth by the respondent authorities.
15. The applicant humbly submits that the prayers sought for by the applicant in the O.A. No. 100 of 2020 be allowed immediately so

that no further damage is ensued upon the forest land at the project site and the applicant further prays that the respondents are subjected to the strictest penalty under law.



THROUGH
(NITESH RANJAN & UTKARSHA SHARMA)

Advocates for the Applicant
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Filed on: 05.07.2021
New Delhi



महाराष्ट्र MAHARASHTRA

2020

YS 640603

प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क्र. ८०००००९

- 8 JUN 2021

सक्षम अधिकारी

BEFORE THE NATIONAL GREEN TRIBUNAL
AT WESTERN ZONAL BENCH, PUNE
ORIGINAL APPLICATION NO. 100 OF 2020

IN THE MATTER OF:

UDAYASANKAR SAMUDRALA

.. APPLICANT

Versus

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.. RESPONDENTS





**BEFORE THE NATIONAL GREEN TRIBUNAL
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AFFIDAVIT

I, Udaya Sankar Samudrala, S/o Rajasekhar Rao Samudrala, aged about 70 Years, having address at 2, Rewa Chambers, 31, New Marina Lines, Mumbai 400 020, do hereby solemnly affirm and state as follows:-

1. That I am the Applicant in the present case and I am well conversant with the facts and circumstances of the case and as such am competent to swear this affidavit.
2. That the said Rejoinder has been drafted under my instructions and I have gone through the contents of the same.
3. That the contents of the accompanying Rejoinder are true and correct to the best of my knowledge and belief and nothing material has been concealed there from and the prayers thereof are my humble submissions before this Hon'ble Tribunal.

4. That the statements contained in the aforesaid paragraphs are true to my knowledge.

Iday Sami C
DEPONENT

VERIFICATION

Verified on this the 3rd day of July, 2021 at Mumbai that the contents of the above Affidavit are true and correct to the best of my knowledge and belief and no part of it is false and nothing material has been concealed therefrom.

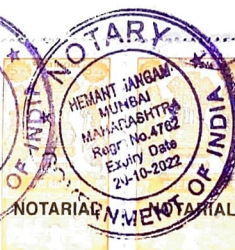
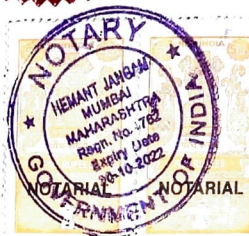
Iday Sami C
DEPONENT

BEFORE ME

[Signature]
HEMANT JANGAM
NOTARY, Reg. No. 4762
Government of India
-3 JUL 2021



Reg. No.	<i>4762/KKK</i>
Sr. No.	<i>532</i>
Pg. No.	<i>45</i>
Date	<i>3 JUL 2021</i>



**REPORT OF AN AUDITOR RELATING TO ACCOUNTS
AUDITED UNDER SUB-SECTION (2) OF SECTION 33 & 34
AND RULE 19 OF THE BOMBAY PUBLIC TRUSTS ACT.**

Registration No. : A - 397 (THANE)
Name of the Public Trust : SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
For the year ending : 31st MARCH, 2018

(a)	Whether accounts are maintained regularly and in accordance with the provisions of the Act and the rules ;	YES
(b)	Whether receipts and disbursements are properly and correctly shown in the accounts ;	YES
(c)	Whether the cash balance and vouchers in the custody of the Manager or Trustee on the date of audit were in agreement with the accounts ;	YES
(d)	Whether all books, deeds, accounts, vouchers or other documents or records required by the auditor were produced before him ;	YES
(e)	Whether a register of movable and immovable properties is properly maintained, the changes therein are communicated from time to time to the regional office and the defect and inaccuracies mentioned in the previous audit report have been duly complied with ;	YES
(f)	Whether the Manager or Trustee or any other person required by the auditor to appear before him did so and furnished the necessary information required by him ;	YES
(g)	Whether any property or funds of the Trust were applied for any object or purpose other than the object or purpose of the Trust ;	NO
(h)	The amounts of outstandings for more than one year and the amounts written off, if any ;	NO
(i)	Whether tenders were invited for repairs or construction involving expenditure exceeding Rs.5000/- ;	NO
(j)	Whether any money of the public trust has been invested contrary to the provisions of Section 35 ;	NO
(k)	Alienations, if any, of the immovable property contrary to the provisions of Section 36 which have come to the notice of the auditor ;	NIL
(l)	All cases of irregular, illegal or improper expenditure, or failure or omission to recover monies or other property belonging to the public trust or of loss or waste of money or other property thereof, and whether such expenditure, failure, omission, loss or waste was in consequence of breach of trust or misapplication or caused any other misconduct on the part of the trustees or any other person while in the management of the trust ;	NIL
(m)	Whether the budget has been filed in the form provided by Rule 16A ;	YES
(n)	Whether the maximum and minimum number of the trustees is maintained ;	YES
(o)	Whether the meetings are held regularly as provided in such instrument ;	YES
(p)	Whether the minute books of the proceedings of the meetings is maintained ;	YES
(q)	Whether any of the trustees has any interest in the investment of the trust ;	NO
(r)	Whether any of the trustees is a debtor or creditor of the trust ;	NO
(s)	Whether the irregularities pointed out by the auditors in the accounts of the previous year have been duly complied with by the trustees during the period of audit ;	YES
(t)	Any special matter which the auditor may think fit or necessary to bring to the notice of the Deputy or Assistant Charity Commissioner;	NO

For M.R. Padhye & Co.

(Aniket.M.Padhye)
Chartered Accountants
Auditors
Memb.No. 105182



Place : Virar

Dated : 06/09/2018

THE BOMBAY PUBLIC TRUSTS ACT, 1950
SCHEDULE IX-C
(Vide Rule 32)

Statement of income liable to contribution for the year ending : 31st MARCH, 2018

Name of Public Trust : SHRI JIVDANI DEVI SANSTHAN

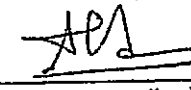
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)

Registered No : A-397 (THANE)

	Rs.	P.	Rs.	P.
I. Income as shown in the Income and Expenditure Account (Schedule IX)			156842003.82	
II. Items not chargeable to Contribution under section 58 and Rule 32 :				
(i) Donations received from other Public Trusts and Dharmadas.				
(ii) Grants received from Government and Local authorities.				
(iii) Interest on Sinking or Depreciation Fund.				
(iv) Amount spent for the purpose of secular education.			54168696.57	
(v) Amount spent for the purpose of medical relief.			4534037.00	
(vi) Amount spent for the purpose of veterinary treatment of animals.				
(vii) Expenditure incurred from donations for relief of distress caused by scarcity, drought, flood, fire or other natural calamity.				
(viii) Deductions out of income from lands used for agricultural purposes :-				
(a) Land Revenue and Local Fund Cess.				
(b) Rent payable to superior landlord.				
(c) Cost of production, if lands are cultivated by trust				
(ix) Deductions out of income from lands used for non-agricultural purposes :-				
(a) Assessment, cesses and other Government or Municipal taxes.				
(b) Ground rent payable to the superior landlord.				
(c) Insurance premia.				
(d) Repairs at 10 per cent of gross rent of building.		0.00		
(e) Cost of collection at 4 per cent of gross rent of buildings let out.		94427.88		94427.88
(x) Cost of collection of income or receipts from securities, stocks etc. at 1 per cent of such income.				
(xi) Deduction on account of repairs in respect of buildings not rented and yielding no income, at 10 per cent of the estimated gross annual rent.				
Gross Annual Income chargeable to contribution Rs.			152213538.94	

Certified that while claiming deductions admissible under the above Schedule, the Trust has not claimed any amount twice, either wholly or partly, against any of the items mentioned in the Schedule which have the effect of double-deduction.

For M.R. Padhye & Co.


 (Aniket.M.Padhye)
 Chartered Accountants
 Auditors
 Memb.No.105182



Trust Address :

JIVDANI DEVI TEMPLE TRUST
 VIRAR (E), TAL.VASAI,
 DIST. THANE - 401303.

Dated : 06/09/2018

Dated : 06/09/2018

 
 Chairman Vice Chairman Secretary Treasurer Trustees
 SHREE JIVDANI DEVI SANSTHAN, VIRAR

SCHEDULE IX
[Vide Rule 17(4)]
Registration No. : A - 397 (THANE).

Name of the Public Trust : **SHRI JIVDANI DEVI SANSTHAN**
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)

Income and Expenditure Account for the year ending : 31st MARCH, 2018

EXPENDITURE		Rs.	Rs.	INCOME		Rs.	Rs.
To	Expenditure In respect of Properties :-			By	(accrued)		
	Rates, Taxes, Cesses ...	31125.00			(realised)		2360697.00
	Repairs and Maintenance (As per Schedule "A")	17119357.00					
	Salaries ...	0.00			(accrued)		
	Insurance ...	0.00		By	FD Interest	9379722.00	
	Depreciation (by way of provision or adjustments)	0.00			(realised)		
	Afforestation Exps.				On Rent	0.00	
	Other expenses ...	0.00	17150482.00		On Loans ...	0.00	
To	Establishment Expenses ... (As per Schedule "B")		52248937.97		On Bank Account ...	79406.24	9459128.24
To	Remuneration to Trustees.		0.00				
To	Remuneration (In the case of a math) to the head of the math, including his household expenditure, if any.		0.00	By	Dividend ...		335.00
				By	Donations in cash or kind		131633436.78
To	Legal Expenses ...		0.00	By	Grants ...		0.00
To	Audit Fees ...		88500.00	By	Income from other sources (In details as far as possible)		
To	Contribution and Fees ... (Charity Commissioner)		0.00		As Per Schedule "F"		8038406.72
To	Amount written off :-			By	Interest on Loan to staff		0.00
	(a) Bad Debts ...	0.00		By	Transfer from Reserve ...		5350000.08
	(b) Loans Scholarship ...	0.00					
	(c) Irrecoverable rents ...	0.00					
	(d) Other Items		0.00	By	Deficit carried over to Balance Sheet ...		0.00
To	Miscellaneous Expenses ...		0.00				
To	52nd Annual Anniversary Exp. ...		0.00				
To	Depreciation ...		5646648.00				
To	Amounts transferred to Reserve or Specific Funds.		0.00				
To	Expenditure on objects of the trust :-						
	(a) Religious (Sch."C")	18524292.50					
	(b) Educational ...	0.00					
	(c) Medical Relief ... (Sch."E")	4534037.00					
	(d) Relief of Poverty ...	0.00					
	(e) Other charitable objects (Sch."D")	4383119.00	27441448.50				
To	8% of Donation trf to Corpus Fund		5000000.00				
To	2% of Donation trf to Employee Nidhi fund		2632668.74				
To	Trf to Educational building furniture fund a/c						
To	Surplus carried over to Balance Sheet		46633318.61				
Total Rs...			156842003.82	Total Rs...			156842003.82

As Per Our Report Of Even Date
For M.R. Padhye & Co.

(Aniket M. Padhye)
Chartered Accountants
Auditors
Memb.No.105182



Place : Virar

Dated : 06/09/2018

[Signature]

Chairman Vice Chairman Secretary Treasurer Trust
SHREE JIVDANI DEVI SANSTHAN, VIR.

Dated : 06/09/2018

THE BOMBAY PUBLIC TRUSTS ACT, 1950
SCHEDULE VIII
[Wide Rule 17(3)]

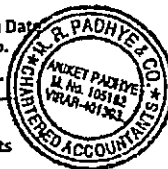
Registration No. : A-397 (THANE)

Name of the Public Trust : **SHRI JIVDANI DEVI SANSTHAN**
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
 Balance Sheet as at : **31 MARCH, 2018**

FUNDS AND LIABILITIES	Rs.	Rs.	PROPERTY AND ASSETS	Rs.	Rs.
Trust Funds or Corpus :-			Immovable Properties :- (As per Sch. - I)		396588728.24
Balance as per last Balance Sheet...	15687428.31		Movable Properties :- (As per Sch. - II)		61320572.59
Adjustment during the year	5000000.00	20687428.31	Investments :- (As per Sch. - III)		61987460.00
Other Earmarked Funds :- (Created under the provisions of the trust-deed or scheme or out of the income).			Note : The market value of the above investments is Rs.		
Depreciation Fund ...	0.00		Loans (Secured or Unsecured)		
Sinking fund ...	0.00		Good/doubtful ...	0.00	0.00
Reserve fund ...	0.00		To Employees	0.00	
Any other fund (employee nidhi fu	6514624.74	6514624.74	Advances :-		
Temple Renovation Fund			To Trustees ...	0.00	
Op. balance...	108668286.30		To Employees ...	0.00	
Addition During the year	0.00		To Contractor ...	0.00	
ADD: App. From I & E A/C	0.00	108668286.30	To Lawyers ...	0.00	
Educational Building Fund			To Others ...	7723188.00	7723188.00
Op. balance...	5350000.08		(As per Sch. - IV)		
Addition During the year	0.00		Sundry Debtors (MSED CO.)		186021.00
Less:-Transfer to Income & Expenc	5350000.08	0.00	T.D.S.		1563431.00
Educational Building Furniture Fund a/c			T.C.S. RECEIVABLE		2466058.30
Op. balance....	12500000.00		Other Deposits (As per sch. "V")		145399.00
Addition During the year	0.00		Accrued Interest		1201358.70
Less:-Transfer to Income & Expenc	12500000.00	12500000.00	Income Outstanding :-		
Employees Provident Fund			Rent (M.S.E.B.)...	0.00	
Op. Balance	0.00		Interest on Rent	0.00	
Addition During the year	0.00		Other Income ...	164408.00	164408.00
Int. on Investment	0.00	0.00	Cash and Bank Balances :- (As per Sch. - VII)		840809.10
Less: Withdrawals	0.00		(a) In current account		
Loans(Secured or Unsecured) :-			with	0.00	
From trustees ...	0.00		In Fixed Deposit		
From others...(Vasal Vikas bank OD	34794738.94	34794738.94	account with	0.00	
Liabilities :-			(b) With the trustee	0.00	
For expenses ...	0.00		(c) With the Manager	0.00	0.00
For advances...	0.00		Income and Expenditure		
For rent and other deposits	0.00		Account :-		
For sundry credit bal.	0.00		Balance as per last Balance		
Professional Tax	350.00		Sheet...	0.00	0.00
Service Tax	-124619.00		Less : appropriation, if any		
Road Tax	-15380.00		Add : Surplus as per Income and		
Provision for Audit Fees	88500.00		Expenditure A/c		
T.D.S.PAYABLE	2803.00		Less : Deficit Expenditure Account	0.00	0.00
EPF	1661518.00	1613172.00			
Tender Shop & Other Deposit (AS PER SECHULDE "VI")		4630650.00			
Income and Expenditure					
Account :-					
Balance as per last Balance					
Sheet...	298145215.35				
Add : Surplus as per Income and	46633318.61				
Expenditure A/c					
Less : Deficit Expenditure Account	0.00	344778533.64			
Total Rs...	534187433.93	534187433.93	0.00	Total Rs...	534187433.93

As Per Our Report of Even Date
 For M.R. Padhye & Co.

(Aniket.M.Padhye)
 Chartered Accountants
 Auditors
 Memb.No.105182.



Place : Virar

Dated : 06/09/2018

The above Balance Sheet to the best of my/our belief contains a true account of the Funds and Liabilities and of the Property and assets of the Trust.

Dated : 06/09/2018

Chairman Vice Chairman Trustee Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)

SCHEDULES TO INCOME & EXPENDITURE A/C FOR THE YEAR ENDED 31ST MARCH, 2018

SCHEDULE "A" : REPAIRS & MAINTENANCE

TROLLY MAINTENANCE	2762374.00
TEMPO REPAIRS & MAINTENANCE	47000.00
RIKSHAW MAINT. & REPAIRS	33251.00
DEAD STOCK REPAIRS	441929.00
AMBULANCE REPAIRS & MAINT.	264960.00
LIFT REPAIRS & MAINTENANCE	1071920.00
VAN REPAIR & MAINT.	44981.00
GENERATOR REPAIR & MAINT.	104298.00
MANDIR BUILDING REPAIR & MAINT.	12337594.00
PAYARI RENOVATION	11050.00

17119357.00

SCHEDULE "C" : RELIGIOUS EXPENSES

BUNDI & BUNDI LADOO MAKING CHGS	501540.00
SHREE JIVDANI DEVI POOJA ARCHA	626917.00
GANPATI MANDIR POOJA ARCHA	9785.00
SHREE MAHAKALI POOJA ARCHANA	16390.00
HANUMAN JAYANTI UTSAV	3517.00
MAHASHIVRATRI UTSAV	52362.00
MAGHI GANPATI UTSAV	52000.00
CHAITRA NAVRATRI UTSAV	362429.00
NAVRATRI UTSAV	1312041.00
DIPAWALI UTSAV	145201.00
DATTA JAYATI UTSAV	27045.00
BHANDARA EXP.	9336995.50
GROSARY EXP.	3901683.00
POUCHES FOR "NARALVADI"	652381.00
GANESH CHATURTHI UTSAV	51500.00
COCONUT PURCHASE	265960.00
COCONUT VADI MAKING CHARGES	1206546.00

18524292.50

SCHEDULE "D" : OTHER CHARITABLE OBJECTS

SOCIAL	3549183.00
SPORTS	277000.00
PLANTATION	556936.00

4383119.00

SCHEDULE "E" : MEDICAL RELIEF

DISPENSARY-MEDICINE PURCHASES	2634470.00
CHARITY MEDICAL	1518000.00
DISPENSARY-OTHER EXP.	24094.00
DISPENSARY-PROFESSIONAL FEES	357473.00

4534037.00

SCHEDULE "F" : INCOME FROM OTHER SOURCES

GAS SUBSIDY	725.24
RIKSHAW CAR PARKING CHARGES	717200.00
CGST	144989.24
SGST	144989.24
SADI/CHUNARI	2164092.00
GOMTI PATIL (HEN/GOAT)	756684.00
MISC. INCOME	0.00
SALE OF SAREE / BLOUSE PEACE	1564827.00
SOLAR SUBSIDY RECEIVED	2544900.00

8038406.72

RENT

DATTA MANDIR BLDG. RENT	268697.00
POPCORN- TEA STALL RENT	1752000.00
ATM RENT	340000.00

2360697.00

SCHEDULE "B" : ESTABLISHMENT EXPS.

ADVERTISEMENT EXP	63149.00
ANIVERSARY CELEBRATION EXP	131522.00
ENVIRNMENT TAX	3300.00
BANK CHARGES	49450.29
CEMENT	3716070.00
CRANE RENT	207208.00
COLOUR WORK	1055150.00
COMPUTER SYSTEM EXP	99346.00
COOKING GAS EXP	507755.00
DIESEL EXP	491609.00
ELECTRIC ARTICLES	211015.00
ELECTRIC METER ADDITIONAL LODGE	256800.00
ATM ROOM CONSTRUCTION	2944.00
EMPLOYEE HEALTH INSURANCE	1891649.00
EMPLOYEE MEDICAL HELP	25343.00
EMPTY BAGS PURCHASES	15600.00
EARTHING EXPS	593151.00
EPF ADMINISTRATIVE EXPS	275707.00
EPF TRUST CONTRIBUTION	1097359.00
EX-GRATIA	1763014.00
BIRDS CAGE EXPS	127040.00
GRATUITY	384808.00
HARDWARE	496840.00
HONORIUM	226000.00
BIRDS FOOD & OTHER EXPS	236853.50
INTEREST ON OD A/C	491044.00
JIVDANI PHOTO FRAMES	74090.00
DATT MANDIR EXPS	3535.00
LIGHT BILLS	3434660.00
LOCKER RENT	2070.02
MAIN GATE DECKS SPAN	7509806.00
MISCELLNEOUS EXP	82288.16
MONEY INSURANCE POLICY	28318.00
NEWS PAPERS EXP	3087.00
INSURANCE FOR ORNAMENTS	45478.00
O.T.PAYMENT	433521.00
JCB RENT	114500.00
PAYARI SHED CONSTRUCTION	6875.00
PAPADKHIND WORK	103642.00
PANCHPAYARI CONSTRUCTION	15000.00
PETROLEXP	269532.00
PLASTIC COMMODITY EXP	240104.00
PLUMBING EXP	20835.00
PROFESSIONAL FEE	622372.00
PROCESSING FEE (NAGARPALIKA)	5000.00
RETI ,VITA KHADI A/C	2060486.00
RIKSHA INSURANCE	2618.00
RIKSHAW STAND RENT	13000.00
SALARY-CASUAL EMPL	152263.00
SALARY-DISPENSARY	304004.00
SALARY PERMANANT EMPL	8443568.00
SALARY-TEMPARARY EMPL	3783759.00
SANITATION EXP	349538.00
SECURITY EXP	4890121.00
STAMPS & POSTAGES	12066.00
STATIONERY ,PRINTING & XEROX	182793.00
TDS PENALTY	889.00
TEA & REFRESHMENT	201872.00
TELEPHONE EXP	51691.00
TRANSPORTATION EXP	262984.00
TRAVELLING EXP	70413.00
UNIFORM EXPS	255739.00
UNION CONTRIBUTION	-24240.00
WATER TANKER	26200.00
NON-AGRICULTURAL TAX	156570.00
PACHPAYARI NALA CONSTRUCTION	3300.00
MAKING STATUE EXPS	450000.00
KHAT PRAKLAP	3145.00
PROF. FEES FOR ABHAY SHINDE	228323.00
SHRI JIVDANIDEVI UPVAS EXPS	32525.00
WALKY TALKY & ACCESSORIES PURCHAS	17024.00
NARALWADI ROOM	154807.00
SUPERKLEAN ENVIRONMENT ENGG.	-7000.00

52248937.97

(Signature)

Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIRAR



SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
SCHEDULES TO BALANCE SHEET FOR THE YEAR ENDED 31ST MARCH 2018

SCHEDULE "I" : IMMOVABLE PROPERTIES

SABHA MANDAP & ALLIED CONST.	
OPENING BALANCE	136798465.33
DECKS SPAN	8868433.00
NEW PAYRI CONSTRUCTION	390499.00
PANCHPAYRI BATHROOM CONSTRUCTION	264819.00
PANCHPAYRI SHED CONSTRUCTION	117145.00
	146439361.33
ADD: PANCHPAYRI SHED CONSTRUCTION	1361128.00
	147800489.33
LAND AT SHAHAPUR	156875.00
LAND AT VIRAR	6048070.00
VELAVATI MANDIR AT PANCH PAYARI	2525000.00

EDUCATIONAL BUILDING AT SAHAKAR NAGAR	127961075.34
ADDITION DURING THE YEAR	54168696.57
	182129771.91

WAITING ROOM CONSTRUCTION	12294779.00
ADD: DURING THE YR.EXP.	1788300.00
	14083079.00

BHANDARKHANA (TEMPORARY)	975891.00
BHANDARKHANA (MAHAKALI)	75000.00
BHANDARKHANA NEW	42182777.00
PANCHPAYRI COMPOUND WALL	306500.00
BOREWELL CONSTRUCTION AT SAHKARNAGAR	305275.00
	396588728.24

SCHEDULE "IV" : ADVANCES

ABDUL WAHID	30000.00
ALTOP IHICHI SOLUTIONS & PROJECTS	900000.00
BAU GROUP ENGG.	92400.00
BHARTIBHEN NATWARLAL PATEL	15000.00
DIGAMBAR R. KAWALE	25000.00
FAGUN INDUSTRIES	80000.00
IV SOFTTECH	15000.00
M/S K.G.N PRESTRESS PVT LTD	6924.00
M/S MINAKSHI POWER SAVERS	210000.00
MADHAV DHAGE	25000.00
OCHRE DRILLERS INDIA PVT LTD	600000.00
PRASHANT GODAMBE	150000.00
ROYAL ELEVATORS	4209084.00
RAJASTAN STEEL CORPORATION	66000.00
SULTAN SHAIKH	30000.00
SHRI PANKAJ MALI	400000.00
VIDHYA ENGG. CORPORATION	784780.00
TWINS AQUARIUM & PET'S	84000.00
	7723188.00

SCHEDULE "VII" : CASH & BANK BALANCE

VASAI VIKAS SAH. BANK LTD. - 5395	378198.71
AXIS BANK A/C- 4596	14337.39
VASAI VIKAS SAH. BANK LTD. - 1283	3176.00
BANK OF MAHARASHTRA 8566	183858.00
CASH ON HAND	261239.00
	840809.10

SCHEDULE "III" : INVESTMENTS

VASAI VIKAS SAH. BANK LTD. F.D.	47899445.00
VASAI JANTA SAH.BANK LTD. FD	0.00
BANK OF MAHARASHTRA	8732984.00
FD IN BANK OF BARODA	0.00
FD IN CENTRAL BANK OF INDIA	5351531.00
FD IN CORPORATION BANK	0.00
SHARE CAPITAL - SARYODAYA URBAN SOCIETY	1000.00
VASAI VIKAS SAH. BANK SHARES	1500.00
VASAI JANATA SAH. BANK SHARES	1000.00
	61987460.00

SCHEDULE "V" : DEPOSITS

RELIANCE (SEASON UTSAV)	3000.00
B.S.N.I.	3279.00
MSED CO.	92220.00
ANITA GAS AGENCY	17200.00
VVMC	29700.00
	145399.00

SCHEDULE "VI" : TENDER DEPOSITS

BALANCE PRIOR TO MARCH 1999	50500.00
M/S DAMODAR ROPEWAY CON. CO.	1000000.00
SHRI DHIRAJ PATIL	10000.00
SHRI VINODKUMAR SING	100000.00
RUPALI CHORGHE	200000.00
SHRI SURESH PATIL	775000.00
RAMESH PATIL	100000.00
EARNEST MONEY DEPOSIT	395150.00
YASHITA AUTOMOTIVE EN.	200000.00
	4630650.00



(Signature)
Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)
SCHEDULE "II" : MOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31-3-2018.

	OP.BAL. 01/04/17	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL. BALANCE 31-03-2018
		BEFORE 1.10.2017	AFTER 1.10.2017					
FURNITURE	4097507.74	0.00	2341268.00	0.00	6438775.74	10%	526814.00	5911961.74
COMPUTER(PRINTER & SCANNER)	35323.12	31600.00	167150.00	0.00	234073.12	40%	60199.00	173874.12
CCTV	0.00	180061.00	0.00	0.00	180061.00	15%	27009.00	153052.00
MOVABLE PROPERTIES @10%	2459381.24	0.00	0.00	0.00	2459381.24	10%	245938.00	2213443.24
MOVABLE PROPERTIES @15%	3020790.94	0.00	0.00	0.00	2020790.94	15%	303119.00	1717671.94
DEVI'S ORNAMENTS	4125873.00	0.00	0.00	0.00	4125873.00	0%	0.00	4125873.00
LIFT ROPE	702984.20	0.00	0.00	0.00	702984.20	15%	105448.00	597536.20
STEAM TANK	239806.00	0.00	0.00	0.00	239806.00	15%	35971.00	203835.00
SOLAR SYSTEM	0.00	6075767.00	4101300.00	0.00	10177067.00	40%	3250567.00	6926500.00
SILVER ARTICLE	0.00	397768.00	0.00	0.00	397768.00	0%	0.00	397768.00
FIRE EXTINGUISHER	40344.10	45120.00	30562.00	0.00	116026.10	15%	15112.00	100914.10
FUNICULAR ROPEWAY (WIP)	0.00	0.00	26636963.00	0.00	26636963.00	0%	0.00	26636963.00
AIR CONDITIONER	105495.50	0.00	0.00	0.00	105495.50	15%	15824.00	89671.50
AMBULANCE	777482.00	0.00	0.00	0.00	777482.00	15%	116622.00	660860.00
CASH COUNTING MACHINE	31577.25	0.00	0.00	0.00	31577.25	15%	4737.00	26840.25
COCONUT WADI MAKING MACHINE	301960.25	0.00	171842.00	0.00	473802.25	15%	58182.00	415620.25
DEMOTISION HAMMER	43719.65	0.00	0.00	0.00	43719.65	15%	6553.00	37161.65
GOLD & SILVER	3894783.00	0.00	0.00	0.00	3894783.00	0%	0.00	3894783.00
INVERTER & BATTERY	498624.15	0.00	0.00	0.00	498624.15	15%	74794.00	423830.15
NEW TELEPHONE SYSTEM	60993.45	8000.00	0.00	0.00	68993.45	15%	10349.00	58644.45
NEW AUTORISHWA	0.00	0.00	164635.00	0.00	164635.00	15%	12348.00	152287.00
NEW CAR	415522.00	0.00	0.00	0.00	415522.00	15%	62328.00	353194.00
T.V. SET	213080.00	0.00	0.00	0.00	213080.00	15%	31962.00	181118.00
REFRIGERATOR	97695.00	0.00	0.00	0.00	97695.00	15%	14654.00	83041.00
UTENSIL (BHANDI)	193042.00	85393.00	58273.00	0.00	339708.00	10%	31057.00	308651.00
WATER PUMP	37627.00	0.00	0.00	0.00	37627.00	15%	5644.00	31983.00
DEAD STOCK	1067940.00	956088.00	3730986.00	0.00	5755014.00	15%	583428.00	5171586.00
WALKY TALKY & ACCESS.	136999.00	0.00	0.00	0.00	136999.00	15%	20550.00	116449.00
WATER FILTER	182894.00	0.00	0.00	0.00	182894.00	15%	27434.00	155460.00
TOTAL.....	21784444.59	7779797.00	37402979.00	0.00	66967220.59		5646648.00	61320572.59

Chairman Vice Chairman Secretary Treasurer
SHREE JIVDANI DEVI SANSTHAN, VIMAR



**DEPRECIATION AS PER INCOME TAX
ALLOWABLE DEPRECIATION**

	OF BAL. 01/04/17	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL. BALANCE 31-03-2018
		BEFORE 1.10.2017	AFTER 1.10.2017					
FURNITURE	0.00	0.00	2341268.00	0.00	2341268.00	10%	117063.00	2224205.00
COMPUTER(PRINTER & SCANNER)	0.00	31600.00	167150.00	0.00	198750.00	40%	46070.00	152680.00
CCTV	0.00	180061.00	0.00	0.00	180061.00	15%	27009.00	153052.00
SOLAR SYSTEM	0.00	6075767.00	4101300.00	0.00	10177067.00	40%	3250567.00	6926500.00
FIRE EXTINGUISHER	0.00	45120.00	30562.00	0.00	75682.00	15%	9060.00	66622.00
COCONUT WADI MAKING MACHINE	0.00	0.00	171842.00	0.00	171842.00	15%	12888.00	158954.00
NEW TELEPHONE SYSTEM	0.00	8000.00	0.00	0.00	8000.00	15%	1200.00	6800.00
NEW AUTORISHWA	0.00	0.00	164635.00	0.00	164635.00	15%	12348.00	152287.00
UTENSIL (BHANDI)	0.00	85393.00	58273.00	0.00	143666.00	10%	11453.00	132213.00
DEAD STOCK	0.00	956088.00	1870986.00	0.00	2827074.00	15%	283737.00	2543337.00
TOTAL...	0.00	7382029.00	8906016.00	0.00	16288045.00		3771395.00	12516650.00

Chairman Vice Chairman Secretary Treasurer
SHREE JYDANI DEVI SANSTHAN, VIRAR



**SCHEDULE "I": IMMOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31-3-2018.**

	OP.BAL. 01/04/17	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL.BALANCE 31-03-2018
		BEFORE 1.10.2017	AFTER 1.10.2017					
LAND AT SHAHAPUR	156875.00	0.00	0.00	0.00	156875.00		0.00	156875.00
LAND AT VIRAR	6048070.00	0.00	0.00	0.00	6048070.00		0.00	6048070.00
SABHA MANDAP & ALLIED CONST.	136798465.33	0.00	0.00	0.00	136798465.33		0.00	136798465.33
DECKSPAN	8868433.00	0.00	0.00	0.00	8868433.00		0.00	8868433.00
NEW PAYRI CONSTRUCTION	390499.00	0.00	0.00	0.00	390499.00		0.00	390499.00
PANCHPAYRI BATHROOM CONST.	264819.00	0.00	0.00	0.00	264819.00		0.00	264819.00
PANCHPAYRI SHED CONST.	117145.00	853785.00	507342.00	0.00	1478273.00		0.00	1478273.00
PANCHPAYRI COMPOUND WALL	306500.00	0.00	0.00	0.00	306500.00		0.00	306500.00
VELAVATI MANDIR AT PANCHPAYRI	2250000.00	275000.00	0.00	0.00	2525000.00		0.00	2525000.00
WAITING ROOM CONST.	12294779.00	1780620.00	7680.00	0.00	14083079.00		0.00	14083079.00
BOREWELL CONST. AT SAHAKAR NA	305275.00	0.00	0.00	0.00	305275.00		0.00	305275.00
EDUCATIONAL BUILDING AT SAHAKAR	127961075.34	0.00	0.00	0.00	127961075.34		0.00	127961075.34
BHANDARKHANA (TEMPORARY)	975891.00	0.00	0.00	0.00	975891.00		0.00	975891.00
BHANDARKHANA (MAHAKALI)	75000.00	0.00	0.00	0.00	75000.00		0.00	75000.00
BHANDARKHANA (NEW)	17849965.00	1112015.53	0.00	0.00	18961980.53		0.00	18961980.53
TOTAL.....	314662791.67	4021421.53	515022.00	0.00	319199235.20		0.00	319199235.20

Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDAN DEVI SAMSTHAN, VIRAR



**REPORT OF AN AUDITOR RELATING TO ACCOUNTS
AUDITED UNDER SUB-SECTION (2) OF SECTION 33 & 34
AND RULE 19 OF THE BOMBAY PUBLIC TRUSTS ACT.**

Registration No. : A - 397 (THANE)
Name of the Public Trust : SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
For the year ending : 31st MARCH, 2019

(a)	Whether accounts are maintained regularly and in accordance with the provisions of the Act and the rules ;	YES
(b)	Whether receipts and disbursements are properly and correctly shown in the accounts ;	YES
(c)	Whether the cash balance and vouchers in the custody of the Manager or Trustee on the date of audit were in agreement with the accounts ;	YES
(d)	Whether all books, deeds, accounts, vouchers or other documents or records required by the auditor were produced before him ;	YES
(e)	Whether a register of movable and immovable properties is properly maintained, the changes therein are communicated from time to time to the regional office and the defect and inaccuracies mentioned in the previous audit report have been duly complied with ;	YES
(f)	Whether the Manager or Trustee or any other person required by the auditor to appear before him did so and furnished the necessary information required by him ;	YES
(g)	Whether any property or funds of the Trust were applied for any object or purpose other than the object or purpose of the Trust ;	NO
(h)	The amounts of outstandings for more than one year and the amounts written off, if any ;	YES, ADVANCE OF RS.210000/- & DEPOSIT PAID OF RS.3000/- NOT RECOVERABLE.
(i)	Whether tenders were invited for repairs or construction involving expenditure exceeding Rs.5000/- ;	NO
(j)	Whether any money of the public trust has been invested contrary to the provisions of Section 35 ;	NO
(k)	Alienations, if any, of the immovable property contrary to the provisions of Section 36 which have come to the notice of the auditor ;	NIL
(l)	All cases of irregular, illegal or Improper expenditure, or failure or omission to recover monies or other property belonging to the public trust or of loss or waste of money or other property thereof, and whether such expenditure, failure, omission, loss or waste was in consequence of breach of trust or misapplication or caused any other misconduct on the part of the trustees or any other person while in the management of the trust ;	NIL
(m)	Whether the budget has been filed in the form provided by Rule 16A ;	YES
(n)	Whether the maximum and minimum number of the trustees is maintained ;	YES
(o)	Whether the meetings are held regularly as provided in such instrument ;	YES
(p)	Whether the minute books of the proceedings of the meetings is maintained ;	YES
(q)	Whether any of the trustees has any interest in the investment of the trust ;	NO
(r)	Whether any of the trustees is a debtor or creditor of the trust ;	NO
(s)	Whether the irregularities pointed out by the auditors in the accounts of the previous year have been duly complied with by the trustees during the period of audit ;	YES
(t)	Any special matter which the auditor may think fit or necessary to bring to the notice of the Deputy or Assistant Charity Commissioner ;	NO

Place : Virar

Dated : 09/10/19

For M.R. Padhye & Co.

(Aniket.M.Padhye)

Chartered Accountant

Auditors

Memb.No. 105182



19105182AAAAGN2766

Firm Reg.No. 0138533W

THE BOMBAY PUBLIC TRUSTS ACT, 1950
SCHEDULE IX-C
(Vide Rule 32)

Statement of income liable to contribution for the year ending : 31st MARCH, 2019

Name of Public Trust : SHRI JIVDANI DEVI SANSTHAN

(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)

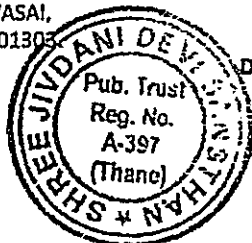
Registered No : A - 397 (THANE)

	Rs.	P.	Rs.	P.
I. Income as shown in the Income and Expenditure Account (Schedule IX)			157711095.19	
II. Items not chargeable to Contribution under section 58 and Rule 32 :				
(i) Donations received from other Public Trusts and Dharmadas.				
(ii) Grants received from Government and Local authorities.				
(iii) Interest on Sinking or Depreciation Fund.				
(iv) Amount spent for the purpose of secular education.			26417883.00	
(v) Amount spent for the purpose of medical relief.			4624764.00	
(vi) Amount spent for the purpose of veterinary treatment of animals.				
(vii) Expenditure incurred from donations for relief of distress caused by scarcity, drought, flood, fire or other natural calamity.				
(viii) Deductions out of income from lands used for agricultural purposes :-				
(a) Land Revenue and Local Fund Cess.				
(b) Rent payable to superior landlord.				
(c) Cost of production, if lands are cultivated by trust				
(ix) Deductions out of Income from lands used for non-agricultural purposes :-				
(a) Assessment, cesses and other Government or Municipal taxes.				
(b) Ground rent payable to the superior landlord.				
(c) Insurance premia.				
(d) Repairs at 10 per cent of gross rent of building.		0.00		
(e) Cost of collection at 4 per cent of gross rent of buildings let out.	79640.00		79640.00	
(x) Cost of collection of Income or receipts from securities, stocks etc. at 1 per cent of such income.				
(xi) Deduction on account of repairs in respect of buildings not rented and yielding no income, at 10 per cent of the estimated gross annual rent.				
Gross Annual Income chargeable to contribution Rs.			153006691.19	

Certified that while claiming deductions admissible under the above Schedule, the Trust has not claimed any amount twice, either wholly or partly, against any of the items mentioned in the Schedule which have the effect of double-deduction.

Trust Address :
 JIVDANI DEVI TEMPLE TRUST
 VIRAR (E), TAL.VASAI,
 DIST. THANE - 401303

Dated : 09/10/2019



Dated :

For M.R. Padhye & Co.

(Aniket.M.Padhye)
 Chartered Accountants
 Auditors
 Memb.No.105182
 Firm Reg. No.0138533W



Trustee
 Chairman Vice Chairman Secretary Treasurer Trustee
 SHREE JIVDANI DEVI SANSTHAN, VIRAR

SCHEDULE IX
[Vide Rule 17(1)]

Registration No. : A - 397 (THANE).

Name of the Public Trust : SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)

Income and Expenditure Account for the year ending : 31st MARCH, 2019

EXPENDITURE		Rs.	Rs.	INCOME		Rs.	Rs.
To	Expenditure In respect of Properties :-			By	Rent (accrued) ...		1991000.00
	Rates, Taxes, Cesses ...	0.00			(realised)		
	Repairs and Maintenance (As per Schedule "A")	9180602.98					
	Salaries ...	0.00			(accrued)		
	Insurance ...	0.00		By	FD Interest (realised)	6969496.00	
	Depreciation (by way of provision or adjustments)	0.00			On Rent	0.00	
	Afforestation Exps.	0.00	9180602.98		On Loans ...	0.00	
To	Other expenses ...				On Bank Account ...	15868.00	6985364.00
To	Establishment Expenses ... (As per Schedule "B")		49193774.00				
To	Remuneration to Trustees.		0.00				
To	Remuneration (In the case of a math) to the head of the math, including his household expenditure, if any.		0.00	By	Dividend ...		0.00
To	Legal Expenses ...		0.00	By	Donations in cash or kind		139449059.00
To	Audit Fees ...		94400.00	By	Grants ...		0.00
To	Contribution and Fees ... (Charity Commissioner)		0.00	By	Income from other sources (in details as far as possible) As Per Schedule "F"		9285672.19
To	Amount written off :-			By	Interest on Loan to staff		0.00
	(a) Bad Debts ...	0.00		By	Transfer from Reserve ...		0.00
	(b) Loans Scholarship ...	0.00					
	(c) Irrecoverable rents ...	0.00					
	(d) Other Items		0.00				
To	Miscellaneous Expenses ...		0.00	By	Deficit carried over to Balance Sheet ...		0.00
To	52nd Annual Anniversary Exp. ...		0.00				
To	Depreciation ...		6016502.00				
To	Amounts transferred to Reserve or Specific Funds.		0.00				
To	Expenditure on objects of the trust :-						
	(a) Religious (Sch."C")	18762734.00					
	(b) Educational ...	0.00					
	(c) Medical Relief ... (Sch."E")	4624764.00					
	(d) Relief of Poverty ...	0.00					
	(e) Other charitable objects (Sch."D")	3827919.00	27215417.00				
To	8% of Donation trf to Corpus Fund		5000000.00				
To	2% of Donation trf to Employee Nidhi fund		2788981.18				
To	Trf to Educational building furniture fund a/c						
To	Surplus carried over to Balance Sheet		58221418.03				
Total Rs...			157711095.19	Total Rs...			157711095.19

As Per Our Report Of Even Date
For M.R. Padhye & Co.

Place : Virar

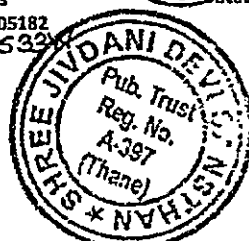
Dated : 09/10/19

(Aniket.M.Padhye)
Chartered Accountants
Auditors

Memb.No.105182

Frm Reg.No. 0138532

19105182AAAAGN2766



[Signature]

Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)

SCHEDULES TO INCOME & EXPENDITURE A/C FOR THE YEAR ENDED 31ST MARCH 2019

SCHEDULE "A" : REPAIRS & MAINTENANCE

TROLLEY MAINTENANCE	760945.00
TEMPO REPAIRS & MAINTENANCE	12945.00
RICKSHAW MAINT. & REPAIRS	20681.00
DEAD STOCK REPAIRS	575754.48
AMBULANCE REPAIRS & MAINT.	12783.00
LIFT REPAIRS & MAINTENANCE	92040.00
VAN REPAIR & MAINT.	23190.00
GENERATOR REPAIR & MAINT.	47848.00
MANDIR BUILDING REPAIR & MAINT.	7368975.50
VENEVA ENTERPRISES - COIN MACHINE	23600.00
AMC-AC MAINTAINANCE	39117.00
AMC-BHANDARKHANA LIFE	59000.00
AMC-BHANDARKHANA RO	33630.00
AMC-INTERCOM SYSTEM	9440.00
AMC-MANDIR LIFT	51920.00
AMC-NARALWADI PRINTING MACHINE	29264.00
ANNUAL MAINTAINANCE FIRE BIRDS	19470.00

9180602.98

SCHEDULE "C" : RELIGIOUS EXPENSES

SHRI MAHAKALI DEVI POOJA ARCHYA	2332.00
SHREE JIVDANI DEVI POOJA ARCHYA	639436.00
GANPATI MANDIR POOJA ARCHYA	11141.00
SHREE MAHAKALI POOJA ARCHANA	0.00
HANUMAN JAYANTI UTSAV	4863.00
MAHASHIVRATRI UTSAV	39210.00
MAGHI GANPATI UTSAV	55423.00
CHAITRA NAVRATRI UTSAV	369826.00
MANDIR GHABARA CURTAIN	12350.00
DIPAWALI UTSAV	204900.00
DATTA JAYANTI UTSAV	42889.00
BHANDARA EXP.	12187706.00
GROSARY EXP.	3780374.00
NAVRATRI UTSAV	775748.00
GANESH CHATURTHI UTSAV	61000.00
POUCHES FOR NARALWADI	575536.00

18762734.00

SCHEDULE "D" : OTHER CHARITABLE OBJECTS

SOCIAL	2249968.00
SAMUHIK VIVAH EXPENSES	256500.00
PLANTATION	1301537.00
N.A.TAX (SAHAKAR NAGAR)	19914.00

3827919.00

SCHEDULE "E" : MEDICAL RELIEF

DISPENSARY-MEDICINE PURCHASES	2657097.00
CHARITY MEDICAL	1342434.00
DISPENSARY-OTHER EXP.	199501.00
DISPENSARY-PROFESSIONAL FEES	425732.00

4624764.00

SCHEDULE "F" : INCOME FROM OTHER SOURCES

GAS SUBSIDY	1909.85
RICKSHAW CAR PARKING CHARGES	818260.00
SALE OF GOLD AND SILVER	4567915.00
SCRAP SALE	70425.00
SADI/CHUNARI	1375000.00
GOMTI PATIL (HEN/GOAT)	443655.00
LATE FEES	30357.00
SALE OF SAREE / BLOUSE PEACE	1977645.00
MISCELLANEOUS INCOME	185.34
DIVIDEND	320.00

9285672.19

RENT

POPCORN-TEA STALL RENT	1771000.00
ATM RENT	220000.00
	1991000.00

SCHEDULE "B" : ESTABLISHMENT EXPS.

ADVERTISEMENT EXP	22382.00
ANIVERSARY CELEBRATION EXP	137777.00
BANK CHARGES	31667.00
BIRDS CAGE EXPENSES	31326.00
BIRDS FOOD & OTHERES EXPENSES	202548.00
BUNDI & BUNDI LADU MAKING CHARGE	443200.00
CEMENT	698273.00
COCONUT PURCHASE	61380.00
COCONUT VADI MAKING CHARGES	1432251.00
COCONUT POUCHES PRINTING MACHIN	48373.00
COMPENSATION TO SMT MITHILA DEVI	100000.00
CRANE RENT	606630.00
CURTAIN PURCHASE	800.00
COLOUR WORK	251123.00
COMPUTER SYSTEM EXPENSES	109185.00
COOKING GAS EXPENSES	629641.00
DATTA MANDIR RENOVATION	281723.00
DATTA MANDIR SHTABDI EXPENSES	45391.00
DIESEL EXPENSES	736042.00
ECO CAR INSURANCE	9675.00
EMPLOYEES LEAVE ENCASHMENT	584281.00
EXPENSES FOR OC	693000.00
ELECTRIC ARTICLES	455779.00
EMPLOYEE MEDICAL HELP	23172.00
EPF ADMINISTRATIVE EXPS	311911.00
EPF TRUST CONTRIBUTION	3339577.00
EX-GRATIA	1816960.00
FIRE EXTINGUISHERS	39436.00
GRATUITY	159883.00
HARDWARE	277555.00
HONORIRUM	203400.00
HOUSE TAX DATTAMANDIR	5830.00
INSURANCE FOR ORNAMENTS	45479.00
INTEREST ON OD A/C 104	1958995.00
INTEREST ON OD A/C 9871	2190175.00
INTEREST ON TERM LOAN	3339237.00
JIVDANI PHOTO FRAMES	3300.00
JCB Rent	113550.00
KIAT PRAKALP	13850.00
LOAN REGISTRATION CHARGES	852400.00
LIGHT BILLS	1502290.00
LOCKER RENT	1800.00
MAKING TEMPORARY SHOP STRUTURE	125000.00
MISCELLANEOUS EXP	76229.00
NEW STORE ROOM	301400.00
NEWS PAPERS EXP	3163.00
NOTICE BOARD	5546.00
O.T.PAYMENT	409138.00
PAYRI RAILING WORK EXPENSES	327256.00
PROFESSIONAL FEES FOR ABHAY SHINDI	145435.00
PANCHAYATI CONSTRUCTION	7080.00
PAPADKHIND WORK	7480.00
PETROL EXP	205159.00
PLASTIC COMMODITY EXP	407566.00
PLUMBING EXP	21500.00
PROFESSIONAL FEE	448370.00
RICKSHAW STAND RENT	11000.00
SALARY CASUAL EMPL	103906.00
SALARY DISPENSARY	3288174.00
SALARY PERMANANT EMPL	6074710.00
SALARY TEMPORARY EMPL	4118264.00
SANITATION EXP	350291.00
SECURITY EXP	5097812.00
STAMPS & POSTAGES	10417.00
STATIONERY ,PRINTING & XEROX	355072.00
SHRI JIVDANI NAVAS EXPENSES	15115.00
STATUE OPENING CEREMONY EXPENSE	212438.00
SUSPENSION ALLOWANE	19352.00
TDS PENALTY	288.00
TEA & REFRESHMENT	182360.00
TELEPHONE EXP	31787.00
TRANSPORTATION EXP	261881.00
TRAVELLING EXP	61934.00
TRANSIT INSURANCE	28318.00
UNIFORM EXPS	330020.00
WALKY TALKY & ACCESSOIRES PURCHASE	126416.00
WATER TANKER	59500.00
WRITE OFF AMOUNT	152500.00

49193774.00



Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VIRAR

THE BOMBAY PUBLIC TRUSTS ACT, 1950
SCHEDULE VIII
[Vide Rule 17(1)]

Registration No. : A-397 (THANE)

Name of the Public Trust : SHRI JIVDANI DEVI SANSTHAN
 (ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
 Balance Sheet as at : 31 MARCH, 2019

FUNDS AND LIABILITIES	Rs.	Rs.	PROPERTY AND ASSETS	Rs.	Rs.
Trust Funds or Corpus :-			Immovable Properties :- (As per Sch. - I)		439615787.24
Balance as per last Balance Sheet...	20687428.31		Movable Properties :- (As per Sch. - II)		200768508.57
Add:-Transfer to Income & Expenditure Account	5000000.00	25687428.31	Investments :- (As per Sch. - III)		34234030.00
Other Earmarked Funds :- (Created under the provisions of the trust-deed or scheme or out of the income).			Note : The market value of the above Investments is Rs.....		
Depreciation Fund ...	0.00		Loans (Secured or Unsecured)		
Sinking fund ...	0.00		Good/doubtful ...	0.00	
Reserve fund ...	0.00		To Employees	0.00	0.00
Any other fund (employee nidhi fund)	9303605.92	9303605.92	Advances :-		
Temple Renovation Fund			To Trustees ...	0.00	
Op. balance....	108668286.30		To Employees ...	0.00	
Addition During the year	0.00	108668286.30	To Contractor ...	0.00	
ADD: App. From I & E A/c	0.00		To Lawyers ...	0.00	
Educational Building Fund			To Others ...	1236488.00	1236488.00
Op. balance....	0.00		(As per Sch. - IV)		
Addition During the year	0.00		Sundry Debtors (Ramesh Patil)		242349.00
Less:-Transfer to Income & Expenditure Account	0.00	0.00	T.D.S.		1563431.00
Educational Building Furniture Fund a/c			T.C.S. RECEIVABLE		3236341.30
Op. balance....	12500000.00		Other Deposits (As per sch. "V")		744999.00
Addition During the year	0.00		GST (SCHEDULE "VIII")		21433739.78
Less:-Transfer to Income & Expenditure Account	0.00	12500000.00	Accrued Interest		3280635.70
Employees Provident Fund			Income Outstanding :-		
Op. Balance	0.00		Rent (M.S.E.B.)...	0.00	
Addition During the year	0.00		Interest on Rent	0.00	
Int. on Investment	0.00	0.00	Other Income ...	164408.00	164408.00
Less: Withdrawals	0.00		Cash and Bank Balances :- (As per Sch. - VII)		625782.35
Loans (Secured or Unsecured) :-			(a) In current account	0.00	
From trustees ...	0.00		with ...		
From others...(Term loan)	65488150.00	117372886.24	In Fixed Deposit	0.00	
From others...(Vasali Vikas bank OD)	51884736.24		account with ...	0.00	
Liabilities :-			(b) With the trustee	0.00	
For expenses ...	0.00		(c) With the Manager	0.00	0.00
For advances...	0.00		Income and Expenditure Account :-		
For rent and other deposits	0.00		Balance as per last Balance Sheet...	0.00	
For sundry credit bal.	26158325.50		Less: appropriation, if any	0.00	
Duties & Taxes	29691.00		Add: Surplus as per Income and Expenditure A/c		
Provision for Audit Fees	81000.00		Less: Deficit Expenditure Account	0.00	0.00
Profession tax	175.00	26269191.50			
Tender Shop & Other Deposit (AS PER SCHEDULE "VI")		4345150.00			
Income and Expenditure Account :-					
Balance as per last Balance Sheet...	344778533.64				
Add: Surplus as per Income and Expenditure A/c	58221418.03				
Less: Deficit Expenditure Account	0.00	402999951.67			
Total Rs...		707146499.94	0.00	Total Rs...	707146499.94

As Per Our Report of Even Date
 For M.R. Padhye & Co.

(Aniket.M.Padhye)
 Chartered Accountants

Auditors

Memb.No.105182

Firm Reg. No. 138533W

Place : Virar

Dated: 9/10/19

19105182AAAAGN2766



The above Balance Sheet to the best of my/our belief contains a true account of the Funds and Liabilities and of the Property and assets of the Trust.

Trustee

Chairman Vice Chairman Secretary Treasurer Trustees
 SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)
SCHEDULES TO BALANCE SHEET FOR THE YEAR ENDED 31ST MARCH 2019

SCHEDULE "I" : IMMOVABLE PROPERTIES

SABHA MANDAP & ALLIED CONST.		
OPENING BALANCE	136798465.33	
DECKS SPAN	8868433.00	
ADDITION	5418513.00	
NEW PAYRI CONSTRUCTION	390499.00	
PANCHPAYRI BATHROOM CONSTRUCTION	264819.00	
PANCHPAYRI SHED CONSTRUCTION	1478273.00	
	153219002.33	
ADD: PANCHPAYRI SHED CONSTRUCTION	515399.00	153734401.33
LAND AT SHAHAPUR	156875.00	
LAND AT VIRAR	6048070.00	
VELAVATI MANDIR AT PANCH PAYARI	2525000.00	
EDUCATIONAL BUILDING AT SAHAKAR NAGAR	182129771.91	
ADDITION DURING THE YEAR	26417883.00	208547654.91
WAITING ROOM CONSTRUCTION	14083079.00	
ADD: DURING THE YR.EXP.	925373.00	15008452.00
BHANDARKHANA (TEMPORARY)	975891.00	
BHANDARKHANA (MAHAKALI)	75000.00	
BHANDARKHANA NEW)	42182777.00	
ADDITION	9749891.00	51932668.00
PANCHPAYRI COMPOUND WALL	306500.00	
BOREWELL CONSTRUCTION AT SAHKARNAGAR	305275.00	
	439615787.24	



SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)
SCHEDULES TO BALANCE SHEET FOR THE YEAR ENDED 31ST

SCHEDULE "II" : INVESTMENTS

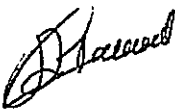
VASAI VIKAS SAH. BANK LTD. F.D.	30232030.00
BANK OF MAHARASHTRA	1500000.00
SHARE CAPITAL - SARYODAYA URBAN SOCI	1000.00
VASAI VIKAS SAH. BANK SHARES	2500000.00
VASAI JANATA SAH. BANK SHARES	1000.00
	34234030.00

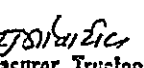
SCHEDULE "V" : DEPOSITS

B.S.N.L	3279.00
MSD CO.	92220.00
INCOME TAX	750000.00
ANITA GAS AGENCY	17200.00
RETENTION TIRMURTI WEILDING WORKS	-300000.00
VVMC	172300.00
FAIR GROUND DEPOSIT	10000.00
	744999.00

SCHEDULE "VI" : TENDER DEPOSITS

RAMESH PATIL	100000.00
M.S.DAMODAR ROPEWAY	1000000.00
SHRI SURESH PATIL	775000.00
RUPALI CHARGE	200000.00
VINOD SINGH	100000.00
YASHITA AUTO	2000000.00
EARNST MONEY	170150.00
	4345150.00




 Chairman Vice Chairman Secretary Treasurer Trustees
 SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)
SCHEDULES TO BALANCE SHEET FOR THE YEAR ENDED 31ST MARCH 2019

SCHEDULE "IV" : ADVANCES

ABDUL WAHID	30000.00
ALTOP IHICHI SOLUTIONS & PROJECTS	900000.00
ANIL DHARULKAR & ASSOCIATES	10000.00
BAU GROUP ENGG.	29400.00
PADMATECH INDUSTRIES PVT LTD	125000.00
PT ECOLOGICAL SERVICES	33898.00
TWINS AQUARIUM & PETS	84000.00
URMI TECHNOLOGIES	12000.00
RUDAYANA CONSTRUCTION	12190.00
	<u>1236488.00</u>

SCHEDULE "VII" : CASH & BANK BALANCE

VASAI VIKAS SAH. BANK LTD. - 5395	-43547.74
AXIS BANK A/C- 4596	37984.09
VASAI VIKAS SAH. BANK LTD. - 1283	3447.00
BANK OF MAHARASHTRA 8566	34860.00
CASH ON HAND	593039.00
	<u>625782.35</u>

SCHEDULE "VIII" : GST

CGST	9833753.89
IGST	1641613.00
SERVICE TAX	124619.00
SGST	9833753.89
	<u>21433739.78</u>

TOTAL

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE , TRUST)
SCHEDULES TO BALANCE SHEET FOR THE YEAR ENDED 31ST

SCHEDULE "IX" : CREDITORS

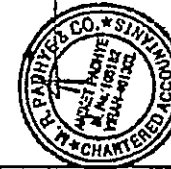
ADARSH STEEL ART & SLIDING WORKS	206840.00
ADD SERVICES	24662.00
ADITH JETH CLEANING SOLUTION	4812.00
ADITYA ENTERPRISES	8580.00
AKASH ENTERPRISES	20068.00
AKSHAY ENTERPRISES	37730.00
AMAR ELECTRICALS	27462.00
AMBIKA POWER WORKS	1890054.00
AMEYA TRANSPORT & TRADERS	76734.00
ANITA GAS SERVICES	2370.00
A S ALL INDIA COMPANY	2136.00
ASMI ENTERPRISES	19045.00
CHANDU P.O.P WORKS	26419.00
CHYAYAKAR STUDIO	20000.00
D.J.ASSOCIATES	2524790.00
FIREBIRD FIRE SERVICES	11151.00
FAGUN INDUSTRIES	144908.00
FRESH AQUA SERVICES	22420.00
GALBRO ISPAT GALVANISERS PVT LTD	132859.00
GANESH PLYWOOD	72139.00
GAURAV PAWAR AND CO	5831.00
GENERAL ELECTRICALS	16260.00
INNOVATION TECHNOLOGIES	9440.00
JAI GANESH ISPAT & FERRO ALLOYS PVT LTI	427364.00
JYOTI ENTERPRISES	15750.00
KALPATRU INDUSTRIES	799366.00
L.P.ENTERPRISES	104181.00
MAA PACKAGING F.Y.2018-19	172094.00
MAHAVIR AGENCIES	84000.00
MAHESHKUMAR HASMUKHLAL & CO	97173.00
MAKSUD I. BALOCH	44840.00
MATOSHREE PHARMA CHEM	91765.00
M.FIDAHUSAIN & CO	73836.00
MOHITE ENTERPRISES	1801248.00
M/S GOBAL LAB	11800.00
M/S SHAH RAJNIKANT RAMANLAL AND CO	1041923.00
NATIONAL ALUMINIUM & HARDWARE	22224.00
NIRAJ REMEDIES	19781.00
OMKAR REWINDING SERVICES	4366.00
PARSHVA PRINTS	24845.00
PAWAR ARTS	34300.00
RAJ ASSOCIATES	413816.00
RAMBHABEN DAMODAR FOODGRAINS PVT	32406.00
RUDRAYANA CONSTRUCTION	1314520.00
RUSHABH HARDWARE	56830.00
RUSHABH STEELS	947.00
SAIRAJ WEILDERS	12342.00
SAM ENGINEERING & FABRICATORS	55625.00
SANJAY STEELS	634946.00
S.B.ENTERPRISES	1972.00
SHAH RASIKLAL PREMCHAND PAINTS & HAI	2118.00
SHREE GANESH TRANSPORT	8200.00
SHREE PADMAVATI PLASTIC	32279.00
SHREE SAI DECORATORS	36000.00
SHRI RAJU BHARWAD	20000.00
S.K.WRAPS SYSTEM	224200.00
S SANDESH SECURITY SERVICE	376192.00
SUKHMANI CRANE SERVICES	172280.00
SUNIL STEEL CORPORATION	775089.50
SUVANDAN ENGINEERING WORKS	2266.00
TULSI TRADERS	4038.00
UNICORN CORPORATION	274377.00
URMI TECHNOLOGIES	53504.00
VAIBHAV TRADERS	176162.00
YASHITA AUTOMOTICE ENGG PVT LTD	11280000.00
YATHATH ENGINEERING AND FABRICATION	20650.00
TOTAL	<u><u>26158325.50</u></u>






 Chairman Vice Chairman Secretary Treasurer Trustees
 SHREE JIVDANI DEVI SANSTHAN, VIRAR

SHRI JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE, TRUST)
SCHEDULE 'II': MOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31-3-2019



	OP. BAL. 01/04/18	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL. BALANCE 31-03-2019
		BEFORE 1.10.2019	AFTER 1.10.2019					
FURNITURE	5911961.74	155205.00	38940.00	0.00	6106106.74	10%	608664.00	5497442.74
COMPUTER(PRINTER & SCANNER)	173874.12	32250.00	0.00	0.00	206124.12	40%	82450.00	123674.12
CCTV	153052.00	292994.00	0.00	0.00	446046.00	15%	66907.00	379139.00
DIALYSIS CENTER EQUIPMENT	0.00	1039337.00	68815.00	0.00	1108152.00	15%	161062.00	947090.00
MOVABLE PROPERTIES @10%	2213443.24	0.00	0.00	0.00	2213443.24	10%	221344.00	1992099.24
MOVABLE PROPERTIES @15%	1717671.94	0.00	0.00	0.00	1717671.94	15%	257651.00	1460020.94
DEVI'S ORNAMENTS	4125873.00	0.00	0.00	0.00	4125873.00	0%	0.00	4125873.00
LIFT ROPE	597536.20	0.00	0.00	0.00	597536.20	15%	89630.00	507906.20
STEAM TANK	203835.00	0.00	0.00	0.00	203835.00	15%	30575.00	173260.00
SOLAR SYSTEM	6926500.00	0.00	0.00	0.00	6926500.00	40%	2770600.00	4155900.00
SILVER ARTICLE	397768.00	0.00	0.00	0.00	397768.00	0%	0.00	397768.00
FIRE EXTINGUISHER	100914.10	0.00	0.00	0.00	100914.10	15%	15137.00	85777.10
FUNICULAR ROPEWAY (WIP)	26636963.00	74569329.10	65080403.88	0.00	166286695.98	0%	0.00	166286695.98
AIR CONDITIONER	89671.50	0.00	0.00	0.00	89671.50	15%	13451.00	76220.50
AMBULANCE	660860.00	0.00	0.00	0.00	660860.00	15%	99129.00	561731.00
CASH COUNTING MACHINE	26840.25	50740.00	0.00	0.00	77580.25	15%	11637.00	65943.25
COCONUT WADI MAKING MACHINE	415620.25	110517.00	0.00	0.00	526137.25	15%	78921.00	447216.25
DEMOTISION HAMMER	37161.65	0.00	0.00	0.00	37161.65	15%	5574.00	31587.65
GOLD & SILVER	3894783.00	0.00	0.00	0.00	3894783.00	0%	0.00	3894783.00
INVERTER & BATTERY	423830.15	0.00	0.00	0.00	423830.15	15%	63575.00	360255.15
NEW TELEPHONE SYSTEM	58644.45	8614.00	0.00	0.00	67258.45	15%	10089.00	57169.45
NEW AUTORISHWA	152287.00	0.00	15380.00	0.00	167667.00	15%	23997.00	143670.00
NEW CAR	353194.00	0.00	0.00	0.00	353194.00	15%	52979.00	300215.00
T.V. SET	181118.00	0.00	0.00	0.00	181118.00	15%	27168.00	153950.00
REFRIGERATOR	83041.00	0.00	0.00	0.00	83041.00	15%	12456.00	70585.00
UTENSIL (BHANDI)	308651.00	220.00	234107.00	0.00	542978.00	10%	42592.00	500386.00
WATER PUMP	31983.00	0.00	0.00	0.00	31983.00	15%	4797.00	27186.00
DEAD STOCK	5171586.00	1470976.00	1316387.00	0.00	7958949.00	15%	1095113.00	6863836.00
WALKY TALKY & ACCESS.	116449.00	0.00	0.00	0.00	116449.00	15%	17467.00	98982.00
NEW PICK BOLERO	0.00	756023.00	0.00	0.00	756023.00	15%	113403.00	642620.00
BUNDI PACKING MACHINE	0.00	0.00	224200.00	0.00	224200.00	15%	16815.00	207385.00
WATER FILTER	155460.00	0.00	0.00	0.00	155460.00	15%	23319.00	132141.00
TOTAL	61320572.59	78486205.10	66978232.88	0.00	206785010.57		6016502.00	200768508.57



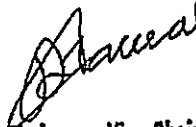
Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VIRAR

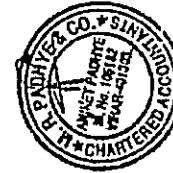


**DEPRECIATION AS PER INCOME TAX
ALLOWABLE DEPRECIATION**

	OP.BAL. 01/04/18	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL.BALANCE 31-03-2019
		BEFORE 1.10.2018	AFTER 1.10.2018					
FURNITURE	2224205.00	155205.00	38940.00	0.00	2418350.00	10%	239888.00	2178462.00
COMPUTER(PRINTER & SCANNER)	192680.00	32250.00	0.00	0.00	184930.00	40%	73972.00	110958.00
CCTV	153052.00	292994.00	0.00	0.00	446046.00	15%	66907.00	379139.00
DIALYSIS CENTER EQUIPMENT	0.00	1039337.00	0.00	0.00	1039337.00	15%	155901.00	883436.00
SOLAR SYSTEM	6926500.00	0.00	0.00	0.00	6926500.00	40%	2770600.00	4155900.00
FIRE EXTINGUISHER	66622.00	0.00	0.00	0.00	66622.00	15%	9993.00	56629.00
CASH COUNTING MACHINE	26840.25	50740.00	0.00	0.00	77580.25	15%	11637.00	65943.25
COCONUT WADI MAKING MACHINE	158954.00	110517.00	0.00	0.00	269471.00	15%	40421.00	229050.00
NEW TELEPHONE SYSTEM	6800.00	8614.00	0.00	0.00	15414.00	15%	2312.00	13102.00
NEW AUTORISHWA	152287.00	0.00	15380.00	0.00	167667.00	15%	23997.00	143670.00
UTENSIL (BHANDI)	132213.00	220.00	234107.00	0.00	366540.00	10%	24949.00	341591.00
NEW PICK BOLERO	0.00	756023.00	0.00	0.00	756023.00	15%	113403.00	642620.00
BUNDI PACKING MACHINE	0.00	0.00	224200.00	0.00	224200.00	15%	16815.00	207385.00
DEAD STOCK	2543337.00	1470976.00	1316387.00	0.00	5330700.00	15%	700876.00	4629824.00
TOTAL	12543490.25	3916876.00	1829014.00	0.00	18289386.25		4251671.00	14037709.25



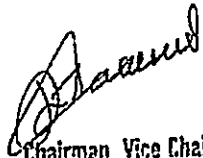
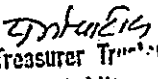

 Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIRAR



**SCHEDULE 'I' : IMMOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31-3-2019**

	OP.BAL. 01/04/18	ADDITION		SCRAP VALUE	TOTAL	RATE	DEP.	CL.BALANCE 31-03-2019
		BEFORE 1.10.2018	AFTER 1.10.2018					
LAND AT SHAHAPUR	156875.00	0.00	0.00	0.00	156875.00		0.00	156875.00
LAND AT VIRAR	6048070.00	0.00	0.00	0.00	6048070.00		0.00	6048070.00
SABHA MANDAP & ALLIED CONST.	136798465.33	0.00	0.00	0.00	136798465.33		0.00	136798465.33
DECKS SPAN	8868433.00	0.00	5418513.00	0.00	14286946.00		0.00	14286946.00
NEW PAYRI CONSTRUCTION	390499.00	0.00	0.00	0.00	390499.00		0.00	390499.00
PANCHPAYRI BATHROOM CONST.	264819.00	0.00	0.00	0.00	264819.00		0.00	264819.00
PANCHPAYARI SHED CONST.	1478273.00	515399.00	0.00	0.00	1993672.00		0.00	1993672.00
PANCHPAYARI COMPOUND WALL	306500.00	0.00	0.00	0.00	306500.00		0.00	306500.00
VELAVATI MANDIR AT PANCHPAYARI	2525000.00	0.00	0.00	0.00	2525000.00		0.00	2525000.00
WAITING ROOM CONST.	14083079.00	532474.00	392899.00	0.00	15008452.00		0.00	15008452.00
BOREWELL CONST. AT SAHAKAR NA	305275.00	0.00	0.00	0.00	305275.00		0.00	305275.00
EDUCATIONAL BUILDING AT SAHAJ	182129771.91	19120140.00	7297743.00	0.00	208547654.91		0.00	208547654.91
BHANDARKHANA (TEMPORARY)	975891.00	0.00	0.00	0.00	975891.00		0.00	975891.00
BHANDARKHANA (MAHAKALI)	75000.00	0.00	0.00	0.00	75000.00		0.00	75000.00
BHANDARKHANA (NEW)	42182777.00	6723506.00	3026385.00	0.00	51932668.00		0.00	51932668.00
TOTAL...	306588728.24	26891519.00	16185540.00	0.00	439615787.24		0.00	439615787.24



 Chairman
 Vice Chairman
 Secretary
 Treasurer
SHREE JIVDANI DEVI & CO. CHARTERED ACCOUNTANTS, VIHAR

Report of an auditor relating to accounts audited under sub-section (2) of section 33 & 34 and rule 19 of the Bombay Public Trusts Act, 1950

Reg. No.: A-397 (Thane)

Name of the Trust : SHRI JIVDANI DEVI SANSTHAN

(ERSTWHILE SHRI JIVDANI DEVI TEMPLE TRUST)

For the year ending March 31st, 2020

Sr No.	PARTICULARS	Remarks
1	Whether accounts are maintained regularly and in accordance with the provisions of the Act and the rules ;	YES
2	Whether receipts and disbursements are properly and correctly shown in the accounts ;	YES
3	Whether the cash balance and vouchers in the custody of the manager or trustee on the date of audit were in agreement with Accounts ;	YES
4	Whether all books, deeds, accounts, vouchers or other documents or record required by the auditor were produced before him ;	YES
5	Whether a register of movable and immovable properties is properly maintained, the changes therein are communicated from time to time to the regional office, and the defects and inaccuracies mentioned in the previous audit report have been duly ;	YES
6	Whether the manager or trustee or any other person required by the auditor to appear before him did so and furnished the necessary information required by him ;	YES
7	Whether any property or funds of the Trust were applied for any object or purpose other than the object or purpose of the Trust ;	NO
8	The amounts of outstandings for more than one year and the amounts written off, if any ;	YES
9	Whether tenders were invited for repairs or construction involving expenditure exceeding Rs. 5000/- ;	NO
10	Whether any money of the public trust has been invested contrary to the provisions of Section 35 ;	NO
11	Alienations, if any, of the immovable property contrary to the provisions of Section 36 which have come to the notice of the auditor ;	N.A.
12	All cases of irregular, illegal or improper expenditure, or failure or omission to recover monies or other property belonging to the public trust or of loss or waste of money or other property thereof, and whether such expenditure, failure, omission, loss or waste was caused in consequence of breach of trust or misapplication or any other misconduct on the part of the trustees or any other person while in the management of the trust ;	N.A.
13	Whether the budget has been filed in the form provided by rule 16A ;	YES
14	Whether the maximum and minimum number of the trustees is maintained ;	YES
15	Whether the meetings are held regularly as provided in such instruments ;	YES
16	Whether the minute books of the proceedings of the meeting is maintained ;	YES
17	Whether any of the trustees has any interest in the investment of the trust ;	NO
18	Whether any of the trustees is a debtor or creditor of the trust ;	NO
19	Whether the irregularities pointed out by the auditors in the accounts of the previous year have been duly complied with by the trustees during the period of audit ;	N.A.
20	Any special matter which the auditor may think fit or necessary to bring to the notice of the Deputy or Assistant Charity Commissioner ;	NO

For Agarwal Ritu & Associates
Chartered Accountants
Firm Reg. No.: 138265W



(Akash Agarwal)
Partner

Mem. No. 415586
UDIN :

Date : November 23rd, 2020
Place : Virar

20415586AAAAAR4957

The Bombay Public Trust Act, 1950
SCHEDULE IX-C
[Vide Rule 32]

Name of the Trust : SHRI JIVDANI DEVI SANSTHAN
(EASTWILE SHRI JIVDANI DEVI TEMPLE TRUST)
Reg. No. A-397 (Thane)

Statement of Income liable to contribution for the year ending March 31st, 2020

Particulars		Rs.	Rs.
I	Income as shown in the Income and Expenditure Account (Schedule IX)		14,73,19,133.13
II	Items not chargeable to contribution under Section 58 and Rules 32 :		
	1 Donations received from other Public Trust and Dharmadas		
	2 Grants Received from Government and Local authorities		
	3 Interest On Sinking Or Depreciation Fund:		
	4 Amount spent for the purpose of secular education		20,40,910.80
	5 Amount spent for the purpose of medical relief		17,87,329.80
	6 Amount spent for the purpose of veterinary treatment of animals		
	7 Expenditure incurred from donations for relief of distress caused by scarcity, drought, flood, fire or other natural calamity.		
	8 Deductions out of income from lands used for agricultural purpose :-		
	a. Land Revenue and Local Fund Cess		
	b. Rent payable to superior landlord		
	c. Cost of production, if lands are cultivated by trust		
	9 Deduction out of income from lands used for non-agricultural purpose:		
	a. Assessment, cesses and other Government or Municipal Taxes		
	b. Ground rent payable to the superior landlord		
	c. Insurance premia		
	d. Repairs at 10 per cent of gross rent of building		
	e. Cost of collection at 4 per cent of gross rent of buildings let out	94,764.00	94,764.00
	10 Cost of collection of income or receipts from securities, stocks, etc. at 1 per cent of such income		
	11 Deductions on account of repairs in respect of buildings not rented and yielding no income, at 10 per cent of the estimated gross annual rent		
Gross Annual Income chargeable to contribution Rs.			14,33,96,228.53
Certified that while claiming deductions admissible under the above Schedule, the Trust has not claimed any amount twice, either wholly or partly, against any of the items mentioned in the Schedule which have the effect of double-deduction.			

For Shree Jivdani Devi Sansthan

Chairman Vice-Chairman Secretary Treasurer Trustee

SHRI JIVDANI DEVI SANSTHAN, VIRAR

Date : November 23rd, 2020

Place : Virar

Trust Address:

Shri Jivdani Mandir Hill, Virar (E).

Taluka Vasai, Dist. Palghar - 401305



For Agarwal Ritu & Associates
Chartered Accountants
Firm Reg. No.: 138265W

(Signature)
(Akash Agarwal)
Partner

Mem. No. 415586



The Bombay Public Trust Act, 1950

SCHEDULE IX-D

[See rule 19 (2A)]

Information to be submitted by the Auditor along with Audit Report under sub-section (1) of section 34 of the Maharashtra Public Trusts Act.

Name of the Trust : SHRI JIVDANI DEVI SANSTHAN

(ERSTWHILE SHRI JIVDANI DEVI TEMPLE TRUST)

Sr. No.	Particulars	Details																																	
1	PAN No. of Trust.	AAATJ4041Q																																	
2	Registration No. with date of registration under section 12AA of Income Tax Act, 1961 (43 of 1961).	T-291 Dated 23/02/1959																																	
3	Acknowledgement No. with date of filing of the Return of Income for earlier three years.	<table> <tr> <th>Sr. No.</th><th>Acknowledgement No.</th><th>Year</th></tr> <tr> <td>(i)</td><td>202742230161019</td><td>AY 2019-20</td></tr> <tr> <td>(ii)</td><td>298916150200918</td><td>AY 2018-19</td></tr> <tr> <td>(iii)</td><td>204383640090917</td><td>AY 2017-18</td></tr> </table>	Sr. No.	Acknowledgement No.	Year	(i)	202742230161019	AY 2019-20	(ii)	298916150200918	AY 2018-19	(iii)	204383640090917	AY 2017-18																					
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(i)	202742230161019	AY 2019-20																																	
(ii)	298916150200918	AY 2018-19																																	
(iii)	204383640090917	AY 2017-18																																	
4	PAN No. of all Trustees.	<table> <tr> <th>Sr. No.</th><th>Name of Trustee</th><th>PAN No.</th></tr> <tr> <td>(i)</td><td>Shri Ramchandra Mukund Gawad</td><td>ACQPG6533N</td></tr> <tr> <td>(ii)</td><td>Shri Pankaj Bhaskar Thakur</td><td>AAUPT2293C</td></tr> <tr> <td>(iii)</td><td>Shri Pradeep Vishnu Tendolkar</td><td>AAOPT0700C</td></tr> <tr> <td>(iv)</td><td>Shri Parshuram Moreswar Patil</td><td>BIHPP6095C</td></tr> <tr> <td>(v)</td><td>Shri Vinod Prantlal Thakkar</td><td>AAOPT0758L</td></tr> <tr> <td>(vi)</td><td>Shri Rajiv Yashwant Patil</td><td>ACKPP1441N</td></tr> <tr> <td>(vii)</td><td>Shri Vasant Gajanan Mangela</td><td>AGMPM8118P</td></tr> <tr> <td>(viii)</td><td>Shri Parshuram Vasudev Patil</td><td>AOUPP2353R</td></tr> <tr> <td>(ix)</td><td>Shri Kashinath Govind Patil</td><td>AHHPP3746L</td></tr> <tr> <td>(x)</td><td>Shri Pranay Shashikant Nerurkar</td><td>ABCPN7654A</td></tr> </table>	Sr. No.	Name of Trustee	PAN No.	(i)	Shri Ramchandra Mukund Gawad	ACQPG6533N	(ii)	Shri Pankaj Bhaskar Thakur	AAUPT2293C	(iii)	Shri Pradeep Vishnu Tendolkar	AAOPT0700C	(iv)	Shri Parshuram Moreswar Patil	BIHPP6095C	(v)	Shri Vinod Prantlal Thakkar	AAOPT0758L	(vi)	Shri Rajiv Yashwant Patil	ACKPP1441N	(vii)	Shri Vasant Gajanan Mangela	AGMPM8118P	(viii)	Shri Parshuram Vasudev Patil	AOUPP2353R	(ix)	Shri Kashinath Govind Patil	AHHPP3746L	(x)	Shri Pranay Shashikant Nerurkar	ABCPN7654A
Sr. No.	Name of Trustee	PAN No.																																	
(i)	Shri Ramchandra Mukund Gawad	ACQPG6533N																																	
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(ix)	Shri Kashinath Govind Patil	AHHPP3746L																																	
(x)	Shri Pranay Shashikant Nerurkar	ABCPN7654A																																	

For Shree Jivdani Devi Sansthan

Chairman Secretary Treasurer Trustee
SHRI JIVDANI DEVI SANSTHAN, VIRAR

Date : November 23rd, 2020

Place : Virar

Trust Address:

Shri Jivdani Mandir Hill, Virar (E),

Taluka Vasal, Dist. Palghar- 401305

For Agarwal Ritu & Associates

Chartered Accountants

Firm Reg. No.: 138265W



(Akash Agarwal)
Partner

Mem. No. 415586

The Bombay Public Trust Act, 1950

SCHEDULE IX

(Vide Rule 17(1))

Name of the Trust : SHRI JIVDANI DEVI SANSTHAN

(ERSTWHILE SHRI JIVDANI DEVI TEMPLE TRUST)

Reg. No.: A-397 (Thane)

Income and Expenditure Account for the year ending 31st March 2020

Expenditure	Rs	Rs	Income	Rs	Rs
To Expenditure Related- Properties			By Rent -----		
Rates, Taxes, Cesses	0.00		Accrued		
Repairs and Maintenance	9218778.93		Realised	2369100.00	2369100.00
(As per Schedule "C")			(As per Schedule "A")		
Salaries	0.00		By Interest -----		
Bank Charge	0.00		on FD Accrued	2817257.00	
Insurance	0.00		on FD Realised	0.00	
Depreciation	0.00		On Securities	0.00	
Other Expenses	0.00	9218778.93	On Loan	0.00	
			On Bank Account	9475.00	2826712.00
To Establishment Expenses		55222991.74			
(As per Schedule "D to H")			By Dividend		55155.00
To Remuneration to Trustees		0.00	By Donations in Cash or Kind		13542016.00
To Remuneration to Head of Math		0.00	By Grants		0.00
To Legal Expenses		1310000.00	By Income - Other Sources		6847780.80
To Audit Fees		90000.00	(As per Schedule "B")		
To Contribution and Fees		913000.00	By Transfer from Reserve		0.00
(Charity Commissioner)					
To Amount Written off :					
a. Bad Debts					
b. Loan Scholarships					
c. Irrecoverable Rents					
d. Other Items	4223163.50	4223163.50			
To Miscellaneous Expenses		0.00			
To Depreciations		5434931.00			
To Amount transferred to Reserve					
or Specific Funds					
a. 8% of Donation (Max 50 Lakhs) to Corpus Fund	5000000.00				
b. 1% of Donation to Employee Nidhi Fund	1354204.00	6354204.00			
To Expenditure on Objects of the Trust:					
a. Religious (Schedule "I")	18929866.00				
b. Educational	1787329.80				
c. Medical Relief (Schedule "J")					
d. Relief of Poverty	2687198.00	23404393.80			
e. Other Charitable Objects (Sch "K")					
To Surplus Carried over to			By Deficit Carried over to		0.00
Balance Sheet		41147670.16	Balance sheet		
Total Rs.		147319133.13	Total Rs.		147319133.13

For Shree Jivdani Devi Sansthan

As per our report of even date

For Agarwal Ritu & Associates

Chartered Accountants

Firm Reg. No.: 138765W

Chairman
Vice Chairman
Secretary
Treasurer
Trustee
SHRI JIVDANI DEVI SANSTHAN, VIRAR

Date : November 23rd, 2020
Place: Virar



(Akash Agarwal)
Partner
Mem. No. 415586
UDIN:

(20415586AAAAAR4357)

SHREE JIVDANI DEVI SANSTHAN
(TRUSTEES SHRI JIVDANI DEVI TEMPLE TRUST)
SCHEDULE TO INCOME AND EXPENDITURE A/C FOR THE YEAR ENDED 31ST MARCH 2020

SCHEDULE "A" INCOME FROM RENT

Particular	Amount
ATM Rent (Vasav Vast Sahakar Bank)	20000.00
Rent - Empcon Tea Stall	210910.00
TOTAL	230910.00

SCHEDULE "B" INCOME FROM OTHER SOURCES

Particular	Amount
Religious Car Parking Charges	89081.00
Sale of Gold Silver	1296150.00
Sale of Silver Ghouse Plates	2381306.00
Sales of Churni	97000.00
Sales of Hien & Gnat	405670.00
Scrap Sales	278531.89
Interest on Security Deposits	99746.00
Interest on Life Payments	6058.00
TOTAL	6647730.89

SCHEDULE "C" REPAIRS & EXP WITH RESPECT TO PROPERTIES

Particular	Amount
Ambulance Repairs & Maintenance	28165.00
ANAC - Bhambharkhane Lift	64404.00
ANAC - Bhambharkhane Machine	30000.00
ANAC - Mandir Lift	23446.00
ANAC Office AC-system	26210.00
ANAC - Workshop building lift	33642.00
Bolero Servicing	4228.00
Bhambharkhane Building Repair & Maintenance	402229.30
Computer System Expenses	60178.00
Dead Stock Repairs	412041.10
D G Set Area - Office	10338.00
D G Set Area - Upper Station	11710.00
D G Set Area - Working Room	10518.00
Eco Car Repairs	13574.00
Electric Articles	83094.00
Generator Repairs & Maintenance	32348.00
Lift Repairs & Maintenance	56294.00
Mandir & Others Repairs & Maintenance	738206.84
Office Building R & M	16663.00
PAPADKOT Mandir Repairs & Maintenance	6260.00
Paytm Registration	240591.00
Religious Repairs & Maintenance	17568.00
Tempo Repairs & Maintenance	17240.00
Trucks Repairs & Maintenance	305035.50
Van Repairs & Maintenance	1675.00
TOTAL	9218778.93

SCHEDULE "D" EMPLOYEE BENEFIT EXPENSES

Particular	Amount
Employees Leave Provisions	70123.00
EPF Administrative Expenses	137297.00
EPF Miscellaneous Charges	807614.00
EPF Trust Contribution	1647615.00
EX-Grata	1695601.00
Gratuity Expenses	1335018.00
Provision	25000.00
PF Payments	372492.00
Salary - Casual Employees	191521.00
Salary - Dispensary	3416758.00
Salary - Permanent Employees	19237844.00
Salary - Temporary Employees	4601422.00
TOTAL	24101509.00

SCHEDULE "E" LEGAL AND PROFESSIONAL CHARGES

Particular	Amount
Court Administrative Charges	15000.00
Professional Fees	1073726.00
Valuation Charges (Gold)	15000.00
TOTAL	1113726.00

SCHEDULE "F" RELIGIOUS EXPENSES

Particular	Amount
Bhambharkhane Expenses	1282818.48
Charity - Religious Utsav Expenses	28508.00
Dev Jyoti Utsav	28287.00
Ganesh Utsav	164172.00
Ganesh Chaturthi Utsav	61000.00
Grocery Expenses	2789900.84
Hanuman Jyoti Utsav Expenses	4309.00
Maharaj Ganapati Utsav	50500.00
Maharaj Ganapati Utsav Expenses	50042.00
Narayani Utsav Expenses	795916.00
Pouches for "Nandawada"	45885.00
Shri Ganapati Mandir Puja Articles	15000.00
Shri Jivdani Devi Puja Articles	627332.00
Shri Mahakali Devi Puja Articles	2228.00
TOTAL	13925866.00

SCHEDULE "G" ESTABLISHMENT EXPENSES

Particular	Amount
Advertisement Expenses	20000.00
Anniversary Celebration Expenses	135004.00
Birds Cage Expenses	183294.00
Birds Food & Others Expenses	1275236.00
Bundi & Bundi Lodu Making Charges	434400.00
Cashew Purchases	19001.00
Cashew Vast Making Charges	1631611.00
Commission Expenses	700000.00
Cooking Gas Expenses	564037.32
Cow Food Expenses	13190.00
Curtain Purchase	1000.00
Dash Mandir Shikhar Etc.	3000.00
Diesel Expenses	652936.00
Fire Extinguishers Expenses	2570.00
Flower Expenses	44251.00
Incense Photo Frames	11000.00
Gift Printing	2900.00
Labour Charges for Carrying Nandawada	16800.00
Ladu Box Material Expenses	38234.00
Ladu Making Expenses	6175.00
Light Bills	5281910.00
Loading Packing & Forwarding	7715.00
Locker Rent	2108.00
Mastercard Expenses	50690.00
New Meter Connection (Dattamandir)	1672.00
New Papers Expenses	3192.00
Petrol Expenses	235597.00
Paste Commodity Expenses	12000.00
Pinkish Stand Rent	4185567.00
Security Expenses	1100.00
Solar System Registration	1160.00
Stamps & Postages	9162.00
Stationery, Printing & Vercs	282549.30
Tax & Refreshments	16775.00
Telephone Expenses	16425.00
Transportation Expenses	151340.00
Traveling Expenses	6624.00
Uniform Expenses	2470.00
Upama Purchase Expenses	63238.00
Vehicle Insurance A/c	13881.00
Water Tanker	26400.00
Water Tax	9100.00
Waste Expenses	2150.00
GST Late Fees	1000.00
Founding CH	5.20
TOTAL	56649771.18

SCHEDULE "H" INTEREST & FINANCE CHARGES

Particular	Amount
Bank Charges	24185.58
Interest On Old A/c 104	3106955.00
Interest On Old A/c 9871	2118916.00
Interest On Term Loan	5819372.00
Interest On Term Loan New	2152621.00
Loan Processing Fees	17650.00
Loan Repayment Charges	18000.00
Loan Stamp Duty	107400.00
Processing Fees (OD A/C)	20774.00
TDS (Interest)	23550.00
TOTAL	14117918.56

SCHEDULE "I" INSURANCE EXPENSES

Particular	Amount
Accidental Policy (Hunkar)	127925.00
Accidental Policy (Mandir)	60530.00
Eco Car Insurance	1779.00
Insurance for Garments	25340.00
Money Insurance Policy	3160.00
Public Liability - High Industrial Policy (Mandir)	26100.00
TOTAL	248670.00

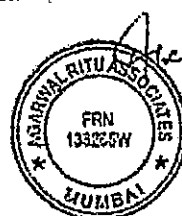
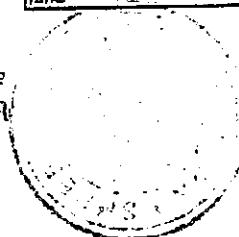
SCHEDULE "J" MEDICAL RELIEF

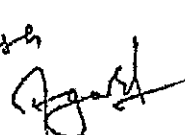
Particular	Amount
Charity - Medical	150561.00
Dispensary Medicine Purchase	1185913.00
Dispensary Other Expenses	6149.00
Dispensary Professional Fees	211254.00
TOTAL	1797329.00

SCHEDULE "K" OTHER CHARITABLE OBJECTS

Particular	Amount
Charity - Social	429169.00
Plactition	1332215.00
Samadhi Vrat Expenses	52094.00
TOTAL	2687498.00


 Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIRAR





The Bombay Public Trust Act, 1950

SCHEDULE VIII

(Vide Rule 17(1))

Name of the Trust : SHRI JIVDANI DEVI SANSTHAN

(ERSTWHILE SHRI JIVDANI DEVI TEMPLE TRUST)

Reg. No.: A-397 (Thane)

BALANCE SHEET AS AT 31ST MARCH 2020

FUNDS & LIABILITIES	Rs.	Rs.	PROPERTY & ASSETS	Rs.	Rs.
Trust Funds or Corpus:			Immovable Properties:		444514981.00
Balance as per Last Balance Sheet	25687428.31		(As per Schedule - "I")		
Add: Appr. from Income & Expenditure A/c	5000000.00	30687428.31	Movable Properties:		260852756.41
			(As per Schedule - "II")		
Other Earmarked Funds:			Investments:		4252000.00
(Created under the provision of the Trust			(As per Schedule - "III")		
deed or scheme or out of the Income)			Loans (Secured or Unsecured):		
Depreciation Fund	0.00		Good/Doubtful	0.00	
Sinking Fund	0.00		To Employees	0.00	0.00
Reserve Fund	0.00				
Any Other Fund (Employee Nidhi Fund)	9102678.92	9102678.92	Advances:		
Temple Renovation Fund:			To Trustees	0.00	
Op. Balance	108668286.30		To Employees	3000.00	
Addition During the year	0.00	108668286.30	To Contractors	0.00	
Add: Appr. From Income & Expenditure A/c	0.00		To Lawyers	0.00	
Education Building Fund:			To Others	0.00	
Op. Balance	12500000.00		(As per Schedule - "IV")	14144780.00	14147780.00
Addition During the year	0.00	12500000.00	Sundry Debtors:		382697.00
Add: Appr. From Income & Expenditure A/c	0.00		(As per Schedule - "V")		
Education Building Furniture Fund:			Govt. Receivables:		39467893.00
Op. Balance	0.00		(As per Schedule - "VI")		
Addition During the year	0.00	0.00	Other Deposits		1342469.00
Add: Appr. From Income & Expenditure A/c	0.00		(As per Schedule - "VII")		
Employees Provident Fund			Accrued Interest		2867341.00
Op. Balance	0.00				
Addition During the year	0.00	0.00	Income Outstanding:		
Add: Appr. From Income & Expenditure A/c	0.00	0.00	Rent	0.00	
Loans (Secured & Unsecured)			Interest on Rent	0.00	
(As per Schedule - "IX")			Other Income	0.00	0.00
From Trustees	0.00		Cash & Bank Balance:		
From Bank - (Secured TL)	101909926.00		(As per Schedule - "VIII")		
From Bank - (Secured OD)	81308454.19	185218380.19	a) in current & Saving A/c	489068.03	
From Others	2000000.00		b) in FO A/c's	41528913.00	
Liabilities:			c) With the Trustees	0.00	
For Expenses (As Per Schedule - "X")	2184153.00		d) In Hand with the Manager	52069.00	42500050.00
For Goods & Services (As Per Schedule - "X")	7506807.00		Debit Balance in Income & Expenditure A/c		
For Provision for Audit Fees	81000.00		Balance as per Last Balance Sheet	0.00	
TDS Payable	9112.00		Add: Surplus as per Income & Expenditure A/c	0.00	
Professional Tax	350.00		Less: Deficit as per Income & Expenditure A/c	0.00	0.00
GST Payable	162000.00	10003422.00			
EPF Payable	0.00				
Tendor Shop & Other Deposits		4000150.00			
(As per Schedule - "XI")					
Income & Expenditure A/c					
Balance as per Last Balance Sheet	402999951.67				
Add: Surplus as per Income & Expenditure A/c	41147670.16	444147621.83			
Less: Deficit as per Income & Expenditure A/c	0.00				
TOTAL		804327967.55	TOTAL		804327967.55

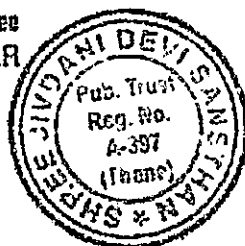
For Shree Jivdani Devi Sansthan

Chairman *Signature* Vice Chairman *Signature* Secretary *Signature* Treasurer *Signature* Trustee *Signature*

SHRI JIVDANI DEVI SANSTHAN, VIRAR

Date : November 23rd, 2020

Place: Virar



As per our report of even date

For Agarwal Ritu & Associates

Chartered Accountants

Firm Reg. No.: 138265W

(Akash Agarwal)

Partner

Mem. No. 415586

UDIN:

(20415586AAAAAR4957)

SCHEDULE "A" TENDER & OTHER DEPOSITS (LIABILITY)	
Particular	Amount
Larnest Money Deposit	150150.00
Tender Deposit - M/s Diamond Roadways	150000.00
Tender Deposit - Shri Kureish Pathi	150000.00
Tender Deposit - Ramchuh Pathi	100000.00
Tender Deposit - Purnali Chaudhary	200000.00
Tender Deposit - Vaid Singh	100000.00
Tender Deposit - Pashila Automobiles Pvt Ltd	200000.00
TOTAL	800150.00

Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIHAR

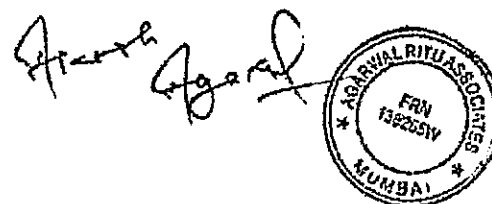
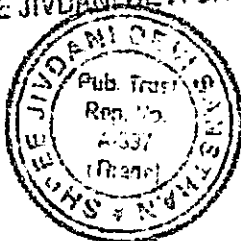


SHREE JIVDANI DEVI SANSTHAN
(ERSTWHILE SHRI JIVDANI DEVI TEMPLE TRUST)

SCHEDULE "I" IMMOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31.03.2020

Particulars	Op Balance	Additions		Scrap Value	TOTAL	Rate of Dep.	Depreciation for the year	Closing Balance
	As on 01/04/19	Before 01.10.2019	After 01.10.2019					As on 31/03/20
LAND AT SHAHAPUR	1,56,875.00				1,56,875.00	0%	-	1,56,875.00
LAND AT VIRAR	60,48,070.00				60,48,070.00	0%	-	60,48,070.00
SABHA MANDAP & ALLIED CONS.	13,67,98,465.33				13,67,98,465.33	0%	-	13,67,98,465.33
DECK SPAN	1,42,86,946.00	7,18,086.00	1,326.00		1,50,06,358.00	0%	-	1,50,06,358.00
NEW PAYRI CONSTRUCTION	3,90,499.00				3,90,499.00	0%	-	3,90,499.00
PANCHPAYRI BATHROOM CONS.	2,64,819.00				2,64,819.00	0%	-	2,64,819.00
PANCHPAYRI SHED CONS.	19,93,672.00				19,93,672.00	0%	-	19,93,672.00
PANCHPAYRI COMPOUND WALL	3,06,500.00				3,06,500.00	0%	-	3,06,500.00
VALAVATI MANDIR AT PANCHPAYRI	25,25,000.00				25,25,000.00	0%	-	25,25,000.00
WAITING ROOM CONS.	1,50,08,452.00				1,50,08,452.00	0%	-	1,50,08,452.00
BOREWELL CONS. AT SAHAKAR NAGAR	3,05,275.00				3,05,275.00	0%	-	3,05,275.00
EDUCATION BUILDING AT SAHAKAR NAGAR	20,85,47,654.91	14,72,296.80	5,68,514.00		21,05,88,465.71	0%	-	21,05,88,465.71
BHANDARKHANA (TEMPORARY)	9,75,891.00				9,75,891.00	0%	-	9,75,891.00
BHANDARKHANA (MAHAKALI)	75,000.00				75,000.00	0%	-	75,000.00
BHANDARKHANA (NEW)	5,19,32,668.00	2,10,637.42	8,11,026.58		5,29,54,332.00	0%	-	5,29,54,332.00
FUNICULAR ROPEWAY (CAPITAL APPLICATION)	11,17,307.02				11,17,307.02	0%	-	11,17,307.02
TOTAL	44,07,33,094.26	24,01,020.22	13,80,866.58	-	44,45,14,981.06		-	44,45,14,981.06

[Signature]
Chairman Vice Chairman Secretary Treasurer Trustee
SHREE JIVDANI DEVI SANSTHAN, VIRAR



SCHEDULE "II" MOVABLE PROPERTIES
DETAILS OF FIXED ASSETS AS ON 31.03.2020

Particulars	Op Balance	Additions		Subsidy/Scrap	TOTAL	Rate of Dep.	Depreciation for the year	Closing Balance
	As on 01/04/19	Before 01.10.2019	After 01.10.2019					As on 31/03/20
Furniture	54,97,442.74	32,500.00	27,538.00	-	55,57,480.74	10%	5,54,371.00	50,03,109.74
Computer Peripherals	1,23,674.12		10,050.00	-	1,33,724.12	40%	51,480.00	82,244.12
CCTV	3,79,139.00			-	3,79,139.00	15%	56,871.00	3,22,268.00
Dialysis Center Equipments	9,47,090.00			-	9,47,090.00	15%	1,42,064.00	8,05,026.00
MOVABLE PROPERTIES (10%)	19,92,099.24			-	19,92,099.24	10%	1,99,210.00	17,92,889.24
MOVABLE PROPERTIES (15%)	14,60,020.94			-	14,60,020.94	15%	2,19,003.00	12,41,017.94
DEVI'S ORNAMENTS	41,25,873.00		41,519.00	-	41,67,392.00	0%	-	41,67,392.00
Silver Article	3,97,768.00			-	3,97,768.00	0%	-	3,97,768.00
Gold & Silver	38,94,783.00			-	38,94,783.00	0%	-	38,94,783.00
Uft Rope	5,07,906.20			-	5,07,906.20	15%	76,186.00	4,31,720.20
Steam Tank	1,73,260.00			-	1,73,260.00	15%	25,989.00	1,47,271.00
Solar System	41,55,900.00	19,58,250.00	9,50,000.00	12,93,850.00	57,70,300.00	40%	23,76,890.00	33,93,410.00
Fire Extinguisher	85,777.10			-	85,777.10	15%	12,867.00	72,910.10
Air Conditioner	76,220.50			-	76,220.50	15%	11,433.00	64,787.50
Ambulance	5,61,731.00			-	5,61,731.00	15%	84,260.00	4,77,471.00
Cash Counting Machine	65,943.25			-	65,943.25	15%	9,891.00	56,052.25
Coconut Wadi Making Machine	4,47,216.25			-	4,47,216.25	15%	67,082.00	3,80,134.25
Demolition Hammer	31,587.65			-	31,587.65	15%	4,738.00	26,849.65
Inverter & Battery	3,60,255.15			-	3,60,255.15	15%	54,038.00	3,06,217.15
New Telephone System	57,169.45			-	57,169.45	15%	8,575.00	48,594.45
New Autorikshaw	1,43,670.00			-	1,43,670.00	15%	21,551.00	1,22,119.00
New Car	3,00,215.00			-	3,00,215.00	15%	45,032.00	2,55,183.00
New Pickup Bolero	6,42,620.00			-	6,42,620.00	15%	96,393.00	5,46,227.00
TV Set	1,53,950.00			-	1,53,950.00	15%	23,093.00	1,30,857.00
Refrigrator	70,585.00			-	70,585.00	15%	10,588.00	59,997.00
Utensils	5,00,386.00		3,30,900.00	-	8,31,286.00	10%	66,584.00	7,64,702.00
Water Pump	27,186.00			-	27,186.00	15%	4,078.00	23,108.00
Dead Stock	68,63,836.00	3,49,483.00	8,55,596.00	-	80,68,915.00	15%	11,46,168.00	69,22,747.00
Walky Talky & Access	98,982.00		9,600.00	-	1,08,582.00	15%	15,567.00	93,015.00
Bundi Packing Machine	2,07,385.00			-	2,07,385.00	15%	31,108.00	1,76,277.00
Water Filter	1,32,141.00			-	1,32,141.00	15%	19,821.00	1,12,320.00
Funicular ropeway (WIP)	16,51,69,388.96	2,91,60,632.66	2,47,57,155.50	-	21,90,87,177.12	0%	-	21,90,87,177.12
Datta Mandir Renovation (WIP)	-	17,48,858.90	21,79,671.80	-	39,28,530.70	0%	-	39,28,530.70
Rain Water Harvesting (WIP)	-	-	6,19,500.00	-	6,19,500.00	0%	-	6,19,500.00
Sewage Treatment Plant (WIP)	-	-	48,99,081.00	-	48,99,081.00	0%	-	48,99,081.00
TOTAL	19,96,51,201.55	3,32,49,724.56	3,46,80,611.30	12,93,850.00	26,62,87,687.41		54,34,931.00	26,08,52,756.41

Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VILAR

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DEPRECIATION AS PER INCOME TAX

ALLOWABLE DEPRECIATION ON FIXED ASSETS AS ON 31.03.2020

Particulars	Op Balance	Additions		Scrap Value	TOTAL	Rate of Dep.	Depreciation for the year	Closing Balance
	As on 01/04/19	Before 01.10.2019	After 01.10.2019					As on 31/03/20
Furniture	21,78,462.00	32,500.00	27,538.00	-	22,38,500.00	10%	2,22,473.00	20,16,027.00
Computer Peripherals	1,10,958.00		10,050.00	-	1,21,008.00	40%	46,393.00	74,615.00
CCTV	3,79,139.00			-	3,79,139.00	15%	56,871.00	3,22,268.00
Dailysis Center Equipments	8,83,436.00			-	8,83,436.00	15%	1,32,515.00	7,50,921.00
Solar System	41,55,900.00	19,58,250.00	9,50,000.00	12,93,850.00	57,70,300.00	40%	23,76,890.00	33,93,410.00
Fire Extinguisher	56,629.00			-	56,629.00	15%	8,494.00	48,135.00
Cash Counting Machine	65,943.25			-	65,943.25	15%	9,891.00	56,052.25
Coconut Wadi Making Machine	2,29,050.00			-	2,29,050.00	15%	34,358.00	1,94,692.00
New Telephone System	13,102.00			-	13,102.00	15%	1,965.00	11,137.00
New Autorikshaw	1,43,670.00			-	1,43,670.00	15%	21,551.00	1,22,119.00
New Pickup Bolero	6,42,620.00			-	6,42,620.00	15%	96,393.00	5,46,227.00
Utensils	3,41,591.00	-	3,30,900.00	-	6,72,491.00	10%	50,704.00	6,21,787.00
Dead Stock	46,29,824.00	3,49,483.00	8,55,596.00	-	58,34,903.00	15%	8,11,066.00	50,23,837.00
Bundi Packing Machine	2,07,385.00			-	2,07,385.00	15%	31,108.00	1,76,277.00
TOTAL	1,40,37,709.25	23,40,233.00	21,74,084.00	12,93,850.00	1,72,58,176.25		39,00,672.00	1,33,57,504.25

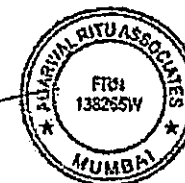
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Chairman Vice Chairman Secretary Treasurer Trustees
SHREE JIVDANI DEVI SANSTHAN, VIRAR



March

Agarwal



MAHARASHTRA POLLUTION CONTROL BOARD

Tel : 25802272

Fax : 25805398

Visit us at:

Website : <http://mpcb.gov.in/>E-mail Id: rothane@mpcb.gov.in

No. MPCB/ROT/B- 684



Regional Office, Thane
5th Floor, Office Complex Bldg.,
Near Mulund Check Naka,
Wagale Estate,
Thane-400 604

Date:- 14 / 01 /2021

To,
Joint Director (WPC),
M. P. C. Board,
Sion, Mumbai-22.

Sub:- Minutes of Public Hearing Conducted on 30.12.2020 in respect of
Proposed Jivdani Passenger Funicular System (Ropeway) at proposed
by M/s., Shree Jivdani Devi Sansthan, Virar Public Registration No.
A/397, Shree Jivdani Marg Virar (East) Tal. Vasai, Dist- Palghar

Sir,

The Public hearing for proposed Jivdani Passenger Funicular System (Ropeway) at proposed by M/s., Shree Jivdani Devi Sansthan, Virar Public Registration No. A/397, Shree Jivdani Marg Virar (East), Tal.- Vasai, Dist- Palghar Maharashtra was conducted on 30.12.2020 via digital platform & public participation.

The Minutes of the Public Hearing proceeding through digital platform & Public participation (Marathi & English) along with video recording (CD), photographs (CD), list of participants & other documents are enclosed.

This is submitted for information and on word submission to MoEF & CC.

Yours faithfully,

(R. A. Rajput)

Regional Officer, Thane

Copy submitted for information to:

1. Member Secretary, M.P.C. Board, Sion, Mumbai-22
2. Sub-Regional Officer, M.P.C. Board, Thane-2.
3. Director, Environment department, Government of Maharashtra, Mantralaya Mumbai-32.

MINUTES OF THE PUBLIC HEARING FOR PROPOSED JIVDANI PASSENGER FUNICULAR SYSTEM (ROPE WAY) PROPOSED BY PROJECT PROPONENT M/S SHREE JIVDANI DEVI SANSTHAN, VIRAR PUBLIC REGISTRATION NO. A/397, SHREE JIVDANI MARG, VIRAR (EAST), TAL-VASAI, DIST-PALGHAR-401305, MAHARASHTRA

- Ref :**
- 1) Ministry of Environment, Forest & Climate Change, Govt. of India, New Delhi's Notification Dated 14-09-2006 and Amended Notification Dated 01-12-2009
 - 2) Ministry of Environment, Forest & Climate Change, Govt. of India, New Delhi's Notification Dated 06-01-2011 on Coastal Regulation Zone;
 - 3) Ministry of Environment, Forest & Climate Change, Govt. of India, New Delhi's Office Memorandum Dated 14-09-2020;
 - 4) Maharashtra Pollution Control Board's directives vide no. B-200917-FTS-0082, Dated 17-09-2020

The public hearing for proposed Jivdani Passenger Funicular System (Rope Way) proposed by Project Proponent M/s Shree Jivdani Devi Sansthan, Virar Public Registration No. A/397, Shree Jivdani Marg, Virar (East), Tal-Vasai, Dist – Palghar – 401 305, Maharashtra was conducted on Wednesday, the 30th December, 2020 at 11.00 a.m. at the Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd Floor, Jivdani Mandir Road, Virar (East), Virar, Tal – Vasai, Dist – Palghar-401 305.

As per the Notification dated 14-09-2006 issued by Ministry of Environment, Forest & Climate Change, Govt. of India, (MoEF & CC, Gol), New Delhi and subsequent amendment on 01-12-2019 & Dated 14-09-2020 (Ref. at Sr.No.1 & 3), Member Secretary, Maharashtra Pollution Control Board, Mumbai has constituted Public Hearing Panel vide Office Order No.E-73 of 2020 issued under letter no.BO/JD (WPC)/PH/B-201203-FTS-0131, Dated 03-12-2020 as below :-

1) District Magistrate, Palghar	-	Chairman
or his representative not below the rank of an Additional District Magistrate		
2) Regional Officer, MPCB, Thane	-	Member
(Representative of Maharashtra Pollution Control Board)		
3) Sub Regional Officer, Thane-2	-	Convener
Maharashtra Pollution Control Board, Thane		

Shri Ishwar Thakare, Sub Regional Officer, Thane-2, MPCB, Thane and Convener of the Public Hearing Committee while welcoming all informed that as this Virtual Public Hearing is arranged in the background of Covid-19, we all have to follow the directives of the Ministry of Environment, Forest & Climate Change, Govt. of India, New Delhi dated 14-09-2020 [referred at sr. no. (2)] and subsequent Order as issued by Maharashtra Pollution Control Board dated 17-09-2020 [referred at sr. no. (3)] above. Hence, 100 persons are allowed in the meeting hall in a session. If the participants are more, subsequent sessions will continue until all the participants are given opportunities to attend the meeting.

As per the directives, it is requested all the participants to follow strictly guidelines of Covid-19 of Govt. of India. The thermal checking and use of sanitizer were kept at the entrance of the meeting hall and in the meeting hall, it is compulsory to wear mouth mask and follow the social distancing amongst the persons.

Convener of the Public Hearing Meeting welcomed Hon'ble Chairman of the Public Hearing Committee, Member of the Public Hearing Committee, Company Officials, Government Officials and Public who were present in large number and informed that as per the EIA Notification of Ministry of Environment, Forest & Climate Change, Govt. of India, (i.e. MoEF & CC, GoI) dated 14th September, 2006 as amended on 1st December, 2009, it is mandatory to conduct prior public consultation to certain projects which are covered in the schedule of the said Notification.

He informed that the Maharashtra Pollution Control Board was in receipt of application of Project Proponent M/s Shree Jivdani Devi Sansthan, Virar Public Registration No. A/397, Shree Jivdani Marg, Virar (East), Tal-Vasai, Dist – Palghar – 401 305, Maharashtra for their proposed Jivdani Passenger Funicular System (Rope Way).

The Convener further informed that the project is in operation outside of notified industrial area and as per EIA Notification, 2006 the category of project falls under Category A – 7 (g) and as per Wild Life Protection Notification, 1972, the project site is 4.4 kilometre (East) away from the Notified Tungareshwar Wild Life Sanctuary and 2.5 kilometre from the Notified Eco-Sensitive Zone of Tungareshwar Wild Life Sanctuary.

Convener of the Public Hearing Committee informed that the aim of conducting prior public consultation is to make aware, local people who can be

participant in the hearing and they should know the developmental activities and Environment Management Plan of the project.

Project Proponent had sought permission from MoEF & CC, Gol for sanction of Terms of Reference (ToR) and for preparation of Environment Impact Assessment and MoEF & CC, Gol in its 45th meeting kept the proposal and has sanctioned ToR on 03-12-2018.

Shri. Thakare, Convener of the Public Hearing Committee informed that as this public hearing was arranged on 30-12-2020, 30 days in advance public notice was published as per provisions in the Notification by District Collector- Palghar in local newspaper Daily Loksatta and in national newspaper Daily Indian Express on 26-11-2020.

Also a copy of EIA report and executive summery were made available at various notified offices of Government i.e. Ministry of Environment, Forest & Climate Change, West-East Division Office, New Secretariat Building, Ground Floor, East Wing, Civil Lines, Nagpur – 440 001; District Magistrate Office-Palghar; Additional District Magistrate Office- Palghar; Zilla Parishad Office- Palghar; District Industries Centre-Office, Palghar; Tahsildar, Tahsil Office- Vasai, Dist – Palghar; Sub Regional Office, Thane-2, MPCB, Thane; Regional Office, MPCB, Thane and at Head Office of MPCB at Mumbai; Environment & Climate Change Department, Govt. of Maharashtra, Mumbai and on the website of MPCB. The public were appealed to send any suggestion or objection regarding the expansion of above project.

Convener further informed that the local MPCB Thane Office received 01 written suggestions / objections and 26 written letters for supporting the project. They have been informed to attend this public hearing. He informed that an opportunity is given to all raise their suggestions / objections regarding the proposed project in environmental angle only.

Convener informed that first the Environment Consultant of the Project will give presentation. After presentation, the participants may raise their suggestions, doubts, objections regarding Environment Management Plan. While raising the suggestions, first name and place of residence be informed. He directed Environment Consultant to give presentation in Marathi, an official language of the Maharashtra State.

He appealed Chairman of the Committee to allow to start the proceedings.

With the permission of the Hon'ble Chairman of the meeting, the Environment Consultant appointed by the company has gave the presentation.

Project Environment Consultant informed that in Maharashtra at Satara District, an accident due to stampede occurred at Mandhardevi Religious place. After the incidence, Maharashtra Government has issued certain Orders for all religious places which are located on high hill/mountain.

Project Environment Consultant informed that Jivdani Mandir is located on a hill top/mountain at Virar of Palghar District. The surroundings of the temple are beautiful and there is heavy rush of devotees on the holidays and on the day of the festivals. But to take darshan of the Jivdani Goddess, stiff and straight 900 steps have to be climbed. The journey to the temple is difficult. Hence, Jivdani Devi Trust has planned to make other options for devotees to go to temple for darshan and finalized Passenger Funicular Ropeway System. This project is convenient for the visitors and devotees. The details of the Rope Way is explained by the Consultant.

After the presentation, the participants are appealed to raise their views, suggestions or objections regarding Environment Management Plan.

Followings have participated during the discussions and the Answers given by the Project Proponent / Project Consultant / Public Hearing Committee :-

1) Ms. Maya Chaudhari, Resident – Virar, Tal-Vasai, Dist-Palghar:-

Ms. Maya Chaudhari remarked that she thanks officials of the Consulting Firm for giving the good presentation. We, the common people do not know various points and how the study is carried. Here the capacity of the land, present status water level is studied. She said that we stay here since long. This hill / mountainous area was deserted. But this Jivdani Trust has converted it totally and now the deserted mountainous area has become totally green. Here Afforestation is carried every year by spending nearly rupees 30-35 lakhs. We are watching the change. Our Saving Group do take part in afforestation programme every year. While afforesting, we carry it from upward to downside. We have observed that the rain water harvesting system is commissioned due to which saplings will grow fast.

She further informed that every year it is observed that many devotees are overwhelmed to take darshan of the Jivdani Devi/Goddesses. But due to tremendous rush of the devotees, the plastic wrappers and eatables are thrown on the hill/mountain. Due to commissioning of Funicular System (Rope Way), plastic pollution on the mountain will be avoided.

There are few people in society who have 'Height Fobia.' Due to installation of Rope Way, they will be able to take darshan of Jidani Devi.

Maya Chaudhari further informed that she is social worker. Hence, she knows that how the Trust has helped the needy people by providing them cooked food in the days of Covid-19. The Anna Dan/Donation of Food programme will be continued forever by the Trust. This project will be beneficial to all. Hence, we support the Funicular Ropeway.

2) Shri Hardik Ravindra Raut, Resident-Virar, Tal-Vasai, Dist – Palghar:-

My birth place is Virar. I am watching the various developments carried by the Trust since my childhood. Not a single tree was there on the Jivdani hill/mountain. Now the hill/mountain is converted into greenery. We are experiencing the development of this area by the Jivdani Devi Trust and Local Corporation. I am 35 years old and just as my age is increasing, the greenery is increasing. We have the Morning Walk Group. It gives mental strength when we come here, but there is always heavy rush. The devotees should get the good darshan.

Hence, by commissioning of Funicular System (Rope Way), the large people coming here will get the darshan as not only people from Virar is coming, but devotees from throughout the State of Maharashtra and our country are coming here. The time management of the devotees should be maintained.

Due to Jivdani Trust, the people residing the nearby areas have got various occupations/business opportunities. The tea, flower and garland vendors, rickshaw drivers have got the source of livelihood. The flower and horticulture farmers residing nearby areas have also got a platform to sale. There are local people who prepare and sale the prasad of coconut sweets (Nariyal Barfi).

It is experienced that Jivdani Trust is always ahead in extending help at the time of natural disaster e.g., in flood affected areas, earthquake. In the days of lock down due to pandemic Corona virus, the Trust had provided prepared foods to the needy people since 7-8 months. The coconut sweet (Nariyal Barfi) vendors

are local people only. They have got the source of livelihood. Jivdani Trust is always ahead to help the people in natural disaster period. It may not have happened anywhere else.

As large number of people should get the darshan properly, the Funicular System (Rope Way) is necessary and we all support to commission the same.

All the participants supported by clapping the hands.

3) Advocate Ramakant Waghtaude, Resident – Nalasopara, Dist – Palghar:-

He congratulated Maharashtra Pollution Control Board for arranging public hearing. He informed that though he is from Satara district, he is staying here since many years and observing the social work of Jivdani Devi Trust. He said that he has seen many religious institutes, but the social work carried by Jivdani Devi Trust is remarkable and right and it has set an example to others. Though this Trust is religious, its active part for implementing various programmed for health, education and social is remarkable. The participation of this Trust in various other social welfare programmed is pioneering.

He said that the help and rehabilitating work carried during the natural disaster, flood by the Trust of Jivdani Devi is as per Government only. It has extended helping hand to millions of needy and poor people and gain the confidence of local people. We came here to support the project, we are supporters. This passenger funicular ropeway will be beneficial to many people. The physically and mentally challenged people, senior citizens, school children will be benefited by this passenger funicular ropeway.

Hence, on behalf of the people of Nalasopara and other citizens, I support the project. This is the way of development. Here also one or others may oppose the project due to some or other reasons. It is requested to District Collector and MPCB officials to look into the matter seriously and as construction of passenger funicular ropeway is towards development, it should be approved. He supported the project.

Project consultant thanked him for supporting the project.

4) Advocate N. Jain, Resident – Virar, Tal – Vasai, Dist – Palghar:-

He informed that all have come here to support the nice project of Rope Way. Those people who could not come here, they are also supporting the project. Our support is for the development of Virar.

This project is need of the Virar for the development. We were not imagining that we will get the Darshan of Jivdani Devi within three minutes. The presentation is given very nicely. Hence, I request Government to sanction the project. There will no ill-effects on the nature due to this project. The local people will get job opportunities and name of the Virar will be known at national and international level.

I request Pollution Control Board to think seriously about the project and the commissioning work should be started at the earliest. We support the project and many thousands will come to support the project.

Project Environment Consultant thanked for supporting the project.

5) Ms. Swati Marathe, Resident-Virar, Tal-Vasai, Dist – Palghar:-

Ms. Marathe informed that she is teacher and stays at Virar since her childhood. This project will help the development of Virar. We bring here school children for the trip. The small children and old persons will be benefited due to this passenger funicular ropeway.

Local people will get job opportunities. The saplings have been planted by the Jivdani Devi Trust. The devotees from Mumbai come every day for the darshan. Hence local people can get job opportunities. The suggestion is already made by the participant to installed the project at the earliest.

6) Shri Sunil Bajaj, Resident-Virar, Tal-Vasai, Dist – Palghar:-

Shri Sunil Bajaj informed that that as this project is to the benefit of all, though it is supported by me, I have certain reservations/objections in a manner it is approved and public hearing is called at the background of Covid-19.

He said that he has objected for it and written submission is already given.

7) Shri Jay Desai, Resident – Virar, Tal-Vasai, Dist – Palghar:-

He informed that his name is Jay Desai and he is MBA student. He is young and student and desires to raise views for Passenger Funicular Ropeway. If more than 100 devotees are able to go for darshan by Rope Way than the stairs, it will be beneficial to people.

We are aware that due to Covid-19, the tourism industry has come in trouble. Due to this passenger funicular ropeway, the number of tourists will increase. There are many sea shores at Vasai Virar area. Hence, local tourism and income of local people will increase. The trust has carried very dedicated work.

He informed that he is coming in the temple since childhood and his grandfather used to take darshan upto the age of 90 years. Many engineering students will like to come and study this project. Hence, this project should be commissioned at the earliest for the convenience of the public. We support the project.

8) Shri Jagdish Tare, Village is from Saphale Station.

Shri Jagdish Tare informed that Koli communities are habitants in our village. They have faith on the Jivdani Devi. He said that he is coming here since childhood. Without offering/breaking the coconut in the name of Goddess, the boats are not sent into the Sea. We see the temple while boating in the sea. We have faith on the Goddess.

Shri Tare further informed that the development work carried by the Jivdani Devi Trust is definitely praiseworthy.

We believe that the Goddess is blessing from the mountain. In the days of Corona, all the trustees were working very hard for the people. When the prepared food was not getting at most places, trustees used to visit and donated the prepared food. We Koli community salute Jivdani Devi Sanstha. At these critical days, each human being needs another human being. This Jivdani Devi Trust is preserving humanity. We support the project. Best Luck to project.

9) Shri Naresh Jadhav, Resident – Nalasopara, Dist – Palghar:-

Shri Naresh Jadhav said that he extends thanks to Maharashtra Pollution Control Board, due to which we gathered here for the cause of environment. He

informed that he stays in this area since last 35 years. The hill/mountains which are now green, the credit goes to Bhiwandi Nijampur Municipal Corporation and Vasai-Virar Municipal Corporation and Jivdani Devi Trust. The 1-2 crores of trees were planted in the area. The Goddesses Jivdani is archaic and not only just devotees from Vasai Virar and Nalasopara area, but from all over Maharashtra and whole country are coming to take darshan. The work carried by the trustees is so good, that the faith of devotees will not be disturbed. In the days of Covid-19, the Trust has served prepared food and vegetables to nearly 70 lakh needy people. This great humanitarian work will be appreciated in our country. Hence, considering the feelings of the people, the passenger funicular ropeway project should be sanctioned.

Project Consultant thanked for extending support.

10) Shri Sandip Sakharam Nadkar, Sainath Nagar, Virar, Tal-Vasai, Dist-Palghar:-

He said that now we are watching green mountains. The credits go to Jivdani Devi Trust for their dedicated hard work. Also, in the days of Covid-19, water and prepared food is served to all needy people. Today, the public hearing is arranged for the commissioning of the Rope Way project. It will be very useful to devotees. The local rickshawalls, flower and garland vendors will get job opportunities. Hence, my request is to sanction the project at the earliest.

Project Environment Consultant thanked for the support.

11) Shri Dhanjay Zha, Resident -Virar, Tal – Vasai, Dist – Palghar :-

I stay here since last 22 years. I am from Bihar and came here for livelihood. I observed the custom here that those who come to stay here, takes the darshan of Jivdani Mata. The mountains which I have seen 22 years back have been totally changed. It is not happened in one day, it is due to hard efforts taken since 20-25 years. I thanks to Jivdani Trust for it. Here 5-6 lakh people used to stay in small houses. Now they are staying in their flats. This is due to blessings of Jivdani Mata only. The social work of Jivdani Trust makes all of us to stay here. We all believe on the Jivdani Devi Trust.

He thanked to Project Consultant for giving informative presentation. He remarked that though this Trust and place is known in Maharashtra, after inception

of the project, it will be known throughout our country. Just as devotees throughout India go to Mata Vaishanavi Devi, they will come here for darshan.

He said that I extend my thanks to Jivdani Trustee for taking in hand the Rope way project. Due to this, the time for darshan of the devotees will be saved. He informed that many people left the staying place, as they did not get food in the days of Corona, but from Virar, nobody left as Trustees took tremendous efforts for providing cooked food in the days of Corona to people in the area. The Trust also donated cooked food, medicines and extended full security. I request Maharashtra Pollution Control Board to sanction the Rope way project.

Environment Consultant thanked for the support.

12) Shri Shirish Krishna Raut, Resident – Virar, Tal – Vasai, Dist – Palghar:-

I am staying here since last 60 years. Since childhood, I am watching this hill/mountain. It was totally desert. There were not a single tree on the road. There was a high road to the temple above. The devotees, people and other visitors used to slip. Now the hill / mountain is converted into lush green cover. It is due to tireless efforts of Jivdani Trust and Mahanagar Palika. This Rope way will be beneficial to all people residing in the area. The time, money and unnecessary trouble will be saved. There will not be any environment degradation due to this passenger funicular ropeway. There will not be any smoke. The speakers here already raised the suggestions. Hence, I request Public Hearing Committee to sanction the project.

Environment Consultant expressed thanks for the support.

13) Mrs. Kanchan Zha, Social Worker, Resident-Virar, Tal – Vasai, Dist – Palghar:-

Mrs. Zha informed that in Maharashtra the people are well connected by cultural relations. Many people do worship Goddess by Vrat / Vow. Just as Mumbaikars do worship Mumbadevi, here at Virar we worship Jivdani Devi. Due to Rope Way, all the sections of society will be benefitted. As expressed earlier, there are huge scope for tourism industries. The small children also can get darshan after following security. There will boost to our cultural heritages. We support the project.

Environment Consultant expressed thanks for the support.

14) Shri Vivek Madan Patil, Resident-Sopara Gaon, Dist-Palghar:-

I am local person. We came here since our childhood. In the young age, we used to come by walk. But as the age is increasing, we middle aged people require Rope Way.

Secondly, regarding Environment. It is understood that this project will run on solar energy. It will be operated on electricity. Hence, there will not be any smoke.

This project will be beneficial to the people. The people have to take rest at 2-3 places while going by stairs. After eating the biscuits, the people keep the plastic covers and plastic bottles there only. The plastic pollution on the hill/mountains will be avoided and the time will be saved. I personally appeal to other Trusts to imitate the Trust of Jivdani Devi for the activities in social, educational, medical and at emergency situation. It is observed by me that, there is increase in the numbers of monkey. It shows the nourishment of nature.

Environment consultant thanked for the support.

15) Shri Chandrakant Shankar Katore, Residnet-Virar, Tal – Vasai, Dist – Palghar:-

I have retired in 2011. Now I am carrying the work at Jivdani Goddess Mountain. Since last year, I am extending the support to Jivdani Devi Trust as an Environmentalist.

Since last year, I am working near the Funicular Systems. The 60 meters green drive is carried at both sides. There will be fogging and drip system in two stages. This project will bring happiest moments to all. Due to this project, old persons, daughters and daughter-in-law, small children will get the darshan of the Mata.

He further informed that he is submitting written suggestions. He read the suggestions and objections which are as under:-

- a) The kitchen is used for preparation of Prasad for many thousand devotees. The domestic effluent/sewage is treated in Sewage Treatment Plant (STP), which is installed by the Trust and the treated domestic effluent/sewage is reused for toilet and green belt development;

- b) I have seen the workings of the Trust very closely during the Corona period. The Trust has donated cooked foods and vegetables to nearly 25 lakh needy people. The whole Taluka is indebted for this generous act.
- c) I am staying at the foot of the goddess since last 50 years. I have written a book on Jivdani Goddess as "Jivdani Gatha." It is in Marathi and in Hindi. At that time, my wishes were mentioned in the book that when there will be stoppage of sacrifice of animals, it will be golden day. Now, the Trust has already banned the method of sacrificing the animals.
- d) The Jivdani Hill/ Mountain is of black stone. It is difficult challenge to sow the tree. Now there are trees, which is of years. The trees have been kept alive. The Environment Consultant thanks for giving support.

16) Shri Anupra singh, Resident – Virar, Tal – Vasai, Dist–Palghar-

I am from Uttar Pradesh and staying at Virar since last 17 years. We go to take darshan of Jivdani Devi every Tuesday. Here in Public Hearing on Environment, I am telling 2-3 examples how the Trust is carrying good work:-

- a) For the protection and preservation of Environment, the green belt development, tree plantation is carried. The Trust protects all the planted trees and total forest area;
- b) The Trust has already banned the use of plastic on the Jivdani Devi Mountain.
- c) We support the project.

17) Shri Parag Kamble, Resident – Nalasopara, Dist – Palghar:-

I stay at Nalasopara. All the participants have expressed their suggestions. The Jivdani Devi Trust is implementing various social welfare projects. My family deity Renuka Devi is at Karnataka. But now I believe Jivdani as Family Deity and take darshan at every year.

Last year my age-old mother and father cannot taken darshan.

Hence, I request to complete the project at the earliest, so that my father and mother can be brought to take the darshan. On behalf of Nalasopara, I request to complete the project at the earliest.

18) Shri Gajendra Kayekar, Resident – Virar, Tal – Vasai, Dist – Palghar:-

I request Maharashtra Pollution Control Board to sanction this project at the earliest. There is no word how the Jivdani Devi Trust has helped the needy and poor people donated cooked food & medicines in the days of Corona. Due to this project, local people will get the job opportunities. Hence, the Government should give sanction at the earliest.

19) Shri Amol Chaudhari, Resident-Virar, Tal-Vasai, Dist – Palghar:-

I am from Bihar, but staying here since last 19 years. I have become devotee of Jivdani Mata. In the days of lockdown, the Trust has provided cooked food to more than 50-60 thousand. Also the doctors and ambulance are also provided. Needy students have been provided books. Hence, those who want to oppose, may think first the social work of the Trust and then support. We support the project.

Environment Consultant thanked for the support.

20) Shri L.N.Gosavi, Resident – Nalasopara, Dist – Palghar:-

It is understood by me that 90% work of Funicular System is completed and only 10% is remained. The Jivdani Devi Trust do implement various social programmed at various villages. The free medication is provided. I am from Khandesh Region and came here in 1973. My whole life is spent at Vasai, Virar and Nallasopara. I was Head Master at Secondary School. I here desires to inform the participants that with blessings of Jivdani Mandir, this project will be completed.

21) Shri Balkrishna Shttety, Ranga Senior Citizen Sanstha, Virar, Tal-Vasai, Dist – Palghar:-

We are senior citizens and we have 360 members. It is very difficult to seniors to climb by the stairs. Hence, we are not able to take darshan. Hence, MPCB should sanction the project at the earliest.

22) Shri Prafulla Sane, Resident – Virar, Tal – Vasai, Dist – Palghar:-

When I was one year old, my parents came to Virar. I am watching the Mandir since my childhood. Previously, there was very small temple. Afterwards stairs were built. Then the rope way was prepared. Few last years back, the population and devotees has increased tremendously. As per the need of the time, the Trust has given various facilities. The facility of drinking water system is definitely good.

The Trust is carrying various social welfare schemes. The medical help is provided at rural areas by the Trust. This place is developed as pilgrim place. Now the school is started and there are 3,000 students studying in the school. As Mumbai and Thane districts are near, this area should be developed as Tourist Spots. Hence, Rope Way is essential.

Hence, all members of Jivdani Trusts who have attended the meeting are thanked and MPCB is requested to sanction the project.

Project Environment Consultant thanked for supporting the project.

Here Project Environment Consultant informed that in the meeting, all have supported for the project. One objection is received for the technical reason.

Environment Public Hearing Committee here appealed all to raise any views, suggestions or objections. There was no response in the meeting. At this moment, Convener of the Public Hearing Committee informed that the suggestions, objections raised during the meeting are noted and it will be included in the minutes of the meeting. The writing suggestions, objections, Final Environment Impact Assessment Report and minutes of the meeting will be submitted to an Expert Committee, Ministry of Environment, Forest & Climate Change, Govt. of India, New Delhi. An Expert Committee will take further decision accordingly.

Convener, Environment Public Hearing Committee thanked all local people for attending the meeting and raising their views, suggestions, objections, project officials and government officials and on behalf of Chairman of the Public Hearing Committee declared that the meeting is completed.

The meeting ended extending thanks to the Chair.

In the meeting 27 suggestions have been received.

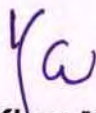
Total 26 suggestions are received for supporting the project. One objection is received for the technical reason. All the letters are enclosed herewith for consideration.



(Ishwar Thakare)
Convener,
Environment Public Hearing
Committee
And
Sub Regional Officer, Thane-2,
MPCB, Thane



(Dr. Rajendra Rajput)
Member,
Environment Public Hearing
Committee
And
Regional Officer, MPCB, Thane



(Dr. Kiran Mahajan),
Chairman,
Environment Public Hearing Committee
And
Additional District Magistrate, Palghar,
District – Palghar



//TRUE COPY//

Form 1, TOR Compliance, Environment Impact Assessment Report

For

“Jivdani
Passenger
Funicular
System
(Ropeway)”

At

Village-Virar, Tal- Vasai,
District-Palghar,
Maharashtra

UID-PE/2018/078-G-04

TOR Letter F No. 10-46/2019-IA-III
dated 3.12.2019

Project Cost: 32 Crores

Category As per EIA Notification, 2006:
S.no 7(g) Cat “A”

Baseline Season: March 2019-May 2019

Laboratory Assigned: M/s Perfact
Researchers Pvt Ltd

Project Proponent

Shree Jivdani Devi Sansthan Virar,

Address: Public Registration No. A/397,
Shree Jivdani Marg, Virar (East),
District-Palghar, Maharashtra-401305

Name: Mr. Pradeep Vishnu Tendolkar

Designation: Secretary

Email: jivdanidtt@gmail.com

Contact no: 0250-2523698, 0250-2523398

Environmental Consultant

Perfact Enviro Solutions Pvt. Ltd.
(PESPL)

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NABET/EIA/1922/RA 0184)

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श्री जीवदानी देवी संस्थान, विरार

पब्लीक ट्रस्ट रजि. नं. ए-३९७ (ठाणे).

विरार (पूर्व), जि. पालघर (महाराष्ट्र), पिन - ४०१ ३०५.

दूरध्वनी - कार्यालय : (०२५०) २५२३३९८, २५२३६९८, २५२९७७७

Email : jivdanidtt@gmail.com, Website : www.jivdanidevi.com

जा. क्र. :

दिनांक :

श्री. रामचंद्र गावड
अध्यक्ष

श्री. पंकज भा. ठाकूर
उपाध्यक्ष

श्री. प्रदिप तेंडोलकर
कार्यवाह

श्री. परशुराम मो. पाटील
कोषाध्यक्ष

Outward No.79/2020-21

Dated :01-03-2021

To,
The Member Secretary
Infrastructure & Miscellaneous Projects & CRZ Committee
Ministry of Environment, Forest and Climate Change
Govt. of India, Indira Paryavaran Bhavan,
Jor Bagh Road, New Delhi-110003

Reference: ToR vide letter no. F. No. 10-46/2019-IA-III dated 3.12.2019

Subject: Environmental Clearance for the Project "Jivdani Passenger Funicular System (Ropeway)" at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra by Shree Jivdani Devi Sansthan Virar

Dear Sir,

This is in reference to the project "Jivdani Passenger Funicular System (Ropeway)" at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra by Shree Jivdani Devi Sansthan Virar. The project is covered under item 7(g) of EIA notification 2006 and its subsequent amendments. As the proposed project (UTP) lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972., hence, General conditions are applied and the proposal falls under category 'A'.

The project was earlier granted Terms of Reference vide letter no. F. No. 10-46/2019-IA-III dated 3.12.2019. The Public Hearing for the above said project was successfully conducted on 30th December 2020 at Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd Floor, Jivdani Mandir Road Virar (east), Virar, Vasai, Palghar, Maharashtra.

Now, we are submitting the final EIA report along with the TOR Compliance and Public Hearing minutes compliance at MoEF&CC. The following documents are enclosed:

- Form 1
- Copy of ToR letter and its Compliance
- Public Hearing minutes and compliance
- EIA Report with annexures

We shall be thankful if the process of Environmental Clearance is initiated at the earliest.

Thanking you,

Yours faithfully,

Shree Jivdani Devi Sansthan Virar
(Authorized Signatory)





Undertaking By EIA Coordinator

I **Rachna Bhargava**, EIA Coordinator from Environmental consultant M/s Perfact Enviro Solutions Pvt. Ltd., 5th floor, NN Mall, Sector 3, Rohini, New Delhi, 110085 for project **“Jivdani Passenger Funicular System (Ropeway)”** shall be developed at **Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305** by **Shree Jivdani Devi Sansthan Virar** hereby undertake that the report is prepared in accordance with a robust quality management system adopted by EIA consulting organisation for the EIA process and the prescribed TOR have been complied with and that the data submitted is factually correct

M/s Perfact Enviro Solutions Pvt Ltd



Declaration by EIA Coordinator(s) & Experts Contributing to the EIA “Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305 by Shree Jivdani Devi Sansthan Virar

I hereby declare that I was involved in the following EIA Report submitted to the **Ministry of Environment, Forest and Climate Change (MoEFCC) EAC** as **EIA Coordinator**. I further certify that the **data** given in this report is **true** and **correct** to the best of my knowledge.

EIA Coordinator: Mrs. Rachna Bhargava

Signature

Assistant to EC: Ms. Shipra Varshney

Period of Involvement: January 2019 - till date

Office Address: Perfect Enviro Solutions Pvt. Ltd.

5th floor, NN Mall, Mangalam Palace,
Sector – 3, Rohini, New Delhi – 110085

Functional Area Expert

S. No	Functional Areas	Name of Expert(s)	Involvement (Period & Task)	Signature
1.	EIA Coordinator	Mrs. Rachna Bhargava	I had visited the site with the FAEs to assess the project site and the study area. Coordinated With the experts and prepared the impact assessment methodology. Identification and Prediction of the impact assessment, Formulation of the Environment Management Plan, Technical Review. Jan 2019- till date	



2	AP	Mr. Nipun Bhargava	I had visited the site to assess the site conditions and the surrounding area. After assessing the Air pollution sources have prepared the Impact Mitigation measures and development of the Environment management Plan (EMP), Selections of Air Quality Monitoring stations. Jan 2019- till date	
3	AQ	Mr. Nipun Bhargava	I had visited the site for the assessment of the sources and the emissions. After studying, calculated the model input data related to the proposed emissions and micrometeorology interpretation of modelling results and development of EMP. Jan 2019- till date	
4	WP	Mr. Nipun Bhargava	I had visited the site to assess the water sources and its water quality in the study area. After studying the Water pollution sources have prepared the Impact report and suggested Mitigation measures, Selection of the water Monitoring stations and development of EMP. Jan 2019- till date	
5	LU	Mr. Rajneesh Maurya	I was involved in preparing a Land Use map using Satellite Imagery, Google maps and Toposheet after primary survey. Jan 2019- till date	
6	EB	Mr. Rajiv Kumar	I had visited the site to collect the baseline status of Ecology and Biodiversity conditions in the core and	



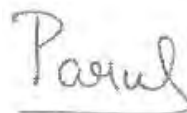
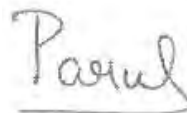
			buffer zone. With the help of the literature and the data collected during the site visit the report was prepared and related impact and mitigation measures and EMP was prepared. Jan 2019- till date	
7	SE	Mrs. Rachna Bhargava	I had visited the site to collect the baseline status of socio-economic conditions up to 3 km radius. Studied Villages in study area using Topographical map and extracted Secondary data from Census of India. Then was involved in preparing a socio economic study report using the primary survey and secondary data which includes impact and mitigation measures. Jan 2019- till date	
8	NOISE	Mr. Praveen Bhargava	I had visited the site to assess the Noise sources and its quality in the study area. After studying the Noise pollution sources have prepared the Impact report and suggested Mitigation measures, Selection of the Noise Monitoring stations and development of EMP. Jan 2019- till date	
9	SHW	Mr. Praveen Bhargava	I had visited the site to assess the Solid waste sources and status in the study area. After studying the sources have prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date	



10	RH	Mr. Nipun Bhargava	I had visited the site to assess the Risk associated and its Hazards in the study area. After studying the possible sources have prepared the Impact, risk report and suggested Mitigation measures and development of EMP. Jan 2019- till date	
11	HG & Geo	Mr. Santosh Pant	I studied the Hydrology and Geology status of the Study area. After studying, I prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date	
12	SC	Mr. Praveen Bhargava	I had visited the site to assess the Soil Quality in the study area. After studying the possible sources have prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date	



Functional Area Associates (FAA)

S. No	Functional Areas	Name of Expert(s)	Involvement (Period & Task)	Signature
1	AQ	Ms. Parul Badalia	Assisted FAE in the calculation of proposed emissions and micrometeorology interpretation of modelling results and development of EMP. Jan 19-till date	
2	EB	Ms. Parul Badalia	Assisted FAE in Preparation of EB report with Conservation Plan & reviewed the secondary data w.r.t to conservation plan. Identified impact and suggested mitigation for the impact identified. Jan 19-till date	



श्री जीवदानी देवी संस्थान, विरार

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पब्लीक ट्रस्ट रजि. नं. ए-३९७ (ठाणे).

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Email : jivdanidtt@gmail.com, Website : www.jivdanidevi.com

जा. क्र. :

दिनांक : ०१/०३/२०२१

श्री. रामचंद्र गावड
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कार्यवाह

श्री. परशुराम मो. पाटील
कोषाध्यक्ष

To whomsoever it may concern

I, Pradeep V. Tendolkar Secretary of Shree Jivdani Devi Sansthan Virar, for the project "Jivdani Passenger Funicular System (Ropeway)" at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra hereby commit the implementation of Environmental Management Program including Environmental Monitoring Program and recommendations of the additional studies, if any in the specified time-frame and allocation of the required funds included.

Authorised Signatory

Shree Jivdani Devi Sansthan Virar





PERFACT ENVIROSOLUTIONS PVT LTD

Plagiarism/ QMS Certificate

To whomsoever it may Concern

I, Rachna Bhargava, CEO of M/s Perfact Enviro Solutions Pvt Ltd located at 5th floor, NN Mall, Mangalam Palace, Sector – 3, Rohini, New Delhi – 110085 for project **“Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305 by Shree Jivdani Devi Sansthan Virar** hereby take the responsibility that the report is prepared in accordance with a robust quality management system adopted by EIA consulting organisation for the EIA process including methodologies used to ensure completeness, relevance, authenticity and consistency.

M/s Perfact Enviro Solutions Pvt Ltd

Abbreviations Used:

AQ	Air Quality
AP	Air Pollution
BGL	Below Ground Level
BOD	Biochemical Oxygen Demand
CGWA	Central Ground Water Authority
CER	Corporate Environmental Responsibility
COD	Chemical Oxygen Demand
CTO	Consent to Operate
DG	Diesel Generators
EIA	Environment Impact Assessment
EC	Environmental Clearance
EAC	Expert Appraisal Committee
EPA	Environment Protection Act
EMP	Environment Management Plan
ECS	Equivalent car Space
EB	Ecology & Biodiversity
FAR	Floor-Area Ratio
FAE	Functional Area Expert
FAA	Functional Area Associate
GLC	Ground Level Concentration
GE	Geology
IMD	Indian Meteorological Department
LOS	Level of Service
LED	Light Emitting Diode
LU	Land Use
ML	Mine Lease
MSL	Mean Sea Level
MBBR	Moving Bed Bio Reactor
MoEF&CC	Ministry of Environment Forests & Climate Change
NOC	No Objection Certificate
NAAQS	National Ambient Air Quality Standards
NBC	National Building Code
NH	National Highway
NV	Noise & Vibration
NABET	National Accreditation Board For Education & Training
NOx	Nitrogen Oxides
OWC	Organic Waste converter
PM	Particulate Matter
PPE	Personal Protective Equipment
PCU	Passenger Car Unit
QoL	Quality of Life

R&R	Rehabilitation and Resettlement
RWH	Rain Water Harvesting
RH	Risk & Hazards
SPCB	State Pollution Control Board
SEIAA	State Environment Impact Assessment Authority
SC	Soil Conservation
SHW	Solid & Hazardous Waste
SO ₂	Sulphur dioxide
SE	Socio-Economic
STP	Sewage Treatment Plant
ToR	Terms Of Reference
TDS	Total Dissolved Solids
TPA	Tonnes per annum
TSS	Total Suspended Solids
WP	Water Pollution

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SECTION A- FORM 1

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

APPENDIX I
FORM 1

I. Basic Information

S No	Item	Details
1.	Name of the project/s	Jivdani Passenger Funicular System (Ropeway)
2.	S. No. in the schedule	7(g)
3.	Proposed capacity/ area/length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled.	Proposed handling Capacity - 2400 PPH Total Plot area under the temple trust- 19500 m ² Length of Funicular -400 m Area of Lower Terminal Point (LTP)- 748.11 m ² Area of Upper Terminal Point (UTP)- 518.32 m ² Area of Funicular track- 3600 m ² Total area required for construction of ropeway- 4866.43 m ²
4.	New/ Expansion/ Modernization	New
5.	Existing Capacity/ Area etc.	Already granted Environmental Clearance from Maharashtra SEIAA for construction of Ropeway vide letter no. SEAC-2008/CR.26/TC2 dated 17.9.2009. The construction work started but due to changes in technology of the ropeway, the work was stopped at the site.
6.	Category of Project i.e. 'A' or 'B'	A
7.	Does it attract the general condition? If yes, please specify.	Yes, Since the project lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972.
8.	Does it attract the specific condition? If yes, please specify.	No
9.	Location	Virar East
	Plot/ Survey/ Khasra No.	-
	Village	Virar
	Tehsil	Vasai
	District	Palghar
	State	Maharashtra
10.	Nearest railway station/ airport along with distance in kms.	Nearest Railway Station- Virar Railway Station-1.66 Km SW Nearest Airport- Chhatrapati Shivaji International Airport: 41.70 Km South

**Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar**

11.	Nearest Town, city, District Headquarters along with distance in kms.	Virar
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Vasai-Virar City Municipal Corporation (VVCMC), Bazar Peth, Killa Road, Vasai West, Vasai-Virar, Maharashtra - 401201
13.	Name of the applicant	Pradeep Vishnu Tendolkar
14.	Registered Address	Shree Jivdani Devi Sansthan, Virar Public Registration No. A/397 (Thane), Virar (East), District-Palghar, Maharashtra-401305
15.	Address for correspondence:	
	Name	Pradeep Vishnu Tendolkar
	Designation (Owner/Partner/CEO)	Secretary
	Address	Shree Jivdani Devi Sansthan, Virar Public Registration No. A/397(Thane), Virar (East), District-Palghar, Maharashtra
	Pin Code	401305
	E-mail	jivdanidtt@gmail.com
	Telephone No.	0250-2523698, 0250-2523398
	Fax no.	-
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet.	Yes, Details of Alternative sites and technologies have been given in Section C.
17.	Interlinked Projects	No
18.	Whether a separate application of an 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?	Yes, Forest Clearance obtained vide letter no. 8B/37/97-FCW/1513 dated 15.07.1999 and subsequent letter vide letter no. 8B/37/97-FCW/982 dated 02.05.2000 Yes, the project (UTP) lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification

**Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar**

	(c) The C.R.Z. Notification, 1991?	dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972. Not Applicable
22.	Is there any Government Order/ Policy relevant/ relating to the site?	No
23.	Forest land involved (hectares)	Forest land of 1.95 Ha is involved in the project, which has been granted Forest Clearance vide letter no. 8B/37/97-FCW/1513 dated 15.07.1999 and subsequent letter vide letter no. 8B/37/97-FCW/982 dated 02.05.2000
24.	Is there any litigation pending against the project and/ or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No. (c) Orders/ directions of the Court, if any and its relevance with the proposed project.	Two separate Litigations launched by Damodar Ropeways & Infra Ltd against the project have been dismissed by the Bombay High Court without stopping the project or giving any stay or injunction. Only Arbitration and conciliation is ongoing relating to claims by both parties on each other relating to the disputes on contract. Related copy of document dated 07.11.2019 and NGT hearing (Original Application No. 100/2020(WZ)) dated 24.12.2020 is enclosed in Section D.

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.)

S.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 existing land use of the project site is commercial land and will remain commercial even after the Funicular development. Total site selected for the development of Lower Terminal Point (LTP) and Upper Terminal Point (UTP) including the ropeway alignment falls under ownership of the Trust, who will be responsible for the development of the Funicular project. The development work involves laying a ropeway trail for which leveling work for its construction and Terminal Stations is to be done, thus there will be a slight change in topography.

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

1.2	Clearance of existing land, vegetation and buildings?	Yes	Some parts of land will be cleared, however most of land is an existing kutchha pathway. No clearing of buildings is required.
1.3	Creation of new land uses?	Yes	Vacant land will be converted to the construction of commercial areas for LTP and UTP with basic amenities.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Geotechnical investigation has already been carried out.
1.5	Construction works?	Yes	Terminal stations and line tracks will be constructed. Terminal Points (LTP & UTP) shall have basic amenities like toilets, tickets rooms, waiting areas, souvenir shops, restaurants, first aid rooms, etc.
1.6	Demolition works?	No	Not Applicable.
1.7	Temporary sites used for construction works or housing of construction workers?	No	No Housing required. 80 no. of local persons (including technical and non-technical) shall be employed for the construction of ropeway. The existing resting place of the temple shall be used.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	The proposed project shall involve the construction of two terminal stations i.e. upper & lower and pathway for the ropeway based on a funicular system.
1.9	Underground works including mining or tunneling?	No	Not Applicable
1.10	Reclamation works?	No	Not Applicable
1.11	Dredging?	No	Not Applicable
1.12	Offshore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	No	Not Applicable
1.14	Facilities for storage of goods or materials?	Yes	Temporary sheds will be used for the storage of material during the construction of Ropeway.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	The proposed project activity will only envisage the development of basic public amenities in terms of sanitary provision of passengers and devotees of the temple. The wastewater generated from the project will be treated in STP of 165 KLD capacity (proposed at LTP) which shall be cleaned regularly and treated water will be used for sprinkling. Bio-Toilets shall be used at UTP.

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			The solid waste generated from the project will be sent to Organic waste converters. Organic Waste Converter of capacity 500 kg/day is already operational at the project site and another Organic Waste Converter of capacity 1500 kg/day is proposed.
1.16	Facilities for long term housing of operational workers?	No	Not Applicable
1.17	New road, rail or sea traffic during construction or operation?	No	Not Applicable
1.18	New road, rail, air, waterborne or other transport infrastructure including new or altered routes and stations, ports, airports, etc.?	No	Not required
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	The project is itself a creation of an alternative mode of transportation.
1.20	New or diverted transmission lines or pipelines?	No	Not Applicable
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not Applicable
1.22	Stream crossings?	No	Not Applicable
1.23	Abstraction or transfers of water from ground or surface waters?	No	Not Applicable
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not Applicable
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Material will be transported to construction sites by local trucks/trolleys.
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not Applicable
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not Applicable

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

1.28	Influx of people to an area in either temporary or permanent?	Yes	Influx of people to an area will be temporary in the form of a number of pilgrims.
1.29	Introduction of alien species?	No	Not Applicable
1.30	Loss of native species or genetic diversity?	No	Not Applicable
1.31	Any other actions?	No	Not Applicable

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 in short supply):

S.N o.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	Total land diverted to Shree Jivdani Devi Mandir Trust by Forest Department is 19500 m ² out of which 748.11 m ² will be used for the development of UTP, 518.32 m ² will be used for the development of LTP and 3600 m ² shall be used for the development of Ropeway Track. Thus, a total of 4866.43 m ² of undeveloped land will be required for the development of the Funicular project.
2.2	Water (expected source & competing users) unit: KLD	Yes	Total Water Requirement of the project shall be about 43 KLD during normal days and 164 KLD during festival days which will be sourced through VVMC.
2.3	Minerals (MT)	No	Not applicable
2.4	Construction material – stone, aggregates, sand/soil (expected source – MT)	Yes	Construction material will be bought from the nearby areas
2.5	Forests and timber (source – MT)	Yes	Forest and Timber material will be bought from the nearby areas and towns
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Total Power Requirement: 400 KVA Power Source: Maharashtra State Electricity Distribution Co. Ltd.
2.7	Any other natural resources (use appropriate standard units)	No	Not applicable

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

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate 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)	Yes	No Storage of hazardous substances (as per MSIHC rules) will be done however, used oil from DG sets will be generated. Proper management of used oil will be taken care of. Details are given in Section-D.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Suitable drainage and waste management measures will be adopted in both the construction and operational phase which will restrict stagnation of water or accumulation of water. This will effectively restrict the reproduction and growth of disease vectors.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	1. To and fro carrying of pilgrims to Shree Jivdani Temple 2. To facilitate uphill climb for old and infirm pilgrims 3. To boost tourism and cater to large number of pilgrims 4. To generate employment and allied activities.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly, etc.,	No	Not Applicable
3.5	Any other causes	No	Not applicable

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

S.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	Not applicable
4.2	Municipal waste (domestic and or commercial wastes)	Yes	500 kg/day (108 TPA) of domestic waste shall be generated during normal days & 2000 kg/day (300 TPA) during festive

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			days which will be sent to Organic waste converters of total capacity 2000 kg/day (500 kg/day existing and 1500 kg/day proposed).
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Used oil generated from the operation of DG Sets of 500 KVA, 25 kW (auxiliary DG) will be given to approved vendors from the State Pollution Control Board.
4.4	Other industrial process wastes	No	Not applicable
4.5	Surplus product	No	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	Yes	The STP sludge will be generated which will be reused in gardening after dewatering it.
4.7	Construction or demolition wastes	Yes	Waste generated due to construction for the project will be re-used completely for backfilling and landscaping.
4.8	Redundant machinery or equipment	No	Not applicable
4.9	Contaminated soils or other materials	No	Not applicable
4.10	Agricultural wastes	No	Not applicable
4.11	Other solid wastes	No	Not applicable

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

S.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	Source of emissions from the project will be DG Sets of ropeway i.e. DG set of 500 kVA capacity & 25 kW (auxiliary DG) To avoid the emissions, the proper stack height of 4.5 m above roof level will be provided.
5.2	Emissions from production processes	No	Not applicable
5.3	Emissions from materials handling including storage or transport	No	Not applicable
5.4	Emissions from construction activities including plant and equipment	Yes	Dust emissions during construction activities. Water sprinkling will be undertaken during the construction phase.

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	Not applicable
5.6	Emissions from incineration of waste.	No	Not applicable
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris).	No	Not applicable
5.8	Emissions from any other sources.	No	Not applicable

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

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise shall be generated at the time of construction activities for which Noise enclosure around the construction site of ropeway will be installed. Acoustically enclosed DG sets will be purchased.
6.2	From industrial or similar processes	No	Not applicable
6.3	From construction or demolition	Yes	Temporary increase in noise level during the construction phase.
6.4	From blasting or piling	No	Not applicable
6.5	From construction or operational traffic	No	Not applicable
6.6	From lighting or cooling systems	No	Not applicable
6.7	From any other sources	No	Not applicable

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

S.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	No	Not applicable

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	It will be A Zero Liquid Discharge (ZLD) project and STP treated water will be used in Gardening after dewatering the Sludge.
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	Source of emissions from the project will be DG Sets of ropeway i.e 1 x 500 kVA and auxiliary DG of 1 x 25 kW for power back up. To avoid the emissions, the proper stack height of 4.5 m above roof level will be provided.
7.4	From any other sources	No	Not applicable
7.5	Is there a risk of long-term buildup of pollutants in the environment from these sources?	No	Not applicable

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

S. 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	Not applicable
8.2	From any other causes	Yes	Adequate safety measures shall be followed as per IS specifications such as door locks, rescue equipment. Appropriate rescue equipment shall be provided to facilitate the rescue operations of passengers from Cabins of line.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The project falls in Seismic Zone III. Proper precautions shall be undertaken during the designing of foundations of LTP & UTP columns and track lines.

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

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

S. 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 facilities, 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	The following structures will be developed as supporting infrastructure within the premises: There will be provision of STP at LTP, Bio-Toilets at UTP & 3 no. of, OWC at LTP & UTP for organic waste conversion to manure for the proposed project. None None None None
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	There would be a social upliftment of the area due to increased pilgrimage from the proposed project, positive impact due to efficient and cost-effective alternate means of transportation system due to the proposed Ropeway. Ropeway system would also lead to Reduced pollution, Traffic decongestion. There will be more infrastructure development nearby due to better means of transportation.
9.3	Set a precedent for later developments	Yes	This rope-way will lay precedent for alternatives mode of transportation as the proposed ropeway system would also lead to reduced pollution, Traffic decongestion. There will be more infrastructure development nearby
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Not applicable

III. Environmental Sensitivity

S.No	Areas	Name/ Identity	Aerial distance (within 15 km) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Tungareshwar Wildlife Sanctuary A tank by the west side of the road from Umralla village to Bolinj. A mound locally known as BurudKot. A mound locally known as SonarBhat Arnala Fort	UTP lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary 4.55 Km SW 6.30 km SW 6.41 km SW 9.76 km W
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water sources or other water bodies Virar Reservoir Virar Dam Kopori Lake Waliv Talav Gass Road Lake Ranale Talav Akkarbhat Lake Manvel Pada Lake Zagodi Pond Umarale Lake Lake Near Sapora Gaon Lake Near Torbhat Stpala Lake Chakreshwar Talav Pelhar Dam Shirgaon Dam Wetland Near Gaskopari Wetland Near Datiware Tansa River Achole Talav	0.47 Km NW 0.87 Km SE 1.43 km N 1.62 km SE 8.36 km SW 2.17 km SE 5.17 km SW 5.18 km SW 5.43 km SW 5.79 km SW 5.85 km S 5.91 km SW 6.05 km SW 6.39 km SW 6.48 Km SE 1.29 Km SE 7.55 km NW 7.76 km NE 3.14 km N 8.26 km SW

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

		Chulna Talav Deewanman Talav Manikpur Talav Nirmal Lake Ulhas River Wetland near Kandre Bhure Forest Reserve Forest Reserve forest near Thembikhodave Tungarlnam Reserve forest Sativli Reserve forest RF near Kandarvan	8.31 km SW 9.22 km SW 9.35 km SSW 9.77 km S 13.54 km S 13.56 km S Project area (UTP and LTP) falling in an unnamed reserve forest. 6.36 km N 7.19 km SE 8.08 km SE 9.47 km NE
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration.	Arabian Sea	7.46 km NWW
4	Inland, coastal, marine or underground waters	Arabian Sea.	7.46 km NWW
5	State, National boundaries	International Boundary	7.46 km NWW
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	Roads Kopri-Naka-Chandansar Rd NH-8 Railway Station Virar Railway Station Nala Sopara Railway Station Vasai Road Railway Station Airport CSIT Airport	1.09 km NW 6.10 km E 1.66 km SW 5.04 km SW 8.97 km S 41.70 Km S
7	Defense installations	None	None
8	Densely populated or built-up area	Baluch Nagar	0.89 km SW
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of	Hospital Balaji Hospital Shubham Hospital Tondare Hospital	1.16 km NW 1.14 km NWW 1.21 km SW

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

	worship, community facilities)	Jivdani Hospital Schools Tree house play group Father Agnel English School A.V.S Vidya Bhavan NGV School Places of worship Jivdani Devi Temple Sri Varadvinayak Mandir Kala Hanuman Mandir Community Facilities Virar Post Office Bolinj Post Office Agashi Post Office	1.29 km SW 0.77 Km SW 1.13 Km W 1.36 km W 1.39 km W At UTP 1.13 km SW 1.38 Km SW 1.66 km SW 3.98 km SW 5.18 km W
10	Areas containing important, high quality or scarce resources (Ground-water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	A tank by the west side of the road from Umralla village to Bolinj A mound locally known as BurudKot A mound locally known as âSonarBhatâ Arnala Fort	4.55 km SW 6.30 km SW 6.41 km SW 9.76 km W
11	Areas already subjected to pollution or environmental damage. (Those where existing legal environmental standards are exceeded)	None within 15 km.	None within 15 km.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (Earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	Area falls in Seismic Zone III according to the Seismic Zone map of India.	-



श्री जीवदानी देवी संस्थान, विरार

पब्लीक ट्रस्ट रजि. नं. ए-३९७ (ठाणे).

विरार (पूर्व), जि. पालघर (महाराष्ट्र), पिन - ४०१ ३०५.

दूरध्वनी - कार्यालय : (०२५०) २५२३३९८, २५२३६९८, २५२९७७७

Email : jivdanidtt@gmail.com, Website : www.jivdanidevi.com

जा. क्र. :

दिनांक :

श्री. रामचंद्र गावड
अध्यक्ष

श्री. पंकज भा. ठाकूर
उपाध्यक्ष

श्री. प्रदिप तेंडोलकर
कार्यवाह

श्री. परशुराम मो. पाटील
कोषाध्यक्ष

UNDERTAKING

"I hereby given 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".

For M/s. Shree Jivdani Devi Sansthan.

(Authorized Signatory)

Date: **कार्यवाह**
श्री जीवदानी देवी संस्थान

Place:



SECTION B- TOR AND TOR COMPLIANCE

f.No. 10-46/2019-IA-III

F. No. 10-46/2019-IA-III
Government of India
Ministry of Environment, Forest and Climate Change
(IA.III Section)

Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi - 3

Date: 3rd December, 2019

To,

M/s Shree Jivdani Devi Sansthan
Public Trust Reg. No. A-397 (Thane),
Virar (East) - 401305, Maharashtra
E-mail: jivdanidtt@gmail.com

Subject: Jivdani Passenger Funicular Ropeway at Virar, Maharashtra by M/s Shree Jivdani Devi Sansthan - Terms of Reference reg.

Sir,

This has reference to your proposal No. IA/MH/MIS/119943/2019 dated 30th September, 2019, submitted the above proposal to this Ministry for seeking Terms of Reference (ToR) in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986.

2. The proposal for grant of Terms of Reference (ToR) to the project 'Jivdani Passenger Funicular Ropeway at Virar, Maharashtra by M/s Shree Jivdani Devi Sansthan was considered by the Expert Appraisal Committee (Infra-2) in its 45th meeting held on 17-18 October, 2019.

3. The details of the project, as per the documents submitted by the project proponent, and also as informed during the above said meeting, are under:-

- (i) Jivdani Passenger Funicular Ropeway has been proposed by Shree Jivdani Devi Sansthan in Village Virar, Tehsil Vasai of District Palghar of Maharashtra by M/s Shree Jivdani Devi Sansthan. which is a Special Purpose Vehicle (SPV) incorporated under the Companies Act for implementation and operation of Jivdani Passenger Funicular Ropeway at Shree Jivdani Devi temple, at S. No. 398, Virar -E, Virar, Maharashtra on S.no Class A/Land/ 346/ year 2017-18 dated 25/10/2017 in order to promote tourism & model shift to transit and reduction in traffic congestion in the region.
- (ii) The project was granted Environmental Clearance vide letter no. SEAC-2008/CR.26/TC2 dated 17.09.2009 by Maharashtra SEIAA for development of Ropeway based on Monocable pulsed fixed Grip Passenger Ropeway being developed by M/s Damodar Ropeways and Construction Co. (P) Ltd. on behalf of Jivdani Devi Sansthan. Thereafter, construction works had been started but due to change in technology of ropeway, the work had been stopped at the site. The project was then applied at SEAC (Maharashtra) for modernization of the ropeway project which was deferred due to few conditions.
- (iii) The proposed passenger Ropeway will be developed on the hill in Village Virar, Tehsil-Vasai, District-Palghar, Maharashtra. The details are as follows:

S. No.	Particular	Unit	Details
1	Plot Area	sqm	19500
2	Number of Terminals	No.	2
3	Carrying capacity	PPH	1200 per Direction
4	Hours of Operation	Hours	12
5	Length of ropeway	meter	400

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6	Number of Cabins	No.	4
7	Travel Time	minute	3

- (iv) The ropeway will be used to take Darshan at Shree Jivdani Devi Temple, Virar East, everyday and particularly on holidays and festival days. The average pilgrims are approximately 10000 per day and during festivals and weekend may increase to 40000 to 50000 per day. The Managing Trust for the Temple, Shree Jivdani Devi Sansthan studied various alternatives to provide transport facilities to the devotees to climb the hill.
- (v) The alignment falls within a Forest land which has been diverted for development of terminal stations & line towers. The forest land of the project is covering an area of 1.95 ha.
- (vi) The project being a Ropeway falls under the activity 7 (g) of the EIA notification, 2006 and is a designated Project as per Schedule and falls under category A due to applicability of general condition as the project lies at 4.6 km E from ESZ of Notified WLS (Tungareshwar WLS) under Wildlife Protection Act 1972.
- (vii) Total water requirement in normal days will be 43 KLD and in festival days will be 163 KLD mainly used for gardening, flushing, drinking, hand washing & horticulture purposes. Water will be sourced from VVCMC. The total quantity of wastewater generation in normal days will be 35 KLD and in festival days will be 137 KLD which will be treated in the Sewage Treatment Plant of 165 KLD capacity.
- (viii) Power requirement during operation phase will be 800 KVA which will be sourced by the Maharashtra State Electricity Board (MSEB). Thus, DG sets installed during operation phase will be 1x500 KVA.
- (ix) During normal days total Bio-degradable waste will be 350 Kg/day and recyclable waste will be 150 kg/day generated from the project and during festival days total Bio-degradable waste will be 1400 kg/day of and recyclable waste 600 kg/day will be generated from the project. The organic waste will be sent to Organic Waste Converter. The Recyclable Waste Collected and given to approved recycler.
- (x) Used oil generated from the DG sets will be sent to authorize hazardous waste disposal authority.
- (xi) Total cost of the project will be Rs. 1.25 crores.
- (xii) The average visitors will be 10,000 nos., Visitors during festival days will be 40000-50000 and staff will be 25 no.

4. The project/activity is covered under category B of item 7(g) 'Ropeways' of the Schedule to the EIA Notification, 2006 and its subsequent amendments, and requires appraisal at SEIAA/SEAC level. However due to applicability of general condition as the project lies at 4.6 km E from ESZ of Notified WLS (Tungareshwar WLS) under Wildlife Protection Act 1972, the project is appraised as Category at Central Level by sectoral EAC.

5. The project proponent informed the EAC that Jivdani Devi Mandir is a temple located on the hill in Virar, Maharashtra. The temple is on the hill, almost 230 m from the sea-level. The Goddess rests in a temple situated about 900 steps above the ground on a hill that forms a part of the Satpura Range in Virar, a northern Mumbai suburb, about 60 km away from Mumbai. The average pilgrims are approximately 10000 per day and during festivals and weekend may increase to 40000 to 50000 per day. Shree Jivdani Devi Sansthan Virar, is a Special Purpose Vehicle (SPV) incorporated under the Companies Act for implementation and operation of Jivdani Passenger Funicular Ropeway at Shree Jivdani Devi temple, at S. No. 398, Virar -E, Virar, Maharashtra on S.No. Class A/Land/ 346/ year 2017-18 dated 25.10.2017 in order to promote tourism & model shift to transit and reduction in traffic congestion in the region. The project was granted Environmental Clearance vide letter No. SEAC-2008/CR.26/TC2 dated 17.09.2009 by Maharashtra SEIAA for development of Ropeway based on Monocable pulsed

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fixed Grip Passenger Ropeway being developed by M/s Damodar Ropeways and Construction Co. (P) Ltd on behalf of Jivdani Devi Sansthan.

Thereafter, construction works had been started but due to change in technology of ropeway, the work had been stopped at the site. The project was then applied at SEAC (Maharashtra) for modernization of the ropeway project which was deferred in 150th SEAC meeting dated 4th May, 2018. The project falls under activity 7 (g) of the schedule of EIA notification, 2006 under category A, due to applicability of general condition as the project lies at 4.4 km E from Notified WLS (Tungareshwar WLS) under Wildlife Protection Act 1972 and 2.5 km from the Notified ESZ of Tungareshwar WLS dated 11th September, 2019. S.O. 3250(E).

The project proponent also informed the EAC that no tree cutting is involved, however they are currently upgrading the existing degraded forest land in the nearby area. Till date more than 2 Lakh trees have already been planted since 2005 and taken care of.

6. The EAC, in its meeting held on 17-18 October, 2019, after detailed deliberations, recommended the project for grant of ToR. As per the recommendation of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords ToR to the project 'Jivdani Passenger Funicular Ropeway at Virar, Maharashtra by M/s Shree Jivdani Devi Sansthan for preparation of the Environment Impact Assessment (EIA) Report and Environment Management Plan (EMP) with the following specific and general conditions in addition to Standard ToR provided at **Annexure-1**:

- (i) Importance and benefits of the project.
- (ii) Status of Stage-I forest clearance.
- (iii) Status of clearance from National Board for Wild Life (NBWL).
- (iv) Certified Compliance Report issued by the MoEF&CC, Regional Office or concerned Regional Office of Central Pollution Control Board or the Member Secretary of the respective State Pollution Control Board for the conditions stipulated in the earlier environmental clearances issued to the project along with an action taken report on issues which have been stated to be partially complied or non/not complied.
- (v) Toposheet map of 10 km distance indicating eco-sensitive areas duly authenticated by the Wildlife warden.
- (vi) Route map of proposed ropeway project.
- (vii) Layout maps of proposed project indicating location of upper station and lower station, building, food court, parking, greenbelt area, utilities etc.
- (viii) Numbers of persons/projections of tourist. Numbers of persons/projections of tourist. Any developmental activity, especially tourism related, leads to lot of ancillary developmental activities. This brings in quite a number of people in project area and in nearby areas as well. No estimation or study of this ancillary incremental population is generally conducted. Many a times this results in development of slums in areas near the project site. The projected study of the number of persons coming in the area, tourists and ancillary population should be conducted meticulously which should include the learning from other examples. This must include permanent resident influx along with the temporary tourists. The projection study should cover a time period of the estimated 30 to 50 years. The results of the study should be used to develop a mitigation plan so that slums do not develop in and around the project site.
- (ix) Cost of project and time of completion.
- (x) Details of air emission, effluents, solid waste and hazardous waste generation and their management.
- (xi) Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract).
- (xii) The E.I.A. should specifically address to vehicular traffic management and parking facilities.

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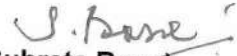
- (xiii) Examine the ground water / water body contamination from septic tank/Soak pit.
- (xiv) The impact of odors from the bio-toilets and its management.
- (xv) The increment in foot falls as a result of implementation of the project along with a justification on the adequacy of the existing and proposed infrastructure including toilets.
- (xvi) An assessment of the impact of all activities being carried out or proposed to be carried out by the project shall be made for traffic densities and parking capabilities in a 2 kms radius from the site. A detailed traffic management and a traffic decongestion plan drawn up through an organization of repute and specializing in Transport Planning shall be submitted with the EIA.
- (xvii) An onsite disaster management plan shall be drawn up to account for risks and accidents. This onsite plan shall be dovetailed with the onsite management plan for the district.
- (xviii) The E.I.A. would study the safety risks associated with the construction and operation of the Ropeway and draw up a detailed safety management plan.
- (xix) The impact of the ropeway on traffic movement, both at the L.T. and the U.T. will be examined and a plan submitted along with the E.I.A.
- (xx) The E.I.A. would also submit a plan ensuring the segregation of passenger cars with luggage cars in the ropeway and work out the minimum size of baggage to be allowed on the passenger cabin cars.
- (xxi) Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included.
- (xxii) Public hearing to be conducted and issues raised and commitments made by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.
- (xxiii) The project proponents shall satisfactorily address to all the complaints/suggestions that have been received against the project till the date of submission of proposals for Appraisal.
- (xxiv) Plan for Corporate Environment Responsibility (CER) as specified under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 1st May 2018 shall be prepared and submitted along with EIA Report.
- (xxv) A tabular chart with index for point wise compliance of above ToR.

General Guidelines

- (i) The EIA document shall be printed on both sides, as far as possible.
- (ii) All documents should be properly indexed, page numbered.
- (iii) Period/date of data collection should be clearly indicated.
- (iv) Authenticated English translation of all material provided in Regional languages.
- (v) The letter/application for EC should quote the MoEF&CC File No. and also attach a copy of the letter prescribing the ToR.
- (vi) The copy of the letter received from the Ministry on the ToR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues mentioned in ToR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific ToR prescribed by the Ministry and the issue raised in the Public Hearing have been incorporated. Questionnaire related to the project (posted on MoEF&CC website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- (viii) Grant of ToR does not mean grant of EC.

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- (ix) The status of accreditation of the EIA consultant with NABET/QCI shall be specifically mentioned. The consultant shall certify that his accreditation is for the sector for which this EIA is prepared.
 - (x) On the front page of EIA/EMP reports, the name of the consultant/consultancy firm along with their complete details including their accreditation, if any shall be indicated. The consultant while submitting the EIA/EMP report shall give an undertaking to the effect that the prescribed ToRs (ToR proposed by the project proponent and additional ToR given by the MoEF&CC) have been complied with and the data submitted is factually correct (Refer MoEF&CC Office memorandum dated 4th August, 2009).
 - (xi) While submitting the EIA/EMP reports, the name of the experts associated with/involved in the preparation of these reports and the laboratories through which the samples have been got analysed should be stated in the report. It shall clearly be indicated whether these laboratories are approved under the Environment (Protection) Act, 1986 and the rules made there under (Please refer MoEF&CC Office Memorandum dated 4th August, 2009). The project leader of the EIA study shall also be mentioned.
 - (xii) All the ToR points as presented before the Expert Appraisal Committee (EAC) shall be covered.
7. The above ToR should be considered for the project 'Jivdani Passenger Funicular Ropeway at Virar, Maharashtra by M/s Shree Jivdani Devi Sansthan, in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006.
8. The project proponent shall submit the detailed final EIA/EMP prepared as per ToR to the Ministry for considering the proposal for environmental clearance within 3 years as per the MoEF&CC O.M. No.J-11013/41/2006-IA-II(I) (P) dated 08.10.2014.
9. The consultants involved in preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/ Laboratories including their status of approvals etc. vide Notification of the MoEF&CC dated 19.07.2013.
10. The prescribed ToR would be valid for a period of three years for submission of the EIA/EMP Reports.
11. This issues with the approval of the competent authority.


 (Dr. Subrata Bose)
 Scientist F

Copy to:

The Member Secretary, Maharashtra State Pollution Control Board Kalptaru Point, 3rd & 4th Floor, Sion Matunga Scheme, Road No 6, Opposite Cine, Sion Circle, Sion (E), Mumbai-400 022.



Annexure-1**7(g): STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR AERIAL ROPEWAYS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

- (i) Examine and submit a brief description of the project-name, project site, geology, topography, nature, size, location of the project, project coverage, master plan, length of the proposed aerial rope way, details of ROW, height from MSL and its importance to the region/ State.
- (ii) Any adverse impact of the works already carried out.
- (iii) Submit the details of facilities viz. administration building, restaurant, toilets, waste collection and disposal etc at Lower terminal and upper terminal including parking area.
- (iv) Submit the details of trees required to be cut for the project, including the type, girth size etc. Necessary permission from competent authority shall be obtained for tree cutting. Compensatory tree plantation shall be carried out and cost provision should be made for regular maintenance. Details to be submitted.
- (v) Examine and submit the likely impact due to influx of people and associated developments
- (vi) Submit maps of the project area and 10 km surrounding area from boundary of the proposed/existing project area, thereby delineating project areas wild life sanctuaries notified under the Wild Life (Protection) Act, 1972/critically polluted areas as identified by the CPCB from time to time/notified eco-sensitive areas/inter state boundaries and international boundaries. Any bio- diversity park or any protected site.
- (vii) Submit baseline data and description of existing situation of the land at the proposed project site including description of terrain, hill slopes, inland topography, slope and elevation, rock types, regional tectonic setting (reported fractures/faulting/folding, warping), and history of any volcanic activity, seismicity and associated hazards.
- (viii) Submit details of power requirement and source. Energy efficiency measures in the activity should be drawn up. PP should also submit details of D.G. Sets along with noise control measures.

- (ix) Details of anticipated impact during construction stage and operation stage w.r.t. landslides, surface drainage etc., should be predicted. The existing surrounding features up to 1 km and impact on them should be addressed separately.
- (x) PP should examine and submit activities associated with aerial ropeway construction and operations and likely associated hazards and accidents. It is therefore desirable that based on the categories of hazards prevailing at the project site, risk assessment may be carried out by specialists in the field and recommendations may be implemented. Risk assessment should be carried out for seismicity, slope stability, soil erosion, and flood hazard.
- (xi) Any litigation pending against the proposed project and/or any direction/order passed by any court of law against the project, if so, details thereof should be provided.
- (xii) Submit Certificate from the competent authorities for safety of ropeway and its monitoring.
- (xiii) Public hearing to be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.
- (xiv) A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.
- (xv) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- (xvi) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- (xvii) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "[http://moef.nic.in/Manual/Aerial Ropeway](http://moef.nic.in/Manual/AerialRopeway)".

TOR Points with Compliance

S No	TOR POINT	TOR COMPLIANCE	Reference
ADDITIONAL TOR POINTS			
1.	Importance and benefits of the project.	The proposed Funicular System will be used as an alternative mode of transport by the pilgrims to Jivdani Devi Temple. It will be an eco & environmentally friendly, time saving Funicular. It will also generate employment for local people and aid in traffic decongestion. Detailed Importance and benefits of the project are given in chapter 8 of Section C.	Chapter 8 of Section C
2.	Status of Stage-I forest clearance.	Forest Clearance has been obtained vide letter no. 8B/37/97-FCW/1513 dated 15.07.1999 and subsequent letter vide letter no. 8B/37/97-FCW/982 dated 02.05.2000. Copy of Forest clearance is enclosed in Section D.	Section D.
3.	Status of clearance from the National Board for Wild Life (NBWL).	NBWL Clearance is Not Required, as ESZ of Tungareshwar Wildlife Sanctuary has been declared (vide S.O. 3250(E) dated 11th September 2019) and the project does not lie within the ESZ boundary. Letter from the Borivali Forest officer clarifying the same is enclosed in Section D.	Section D.
4.	Certified Compliance Report issued by the MoEF&CC, Regional Office or concerned Regional Office of Central Pollution Control Board or the Member Secretary of the respective State Pollution Control Board for the conditions stipulated in the earlier environmental clearances issued to the project along with	Certified Compliance Report is enclosed in Section D.	Section D.

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	an action taken report on issues which have been stated to be partially complied or non/not complied.		
5.	Toposheet map of 10 km distance indicating eco-sensitive areas duly authenticated by the Wildlife warden.	Toposheet map of 10 km distance indicating eco-sensitive areas is given in Chapter 2 Section 2.3 and is enclosed in Section D.	Section D.
6.	Route map of proposed ropeway project.	Route map of the proposed Funicular project is given in Chapter 2 Section 2.6 of Section C.	Chapter 2 Section 2.6
7.	Layout map of proposed project indicating location of upper station and lower station, building, food court, parking, greenbelt area, utilities etc.	Layout Map has been attached in Chapter 2 Section 2.6 of Section C.	Chapter 2 Section 2.6
8.	Numbers of persons/projections of tourists. Any developmental activity, especially tourism related, leads to a lot of ancillary developmental activities. This brings in quite a number of people in the project area and in nearby areas as well. No estimation or study of this ancillary incremental population is generally conducted. Many times this results in the development of slums in areas near the project site. The projected study of the number of persons coming in the area,	The Proposed Pilgrims could vary from about 10000 persons (during normal days) to 40000-50000 (during festive Season). The carrying capacity of the ropeway will be 1200 PPH per direction. The area near the LTP is an already developed area with lots of shops and other ancillary activities. The list of amenities are given in Section 3.12 of Chapter 3. Thus, no such ancillary incremental population is envisaged. Surrounding will be monitored so that no slum development will be developed around the project site.	Section 3.12 of Chapter 3-

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	tourists and ancillary population should be conducted meticulously which should include the learning from other examples. This must include permanent resident influx along with the temporary tourists. The projection study should cover a time period of the estimated 30 to 50 years. The results of the study should be used to develop a mitigation plan so that slums do not develop in and around the project site.		
9.	Cost of project and time of completion.	The estimated project cost is of Rs 32 crores. The scheduled completion of the project will be within 12 to 16 Month after getting all the approval.	Section 2.19 Section C.
10.	Details of air emission, effluents, solid waste and hazardous waste generation and their management.	Details of air emissions, effluents, solid waste and hazardous waste generation with their management are given in Chapter 2 of Section C.	Chapter 2 Section 2.12-2.14
11.	Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract).	Source of water- Vasai-Virar City Municipal Corporation (VVMC). The total water requirement estimated during Normal days is 43 KLD and Festive days is 164 KLD. Water Balance diagram is given in Chapter 2 Section 2.12 of Section C. The water Assurance is enclosed in Section D. Source of Power- Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) Power Requirement- 400 kVA The Power Assurance is enclosed in Section D.	Chapter 2 Section 2.12 Section D. Section D.

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		Manpower during installation- 80 Nos & During Operation-25 Nos.	
12.	The E.I.A. should specifically address vehicular traffic management and parking facilities.	From the total plot area of 19500 sqm, Parking area of 9620 sqm is already present and will be utilised for Parking facility at LTP after repair and renovation which will aid in traffic decongestion on existing roads during festive season. Approximately 500 ECS of Parking Provision will be provided.	Section 2.16 Chapter 2
13.	Examine the ground water / water body contamination from septic tanks/Soak pits.	During the Construction phase, wastewater generated from labours shall be disposed of to septic tanks followed by soak pit. Regular cleaning of the tanks will be done. However, it will be temporary and will be removed after installation of the ropeway will be done. During Operation phase, there will not be a provision of septic tanks/soak pits as STP of 165 KLD capacity shall be used for wastewater treatment and treated water will be completely reused within the project. Also, Bio toilets shall be provided at the UTP. Adequate measures shall be taken to reduce the ground water/water body contamination.	Section 2.12 of Chapter 2
14.	The impact of odors from the bio-toilets and its management.	Bio-Toilets will be provided at UTP. They will be fitted with a proper ventilation system which will ensure proper cross-ventilation of fresh air in the toilets. Moreover, regular cleaning shall be done in order to prevent odours from the bio-toilets.	
15.	The increment in foot falls as a result of implementation of the project along with a justification on the adequacy of the existing and proposed infrastructure including toilets.	The increment in footfall will increase by 20% after funicular being operational. The details of existing and proposed infrastructure are given in Chapter 2 Section 2.7 of Section C.	Chapter 2 Section 2.7
16.	An assessment of the impact of all activities being carried out or proposed to be carried out by the project	Traffic assessment details are given in Chapter 3 Section 3.13 of Section C. The impact and mitigation measures are given in Chapter 4.	Chapter 3 Section 3.13, chapter 4

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	shall be made for traffic densities and parking capabilities in a 2 kms radius from the site. A detailed traffic management and a traffic decongestion plan drawn up through an organization of repute and specializing in Transport Planning shall be submitted with the EIA.	From the total plot area of 19500 sqm, Parking area of 9620 sqm is already present and will be utilised for Parking facility at LTP after repair and renovation. Approximately 500 ECS of Parking Provision will be provided which will help in decongestion of the traffic on the existing roads. The main purpose of Funicular System (Ropeway), it will be used as an alternative mode of transportation for passengers and will help in easing the present arduous journey to the Jivdani Temple situated at the mountain.	Section 2.16 of Chapter 2
17.	An onsite disaster management plan shall be drawn up to account for risks and accidents. This onsite plan shall be dovetailed with the onsite management plan for the district.	Onsite disaster management plan is given at chapter-7 of Section C.	Chapter-7
18.	The E.I.A. would study the safety risks associated with the construction and operation of the Ropeway and draw up a detailed safety management plan.	Safety measures associated with construction of ropeway is given in Chapter 2 Section 2.18 of Section C.	Chapter 2 Section 2.18
19.	The impact of the ropeway on traffic movement, both at the L.T.P and the U.T.P will be examined and a plan submitted along with the E.I.A.	The impact and mitigation measures are given in Chapter 4.	Chapter 3 Section 3.13, chapter 4
20.	The E.I.A. would also submit a plan ensuring the segregation of passenger cars with luggage cars in the ropeway and work out the minimum size of	Passenger trolleys shall not be allowed to carry heavy baggage. There is no requirement for separate dedicated baggage trolleys. The passengers need to deposit their baggage at the counter only where lockers will be provided. Only handy bags will be allowed in the ropeway.	--

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	baggage to be allowed in the passenger cabin cars.		
21.	Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included.	Two separate Litigations launched by Damodar Ropeways & Infra Ltd against the project have been dismissed by the Bombay High Court without stopping the project or giving any stay or injunction. Only Arbitration and conciliation is ongoing relating to claims by both parties on each other relating to the disputes on contract. Related copy of document dated 07.11.2019 and NGT hearing (Original Application No. 100/2020(WZ)) dated 24.12.2020 is enclosed in Section D.	Section D.
22.	Public hearing to be conducted and issues raised and commitments made by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.	The Public Consultation was held on 30th December 2020 at Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd floor, Jivdani Mandir Road, Virar (East), Virar, Taluka Vasai, Disc. Palghar-401305 via digital Platform and public participation. People in the Public hearing supported the project only one objection was raised which is addressed in Chapter 7 Section 7.1 of Section C.	Chapter 7 Section 7.1
23.	The project proponents shall satisfactorily address all the complaints/suggestions that have been received against the project till the date of submission of proposals for Appraisal.	All the complaints/suggestions received against the project till the date of submission of proposals for appraisal during public hearing have been incorporated in the EIA report. One complaint letter was sent to EAC(Infra-2), MoEF&CC by Senior conservation Officer of Conservation Action Trust. The comments given by him have been addressed in the EIA itself and the complaint letter is enclosed in Section D.	
24.	Plan for Corporate Environment Responsibility (CER) as specified under Ministry's Office Memorandum vide F.No.	Corporate Environment Responsibility (CER) as specified under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 1st May 2018 has been suppressed by new Office Memorandum of MOEF F.No.22-65/2017-IA.III dated 30th September 2020 which deliberates on the	

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	22-65/2017-IA.III dated 1st May 2018 shall be prepared and submitted along with EIA Report.	commitments made by Project Proponent for Environment Clearance in lieu of Corporate Environment Responsibility (CER). It is directed that all the activities proposed by the Proponent shall be a part of the Environment Management Plan. The proponent will spend Rs 64 Lakhs for social activities.	
25.	A tabular chart with index for point wise compliance of above ToR.	A tabular chart with index for point wise compliance of above TORs is given.	
STANDARD TOR POINTS			
1	Examine and submit a brief description of the project-name, project site, geology, topography, nature, size, location of the project, project coverage, master plan, length of the proposed aerial ropeway, details of ROW, height from MSL and its importance to the region/ State.	Project-Name: Jivdani Passenger Funicular System (Ropeway) Project Site: Public Registration No. A/397 (Thane), Virar (East), District-Palghar, Maharashtra-401305. Geology: Chapter 3 Section 3.9 Topography: Chapter 3 Section 3.9 Nature of project: Category 'A', Activity - 7(g) Size of the project: 1200 PPH per direction Location of the project: Virar, Maharashtra Master plan is enclosed in Section D. Length of the proposed aerial ropeway: 400 meters ROW: 9 m Height from MSL: The elevation of LTP is 50 m above MSL, & UTP is 222 m above MSL. The Need of Project is explained in Chapter 2 Section 2.2 of Section C.	Chapter 2 & 3 Section D.
2	Any adverse impact of the works already carried out.	The impacts and mitigations of various aspects are given in chapter 4 of Section C.	Chapter 4
3	Submit the details of facilities viz. administration building, restaurant, toilets, waste collection and disposal etc at Lower terminal and upper terminal including parking area.	Details of facilities at Lower terminal and upper terminal is given in Chapter 2 section 2.9 of Section C.	Chapter 2 section 2.9

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4	Submit the details of trees required to be cut for the project, including the type, girth size etc. Necessary permission from competent authority shall be obtained for tree cutting. Compensatory tree plantation shall be carried out and cost provision should be made for regular maintenance. Details to be submitted.	A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint Forest Management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar. No Trees has been cut for the development of the Funicular System (Ropeway).	---
5	Examine and submit the likely impact due to the influx of people and associated developments.	Likely impact due to influx of people and associated developments is given at Chapter 4 of Section C.	Chapter 2
6	Submit maps of the project area and 10 km surrounding area from boundary of the proposed/ existing project area, thereby delineating project areas wild life sanctuaries notified under the Wild Life (Protection) Act, 1972/Critically polluted areas as identified by the CPCB from time to time/ notified eco-sensitive areas/ inter-state boundaries and international boundaries. Any bio-diversity park or any protected site.	The project lies at 4.4 km E from Notified ESZ of WLS (Tungareshwar WLS) under Wildlife Protection Act 1972 and 2.5 km from the Notified ESZ of Tungareshwar WLS dated 11th September 2019. S.O. 3250(E). The Topographical map showing the same is enclosed in Section D. The details of all the Eco Sensitive areas within 10 km are discussed in Chapter 2 Section 2.3.3 of EIA report. No Biodiversity park is there in the study area.	Section D. Chapter 2 Section 2.3.3

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7	Submit baseline data and description of existing situation of the land at the proposed project site including description of terrain, hill slopes, inland topography, slope and elevation, rock types, regional tectonic setting (reported fractures/faulting/folding, warping), and history of any volcanic activity, seismicity and associated hazards.	Baseline data and description of the existing situation of the land at the proposed project site is given in Chapter 3 of Section C.	Chapter 3
8	Submit details of power requirement and source. Energy efficiency measures in the activity should be drawn up. PP should also submit details of D.G. Sets along with noise control measures.	Power requirement will be 400 kVA and source will be Maharashtra State Electricity Distribution Co. Ltd. Energy conservation measures are given in Chapter 5 Section 5.3 of Section C. Details of D.G. Sets along with noise control measures are given in Chapter 2 Section 2.13 & 2.15 of Section C.	Chapter 5 Section 5.3 Chapter 2 Section 2.13 & 2.15
9	Details of anticipated impact during construction stage and operation stage w.r.t. landslides, surface drainage etc., should be predicted. The existing surrounding features up to 1 km and impact on them should be addressed separately.	The proposed project falls under Seismic zone III and as per the Landslide hazard zonation map of India by GSI, it doesn't fall under landslide prominent zone of India. To check the stability of rock and soil of the core zone a proper Geotechnical Investigation has been carried out and as per the Geotechnical Investigation Report (Section D) Overall drainage pattern of the area is by and large dendritic. The natural slope of the area is towards the west i.e seashore and the nearest water body within one km is Virar Reservoir 0.47 Km NW and Virar Dam 0.87 Km SE which is opposite site of the slope direction. As a precautionary measure during the construction period, runoff from the construction site shall not be allowed to	Chapter 4

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		stand (water logging) or enter the roadside or nearby drain. Detailed Environmental Impacts due to proposed activities and their mitigation measures are addressed in Chapter 4 of Section C.	
10	PP should examine and submit activities associated with aerial ropeway construction and operations and likely associated hazards and accidents. It is therefore desirable that based on the categories of hazards prevailing at the project site, risk assessment may be carried out by specialists in the field and recommendations may be implemented. Risk assessment should be carried out for seismicity, slope stability, soil erosion, and flood hazard.	Risk assessment of activities associated with ropeway construction and operations is given at Chapter 7 of Section C.	Section D.
11	Any litigation pending against the proposed project and/or any direction/order passed by any court of law against the project, if so, details thereof should be provided.	Two separate Litigations launched by Damodar Ropeways & Infra Ltd against the project have been dismissed by the Bombay High Court without stopping the project or giving any stay or injunction. Only Arbitration and conciliation is ongoing relating to claims by both parties on each other relating to the disputes on contract. Related copy of document dated 07.11.2019 and NGT hearing (Original Application No. 100/2020(WZ)) dated 24.12.2020 is enclosed in Section D.	Section D.
12	Submit Certificate from the competent authorities for safety of ropeway and its monitoring.	Certificate from the competent authorities for safety of ropeway and its monitoring has been applied to PWD and enclosed in Section D.	Chapter 2 & 6

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		Details of safety measures which shall be adopted is given in Chapter 2 Section 2.18 and its monitoring is given in Chapter 6 of Section C.	
13	Public hearing to be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry.	The Public Consultation was held on 30th December 2020 at Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd floor, Jivdani Mandir Road, Virar (East), Virar, Taluka Vasai, Dist. Palghar-401305 via digital Platform and public participation. People in the Public hearing supported the project only one objection was raised which is addressed in Chapter 7 Section 7.1 of Section C.	Chapter 7 Section 7.1
14	A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.	Noted	
15	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.	Two separate Litigations launched by Damodar Ropeways & Infra Ltd against the project have been dismissed by the Bombay High Court without stopping the project or giving any stay or injunction. Only Arbitration and conciliation is ongoing relating to claims by both parties on each other relating to the disputes on contract. Related copy of document dated 07.11.2019 and NGT hearing (Original Application No. 100/2020(WZ)) dated 24.12.2020 is enclosed in Section D.	Section D.
16	The cost of the project capital cost and recurring cost) as well	The cost of the project capital cost and recurring cost) as well as the cost towards	Chapter 10 Section 10.4

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	as the cost towards implementation of EMP should be clearly spelt out.	implementation of EMP is given in Chapter 10 Section 10.4 of Section C.	

SECTION C-ENVIRONMENT IMPACT ASSESSMENT REPORT

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1. Introduction

Shree Jivdani Devi Sansthan Virar is proposing to develop a **Funicular (Ropeway)** named as “**Jivdani Passenger Funicular System (Ropeway)**” as an **alternative** mode of transportation for **passengers and will help in easing the present arduous journey to the Jivdani Temple situated at mountain.** The proposed ropeway will be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra by **Shree Jivdani Devi Sansthan Virar** which is a Special Purpose Vehicle (SPV) incorporated under the Companies Act for implementation and operation of Jivdani Passenger Funicular System (Ropeway). 19500 m² of land was diverted by the Forest department and allotted to Shree Jivdani Devi Mandir Trust for the renovation and its allied construction, out of which 748.11 m² will be used for the development of UTP, 518.32 m² will be used for the development of LTP and 3600 m² shall be used for the development of Funicular system Track. Thus, a total of 4866.43 m² of undeveloped land will be required for the development of the Funicular project (including two Terminal Stations, towers, Funicular system corridor, waiting hall, lift, entrance hall, bio toilets, sheds & stairs). The length of the funicular system will be 400 m. There will be a continuous Funicular track from Lower Terminal Point to Upper Terminal Point.

Jivdani Mandir is a temple located on a hill in Virar, Maharashtra. The temple is on the hill, almost 230 m above sea-level. The Goddess rests in a temple situated about 900 steps above the ground on a hill that forms a part of the Satpura Range in Virar, a northern Mumbai suburb, about 60 km away from Mumbai. The hill offers a very picturesque view of Virar and its vicinity. Overall 120 days of a year devotees visit the temple in large numbers. One material ropeway was installed during 2002-2003 which was modified in 2004 to also carry passengers. It was used for ease of pilgrims who are either handicapped or unable to climb the stairs to reach the temple. As it was installed before EIA Notification 2006 therefore EC was not applicable on that project.

We immediately applied to the Ropeway Advisory Board of PWD Maharashtra for clarification about whether a Funicular System is an Aerial Ropeway or not in their jurisdiction.

Earlier an Environmental Clearance was granted vide letter no. SEAC-2008/CR.26/TC2 dated 17.09.2009 by Maharashtra SEIAA for development of Ropeway based on Monocable pulsed fixed Grip Passenger Ropeway to M/s Damodar Ropeways and Construction Co. (P) Ltd on behalf of Jivdani Devi Sansthan. In 2017, a case was filed by M/s Damodar Ropeways against Jivdani Devi Mandir trust regarding inability to start the work and get the approvals. But, later

the construction work was started for the Monocable Passenger ropeway system after the grant of Environment Clearance. Since the trust was concerned about the safety of the pilgrims therefore new technology “Funicular technology” was introduced in the project which is more safer for the passengers. Thereafter, the construction work was stopped at the site. The Trust studied the Bombay Aerial Ropeway Act and got the opinion that Funicular Systems are not covered in the Bombay Aerial Ropeway Act. Therefore construction was started again for the Funicular System.

Due to change in technology, the trust Shree Jivdani Devi Sansthan Virar applied the same project under modernization of ropeway technology to SEAC Maharashtra under item 7(g), category ‘B’ of EIA notification 2006 without engaging any Environment Consultant. The case was deferred due to few conditions.

Later ESZ of Tungareshwar Wildlife Sanctuary was declared on 11th September 2019, hence, Project Proponent involved Accredited Consultant M/s Perfact Enviro Solutions Pvt. Ltd. for preparing an Environment Impact Assessment report based on Appendix III of the said notification for grant of Environmental Clearance. The project falls under **schedule 7(g)** of the EIA notification, 2006 and its subsequent amendments under **category A**, due to applicability of **general condition** as the project (UTP) lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972. Hence, the application for grant of Terms of Reference was submitted as a fresh proposal at MoEF&CC and the project was granted Terms of Reference by MoEF&CC vide letter no. **F. No. 10-46/2019-IA-III dated 3.12.2019** for the development of a new passenger Funicular system (Ropeway).

The Public Consultation was held on 30th December 2020 at Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd floor, Jivdani Mandir Road, Virar (East), Virar, Taluka Vasai, Disc. Palghar-401305 via digital Platform and public participation.

Court Case (NGT) and Litigations:

A court case was filed in the Bombay high court by M/s Damodar Ropeways & Infra Ltd., while the court case is under process in the High Court. Two separate Litigations launched by Damodar Ropeways & Infra Ltd against the project have been dismissed by the Bombay High Court without stopping the project or giving any stay or injunction. Only Arbitration and conciliation is ongoing relating to claims by both parties on each other relating to the disputes on contract. Evidence of both the parties have been filed and the matter would now proceed for the cross examination of the Claimant’s witness. No particular date is given in the matter due

to the pandemic situation. The latest order issued on 07.11.2019 is enclosed in Section D.

As per NGT hearing (Original Application No. 100/2020(WZ)) dated 24.12.2020, grievance in this application is against Funicular Ropeway Project, According to the applicant, the project is on forest land. The matter ought to be first looked into by the MoEF&CC and further appropriate action taken, in accordance with law within two months. The case is further listed for further consideration on 12.03.2021 but the case didn't held, the minutes of meeting are pending for the same. Detailed copy of order is enclosed in Section D.

1.1. Purpose of the Report

The EIA Study for the proposed project as per the requirements of the EIA Notification, 2006 and its subsequent amendments with an objective of obtaining an Environmental Clearance (EC) has been done to make a comprehensive impact assessment of the project on the environment and its mitigation measures. As the proposed project will be the installation of the Passenger Funicular System (ropeway) and will be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305, the project falls under **Schedule 7(g)** and due to the applicability of the general condition as the project lies (UTP) at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972, the project falls under **Category A** and is required to be appraised by the EAC committee at MOEF&CC. The project was granted **Terms of Reference** by the MoEF&CC. We are now submitting the EIA report along with compliance to the prescribed Terms of Reference conditions for the purpose of submission to MoEF&CC Environmental Appraisal committee (EAC) for seeking Environmental clearance.

Description of activities and importance to the region:

Large numbers of devotees visit Shree Jivdani Devi Temple, Virar every day and particularly on holidays and festival days for the Darshan of Shree Jivdani Devi . Presently, their journey to the Temple is arduous as they have to climb over 900 steep steps up the Jivdani hill to reach the temple. The average pilgrims are approximately 10000 per day and during festivals and weekends may increase to 40000 to 50000 per day. The proposed Passenger Funicular System (Ropeway) will ease their journey by saving their travel time. The activities and facilities proposed at LTP are Waiting Hall, lift, Entrance hall, Toilets, sheds and at UTP are Lift, Sheds, Bio Toilets, Stairs etc

Employment Generation: The construction phase will involve about 80 skilled and unskilled people. During the operational phase, about 25 staff would be required for technical and administrative functions. The employment opportunities will be given to the local populace.

1.2. Project and Project Proponent

The proposed project titled “Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305 by Shree Jivdani Devi Sansthan Virar.

Table 1. Latitude and Longitude of of the terminal points

Station	Latitude	Longitude
LTP	19°27'48.39"N	72°49'30.92"E
UTP	19°27'58.75"N	72°49'38.44"E

Name of the Applicant: Mr. Pradeep Vishnu Tendolkar

Address: Public Registration No. A/397, Shree Jivdani Marg, Virar (East), District-Palghar, Maharashtra-401305

Mobile: 0250-2523698, 0250-2523398

E-Mail: jivdanidtt@gmail.com

Shree Jivdani Devi Sansthan, Virar is a registered charitable trust in Maharashtra that manages the affairs of Shree Jivdani Devi Temple. The Managing Trust for the Temple, Shree Jivdani Devi Sansthan studied various alternatives to provide transport facilities to the devotees to climb the hill. The Trust appointed M/s Yashita Automotive Engineering Pvt Ltd, as Technical Consultants for carrying out initial studies and preparing a feasibility report for the project.

1.3. Brief description of Project

Location: Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305

Length of Funicular track: 400 m

Area: 4866.43 m² (including two Terminal Stations, towers, Funicular track, and activities and facilities at LTP and UTP)

Locational advantages: The terminal points selected have a good site approach and the area is structurally stable and found adequate for the terminal stations, and the Funicular System (Ropeway) track is short.

Map showing Accessibility to the project site with 1 km radius is given below:



- 1. To Determine the status of current environmental parameters:** This study involves assessment of present environment and ecology, flora and fauna, land use/ land cover, socio-economic condition of the area, monitoring of atmospheric pollutants like air, water, soil, noise and meteorological parameters. Studies in this respect were carried out in core zone (i.e. project area) as well as in buffer zone (area covering 10 km radius from the project) as per the guidelines of MoEF&CC and TOR Granted.
- 2. To Predict, Assess, categorise, quantify and mitigate probable significant environmental impacts (considering alternate assignments, baseline scenario and public opinion):** In order to predict the expected impact of processes and activities of the project on various environmental factors, a detailed study of interrelationship of project activities and environmental factors has been carried out in this report.
- 3. To prepare a detailed Environmental Management Plan (EMP) with best available management tools and techniques including monitoring, reporting along with Operation and Maintenance Budget for better implementation.**

4. **Undertake Risk assessment for the proposed project and lay down risk mitigation measures for the safe Operations.**

1.5. EIA Methodology

The methodology adopted while preparing the EIA report is given below in the following steps.

1. **Screening:** Reviewing of the study area and the project description & activity associated with the project, identifying their potential impacts on various environmental components, applicability of the regulatory framework, compilation of the available baseline data, categorization and identification of the schedule & activity number of the project as per the EIA Notification, 2006.
2. **Scoping:** It involves the submission of the Application for the terms of reference & appraisal by EAC for scoping for the EIA study. The proposal for the grant of terms of reference was submitted to MoEF&CC and Accordingly TOR was granted by the MoEF&CC vide letter F. No. 10-46/2019-IA-III dated 03.12.2019 based on which this EIA study has been conducted.
3. **Project Description:** The detailed study and project description was carried out as per the Project pre feasibility report and additional information provided by the Project Proponent Shree Jivdani Devi Sansthan, Virar the detailed project description is covered in Chapter 2 and has been considered as an input for the impact assessment & suggesting mitigation measures. Occupational health & safety and their Hazards have also been identified and covered in the Chapter.
4. **Environmental Baseline Study:** The Baseline study was carried out for the Summer season (March 2019-May 2019). The information has been collected and compiled from primary and secondary sources. Primary environmental data has been generated through field study within the impact zone (Core Zone and Buffer Zone) for various components of the environment viz. Air, Noise, Soil, Water, Traffic. The Land use/land Cover, Ecology & Biodiversity and Socioeconomic baseline has been prepared through primary survey and collection of secondary data.
5. **Impact Assessment & Analysis of Alternatives:** The detailed methodology for the assessment of the impact associated with the project activities are given in Chapter 4. This involves identification, prediction and quantification of the impacts based on the activities associated during the construction and operation phase. The impacts have been assessed as per the information provided by the proponent and the experts judgement. The methods involved qualitative assessment, expert/professional judgement to quantitative modelling output. Worst case scenario has been assumed while

identifying the impacts and accordingly mitigation measures have been proposed.

6. **Environmental Management and Monitoring Plan:** Based on the baseline study and the impact assessment the Environmental monitoring Plan has been prepared for ambient air & noise, water & wastewater, soil, solid waste, landscaping, energy saving, work zone area, Hazardous chemicals monitoring etc are covered in Chapter 6.
7. **Risk Assessment (RA):** Risk Assessment was carried out in order to ensure effective management of any emergency situations that may arise from the technical failure/accident of Passenger Funicular System (Ropeway), Human-Wildlife conflicts. The RA provides the appropriate preventive and risk mitigation measures. (Chapter 7).
8. **Project Approvals:** The EIA study conducted will be used as a guiding document for the decision making for the proposed project by MoEF&CC as per the EIA Notification, 2006.

1.6. Limitations

This EIA study is based on certain scientific principles, expert systems and professional judgement to certain facts with resultant subjective interpretation and the baseline data collected. The report has been prepared based on the information provided by Shree Jivdani Devi Sansthan, Virar and information gathered by the M/s Perfect Enviro Solutions Pvt. Ltd. team. The impact prediction and assessment is done based on the project description covered in the Chapter 2. If information to the contrary is found, the finding in this EIA may need to be modified accordingly.

The report preparation is not for the purpose of advertisement, sales, promotions, or recommendation of the client's interest or Public attention. The client acknowledges that the report prepared by M/s Perfect Enviro Solutions Pvt. Ltd. is only for the absolute use of the client and for the grant of the Environmental clearance and will not be used for any promotional and commercial purpose.

1.7. Applicable Environmental Laws

Following legislations are applicable to the project

- The Forest (Conservation) Act 1980, With Amendments Made In 1988
- The Water (Prevention And Control Of Pollution) Act 1974
- The Air (Prevention And Control Of Pollution) Act, 1981
- The Water (Prevention And Control Of Pollution) Cess Act, 1977
- The Environment (Protection) Act, 1986
- Solid Waste Management Rules, 2016

- Hazardous And Other Wastes (Management And Transboundary Movement) Rules, 2016.
- Battery Waste Management Rules, 2016
- E-waste (Management & Handling) Rules, 2016 And Amendment 2018
- Construction & Demolition Waste Management Rules, 2016
- Plastic Waste Management Rules 2016 And Amendment 2018
- Environment (Protection) Amendment Rules, 2018
- The Noise Pollution (Regulation And Control) Rules, 2000
- EIA Notification, 2006 And Its Amendment
- Norms & Codes Applicable to the Project: -
- Energy Conservation Building Code (ECBC Codes) 2017

2. Project Description

2.1. Type of Project

The proposed project “Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305 by Shree Jivdani Devi Sansthan, Virar. The project being an Aerial Ropeway falls under the item 7 (g) of the EIA notification, 2006 and is a designated Project as per Schedule and falls under category A due to the applicability of the general condition. The project (UTP) lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972.

2.2. Need of the proposed project

Large numbers of devotees take Darshan at Shree Jivdani Devi Temple, Virar East, every day and particularly on holidays and festival days. Presently, their journey to the Temple is arduous as they have to climb over 900 steep steps up the Jivdani hill to reach the temple. The average pilgrims are approximately 10000 per day and during festivals and weekends may increase to 40000 to 50000 per day. The Managing Trust for the Temple, Shree Jivdani Devi Sansthan studied various alternatives to provide transport facilities to the devotees to climb the hill.

The proposed Funicular system project, apart from serving tourists of Jivdani temple:

- Environment-friendly alternative transport to Jivdani Devi Temple.
- Reduction in the pressure on road transport, thereby, reducing air pollution.
- Beautiful view of the area from Funicular cabin
- Saving on travel time.
- Safe and Eco-Friendly mode of transport.
- Provision of direct and indirect employment to the nearby people.

Thus, Shree Jivdani Devi Sansthan, Virar has proposed to install the Funicular System (Ropeway).

State: Maharashtra



Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar



Figure 3. Map showing Study area with 10 km radius

The Project site is well connected with Kopri-Naka-Chandansar Rd at 1.09 km NW. the connectivity to the site is given below:

Table 2. Connectivity to Project site

S. No.	Accessibility	Description	Distance & Direction
1.	Highway/ Road	Kopri-Naka-Chandansar Rd NH-8	1.09 km NW 6.10 km E
2.	Railway Station	Virar Railway Station NalaSopara Railway Station Vasai Road Railway Station	1.66 km SW 5.04 km SW 8.97 km S
3.	Airport	CSIT Airport	41.70 Km S

Map showing Accessibility to the project site



Figure 4. Accessibility Map of 1 km of Proposed Project Site

2.3.1. Coordinates of the LTP and UTP

The Latitude & longitude of the site are given below:

Station	Latitude	Longitude	Elevation
LTP	19°27'48.39"N	72°49'30.92"E	52 msl
UTP	19°27'58.75"N	72°49'38.44"E	222 msl

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar



Figure 5. Google image showing coordinates of the site

2.3.2. Topographical Map (showing 10 km radius around the project site)

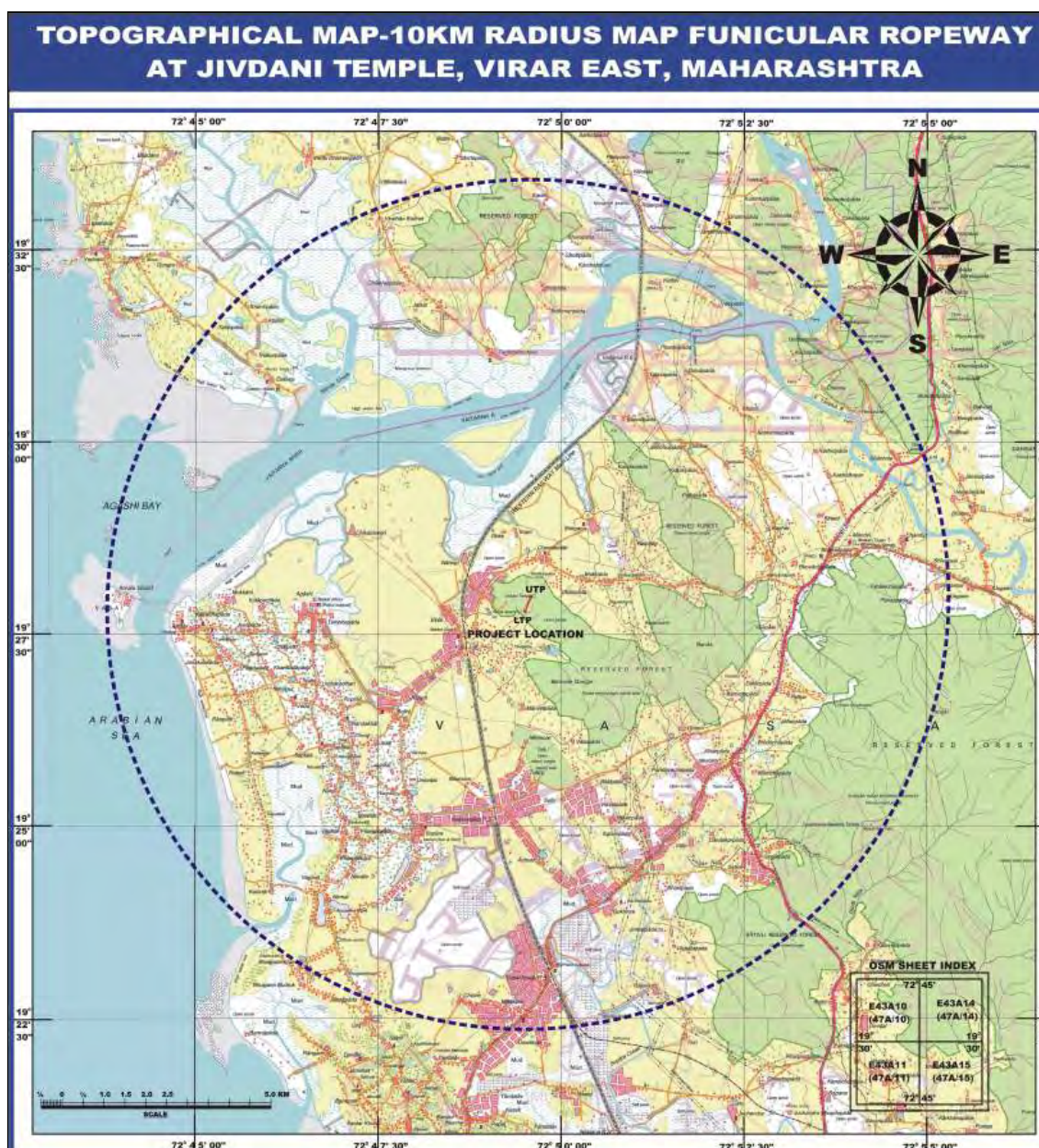


Figure 6. Topographical Map showing study area (10 Km radius)

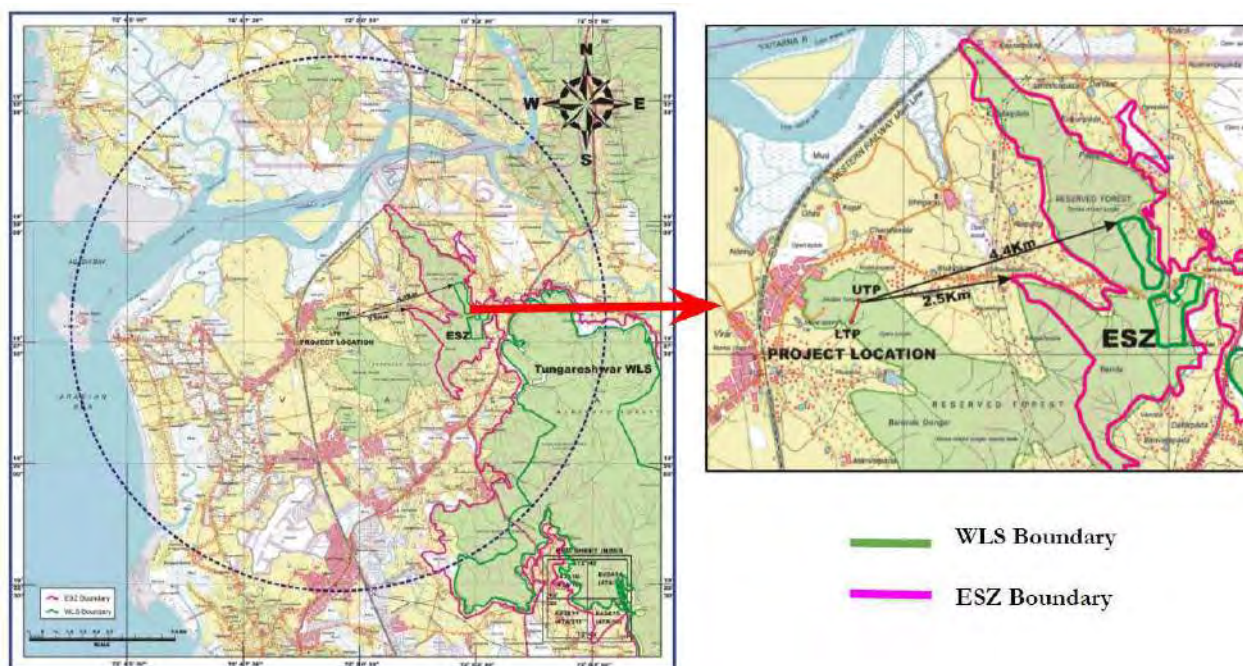


Figure 7. Topographical Map showing Tungareshwar WLS & its ESZ in Study area (10 Km radius)

2.3.3. Environment settings of the project (10km radius)

The Project area (UTP and LTP) falling in an unnamed Reserve forest. The Boundaries of the forest area - North, East, West, & South are defined by reserved forest survey no. 398 of village Virar.

Table 3. Environment setting of project

Environment Setting	Distance and Direction
Tungareshwar WildLife Sanctuary	4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary
A tank by the west side of the road from Umralla village to Bolinj.	4.55 Km SW
A mound locally known as BurudKot.	6.30 km SW
A mound locally known as a SonarBhata	6.41 km SW
Arnala Fort	9.76 km W
Water sources or other water bodies	
Virar Reservoir	0.47 Km NW
Virar Dam	0.87 Km SE

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
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Kopori Lake	1.43 km N
Waliv Talav	1.62 km SE
Gass Road Lake	8.36 km SW
Ranale Talav	2.17 km SE
Akkarbhat Lake	5.17 km SW
Manvel Pada Lake	5.18 km SW
Zagodi Pond	5.43 km SW
Umarale Lake	5.79 km SW
Lake Near Sapora Gaon	5.85 km S
Lake Near Torbhat	5.91 km SW
Stpala Lake	6.05 km SW
Chakreshwar Talav	6.39 km SW
Pelhar Dam	6.48 Km SE
Shirgaon Dam	1.29 Km SE
Wetland Near Gaskopari	7.55 km NW
Wetland Near Datiware	7.76 km NE
Tansa River	3.14 km N
Achole Talav	8.26 km SW
Chulna Talav	8.31 km SW
Deewanman Talav	9.22 km SW
Manikpur Talav	9.35 km SSW
Nirmal Lake	9.77 km S
Forest	
Reserve Forest	Project area (UTP and LTP) falling in an unnamed reserve forest.
Reserve forest near Thembikhodave	6.36 km N
Tungar Inam Reserve forest	7.19 km SE
Sativli Reserve forest	8.08 km SE
RF near Kandarvan	9.47 km NE
Arabian Sea	7.46 km NWW
International Boundary	7.46 km NWW



2.3.4. Site Photographs



Figure 9. Shree Jivdani Devi Temple and existing infrastructure near Temple

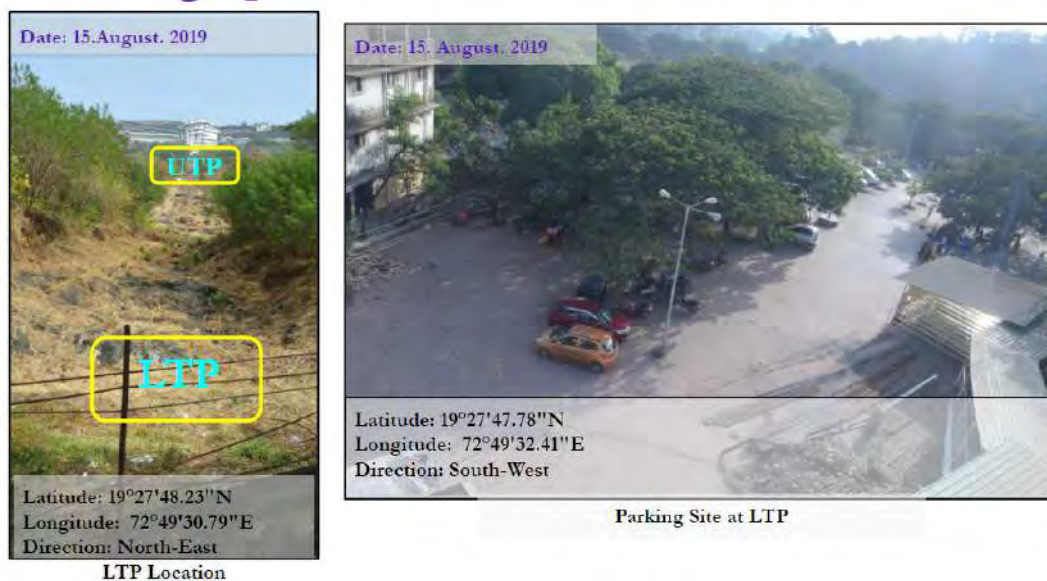


Figure 10. Proposed Passenger Funicular System (Ropeway)

2.3.5. Seismicity

Project site is located in seismic zone- III (moderate intensity zone) according to the Indian Standard Seismic Zoning Map.

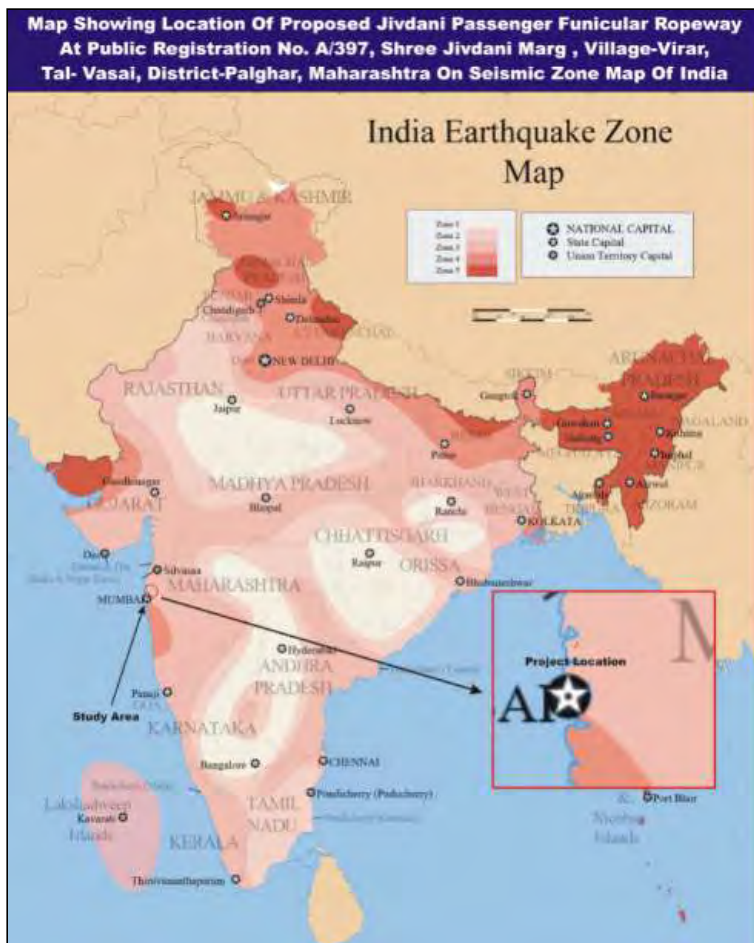


Figure 11. Map showing seismicity of the area

2.4. Project Description

Table 4. Project brief description

Project details		
Particulars	Unit	Details
Project Cost	Rs in Crores	32
Total Plot area	m ²	19500
Area on Funicular system to be installed	m ²	4866.43

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
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Area of Lower Terminal Point (LTP)	m ²	518.32
Area of Upper Terminal Point (UTP)	m ²	748.11
Area of Funicular track	m ²	3600
Length	m	400
Level Difference	m	170
Number of Cabins	No.	4
Carrying Capacity	PPH	1200 per direction
Service Details		
Power Requirement	kVA	400
DG Sets (Back-up Power)	kVA	1 x 500
Auxiliary DG set	KW.	1x 25
Staff	No.	25
Visitors	No.	10000 (Normal days) 40000-50000 (Festive days)
Total water requirement	KLD	43 (Normal days) 164 (Festive days)
Total waste water generation	KLD	35 (Normal days) 137 (Festive days)
Total Solid Waste Generation	kg/ day	500 (Normal days) 2000 (Festive days)

Technical Description of Passenger Funicular System (Ropeway)

Table 5. Technical description of Ropeway

Particulars	Technical Details
System	Funicular System (Ropeway)
Carrying capacity	1200 PPH per Direction
Maximum speed, max acceleration	0 to 4 m/ sec, 0.2 m/sec ²
Hours of Operation	12 hr
Length of Funicular	400 m
Vertical Rise	170 m
Number of Cabins	4
Travel Time	3 min

Vertical rise	170 m
Track gauge	1500 mm
Rail attachment spacing	0.8 m
Rail size	52 Kg/M (IU)
Cars and Traction	-80 passenger + 1 driver capacity, 4 doors on each side, passenger door operations will be automatic. Wheel diameter- 500 mm. Spring loaded emergency rail brakes, Auxiliary electric driven. -40 mm haul rope connected by rope drum. Traction on top with 2 groove bull wheel, main motor 355 KW, emergency motor 15 KW, active brake and emergency

2.5. Details of Development

2.5.1. Land Area Details (Forest/Non Forest and ownership)

The Project area (UTP and LTP) lies in the reserve forest. The Boundaries of the forest area - North, East, West, & South are defined by reserved forest survey no. 398 of village Virar.

The total land of 1.95 Ha has been transferred by Forest Department to Shree Jivdani Devi Mandir Trust, Virar vide letter no. कक्ष - १ /२०/जमीन /६३५७ dated 1.02.2005. The Land Papers are enclosed in Section D.

2.5.2. Details of Approvals

Table 6. Approvals related to project

S.No.	Approvals	Status
1	Forest Clearance	Forest Clearance has been obtained for area 1.95 ha vide letter no. 8B/37/97-FCW/1513 dated 15.07.1999 and subsequent letter vide letter no. 8B/37/97-FCW/982 dated 02.05.2000 and enclosed in Section D.
2	Power Assurance	Obtained and enclosed in Section D.
3	Water Assurance	Obtained and enclosed in Section D.

4	Consent To Establish (CTE)	Applied and enclosed in Section D.
5	PWD Approval	Obtained and enclosed in Section D.
6	NBWL Clearance	Not Applicable, as project lies outside the ESZ boundary of Notified Tungreshwar Wildlife Sanctuary

2.6. Proposed Layout Plan

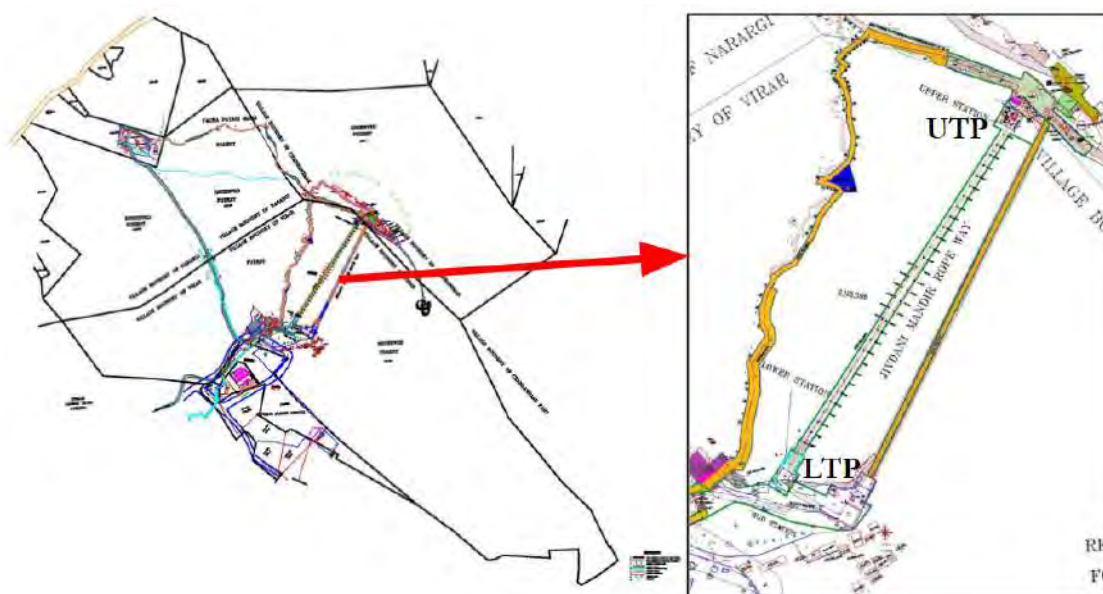


Figure 12. Layout Plan showing Funicular Ropeway-terminal points & Corridor

2.7. Resources for the Project

2.7.1. Land

The total area of 1.95 Ha has been transferred by the Forest Department to Shree Jivdani Devi Mandir Trust, Virar vide letter no. कक्ष - १ /२०/जमीन /६३५७ dated 1.02.2005 for construction. Area Bifurcation is given below:

Table 7. Area bifurcation of 1.95 ha land

S. No.	Area Description	Area (m ²)
1.	Shree Jivdani Devi Mandir, Sabha Mandap and Funicular system (UTP)	2500.00

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2.	Funicular Rail Track	3600.00
3.	Repair of Road leading to Shri Jivdani Temple	1100.00
4.	Repair of existing parking road	9620.00
5.	Funicular system base station	600.00
6.	Shree Baronda Mandir	300.00
7.	Shree Mahakali Mandir	300.00
8.	Shree Dutt Mandir	300.00
9.	Shree Ganesh Mandir, Sabha Mandap, Offices and related construction works	500.00
10.	Toilets	180.00
11.	Bhandara Shed	500.00
12.	Total Plot Area	19500.00 Sq. m (1.95 Ha)
13.	Permissible FSI	0.30
14.	Existing Built-up Area	4241.67
15.	Proposed Built-up Area	1349.22
16.	Total Built-up Area	5590.89

The area required for the construction of the terminal stations and Funicular corridor would be about 4866.43 m². Area Bifurcation is given below:

Table 8. Area Break up

Area required for	Unit	Area Details	Percentage (%)
Lower Terminal Station	m ²	518.32	10.65
Upper Terminal Station	m ²	748.11	15.37
Funicular (Ropeway) Corridor	m ²	3600.00	73.98
Total Area for Funicular System (ropeway)	m²	4866.43	100.00

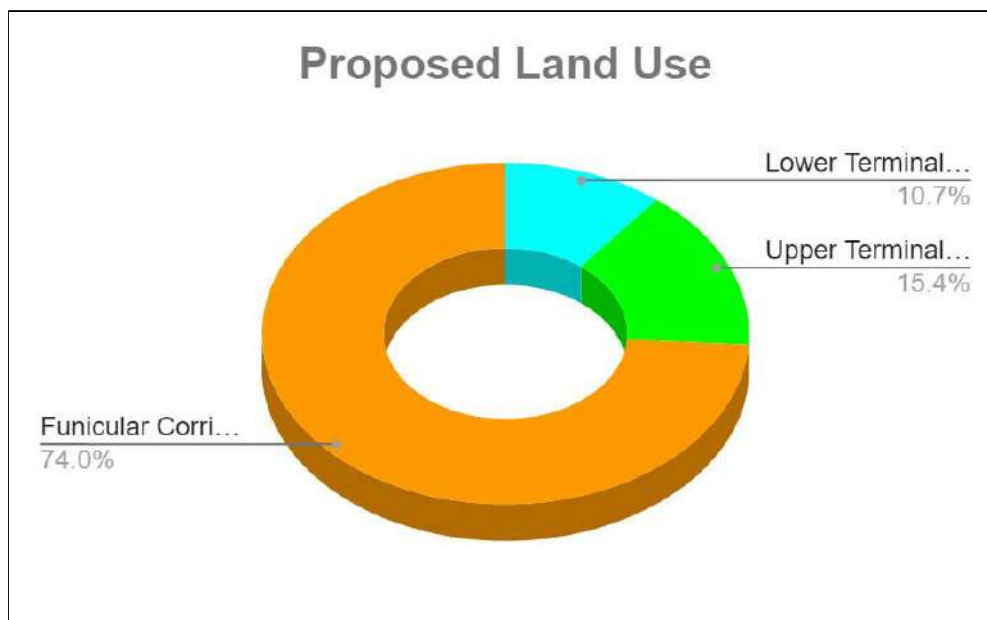


Figure 13. Land use

2.7.2. Manpower

During construction phase: There will be a temporary influx of 80 no. of labour for the proposed Passenger Funicular System (Ropeway) project.

During operation phase: Approx. 25 no. of staff will be employed for technical and administrative functions.

The un-skilled labor will be procured from the local villages / towns providing employment opportunities to the local populace. The basic requirement of manpower for running a Passenger Funicular System (Ropeway) project shall be categorized as

Table 9. Manpower Requirement

Technical	Non-Technical
Preventive maintenance	Ticketing
Breakdown maintenance	Accounting/Stores
Supervision	Security

Proposed Pilgrims could vary from about 10000 persons (during normal days) to 40000-50000 (during festive Season).

2.7.3. Power and fuel Requirement

During Operation Phase: The total power requirement of the unit will be **400 kVA** which will be sourced from **Maharashtra State Electricity Distribution Co. Limited (MSEDCL)**.

Table 10. Power and back up

Particulars	Unit	Details
Power Requirement	KVA	400
D.G. Set back up	KVA	1 x 500 Fuel- Low Sulphur Diesel (LSD)
Auxiliary DG set	KW	1x 25 Fuel- Low Sulphur Diesel (LSD)

2.7.4. Water

During installation phase: Water Requirement will be for Passenger Funicular System (Ropeway) development, dust suppression & human consumption. It is estimated that around 3 KLD & 2 KLD of water will be required for Domestic and Construction activities respectively. 2.5 KLD of wastewater will be generated from labours which will be disposed of to a septic tank followed by a soak pit. The fresh water will be sourced through VVMC supply and for construction activities STP treated water will be used.

During Operation phase: Source of Freshwater: VVMC

The total water requirement during Normal days will be 43 KLD and during Festival days will be 164 KLD out of which 11 KLD and 41 KLD will be fresh water and rest will be met by inhouse treated water. The wastewater generated will be treated in a Sewage Treatment Plant of 165 KLD capacity.

2.8. Details of Raw Materials

The major materials required for construction of the project are steel, cement, bricks, flooring tiles/ stones, sanitary and hardware items, electrical fittings, structures for terminal points etc which will be sourced through the nearby market and local vendors.

2.9. Facilities and Amenities

At LTP: Waiting Hall, lift, Entrance hall, Toilets, Sheds.

At UTP: Lift, Sheds, Bio Toilets, Stairs.

2.10. Flow Chart of activities during construction and operation phase

2.10.1. During Construction Phase



Figure 14. Activities involved in Construction Phase

2.10.2. During Operation Phase



Figure 15. Activities involved in Operation Phase

2.11. Environmental issues in the project

Table 11. Environmental issue and their control system

S.no.	Activities	Associated issues	Control System
1.	Air Pollution		
	Operation of DG sets, Odour generation from toilets	-Pilgrims may be affected by the gaseous pollutants/emissions from tractor movement, DG set operation as these may cause eye irritation, breathing problems. Wildlife may also be affected due to the pollutants similarly. -Odour may affect the psychological/ aesthetics stability of the nearby population.	Detail is given at section 2.13
2.	Noise Pollution		
	Operation of Passenger Funicular System (Ropeway) and Equipments- STP, DG sets, Pumps, and other machineries etc	-During the Passenger Funicular System (Ropeway) operation, noise and vibration may be generated which may cause speech interference, annoyance, hearing impairment, headache and disturbance of peace of mind in the workers.	Detail is given at section 2.15
	Transportation of staffs, raw material, waste, finished product	-Due to transportation of materials and machinery for installation high levels of noise may be generated which may cause physiological & psychological effects on workers like annoyance, speech interference, headache, Auditory impact, increase in heartbeat of elderly people.	
3.	Water Pollution		
	Generation of domestic sewage by staff. Spillage of leakage of used oil from DG set operation and machineries lubrication	-Improper disposal of waste generated may affect the quality of groundwater.The waste water If not properly disposed off, then it can deteriorate the surface water quality of nearby water bodies by increase in the no. of pathogens, BOD, COD, TSS, Cl2 and making water unfit for consumption. -Spillage of oil & chemicals, if in any case encounters with water bodies can deteriorate the groundwater & surface water body, which in turn may affect aquatic life also.	Detail is given at section 2.12

4.	Solid waste, Hazardous waste and Non-Hazardous waste		
	Daily activities of the staff.	Biodegradable Waste generation may lead to odour problems if not stored properly.	Detail is given at section 2.14
	STP Sludge	-Generation of STP sludge may degrade the aesthetic value of the surrounding.	
	Operation of DG sets & other machineries will result in the generation of used oil.	Chemical Degradation of soil may if any spillage/leakage occur.	

2.12. Water & Waste water management

During installation phase: Total 3 KLD of water will be required during the construction phase for domestic purposes for labours which will be sourced through VVMC supply and 2 KLD will be required for construction activities which shall be sourced through tankers water supplier. Domestic wastewater generated from labours will be discharged to a septic tank followed by a soak pit. Runoff from the construction site shall not be allowed to stand (water logging) or flow down the hill or enter into the roadside. Construction of site boundary silt fences for both LTP & UTP to avoid soil runoff. Construction of storm water drainage line to divert storm runoff to catchment tank. The runoff shall be collected to the maximum extent possible & shall be treated for reuse in sprinkling & curing activities.

During Operation phase: Source of Freshwater- VVMC Supply

The water requirement has been calculated for normal and festival days. The total water requirement during Normal days will be 43 KLD and during Festival days will be 164 KLD. The freshwater requirement during Normal days will be 11 KLD and during Festival days will be 41 KLD which will be sourced through VVMC supply and rest will be met by the inhouse treated water. Total quantity of waste water generation will be 35 KLD during Normal days and 137 KLD during Festival days. The wastewater generated will be treated in a Sewage Treatment Plant of 165 KLD capacity based on MBBR Technology at LTP and in Bio-toilets at UTP followed by Septic tanks . Detailed water management is given below:

Table 12. Water Management (Normal days)

S. No.	Particulars	Population		Factor (LPCD)	Water Requirement (in KLD)	Waste Water Generation (in KLD)
1.	Drinking & Handwashing	Staff	25	3	0.08	0.03
		Visitor	10000	1	10.0	4.0

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2.	Flushing	Staff	25	12	0.3	0.3
		Visitor	10000	3	30.0	30
3.	Gardening	-	-	-	2.0	Nil
4.	Miscellaneous	-	-	-	1.0	0.3
Total					43 KLD	35 KLD

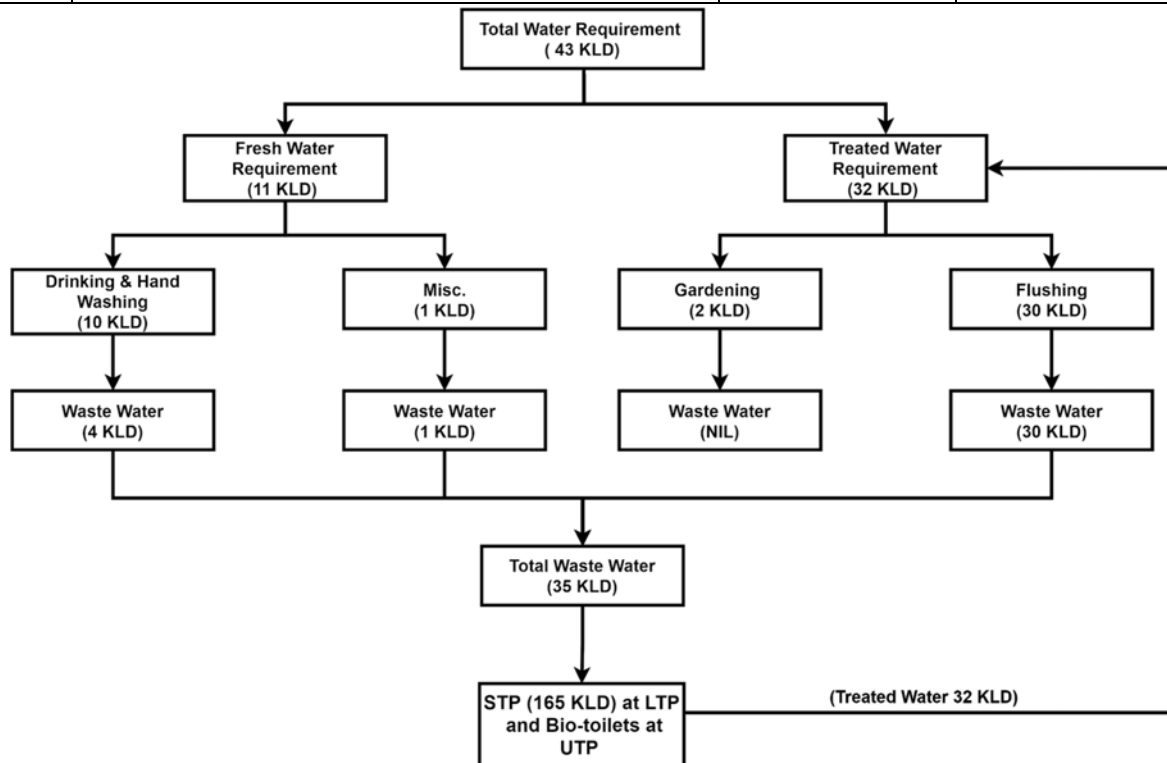


Figure 16. Water Balance (Normal Days)

Table 13. Water Management (Festive days)

S. No.	Particulars	Population		Factor (LPCD)	Water Requirement (in KLD)	Waste Water Generation (in KLD)
1.	Drinking & Handwashing	Staff	25	3	0.08	0.03
		Visitor	40000	1	40	16.0
2.	Flushing	Staff	25	12	0.3	0.3
		Visitor	40000	3	120	120
3.	Gardening				2.0	Nil
4.	Miscellaneous				1.0	0.5
Total					164 KLD	137 KLD

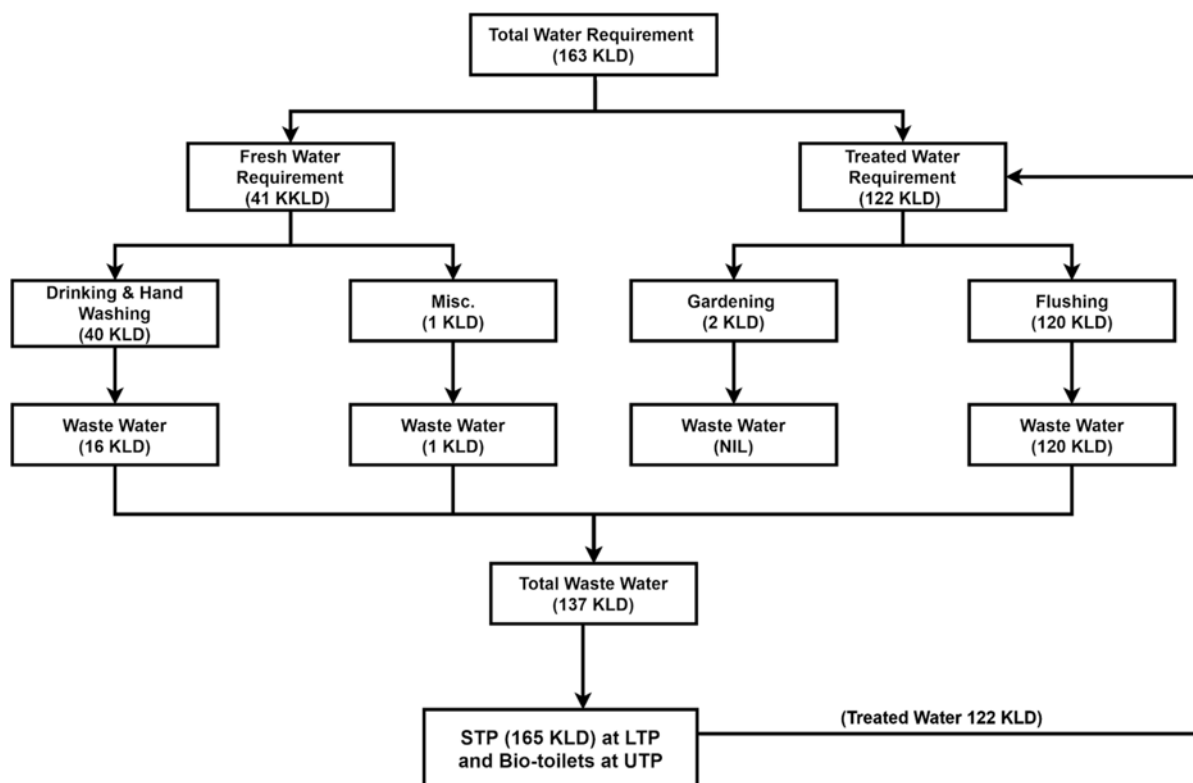


Figure 17. Water Balance (Festive Days)

2.12.1. Scheme of STP & Technical Specifications

The Sewage Treatment Plant of 165 KLD based on MBBR Technology shall be installed. It offers some distinct advantages over conventional activated sludge processes. The scheme is proven, under a variety of operating conditions, and is highly flexible in operation.

Scheme of Sewage Treatment Plant:

In the project, the generation of waste water will be about 137 KLD in festival days. The generated sewage will be treated in in-house Sewage Treatment Plants of total 165 KLD capacity based on MBBR Technology.

Table 14. Raw Sewage Characteristics

Flow	m ³ / day	137
pH	-	7.5 – 8.0
BOD	mg / l	200 - 350
COD	mg / l	400 - 500
TSS	mg / l	100
Oil & Grease	mg / l	10

The Sewage Treatment Plant (STP) will give treated water, which will be reused for Flushing, Gardening purpose.

Table 15. Treated Sewage Characteristics

pH	-	6.5-9.0
BOD	mg / l	<10
COD	mg / l	<50
TSS	mg / l	<20
Oil & Grease	mg / l	Nil

Treatment Process: It is proposed to treat the complete wastewater in a scientific manner through a properly planned treatment plant. The objective is to stabilize the decomposable organic matter present in sewage to get an effluent and sludge having characteristics which are within safe limits. To have an efficient treatment system, this aeration system is proposed consisting of MBBR Technology. The sewage treatment plant can be constructed in such a way that it becomes viable by providing Treated water for reuse and sludge that can be used as manure for further use.

Different Components of the Plant

In the proposed treatment scheme, the following component unit shall be provided:

- Screen chamber
- Bar screen /Grit chamber within effluent collection sump.
- Submersible type raw effluent re-lift pumps
- Equalization tank
- MBBR tank/ Aeration tank
- Tube settler
- Clarified Water, Filtered Water & Soft Water Storage Tanks
- Filter feed pump
- Tertiary Treatment Units (Filtration, U.V treatment)
- Treated Water Supply Pumps
- Sludge return pump
- Sludge holding tank
- Centrifuge for solid waste management
- Sludge loading pumps
- Sludge drying beds, Centrifuge/Filter Press

Process Description

1. Raw sewage from the main sewer line shall be collected through gravity pipes into the screen chamber. This manually cleaned screen shall be

provided to remove floating and big size particles which may otherwise choke the pumps and pipelines.

2. After screening, the wastewater shall be allowed to pass through a grit chamber to remove the grit material. The screens and grit chambers shall be accessible so that they may be manually cleaned from time to time.
3. The screened wastewater from the Grit chamber shall be then passed into the equalization tank to homogenize the wastewater quality and also even out flow fluctuations and feed waste water of uniform quality at a constant rate to subsequent treatment units. Air mixing shall be provided to mix the contents of the equalization tank. A coarse bubble aeration grid shall be provided to mix the contents of the equalization tank and also to avoid septic conditions in the tank. From the equalization tank the wastewater will be pumped into an MBBR Tank.
4. The MBBR process uses small plastic carrier elements to provide growth sites for bacteria attachment in a suspended growth medium. The carrier elements shall allow a higher biomass concentration to be maintained in the reactor. This shall increase the biological treatment capacity for the given reactor volume.
5. The carrier elements shall be continuously kept in suspension by the aeration system. The agitation pattern in the reactor shall be designed to provide an upward movement of the carriers across the surface of the retention screen which creates a scrubbing effect to prevent clogging. Combination of fine & coarse bubbles may be provided to provide oxygen as per detailing.
6. From the MBBR tank mixed liquor shall flow by gravity into the Tube settler. The solids will settle in the tank. The sludge that settles down shall be transferred to the sludge holding tank via sludge loading pumps, with provision of sludge return to the bioreactor if necessary.
7. From the tube settler, treated wastewater will be fed by means of filter/softener feed pump sets to pass through dual media filters, activated carbon filters and softeners and stored in the filtered water and soft water storage tanks. The activated carbon filters shall ensure removal of all coloration and odours present in the treated effluent.
8. The filtered, clean and odourless water from the filtered water tank is then fed through a variable frequency drive hydro-pneumatic system to the external treated effluent rings as per the master plan, from where connections are taken to the garden hydrant system and to each unit for flushing water as per detailing.
9. Excess sludge from the tube settler will be taken periodically into the sludge holding tank. In this tank sludge will be aerated for self-stabilization. Air will be shut off periodically and superannuate water will be transferred to the aeration tank creating stabilized sludge. The final sludge shall be de-watered

through a centrifuge mechanism. Sludge loading arrangements shall also be provided for direct disposal of sludge to sludge tankers / trolleys.

Schematic Diagram of STP based on MBBR Technology

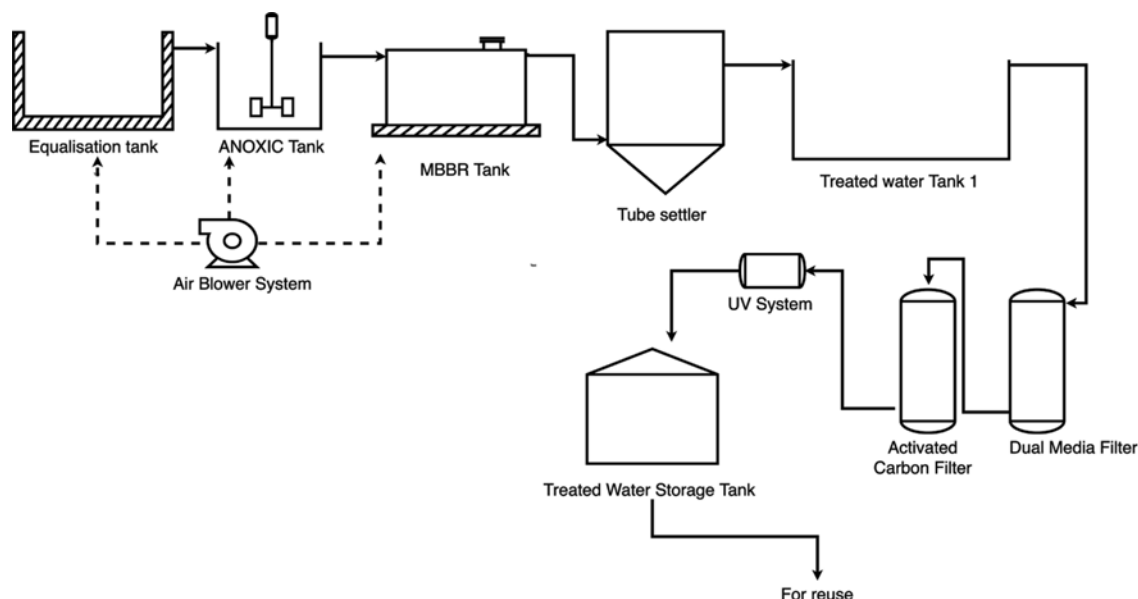


Figure 18. Schematic Diagram of STP based on MBBR Technology

2.12.2. Scheme of bio-toilet

A Bio-Toilet is a complete waste management solution which reduces solid human waste to biogas and pure water, with the help of a bacterial inoculum. Bio-Digester is a decomposition mechanized toilet system which decomposes Human Excretory Waste in the digester tank using specific high graded bacteria further converting it into methane and water, discharged further to the desired surface. Bio-digester technology treats human waste at the source. A collection of anaerobic bacteria that has been adapted to work at temperatures as low as -5°C and as high as 50°C act as inocula (seed material) to the bio-digesters and convert the organic human waste into water, methane, and carbon-dioxide. The anaerobic process inactivates the pathogens responsible for water-borne diseases and treats the fecal matter without the use of an external energy source.

The only by-products of the waste treatment process are pathogen-free water, which is good for gardening, and biogas. Bio-toilets do not require sewage connectivity and because the process is self-contained, bio-toilets are also maintenance-free. Some specific features of the Bio-Toilets are given below:

- 100% sludge – Free disposal of human waste
- Eco Friendly - Decomposes solid waste to water and biogas

- Eliminates the need for expensive waste treatment
- Clean discharge - The water discharged from the Pronto Bio-Toilet is colorless, odorless and devoid of solid particles
- 100% hazard free – On a dry weight basis, 90% of the solid waste is reduced
- 100% maintenance free – Bio-Digester tanks do not require any form of maintenance
- No repeat dosing of bacterial inoculum
- Easy to transport and install in any terrain
- Plays a critical role in preventable healthcare

The residual water from Bio-Toilets

- Is colorless, odorless and devoid of any solid particles
- Requires no further treatment / waste management
- Can be used for irrigation purposes

Features	Bio-Toilet
Composition	1) Prefab Toilet 2) Bio-Digester Tank
Space	1/3rd of Septic Tank & Soak Pit
Technology	Tank contains Bacterial Inoculum to decompose Waste
End Product(s)	Water & biogas
Waste Emptying	Not Required
Maintenance	Minimum Maintenance
Decomposition	90%

SCHEMATIC DIAGRAM OF BIO-TOILETS



2.12.3. Rain Water Harvesting/ Stormwater Management

Maximum collection of rainwater will be done and reused wherever possible. Garland drains are proposed around the pillars/towers to ensure the proper drainage of the storm water and to prevent disturbance to the drainage pattern of the area.

2.13. Air Emission Management

During installation phase: Water sprinkling shall be done in the nearby area where dust generation is anticipated. No loose soil, Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered. Construction material and waste will be stored at the specified area earmarked for the storage. Road side storage of construction materials and waste shall be prohibited.

During Operation Phase

Although the Funicular System (Ropeway) operation is an environment friendly non-polluting transport system, the main source of pollution will be the Funicular System (Ropeway) machineries, DG sets and the dust emissions due to human traffic.

DG sets of capacity 1 x 500 kVA and auxiliary DG of 1 x 25 kW is proposed for backup power supply. These D.G. Sets will be provided with proper stack height as per the CPCB norms. The impact of pollutants such as SO₂, NO₂ and CO mainly released from D.G sets and their concentration & impact will be very negligible and of short term duration. The system will be operated mainly on electricity provided by Grid. DG sets will be used as a stand-by only at the time of power failure.

The management practices to be followed are as follows:

- Adequate Stack height above the roof of terminal stations shall be provided to discharge the gaseous emissions from machineries at a certain height.
- Regular sprinkling of water will be done for dust suppression.
- Vehicles used in the transportation of construction material will be kept fully covered & will be PUC certified.

2.14. Solid & Hazardous waste Management

During installation phase: Total 12 kg/day of waste will be generated from laborer's during installation phase. Out of which, biodegradable waste will be sent to the solid waste/landfill site and non-biodegradable waste will be sent to the approved recycler. The debris of construction material shall be used in backfilling, roads etc. & rest shall be disposed off to C&D facility as per C&D Waste Management Rules, 2016.

During operation phase:

Solid Waste generating from the temple premises will include –

- **Biodegradable-** Food items, Flowers, Coconut husk, leaves, domestic waste from pilgrims and inhabitants.
- **Non-Biodegradable-** packaging waste, inert waste, Disposable plates and cups.

The waste generated will be segregated at source in respective dry & wet waste bins. The waste will be collected in color-coded bins. The color coded bins will be emptied into the main bin near the Organic Waste Collection site.

Table 16. Details of Solid Waste Management (During Normal Days)

Type of Waste	Colour of Bin	Category	Disposal Method	Total Waste (kg/day)
Organic Waste	Green	Biodegradable	The waste will be treated in an Organic Waste Converter converted into compost.	350
Recyclable Waste	Blue	Recyclable	Collected and given to approved recycler	150
Total Waste				500 kg/day (182.5 TPA)

Table 17. Details of Solid Waste Management (During Festival Days)

Type of Waste	Colour of Bin	Category	Disposal Method	Total Waste (kg/day)
Organic Waste	Green	Biodegradable	The waste will be treated in an Organic Waste Converter	1400

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			converted into compost.	
Recyclable Waste	Blue	Recyclable	Collected and given to approved recycler	600
Total Waste				2000 kg/day (730 TPA)

Following points will be taken care during Operation phase:

- No disposal of the waste on land will be done. Proper collection bins will be provided at each terminal. Coloured bins separate for Biodegradable, recyclable waste, fallen flowers, etc. will be provided at various locations on terminal stations.
- Biodegradable waste will be treated in 2 no. of Organic Waste Convertor (OWC) of capacity 500 kg/day has been proposed by company PT and 1 no. of OWC of capacity 400 kg/day has already been installed as described below:
- **Specifications Of Organic Waste Convertor**

Table 18. Specification of OWC

OWC-Model	Biodegradable Waste (kg/day)	Time taken	Power	Dimension (l x w x h)
Model - OCM 500 Make - PT (Proposed)	500	Machine Time- 8 hr	8 HP	5.24 x 2.78 x 3.60
Model - OCM 500 Make - PT (Proposed)	500	Machine Time- 8 hr	8 HP	5.24 x 2.78 x 3.60
Model - OWC 60 Make - NOS Composting Machine (Installed)	400	Batch capacity - 50 kg/batch No. of batch- 8 Machine Time- 15-20 m Total Time- 1 hr (Curing is involved)	8 HP	5.24 x 2.78 x 3.60

Process Description for Organic Waste Converter Machine System

- The segregated organic waste is bio-mechanically treated in the Organic Waste Converter Machine.
- Waste is homogenized with bio-culture and organic media. The coarse wastes are shredded prior to feeding into the OWC machine. Leachate is also controlled during the homogenization process.
- The output from Machine is raw compost which is uniform in colour and soil structured coarse powder, and also free of bad odour.
- In an OWC machine by excel, the raw compost is placed into a compost curing system & moisture is controlled by using a fogging system and the raw compost is bio-converted matured compost, in about 10-15 days of curing period while In an OWC machine by PT, no separate curing is required in it. Fully automatic compost machine shall be installed that converts wet waste into compost into 24 hrs
- The mature compost can be utilized for gardening or will be given in farm land.

NO PLASTIC ZONE

Following steps shall be taken to attain Plastic free zone:

- There will be concrete steps to minimize generation of plastic waste, not to litter, ensure segregated storage of waste at source and handover segregated waste
- Signboard and hoarding for no-use of plastic will be provided in various parts of the temple
- Use of Paper/Jute bags instead of Plastic bags will be mandated within the temple zone.
- Plastic cups will not be used within the Temple zone for tea, coffee or any beverage by any of the vendors.
- Open burning of plastic waste will be prohibited
- The plastic waste will be segregated within the premises and will be sold to authorized recyclers as per Plastic waste management rules, 2016

2.15. Noise Management

To reduce Ambient Noise level the following measures will be adopted:-

- DG sets of 1 x 125 kVA will be bought acoustically enclosed & placed inside an acoustically treated room as per CPCB guidelines.
- Noise free and less air pollution emitting, acoustically enclosed DG Sets, approved by the CPCB will be bought and installed.

- The system will be operated mainly on electricity provided by Grid. DG sets will be used as a stand-by only at the time of power failure. DG sets shall be installed on proper vibration pads to avoid vibration impacts.
- The noise pollution due to operation of DG set can be controlled by installation of silent cowling to a value of 65 dB (A).
- The green belt helps in reducing noise levels in the complex as a result of attenuation of noise generated due to plant operations and transportation.

The normal Passenger Funicular System (Ropeway) operations are always lower than 50 dB (A) of noise level. Proper maintenance of the Passenger Funicular System (Ropeway) during the operational phase will be done to ensure low or no noise and environmental impacts.

2.16. Parking Provision

From the total plot area of 19500 sqm, Parking area of 9620 sqm is already present and will be utilised for Parking facility at LTP after repair and renovation. Approximately 500 ECS of Parking Provision will be provided.

2.17. Plantation & Green belt

The total land allotted to Shree Jivdani Devi Sansthan, Virar is 19.5 ha, out of which 4866.43 m² area will be used for the Funicular system. The project lies in the reserve forest area. The diversion of forest land has been carried out vide letter no. कक्ष - १/२०/जमीन/६३५७ dated 1.02.2005 for various activities.

The diversion of forest land has been carried out as per the guidelines of the Forest (Conservation) Act, 1980. A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint Forest Management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar. No Trees will be cut for the development of the Funicular System (Ropeway). Peripheral plantation will be developed at LTP and UTP with native species.

Approximately 15000-17000 numbers of trees (22 % of Total Green Area) have already been planted.

213.79 m² of Green area will be developed at LTP and 182.29 m² of Green area will be developed at UTP which is approximately 2.03 % of the total plot area (19500 sqm). Plantation of 3 m will be done all around the periphery of the UTP and LTP.

Trees to be planted will be $396.08/5 = 79$ trees

Photographs of Tree species and Plantation



Figure 19. Plantation and green development

2.18. Safety Measures In Project

Safety measures adopted for Funicular System (Ropeway)

- The Funicular system will be designed, manufactured and installed in accordance with the latest standards, will feature state-of-the-art equipment and operate automatically (with the exception of cabin parking). It will fully comply with the latest CEN standards (European standard) and safety requirements for Passenger Funicular system. CEN standards are most reliable in terms of technological and safety requirements.
- Before making it for public use the Funicular project shall be thoroughly inspected to ensure the Funicular project is safe for public use. After getting a clearance certificate, the commercial operation of the Funicular would be able to commence.

- Key functions of the Funicular , such as rope speed and grip opening and closing operations, are monitored and controlled by electronic safety circuits in order to ensure smooth operation and maximum safety.
- Fixed rope tensioning is achieved by cylinders in the tensioning terminal for each rope loop.
- The parking of cabins is carried out manually / automatically. The parking provided is sufficient for all cabins and will be located in the drive station.
- The Funicular is designed for one main direction of rotation. For special requirements, rescue and service purposes, reverse operation is permitted at a limited speed.
- All elements of the Funicular are mounted onto steel tracks which are anchored on concrete columns.
- The Cabins shall be provided with door lock, which cannot be opened by the passengers
- In the event of main supply power failure, full capacity D.G. Sets provided to supply power to run drive motors.
- Emergency push buttons should be provided at all stations to stop the Funicular, if required.

2.18.1. Safety Codes for Funicular System (Ropeway)

Federal Codes and Standards "Safety Rules for Passenger Funiculars" approved by order No. 42 of Federal Environmental, Industrial and Nuclear Supervision Service of February 6, 2014, have come into force on October, 22, 2014.

Table 19. Safety Codes for Jivdani Passenger Funicular System (Ropeway)

S No.	Indian Standard (BIS)	Safety Standard	Standard Number
1	Draft standard ICS 45.100	Safety Requirements For Drives And Other Mechanicals Used For Ropeway Installation For Passenger Transportation	MED 6 (13874)
2	Draft standard ICS 93.110	Draft Indian Standard On Prevention And Fight Against Fire In Ropeway Code Of Practice	MED 6 (13886)
3	Draft standard ICS 45.100	Continuous Movement Bicablemulticable Ropeways With Detachable Grip Code Of Practice	MED 6 (13065)
4	Draft standard ICS 93.110	Acceptance And Certification Criteria For Design And Construction Of All Types Of Ropeways Intended For Transportation Of Passengers	MED 6 (13572)

5	Draft standard ICS 93.110	Operation And Maintenance Of All Types Of Ropeways Intended For Transportation Of Passengers Code Of Practice	MED 6 (13573)
6	Draft standard ICS 45.100	Corrosion Protection Of Iron And Steel Sections Used In Passenger Ropeways Code Of Practice	MED 6 (14074)

2.18.2. Safety Measures for Wildlife

From the safety point of view, the Funicular seems to offer no danger of any kind to the Wild Life. All precautions and safety measures will be taken to ensure maximum safety of any type of Wildlife-human conflict at site during construction as well as Operational Phase, which are discussed as under:

During Construction Phase

- The construction activities will be carried out only during the time. No construction activities will be done in early and late hours.
- Storage Yards for Construction Material, Column Erection Steel Structures, Cabin storage areas and other related Storage and working areas shall be properly made.
- The storage yards and construction areas will be barricaded with meshed wire fences of at least 3 m height. This would prevent the wild animals from accidentally entering into these work areas during the construction phase and thus ensure their safety.

During Operational Phase

- Minimum required area is being considered for the construction of Terminal Stations.
- As the Funicular Columns, which shall be made up of concrete, are to be erected over the ground, the base of the towers shall be of some danger to the Wild Life. Thus, they would be closed in a mesh wire enclosure which shall be approximately 6 feet (2 m) high. This would prevent any animals from straying into the columns.
- The main stations of the Passenger Funicular System (Ropeway) shall also be secured for bird hits by enclosing them with bird meshes.

2.19. Project Cost And Implementation Schedule

The estimated cost of the project is Rs. **32** Crores. The proposed project will take approximately 12- 16 months for the implementation after getting Environmental clearance and consent order from SPCB.

2.20. Occupational Health and Safety

WELFARE:

- Potable drinking water will be provided.
- Mobile toilets will be provided.
- Agreement with hospitals for emergencies.
- Third party insurance etc.

SAFETY:

- Measures for first aid, fire-fighting and premises evacuation.
- Necessary contacts with appropriate emergency services (first aid, emergency medical care, rescue work and fire-fighting).
- Safety helmets, belts and slings, nets.
- Properly braced scaffolding.
- Properly laid electrical cables and connections.
- D.G. sets with acoustic enclosures to reduce noise pollution.

Mitigation Measures for Handling of Construction Materials:

- Separate raw material yard will be made. Cement will be separately stored under cover in bales.
- Sand will be stacked nearby under tarpaulin cover.
- To minimize the occupational health hazard, proper masks will be provided to the workers who will be engaged in dust generation activity.

Measures adopted during the entire Life Cycle of the Project:

- Measures shall be taken to identify the Electrical Environment Impacts (Hazards) arising during the land preparation for use, Funicular (Ropeway) operation, and the entire cycle activities of the project and proper mitigation measures shall be adopted.
- Proper Coordination with Local Municipal Fire Brigade, police, health surveillance (To treat the affected person in accident) shall be maintained. Proper Fire Management System shall be installed.

- Environment Management Plan shall be prepared with Emergency Procedures (Emergency Plan) to deal with localized fire and electrical hazards and hazards due to natural calamities at the entire cycle of the activities of the project.
- Provision of the communication systems to call for help and assistance from nearby complex bodies and other external authorities like district authority, fire services, police services, medical services, civil and defence services etc. shall be provided.
- Provision of Health and Welfare Facilities will be provided to the labourers and staff at the entire cycle activities of the project such as:
 - Provision of drinking water from an approved source.
 - Provision of latrines and urinals and accommodation as per the rules and their drainage and disposal treatment.
 - Provision of medical and first aid treatment.
 - Facilities for sitting, shelters, rest rooms and lunch rooms, crèches, canteen etc.
 - Provision of Day working hours.

2.21. Technological Risk and alternatives

The name "funicular" itself is derived from the Latin word funiculus, the diminutive of funis, which translates as "rope". In the Funicular System, even though the Cabins run on Rail tracks, they are pulled by wire ropes.

The basic idea of a funicular operation is that two cars are always attached to each other by a cable, which runs through a pulley at the top of the slope. Counterbalancing of the two cars, with one going up and one going down, minimizes the energy needed to lift the car going up. Winching is normally done by an electric drive that turns the pulley. Sheave wheels guide the cable to and from the drive mechanism and the slope cars. The details of the alternatives are mentioned in Chapter 5.

Advantages

- High transport capacity for passengers and cargo
- Extremely energy efficient and pollution free
- Exceptionally resilient to wind and weather
- Amongst the safest means of transport.
- Long service life and high operational efficiency.
- Requires minimal staff and incur low maintenance costs.

2.21.1. Specifications & Guidelines

The specifications and guidelines are provided for the various project components (Ropeway System, associated infrastructure) including, but not limited to the following major provisions:

The Concessionaire shall consider Specifications provided by Bureau of Indian Standards and other applicable statutory code of practices like Indian Electricity Act, National Building Code, Municipal Building Bylaws of Maharashtra, Maharashtra ropeway Act etc for design, construction, operation and applicable maintenance of the project facilities. In case of Cabins and its associated part to be mandatorily procured imported, suitable international standards with justification may be followed.

3. Description of Environment

3.1. Introduction

To cover environmental baseline studies, following aspects have been covered: -

The baseline data is generated through field study within the impact zone (Core Zone and Buffer Zone) for various components of the environment viz. Air, Noise, Soil, Water, Land, Ecology and Socioeconomic. The baseline environmental studies have been done for **Summer Season- March 19-May 19** by M/s Perfact Researchers Pvt Ltd in a study area of 10 Km radius from the project site. While generating the baseline status of the physical and biological environment of the study area, the concept of impact zone has been considered. The impact zone selection is based on preliminary screening and modelling studies. The data collection had been done as given below:

- Field Survey and site visit
- Primary monitoring of key environmental parameters like Air, Noise, Soil, Water, Land, Ecology and Socio Economic survey during the summer and post monsoon season
- Consultation with local people, government departments such as the Forest department, etc.
- Literature review on secondary information available for the study area

3.2. Base maps of the area

3.2.1. Google Image of the Project Site

Map showing Study area & Close view of the study area with 1 km Buffer radius is already given at section no. 2.3 & 2.3.1

3.2.2. Topographical map

Topographical Map with 10 km radius is already given at section no. 2.3.2

3.2.3. DEM map

DEM Map with 10 km radius is given in Section 3.9.1

3.2.4. Village map

Village Map with 10 km radius is given below:

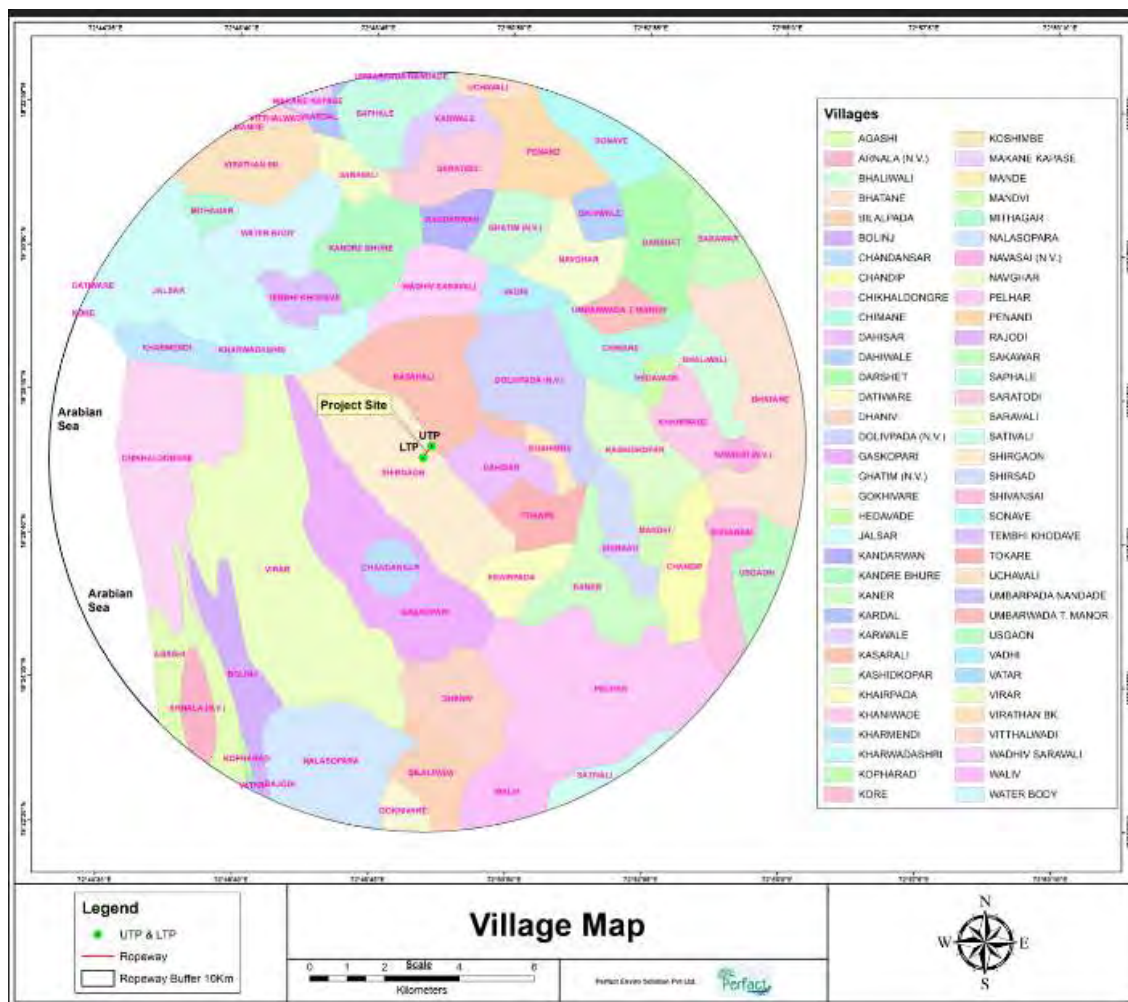


Figure 20. Village Map showing villages in study area

3.3. Methodology of baseline data collection

Table 20. Methodology of baseline Chapter

S.No.	Functional Area	Methodology
1.	Micro-Meteorological Data	Site specific Micro-Meteorological Data has been used for the study. The important parameters considered are temperature, humidity & wind speed.
2.	Ambient Air Quality	The ambient air quality monitoring was done to assess the ambient air quality in the Summer season (March 19-May 19). The guidelines for selections of

		ambient air monitoring stations given in IS – 5182 part 14, 2000 were followed.
3.	Water Quality	To assess the water quality of the proposed area, Grab, Composite sampling done for water sample collection. Water samples were taken as per the Standard Methods (IS & APHA, 23 rd Edition 2017). Necessary precautions were taken for the preservation of samples. The physical parameters viz. pH, temperature and conductivity were measured at site using a portable water analyser.
4.	Ambient Noise Quality	At each station noise level was monitored for 24-hours. For each measurement, dB (A) readings were taken for every 15 minutes for 24 hrs once in a season to get Leq values.
5.	Soil Quality	Augur method was used for soil sampling and samples were collected at 15 cm depth after removing the upper crust.
6.	Topography, Land-form and Land Use	The land use/ land cover map has been generated on 1:50,000 scale using Satellite imagery, topographical maps, Survey of India and ground truth information.
7.	Biological Environment	Primary and secondary data collection has been done by the Ecology and Biodiversity team for the study of flora and fauna in the core and Buffer Zone.
8.	Socio Economic Environment	For demography and socioeconomics, block wise data has been collected and used for the assessment of impacts.

3.4. Meteorology

Before dwelling on the various aspects of air quality, it would be in the fitness of things to discuss the meteorological status of the area as the dispersion of fugitive emission depends largely on the meteorological conditions of the area. The selection of sampling stations is mainly guided by the predominant wind direction during the monitoring season in the area.

3.4.1. Climatic Conditions (As per the Indian Meteorological Data-Station Mumbai)

The important parameters considered are temperature, relative humidity, wind speed, wind direction and rainfall. The extract of Maximum, minimum values (month wise in twelve years) of above said parameters from meteorological data of last Twelve years (2003 - 2015), as recorded at Mumbai, are given below in the tables with graphical representation of it:

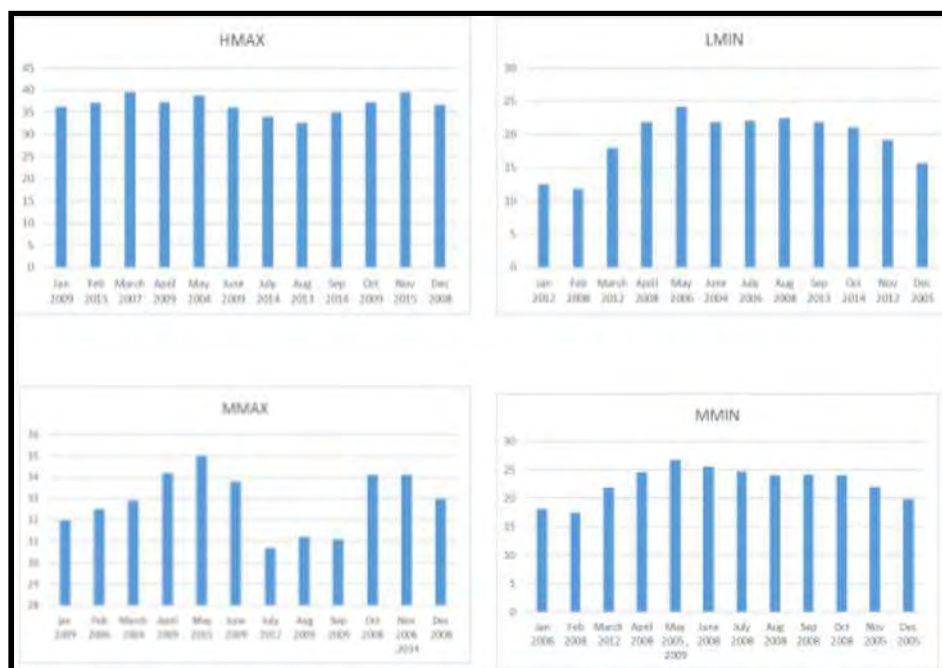
3.4.2. Temperature

The Maximum temperature of the area in twelve Years, was recorded as 39.5 in March 2007 and November 2015, whereas the minimum temperature of the area was recorded as 11.8 in February 2008.

Table 21. Temperature record

Month	Year	Hmax	Year	Lmin	Year	Mmax	Year	Mmin
January	2009	36.3	2012	12.5	2009	32	2008	18.1
February	2015	37.2	2008	11.8	2006	32.5	2008	17.5
March	2007	39.5	2012	18.0	2004	32.9	2012	21.9
April	2009	37.3	2008	21.8	2009	34.2	2008	24.6
May	2004	38.7	2006	24.1	2015	35.0	2005, 2009	26.7
June	2009	36.1	2004	21.8	2009	33.8	2008	25.5
July	2014	34.0	2006	22.0	2012	30.7	2008	24.7
August	2013	32.7	2008	22.4	2009	31.2	2008	24.0
September	2014	35.0	2013	21.8	2009	31.1	2008	24.1
October	2009	37.3	2014	21.0	2008	34.1	2008	24.0
November	2015	39.5	2012	19.2	2006, 2014	34.1	2005	22.0
December	2008	36.7	2005	15.7	2008	33.0	2005	19.8

H max-Highest maximum, L min-Lowest minimum, M max- Mean max, L min-Lowest min



Source: IMD, Station –Bombay from 2003 -2015)

3.4.3. Relative Humidity

From the data, the Maximum relative humidity was recorded as 96 % in July, August, September 2014. Minimum relative humidity was recorded as 53 % in December 2004 and January 2005. The relative humidity figures show that the area is humid.

Table 22. Relative Humidity record

Month	Year	Max	Year	Min
January	2013	84	2005	53
February	2009	85	2008	54
March	2005	85	2004	60
April	2014	88	2008	60
May	2014	87	2008	64
June	2013	91	2009	74
July	2014	96	2015	85
August	2014	96	2009	80
September	2014	96	2015	71
October	2013	90	2004	63
November	2009	85	2004	60
December	2009	84	2004	53

(Source: Imd, Station –bombay From 2003 -2015)

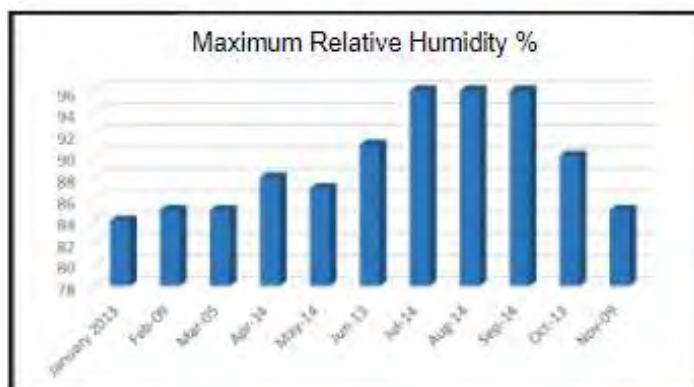


Figure 21. Maximum Relative humidity

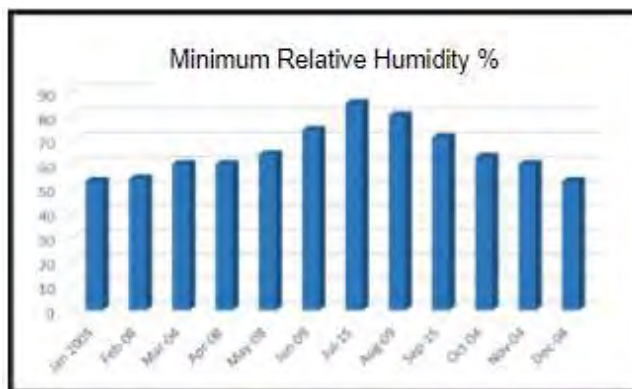


Figure 22. Minimum relative humidity

3.4.4. Rainfall

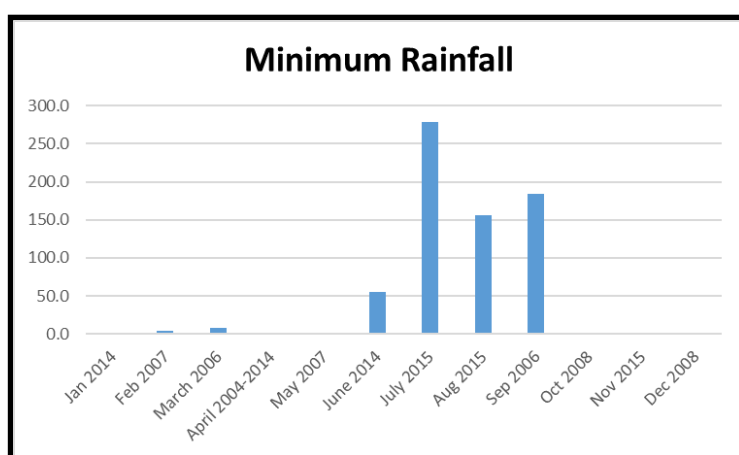
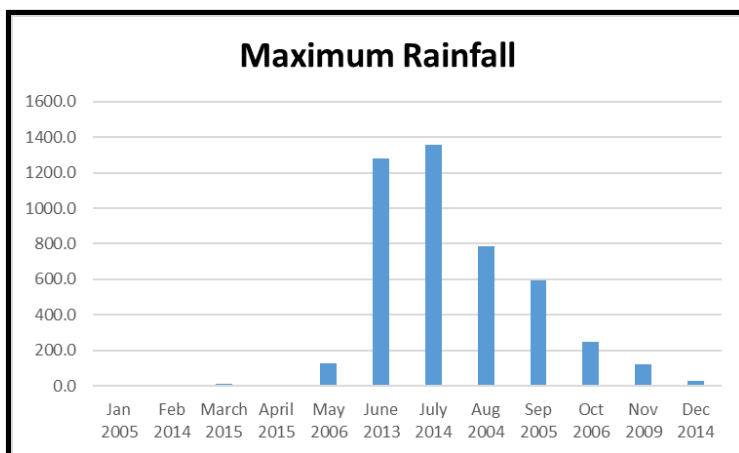
The maximum rainfall was recorded in July (upto 1356.9 mm) in 2014. From data, it is clear that maximum time of year remains moist, the wet months exceed dry months. July, August & September are the wettest months and are considered as monsoon season. Average Annual rainfall is 2182.9 mm.

Table 23. Rainfall data

Month	Year	Rf Max	Year	Rf Min	Average Rainfall
Jan	2014	0.9	2005	0.6	0.2
Feb	2014	7.8	2007	4.0	1.2
March	2015	12.2	2006	7.3	2
April	2015	1.4	2004-2014	0.0	0.1
May	2006	128.0	2007	0.7	16.4
June	2013	1282.5	2014	55.0	542.1
July	2014	1356.9	2015	278.2	742.2
Aug	2004	786.9	2015	156.2	432.3
Sep	2005	593.3	2006	184.0	346.4
Oct	2006	246.0	2008	1.0	80.6
Nov	2009	120.2	2015	1.7	15.6
Dec	2014	30.0	2008	0.3	3.8

(Source: Imd, Station –bombay From 2004 -2015)

**Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar**



3.4.5. Wind Speed

Wind speed normally was in the range of 0.5 km/hr in January 2005 to 14.3 km/hr in July 2006.

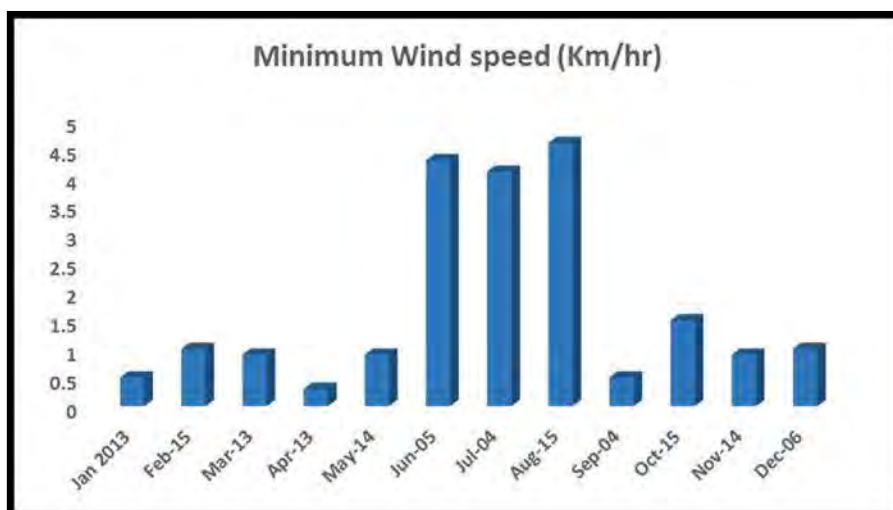
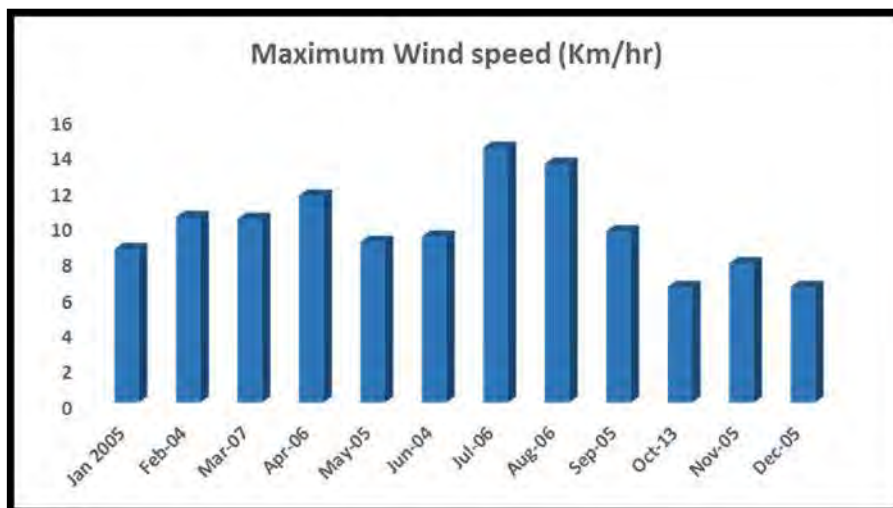
Table 24. Wind record

Month	Year	Max Wind speed (Km/hr)	Year	Min Wind speed (Km/hr)
January	2005	8.6	2013	0.5
February	2004	10.4	2015	1.0
March	2007	10.3	2013	0.9
April	2006	11.6	2013	0.3
May	2005	9	2014	0.9
June	2004	9.3	2005	4.3
July	2006	14.3	2004	4.1
August	2006	13.4	2015	4.6
September	2005	9.6	2004	0.5
October	2013	6.5	2015	1.5

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

November	2005	7.8	2014	0.9
December	2005	6.5	2006	1.0

(Source: IMD, Station –Bombay from 2004 -2015)



3.4.6. Wind Direction

Table 25. Wind Direction

Month	Wind Direction	
	Direction	Calm
January	North west	33.0%
February	North west	31.0%
March	North west	31.0%
April	North west	29.0%
May	North west	29.0%
June	West	16.0%
July	West	9.0%

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

August	West	11.0%
September	West	27.0%
October	North west	30.0%
November	North west	30.0%
December	North west	27.0%

The predominant wind direction is NW -SE. The season wise predominant wind directions are given below:

Winter : NW

Summer : NW

Autumn : NW

WINDROSE DIAGRAM ANNUAL (2004- 2015)

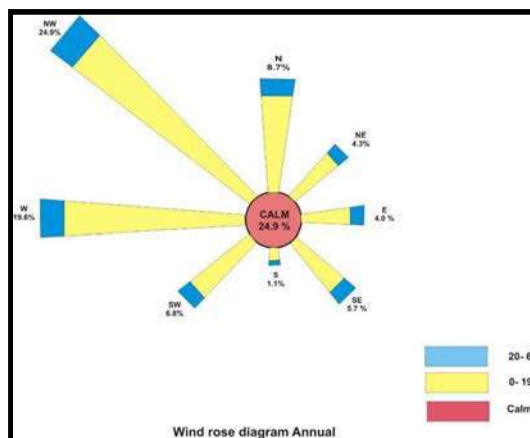


Figure 23. Wind Rose Diagram Annual

WINDROSE DIAGRAM WINTER (2004- 2015)

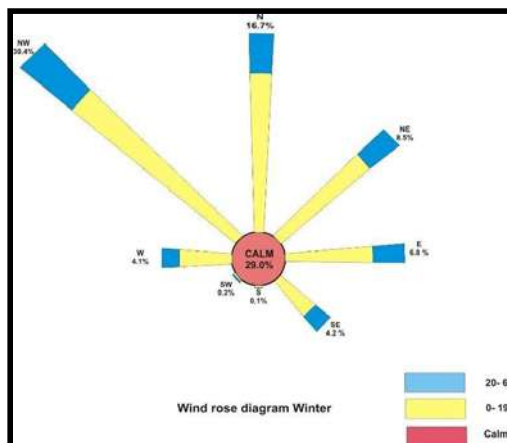


Figure 24. Winter wind rose diagram

WINDROSE DIAGRAM SUMMER (2004-2015)

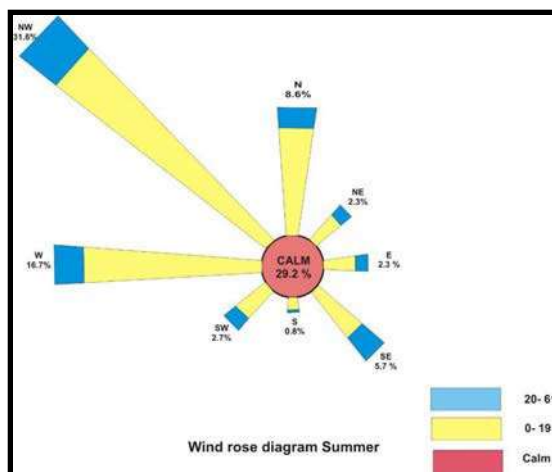


Figure 25. Summer Wind Rose Diagram

WINDROSE DIAGRAM POST MONSOON (2004- 2015)

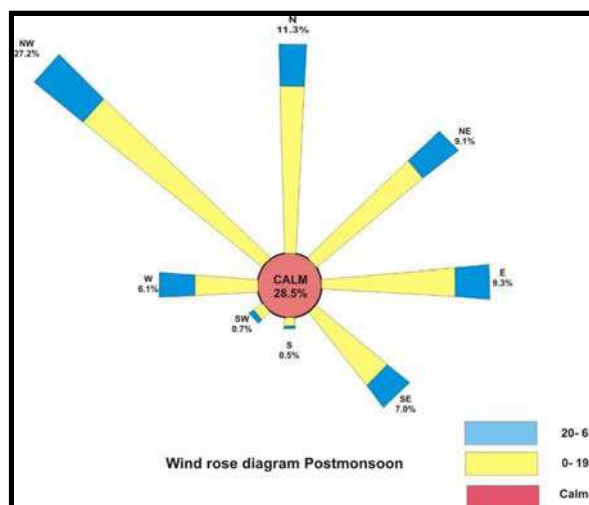


Figure 26. Post Monsoon Wind Rose Diagram

3.4.7. Micro-Meteorological Data

A weather station was installed near the site for hourly monitoring of temperature, humidity, wind speed & wind direction for the month of March 2019 to May 2019. Average data is given below:

Table 26. Micro Meteorological Data of March-May 2019

Month	Temperature(°C)			Humidity (%)			Wind speed (m/s)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean

1st March-31st March 2019	39.0	22.0	30.7	89.0	10.0	49.6	12.0	0.1	4.4
1st April 2019 – 30th April 2019	37.0	25.0	31.1	89.0	29.0	58.3	12.0	0.1	4.6
1st May 2019 – 31st May 2019	36.0	27.0	31.5	84.0	43.0	63.7	13.0	0.2	5.4

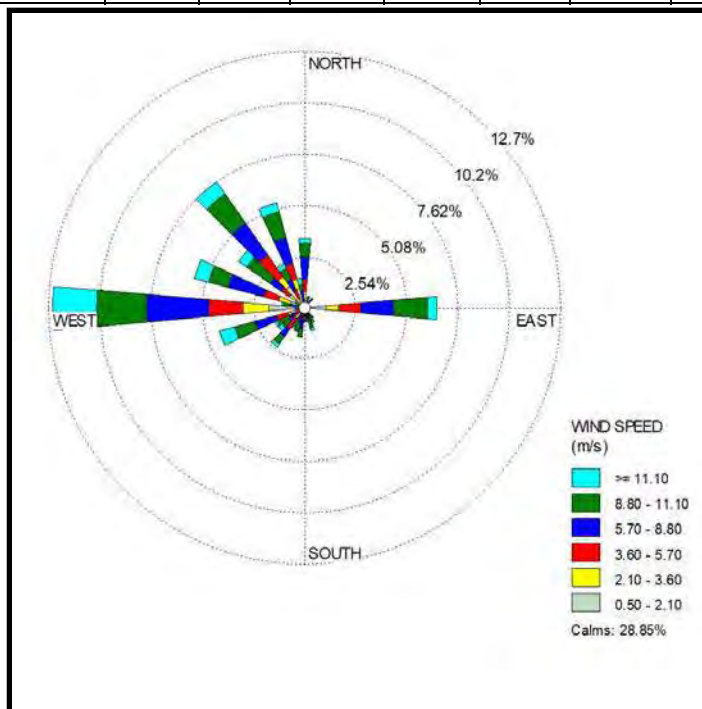


Figure 27. Wind Rose (March-May, 19)

3.5. Ambient Air Quality

The ambient air quality monitoring was done to assess the ambient air quality. Monitoring was carried out at Six stations for the month of March 19- May19. The guidelines for selections of ambient air monitoring stations given in IS – 5182 parts 14, 2000 were followed. These guidelines state that, “when the objective of air sampling is to identify the contribution from specific sources of pollution, the sampling locations should be located in upwind and the downwind direction of such sources”.

3.5.1. Sampling Station Selection

To select the air sampling locations, meteorological data with respect to temperature, relative humidity, wind speed and direction plays a vital role. Predominant wind direction plays an important role in determining location of

monitoring stations. The monitoring stations were located in areas that were downwind from the source.

3.5.2. Ambient Air Sampling Locations

Table 27. Air sampling locations (March-May 19)

S.No.	Location	Distance & Direction from project area	Project area/study area	Environmental Significance	Sampling type and parameter and their rationale
A1	Upper Terminal Point (UTP)	Located onsite	Commercial	Existing ambient air quality in upwind and downwind at core zone	PM ₁₀ , PM _{2.5} , SO ₂ ,and NO ₂
A2	Lower Terminal Point (LTP)	Located onsite	Commercial		
A3	Khatkanpada	0.24 Km (From UTP), NNE	Residential	Existing air quality at Buffer Zone	
A4	Virar East	0.79 Km (From LTP), SW	Residential		
A5	Sai Nath Nagar	0.83 Km (From UTP), NW	Residential		
A6	Phulpada	1.04 Km (From LTP), South	Residential		

The predominant wind direction is from W to E. To study the present ambient air scenario total six locations were selected.

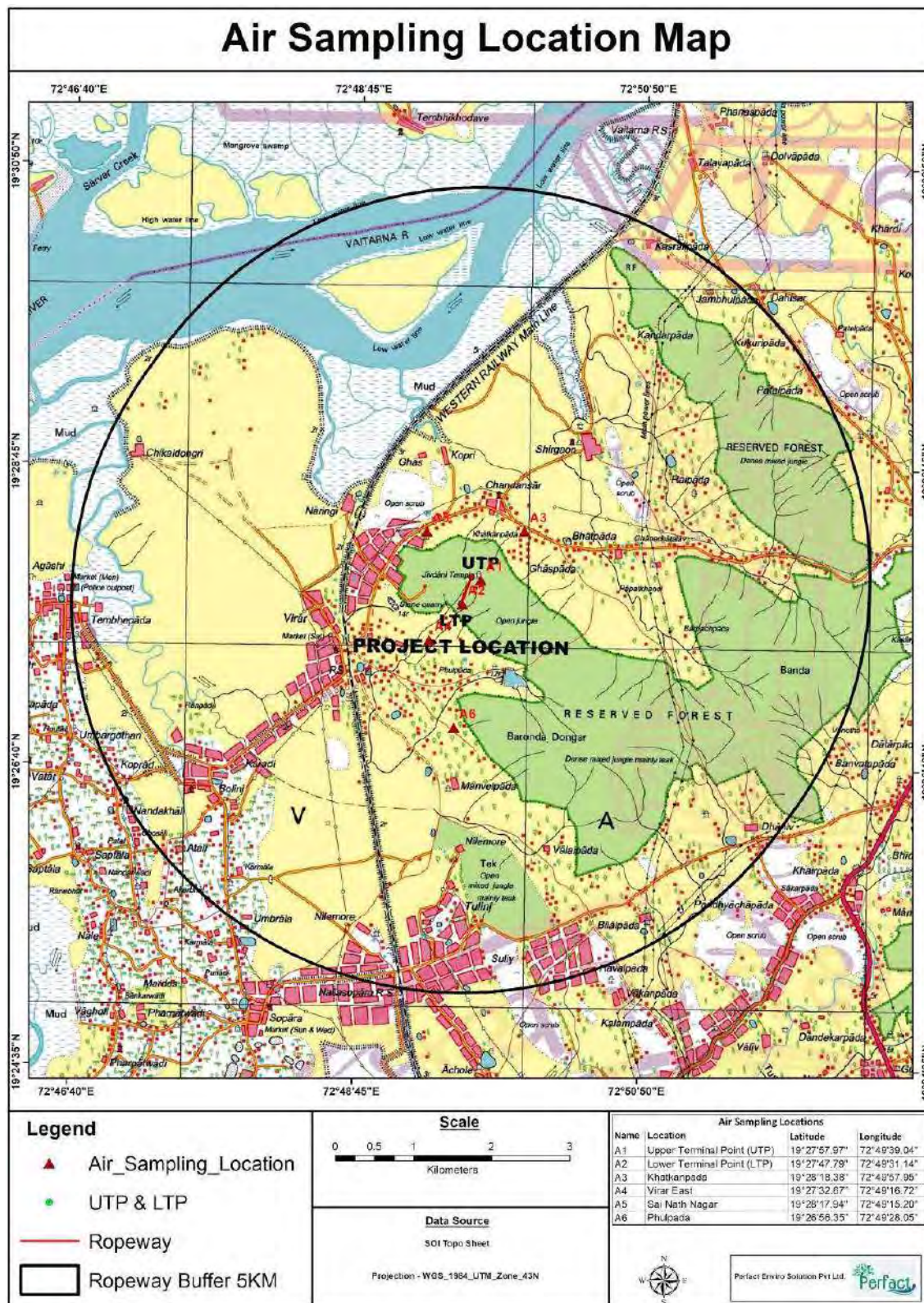


Figure 28. Air Sampling location on Topographical Map

3.5.3. Sampling Procedure

Respirable Dust Samplers were used to collect samples for PM_{10} and $PM_{2.5}$ in ambient air. The ambient air was sucked through the cyclone and filter paper by a blower. Samples of gases were drawn at a flow rate of 0.5 litres per minute and were analysed in the laboratory.

Monitoring was conducted in respect of the following parameters:

- Particulate Matter (PM_{10})
- Particulate Matter ($PM_{2.5}$)
- Sulphur Dioxide (SO_2)
- Oxides of Nitrogen (NO_2)

This procedure was adopted because there are no short-term variations and low concentration of gaseous pollutants was expected.

3.5.4. Analytical methods followed for ambient air quality monitoring

- **Particulate Matter ($PM_{2.5}$) (USEPA Quality Assurance HandBook (Vol.II) Part II, Quality Assurance Guideline Document, 2.12):** Particulate Matter ($PM_{2.5}$) was analysed by the Gravimetric Method. Particulate matter was collected on the 37 mm diameter glass microfiber Filter Paper. $PM_{2.5}$ value is determined from the values of volume of air passed through Ambient Fine Dust Sampler.
- **Particulate Matter (PM_{10}) (IS: 5182 Part 23:2006):** Particulate Matter (PM_{10}) was analysed by the Gravimetric Method. It was carried out by Respirable Dust sampler as per IS: 5182(Part 23):2006. Particulate matter was collected on the GF/A Filter Paper. Particles with aerodynamics diameter less than the cut-point of the inlet are collected by the filter. The mass of these particles is determined by the difference in filter weight prior to and after sampling.
- **Sulphur dioxide (SO_2) (IS: 5182; Part – II – 2001):** Sulphur dioxide is absorbed by aspirating a measured air sample through a solution of Potassium or sodium tetrachloromercurate, TCM. This procedure results in the formation of a dichloro sulphite mercurate complex. The Sulphite Ion produced during sampling is reacted with sulphamic acid, formaldehyde and pararosaniline to form an azo dye and then determined colorimetrically.
- **Nitrogen dioxide (IS: 5182; Part – VI – 2006):** Nitrogen dioxide is collected by bubbling air through a sodium hydroxide- sodium arsenite solution to form a stable solution of sodium Nitrite. The Nitrite Ion Produced during sampling

is reacted with hydrogen peroxide, Sulphanilamide and NEDA to form an azo dye and then determined colorimetrically.

3.5.5. Ambient Air Quality Results

At each station ambient air quality parameters i.e PM_{10} , $PM_{2.5}$, SO_2 , NO_2 were monitored twice a week for 3 months (March 19-May19) 24 hourly at uniform intervals and ambient air quality parameters.

Table 28. PM results in Ambient Air quality

S. No.	Min.	Max.	98 th Percentile	Mean	Min.	Max.	98 th Percentile	Mean
	$PM_{2.5}$ (Standard – 60 $\mu g/m^3$)				PM_{10} (Standard – 100 $\mu g/m^3$)			
A1	24.66	38.27	36.44	30.70	47.59	66.75	63.80	54.90
A2	26.67	39.80	37.89	32.50	49.49	69.42	67.69	57.80
A3	29.05	42.48	41.29	35.70	52.82	77.11	74.09	63.10
A4	30.36	45.09	44.39	38.00	55.2	84.21	77.43	67.00
A5	31.67	49.06	47.18	40.50	57.58	91.63	83.38	71.00
A6	32.98	53.20	51.16	43.00	59.96	99.35	75.00	90.41

(Source of Standards: G.S.R 826(E) dated 16th November 2009 of MoEF, Laboratory engaged: M/s Perfect Researchers Pvt.Ltd. (NABL Accredited))

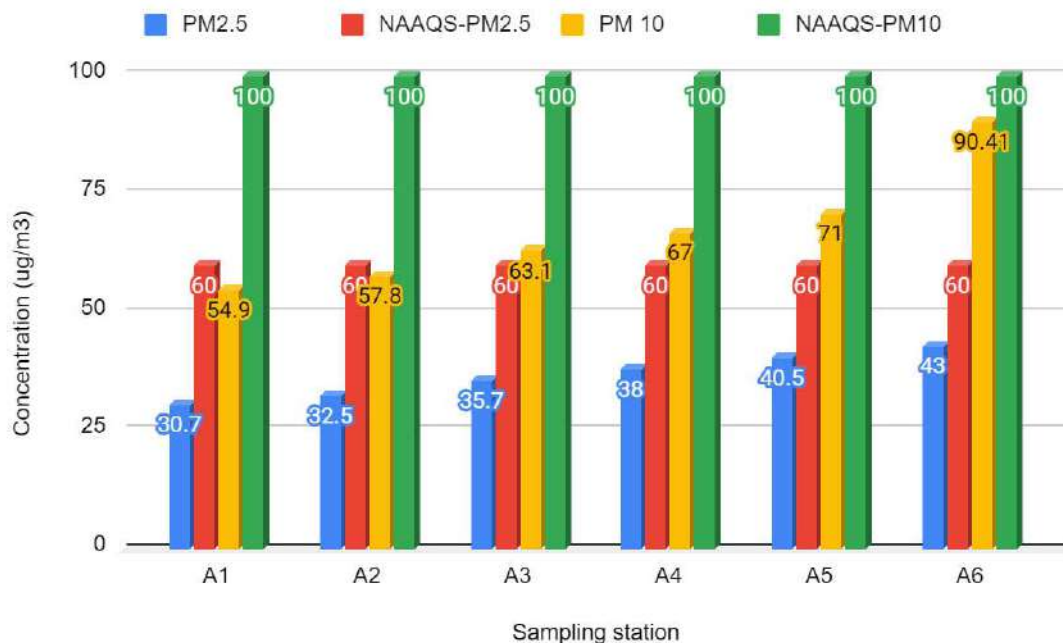


Figure 29. Bar chart showing comparative PM result with NAAQS

Table 29. SO₂ & NO₂ results for Ambient air quality

Locati on	Min.	Max.	98 th Percentile	Mean	Min.	Max.	98 th Percentile	Mean
	SO ₂ (Standard – 80 µg/m ³)				NO ₂ (Standard – 80 µg/m ³)			
A1	4.62	7.32	7.25	5.90	12.94	23.72	20.34	17.70
A2	4.80	7.84	7.61	6.30	13.99	24.67	21.15	18.70
A3	5.13	8.93	8.12	6.80	15.94	26.33	23.14	20.50
A4	5.36	9.75	8.49	7.30	17.36	27.52	25.28	21.80
A5	5.59	10.61	8.85	7.70	18.11	28.7	27.5	23.20
A6	5.82	11.50	9.33	8.20	18.86	29.89	29.82	24.50

(Source of Standards: G.S.R 826(E) dated 16th November 2009 of MoEF, Laboratory engaged: M/s Perfect Researchers Pvt.Ltd. (NABL Accredited))

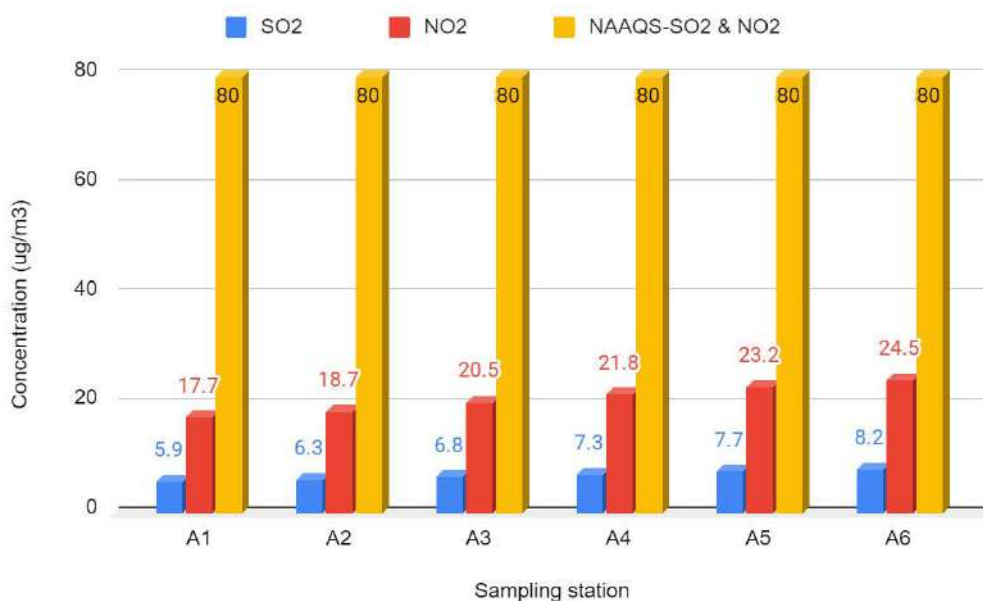


Figure 30. Bar chart showing comparative SO₂ & NO₂ result with NAAQS

3.5.5.1. Inverse distance weighted (IDW) interpolation (will be updated after getting base maps)

The IDW technique computes an average value for unsampled locations where sampling was not possible using values from nearby weighted locations. Below are the maps showing the concentration within the 5 km radius to the project site.

The IDW interpolation has been done for the buffer zone by which the concentration of the ambient air parameters are plotted with respect to the baseline known concentration. The maximum concentration range in the Buffer areas for all the parameters are given below based on IDW Maps.

Table 30. IDW Ambient Air result

Parameters	PM10 (ug/m3)	PM2.5 (ug/m3)	SO2 (ug/m3)	NO2 (ug/m3)
Maximum Concentration in buffer zone	62.03-65.57	36.87-38.08	8.3-8.5	21.11-21.78

Thus it can be concluded from the above results that all the parameters are within the range of the NAAQS and as per AQI by CPCB the buffer zone falls in the **Satisfactory** range.

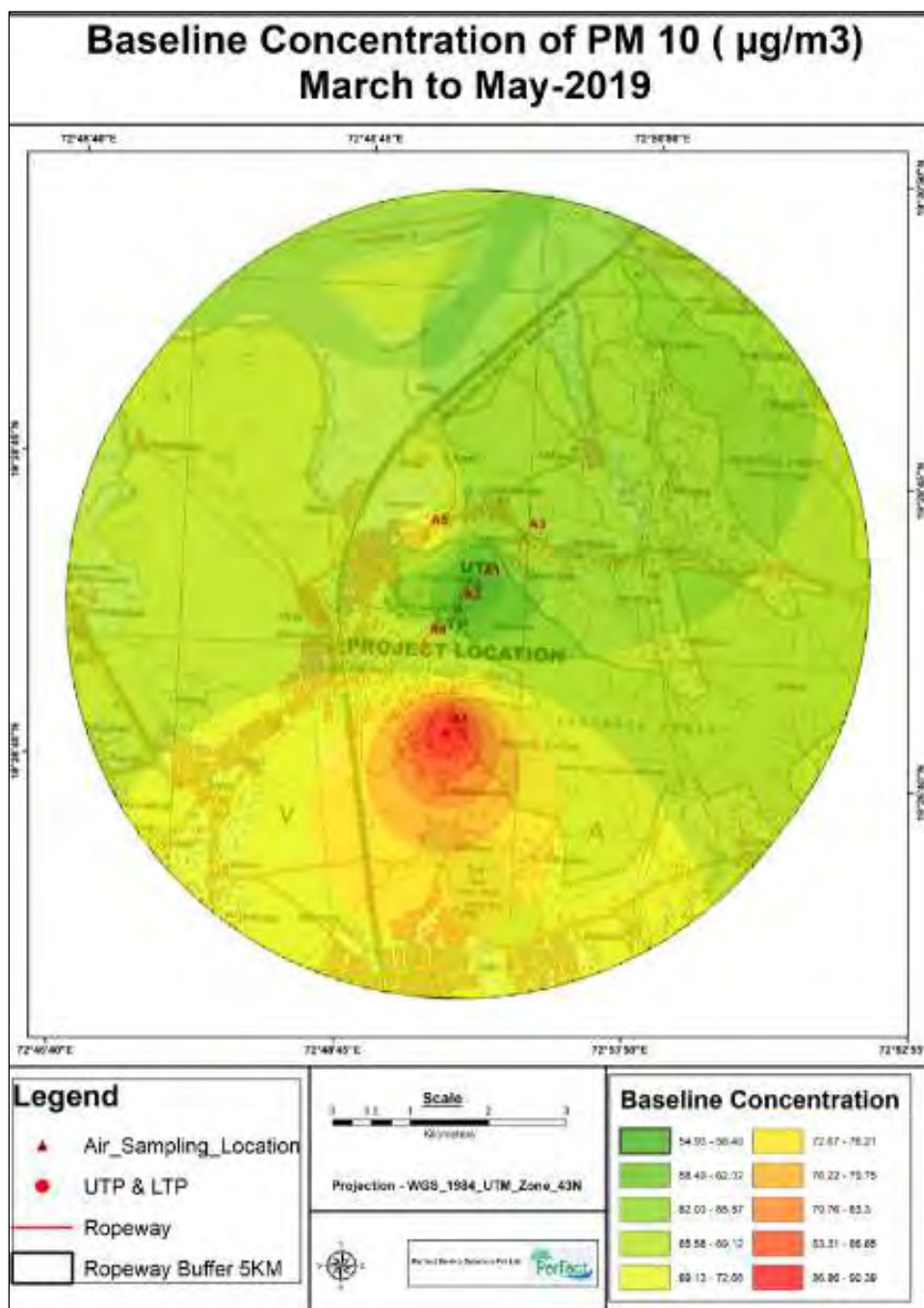


Figure 31. Map showing PM10 concentration by IDW Interpolation (Software ArcMap)

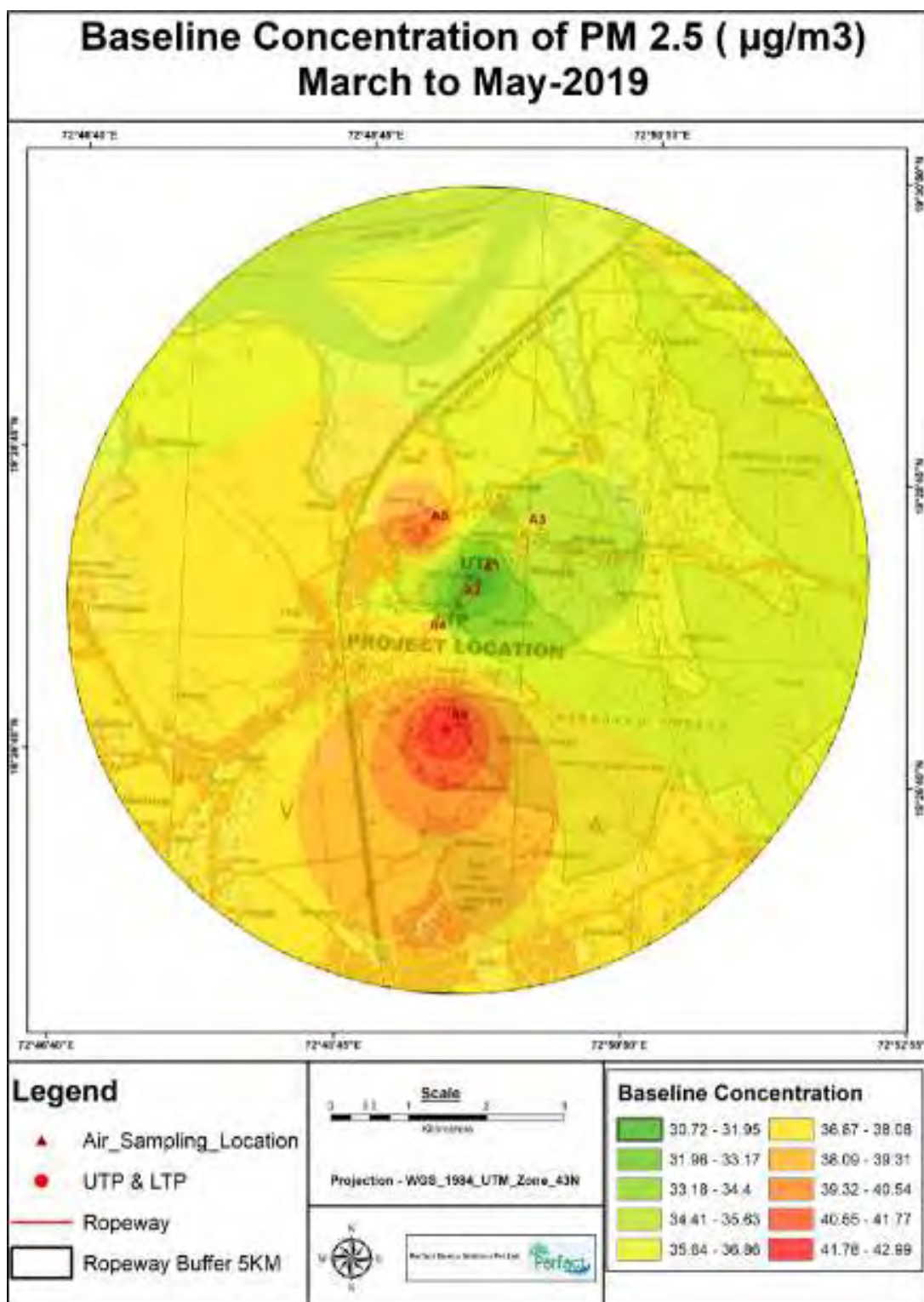


Figure 32. Map showing PM2.5 concentration by IDW Interpolation (Software ArcMap)

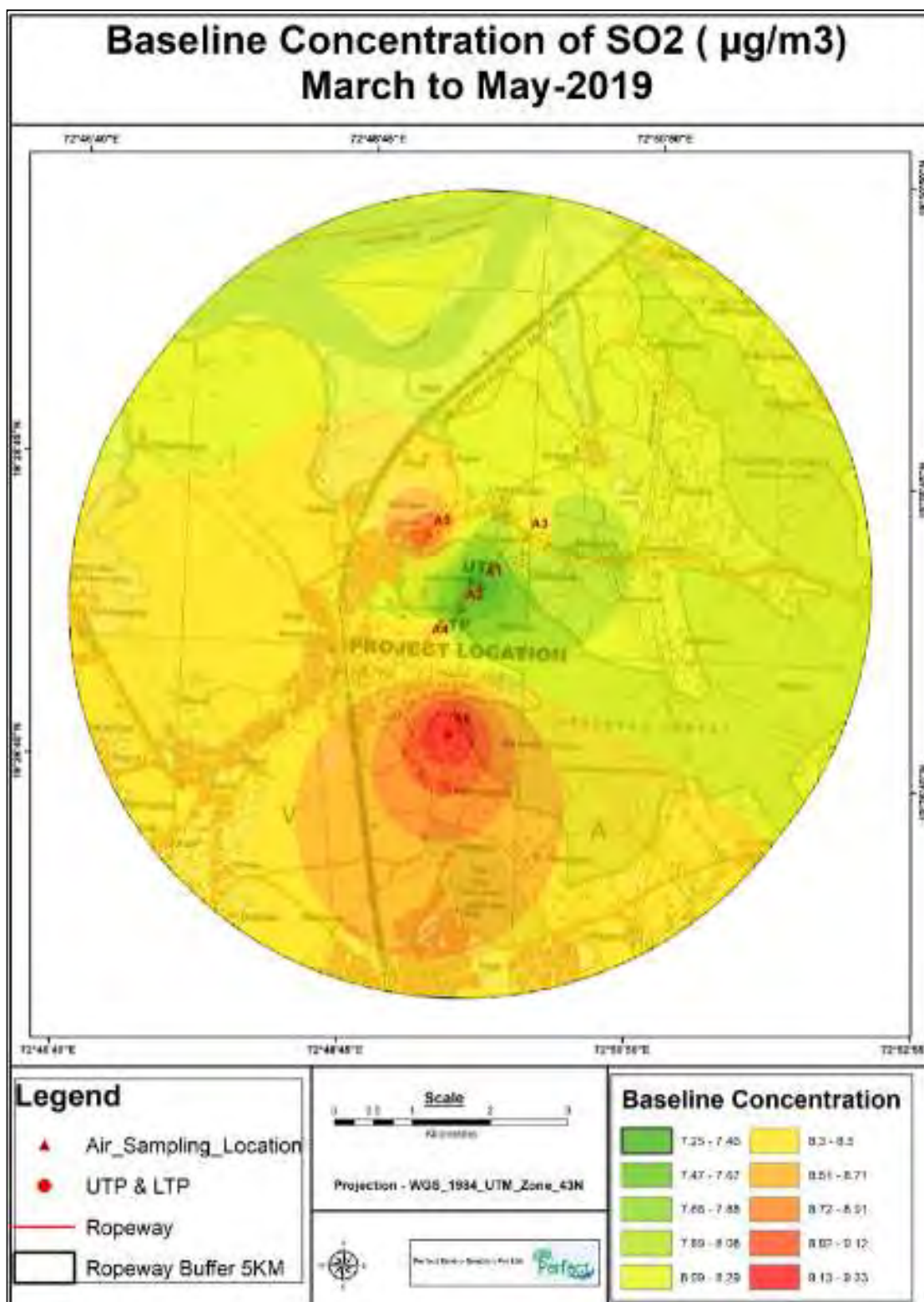


Figure 33. Map showing SO₂ concentration by IDW Interpolation Software ArcMap)

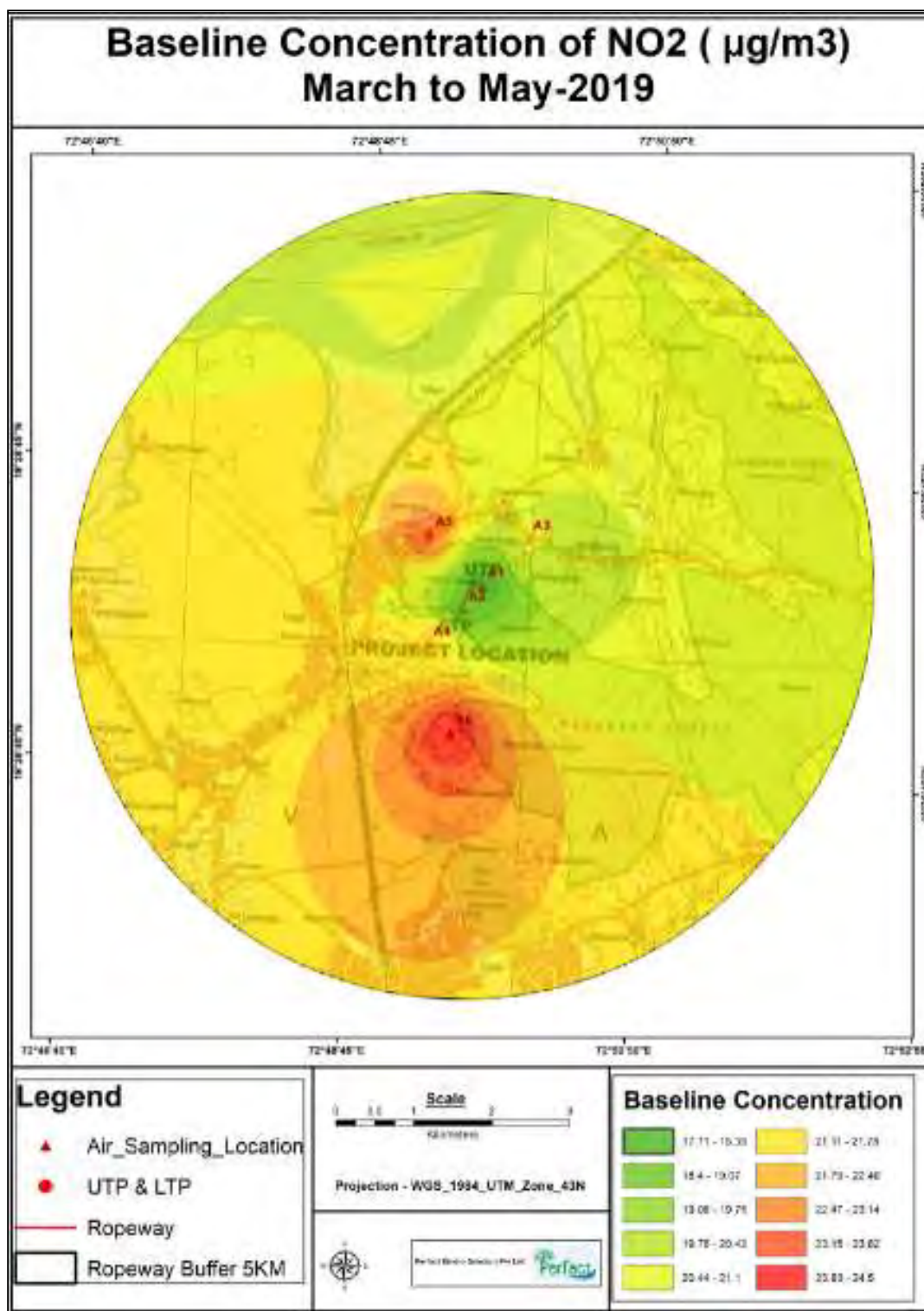


Figure 34. Map showing NO₂ concentration by IDW Interpolation (Software ArcMap)

3.5.6. Air Quality Index

The table given below shows the Air Quality Index (AQI) range & category:

AQI RANGE	AQI CATEGORY	AQI RANGE	AQI CATEGORY
Good (0-50)	Minimal Impact	Poor (201-300)	Breathing discomfort to people on prolonged exposure
Satisfactory (51-100)	Minor breathing discomfort to sensitive people	Very Poor (301-400)	Respiratory illness to the people on prolonged exposure
Moderate (101-200)	Breathing discomfort to the people with lung, heart disease, children and older adults	Severe (401-500)	Respiratory effects even on healthy people

(Computed using: CPCB, AQI CALCULATOR)

Figure 35. AQI Range with category

Table 31. AQI of the Sampling locations

S. No.	Highest Sub-index Parameter	AQI Value	AQI Range
A1	PM ₁₀	57	Satisfactory
A2	PM ₁₀	58	Satisfactory
A3	PM ₁₀	63	Satisfactory
A4	PM ₁₀	67	Satisfactory
A5	PM ₁₀	71	Satisfactory
A6	PM ₁₀	90	Satisfactory

3.5.7. Data Interpretation

The ambient air quality results are summarized in the above tables.

The mean value of PM₁₀ ranges from (54.9-90.4 µg/m³) & PM_{2.5} ranges from (30.7-43.0 µg/m³), SO₂ ranges from (5.9-8.2 µg/m³), NO₂ ranges from (17.7-24.5 µg/m³) which are within the limits of National Ambient Air Quality Standards (NAAQS).

As per the Air Quality Index by CPCB the air quality of the study area is found Satisfactory.

3.6. Noise Level

3.6.1. Methodology

At each station noise level was monitored for 24-hours simultaneously. For each measurement, dB (A) readings were taken for every 15 minutes for 24 hrs ones in a season to get Leq values. As per CPCB guidelines, the site of an area shall be selected based on Commercial, Residential. To assess the noise level of the proposed area, following stations were selected.

3.6.2. Ambient Noise Sampling Station

Table 32. Ambient Noise Sampling Locations

S. No	Location	Distance & Direction from project area	Project area / study area	Environmental Significance	Sampling type and parameter
N1	Upper Terminal point(UTP)	Located onsite	Commercial	Existing Ambient Noise quality at core zone	Noise Values (Leq in dB(A))
N2	Lower Terminal Point (LTP)	Located onsite	Commercial		
N3	Main gate	Located near LTP	Commercial	Existing Ambient Noise quality at Buffer zone	
N4	Khatkanpada	0.24 Km (From UTP), NNE	Residential		
N5	Virar East	0.79 Km (From LTP), SW	Residential		
N6	Sai Nath Nagar	0.83 Km (From UTP), NW	Residential		
N7	Phulpada (South Dir.)	1.04 Km (From LTP), South	Residential		
N8	App. Road	0.08 Km, SW	Commercial		
N9	NH-8	6.40 Km, East(From UTP)	Commercial		
N10	Kopri naka-Chandansar road	1.06 Km, NW	Commercial		

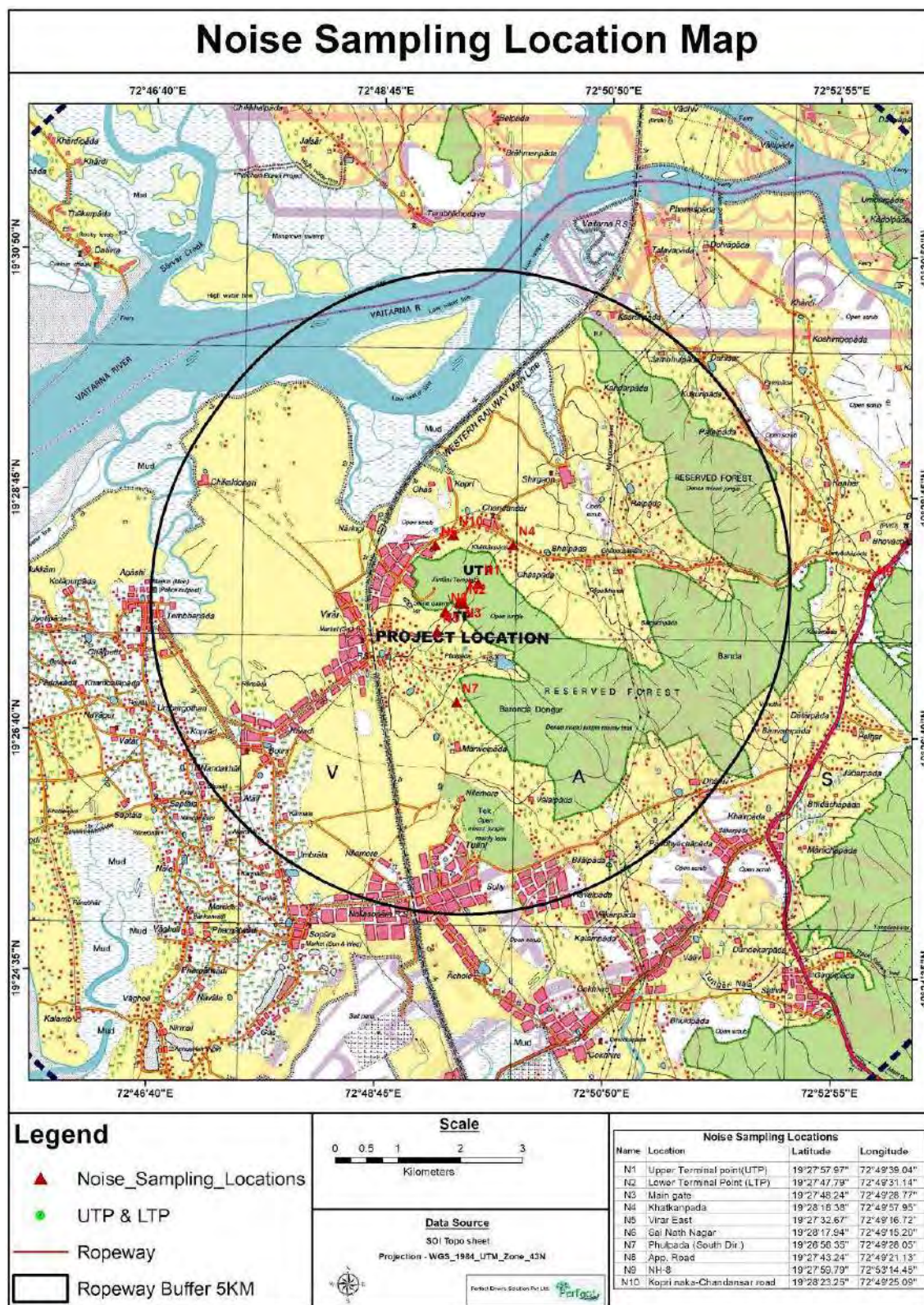


Figure 36. Noise Sampling locations on Topographical Map

3.6.3. Results and Discussion

Table 33. Results of the Ambient Noise

S. No.	Locations	Project area / study area	L _{eq} Day noise level dB(A)	L _{eq} Night noise level dB(A)	Day time (6.00 A.M to 10.00 P.M)	Night time (10.00 P.M to 6.00 A.M)
					As per CPCB ambient noise level Standard (Leq in dB(A)	As per CPCB ambient noise level Standard (Leq in dB(A)
Core zone noise quality						
N1	UTP	Commercial	58.5	50.4	65	55
N2	LTP	Commercial	61.3	53.1	65	55
Buffer zone noise quality						
N3	Main gate	Commercial	60.8	52.7	65	55
N4	Khatkanpada	Residential	54.2	47.0	55	45
N5	Virar East	Residential	53.4	46.9	55	45
N6	Sai Nath Nagar	Residential	57.5	47.2	55	45
N7	Phulpada	Residential	56.5	47.3	55	45
N8	Approach Road	Commercial	62.1	58.2	65	55
N9	Kopri naka-Chandansar road	Commercial	55.7	47.7	65	55
N10	NH-8	Commercial	67.6	60.3	65	55

(Source of Standards: CPCB standards for Noise Pollution (Regulation & control) Rules, Laboratory: M/s Perfact Researchers Pvt. Ltd. (NABL Accredited) Bold values showing result exceeding the standard

The Ambient Noise Quality results are summarized above. The results are discussed below:

The Ambient Noise quality at the core Zone i.e. at the UTP, LTP of the proposed project site during both daytime and nighttime are found to be within their respective standard limits.

Residential area: The noise level ranges from 53.4-57.5 dB (A). At the site N6 & N7 the values are slightly higher than the standard limit of residential area that is ~55 dB(A) due to regular vehicular movement at connecting roads & market area. During the night, the noise level at all the residential sites were recorded between 46.9 dB

(A) – 47.3 dB (A) which is exceeding the standard limit of residential area that is ~45 dB(A).

Commercial Area: The noise level of NH-8 is 67.6 dB(A) at day time and 60.3 dB(A) at night time while at N8 (Approach road) it is 58.2 dB(A) during night time which is exceeding the standard limits of commercial area at day and night that is ~ 65.0 dB(A) and ~ 55.0 dB(A), respectively, due to increased vehicular movement.

3.7. Hydrology & Water Regime

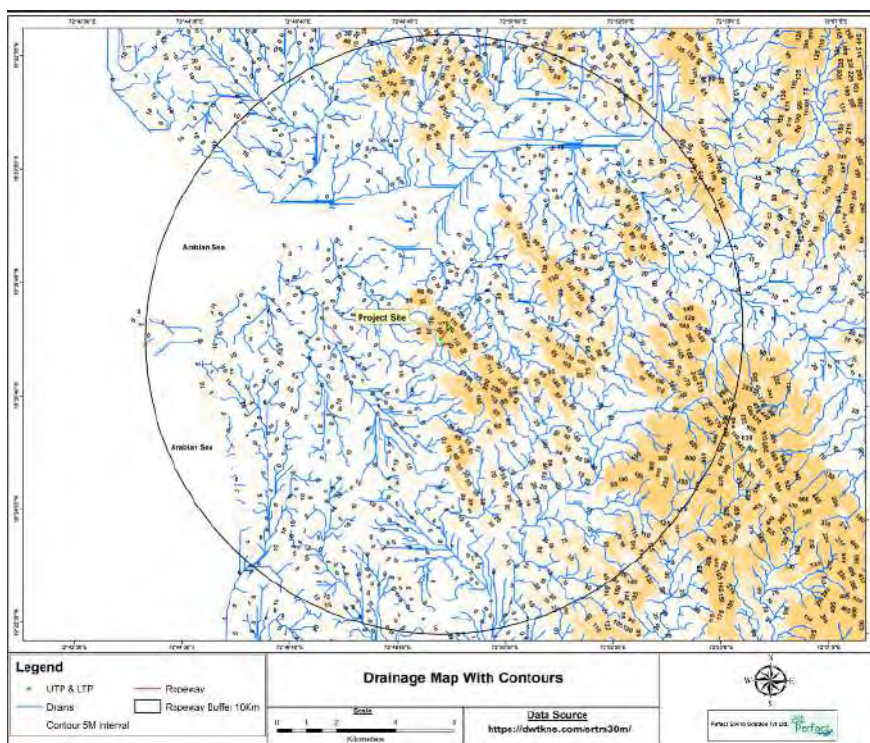
3.7.1. Drainage

Buffer area comprises various water bodies like rivers, part of the Arabian sea, ponds and Mangrove Swamp. The main drainage of the area is River Vaitarna flows almost NE-NW and joins the Arabian Sea. Tansa river is a tributary of Vaitarna river flows SE-N located at 7.73 km Northeast direction from the project site. Overall drainage pattern of the area is by and large dendritic. Understandably, the natural slope of the area is towards the west i.e seashore.

Overall drainage pattern of the area is by and large dendritic. The natural slope of the area is towards the west i.e seashore and the nearest water body within one km is Virar Reservoir 0.47 Km NW and Virar Dam 0.87 Km SE which is opposite site of the slope direction. As a precautionary measure during the construction period, runoff from the construction site shall not be allowed to stand (water logging) or enter the roadside or nearby drain.

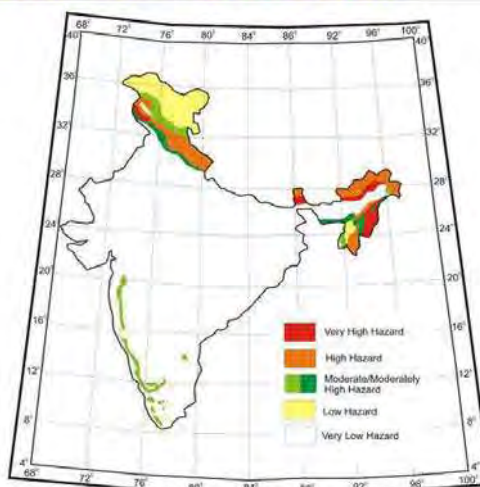
In the core zone basically 1st order and 2nd order drainages are found and the slope angle at LTP is 2 to 3 degree whereas slope angle at UPT is 31 to 33 degree. During the construction phase It will be ensured that drainage of the area will not be disturbed.

**Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar**



Landslide: The proposed project falls under Seismic zone III and as per the Landslide hazard zonation map of India by GSI, it doesn't fall under landslide prominent zone of India. To check the stability of rock and soil of the core zone a proper Geotechnical Investigation has been carried out and as per the Geotechnical Investigation Report (Section D) The rocks present in the hill are average to strong in strength and as per the report foundations shall be placed minimum 50 cm in rock stratum during construction phase.

Landslide Hazard Zonation map of India by GSI



Flood History

The entire storm water outflow system of Mumbai has been so far based purely on gravity. There are closed drains in the old island city (Colaba to Mahim) and open drains or nallas in suburbs. (Chitale, 2006). They both discharge by gravity either in the creek arms or into the open sea along the east and west coasts of Mumbai. The low lying portions of the island city have a history of getting regularly flooded up to 5-6 times a year, generally for a few hours 16/16 every time, when high intensity rainfall is coupled with high tide in the sea. There is water logging in the central Mumbai belt under such conditions. At many locations, land levels are below the high tide level e.g. Sat Rasta, Lower Parel, Grant Road, etc. The mean sea level of Mumbai is very close to the Indian Mean Sea level at 0.01 m. The average high tide level is 2.5 m, the annual highest peak tide level being 2.75 m. The average low tide level is (-) 2.0 m (i.e. two meters below the mean sea level). It is the low tide periods (about 10 to 12 hrs in a day below the mean sea level) that have been providing relief during the storm by draining out the accumulated surface waters. The level of a large coastal belt in Mumbai is close to 3.00 M e.g. Juhu aerodrome; and Khar. These are the vulnerable areas for congestions and submergence by tide and flood interacting. Ground levels in many low lying areas in Island city & suburbs are just 2.25 to 3 meters above MSL, while the flood levels in the creeks also have the same heights.

Seventy-five villages situated along river banks in Palghar and Thane districts in Maharashtra have been put on alert as the water level of two major dams in the region are close to the overflow mark, on 15th July 2019.

Thane Municipal Corporation Regional Disaster Management Cell chief Santosh Kadam said the alert was issued on the basis of information forwarded by the Brihanmumbai Mumbai Municipal Corporation which operates the Modak Sagar and Tansa dams in Shahapur area here.

"Authorities in both districts have been asked to alert villagers along the banks of Tansa and Vaitarna rivers regarding possible flooding," Kadam said. According to a TMC statement, the present water level of Modak Sagar dam was 160.842 metres, while the overflow level is 163.147 metres.

It added that the water level of Tansa was 126.781 metres while the overflow level is 128.62 metres.

3.7.2. Geohydrology

As per CGWB report, in the study area Deccan trap Basalt of Upper Cretaceous to Lower Eocene age is the major rock type. Ground water in Deccan Traps mostly occurs in the weathered and fractured parts down to 10-15m depth. At places potential zones are encountered at deeper levels in the form of fractures and inter-flow zones which are generally confined down to 60-80m in the district. The

weathered portions of both vesicular and massive units have better porosity and permeability. Intensity of weathering is less in the hilly region as seen in the eastern part of the district while it is higher in the plain area. The yield of dug wells tapping phreatic aquifer ranges between 18 to 152 cum/day, which have 5-12m depth range

The seasonal water level fluctuation (May-Nov 2004) ranges from -0.70 to 7.70 m. The fluctuation 0-2 m and 2-4 m has been observed in a major part of the area. The higher fluctuation of 4-6 m and 6-8 m are observed in the eastern part of the district being the recharge area. Negative fluctuation is observed in very few wells in isolated patches.

As per the CGWB report, the Groundwater Surveys and Development Agency (GSDA), Govt of Maharashtra has drilled a large number of bore/tube wells. The aquifer performance test conducted on some these wells indicate that the Specific Capacity ranges from 1.23 to 62.05, Transmissivity ranges from 7.28 to 177.60 m²/day whereas Storativity varies between 0.0082 and 0.0986.

Decadal mean post-monsoon depth to water level varies between 0.32 and 5.25 m bgl. In a major part of the region mean water level is in the range of less than 2 m bgl. Mean water level range of 2 to 5 m bgl is observed in the north western part around Palghar, Dahanu, Talasari and Pansipada and also in the form of isolated patches in the central part of the region. The deeper, mean water level of more than 5 m bgl is observed as isolated patches in the northern part. The decadal water level trend varies from +0.0615 to -0.10m/yr. In post-monsoon 24 wells out of 53 monitored show fall in water levels indicating draining of the aquifer due to steep gradient and natural base flow.

3.7.2.1. Groundwater Development

Deccan Trap Basalt

Groundwater in Deccan Traps mostly occurs in the weathered and fractured parts down to 10-15m depth. At places, potential zones are encountered at deeper levels in the form of fractures and inter-flow zones which are generally confined down to 60-80m in the area. The weathered portions of both vesicular and massive units have better porosity and permeability.

Alluvium

These are developed in the western part of the area along the coast and river courses and are lacustrine in nature. Along the coast, alluvium consists of clayey and mud deposits. The quality of water is slightly brackish and pumping from this formation has to be restricted to prevent ingress of seawater. The alluvium

constitutes the potential aquifer in the area. The yield of dug wells ranges between 122 to 252 cum/day, which have an 8-16m depth range.

Depth of Water Level

The depth of water level ranging between 2 to 5 m bgl and 5 to 10 mbgl are observed in the major part of the region.

The major portion (about 80%) of the buffer zone falls in block Vasai and 20% area in north falls in block Palghar. Our project area falls in Palghar Block. As per the CGWB report, the stage of groundwater development of Vasai block and Palghar block are 29.11% and 11.40% respectively. Both blocks are categorized under safe category, the details are given below:

Table 34. GW status

S. No.	Blocks	Net Annual Groundwater Availability (Ham)	Annual Groundwater Draft	Projected demand for domestic and industrial use up to 2025	Groundwater availability for the future irrigation	Stage of development in %	Category of Ground Water Development
1	Vasai	3661.47	1065.74	173.85	3100.85	29.11	Safe
2	Palghar	16002.60	1823.77	305.07	13581.06	11.40	Safe

Source: CGWB report of Thane District (September 2013)

3.7.3. Water Conservation

As per CGWB report, following recommendation have been made for water conservation:

As per the CGWB report, the groundwater development is marginal; there is ample scope for further groundwater development at feasible locations so as to bring more cultivable land under irrigation. Some of the feasible recommendations for further improvement and development of available resources are listed below:

1. Large diameter (3-6m) dug wells may be constructed down to the depth of 15 m in valley portions and other feasible locations to exploit shallow and potential aquifers.
2. Overdraft of groundwater should be avoided to keep the aquifer safe from quality deterioration due to seawater ingress. The spacing of 200 m between the dug well is recommended in this area.

3. Small schemes of surface water conservation should be undertaken to conserve monsoon water and runoff generated thereupon. Storage tanks on hilltops, Nalabunds, Check dam/ Stop dam, etc., should be constructed on second-order streams after a feasibility study, to conserve the surface water runoff and augment the groundwater recharge by impounding the water for longer duration. Underground Bandharas are also feasible to check the base flow which flows out as surface runoff during the winter months.
4. Excessive pumping in the wells close to the vicinity of sea creeks which causes seawater ingress into the mainland may be stopped and ban may be imposed on the construction of new wells in the areas affected by this ingress.
5. To control the industrial pollution, effluent treatment should be practiced before transporting them to effluent sumps. Disposal of waste etc., should be done at the proper place after taking proper measures.

3.8. Water Quality

3.8.1. Sampling Station

The various indicators of water quality form one of the most important tools for impact assessment in future, therefore it is imperative to assess the existing water quality of both ground and surface water occurring in the core and buffer zone.

To assess the water quality of the proposed area, the sample was collected in March-May 2019 following 16 stations (8 groundwater & 8 surface water) were selected.

3.8.2. Ground-water Locations

Table 35. Groundwater sampling Locations

Station No.	Location	Distance & Direction from Project area	Environmental Significance
W1	UTP (From supply)	Located onsite	Existing Ground water quality at Buffer zone
W2	LTP (BW)	Located onsite	
W3	Khatkanpada(BW)	0.24 Km (From UTP), NNE	
W4	Virar East (B.W.)	0.79 Km (From LTP), SW	
W5	Ghaspada village (B.W.)	0.80 (From UTP), East	
W6	Sai Nath Nagar (Well water)	0.83 Km (From UTP), NW	
W7	Sai Dutt Nagar (B.W.)	0.84 Km (From LTP), West	

W8	Phulpada (B.W.)	1.04 Km (From LTP), South	

3.8.3. Surface water monitoring locations

Table 36. Surface water sampling locations

Station No.	Location	Distance & Direction from Project area	Environmental Significance
SW1	Panchpiyari pond	0.36 Km (From LTP), NW	Existing Surface water quality at Buffer zone
SW2	Virar Dam	0.97 Km, SSE (From LTP)	
SW3	Virar Pond	1.41 Km, SSW (From LTP)	
SW4	Ghaspada lake	1.02 Km (From UTP), NEE	
SW5	Kopori Lake	1.05 Km, North (From UTP)	
SW6	Ghaincha Talav	1.32 Km, (From UTP)NE	
SW7	Virar Naala	1.54 Km, (From LTP) SW	
SW8	Vaitarna River	2.21 Km, (from UTP), NNW	

3.8.4. Water Sampling Location

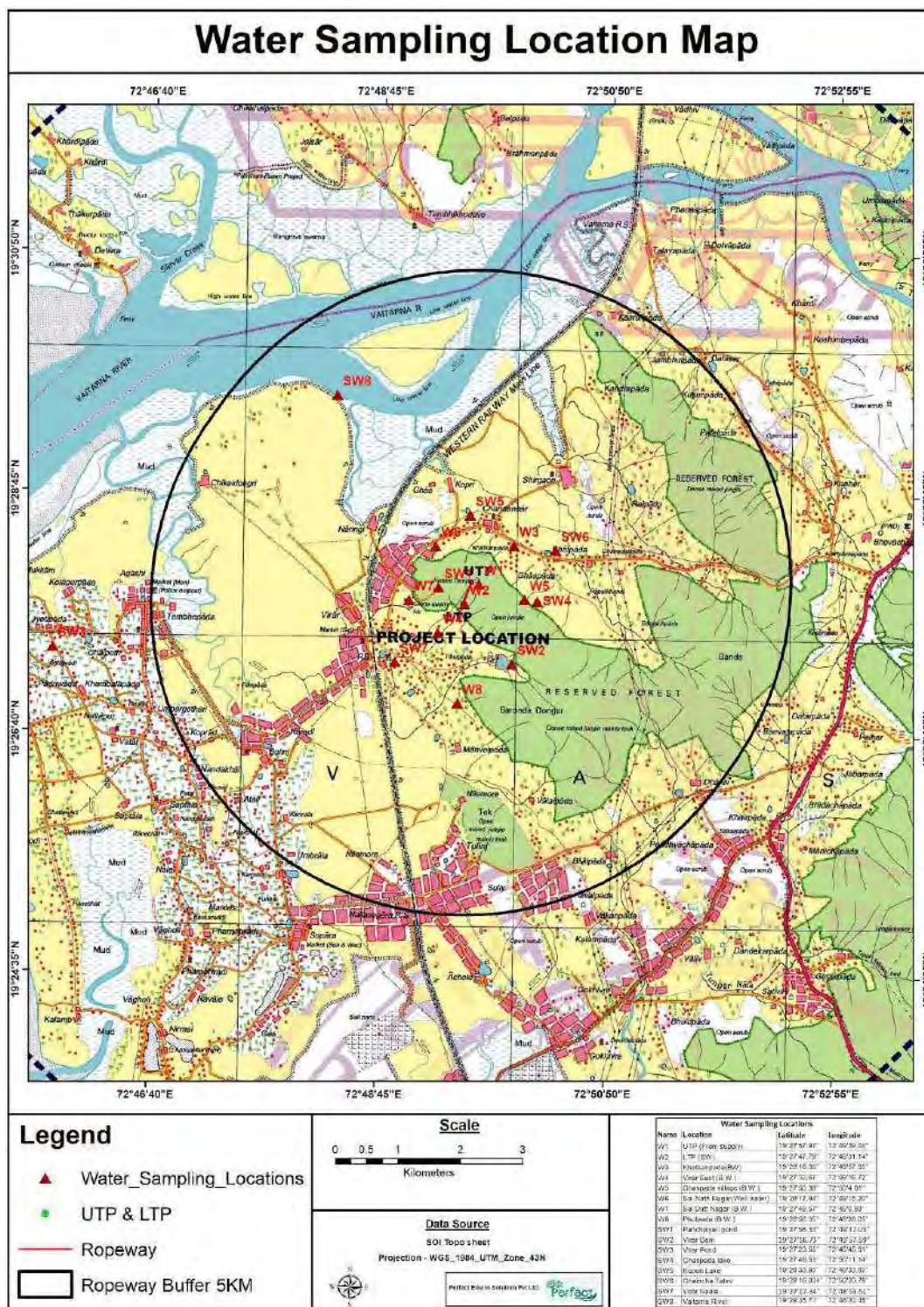


Figure 37. Water sampling locations on Topographical Map

3.8.5. Criteria of Selection of Sampling Locations

Water sampling locations were selected on the basis of following criteria: source of water, flow of water, geological structure (hydrogeology), use of water, depth of water table etc.

Surface water was collected from upstream and downstream to study the chemical parameters. During surface water sampling flow of water plays an important role.

3.8.6. Sampling Frequency and Sampling Techniques

As per the standard practice grab sampling was done for 8 locations, Composite sampling was done for Surface water locations. Water samples were taken as per the Standard Methods (IS & APHA, 23rd Edition 2017). Necessary precautions were taken for preservation of samples.

The physical parameters viz. pH, temperature and conductivity were measured at site using a portable water analyzer.

As evident from the sampling locations for water quality assessment represented surface and groundwater. The results of water quality assessment are presented below

3.8.7. Ground Water Quality Results

Table 37. Groundwater quality results

Parameters	Unit	IS 10500:2012 (Drinking water standard)	Core & Buffer zone ground water quality Results							
			W1 Onsite UTP (Supply)	W2 Onsite LTP (B.W.)	W3 Khatkari Padma (B.W.)	W4 Virar East (B.W.)	W5 Ghaspada village (B.W.)	W6 Sai Nath Nagar (well water)	W7 Sai Dutt Nagar (B.W.)	W8 Phoolpada (B.W.)
Colour	Hazen	5	<1	<1	<1	<1	<1	<1	<1	<1
Odour	--	Unobjectionable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity	NTU	5	<1	<1	<1	<1	<1	<1	<1	<1
pH Value	--	6.5-8.5	8.36	7.27	7.94	7.62	8.02	8.25	7.39	8.27

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

Temperature	°C	–	21.5	21.6	21.5	21.4	21.4	21.4	21.3	21.5
Conductivity	µmho/cm	–	277.1	660	242.2	720	405.3	298	863.5	279.9
Total Dissolved Solids	mg/l	500	138.6	329.9	121.1	359.8	202.7	149.6	431.7	140
Chloride (as Cl)	mg/l	250	24	76	11	72	43	29	76	21
Fluoride (as F)	mg/l	1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.16	0.14
Total Hardness	mg/l	200	60	184	28	180	126.9	104	240	64
Calcium (as Ca)	mg/l	75	20.8	46.4	8	64	38	24	83.2	24
Magnesium (as Mg)	mg/l	30	1.9	16.5	1.9	4.86	7.78	10.7	7.78	0.97
Iron (as Fe)	mg/l	0.3	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate (as SO ₄)	mg/l	200	9.1	28.1	8.1	31.5	7.0	10.5	61.2	8.3
Nitrate Nitrogen	mg/l	45	0.93	19.1	1.1	4.7	0.2	1.6	25.6	0.9
Alkalinity	mg/l	200	76	152	42	148	160	116	212	104
Sodium (as Na)	mg/l	–	11.2	20.8	7.2	19	14	4.6	26	11.1
Potassium (as K)	mg/l	–	0.87	0.49	0.7	0.29	0.23	1	1.8	0.85
Zinc (as Zn)	mg/l	5	0.03	<0.01	<0.01	<0.01	0.01	0.02	0.02	<0.01

Aluminium, Boron, Iron, Total Chromium, Phosphate, Manganese, Copper, Mercury, Cadmium, Arsenic, Lead, Zinc & Selenium are below detection level (Source of standards: IS: 10500, Laboratory: M/s Perfect Researchers Pvt. Ltd (NABL Accredited))

3.8.8. Ground Water Quality Result Interpretation

The ground water quality parameters of all the sampling locations are well within the drinking water standards (IS:10500) except at Location W7, where values exceeded the standard limits for Total hardness, Calcium and Alkalinity. Thus, the water quality of the study area is fit for the consumption.

3.8.9. Surface Water Quality Results

Table 38. Surface water quality results

S.No	Parameters	Unit	SW1 Panc hipya	SW2 Jivda ni	SW3 Virar Pond	SW4 Ghaspa da Pond	SW5 Kopo ri Lake	SW6 Ghanic ha Talab	SW7 Vaitarna River (Khadi)	IS: 10500 (Drinking Water)

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			ri Pond	Virar Dam						Standard)
1	Colour	Hazen	<1	<1	<1	<1	<1	<1	1	5
2	Odour	--	Agree able	Agree eable	Agree eabl e	Agreeab le	Agreea eable	Agreea ble	Agreeabl e	Agreeab le
3	Turbidity	NTU	<1	<1	<1	<1	<1	<1	<1	1
4	pH Value		7.7	7.86	7.58	7.65	7.68	7.65	8.67	6.5-8.5
5	Temperature	°C	21.3	21.1	21	21.1	21.1	21.2	21.2	-
6	Conductivity	µmho/cm	109.5	134	774.1	142.9	605.3	275.9	40990	-
7	Total Dissolved Solids	mg/l	54.7	66.98	396	71.47	302.7	137.8	20500	500
8	Chloride (as Cl)	mg/l	6	4	39	6	30	14	11540	250
9	Fluoride (as F)	mg/l	<0.1	<0.1	0.23	0.1	0.14	<0.1	0.92	1
10	Total Hardness	mg/l	12	16	264	12	160	72	4140	200
11	Calcium (as Ca)	mg/l	3.2	4.8	99.2	1.6	59.2	25.6	416	75
12	Magnesium (as Mg)	mg/l	0.97	0.97	3.9	1.94	2.9	1.9	753.3	30
13	Iron (as Fe)	mg/l	<0.1	0.19	<0.1	<0.1	<0.1	<0.1	0.21	-
14	Sulphate (as SO ₄)	mg/l	6.9	3.7	133	3.5	71.6	53.2	526.1	200
15	Nitrate Nitrogen	mg/l	1.8	1.4	6.6	0.66	3.7	3.6	5.1	45
16	Nitrite Nitrogen	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.19	-
17	Alkalinity	mg/l	22	36	168	24	144	34	116	200
18	Phosphate	mg/l	0.08	0.02	0.04	0.06	0.04	0.07	0.58	-
19	Sodium (as Na)	mg/l	6.7	4.7	14.8	4.5	16	8.2	5068	-
20	Potassium (as K)	mg/l	0.97	0.46	4.5	0.39	4	0.45	318.9	-
21	Nickel (as Ni)	mg/l	<0.02	<0.02	0.027	<0.02	0.034	<0.02	0.279	-
22	Zinc (as Zn)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.028	-

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

23	BOD	mg/l	12	2	15	13	24	4	28	-
24	COD	mg/l	32	8	72	48	120	16	160	-
25	DO	mg/l	4.7	4.9	4.3	4.8	4.8	4.6	5	-
26	Ammonical Nitrogen	mg/l	0.92	0.42	0.39	0.84	0.87	0.88	0.7	-
27	TSS	mg/l	32	12	34	18	44	54	24	-

Aluminium, Boron, Iron, Total Chromium, Nickel, Manganese, Copper, Mercury, Cadmium, Arsenic, Lead, Zinc & Selenium are below detection level (Source of standards: IS: 10500, Laboratory: M/s Perfect Researchers Pvt. Ltd (NABL Accredited)

Table 39. Surface water Designated best Use by CPCB

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20 °C 2mg/l or less
Outdoor bathing (Organised)	B	pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20 °C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20 °C 3mg/l or less
Propagation of Wildlife and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH between 6.0 to 8.5 Electrical Conductivity at 25 °C micro mhos/cm Max.2250 Boron Max. 2mg/l

(Source: Surface Water quality criteria as per CPCB)

Table 40. Surface water quality

S.No	Parameters	Unit	Virar Nala (S.W.)	EPA discharge standards
1	Colour	Hazen	1	< 1
2	Odour	--	Objectionable	Agreeable
3	Turbidity	NTU	1	< 1
4	Temperature	°C	21.1	150
5	pH Value	--	7.76	5.5-9.0

6	Conductivity	µmho/cm	766.7	-
7	Total Dissolved Solids	mg/l	383.5	-
8	Chloride (as Cl)	mg/l	74	-
9	Fluoride (as F)	mg/l	0.44	2
10	Total Hardness	mg/l	73	-
11	Calcium (as Ca)	mg/l	27.2	-
12	Magnesium (as Mg)	mg/l	6.8	-
13	Iron (as Fe)	mg/l	0.55	-
14	Sulphate (as SO ₄)	mg/l	19.2	-
15	Nitrate Nitrogen	mg/l	25.7	10
16	Nitrite Nitrogen	mg/l	0.15	-
17	Alkalinity	mg/l	88	-
18	Phosphate	mg/l	8.3	-
19	Sodium (as Na)	mg/l	31.1	-
20	Potassium (as K)	mg/l	12.8	-
21	BOD	mg/l	18	30
22	COD	mg/l	64	250
23	DO	mg/l	3.5	-
24	Ammonical Nitrogen	mg/l	1.8	50
25	TSS	mg/l	72	100

Aluminium, Boron, Total Chromium, Nickel, Manganese, Copper, Mercury, Cadmium, Arsenic, Lead, & Selenium are below detection level (Source of standards: IS: 10500, Laboratory: M/s Perfact Researchers Pvt. Ltd (NABL Accredited))

3.8.10. Data Interpretation

- The Surface water quality of the Panchpiyari Pond shows that BOD (12 mg/l) is not acceptable within Class A-C, however DO (4.7 mg/l) and pH (7.7) is acceptable as per CPCB Water Quality Criteria Class of water 'D' i.e. Propagation of Wildlife and Fisheries.
- The Surface water quality of the Virar Dam shows that BOD (2 mg/l), DO (4.9 mg/l) and pH (7.86) is acceptable as per CPCB Water Quality Criteria Class of water 'C' i.e. Drinking water source after conventional treatment and disinfection.
- The Surface water quality of the Virar Pond shows that BOD (15 mg/l) is higher and not acceptable within Class A-C; however, DO (4.3 mg/l) and pH (7.58) is acceptable as per CPCB Water Quality Criteria Class of water 'D' i.e. Propagation of Wildlife and Fisheries.
- The Surface water quality of the Ghaspada Pond shows that BOD (13 mg/l) is higher and not acceptable within Class A-C; however, DO (4.8 mg/l) and pH (7.65) is acceptable as per CPCB Water Quality Criteria Class of water 'D' i.e. Propagation of Wildlife and Fisheries.

- The Surface water quality of the Kopori Lake shows that BOD (24 mg/l) is higher and not acceptable within Class A-C; however, DO (4.8 mg/l) and pH (7.68) is acceptable as per CPCB Water Quality Criteria Class of water 'D' i.e. Propagation of Wildlife and Fisheries.
- The Surface water quality of the Ghanicha Talab shows that BOD (4 mg/l) is higher and not acceptable within Class A-C; however; DO (4.6 mg/l) and pH (7.65) is acceptable as per CPCB Water Quality Criteria Class of water 'D' i.e. Propagation of Wildlife and Fisheries.
- The Surface water quality of the Vaitarna River shows that BOD (28 mg/l) is higher and not acceptable within Class A-C; DO (5 mg/l) is within the permissible limits in Class D; however, pH (8.67) does not meet the standards in Class D. Therefore, water quality at Vaitarna River does not fall under any of the water quality Criteria classes
- The Surface water quality of the naala near Virar Nala shows that Odour and Nitrate Nitrogen is higher than EPA discharge standards. All other parameters are within the range of EPA Discharge standards.

As per the data analysis and compared with CPCB surface water quality criteria the water can be used as Drinking water source after conventional treatment and disinfection.

3.9. Land Environment

3.9.1. Topography

Physiographically, region is broadly divided into four distinct morphological units namely,

- Coastal plain with marine landforms on the western periphery,
- Hillocks in the south-eastern and eastern part, and
- Swampy area in the North-western part of the study area.
- Plain area having an agricultural field in the central part

The maximum elevation of the buffer zone area is 559 mRL at the south-eastern periphery and minimum elevation is MSL along the shoreline of the Arabian sea.

The Funicular system project joins the plain land with a hilly area. The elevation of Lower Terminal Point (LTP) of Funicular is 52 mRL and Upper Terminal Point (UTP) of Funicular is 222 mRL.

Digital Elevation Model (DEM)

Digital Elevation Models are data files that contain the elevation of the terrain over a specified area, usually at a fixed grid interval over the "Bare Earth". The intervals

between each of the grid points will always be referenced to some geographical coordinate system. This is usually either latitude-longitude or UTM (Universal Transverse Mercator) coordinate systems. The closer together the grid points are located, the more detailed the information will be in the file. The details of the peaks and valleys in the terrain will be better modeled with small grid spacing than when the grid intervals are very large. Elevations other than at the specific grid point locations are not contained in the file. As a result, peak points and valley points not coincident with the grid will not be recorded in the file. For practical purposes this "Bare Earth" DEM is generally synonymous with a Digital Terrain Model (DTM).

1. DATA USED

DEM Data: Shuttle Radar Topographic Mission (SRTM) data

Data Source: <http://srtm.csi.cgiar.org>

Software Used: ArcGIS

2. METHODOLOGY: Shuttle Radar Topographic Mission (SRTM) data has been used for creation of Digital Elevation Model of the study area. The SRTM data has vertical accuracy of 16m and the spatial resolution of 90m.

- 1st Stage: The first processing stage involves importing and merging the 1-degree tiles into continuous elevation surfaces in Arc GRID format.
- 2nd Stage: Resampling the data at 23m is done and a contour interval of 5m through the usual process of interpolation is created.
- 3rd Stage: SRTM data is converted in grid format through ArcGIS to obtain elevation information of the study area. Contours are then generated at 2.0 m intervals through 3D analyst of Arc GIS and then are interpolated with raster data.
- 4th Stage: Integration of DEM with contour map showing 3D view for analysis of surface is done.

DEM Map with 10 km radius is given below:

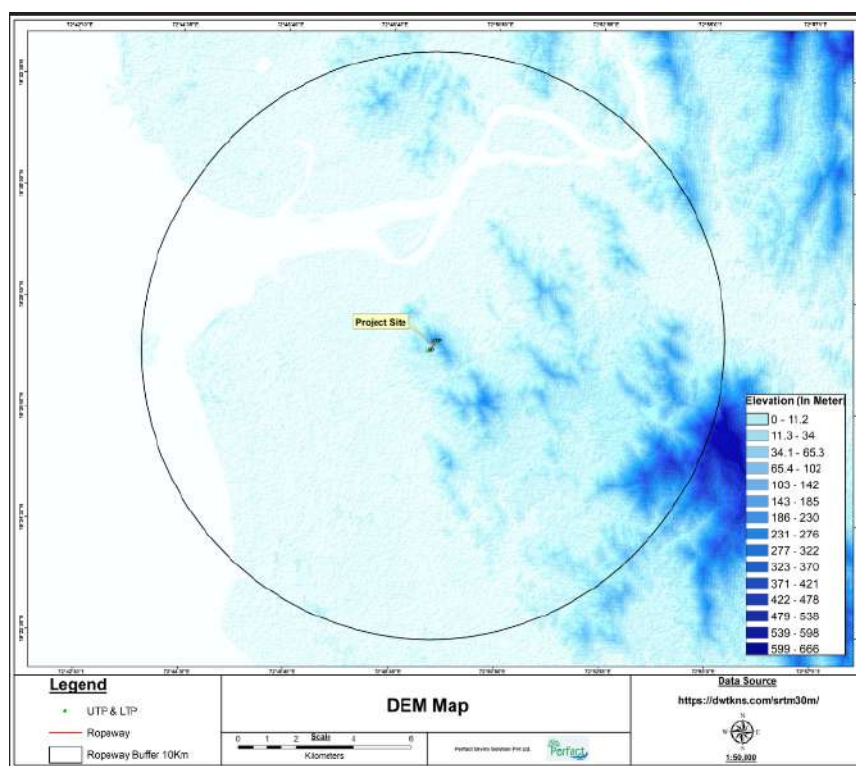


Figure 38. DEM Map of the Study area

Interpretation

It is very clear from the DEM that the elevation varies from 0 m to 666 m in the whole area but the maximum elevation in the study area is 559 M. General Slope in the study area is towards the West. The maximum elevation of the buffer zone area is 559 mRL at the south-eastern periphery and minimum elevation is MSL along the shoreline of the Arabian sea.

3.9.2. Geology

Deccan trap Basalt of Upper Cretaceous to Lower Eocene age is the major rock type covering about 80% of the region, coastal alluvium is another formation occurring only in western end of the region.

Most of the soils in the district can be considered as being derived from trap (Basaltic) rocks. The soil has been classified into two categories based on the characteristics and relationship with topographic setup. (1) Soil of Coastal Lands with Residual Hills - These soils are slightly deep, poorly drained, fine soils on gentle sloping land and very fine soil on sloping land. These soils are calcareous (2) Black Coloured Soil- These soils occur on plains in the middle and eastern part of the district along the valleys. The geology of the study area is shown below:

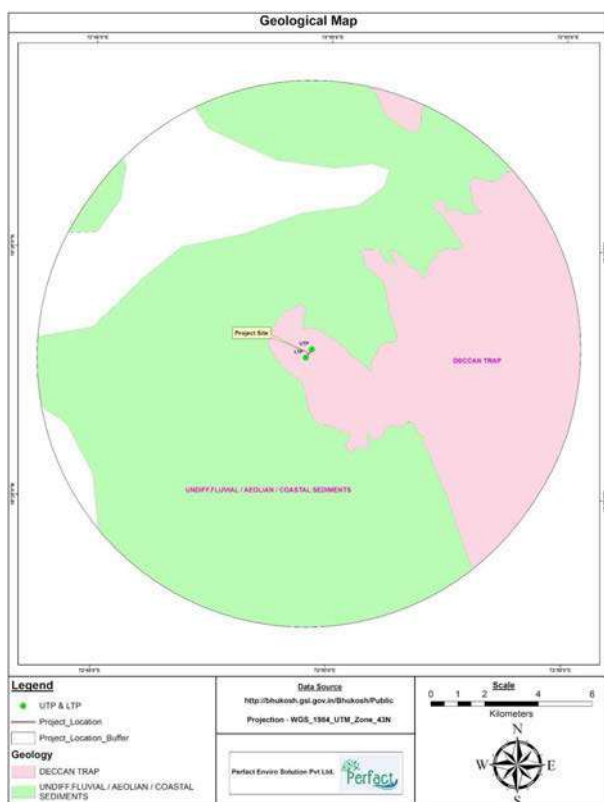


Figure 39. Geological Map

3.9.3. Land Use

3.9.3.1. Introduction

Information on land use/ land cover is the basic prerequisite for land resource evaluation, environmental assessment, utilization and management. A considerable degree of land transformations is being witnessed as a result of growing population pressure on the finite land resources consummating in deterioration of the environment. As a precursor, it is necessary to understand the 'cause and effect' of the transformations through scientific studies. The scope of the present study is limited to mapping the current land use / land cover pattern, their assessment, spatial distribution and extent using remote sensing and GIS techniques. The land environment will mainly deal with the land use, land cover within and buffer zone.

3.9.3.2. Methodology

Image processing software and GIS Software were used for the project. Image Processing Software was used for digital processing of spatial data. Digital image processing techniques were applied for the mapping of the land use/land cover

classes of the provided area from the satellite data. The methodology applied comes under following steps:

- Satellite imagery for the Area of Interest was created through image processing software.
- Geometric correction includes correction for geometric distortions due to sensor, earth geometry variations and conversion of the data to real world coordinates.
- Image enhancement is one of the important image processing functions primarily done to improve the appearance of the imagery to assist in visual interpretation and analysis.
- Google image is used as a reference map for base layer preparation.
- Visual interpretation techniques have been used for digitization of geographical features for different land use and vegetation cover classes based on spatial patterns of geographic features.

3.9.3.3. Results and Conclusions

Land use Buffer zone:

The land use/ land cover map has been generated on a 1:50,000 scale using Satellite Imagery and ground truth information. Based on the methodology developed for the present land use/ land cover, categories have been grouped under the following major land use/land cover categories.

Table 41. Major land use/land cover categories of study area (10 Km Radius Buffer zone)

S No.	Category	Area in Sq Km	Area in Ha	Percentage
1	Agriculture Land	73.88	7388.08	22.95
2	Barren Land	19.94	1993.98	6.19
3	Built-up, Mining	1.14	114.38	0.36
4	Built-up, Rural	10.01	1000.85	3.11
5	Built-up, Urban	51.92	5192.04	16.13
6	Coastal Wetland	52.54	5253.70	16.32
7	Forest, Deciduous	3.21	320.73	1.00
8	Forest, Evergreen/Semi Evergreen	50.46	5045.72	15.67
9	Forest, Scrub Forest	5.45	545.34	1.69
10	Scrubland	7.93	792.52	2.46
11	Sea	24.82	2481.92	7.71
12	Water Bodies, Pond/Reservoir	2.56	255.57	0.79
13	Water Bodies, River/Canal	18.06	1805.59	5.61
	Total	321.90	32190.42	100.00

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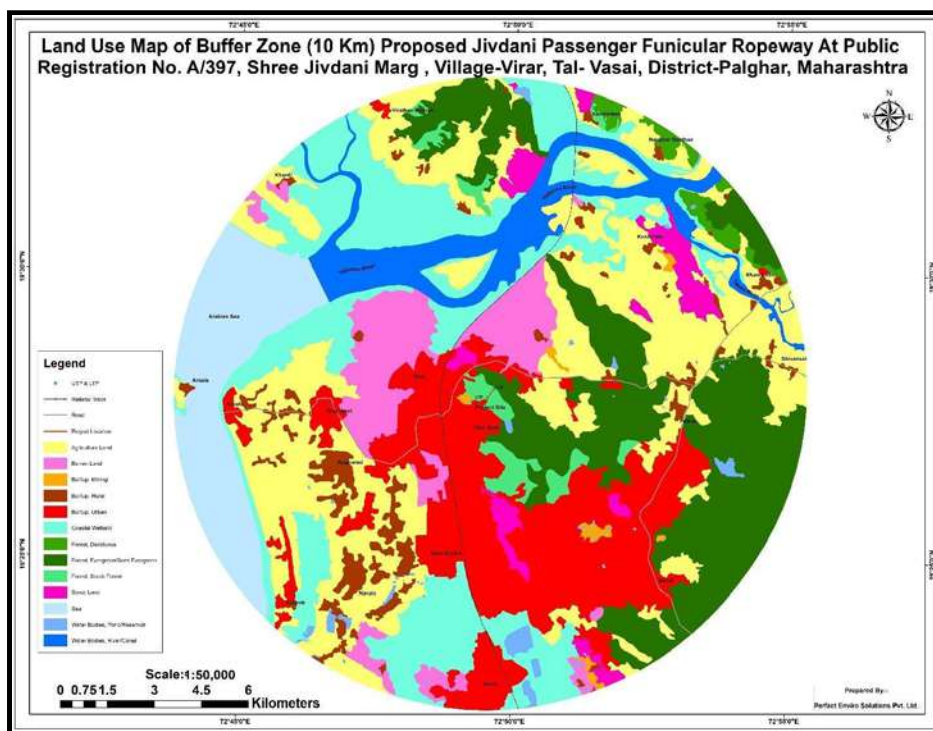
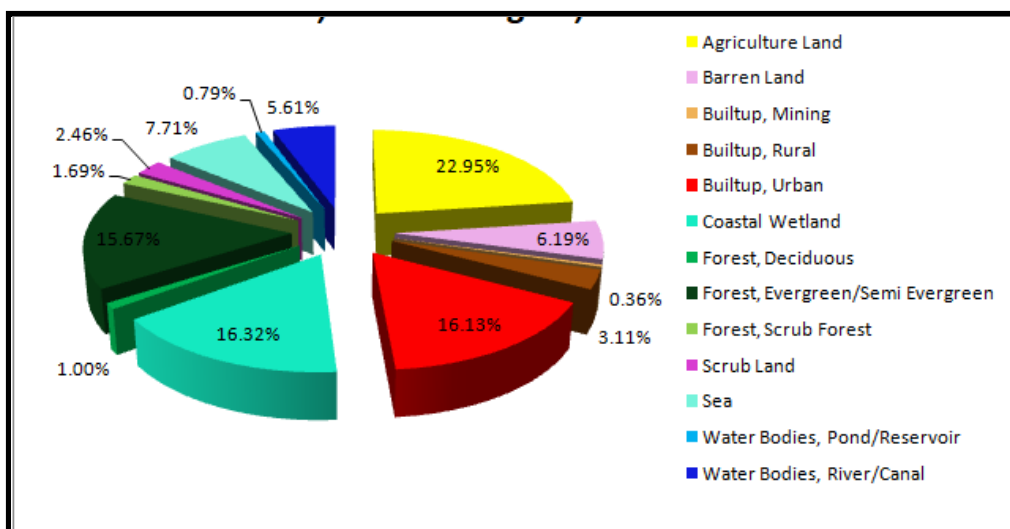


Figure 40. Land Use Map of study area (10 Km Radius Buffer zone)

Built-up: Built-up land includes the urban or rural settlements. The village locations and their area extent have been extracted from the existing Satellite Imagery. The major built-up area is about 6307.26 hectares which is **19.59 percent** of the total 10 km radius study area.

Agriculture Land: Based on Satellite Imagery and ground truth the total Agriculture land is about 7388.08 hectares which is **22.95 percent** of the total study area.

Forest: Based on Satellite Imagery and ground truth the land use is mainly forest land. The total forest area is about 5911.79 hectares which is **18.37 percent** of the total study area.

Waste/ Barren land: Based on Satellite Imagery and ground truth Waste/ Barren land their area extent has been extracted. The Barren land area is about 2786.51 hectares which is **8.66 percent** of the total 10 km radius study area.

Water bodies: Based on Satellite Imagery and ground truth Water bodies their area extent has been extracted. This area is about 9796.77 hectares which is **30.43 percent** of the total 10 km radius study area.

3.10. Soil Quality

Soil Type- Most of the soils in the district can be considered as being derived from trap (Basaltic) rocks. The soil has been classified into two categories based on the characteristics and relationship with topographic setup. (1) Soil of Coastal Lands with Residual Hills - These soils are slightly deep, poorly drained, fine soils on gentle sloping land and very fine soil on sloping land. These soils are calcareous (2) Black Coloured Soil- These soils occur on plains in the middle and eastern part of the district along the valleys.

Soil in the area may be classified as:

- Loamy sand to sandy loam
- Sandy clay loam
- Sandy clay
- Windblown sand
- River sand

To assess the soil quality of the proposed area, following 9 stations were selected. Soil profile and quality was studied at different locations. Location of Soil sampling stations is described below.

3.10.1. Sampling Location

Table 42. Soil sampling Locations (March 2019-May 2019)

S.No	Location	Distance & Direction	Project area / Study area	Environmental Significance
S1	UTP	Located onsite	Mountains, Hills & Hillock	Existing Soil quality at core zone
S2	LTP	Located onsite	Mountains, Hills & Hillock	

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S3	Khatkanpada	0.24 Km (From UTP), NNE	Mountains, Hills & Hillock	Existing Soil quality at Buffer zone
S4	Virar East	0.79 Km (From LTP), SW	Mountains, Hills & Hillock	
S5	Ghaspada	0.80 (From UTP), East	Mountains, Hills & Hillock	
S6	Sai Nath Nagar	0.83 Km (From UTP), NW	Mountains, Hills & Hillock	
S7	Saidutt Nagar	0.84 Km (From LTP), West	Mountains, Hills & Hillock	
S8	Phulpada	1.04 Km (From LTP), South	Mountains, Hills & Hillock	
S9	Forest near Phulpada	1.09 Km, (From LTP), SSE	Mountains, Hills & Hillock	

The sampling design is a fundamental part of data collection for scientifically based decision making. A well-developed sampling design plays a critical role in ensuring that data are enough to draw the conclusions needed. The samples are collected to determine nutrient content, composition, and other characteristics such as the acidity or pH level.

3.10.2. Soil Sampling Locations

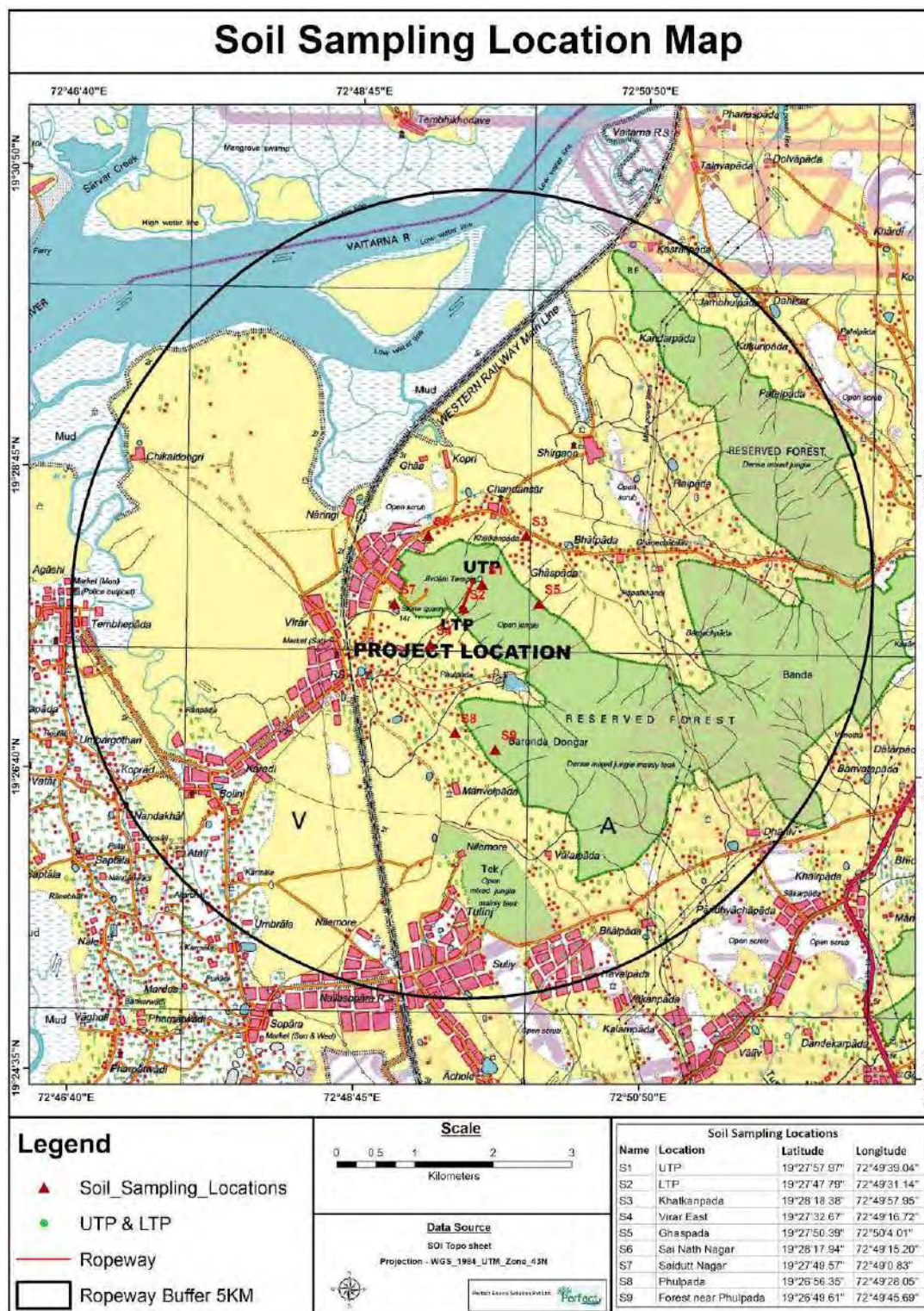


Figure 41. Soil sampling locations on Topographical Map

3.10.3. Sampling Procedure and Analysis

Augur method was used and samples were collected at 15 cm depth after removing the upper crust. Sample from each spot were well mixed with hand on a clean polythene sheet. About 1 kg of soil was retained after the quartering process. This sample was kept for some time for air-drying at room temperature, stored in a polythene bag with a label at the top. Samples were analysed for bulk density, pH, nitrogen, phosphorus, calcium, magnesium and organic contents. Soil Quality Results are summarized below:

3.10.4. Physical & Chemical Properties of Soil

Table 43. Soil quality of study area

Parameters	Unit	S1 Onsite UTP	S2 Onsite LTP	S3 Katka npada	S4 Visar East	S5 Ghaspa da	S6 Saina th Nagar	S7 Saidu tt Nagar	S8 Phulpad a	S9 Forest Area Near Phulpa da
Physical properties										
Color	-	4/3 (Dull Yellow ish Brown)	3/4 (Brown)	3/4 (Brown)	3/4 (Brown)	3/2 (Brownish Black)	3/2 (Brownish Black)	4/3 (Dull Reddish Brown)	4/3 (Dull Reddish Brown)	4/3 (Dull Reddish Brown)
Composition	Sand %	34.9	29.6	17	11.4	25.2	9.4	13.1	20.5	14.8
	Silt %	17.4	17.4	10.2	5.8	18.7	14.9	13.4	13.3	16.9
	Clay %	47.5	52.9	72.8	82.7	56	75.6	73.4	66.1	68.2
Moisture content	%	2.4	3.6	2.9	3.2	0.9	1.8	2.3	2.5	3.3
Electric Conductivity	$\mu\text{S/cm}$	33.97	18.4	43.19	89.14	17.27	36.96	21.73	27.82	19.73
Bulk density	g/cc	1.36	1.34	1.34	1.32	1.3	1.29	1.33	1.31	1.28
Porosity	%	29.8	32.1	30.4	31.5	28.6	30.6	34.4	31.3	30.8
Chemical properties										
Texture Class	-	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH	-	7.5	7.13	6.5	7.4	7.23	7.2	7.1	6.6	6.8
Organic Matter	%	0.5	0.5	2.2	0.5	0.5	2.1	1.2	1.1	1.1

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Available Nitrogen	mg/kg	30.8	49.0	33.6	39.2	46.2	60.2	60.2	58.8	58.8
Available Calcium	mg/kg	88.6	86.4	87.4	126.4	65.8	58.6	75.8	78.6	56.8
Available Magnesium	mg/kg	32.4	26.4	36.4	44.6	24.8	26.8	36.8	25.8	31.4
Available Potassium	mg/kg	18.0	15.2	21.9	29.5	18.2	32.1	29.1	14.8	10.4
Nitrate Nitrogen	mg/kg	19.6	26.6	25.2	23.8	36.4	33.6	31.4	25.2	32.2
Available Phosphorus	mg/kg	7.9	12.6	27.1	11.6	11.4	18	26.4	12.1	6.2
Chloride	mg/kg	26.6	26.6	26.6	35.6	8.9	17.8	43.8	35.6	17.8
Cation Exchange Capacity	meq/100 gm	31.3	29.6	29.7	32.6	32.9	24.6	32.6	29.3	33.9
Available Sulphur	mg/kg	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.4	0.3
Available Sodium	mg/kg	15.9	10.8	23.5	31.6	13.9	21.9	18.6	28.6	12.4
Ortho Phosphate	mg/kg	5.4	9.5	6.5	6.8	10.1	11.5	6.2	4.2	6.4
Bicarbonate	mg/kg	48.8	61	85.4	97.6	36.6	61	73.2	61	24.4

(Laboratory: M/s Perfact Researchers Pvt. Ltd (NABL Accredited))

3.10.4.1. Fertility of Soil at Onsite

Table 44. Onsite soil fertility

Parameters	Result in mg/kg (0-15 cm)	Low mg/kg (0-15 cm)	Medium mg/kg (0-15 cm)	High mg/kg (0-15 cm)	Remarks
Nitrogen	30.8-49	<156	157-313	>314	Low
Potassium	15.2-18	<67	67.1-156	>156	Low
Phosphorus	7.9-12.6	<5.5	5.6-13.9	>14.0	Medium

(Source: Laboratory: M/s Perfact Researchers Pvt. Ltd. (NABL Accredited))

3.10.5. Data Interpretation

Core Zone: After analysing the samples collected from the site shows that At onsite , the soil is clayey at places with low nutrient status and pH value ranges between 7.5-7.13. Traditionally soils in an area are classified on the basis of mode of deposition. After analysing the samples collected from the site shows that the soil

texture in the core zone is Clay which can hold water and nutrients and makes the soil fertile. Amount of primary nutrient like Organic matter is 0.5% and the Available Nitrogen ranges between 30.8-49 mg/kg is low and Available Potassium ranges between 15.2-18 mg/kg is low while the available Phosphorus ranges between 7.9-12.6 mg/kg that is medium in range.

Buffer Zone: In the buffer zone, the colour of the soil is reddish brown to blackish brown, pH ranges from 6.5 to 7.4. Amount of primary nutrients like Organic matter 0.5 % to 2.2 %, the Available Nitrogen 33.6 mg/kg to 60.2 mg/kg that is low in range, the Available Phosphorus 6.2 mg/kg – 27.1 mg/kg is medium to high in range, Available Potassium 10.4 mg/kg to 32.1 mg/kg that is low in range. Primary nutrient profile shows that soil is average fertile due to the availability of low amounts of nitrogen, available potassium.

Primary nutrient profile shows average fertile soil along the stretch. Nitrogen is the most important fertilizer element. Plants respond quickly to application of nitrogen. This element encourages above ground vegetative growth and gives a deep green color to the leaves & Potassium is the third essential fertilizer element and it is essential for photosynthesis, for protein synthesis, for starch formation and for the translocation of sugars. So, the addition of bio fertilizers will enhance the fertility of soil.

3.11. Biological Environment

In accordance with the EIA notification 2006, and technical guidance manual, we study Baseline data for environmental impact assessment to minimise a projects environmental impact. An evaluation of existing baseline ecological conditions in the study area before starting the construction as far as possible, adopting the best available methods and measures for minimising and mitigating project impact. The present document is for flora, fauna and associated ecology status assessment report.

3.11.1. Scope of this report

- To study the project details and identify the Eco-sensitive zone, sensitive habitats, water bodies, Rare, Endangered or Threatened species, endemic species, Land use, Wildlife corridor (including core & buffer zone)
- To review the KML for marking sample location to study primary analysis of Plant species varieties, diversity.
- To identify the type of forest area, agricultural crop, soil type and cultural value if any within the 10 Km of buffer zone.
- To Map the area including all the sensitive and major habitat, Eco-sensitive zone & Water bodies.
- To study the secondary literature from various sources like WPA 1972, WII,

IUCN red book, Forest Manual, district reports on forest inventories, national policy issues and community forestry issues, any Local news associated with Man wildlife conflict information, etc.

- To Prepare Flora and Fauna inventory with schedule or statues of the species.
- Identify, with stakeholders, the current and potential impact and evaluate the significance of impacts and mitigation measures

3.11.2. Environmental Sensitivity of the project

UTP and LTP of the proposed project site lie in the Forest Zone and permission from the Forest Department, Government of Maharashtra is already granted. Among ecologically sensitive areas the project lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972. Four Major Reserve forests in the study area are Thembi Khodave (6.36 km N), Tungarlnam Reserve forest (7.19 km SE), Sativli Reserve forest (8.08 km SE) and RF near Kandarvan (9.47 km NE). Virar Reservoir and Dam lie at 0.47km NW and 0.87 km SE respectively, other lakes within 2km are Kopori lake in North direction and Walive Talab in SE direction. Several other water bodies like Sapra Goan lake, Lake Torbhat, Zagodi pond and Manvel pada lake are within 5-6 km from the site. Gaskopari wetland and Datieware wetland exist at about 7.5 km from the site, whereas wetland KandreBhure is at 13.56km South of the site. Tansa river is a minor river 3 km North of the site. Arabian Sea and India International boundary lies at 7.5 km NWW from the site. The environmental setting of the area is generally green and the topography of the area is undulating, the area receives high rainfall.

3.11.3. Methodology for the study of Flora and Fauna:

During the study, the floral composition of the area was evaluated through a primary questionnaire based survey. The study area was divided according to habitat types followed by the random identification of flora species, exploration of the area, collection of species, and preparation of specimens for later identification if required. Faunal species were observed with the help of methods like standard walk transect, visual encounter survey, etc at different times of the day.

During the survey, fauna photographs were taken for the better identification of species. Primary and Secondary data collected was cross-checked with the traditional knowledge of the people of the study region and crossed check with

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forest data and other secondary resources. For sampling purpose and field study buffer area further divided into nearby project areas and within 5 Km.

Buffer Sampling Location: Primary Survey of flora and fauna was conducted only 4 locations within 5 Km radius of project location.

Table 45. Primary survey location for flora and fauna

S.No	Location Name	Distance & Direction
E1	Nearby LTP area	0.39 Km , WNW
E2	Near Shastri Nagar	0.96 Km (Distance from UTP) NNW
E3	Gandhi Chowk	1.09 Km, (Distance from LTP) SSE
E4	Shirgaon	2.59 Km, (Distance from UTP) East

Location Map



Forest and soil type

1. Virar is a northern suburb city of Mumbai India, part of the Mumbai Metropolitan Region. The climate of Virar is tropical and receives high amounts of rainfall and highly iron rich lateritic soil is found in this area. According to revised classification of forest types of India by Champion & Seth, the forests around the Palghar district represents three types of forest:
2. **3 B/C1 Southern moist teak bearing forests-** This part of the forest area has relatively better soil condition. Types of tree species found in this part are

Tectona grandis, *Garuga pinnata*, *Lannea grandis*, *Schleichera oleosa*, *Manilkara hexandra*, *Mangifera indica*, *Adina cordifolia*, *Pterocarpus marsupium*, *Bombax malabarica*, and *Syzygium cumini*. Shrubs like *Carissa carandas*, *Helicteres isora*, *Justicia adhatoda*, etc are also found.

3. **3 B/C2 Southern moist mixed deciduous forests-** In Southern moist mixed forest teak density occasionally found in low proportions. Other trees found in the area are mango, lokhandi, Shendri, Khair, Kusum, bamboo etc.
4. **8 A/C2 Western Subtropical hill forests-** These types of forest are found in patches at higher elevation in the area. It is a semi-green type of forest with many evergreen species like Mango, Karanj, Kokomo, Jamun, Tamanu etc. Details of flora and fauna are given in tables ahead.

Agricultural Crops: The main crops grown in nearby areas are Cotton, Jowar, Wheat, Rice and other seasonal vegetables and Pulses.

3.11.4. Description of Core Zone

Flora and Fauna of Core Zone: The proposed project is located at a rocky site where no floral biodiversity has been observed at lower and upper terminal stations. Although few species of shrubs and grasses around the elevation like *Calotropis gigantea*, *Lantana camara*, *Cynodon dactylon* and *Parthenium hysterophorus* and few fauna species of reptiles, birds and few mammals have been observed in the core zone except LTP & UTP.

Pictures of Flora of Core Zone



Figure 42. Above image showing *Lantana camara* (Left) and *Calotropis gigantea* (Right)

Detail species of fauna of the core zone given below.

Table 46. Detailed fauna of the core zone given below.

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S. No.	Zoological Name	Common Name	Schedule
Avifauna			
1	<i>Psittacula krameri</i>	Rose-ringed parakeet	IV
2	<i>Acridotheres tristis</i>	Myna	IV
3	<i>Eudynamys scolopaceus</i>	Koel	IV
4	<i>Corvus splendens</i>	House crow	V
5	<i>Passer domesticus</i>	House sparrow	IV
6	<i>Turdoides striata</i>	Jungle babbler	IV
Mammals			
7	<i>Funambulus pennantii</i>	Northern Palm Squirrel	IV
8	<i>Herpestes edwardsii</i>	Common Mongoose	II
9	<i>Rattus rattus</i>	Rat	-
10	<i>Pteropus giganteus</i>	Indian flying fox	V
11	<i>Presbytis entellus</i>	Common Langur	-
Reptiles			
12	<i>Calotes versicolor</i>	Oriental garden lizard	IV
13	<i>Hemidactylus frenatus</i>	House lizards	-
14	<i>Sphenomorphus indicus</i>	Indian skink	-
Insects			
15	<i>Dermaptera</i>	Earwig	-
16	<i>Gryllidae</i>	Cricket	-
17	<i>Halyomorpha halys</i>	Brown marmorated stink bug	-
18	<i>Vespa orientalis</i>	Wasps	-
19	<i>Anisoptera</i>	Dragonfly	-
20	<i>Apis cerana indica</i>	Indian honey bee	-

(Source: Primary survey)

Pictures of Fauna of Core Zone



Figure 43. Above image showing *Sphenomorphus indicus* (upper Left), *Funambulus pennantii* (upper Right) and *Rattus rattus* (Below middle)

3.11.5. Description of Buffer Zone

Flora of Buffer Zone: Primary survey and secondary survey was carried out for 5 Km of Buffer Zone. The project lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972. 4.4 Km from ESZ boundary) falls within the 5 Km of Buffer Zone and a secondary Survey was carried out for the same.

Detailed survey of flora given below

Table 47. Flora of Buffer Zone (Trees)

S.No	Botanical Name	Common Name	Family
Tree			
1	<i>Anacardium occidentale</i>	Kaju	Anacardiaceae
2	<i>Buchanania lanzan</i>	Chironji	Anacardiaceae
3	<i>Lannea coromandelica</i>	Indian ash tree	Anacardiaceae
4	<i>Mangifera indica</i>	Aam	Anacardiaceae

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5	<i>Semecarpus anacardium</i>	Ballataka	Anacardiaceae
6	<i>Annona reticulata</i>	custard apple	Annonaceae
7	<i>Annona squamosa</i>	sugar apple	Annonaceae
8	<i>Saccopetalum tomentosum</i>	Humb	Annonaceae
9	<i>Alstonia scholaris</i>	Satwin, Saptaparni	Apocynaceae
10	<i>Cocos nucifera</i>	Coconut	Arecaceae
11	<i>Phoenix sylvestris</i>	Indian date	Arecaceae
12	<i>Dolichandrone falcata</i>	Medhshingi	Bignoniaceae
13	<i>Heterophragma quadriculata</i>	Warus, Paniag	Bignoniaceae
14	<i>Oroxylum indicum</i>	Tetav	Bignoniaceae
15	<i>Cordia macleodii</i>	Daiws (Dahivel)	Boraginaceae
16	<i>Cordia myxa</i>	Bhokar	Boraginaceae
17	<i>Ehretia laevis</i>	Daterang	Boraginaceae
18	<i>Garuga pinnata</i>	Garuga	Burseraceae
19	<i>Bauhinia malabarica</i>	Malabar	Caesalpiniaceae
20	<i>Calophyllum inophyllum</i>	tamanu	Calophyllaceae
21	<i>Ochrocarpos longifolius</i>	Surangi	Calophyllaceae
22	<i>Casuarina equisetifolia</i>	Whistling Pine	Casuarinaceae
23	<i>Elaeodendron glaucum</i>	Ceylon Tea	Celastraceae
24	<i>Garcinia indica</i>	Kokam	Clusiaceae
25	<i>Anogeissus latifolia</i>	Dhawda	Combretaceae
26	<i>Dillenia pentagyna</i>	karmal	Dilleniaceae
27	<i>Holarrhena antidysenterica</i>	Kurchi	Dogbanes
28	<i>Diospyros melanoxylon</i>	Tendu	Ebenaceae
29	<i>Macaranga peltata</i>	Chandoda	Euphorbiaceae
30	<i>Mallotus philippensis</i>	Kumkum tree	Euphorbiaceae
31	<i>Acacia arabica</i>	Babul	Fabaceae
32	<i>Senegalia pennata</i>	Shembati	Fabaceae
33	<i>Acacia suma</i>	Shenkhair	Fabaceae
34	<i>Albizia chinensis</i>	Siris	Fabaceae
35	<i>Albizia odoratissima</i>	Black Siris	Fabaceae
36	<i>Albizia procera</i>	Kinhai	Fabaceae
37	<i>Bauhinia racemosa</i>	Apta	Fabaceae
38	<i>Bauhinia vahlii</i>	Mahul	Fabaceae
39	<i>Bauhinia variegata</i>	Kanchan	Fabaceae

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40	<i>Butea monosperma</i>	Palas	Fabaceae
41	<i>Cassia fistula</i>	Amaltas	Fabaceae
42	<i>Dalbergia latifolia</i>	Shisam	Fabaceae
43	<i>Delonix regia</i>	Gulmohar	Fabaceae
44	<i>Desmodium oojeinense</i>	Tinnas	Fabaceae
45	<i>Erythrina indica</i>	Pangara	Fabaceae
46	<i>Parkinsonia aculeata</i>	palo verde	Fabaceae
47	<i>Pongamia pinnata</i>	Pongam oiltree	Fabaceae
48	<i>Pterocarpus marsupium</i>	Indian kino	Fabaceae
49	<i>Senegalia catechu</i>	Khair	Fabaceae
50	<i>Senegalia ferruginea</i>	Arimedah	Fabaceae
51	<i>Sesbania grandiflora</i>	Agasta	Fabaceae
52	<i>Barringtonia acutangula</i>	Indian Putat	Lecythidaceae
53	<i>Careya arborea</i>	Kumbhi	Lecythidaceae
54	<i>Lagerstroemia lanceolata</i>	Crepe myrtle	Lythraceae
55	<i>Lagerstroemia speciosa</i>	Pride of India	Lythraceae
56	<i>Adansonia digitata</i>	Gorakh imli	Malvaceae
57	<i>Bombax malabaricum</i>	Sawar , Kate Sawar	Malvaceae
58	<i>Grewia tiliifolia</i>	Dhaman	Malvaceae
59	<i>Kydia calycina</i>	Kydia	Malvaceae
60	<i>Pterospermum suberifolium</i>	cork-leaved bayur	Malvaceae
61	<i>Azadirachta indica</i>	Neem	Meliaceae
62	<i>Melia dubia</i>	Bakan	Meliaceae
63	<i>Ficus amplissima</i>	Pipar	Moraceae
64	<i>Ficus arnottiana</i>	Indian rock fig	Moraceae
65	<i>Ficus benghalensis</i>	Banyan	Moraceae
66	<i>Ficus drupacea</i>	Mysore Fig tree	Moraceae
67	<i>Ficus elastica</i>	Rubber tree	Moraceae
68	<i>Ficus heterophylla</i>	Datir	Moraceae
69	<i>Ficus hispida</i>	Kala Umber	Moraceae
70	<i>Ficus racemosa</i>	Cluster fig	Moraceae
71	<i>Ficus Religiosa</i>	Peepal	Moraceae
72	<i>Ficus retusa</i>	Taiwan Ficus	Moraceae
73	<i>Bridelia retusa</i>	Asana	Phyllanthaceae
74	<i>Emblica officinalis</i>	Awala	Phyllanthaceae

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75	<i>Gardenia latifolia</i>	Ghogari	Rubiaceae
76	<i>Hymenodictyon excelsum</i>	Potur	Rubiaceae
77	<i>Mitragyna parvifolia</i>	Kaim	Rubiaceae
78	<i>Morinda tinctoria</i>	Indian mulberry	Rubiaceae
79	<i>Randia dumetorum</i>	Kaarai	Rubiaceae
80	<i>Adina cordifolia</i>	Haldu	Rubiaceae,
81	<i>Aegle marmelos</i>	Bel	Rutaceae
82	<i>Atalantia racemosa</i>	Ranilimbu	Rutaceae
83	<i>Glycosmis pentaphylla</i>	Gin Berry	Rutaceae
84	<i>Limonia acidissima</i>	elephant-apple	Rutaceae
85	<i>Flacourtia montana</i>	Attak, Champer	Salicaceae
86	<i>Salvadora persica</i>	Khakan	Salvadoraceae
87	<i>Sapindus trifoliatu</i>	Ridha	Sapindaceae
88	<i>Schleichera oleosa</i>	Kusum	Sapindaceae
89	<i>Mahua longifolia</i>	Mohwa	Sapotaceae
90	<i>Manilkara hexandra</i>	Ceylon IronWood	Sapotaceae
91	<i>Mimusops elengi</i>	Spanish cherry	Sapotaceae
92	<i>Grewia columnaris</i>	Kala Dhaman	Tiliaceae.
93	<i>Holoptelea integrifolia</i>	Indian elm	Ulmaceae
94	<i>Gmelina arborea</i>	Gamhar	Verbenaceae
95	<i>Stereospermum tetragonum</i>	yellow snake tree	Bignoniaceae
96	<i>Syzygium cumini</i>	Jamun	Myrtaceae
97	<i>Spondias pinnata</i>	Wild Mango	Anacardiaceae
98	<i>Streblus asper</i>	khoi	Moraceae
99	<i>Sterculia guttata</i>	Kukeri	Malvaceae
100	<i>Tamarindus indica</i>	Imli	Fabaceae
101	<i>Tectona grandis</i>	Sagwan	Verbenaceae
102	<i>Terminalia arjuna</i>	Arjun	Combretaceae
103	<i>Terminalia bellirica</i>	Bahera	Combretaceae
104	<i>Terminalia chebula</i>	Hirda	Combretaceae
105	<i>Terminalia tomentosa</i>	Ain	Combretaceae
106	<i>Thespesia populnea</i>	Portia tree	Malvaceae
107	<i>Trema orientalis</i>	Kargol	Cannabaceae
108	<i>Trewia polycarpa</i>	Patari	Euphorbiaceae
109	<i>Vangueria spinosa</i>	Alu	Rubiaceae

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110	<i>Wrightia tinctoria</i>	Dudhi	Apocynaceae
111	<i>Xylia xylocarpa</i>	Jambu	Fabaceae.
112	<i>Ziziphus jujuba</i>	Jujube	Rhamnaceae
113	<i>Ziziphus rugosa</i>	Torai	Rhamnaceae
114	<i>Ceriops tagal</i>	Chauri	Rhizophoraceae
115	<i>Senna tora</i>	Takla	Leguminosae
116	<i>Abrus precatorius</i>	Gunj	Fabaceae
117	<i>Butea superba</i>	Palasvel	Fabaceae
118	<i>Strychnos nux-vomica</i>	Kuchla	Loganiaceae

Photographs of Tree species



Figure 44. Tree species in core zone

Table 48. List of Shrubs, Herbs Bamboo, Aquatic and Climbers.

S.No	Botanical Name	Common Name	Family
Shrub			
1	<i>Derris trifoliata</i>	Kajarvel	Fabaceae
2	<i>Borassus flabellifer</i>	Asian palmyra palm	Arecaceae
3	<i>Capparis zeylanica</i>	Waghati	Capparaceae
4	<i>Acacia concinna</i>	Shikekai	Fabaceae
5	<i>Adhatoda vasica</i>	Malabar nut	Acanthaceae
6	<i>Nerium indicum</i>	Ran Kanher	Apocynaceae
7	<i>Asparagus racemosus</i>	Shatawari	Asparagaceae
8	<i>Opuntia stricta</i>	Erect prickly pear	Cactaceae
9	<i>Jatropha curcas</i>	Mogli , Erandi	Euphorbiaceae
10	<i>Helicteres isora</i>	Murudsheng	Malvaceae

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11	<i>Microcos paniculata</i>	Shetali	Malvaceae
12	<i>Memecylon edule</i>	Anjani	Melastomataceae
13	<i>Jasminum multiflorum</i>	Indian jasmine	Oleaceae
14	<i>Nyctanthes arbor-tristis</i>	Night- jasmine	Oleaceae
15	<i>Olea dioica</i>	Rose SandalWood	Oleaceae
16	<i>Ixora nigricans</i>	Black ixora	Rubiaceae
17	<i>Ixora parviflora</i>	Lokhandi	Rubiaceae
18	<i>Ixora pavetta</i>	Kuda	Rubiaceae
19	<i>Murraya exotica</i>	Orange Jasmine	Rutaceae
20	<i>Lantana camara</i>	Ghaneri	Verbenaceae
21	<i>Lawsonia inermis</i>	Mehndi	Lythraceae
22	<i>Carissa carandas</i>	Karunda	Apocynaceae
23	<i>Excoecaria agallocha</i>	Phungali	Euphorbiaceae
24	<i>Clerodendrum inerme</i>	Koyanel	Lamiaceae
25	<i>Euphorbia neriifolia</i>	Indian Spurge	Euphorbiaceae
26	<i>Flemingia strobilifera</i>	luck plant	Fabaceae
27	<i>Strobilanthes callosus</i>	Karvi	Acanthaceae
28	<i>Capparis sepiaria</i>	Wild Caper Bush	Capparaceae
29	<i>Biancaea decapetala</i>	Chillari	Fabaceae
30	<i>Mucuna pruriens</i>	Khajkoyli	Fabaceae
31	<i>Abutilon indicum</i>	Mudra	Malvaceae
32	<i>Sesamum indicum</i>	Til	Pedaliaceae
33	<i>Ensete superbum</i>	banana	Musaceae
34	<i>Woodfordia floribunda</i>	Dhaiti	Lythraceae
35	<i>Aeschynomene indica</i>	Silar	Fabaceae
36	<i>Waltheria indica</i>	kafaki	Malvaceae
37	<i>Sesamum indicum</i>	Til	Pedaliaceae
38	<i>Vitex negundo</i>	Nirgudi	Lamiaceae
39	<i>Capparis horrida</i>	Tarati	Capparaceae
Herbs			
40	<i>Kirganelia reticulata</i>	Pavan	Euphorbiaceae
41	<i>Ricinus communis</i>	castor oil	Euphorbiaceae
42	<i>Crotolaria retusa</i>	Ghogali	Fabaceae
43	<i>Ocimum americanum</i>	Ran-Tulas	Lamiaceae
44	<i>Barleria prionitis</i>	Koranti	Acanthaceae

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45	<i>Euphorbia parviflora</i>	Newali , Thor	Euphorbiaceae
46	<i>Sterculia colorata</i>	Bonfire	Malvaceae
47	<i>Asteracantha longifolia</i>	Neermulli	Acanthaceae
48	<i>Gloriosa superba</i>	flame lily	Colchicaceae
49	<i>Commelina benghalensis</i>	Kena	Commelinaceae
50	<i>Teramnus labialis</i>	Rabbit vine	Fabaceae
51	<i>Murdannia nudiflora</i>	doveweed	Commelinaceae
52	<i>Blumea laciniata</i>	Burada	Asteraceae
53	<i>Ipomoea aquatica</i>	Kalambi	Convolvulaceae
54	<i>sida retusa</i>	Atibala	Malvaceae
55	<i>Vanda tessellata</i>	Aitkel	Orchidaceae
56	<i>Tridax procumbens</i>	Degadipala	Asteraceae
57	<i>Smilax zeylanica</i>	Ghotvel	Smilacaceae
58	<i>Xanthium strumarium</i>	Gokharu	Asteraceae
59	<i>Sida acuta</i>	Jungli Methi	Malvaceae
60	<i>Cyanthillium cinereum</i>	Sahadevi	Asteraceae
61	<i>Argemone mexicana</i>	Mexican poppy	Papaveraceae
62	<i>Oxalis latifolia</i>	Khatta Zara	Oxalidaceae
63	<i>Desmodium triflorum</i>	Ran Methi	Fabaceae
64	<i>Heliotropium indicum</i>	Bhurandi	Boraginaceae
65	<i>Ammannia multiflora</i>	Jerry-Jerry	Lythraceae
66	<i>Elephantopus scaber</i>	Elephant Foot	Asteraceae
67	<i>Phyla nodiflora</i>	frog fruit	Verbenaceae
68	<i>Triumfetta pilosa</i>	Hairy Burr-Bush	Malvaceae
69	<i>Limnophila indica</i>	Indian Marshweed	Plantaginaceae
70	<i>Lindernia ciliata</i>	Pennell	Linderniaceae
71	<i>Amaranthus spinosus</i>	spiny amaranth	Amaranthaceae
72	<i>Alternanthera sessilis</i>	Kanchari	Amaranthaceae
73	<i>Anisomeles indica</i>	catmint	Lamiaceae
74	<i>Blepharis asperima</i>	Justicia aspera	Acanthaceae
75	<i>Corchorus olitorius</i>	Jute	Malvaceae
76	<i>Corchorus capsularis</i>	white jute	Malvaceae
77	<i>Argemone mexicana</i>	Mexican poppy	Papaveraceae
78	<i>Digera muricata</i>	False Amaranth	Amaranthaceae
79	<i>Euphorbia hirta</i>	Asthma-plant	Euphorbiaceae

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80	<i>Alysicarpus rugosus</i>	Baker	Fabaceae
81	<i>Begonia crenata</i>	Begonia	Begoniaceae
82	<i>Crotalaria juncea</i>	brown hemp	Fabaceae
83	<i>Curcuma aromatica</i>	Jungli Halad	Zingiberaceae
84	<i>Solanum virginianum</i>	Bhuivangani	Solanaceae
85	<i>Urena labata</i>	Jal-Latang	Malvaceae
86	<i>Hygrophila serpyllum</i>	Roundleaf Marsh	Acanthaceae
87	<i>Justicia simplex</i>	Sokamble Zara	Acanthaceae
88	<i>Impatiens balsamina</i>	Balsam	Balsaminaceae
89	<i>Leucas aspera</i>	Thumba	Lamiaceae
90	<i>Tephrosia purpurea</i>	Sarphonk	Fabaceae
91	<i>Vigna radiata</i>	Mug Moong	Fabaceae
92	<i>Ammania baccifera</i>	Bhar jambul	Lythraceae
93	<i>Biophytum sensitivum</i>	little tree plant	Oxalidaceae
94	<i>Plumbago zeylanica</i>	Shitrak	Plumbaginaceae
95	<i>Clematis triloba</i>	Ranjai	Ranunculaceae
96	<i>Melochia corchorifolia</i>	Methuri	Malvaceae
97	<i>Stachytarpheta indica</i>	Tuisi Zara	Verbenaceae
98	<i>Hedyotis diffusa</i>	Bit Papda	Rubiaceae
99	<i>Physalis minima</i>	Ran Popti	Solanaceae
100	<i>Celastrus paniculatus</i>	Malkangni , Pingvel	Celastraceae
Bamboo			
101	<i>Bambusa arundinacea</i>	Bamboo	Poaceae
102	<i>Bambusa arundinacea</i>	Katas	Poaceae
103	<i>Dendrocalamus strictus</i>	Manvel	Poaceae
Climber			
104	<i>Meyenia erecta</i>	Alu	Acanthaceae
105	<i>Calycopteris floribunda</i>	Ukshi	Combretaceae
106	<i>Luffa acutangula</i>	Shirali	Cucurbitaceae
107	<i>Combretum ovalifolium</i>	Madhel	Combretaceae
108	<i>Coccinia grandis</i>	scarlet gourd	Cucurbitaceae
109	<i>Marsdenia volubilis</i>	Sneezewort	Apocynaceae
110	<i>Dendrophthoe falcata</i>	Bandgul	Loranthaceae
111	<i>Momordica dioica</i>	spine gourd	Cucurbitaceae
112	<i>Cardiospermum halicacabum</i>	Kapsihodi	Sapindaceae

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113	<i>Dioscorea bulbifera</i>	air potato	Dioscoreaceae
114	<i>Cocculus hirsutus</i>	Parval	Menispermaceae
115	<i>Cissus repanda</i>	Arbatvel	Vitaceae
116	<i>Dioscorea pentaphylla</i>	Babra	Dioscoreaceae
117	<i>Argyreia sericea</i>	Silky Morning Glory	Convolvulaceae
118	<i>Argyreia nervosa</i>	Elephant creeper	Convolvulaceae
119	<i>Ampelocissus latifolia</i>	Wild Grape	Vitaceae
120	<i>Trichosanthes paimata</i>	Padaval	Cucurbitaceae
121	<i>Cuscuta reflexa</i>	Amarvel	Convolvulaceae
122	<i>Tinospora cordifolia</i>	Giloya	Menispermaceae
Aquatic			
123	<i>Limnanthemum indica</i>	Kumud	Menyanthaceae
124	<i>Ludwigia octovalvis</i>	Primrose-willow	Onagraceae
125	<i>Eichhornia crassipes, (Mart.)</i>	water hyacinth	Pontederiaceae
126	<i>Salvinia molesta, D.S. Mitch</i>	kariba weed	Salviniaceae
127	<i>Hydrilla verticillata</i>	Sheval	Hydrocharitaceae
128	<i>Nymphaea pubescens</i>	Water lily	Nymphaeaceae

Table 49. List of Grasses

S.No	Botanical Name	Common Name	Family
Grass			
1	<i>Cyperus rotundus</i>	Motha	Cyperaceae
2	<i>Dichanthium annulatum</i>	Marvel	Poaceae
3	<i>Hemidesmus indicus</i>	anantamul	Apocynaceae
4	<i>Andropogon schoenanthus</i>	camel grass	Poaceae
5	<i>Arundinella intricata</i>	Arundinella	Poaceae
6	<i>Phyllanthus niruri</i>	Gale of the wind	Phyllanthaceae
7	<i>Eleusine coracana</i>	Nachni , Nagli	Poaceae
8	<i>Agave americana</i>	Ghaypat	Asparagaceae
9	<i>Aristida adscensionis</i>	Bhuri	Poaceae
10	<i>Ziziphus oenoplia</i>	Makor	Rhamnaceae
11	<i>Andropogon monticola</i>	Dongari Gavati	Poaceae
12	<i>Evolvulus alsinoides</i>	Nela kuriji	Convolvulaceae
13	<i>Persicaria glabra</i>	Dongra	Polygonaceae

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14	<i>Arundinella ciliata</i>	Arundinella	Poaceae
15	<i>Dinebra retroflexa</i>	Kardi	Poaceae
16	<i>Apluda mutica</i>	Pochati , Full - Zara	Poaceae
17	<i>Eleusine coracana</i>	Nachni , Nagli	Poaceae
18	<i>Agave americana</i>	Ghaypat	Asparagaceae
19	<i>Sphaeranthus indicus</i>	Gorkmundi	Poaceae
20	<i>Solanum indicum</i>	Bhui , Ringani	Rhamnaceae
21	<i>Portulaca oleracea</i>	Ghola	Convolvulaceae
22	<i>Andropogon pertusus</i>	Ghanya Marvel	Poaceae
23	<i>Andropogon pumilus</i>	Gondval	Poaceae
24	<i>Andropogon contortus</i>	Kusali	Poaceae
25	<i>Mollugo pentaphylla</i>	Carpetweed	Molluginaceae
26	<i>Sporobolus indicus</i>	smut grass	Poaceae
27	<i>Themeda triandra</i>	Gondel	Poaceae
28	<i>Imperata cylindrica</i>	Cogon grass	Poaceae
29	<i>Cynodon dactylon</i>	Hariali , Durwa	Poaceae
30	<i>Oplismenus compositus</i>	Hirvi Bangadi	Poaceae
31	<i>Brachiaria</i>	Sheprut	Poaceae

Source- Primary survey and Forest Manual of Tungareshwar Wildlife Sanctuary, year 2018-2028, Borivali (Mumbai)

Fauna of Buffer Zone:

Table 50. List of Amphibia, Reptiles, Birds, Mammals and Aquatic species

S.No	Scientific Name	Common Name	Schedule
Amphibia			
1	<i>Bufo melanostictus</i>	Common Toad	IV
2	<i>Microhyla ornata</i>	Ornate narrow-mouthed frog,	-
3	<i>Ramanella montana</i>	Jerdon's narrow-mouthed frog	-
4	<i>Rana Cyanophlyctis</i>	Dicroglossidae frog	-
5	<i>Fejervarya limnocharis</i>	Boie's wart frog	-
6	<i>Hoplobatrachus tigerinus</i>	Indian bullfrog	-
7	<i>Rana malabarica</i>	Malabar Hills frog	-
8	<i>Rhacophorus leucomystax</i>	Common Tree Frog	-
Reptiles			
9	<i>Acrochordus granulatus</i>	Wart Snake	II
10	<i>Ahaetulla nasuta</i>	Common Green whip Snake	II

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11	<i>Amphiesma stolatum</i>	Buffstripped Keelback	II
12	<i>Boiga trigonata</i>	Indian Gamma or Cat Snake	II
13	<i>Bungarus caeruleus</i>	Common Indian Krait	-
14	<i>Calliophis melanurus</i>	Slender Coral snake	II
15	<i>Calotes versicolor</i>	Common Garden Lizard or Blood sucker	IV
16	<i>Chamaeleo zeylanicus</i>	Indian Chamaeleon	II
17	<i>Coelognathus helena</i>	Trinket Snake	II
18	<i>Daboia russelii</i>	Russell's Viper	II
19	<i>Dendrelaphis tristis</i>	Common Indian Bronzeback	II
20	<i>Eryx johnii</i>	Jhon's sand Boa	-
21	<i>Eublepharis macularius</i>	Fat Tailed Gecko	-
22	<i>Eutropis carinata</i>	Golden skink	-
23	<i>Geochelone elegans</i>	Indian star tortoise	IV
24	<i>Gongylophis conicus</i>	Russel's Sand Boa	-
25	<i>Hemidactylus brookii</i>	Brooke's house	-
26	<i>Hemidactylus leschenaultii</i>	Bark Gecko	-
27	<i>Hemidactylus maculatus</i>	Spotted leaf-toed gecko	I
28	<i>Hemidactylus triedrus</i>	Termite Hill Gecko	-
29	<i>Lycodon travancoricus</i>	Travancore Wolf Snake	II
30	<i>Macropisthodon plumbicolor</i>	Green Keelback	II
31	<i>Naja naja</i>	Indian Cobra	II
32	<i>Oligodon arnensis</i>	Common Kukri Snake	II
33	<i>Psammophilus blanfordanus</i>	Blanford's rock agama	I
34	<i>Ptyas mucosa</i>	Dharman or Common Rat Snake	II
35	<i>Python molurus</i>	Indian Python	I
36	<i>Trimeresurus malabaricus</i>	Malabar Pit Viper	II
37	<i>Varanus bengalensis</i>	Monitor lizard	I
38	<i>Xenochrophis piscator</i>	Checkered Keelback	II
Mammals			
39	<i>Presbytis entellus</i>	Common Langur	-
40	<i>Rusa unicolor</i>	Sambar deer	-
41	<i>Panthera pardus</i>	Leopard	I
42	<i>Moschiola meminna</i>	Indian Spotted Chevrotain	I
43	<i>Tetracerus quadricornis</i>	Four-horned antelope	I
44	<i>Macaca radiata</i>	Bonnet Macaque	II

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45	<i>Macaca mulatta</i>	Rhesus Macaque	II
46	<i>Canis aureus</i>	Jackal	II
47	<i>Viverricula indica</i>	Small Indian Civet	II
48	<i>Paradoxurus hermaphroditus</i>	common palm civet	II
49	<i>Herpestes edwardsii</i>	Indian Grey Mongoose	II
50	<i>Felis Chaus</i>	Jungle Cat	II
51	<i>Hyaena hyaena</i>	striped Hyena	III
52	<i>Sus scrofa</i>	Wild Boar	III
53	<i>Axis axis</i>	Chital	III
54	<i>Muntiacus muntjak</i>	Barking deer or Muntjac	III
55	<i>Pteropus giganteus</i>	Indian Flying fox	IV
56	<i>Cynopterus sphinx</i>	Short Nosed Fruit Bat	IV
57	<i>Taphozous melanopogon</i>	Black-beared Tomb Bat	IV
58	<i>Rhinolophus rouxi</i>	rufous horseshoe bat	IV
59	<i>Hipposideros bicolor</i>	bicolored roundleaf bat	IV
60	<i>Hipposideros galeritus</i>	Cantor's Leaf-nosed bat	IV
61	<i>Pipistrellus mimus</i>	Indian Pygmy Bat	IV
62	<i>Pipistrellus dormeri</i>	Dormer's Bat	IV
63	<i>Hesperornis tickelli</i>	Indian Tickell's Bat	IV
64	<i>Scotophilus heathi</i>	greater Asiatic yellow bat	IV
65	<i>Kerivoula picta</i>	Painted Bat	IV
66	<i>Lepus nigricollis</i>	Indian Black Naped Hare	IV
67	<i>Funambulus pennantii</i>	Five Striped Palm Squirrel	IV
68	<i>Hystrix indica</i>	Indian Crested Porcupine	IV
69	<i>Rattus blanfordi</i>	Blanford's Rat	IV
70	<i>Rattus rattus</i>	House Rat	IV
71	<i>Mus musculus</i>	House Mouse	IV
72	<i>Bandicota bengalensis</i>	Rat or Lesser Bandicoot	IV
Birds			
73	<i>Accipiter badius</i>	Indian Shikra	-
74	<i>Accipiter trivirgatus</i>	Crested Goshawk	-
75	<i>Acrocephalus agricola</i>	Paddyfield warbler	-
76	<i>Acrocephalus dumetorum</i>	Blyth's Reed Warbler	-
77	<i>Acrocephalus stentoreus</i>	Indian Great Reed Warbler	-
78	<i>Alauda gulgula</i>	Small or Easternn Skylark	-
79	<i>Anastomus ositanas</i>	Openbill strock	-

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80	<i>Anhinga rufa</i> <i>Melanogaster</i>	Oriental Darter	-
81	<i>Artamus fuscus</i>	Ashy Swallow shrike	-
82	<i>Butastur teesa</i>	White Eyed Buzzard	-
83	<i>Calidris minuta</i>	Little stint	-
84	<i>Calidris temminckii</i>	Temminck's Stint	-
85	<i>Carpodacus erythrinus</i>	Common Rosefinch or Scarlet Grosbeak	-
86	<i>Cecropis daurica</i>	Redrumped swallow	-
87	<i>Ciconia episcopus</i>	woolly-necked stork	-
88	<i>Circus macrourus</i>	Pallid Harrier	-
89	<i>Circus pygargus</i>	Montagu's Harrier	-
90	<i>Dendrocitta vagabunda</i>	Rufous treepie	-
91	<i>Dicrurus adsimilis</i>	Black Drongo or king Crow	-
92	<i>Elanus caeruleus</i>	Black winged kite	-
93	<i>Eudynamys scolopaceus</i>	Keol	-
94	<i>Falco tinnunculus</i>	European Kestrel	-
95	<i>Francolinus pictus</i>	Painted Partridge	-
96	<i>Gallicrex cinerea</i>	Moorhen	-
97	<i>Galloperdix spadicea</i>	Red Spurfowl	-
98	<i>Gelochelidon nilotica</i>	Gull-billed tern	-
99	<i>Haliastur indus</i>	Brahminy Kite	-
100	<i>Hirundo rustica</i>	Swallow	-
101	<i>Iduna caligata</i>	Booted Treewarbler	-
102	<i>Jynx torquilla</i>	Wryneck	-
103	<i>Lanius schach</i>	Rufous backed shrike	-
104	<i>Merops orientalis</i>	Green Bee-eater	-
105	<i>Merops philippinus</i>	Blue Tailed Bee-eater	-
106	<i>Motacilla alba</i>	white wagtail	-
107	<i>Motacilla citreola</i>	Yellow headed wagtail	-
108	<i>Numenius phaeopus</i>	whimbrel	-
109	<i>Oenanthe deserti</i>	desert wheatear	-
110	<i>Oriolus oriolus</i>	Golden Oriole	-
111	<i>Oriolus xanthornus</i>	Blackheaded oriole	-
112	<i>Petronia xanthocollis</i>	Yellow throated Sparrow	-
113	<i>Philomachus pugnax</i>	Reeve	-
114	<i>Phylloscopus collybita</i>	Brown leaf warbler or chiffchaff	-
115	<i>Phylloscopus inornatus</i>	Yellow browed leaf warbler	-
116	<i>Phylloscopus tytleri</i>	Tytler's leaf warbler	-

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117	<i>Ploceus philippinus</i>	Baya or weaver bird	-
118	<i>Porphyrio porphyrio</i>	Purple Moorhen	-
119	<i>Porzana</i>	Spotted Crake	-
120	<i>Porzana pusilla</i>	Baillon's Crake	-
121	<i>Prinia hodgsonii</i>	Franklin's prinia	-
122	<i>Prinia socialis</i>	Ashy wren warbler	-
123	<i>Prinia sylvatica</i>	Jungle Prinia	-
124	<i>Pterocles exustus</i>	Indian sandgrouse	-
125	<i>Ptyonoprogne concolor</i>	Dusky Crag martin	-
126	<i>Rhipidura albicollis</i>	White spotted fantail	-
127	<i>Rostratula benghalensis</i>	Painted Shrike	-
128	<i>Saxicola torquatus</i>	Siberian Stonechat	-
129	<i>Sterna acuticauda</i>	Blackbellied Tern	-
130	<i>Sterna aurantia</i>	Indian River Tern	-
131	<i>Sternula albifrons</i>	Little Tern	-
132	<i>Sylvia curruca</i>	lesser whitethroat	-
133	<i>Tachybaptus ruficollis</i>	Little Grebe or Dabchick	-
134	<i>Tephrodornis pondicerianus</i>	Common wood shrike	-
135	<i>Tringa nebularia</i>	Green Shank	-
136	<i>Tringa totanus</i>	Common Redshank	-
137	<i>Turdus merula</i>	Blackbird or Black caped	-
138	<i>Turnix sylvaticus</i>	Little Bustard Quail	-
139	<i>Upupa epops</i>	Hoopoe	-
140	<i>Vanellus indicus</i>	Red Wattled lapwing	-
141	<i>Vanellus malabaricus</i>	Yellow wattled lapwing	-
142	<i>Xantholaoema haemacephala</i>	Crimsonbreasted Barbet	-
143	<i>Athene brama</i>	Spotted Owlet	I
144	<i>Glaucidium radiatum</i>	Barred Jungle Owlet	I
145	<i>Gracula religiosa</i>	Grackle or Hill Myna	I
146	<i>Gyps bengalensis</i>	Indian Whitebacked Vulture	I
147	<i>Gyps indicus</i>	Indian Long Billed Vulture	I
148	<i>Ictinaetus malaiensis</i>	Black Eagle	I
149	<i>Ocyrocus griseus</i>	Malabar Indian Grey Hornbill	I
150	<i>Pavo cristatus</i>	Peacock	I
151	<i>Acridotheres fuscus</i>	Jungle Myna	IV
152	<i>Acridotheres tristis</i>	Common Myna	IV
153	<i>Actitis hypoleucos</i>	Common Sandpiper	IV

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154	<i>Aegithina tiphia</i>	Common iora	IV
155	<i>Aethopyga siparaja vigorsii</i>	Crimson sunbird	IV
156	<i>Alcedo atthis</i>	Small Blue or Common Kingfisher	IV
157	<i>Alcippe polycephala</i>	Quaker Babbler	IV
158	<i>Amandava amandava</i>	Red Mundi or Avadavat	IV
159	<i>Ammomanes phoenicurus</i>	Rufous Tailed finch lark	IV
160	<i>Anas crecca</i>	Green-winged Teal	IV
161	<i>Anas poecilorhyncha</i>	Spotill Duck	IV
162	<i>Anthus godlewski</i>	Blyth's Pipit	IV
163	<i>Anthus trivialis trivialis</i>	Tree pipit	IV
164	<i>Ardea alba modesta</i>	Large Egret	IV
165	<i>Ardeola - grayii</i>	Pond Heron or Paddy bird	IV
166	<i>Asio flammeus</i>	Shorteared Owl	IV
167	<i>Aythya fuligula</i>	Tufted Duck	IV
168	<i>Bubulcus ibis</i>	Cattle Egret	IV
169	<i>Burhinus oedicephalus</i>	Stone curlew	IV
170	<i>Cacomantis sonneratii</i>	Indian Baybanded Cuckoo	IV
171	<i>Caprimulgus indicus</i>	Indian Jungle Nightjar	IV
172	<i>Ceryle rudis</i>	Lesser Pied Kingfisher	IV
173	<i>Ceyx erithaca</i>	Three Toed Kingfisher	IV
174	<i>Chrysocolaptes festivus</i>	Black Backed Wood Pecker	IV
175	<i>Clamator coromandus</i>	Redwinged Crested	IV
176	<i>Columba livia</i>	Blue Rock Pigeon	IV
177	<i>Copsychus malabaricus</i>	Shama	IV
178	<i>Copsychus saularis</i>	Magpie Robin	IV
179	<i>Coturnix coromandelica</i>	blackbreasted or Rain quail	IV
180	<i>Coturnix coturnix</i>	Common Grey quail	IV
181	<i>Cuculus Canorus</i>	Cuckoo	IV
182	<i>Cuculus micropterus</i>	Indian Cuckoo	IV
183	<i>Dicaeum agile</i>	Thick Billed flowerpecker	IV
184	<i>Dicrurus aeneus</i>	Bronzed Drongo	IV
185	<i>Dicrurus hottentottus</i>	Hair Crested Drongo	IV
186	<i>Dicrurus leucophaeus</i>	Grey or Ashy Drongo	IV
187	<i>Dicrurus paradiseus</i>	Large Racket tailed Drongo	IV
188	<i>Dryocopus javensis</i>	Indian Great Black Wood Pecker	IV
189	<i>Dumetia hyperythra</i>	Rufous bellied babbler	IV
190	<i>Egretta garzetta</i>	Little Egret	IV

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191	<i>Emberiza melanocephala</i>	Blackheaded Bunting	IV
192	<i>Eremopterix griseus</i>	Ashycrowned finch-lark	IV
193	<i>Eumyias thalassinus</i>	Verditer flycatcher	IV
194	<i>Euodice malabarica</i>	White throated Munia	IV
195	<i>Fulica atra</i>	Coot	IV
196	<i>Gallinago gallinago</i>	Fantail snipe	IV
197	<i>Gallirallus striatus</i>	Slaty-breasted rail	IV
198	<i>Gallus gallus</i>	Red Jungle fowl	IV
199	<i>Gracupica contra</i>	Pied Myna	IV
200	<i>Haematopus ostralegus</i>	Dyster Catcher	IV
201	<i>Halcyon pileata</i>	Black Capped Kingfisher	IV
202	<i>Halcyon smyrnensis</i>	White Breasted Kingfisher	IV
203	<i>Hemicircus lucidus</i>	Heart Spotted WoodPecker	IV
204	<i>Himantopus himantopus</i>	Balackwinged stilt	IV
205	<i>Hydrophasianus chirurgus</i>	Pheasant Tailed Jacana	IV
206	<i>Larus brunnicephalus</i>	Brown Headed Gull	IV
207	<i>Leiopicus mahrattensis</i>	Maratha woodPecker	IV
208	<i>Lonchura malacca</i>	Blackheaded Munia	IV
209	<i>Lonchura striata</i>	white-rumped mannikin	IV
210	<i>Metopidius indicus</i>	Bronzewinged Jacana	IV
211	<i>Microcarbo niger</i>	Little of Pygmy cormorant	IV
212	<i>Micropternus brachyurus</i>	Rufous Wood Pecked	IV
213	<i>Mirafra erythroptera</i>	Red Winged Bush lark	IV
214	<i>Monticola solitarius</i>	Blue Rock Thrush	IV
215	<i>Muscicapa latirostris</i>	Brown flycatcher	IV
216	<i>Myophonus horsfieldii</i>	Malabar whistling thrush	IV
217	<i>Nectarinia asiatica asiatica</i>	Purple sunbird	IV
218	<i>Nectarinia zeylonica sola</i>	Purple-rumped sunbird	IV
219	<i>Nettapus coromandelianus</i>	Cotton Teal	IV
220	<i>Numenius arquata</i>	Curlew	IV
221	<i>Pellorneum ruficeps</i>	Puff-throated babbler	IV
222	<i>Pericrocotus cinnamomeus</i>	Small minivet	IV
223	<i>Pericrocotus flammeus</i>	Scarlet minivet	IV
224	<i>Pitta brachyura</i>	Indian Pitta	IV
225	<i>Psittacula cyanocephala</i>	Blossom Headed Parakeet	IV
226	<i>Psittacula eupatria</i>	Large Alexandrine Parakeet	IV

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227	<i>Psittacula krameri</i>	Rose Ringed Parakeet	IV
228	<i>Pycnonotus cafer</i>	Redvented Bulbul	IV
229	<i>Pycnonotus jocosus</i>	Red-whiskered bulbul	IV
230	<i>Pycnonotus luteolus</i>	White browed Bulbul	IV
231	<i>Saxicoloides fulicatus</i>	Indian Robin	IV
232	<i>Spilopelia chinensis</i>	Spotted Dove	IV
233	<i>Spilopelia senegalensis</i>	Little Brown Dove	IV
234	<i>Spilornis cheela</i>	Crested Serpent Eagle	IV
235	<i>Streptopelia decaocto</i>	Indian Ring Dove	IV
236	<i>Streptopelia tranquebarica</i>	Red Turtle Dove	IV
237	<i>Sturnia malabarica</i>	Grey Headed Myna	IV
238	<i>Sturnia pagodarum</i>	Black headed	IV
239	<i>Terpsiphone paradisi</i>	Paradise flycatcher	IV
240	<i>Treron phoenicoptera</i>	Pigeon Yellow legged green pigeon	IV
241	<i>Tringa ochropus</i>	Green sandpiper	IV
242	<i>Tringa stagnatilis</i>	Marsh Sandpiper	IV
243	<i>Turdoides caudata</i>	Common Babbler	IV
244	<i>Turdoides malcolmi</i>	Large Grey Babbler	IV
245	<i>Turdoides striata</i>	Jungle Babbler	IV
246	<i>Turnix suscitator</i>	Blue Breasted Banded Rail	IV
247	<i>Tyto alba</i>	Barn Owl	IV
248	<i>Corvus culminatus</i>	Jungle Crow	V
249	<i>Corvus splendens</i>	House Crow	V
Aquatic species			
250	<i>Harpadon nehereus</i>	Bombay duck (Fish)	-
251	<i>Caridea</i>	Caridean shrimp (shrimp)	-
252	<i>Larimichthys crocea</i>	large yellow croaker (Fish)	-
253	<i>Brama brama</i>	Atlantic pomfret (fish)	-
254	<i>Pampus argenteus</i>	White pomfret (fish)	-
255	<i>Scomberomorus guttatus</i>	Surmai (Fish)	-
256	<i>Rhizoprionodon acutus</i>	Milk Shark (fish)	-
257	<i>Rastrelliger kanagurta</i>	Indian mackerel (fish)	-
258	<i>Parapenaeus longirostris</i>	Deep-water rose shrimp	-
259	<i>Fenneropenaeus indicus</i>	Indian prawn	-
260	<i>Scylla tranquebarica</i>	Mud Crab	-
261	<i>Clarias batrachus</i>	Magur fish	-
262	<i>Perca fluviatilis</i>	Rani	-

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263	<i>Anguilla bengalensis</i>	Mottled eel	-
264	<i>Labeo catla</i>	Catla	-
265	<i>Labeo rohita</i>	Rohu	-
266	<i>Oreochromis niloticus</i>	Nile tilapia	-

Source- Primary survey and Forest Manual of Tungareshwar Wildlife Sanctuary, year 2018-2028, Borivali
(Mumbai)

Photographs of Fauna species



Figure 45. Above image showing *Pampus argenteus* (above Left) and *Dicrurus aeneus* (above Right)



Figure 46. Above image showing *Macaca radiata* (above Left) and *Herpestes edwardsii* (above Right)

3.11.6. Endangered Species

There are fifteen schedule I Species found in buffer zone namely given below:

Table 51. Schedule I Species found in buffer zone

S.No	Zoological Name	Common Name	Schedule
1	<i>Hemidactylus maculatus</i>	Spotted leaf-toed gecko	I
2	<i>Psammophilus blanfordianus</i>	Blanford's rock agama	I
3	<i>Python molurus</i>	Indian Python	I
4	<i>Varanus bengalensis</i>	Monitor lizard	I

5	<i>Panthera pardus</i>	Leopard	I
6	<i>Moschiola meminna</i>	Indian Spotted Chevrotain	I
7	<i>Tetracerus quadricornis</i>	Four-horned antelope	I
8	<i>Athene brama</i>	Spotted Owlet	I
9	<i>Glaucidium radiatum</i>	Barred Jungle Owlet	I
10	<i>Gracula religiosa</i>	Grackle or Hill Myna	I
11	<i>Gyps bengalensis</i>	Indian Whitebacked Vulture	I
12	<i>Gyps indicus</i>	Indian Long Billed Vulture	I
13	<i>Ictinaetus malaiensis</i>	Black Eagle	I
14	<i>Ocyrceros griseus</i>	Malabar Indian Grey Hornbill	I
15	<i>Pavo cristatus</i>	Peacock	I

3.12. Socio-economic Environment

Introduction: The socio-economic report was prepared to identify the expected impacts that can occur on the local community due to the proposed project “Jivdani Passenger Funicular System (Ropeway)” at village Virar, district Palghar, Maharashtra. The impacts were identified and appropriate mitigation measures suggested to reduce the impacts.

Objective:

The main objectives of the study are as follows:

1. To analyse the demographic details of urban and rural areas lie within the 10 Km radial distance from the project site through secondary (Literature survey) and primary (Field visit) data.
2. The analysis of secondary data to extract the required information for preparation of questionnaires and report, (Census data, 2011 and village directory of Maharashtra).
3. To prepare questionnaires according to the effects occurring due to Industrial activities to collect primary data through discussion with the focused group, household survey for prediction of impacts and preparation of CER.
4. The comparison and analysis of primary and secondary data to know the actual condition of the villages and to predict the expected changes due to project activities.
5. To prepare a list of possible impacts due to the project activities during its operation phase.
6. The possible mitigation measures should be adopted in accordance with the impacts identified.

Methodology:

The study was conducted in three parts which are described below:

1. The analysis of secondary data by referring to the census data of 2011 and village directory of Maharashtra. The exact status of amenities from different villages/towns are confirmed by the census data 2011 from the respective census district handbook for the villages coming in the radial distance of 10 Km from the project site.
2. The social impact assessment was done by primary survey through discussion with local villagers, project proponents and the head of the villages in surrounding villages coming under an area of 5 Km radial distance from the project site through prepared questionnaires. The villages coming under the buffer zone within radial distance of 10 Km from the project site were extracted with the help of KML file and listed further.

Concept & Definitions

Study Area: The study area, also known as impact area, has been defined as the total of core area and buffer area with 10 Kilometres from the periphery of the core area. The study area includes all the land-marks both natural and manmade, falling therein.

QoL: The Quality of Life (QoL) refers to the degree to which a person enjoys the important possibilities of his/her life. The 'Possibilities' result from the opportunities and limitations, each person has in his/her life and reflect the interaction of personal and environmental factors. Enjoyment has two components: the experience of satisfaction and the possession or achievement of some characteristic.

Household: A group of persons who normally live together and take their meals from a common kitchen are called a household. Persons living in a household may be related or unrelated or a mix of both. However, if a group of related or unrelated people live in a house but do not take their meals from the common kitchen, then they are not part of a common household. Each such person is treated as a separate household. There may be one member households, two member households or multi-member households.

Sex Ratio: Sex ratio is the ratio of females to males in a given population. It is expressed as 'number of females per 1000 males'.

Literates: All persons aged 7 years and above who can both read and write with understanding in any language are taken as literate. It is not necessary for a person to have received any formal education or passed any minimum educational standard for being treated as literate. People who are blind but can read in Braille are also treated as literates.

Literacy Rate: Literacy rate of population is defined as the percentage of literates to the total population aged 7 years and above.

Labour Force: The labour force is the number of people employed and unemployed in a geographical entity. The size of the labour force is the total of persons employed and unemployed. An unemployed person is defined as a person not employed but actively seeking work. Normally, the labour force of a country consists of everyone of working age (around 14 to 16 years) and below retirement (around 65 years) that are participating workers, that is people actively employed or seeking employment. People not counted under labour force are students, retired persons, stay-at-home people, people in prisons, permanently disabled persons and discouraged workers.

Work: Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The work may be part time, full time, or unpaid work in a farm, family enterprise or in any other economic activity.

Worker: All persons engaged in 'work' are defined as workers. Persons who are engaged in cultivation or milk production even solely for domestic consumption are also treated as workers.

Main Workers: Those workers who had worked for the major part of the reference period (i.e. 6 months or more in the case of a year) are termed as Main Workers.

Marginal Workers: Those workers who did not work for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers

Work Participation Rate: The work participation rate is the ratio between the labour force and the overall size of their cohort (national population of the same age range). In the present study the work participation rate is defined as the percentage of total workers (main and marginal) to total population.

Crude Death Rate: Crude death rate is the number of deaths occurring among the population of a given geographical area during a given year, per 1000 mid-year total population of a given geographical area during the same year.

Infant Mortality Rate: Infant mortality rate is the number of deaths per 1000 live births of children under one year of age.

Infant Mortality Rate= (Number of children death under 1-year age ÷ Number of live births during the Year) × 1000.

Demographic analysis:

Socio-economic Layout

A total of 42 villages fall within the radial distance of 10 Km from the project site. All these villages fall in district Palghar, Maharashtra. The district thane divided on 1st August 2014 into Thane and Palghar. Palghar came into existence as the 36th district of Maharashtra. It is spread between the west coast of the Arabian Sea and the Sahyadri Mountains rows that are east of the Northern district of Palghar. The district has a total of 8 talukas, Mokhada, Tatasari, vasai, Vikramgad, Palghar, Dahanu and Wada. Palghar DISTRICT has 4,69,699 hectares of the total geographical area in a total 1008 villages and 3818 sub-villages as well as 477 gram panchayats. In District the literacy rate is 66.65% and Male percentage is 72.23% and female literacy rate is 59.28%. The socioeconomic study has been carried out for the same district which lies within the buffer zone of the Funicular system project.

The total villages lie within the buffer zone within radial distance of 10 Km from the project site are shown below in table.

Table 52. List of villages within radial distance of 10 Km from the project site

S. NO.	Name	S. NO.	Name	S. NO.	Name
1	Actan	15	Khardi	29	Shivansai
2	Arnala	16	Khardi	30	Tarkhad
3	Chimane	17	Kolawade	31	Tembhare Bk.
4	Datiware	18	Kopri	32	Tembhi
5	Dhanivali	19	Koshimbade	33	Tokare
6	Dolivpada	20	Mithagar	34	Umbarwada T. Manor
7	Ghatim	21	Mukkam	35	Umroli
8	Hedavade	22	Navghar	36	Vasai
9	Jalsar	23	Patilgaon	37	Vedhi
10	Kalamb	24	Rajewadi	38	Vehaloli
11	Kandarwan	25	Saravali	39	Virathan Bk.
12	Kandre Bhure	26	Saravali	40	Virathan Kh.
13	Khanivade	27	Satpale	41	Wadhiv Saravali
14	Kharade	28	Shirsad	42	Walve

(Source: Census data 2011)

Demographic Profile of Study Area

The secondary data was analysed with respect to the demographic details, occupational pattern, literacy rate and available village amenities to reveal the socio-economic status of the project area lying within 10 Km buffer zone from the project site. The demographic profile shows that the total population of the study area is 221691 which constitute 50046 households. The detailed demographic profile of the study areas are as follows:

- Village having minimum population- Chimane (Population 245, Household 62).
- Village having maximum population- Vasai (Population 121012, Households 26951).

The average sex ratio of the study area is 937 (Rural 942 and Urban 877) while the sex ratio of the age group 0 to 6 years is 999 (Rural 1006 and Urban 908). The average SC population is 2.87 % (Rural 2.65% and Urban 5.62%) with maximum in Village Vedhi (17.59 %) and no scheduled caste population in 15 villages. The average ST population of the study area is 26.84 % (Rural 27.33 % and Urban 20.41 %). According to the census data 2011, the overall literacy rate of the study area is 77.92% (Rural 77.50 % and Urban 83.43%) with male literacy rate is 85.11 % (Rural 84.86% and Urban 88.24%) and female literacy rate is 70.25 % (Rural 69.64% and Urban 78.13%).

The demographic details of rural and urban areas are described below in Table:

Table 53. Demographic details of rural areas

S. No.	Name	No of Hous ehold s	Total Populat ion Person	Sex ratio	sex ratio (0-6 years)	Sche duled caste s %	Sched uled tribes %	Total Literate s %	Male Literate s %	Female Literate s %
1	Actan	291	1162	1035	904	0.00	3.96	89.84	92.10	87.68
2	Arnala	3005	15331	985	1022	0.76	9.61	80.10	87.33	72.72
3	Chimane	62	245	763	565	0.00	28.57	72.25	82.76	59.14
4	Datiware	138	490	1149	1071	13.47	2.04	90.46	93.46	87.85
5	Dhanivali	369	1440	823	1010	1.18	3.54	84.96	92.31	75.73
6	Dolivpada	115	690	1000	1265	0.00	0.29	74.06	83.60	64.24
7	Ghatim	176	709	1073	1204	0.00	54.58	72.71	79.17	66.56
8	Hedavade	132	683	240	1143	4.39	25.18	67.55	68.30	63.89
9	Jalsar	515	2153	926	901	0.28	6.92	82.48	89.77	74.62
10	Kalamb	1169	5329	1016	863	0.86	11.33	87.20	91.74	82.80
11	Kandarwan	121	474	951	840	0.00	9.49	79.21	87.61	70.48
12	Kandre Bhure	255	1077	951	1265	0.00	33.52	85.40	86.48	84.23
13	Khanivade	222	966	1034	849	0.00	98.14	53.40	63.87	43.69
14	Kharade	242	1266	939	935	5.85	23.38	76.45	86.11	66.17
15	Khardi	503	2040	994	926	0.00	0.00	80.31	88.91	71.72
16	Kolawade	1183	3692	436	1108	3.33	3.06	87.57	89.82	81.68
17	Kopri	2507	10180	904	969	4.69	2.30	90.02	94.37	85.15
18	Koshimbade	228	1054	941	1255	0.47	42.22	78.71	84.84	71.95
19	Mithagar	243	1082	902	946	0.00	0.00	79.50	87.59	70.50
20	Mukkam	543	2490	1015	1079	0.44	13.65	79.09	87.70	70.56

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21	Navghar	279	1179	985	855	0.34	26.21	79.89	86.84	72.93
22	Patilgaon	314	1529	1017	1122	1.18	11.77	81.12	87.87	74.42
23	Rajewadi	326	1553	999	901	0.00	83.52	39.78	45.29	34.39
24	Saravali	1171	5402	982	1013	2.65	36.56	68.74	78.69	58.56
25	Satpale	865	3751	994	1038	5.87	18.05	86.98	91.52	82.39
26	Shirsad	148	685	963	1050	0.00	34.45	71.64	78.64	64.29
27	Shivansai	374	1605	965	808	5.30	49.47	67.26	74.81	59.70
28	Tarkhad	283	1094	1004	952	0.00	2.19	94.76	97.82	91.73
29	Tembhare Bk.	250	1326	922	811	5.13	11.54	73.31	84.87	61.00
30	Tembhi	741	3220	983	958	1.49	17.64	79.94	86.70	73.09
31	Tokare	214	957	910	1159	0.10	85.06	53.84	63.47	42.82
32	Umbarwad a T. Manor	95	503	1028	1270	0.00	94.63	71.84	84.36	59.13
33	Umroli	977	4011	981	813	8.98	7.95	93.58	95.24	91.92
34	Vedhi	344	1444	1014	859	17.59	16.55	86.51	93.34	79.88
35	Vehaloli	72	345	994	1400	0.00	96.52	63.16	84.46	40.15
36	Virathan Bk.	451	1799	951	1187	7.95	3.22	82.14	92.21	71.32
37	Virathan Kh.	333	1366	1067	1145	10.98	13.98	85.97	91.82	80.44
38	Wadhiv Saravali	190	772	949	1037	0.00	0.00	82.01	91.87	71.55
39	Walve	292	1296	946	744	0.23	84.80	68.57	82.02	55.00
TOTAL		19738	86390	942	1006	2.65	27.33	77.50	84.86	69.64

Source: Census data, 2011

Table 54. Demographic details of Urban Areas

S. NO.	Name	No. of House holds	Total Population Person	Sex ratio	sex ratio (0-6 years)	Sched uled castes %	Sched uled tribes %	Total Literat es %	Male Literat es %	Femal e Literat es %
1	Khardi (CT)	1148	5579	927	910	12.10	25.38	80.32	85.77	74.47
2	Saravali (CT)	2209	8710	739	834	2.65	2.11	92.79	94.84	89.97
3	Vasai	26951	121012	965	981	2.11	33.72	77.17	84.12	69.94
Total Urban Areas		30308	135301	877	908	5.62	20.41	83.43	88.24	78.13

Source: Census data, 2011

Economic Status

As per census data 2011, the analysis of villages data lying within the study area are summarised below.

The average percentage of total workers in the study areas is 44.79% (Rural 45.13% and urban 40.36%), main workers in study areas is 75.14 % (Rural 74.43% and Urban 84.33%). The total marginal worker is 24.86% (Rural 25.57% and Urban 15.67%). The total male worker of the study area is 71.02% (Rural 70.64% and Urban 75.90%) and female workers percentage is 28.98% (Rural 29.36% and Urban 24.10%). The work participation rate is minimum in Khardi (CT) (31.35%) and maximum in village Hedavade (71.45%). The economic status of people is shown in the table.

Table 55. Working status of rural people

S. No.	Name	Total Population Person	Total worker %	Male worker %	Female worker %	Main Worker %	Main working male%	Main working female %	Marginal worker %
1	Actan	1162	36.49	66.51	33.49	97.41	65.80	31.60	2.59
2	Arnala	15331	49.83	61.60	38.40	94.44	58.92	35.52	5.56
3	Chimane	245	35.10	90.70	9.30	100.00	90.70	9.30	0.00
4	Datiware	490	32.86	69.57	30.43	89.44	62.73	26.71	10.56
5	Dhanivali	1440	36.60	93.36	6.64	93.93	89.18	4.74	6.07
6	Dolivpada	690	57.25	55.19	44.81	90.38	53.16	37.22	9.62
7	Ghatim	709	44.99	68.34	31.66	64.26	46.08	18.18	35.74
8	Hedavade	683	71.45	98.16	1.84	50.61	49.18	1.43	49.39
9	Jalsar	2153	42.73	74.35	25.65	32.07	27.28	4.78	67.93
10	Kalamb	5329	49.47	55.92	44.08	76.56	47.46	29.10	23.44
11	Kandarwan	474	33.97	89.44	10.56	88.82	79.50	9.32	11.18
12	Kandre Bhure	1077	50.97	64.66	35.34	28.05	25.68	2.37	71.95
13	Khanivade	966	42.96	61.20	38.80	57.35	48.67	8.67	42.65
14	Kharade	1266	59.40	53.86	46.14	70.74	43.75	26.99	29.26
15	Khardi	2040	52.11	61.05	38.95	63.69	47.41	16.27	36.31

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16	Kolawade	3692	61.32	92.23	7.77	94.48	88.43	6.05	5.52
17	Kopri	10180	37.70	82.65	17.35	90.13	76.21	13.91	9.87
18	Koshimbade	1054	53.61	59.65	40.35	49.03	26.02	23.01	50.97
19	Mithagar	1082	39.93	86.34	13.66	83.33	73.15	10.19	16.67
20	Mukkam	2490	49.76	65.70	34.30	95.96	63.44	32.53	4.04
21	Navghar	1179	32.40	86.39	13.61	14.92	13.09	1.83	85.08
22	Patilgaon	1529	54.74	57.83	42.17	91.04	53.29	37.75	8.96
23	Rajewadi	1553	49.45	51.82	48.18	97.14	50.26	46.88	2.86
24	Saravali	5402	41.24	68.18	31.82	93.31	65.17	28.14	6.69
25	Satpale	3751	44.41	65.07	34.93	84.39	55.94	28.45	15.61
26	Shirsad	685	52.26	55.59	44.41	6.70	5.03	1.68	93.30
27	Shivansai	1605	40.69	70.75	29.25	77.34	58.19	19.14	22.66
28	Tarkhad	1094	40.49	63.66	36.34	91.20	58.47	32.73	8.80
29	Tembhare Bk.	1326	50.83	58.75	41.25	71.66	52.67	18.99	28.34
30	Tembhi	3220	44.44	65.06	34.94	97.13	63.10	34.03	2.87
31	Tokare	957	43.36	66.75	33.25	89.16	60.24	28.92	10.84
32	Umbarwada T. Manor	503	36.58	62.50	37.50	96.20	61.41	34.78	3.80
33	Umroli	4011	37.50	76.46	23.54	72.74	60.84	11.90	27.26
34	Vedhi	1444	49.10	62.20	37.80	56.56	42.45	14.10	43.44
35	Vehaloli	345	59.13	59.80	40.20	15.20	14.71	0.49	84.80
36	Virathan Bk.	1799	37.63	83.01	16.99	79.62	69.87	9.75	20.38
37	Virathan Kh.	1366	38.95	74.62	25.38	73.68	59.21	14.47	26.32
38	Wadhiv Saravali	772	35.23	95.22	4.78	98.16	93.75	4.41	1.84
39	Walve	1296	33.02	80.84	19.16	85.98	75.93	10.05	14.02
TOTAL		86390	45.13	70.64	29.36	74.43	55.80	18.63	25.57

Source: Census data, 2011

Table 56. Working Status of Urban People

S. No.	Name	Total Population Person	Total worker %	Main Worker %	Main working male%	Main working female %	Marginal worker %
1	Khardi (CT)	5579	31.35	76.62	60.49	16.123	23.38
2	Saravali (CT)	8710	42.89	91.46	81.02	10.439	8.54
3	Vasai	121012	46.85	84.91	56.21	28.696	15.09
TOTAL		135301	40.36	84.33	65.91	18.42	15.67

Source: Census data, 2011

Amenities

Village-wise detail of infrastructural facilities with appreciate to training, scientific facility, water delivery, conversation and transportation facility and power supply, and banking centres are presented in following Analysis of statistics of 15 villages indicates that infrastructural facilities/simple amenities are to be had in most of the villages, as summarized below:

Educational Facilities								
Govt Pre-Primary School (Nursery/LKG/UK G)		Govt Primary School		Govt Middle School	Govt Secondary School		Govt Senior Secondary School	
0		10		2	4		0	
Health care								
Private Hospital	Asha Workers	Private Clinic		TB Clinic		Hospital Allopathic		Dispensary
4	11	12		0		0		0
Drinking water Facilities					Communication Facilities			
Covered Well	Uncovered Well	BMC Supply	Tube Wells/Borehole	Tank/Pond/Lake	Post Office	Sub Post Office	Telephone	Public Call Office /Mobile
0	1	15	7	2	1	0	0	15
Road Facilities						Transportation Facilities		
Drainage	Pucca Road	Road	Macadam	All Weather Road	Footpath	Cars,Tempo	Cycles/Scooters	Tractor
5	13	0	0	0	15	14	14	7
Bank Facilities				Power Facilities				
Commercial Bank	Cooperative Bank	Agricultural Credit Societies	Self - Help Group (SHG)	Power Supply For Domestic	Power Supply For Agriculture	Power Supply For Commercial Use	Power Supply For All Users	

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		s		c Use	ure Use		
2	0	0	0	15	11	0	15
Source: Census of India, 2011							

Social Impact Assessment

The project lies at village Virar, tehsil Vasai, district Palghar, Maharashtra. The main objective of the socio-economic study is to collect various social and economical information about the area and to identify the predicted impacts due to the project activities and to provide the appropriate mitigation measures.

The village level information was gathered for different 7 villages which were selected for the study using census data, 2011 and compared with the district level census record, 2011.

The selection of seven villages (Kopri, Shirgaon, Khatkaripada, Panchpayari, Chandansar, Shankar Nagar and Gaskopada) within radial distance of 5 Km from the project site has been done and the proper study related to literacy rate, economic status and work profile of the population of that area by having one to one meeting with residents/panchayats. Also focus group discussion was done at some of the villages.

Distance and direction of villages from the project site are shown below in Table .

Table 57. Distance and direction of villages from the project site

S. No.	Villages	Distance and direction
1	Kopri	1.62 Km, S
2	Shirgaon	2.76 Km, E
3	Khatkaripada	0.24 Km, ENE
4	Panchpayari	0.82 Km, ESE
5	Chandansar	1.61 Km, ENE
6	Shankar Nagar	0.87 Km, SSE
7	Gaskopada	1.59 Km, SE

The primary data gathered from surveys of different villages are shown below in Table.

Village level information of different villages

Table 58. Village level primary data gathered from survey

S. No.	Parameter	Name of the Villages						
		Kopri	Shirgaon	Khatkaripada	Panchpayari	Chandansar	Sahakar Nagar	Gaskopada
1	House Hold	1300	700	450	400	2000	1000	800

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

	Approx							
2	Occupation or source of income	Agriculture, Fishing, Labour, Private Job & Businesses	Fishing, Labour, Private Job & Businesses	Fishing, Labour, Private Job & Businesses	Fishing, Labour, Private Job & Business	Agriculture Fishing, Labour, Private Job & Businesses	Fishing, Labour, Private Job & Businesses	Agriculture, Fishing, Labour, Private Job & Businesses
3	Population	12500	6500	2500	4500	15000	9500	2500
%Working status								
4	Agriculture & Labour	60	75	60	15	45	30	60
	Private Job	25	20	25	75	10	35	25
	Govt. Job	5	3	5	5	15	10	5
	Self Employed	10	2	10	5	30	25	10
5	Main crop	Paddy	-	-	-	Paddy	-	Paddy
6	School	Anganwadi, Primary School	Anganwadi, Primary School	Anganwadi, Primary School	NIL	Anganwadi, Primary School, Middle School & High School	Anganwadi, Primary School, & High School	Anganwadi, & Primary School
7	Hospital	Private Clinic	Private Clinic	Private Clinic	Private Clinic	Private hospitals, Private Clinic, & Asha Workers	Private hospitals, Private Clinic, & Asha Workers	Private Clinic
8	Post office	NIL	NIL	NIL	NIL	YES	NIL	NIL
9	Bank	NIL	NIL	NIL	NIL	YES	NIL	NIL
10	Market	Private Shop	Private Shop	Private Shop	Private Shop	Market	Local Market	Private Shop
11	Electricity	YES	YES	YES	YES	YES	YES	YES
12	Source of water	BMC Supply, Borewell	BMC Supply, Borewell	BMC Supply	BMC Supply	BMC Supply, Borewell	BMC Supply, Borewell	BMC Supply

13	Solid waste facility							
14	Individual toilet facilities	50	50	55	70	60	50	55
	Municipal Toilets	50	50	45	30	40	50	45
15	Transport System	Bi cycles, Scooters, Cars, Tempo, Tractors	Bi cycles, Scooters, Cars, Tempo, Truck, Tractor	Bi cycles, Scooters, Cars, Tempo, Tractor	Bi cycles, Scooters, cars, Tempo	Bi cycles, Scooters, cars, Tempo, Truck, Tractor	Bi cycles, Scooters, cars, Tempo, Dumper s	Bi cycles, Scooters, Cars, Tempo
16	APL	35	30	25	25	40	30	25
17	BPL	65	70	75	75	60	70	75

Conclusion: This area is moderately developed with well connectivity of roadways, proper drinking water facility available for the villagers. amenities like schools and sanitation facilities available for the villagers and market are easily accessible with good transportation facilities. Most of the people depend on agricultural activities like fishing and farming for their livelihood.

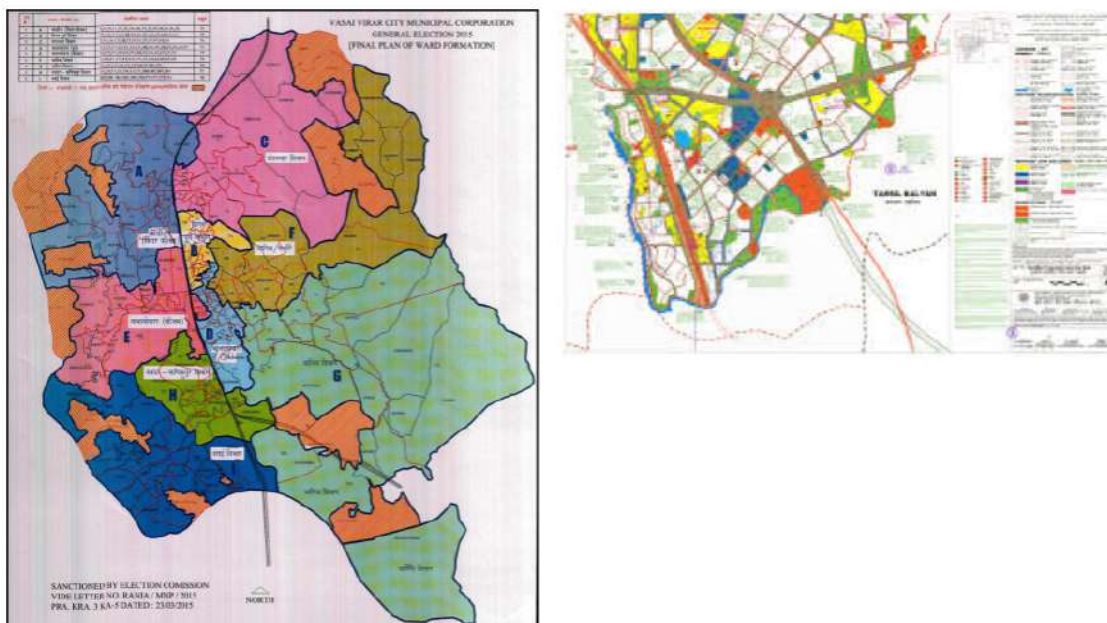
The well developed roads in the area directly connect the villages with the cities which made easy access to schools, hospitals and markets. The availability of industries in the areas provides employment opportunities to the local people which increase the income and lead to better lifestyle of the people.

The development of the Funicular will increase the scenic beauty and attract tourists which indirectly generates employment opportunities to the local people.

3.13. Traffic Survey

Introduction- The proposed project titled “Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra.

- The site is surrounded by major roads: Kopri Naka Chandansar Road (24 m), Tulinj Road (18 m) and Pelhar Road (18 m).
- The site is approached by Jivdani Panch Pyari Marg.
- This zone consists mainly of planned residential localities.



3.13.1. Need For Study

The project site is likely to add a significant number of trips, especially during peak hours in addition to the existing traffic. This may lead to conflict with the traffic on the arterial road outside the site leading to congestion on the access roads emanating from the project site as well as the Sub arterial road along it. Also, the traffic on the arterial roads may affect the access to the project, causing delays affecting safety, thereby lowering its attractiveness to the visitors of the Shri Jivdani Devi Temple. A need exists to examine the likely traffic impact and suggest mitigating measures to minimize the impact.

3.13.2. Study Objectives

- To estimate the traffic generated from the project site onto the surrounding road network.
- To identify the impact of generated traffic from site on Level of Service of peripheral roads

3.13.3. Scope Of Services And Data Collection

Data Collection and Survey: The traffic surveys have been conducted for 7 days to assess travel characteristics of the Kopri Naka Chandansar Road and Jivdani Panch Pyari Road. Survey of the roads has been conducted by estimating the trips generated from the project site using parking data and also estimating the present

traffic densities and parking capabilities within 2 km radius from the site or the project influence area (PIA).

Analysis: Appreciation of impact on the Level of Services outside

The site conditions and traffic flow situation is presented through actual site pictures for different roads within the project influence area. The details are presented below:



Figure 47. Primary Data of Traffic Survey



Figure 48. Study Area: 2 km Radius

The study area will include the following roads and location:

1. Road 1: Kopri Naka Chandansar Road
2. Road 2: Jivdani Panch Pyari Marg



Figure 49. Google Map showing the locations of survey conducted

3.13.4. Methodology & Data Analysis

The study was conducted in two steps:

1. **Kopri Naka Chandansar Road:** 7-days continuous assessment of existing traffic volume for 17-hours at 1 location of Kopri Naka Chandansar Road in order to determine the expected flow and traffic movement.

2. **Jivdani Panch Pyari Marg:** 7-days continuous assessment of existing traffic volume for 17-hours at 1 location of Jivdani Panch Pyari Marg in order to determine the expected flow and traffic movement.

S. No.	Vehicle Type	PCU Value
1	Car	1
2	Two-wheeler	0.5
3	Private Bus	2.2
4	Auto	1.2
5	Lcv	2
6	Truck	3.7
7	Tractor And Trailor	5
8	Cycle Rickshaw	0.5

Conversion Factor (Ref: IRC 106, 1990)

STEP 1: Weekly analysis of traffic density at Kopri Naka Chandansar Road and Jivdani Panch Pyari Marg

a) Road 1: Kopri Naka Chandansar Road

Summary of traffic count at Kopri Naka Chandansar Road (Location 1)

Table 59. Summary of traffic count at Kopri Naka Chandansar Road (Location 1)

Hours	Baseline							
	Car	Bus/Truck	Two Wheeler	Others/ Auto	PCU/17 Hr	PCU/Hr	Capacity of Road in PCU/Hr	LOS
Monday	8913	1275	6844	1446	16876	993	5143	0.19
Tuesday	8638	1248	6491	1391	16297	959	5143	0.19
Wednesday	8798	1283	6757	1487	16784	987	5143	0.19
Thursday	8851	1229	6694	1422	16609	977	5143	0.19
Friday	8248	1196	5994	1378	15530	914	5143	0.18
Saturday	8540	1222	6298	1435	16100	947	5143	0.18
Sunday	8967	1249	6644	1436	16759	986	5143	0.19
Average	8708	1243	6532	1428	16422	966	5143	0.19

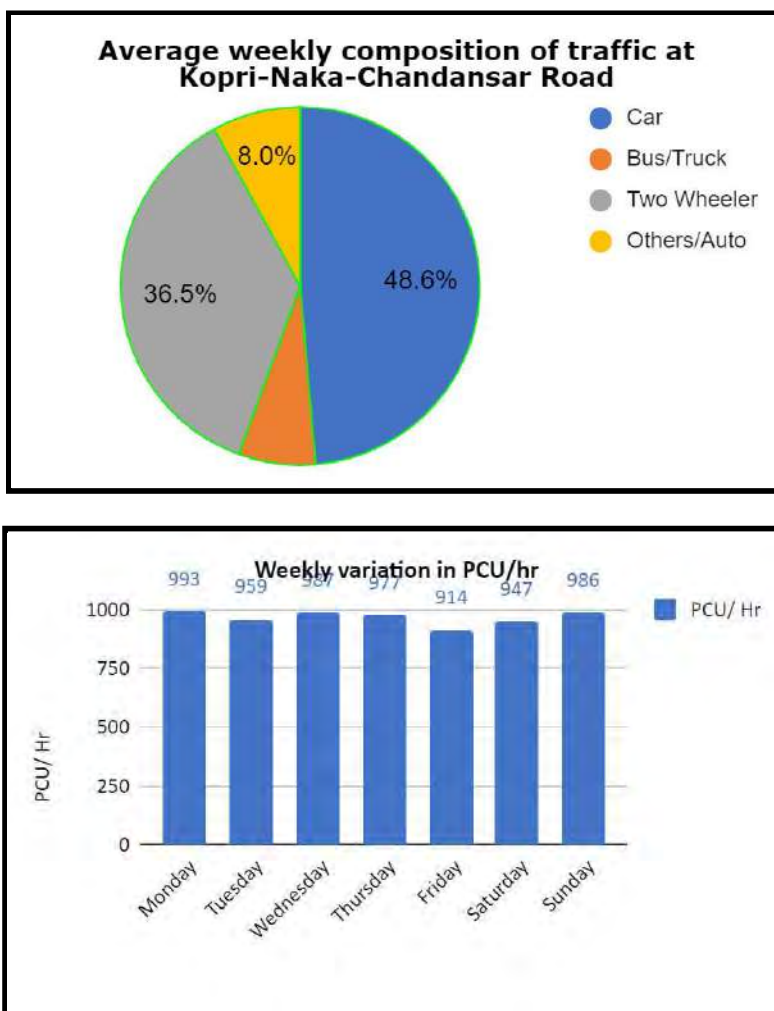


Figure 50. Graphical Representation of traffic composition and variation at Kopri Naka Chandansar Road (Location 1)

b) Road 2: Jivdani Panch Pyari Marg

Table 60. Summary of traffic count at Jivdani Panch Pyari Marg (Location 2)

Hours	Baseline					PCU/ Hr	Capacity of Road in PCU/Hr	LOS
	Car	Bus/Truck	Two Wheeler	Others/ Auto	PCU/17 Hr			
Monday	1748	255	1956	386	3749	221	2000	0.11
Tuesday	1694	250	1855	371	3615	213	2000	0.11
Wednesday	1725	257	1931	397	3731	219	2000	0.11
Thursday	1735	246	1913	379	3688	217	2000	0.11
Friday	1617	239	1713	367	3441	202	2000	0.10

**Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar**

Saturday	1674	244	1799	383	3571	210	2000	0.11
Sunday	1758	250	1898	383	3716	219	2000	0.11
Average	1707	249	1866	381	3644	214	2000	0.11

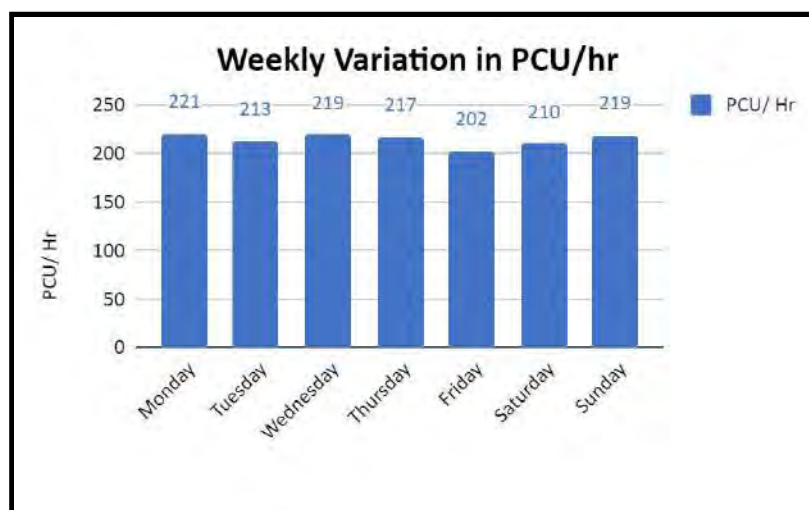
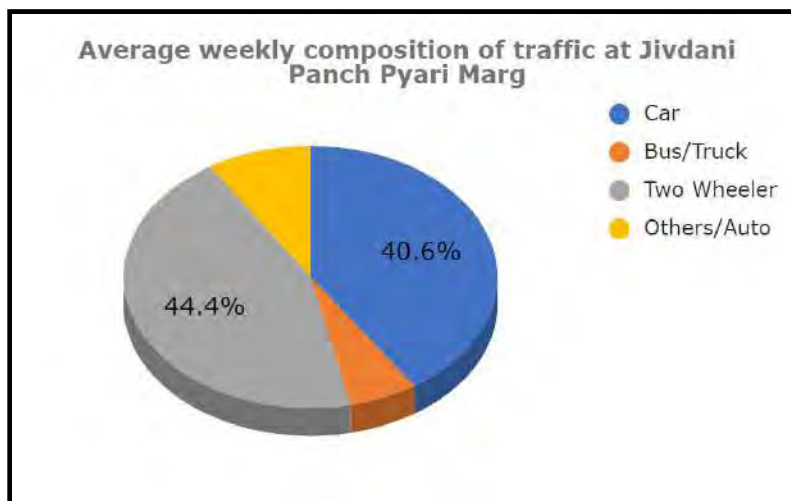


*Figure 51. Graphical Representation of traffic composition and variation at Jivdani Panch Pyari Marg
(Location 2)*

Summary of Traffic Flow:

- Location 1: Weekly Average PCU/Hr= 996
- Location 2: Weekly Average PCU/Hr= 214

STEP 2: Hourly analysis of traffic density at Kopri Naka Chandansar Road of 1 day.

1. Hourly Traffic Density at Kopri Naka Chandansar Road

Table 61. Hourly Traffic Density at Kopri Naka Chandansar Road

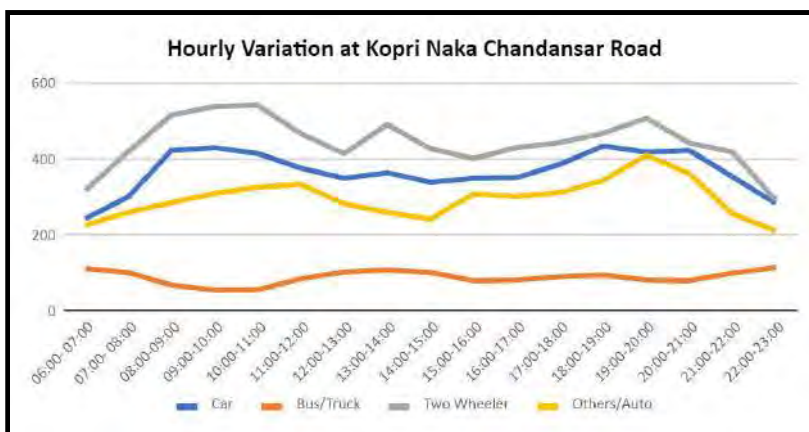
Hours	Baseline					Incremental			
Hours	Car	Bus/Truck	Two Wheeler	Others/Auto	PCU/Hr	PCU/Hr	Baseline PCU/Hr	Capacity of Road in PCU/Hr	LOS Baseline
06:00- 07:00	243	112	317	226	918	30	918	5143	0.179
07:00- 08:00	301	102	420	260	1046	40	1046	5143	0.203
08:00-09:00	423	68	516	286	1174	50	1174	5143	0.228
09:00-10:00	430	55	539	310	1192	68	1192	5143	0.232
10:00-11:00	415	56	542	326	1200	50	1200	5143	0.233
11:00-12:00	376	85	467	334	1198	39	1198	5143	0.233
12:00-13:00	350	103	415	282	1123	35	1123	5143	0.218
13:00-14:00	365	108	491	260	1160	44	1160	5143	0.226
14:00-15:00	340	102	428	242	1068	56	1068	5143	0.208
15:00-16:00	350	80	402	308	1097	42	1097	5143	0.213
16:00-17:00	352	82	430	302	1109	47	1109	5143	0.216
17:00-18:00	387	90	444	312	1182	62	1182	5143	0.230
18:00-19:00	434	95	468	344	1289	54	1289	5143	0.251
19:00-20:00	419	82	508	410	1344	63	1344	5143	0.261
20:00-21:00	423	80	443	362	1255	44	1255	5143	0.244
21:00-22:00	354	100	419	256	1090	42	1090	5143	0.212
22:00-23:00	284	115	292	212	937	33	937	5143	0.182
Average	367	89	444	296	1140	47	1140	5143	0.22

Carrying Capacity at Kopri Naka Chandansar Road = 5143 PCU/hr

Existing traffic density at Kopri Naka Chandansar Road = 1140 PCU/hr

LOS without Project = 0.22 i.e. Cat "B"

LOS with Project= 0.23 i.e. Cat "B"



2. Hourly Traffic Density at Jivdani Panch Pyari Marg:

Table 62. Hourly Traffic Density at Jivdani Panch Pyari Marg

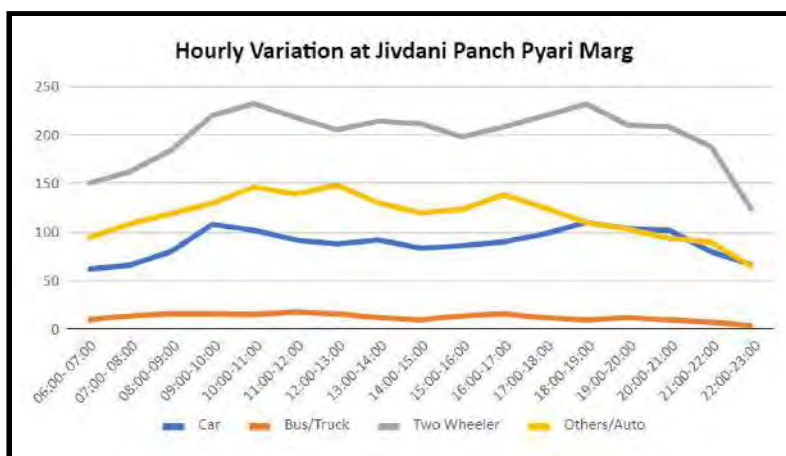
Hours	Baseline					Incremental			
Hours	Car	Bus/Truck	Two Wheeler	Other s/Auto	PCU/Hr	PCU/Hr	Baseline PCU/Hr	Capacity of Road in PCU/Hr	LOS Baseline
06:00- 07:00	62	10	150	94	272	30	272	2000	0.136
07:00- 08:00	66	14	162	108	308	40	308	2000	0.154
08:00-09:00	80	16	184	119	350	50	350	2000	0.175
09:00-10:00	108	16	220	130	409	68	409	2000	0.204
10:00-11:00	102	15	232	146	427	50	427	2000	0.214
11:00-12:00	92	18	218	139	408	39	408	2000	0.204
12:00-13:00	88	16	205	148	404	35	404	2000	0.202
13:00-14:00	92	12	214	130	381	44	381	2000	0.191
14:00-15:00	84	10	212	120	355	56	355	2000	0.178
15:00-16:00	86	14	198	123	364	42	364	2000	0.182
16:00-17:00	90	16	208	138	395	47	395	2000	0.198
17:00-18:00	98	12	220	125	384	62	384	2000	0.192
18:00-19:00	110	10	232	110	380	54	380	2000	0.190
19:00-20:00	104	12	210	103	359	63	359	2000	0.180
20:00-21:00	102	10	208	93	340	44	340	2000	0.170
21:00-22:00	80	8	188	90	299	42	299	2000	0.149
22:00-23:00	66	4	122	64	213	33	213	2000	0.106
Average	89	13	199	117	356	47	356	2000	0.18

Carrying Capacity at Jivdani Panch Pyari Marg = 2000 PCU/hr

Existing traffic density at Jivdani Panch Pyari Marg = 356 PCU/hr

LOS without Project = 0.18 i.e. Cat "A"

LOS with Project = 0.20 i.e. Cat "A"



3.13.5. Conclusion:

Along the project Site, Kopri Naka Chandansar Road, a significant amount of passenger as well as goods traffic during peak hour. The project will not generate much traffic in peak hour, there will be negligible impact of the traffic level on the immediate adjacent network and further, it will be dispersed on other road networks.

After the commissioning of the Project, the analysis shows that the level of service will not be affected by incremental load due to the proposed project.

Hence it could be said that the project does not impact on the surrounding road network in terms of traffic Congestion level.

4. Anticipated Environmental Impacts & Mitigation Measures

Prediction of impacts is the most important component in the Environmental Impact Assessment studies. Several scientific techniques and methodologies are available to predict impacts of developmental activities on physical, ecological and socio-economic environments. Such predictions are superimposed over the baseline (pre-project) status of environmental quality to derive the ultimate (post-project) scenario of environmental conditions. The prediction of impacts helps to minimize the adverse impacts on environmental quality during pre-and post-project execution.

Generally, the environmental impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions.

4.1. Impact Assessment Methodology

For the proposed project, the impact assessment shall be performed in following steps:

- Identification of interactions between activities and environmental receptors.
- Identification of potentially significant environmental impacts.

Based on this preliminary identification, environmental indices that are likely to be impacted due to the project are:

- **Land use / Land cover:** Land use will not change as the construction/alteration will be done within the existing unit land. However, land cover will be changed with the Construction/installation and alteration of sheds.
- **Air quality:** Dust generation during construction/installation, vehicle movement, loading/unloading, manufacturing process, transportation and operation of machineries, etc.
- **Noise:** Vehicle movement during construction, operation of machineries, loading/unloading
- **Water:** Disposal of waste water from construction activity/ labour and staff domestic use

- **Soil:** Excavation activity and contamination.
- **Storage and handling** of solid and hazardous waste.
- **Ecology and Biodiversity:** Construction activities and emission from operational activities may have an effect on the avi fauna and the existing plantation of the study area.
- **Socio – Economic:** There will be both Positive and negative impact. Positive impact due to creation of jobs and increase in indirect income. Indirect impact on the surrounding environment due to air emissions, solid waste generation and Noise generation
- **Occupational health, community Health and safety:** Occupational risk during various activities associated with construction and the running of the project.

4.2. Potential Impacts during Construction Phase

All the Construction activities will be done in off season i.e. when the temple is closed for the Darshan to the Public.

4.2.1. Activity- Site Preparation, Levelling & Excavation

Aspects

- Deforestation/Loss of Forest Cover
- Change of natural contour level
- Change in Topography
- Incremental Load in PM value
- Change in Drainage Pattern
- Change in Land Use
- Removal of Topsoil
- Increased dust & pollution level emissions (PM values, NOx, SOx etc.)
- Increased Noise level & vibration
- Loss of wildlife habitat.
- Contamination of Freshwater resources.
- Habitat fragmentation

Table 63. Activity-Site Preparation, Levelling & Excavation

Environmental component	Anticipated Impact	Proposed Mitigation

Air Environment	-There will be degradation of air quality due to decrease in forest cover. -Increased PM Levels may cause Respiratory ailments like Asthma, Emphysema etc. & cardiovascular diseases to workers and people of nearby villages. -Air pollutants & dust emissions from machinery will lead to disturbance in the air quality which already is an eco-sensitive area that will create a nuisance in the same. -Decrease in Transpiration rate in plants due to sedimentation of dust particles may lead to necrosis of the plants.	-Construction activity will be confined to the project site only. -Barricading/Covers will be provided at the site of excavation at both LTP & UTP. -Water sprinkling will be done at regular intervals to reduce the dust generation. -Excavated material will be covered properly with tarpaulin sheets to reduce outspread of dust particles. -Machinery with authorised pollution certificate will be used and regular maintenance will be done. -Proper masks and safety equipment will be provided to workers.
Water Environment	-Diseases like Diarrhoea, Dysentery etc. due to contamination of the water body may occur. -Decrease in water quality due to deposition of dust particles in the water body.	-Dust particle heaps will be covered properly to prevent deposition on water bodies. To prevent silt deposition in the water body and thereby decrease its water quality, the retaining wall or check dams will be constructed to arrest the silt and the clear water will be allowed to pass from the site. However, geotechnical study has been done accordingly other mitigation measures will be adopted. -Water sprinkling will be done to reduce the dust generation. -Proper drainage for stormwater will be maintained by provision of garland drains during monsoon season and rainwater will be collected in the tank and reused for construction purposes
Land Use	-Land use will be changed from forest land to Funicular corridor. Land cover will get converted from forest land to Funicular corridor.	-Land utilization will get changed accordingly as it has already been converted from forest land to non-forest land by the forest department in favour of Shree Jivdani Devi Mandir Trust, Virar. However, No trees will be cut for the Funicular corridor.
Soil Environment	-Decrease in Soil quality due to loss of green area.	-Construction site will be designed to minimize the disposal of soil and removal of vegetation.

	-Loss of micro-environment in soil due to excavation. -Due to decrease in soil binding capacity, chances of environmental occurrences like flood might exacerbate. -Soil erosion may occur if soil is disturbed, left bare, and exposed to the abrasive action of wind and water -Excavation will lead to further change in natural contours however, details pertaining to earth removal and its impact can be assessed only after conducting soil tests which shall be done. -Contamination of soil due to spillage of oil and other hazardous wastes.	-Excavated soil will be reused in the premises to the maximum extent possible. Mud/Rock/Earth removed will be used in the site itself for activities like backfilling. -Topsoil will be preserved at designated places and used for landscaping to restore the microclimate. -Wind breaker/barriers will be used to keep the excavated soil intact. -The construction and development activities will be done to provide and maintain the artificial contour level.
Socio-Economic	-Displacement of soil & green area will lead to Human-Animal Conflict which would thereby pose a risk to life status of nearby villages. -Human-Animal Conflict due to loss of habitat will lead to injuries or life-risk to the workers.	-Temporary barriers like electric fences, sonicators etc. to prevent entry for animals will be installed. -Information and awareness will be provided to nearby people for taking precautions for entry of animals into the area. -Protective gears and equipment will be given to workers for safety.. -Signs & announcements will be provided to restrict people entry during construction work.
Ecology & Biodiversity	-Loss of green area, Trees. Loss of transpiration due to deposition of dust. -Increased noise will cause disturbance of existing fauna. -Decrease in phytoplanktons & zooplanktons due to contamination of soil and water & noise generation. -Increased noise generation & dust levels will disturb the routine of animals in the area considering the plethora of animals in the area. -Loss of burrowing animals due to habitat loss.	-A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint forest management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar. -The excavation shall only be done to provide foundation and column foundation. The excavated soil &

	-Decrease in pattern of migration due to change in flight path from construction activities.	rocks shall be reused to the extent possible. Top soil shall be used in Landscaping. The remaining excavated soil and stones shall be utilized in re-filling of foundation, road works, etc. -Equipments with proper enclosures and noise-omitting machineries will be used. -Water sprinkling will be done to reduce the dust generation. -All the machinery will be checked and maintained properly to reduce the noise level. -All the activity will be carried along within the site where there is no habitat of flora & fauna and the exposure noise to the vicinity is very less due to noise barriers. However, all machineries will be checked and maintained properly to reduce the noise level. -Excavated soil will be reused to restore biodiversity in the area. -All the construction activities will be carried out during the daytime to prevent disturbance to indigenous flora & fauna in the site & pattern of migration.
Noise & Vibration	-Increased noise generation will affect the microclimate in the soil. -Ailments like annoyance, headache, psychological and mental irritation etc. may be caused due to construction activities. -There will be an impact on the excavator operator like whole body vibration and auditory impact. The noise level generation due to excavator will be 85-90 dB (A)	-Noise generated due to site preparation and levelling will be only for a specified period during day time only. Excavator deployed will be a closed cabin with vibration isolator. -Provision of protective devices like earmuffs/plugs to the workers will be done. -Proper maintenance of the machine/equipment for levelling will be carried out and the machines will be equipped with vibration isolators. If required during compaction activity, workers will be provided with anti-vibration gloves to prevent hand-arm vibration. -The noise due to the running of the excavator will be limited only for a

		specified period of construction and during day-time only. -Protective devices like earmuff/plugs will be provided to workers. -Noise-omitting machineries will be installed for excavation.
Hydrology & Geology	-Soil substratum will be altered due to excavation, but it will be a minor effect and confined to the project site only. -Silt, soil and loose material along with the surface runoff will flow into the water body. -Excavation may intersect the ground water level if done beyond ground water level; hence impacting the ground water quality. -The excavation will be done only for the construction of terminals, pillars and foundation work. Hence, there will be insignificant impact on the geology of the area.	-Excavated soil will be covered properly to prevent the outspread of soil into water bodies. -The retaining wall or check dams will be constructed to arrest the silt and the clear water will be allowed to pass from the site. However, geotechnical study has been done accordingly other mitigation measures will be adopted. -Water tables will not be intersected as the water table is at greater depth.
Solid & Hazardous waste	-Construction & Demolition waste (Excavated soil) will be generated.	-Excavated soil will be reused within the premises to the extent possible.

4.2.2. Activity- Compacting , Foundation Works and Construction of Superstructure & Pillars

Aspects

- Incremental in Dust Emission Levels
- Water Contamination
- Soil compaction & run off soil
- Incremental Noise generation
- Loss of Soil Fertility
- Increased Noise Generation Levels
- Employment Generation
- Accidents

Table 64. Activity- Compacting , Foundation Works and Construction of Superstructure & Pillars

Environmental component	Impact	Proposed Mitigation

Air Environment	-Respiratory ailments like Asthma and uneasiness may occur due to increased PM level. -Decremental level of air quality may negatively impact the flora & fauna. -Increased dust generation would lead to respiratory ailments and uneasiness to workers & physiological problems in plants. -Emission from DG sets & machineries would decrease air quality and thereby cause problems to the nearby population.	-Dust suppression and water sprinkling system will be provided for suppression of particulates. -Adequate PPE and nose masks will be provided to the workers. -Barriers will be installed surrounding the site to prevent dust outspread. -Dust suppression systems (water spray) will be installed as per the requirement at the construction site. -Units under construction will be covered with green cloth which helps in trapping of dust and particulate matters.
Water Environment	-2 KLD of water will be utilized for construction activities and might lead to water scarcity in the area. -Mixing of construction materials and improper disposal of the same would lead to water contamination. -Stagnation of water might lead to water borne diseases like dengue, pneumonia etc. -Improper disposal of sewage would lead to ailments to workers and nearby people. -Contamination of water due to construction activities might eventually lead to decrease in forest cover due to unavailability of clean water.	-Special care and cautions will be made to avoid usage of water from the river. -Stagnation of water will be prevented by sprinkling the same in the areas. -Barriers and garland drains will be provided for channelization. -Channelization of rain water will be done by installation of garland drains, -Masks & medicines to prevent water/vector-borne diseases will be provided to workers and nearby populations. -Safety nets will be provided to prevent spillage of construction material into the water body.
Land Use	-No impact has been envisaged.	-
Soil Environment	-Soil erosion may occur due to compaction of soil. -Groundwater recharge may get lowered down due to decreased soil binding capacity & fertility from compaction and foundation works. -Spillage of oil from machinery would lead to soil contamination. -Soil biodiversity will get affected due to change in microclimate from construction activities.	-Compaction will be sorted carefully in order to prevent washing away of top fertile soil. -Excavated soil will be used to the maximum extent possible in backfilling & landscaping. -Used oil will be stored in impervious containers to prevent spillage. -Regular sprinkling will be done to prevent soil outspread and will be covered too.

	-Decrease in soil fertility would eventually lead to desertification in the area. (Confined to project site only). -Contamination due to improper disposal of C&D waste and domestic waste. -Percolation/Leaching of water into soil leading to soil erosion.	
Socio Economic	-Construction activities might cause uneasiness which would lead to displacement of people to other places. -Human animal conflict might be caused due to construction activities that would eventually harm nearby people. -Occupational hazard may take place during construction. -Accidents like natural calamities, sudden breakage will lead to loss of life.	-Temporary barriers like electric fences, sonicators etc. to prevent entry for animals will be installed. -Information and awareness will be provided to nearby people for taking precautions for entry of animals into the area. -Protective gears and equipment will be given to workers for safety. -Limited working hours will be set for working. -First Aid Kit will be provided at the site.
Ecology & Biodiversity	-Soil biodiversity will get reduced due to loss of habitat. -Foundation works might lead to disturbance in the pattern of wild animals which would eventually lead to Human-Animal Conflict. -Increased dust and emission levels will lead to physiological changes in plants and hereby loss of forest cover. -Increased noise levels will lead to changes in the path of animals & birds in the wildlife corridor that will eventually affect the ecological cycle in the area. -Loss of forest area for the development will disturb the food web and indirectly the biome of Periyar. -Loss of habitat would lead to Human-Wildlife conflict and thereby danger to nearby populations and workers.	-Barriers will be installed in the area to prevent unnecessary entry. -Water sprinkling will be done to reduce the dust generation. -Proper measures like fluorescent sign boards etc. will be installed to prevent interference of wildlife and humans. -Safety equipment & training will be provided to workers. -Construction activities will be timed in accordance to the schedule routine of animals in wildlife corridors. -A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint forest management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same

		purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar.
Noise & Vibration	-Due to compaction activity, loading and unloading activity noise (80-85 dB(A)), will be generated that would cause uneasiness & physiological ailments to nearby people and workers. -Increased noise generation would lead to disturbance in the animal biosphere also. -Increase in noise levels will lead to a change of migratory path of avifauna & fauna in the area. -Physiological and Psychological problems like annoyance, headache, Auditory impact, increase in heartbeat and blood pressure might be caused due to increased noise levels. -Vibrations from machineries might lead to natural calamities	-PPE's will be provided to workers to avoid irritation from noise. -Noise-omitting machineries will be used during construction. Machineries will be regulated properly in terms of noise levels and air emissions. -Construction activities will be limited to a specific time period only. -Safety equipment and PPEs will be provided to workers. -DG sets and other machineries will be acoustically enclosed to prevent excessive noise generation works that will be maintained regularly.
Hydrology & Geology	-Silt, soil and loose material along with the surface runoff will flow into the water body.	-The retaining wall or check dams will be constructed to arrest the silt and the clear water will be allowed to pass from the site.
Solid Hazardous waste	-Construction & demolition waste would be generated.	-C&D waste will be reused in the premises to the maximum extent possible and excess will be sent to the C & D facility.

4.2.3. Activity- Installation of Passenger Funicular System (Ropeway) track & Services

Aspects

- Increase in dust & pollutant levels
- Increase in Noise levels
- Incremental Water Pollution Load
- Increase of Aesthetic Value
- Water Contamination
- Soil Contamination

Table 65. Activity – Installation of Passenger Funicular System (Ropeway) route & Services

Environmental Component	Impact	Proposed Mitigation
Air Environment	-There will be generation of dust and pollutant levels. -Emission generation due to installation activities might lead to increased pollutant emission.	-Dust emission will be suppressed by the provision of regular water sprinkling systems in the area. -Machineries will be maintained regularly to decrease pollutant emissions.
Water Environment	-Spillage of oils into the water bodies might lead to water contamination and hence, health problems to nearby population, -Water Contamination and deposition/pollutant levels would lead to damage to aquatic flora & fauna. -Installation of STP (at LTP) and Bio-toilets (at UTP) will positively impact the water quality in the areas.	-Safety nets will be provided above the area to prevent outspread of construction material into water bodies.
Land Use	No impact has been envisaged. It will be ensured that matters like Topography/ Unique Location, Safety/ Security) Traditional Customs and beliefs are not altered.	-
Soil Environment	-Improper disposal of C&D Waste and domestic waste into soil might lead to deterioration of soil fertility. -There will be a decrease in soil binding capacity by activities like installation of Funicular Tracks etc.	-Soil will be compacted near the pillars to restore the strength of soil. -C&D waste and domestic waste will be segregated accordingly to be sent to the respective facility for treatment & disposal.
Socio-Economic Environment	-No alteration will happen to the traditional routes of the pilgrims. -Installation of Funicular track will increase the aesthetic values to the area that will promote social status of nearby areas. -This will lead to enhancement of socio-economic status of existing merchandise units. -Employment will be generated. -Installation of services (DG Sets, STP, Bio-Toilets, OWC) will inspire nearby people to promote such installations.	-Safety procedures and training will be provided to workers. -First Aid Kit will be provided along with proper safety equipment to workers. -Safety nets will be provided during installation of the Passenger Funicular System (Ropeway) to prevent accidents.

Ecology & Biodiversity	-Increased dust generation will lead to a decrease in forest cover. -Disturbance to nearby flora & fauna will be caused during installation of Funicular System -Vibrations from DG Sets will lead to disturbance among fauna.	-Water sprinkling will be done to reduce the dust generation. -DG Sets will be installed with proper enclosures. -Dust & noise generation will be tried to keep it limited to construction sites only. -No trees will be cut for laying the Funicular track.
Noise & Vibration	-May cause annoyance and auditory impact to the workers and people living in the immediate vicinity.	-Proper lubrication and greasing of other equipment will be done. -Ear & nose masks will be provided to workers.
Hydrology and Geology	-Installation activities may cause landslides or may have impact on surface drainage of the study area.	-The proposed project falls under Seismic zone III and as per the Landslide hazard zonation map of India by GSI, it doesn't fall under landslide prominent zone of India. To check the stability of rock and soil of the core zone a proper Geotechnical Investigation has been carried out and as per the Geotechnical Investigation Report (Section D). -Overall drainage pattern of the area is by and large dendritic. The natural slope of the area is towards the west i.e seashore and the nearest water body within one km is Virar Reservoir 0.47 Km NW and Virar Dam 0.87 Km SE which is opposite site of the slope direction. As a precautionary measure during the construction period, runoff from the construction site shall not be allowed to stand (water logging) or enter the roadside or nearby drain. - In the core zone basically 1st order and 2nd order drainages are found and the slope angle at LTP is 2 to 3 degree whereas slope angle at UPT is 31 to 33 degree. During the construction phase It will be ensured that drainage of the area will not be disturbed.
Solid & Hazardous waste	-Steel & other metal wastes generated may cause lowering of aesthetic value and nuisance among the local population.	-C&D wastes will be reused to the maximum extent possible. -Other wastes will be managed as per Solid Waste Management Rules, 2016.

4.2.4. Activity –Storage and Handling of Construction Material

Aspects

- Oil & Chemical spillage
- Water Contamination
- Pollutant and Dust Emissions
- Hazardous Waste Generation
- Soil Contamination
- Waste effluent generation and seepage into soil

Table 66. Activity –Storage and Handling of Construction Material

Environmental component	Impact	Proposed Mitigation
Air Environment	-Respiratory problems like asthma, emphysema etc. might be caused due to increased dust generation. -Open storage of used oil and their leakage may cause emissions of VOCs that will result in occupational hazards and other related problems.	-Sprinkling will be done regularly to suppress dust generation. -Fuel and other chemicals like paints, adhesives, lubricants and greases will be stored in leak-proof containers within specified units to prevent spillage. -Loose material will be covered with tarpaulin sheets. -Safety masks and PPEs will be provided to workers. -Nearby people will be suggested to keep themselves covered with masks etc. to prevent contact with dust and other pollutants.
Water Environment	-Water scarcity might be caused due to water contamination from spillage of oils and other hazardous effluents into water. -Spillage of oil & other waste effluents into the water body would lead to deterioration of water and thereby loss of aquatic flora & fauna. -Infiltration of dust & loose material into the water body may lead to contamination.	-Used oil & effluent will be stored in leak-proof containers within specified units to prevent spillage. -Loose material will be covered with tarpaulin sheets. -Proper care will be taken to avoid spillage into the water body.
Land Use	No impact has been envisaged.	-

Soil Environment	-Intermixing of loose material into soil would lead to contamination that will result in loss of soil fertility. -Seepage of waste effluent into soil would lead to decreased soil binding capacity that would affect the plantation in the area.	-Procedures for maintenance of equipment will be ensured that this risk is minimized, and clean-up response is rapid if any spill occurs. -Lubricating waste oil will be collected separately in drums and handed over to the authorized outside agency. -Oil & chemicals will be stored in specified units to prevent spillage.
Socio-Economic	-Employment will be generated.	-It will have a positive impact as it will provide additional employment to the locals.
Ecology & Biodiversity	-Increased noise generation will lead to loss of indigenous biodiversity. -Loss of forest cover will lead to habitat loss & fragmentation. -Increased dust deposition on leaves may cause loss of flora and fauna in the area.	-Construction activities will be scheduled accordingly to not to make a clash with scalar timing of animals. -Regular water sprinkling will be done for dust suppression.
Noise & Vibration	-Problems like annoyance, headache etc. will be caused due to increased noise levels during storage.	-Green area will be maintained around the area for noise reduction. -Ear masks and other safety measures will be provided to workers.
Hydrology & Geology	-Spillage of oil & other waste effluents into the water body would impact water quality.	-Loose material will be covered with tarpaulin sheets. -Used oil & effluent will be stored in leak-proof containers within specified units to prevent spillage -Proper care will be taken to avoid spillage into the water body.
Solid Hazardous waste	-Generation of waste from packaging material & construction material which will cause nuisance among local population. -Discarded paint containers, chemicals and other material will be generated which may cause harm if come into contact.	-Wastes will be disposed off as per Solid Waste Management Rules, 2016.

4.2.5. Activity –Operation of Construction machinery (DG Set & Heavy machinery)

Aspects

- Increased Air pollutant emissions

- Water contamination due to Used oil Spillage
- Soil Contamination
- Increased noise levels
- Used oil & hazardous chemical spillage
- Accidents & mishaps

Table 67. Activity –Operation of Construction machinery (DG Set & Heavy machinery)

Environmental component	Impact	Proposed Mitigation
Air Environment	-Emissions from the use of construction machinery may cause respiratory problems to the workers at site and nearby population. -Pollutants emitted from the stack may increase the Ground Level Concentration of pollutants which will affect the respiratory health of people in a nearby area. -Generation of dust from operation of construction machinery. -Spillage of Diesel, used oil & chemicals may result in emission of VOCs in the air environment which may cause irritation in eyes, nose and throat, difficulty breathing and nausea. -Improper handling and disposal of oil may lead to fire accidents and other mishaps.	-Adequate stack height will be provided in order to minimize the GLC. -Low Sulphur fuel will be used in operation of DG sets. -Personal Protective Equipment like dust masks and earmuffs will be provided to the construction workers -Proper maintenance of construction equipment/ machineries, etc. will be done. -Dust suppression and water sprinkling system will be for suppression of particulates. -Fire safety equipment & procedures will be provided in the area.
Water Environment	-Spillage of oil and chemicals into the water body will make water unfit for consumption. -Water scarcity might be caused due to washing of machinery and equipment.	-Used oil & hazardous chemicals will be stored in impervious containers to avoid leakage. -STP (at LTP) treated water will be used for flushing and gardening.
Land Use	-No impact has been envisaged.	-
Soil Environment	-Spillage of used oil and chemicals will contaminate soil which will eventually affect soil fertility and thereby forest cover.	-Procedures for maintenance of equipment would ensure that this risk is minimized, and clean-up response is rapid if any spill occurs. -Lubricating waste oil will be collected separately in drums and handed over to the authorized outside agency.

Socio-Economic	Air and noise emissions may cause health issues to the labours.	-Mitigation of air and noise emissions will minimize the impact on workers.
Ecology & Biodiversity	-Air emissions & noise generation due to operation of machinery will lead to disturbance in the indigenous ecosystem of the tiger reserve. -Loss of flora & fauna due to noise generation would lead to hindrance of the food web of the ecosystem.	-Regular water sprinkling will be done for dust suppression. -Machineries and DG Sets will be acoustically enclosed and kept in specified units. -Noise-omitting machines will be installed along with vibrator isolators in accordance to generation of vibration.
Noise & Vibration	-Increased noise generation would lead to physiological and psychological problems for workers & nearby populations. -Vibrations generated from machinery may lead to disturbance in the area or natural calamities like earthquakes in extreme cases.	-DG sets will be bought acoustically enclosed meeting the norms prescribed by CPCB. -Construction machinery will be properly lubricated and equipped with vibration isolator wherever possible -Provision of protective devices like will be done.
Hydrology & Geology	- Silt, soil and loose material along with the surface runoff will flow into the water body and impact the flow of water.	-The retaining wall or check dams will be constructed to arrest the silt and the clear water will allow it to pass from the site.
Solid & Hazardous waste	-Waste generated from construction machinery including waste oil, grease, sludge and any other may cause nuisance if not maintained properly.	-All the waste generated will be properly disposed as per Solid Waste Management Rules, 2016.

4.2.6. Activity – Transportation (Raw Material, Labour)

Aspects

- Vehicular emission
- Diesel/petrol leakage
- Road congestion and breakage of roads
- Dust emission
- Noise generation

Table 68. Activity – Transportation (Raw Material, Labour)

Environmental component	Impact	Mitigation

Air Environment	-Gaseous emissions from vehicles used for transportation may affect the health of construction workers and nearby population. -Leakage of petrol/diesel may result in emission of VOCs in the air environment which may cause irritation in eyes, nose and throat, difficulty breathing and nausea. -Transportation of construction material will result in dust emission which may affect the respiratory health of construction workers and people in the vicinity. -Deterioration of air quality leading to respiratory ailments to workers and nearby population.	-Vehicles with valid PUC certificates will be used for transportation of construction material -Plantation of trees around the project periphery including green creepers will be done. -Proper maintenance of vehicles will be done periodically to ensure no leakage from the vehicles. -The vehicle used for transportation will be complied to conditions stipulated by SPCB in addition to the requirements mentioned in Motor Vehicle Act, 1988 (59 of 1988). -Construction material will be covered with tarpaulin sheets during transportation. -Regular Water sprinkling will be done for dust suppression from movement of transport vehicles.
Water Environment	-Spillage of construction material, used oil & leakage of waste effluents like paints, greases etc. would lead to water contamination that would make water unsuitable for consumption in the area and eventually scarcity. -Unavailability of fresh water for nearby people due to water contamination might happen. -Vehicular emission might deteriorate aquatic flora & fauna in the water body.	-PUC certified vehicles will be used for transportation. -Loose material will be covered with tarpaulin sheets and liquid material will be stored in leak-proof containers to avoid spillage. -Vehicles will be covered to avoid outspread of dust in the area.
Land Use	No impact has been envisaged.	-
Soil Environment	-Contamination due to spillage may deteriorate the microclimate of soil that might affect the overall ecological system of the same.	-Maintenance of vehicles would ensure that this risk is minimized, and clean-up response will be rapid if any spill occurs.

Socio-economic	-Incremental traffic load in the area would create chaos in the area. Since the project lies in hilly areas, it would create more havoc in the transportation of vehicles. -Employment will be increased. -Increase in traffic load might lead to man-made calamities that would pose a threat to people.	-Limited trucks will be used for specified time to avoid disturbance in the hilly area.
Ecology & Biodiversity	-Vehicular emissions like NO_x, SO_x etc. can inhibit the growth of plants and premature leaf senescence. -Increased pollution levels may cause threat to indigenous fauna. -Increased noise generation due to traffic might lead to displacement of animals from the area. It will indirectly affect the biodiversity of the area. -Irregular timing of trucks might hamper the scalar timing of animals.	-Vehicles will be used in the transportation of construction material and have a PUC certificate. -Water sprinkling will be done to reduce the dust generation -Transportation of construction material will be scheduled accordingly in order to prevent human-wildlife conflict.
Noise & Vibration	-Due to road congestion people will blow the horn which may lead to problems like sleep interference, headache. -There will not be much impact due to vibration on the project. -Due to vehicular transportation high level of noise may cause physiological & psychological effects on people like annoyance, problems like sleep interference, headache, auditory impact, increase in heartbeat of patients and elderly people.	-No honking zone will be provided. -Maintenance of vehicles will be done on a regular basis. -Vehicles will be regularly checked for silencer of vehicles.
Hydrology and Geology	-Spillage of construction material, used oil & leakage of waste effluents like paints, greases etc. would lead to water contamination.	-Loose material will be covered with tarpaulin sheets and liquid material will be stored in leak-proof containers to avoid spillage. -Vehicles will be covered to avoid outspread of dust in the area.
Solid & Hazardous waste	-Due to improper handling & transportation of raw material such as RMC & waste during transportation, littering of waste	-Proper care will be taken while handling raw material such as RMC & waste during transportation to avoid

	will occur leading to unhygienic conditions.	littering of it on roads and sites.

4.2.7. Activity –Working & daily activity of construction labour

Aspects

- Solid waste & E-waste generation
- Water requirement & Waste water disposal
- Employment Generation

Table 69. Activity –Working & daily activity of construction labour

Environmental component	Impact	Proposed Mitigation
Air Environment	-4 kg/day of biodegradable waste generation may lead to odor problems if not stored properly.	-4 kg/day bio- degradable waste will be disposed off at municipal solid waste sites.
Water Environment	-3 KLD water utilization from labours & construction activities. Improper disposal & handling of domestic sewage may lead to water contamination.	-2.5 KLD Sewage and other liquid effluents will be treated in soak pits. There will be no discharge of untreated effluent into water bodies.
Land Use	None	None
Soil Environment	-Soil contamination due to improper disposal of solid waste and liquid effluents will affect the soil fertility & biodiversity of the same.	-Waste water will be treated in soak pits. -4 kg/day biodegradable waste will be sent to municipal facilities. -Other non-biodegradable wastes will be sent to authorised recyclers.
Socio-economic	-Improper disposal of solid wastes might lead to decrease in aesthetic values and generation of odour that will result in irritation to nearby people and workers. -Water-borne/vector-borne diseases might be caused due to assemblage of untreated solid waste. -There is a chance of Wildlife animal attack on labourers during the construction phase	-The generated organic waste is being collected properly & disposed of at Solid Waste Dumping Site. -Assembly of untreated waste will be avoided and the same will be stored at specified units till its delivery to municipal facility. -Stagnation of wastewater will be avoided in the area. -For the protection of labourers from wildlife attack at the time of construction phase barricading will be done in consultation with the forest department and Also the storage yards and construction

		areas will be barricaded with meshed wire fences of at least 3 m height. This would prevent the wild animals from accidentally entering into these work areas during the construction phase and thus ensure their safety. -The project proponent should take care of the health, sanitation, food, shelter, construction and demolition wastes, the liquid and solid waste during the construction phase.
Ecology & Biodiversity	-Littering of waste on soil can affect the fertility of the soil. -Human-Wildlife conflict may occur due to interference of wildlife in the indigenous habitat of the forest as workers will be working there. However there are chances of minimal human wildlife conflict.	-The generated organic waste will be collected properly & disposed of at Solid Waste Dumping Site. -Waste water generated from the laborers at construction sites will be disposed off in septic tanks via soak pits. No untreated wastewater shall be disposed off in the vicinity area. -From a safety point of view, the Passenger Funicular System (Ropeway) seems to offer minimal danger of any kind to the Wildlife. However, all precautions and safety measures will be taken to ensure Maximum Safety of any type of Wildlife at site during construction Phase. For the protection barricading will be done at construction areas in consultation with the forest department along with other measures as detailed in Ch-7.
Noise & Vibration	No significant impact is envisaged.	-
Hydrology & Geology	-Disposal of untreated waste water if infiltrate into the groundwater may deteriorate quality of ground water in ground water and make water unfit for consumption.	-2.5 KLD of waste water will be generated from labours which will be disposed off to septic tanks followed by soak pits.
Solid & Hazardous waste	-Improper storage and disposal of biodegradable waste will enhance the risk of microbial contamination, population, will enhance the risk of disease occurrence and cause foul smell. It will attract the vectors.	-Solid waste from the laborers will be properly collected, stored in respective color-coded containers. -Recyclable materials like aluminum, steel, wood pieces, cement bags, plastic containers,

		cartons, glass etc. will be sent to recyclers. -Plastic waste will be sent to the approved recycler. -E-waste if generated will be given to the approved recycler as per E-Waste (Management) Rules, 2016.

4.3. Potential Impacts during Operation Phase

4.3.1. Activity - Working & daily activity of Staff

Aspects

- Generation of solid waste, E-waste etc.
- Water requirement & waste water generation
- Air pollutant and dust emissions

Table 70. Activity -Working & daily activity of Staff

Environmental component	Impact	Proposed Mitigation
Air Environment	-350 kg/day (during normal days) & 1400 kg/day (during festive days) of biodegradable waste generation may lead to odour problems if not stored properly. - Emission from vehicles will lead to degradation of air quality.	-350 kg/day (during normal days) & 1400 kg/day (during festive days) Biodegradable waste (flowers, prasad, domestic waste) will be treated in Organic Waste Convertor to get converted to manure. It will be used for horticulture purposes. - It will be a Plastic-free zone.
Water Environment	-41 KLD (during normal days) & 163 KLD (during festive days) of water utilization of water resources from the purposes might lead to scarcity of water supply in the area. -Deterioration of water bodies due to improper disposal of wastewater will lead to stagnation and contamination of water bodies that might cause water-borne diseases among nearby populations.	-35 KLD (during normal days) & 137 KLD (during festive days) wastewater will be generated and will be treated in STP at LTP -Installation of STP (at LTP) and Bio-toilets (at UTP). -It will be a Zero-Liquid Discharge Project. -32 KLD (during normal days) & 122 KLD (during festive days) of treated water generated from STP will be reused within the project premises for purposes

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		like flushing, gardening purposes.
Land Use	No impact has been envisaged.	-
Soil Environment	-Improper disposal of solid waste if comes into contact with soil will degrade the soil quality	-All solid waste from the proposed project shall be properly collected, stored and disposed. -350 kg/day (during normal days) & 1400 kg/day (during festive days) Biodegradable waste (flowers, prasad, domestic waste) will be treated in Organic Waste Convertor to get converted to manure. It will be used for horticulture purposes - It will be a Plastic-free zone.
Socio- Economic Environment	-Odour generation from solid waste and sewage might cause nuisance and uneasiness among people. -Assemblage of solid waste will decrease aesthetic value among people.	-All solid waste from the proposed project shall be properly collected, stored and disposed. -350 kg/day (during normal days) & 1400 kg/day (during festive days) Biodegradable waste (flowers, prasad, domestic waste) will be treated in 3 no. of Organic Waste Convertor to get converted to manure. It will be used for horticulture purposes. -It will be a Plastic-free zone. -Job opportunities for local people will be generated. This will have a positive impact on the nearby people.
Ecology & Biodiversity	-Waste accumulation may cause leaching of waste into soil, thereby affecting the growth of floral species and affecting habitat of fauna -Plastic and other non-biodegradable wastes if consumed by fauna/avifauna will lead to their loss due to blockage in the interior cavity.	-All the waste will be segregated accordingly and treated in respective units. -It will be Plastic-Free Zone. -All precautions and safety measures will be taken to ensure Maximum Safety of any type of Wildlife at site during Operational Phase as detailed in Ch-7.
Noise & Vibration	No major impact	There will not be major noise generation from human activities.
Hydrology and Geology	-	-

Solid & other waste	-Improper storage and disposal of biodegradable waste will enhance the risk of microbial contamination, population. -Improper storage and disposal of e-waste & MSW waste, will enhance the risk of disease occurrence and cause foul smell. It will attract the vectors. -Improper hazardous chemical disposal if comes in contact with human body may cause skin irritation and could be flammable also sometimes	-Source segregation will be done for Municipal solid waste & stored in colour coded bins (BioDegradable-Green & Recyclable-Blue) -350 kg/day (during normal days) & 1400 kg/day (during festive days) Biodegradable waste (flowers, prasad, domestic waste) will be treated in Organic Waste Convertor to get converted to manure. It will be used for horticulture purposes - It will be a Plastic-free zone. -Non-biodegradable waste will be given to the authorised recycler. -E- waste will be managed as per E-Waste (Management) Rules, 2018. -Hazardous wastes like used oils, paints, adhesives etc. will be managed as per Hazardous & other wastes management Rules.

4.3.2. Activity - Operation of Funicular System (Ropeway) & Machinery (DG Set, STP, OWC)

Aspects

- Air Pollutant Emissions
- Noise generation
- Water Contamination
- Used oil generation & Oil Spillage
- Solid Waste Generation

Table 71. Activity - Operation of Passenger Funicular System (Ropeway) & Machinery (DG Set, STP, OWC)

Environmental component	Anticipated Impact	Proposed Mitigation

Air Environment	-Dust and other emissions will be generated and may cause eye irritation, breathing problems and cardiovascular problems. Wildlife may also be affected due to the pollutants similarly. -Pollutant emissions from DG Sets (500 KVA and auxiliary - 25 kW) and machinery might cause cardiovascular problems to nearby people. -Odour generation from toilets would deteriorate air quality. -Passenger Funicular System (Ropeway) will be a better alternative for transportation which would lead to a positive impact of air quality in the area.	-Adequate stack height will be installed to control air emissions and minimize GLC. -PPE and masks will be provided to workers for protection from pollutant emissions. -Afforestation will be done in compensation of uprooted trees to decrease pollutant emissions. -From the results generated by AERMOD in the form of Isopleth and results show that the post-project air quality for PM10 & PM2.5, CO, SO2 & NO2 is within the limits as per the Ambient Air Quality standard NAAQS at LTP, UTP and area near the project site. The maximum GLC does not have a significant impact on environment/ ambient air quality on sensitive receptors of the project. The detailed report is enclosed in Section D..
Water Environment	-Spillage of Diesel, used oil from machinery & DG sets would contaminate water that would lead to water scarcity. -Damage to aquatic biodiversity would result from water contamination. -Contamination of water body from sewage and other water effluents will make water unfit for consumption that might lead to scarcity of water in the area.	-Used oil and other Liquid effluents will be stored in leak-proof containers to prevent leakage. -Sewage will be treated in Sewage Treatment Plant at LTP & Bio Toilets will be provided at UTP. No sewage will be discharged to any water body.
Land Use	No Impact	-
Soil Environment	-Used oil in DG sets or other machinery, spillage can occur which can degrade the soil quality.	-Procedures for maintenance of equipment would ensure that this risk is minimized, and clean-up response is rapid if any spill occurs. -Lubricating waste oil & used oil will be collected separately in drums and handed over to the authorized outside agency.
Socio- Economic Environment	-No alteration will happen to the traditional routes of the pilgrims. -Operation of Passenger Funicular System (Ropeway) would alleviate the transportation of material to	-The project envisages daily checks, weekly checks and monthly checks. A 10 days maintenance programme is also scheduled every year.

	high terrain that would increase the socio-economic status of the area. -Generation of indirect employment will be done. -Pilgrimage will be improved to accentuate the socio-economic status of the area. - Noise and air pollution will be reduced after the operation of Passenger Funicular System (Ropeway) -It will aid in rescue facilities for the injured and elderly during emergency purposes.	Insurance coverage for the system will also be provided. -It will be ensured that matters like Safety/ Security, Traditional Customs and beliefs are not altered.
Ecology & Biodiversity	-Noise generation from Passenger Funicular System (Ropeway) will lead to disturbance of migration of birds and route of animals. -Increased pollutant generation would lead to a decrease of flora & fauna in the area. -Increased footfall would lead to disruption of ecological habitat in the area.	-Acoustically enclosed DG sets will be provided & will be kept in a room with adequate stack height & along with vibration pads. -Silencers of Pumps shall be regularly checked, agitators of STP shall be regularly lubricated and greased to check noise pollution. -Operation of Passenger Funicular System (Ropeway) will be scheduled in accordance to the timing of wild animals. -No trees will be uprooted for laying the Funicular track.
Noise & Vibration	-Increased noise levels due to the working of the Passenger Funicular System (Ropeway) may have a negative impact on wildlife as they are highly sensitive to noise, and these noise levels distract and irritate them. Workers/ Drivers are also impacted by this, temporary hearing impairment and irritability may be common. However the proposed Passenger Funicular System (Ropeway) will minimize the traffic and regulate the traffic congestion and noise generation. Thus it will have a positive impact on pilgrims & wildlife. -Due to the running of equipment and DG sets, high levels of noise	-Acoustically enclosed DG sets will be provided & will be kept in a room in the basement with adequate stack height & along with vibration pads. -Silencers of Pumps shall be regularly checked, agitators of STP shall be regularly lubricated and greased to check noise pollution. -Provision of protective devices like earmuffs/plugs to the workers will be done.

	may cause physiological & psychological effects on people like annoyance, problems like speech interference, headache, auditory impact, and increase in heartbeat of elderly people. Running of DG sets will cause vibration generation in the immediate surrounding of DG set area.	
Hydrology and Geology	-There is no impact. The elevation of LTP is 52 AMSL which is much above the HFL of the area. Hence it can be concluded that floods will not affect the Passenger Funicular System (Ropeway).	None
Solid & Hazardous waste	-Generation of Hazardous waste from machinery. -Generation of STP sludge will be there. -Generation of E-waste will be there.	-Used Oil will be collected in leak proof containers at isolated places and then it will be given to the approved vendor of CPCB as per Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016. -Dried sludge will be passed through a filter press where it will be dewatered/ dried to form a cake and then will be used as manure in green areas. The unused sludge shall be given to farmers or nursery. -E-waste generated will be managed as per E-Waste Management Rules.

4.4. Summary of Impact & Mitigation

4.4.1. Air Environment

The most probable construction activities which could have an impact on the air environment would be Site Preparation and Levelling, Dust emission due to mechanical excavation for foundation and basement preparation and superstructure, Handling of construction materials, Operation of Construction Machinery and Transportation of Raw Materials and Labours. The aspects of those activities could be Increased PM level, generation of dust, emission of Volatile Organic Compounds (VOC's), interference of human activities in natural habitat of forest reserve and deposition of dust on leaves which could lead to respiratory problems, damage to flora and fauna and aesthetic properties in the environment.

To check such impacts, mitigation measures like Plantation of trees, confinement of activities only at the project site during daytime only, installation of water sprinkling systems, afforestation, covering of construction materials, installation of acoustically enclosed DG Sets & pollution-omitting machinery and dust compression systems in the nearby areas, provision of proper nose masks to labourers, installation of wind breakers etc. shall be done.

4.4.2. Water Environment

The activities which would be probable to impact the water environment would be Site Preparation, Change of Drainage Pattern, Mechanical Excavation for foundation and basement preparation, waste water generation and Oil and chemical spillage, generation of solid waste and hazardous waste, and water disposal & water contamination during operation phase. The aspects of the activities would be generation of waste water, breeding of mosquitoes, outspread of water-borne diseases, scarcity of water, depletion of water table and deterioration of water quality which could lead to deterioration of aquatic life, generation of water-borne diseases to nearby population. To minimise such impacts, mitigation measures like Provision of proper drainage systems, water sprinkling systems, proper disposal of waste water, proper storage of hazardous waste, usage of STP supplied treated water for construction purpose etc. will be done.

4.4.3. Land Use

The major activities which would be most probable to negatively impact the land use would be Site Preparation and Levelling and Excavation for the foundation work. Since the land has already been converted from forest land to non-forest land by the forest department in favour of Shree Jivdani Devi Mandir Trust, Virar. The diversion of forest land has been carried out as per the guidelines of the Forest (Conservation) Act, 1980. So, the land cover will change to the Funicular System (Ropeway). All activities would be done very carefully to maintain the artificial contour level.

4.4.4. Soil Environment

The major activities which would be most likely to negatively impact the soil environment would be excavation, construction of superstructure and pillars, storage and handling of materials used during construction and operation phase, operation of machinery and equipment (DG Sets, STP, Pumps). The aspects of the activities would be soil erosion, removal of topmost fertile soil, waste generation and spillage of hazardous wastes on the soil which could lead to permanent damage to land productivity, destabilization of landscape, decrease in permeability,

damage to fertility of soil, chemical degradation and indirect negative impact on other aspects of environment like Air, Water & Ecology and Biodiversity. To minimize such impacts, mitigation measures like stacking/storage of excavated material, proper treatment and disposal of waste, proper maintenance of equipment and storage for lubricative, provision and maintenance of plantation areas in the project site and nearby areas.

4.4.5. Socio-economic

The major activities which would be most likely to impact the socio-economic environment would be excavation, operation of machinery and equipment & working and daily activity of staff and workers. The aspects of the activities would be dust emission, waste generation and socio-economic conditions for construction workers which could impact annoyance and respiratory problems. There will be restriction of activities limited to the project area and specific duration in daytime only during Construction Phase, Proper segregation, treatment and disposal of wastes generated from the ropeway would be adapted in the area. The proposed project will positively impact the socio-economic environment by providing employment & less noise & air pollution will be there during the operation phase. It will be ensured that matters like Safety/ Security, Traditional Customs and beliefs are not altered. Job opportunities to the local people.

4.4.6. Ecology & Biodiversity

The major activities which would most probably negatively impact the Ecology and Biodiversity in the project area and the surroundings would be Site Preparation and Levelling, Clearance of vegetation, Excavation for construction of foundation, and superstructure, installation, operation of machinery and equipment (DG Sets, STP, Pumps etc.). The aspects of the activities would be dust emission, increase in noise level, soil erosion, noise generation, water contamination, vehicular emission and waste generation which would directly /indirectly impact in decrease in transpiration rate of flora, loss of habitat, decrease in plant/tree cover, disturbance to avi-fauna and other species, human-animal conflict and hence decrease in population of local faunal species in the area and the surroundings. To minimise the impacts, mitigation measures like provision and proper maintenance of plantation area, installation of water sprinkling systems and dust suppression systems, provision of noise barriers, maintenance of vehicular movement near the project site and proper disposal and treatment of wastes generated from the project site.

4.4.7. Noise and Vibration

The major activities which would most likely negatively impact the environment would be Excavation, Compacting and other related works, Installation of Pillars Superstructure, Operation of machinery (DG Sets, Mobile toilets, Heavy Machinery), Transportation during construction and Operation Phase. The aspects of the activities would be increased in Noise Level and increased Noise Generation which could lead to physiological and psychological problems to workers and nearby population, increased vibration in the nearby areas and an indirect decrease in the biological diversity in the nearby area. To minimize such impacts, mitigation measures like restriction of activities in the limited project area and for daytime only, proper maintenance of equipment and machinery, maintenance of noise barriers, provision of protective devices like earmuffs, compactors, silencers etc., development of plantation areas in the nearby area, provision of No-Honking Zone in the area, maintenance of vehicular and traffic movement etc. would be adapted in the project site.

4.4.8. Hydrology and Geology

The major activities which would most probably negatively impact the hydrology and geology would be working of daily activities of labours, staff and Transportation during Construction and Operation Phase. The aspects of the activities would be generation of Solid Waste, Waste water generation which may cause deterioration of water quality (in both Surface Water and Groundwater). To minimize such impacts, mitigation measures like stormwater management, construction of retaining walls or check dams and Proper treatment and disposal of wastewater shall be adapted in the project site.

4.4.9. Solid and Hazardous Waste

The major activities which would be most likely to negatively impact the environment would be site preparation and levelling, finishing work of wall, painting, stone cladding and tiling work, operation of machinery during Construction and Operation Phase (DG Sets, STP, Pumps) and Working and daily activities of labours, staff and workers. The aspects of the activities would be clearance of vegetation, generation of solid, hazardous and recyclable wastes, oil & chemical spillage and accidental leakage which would impact in degradation of quality of waste which would be used for further treatment, harmful emissions and spread to other parameters of environment, nuisance among the workers and nearby population, physiological and psychological problems to nearby population and mis happenings like fires etc.

5. Analysis of Alternatives

5.1. Description Of Alternative Routes

Three alternative routes were assessed, which are as discussed below:-

During the selection procedure of the Funicular route, few routes were studied and the most stable and convenient stretch with less number of vegetation. Following points were considered while considering the routes:

- Topography
- The location of the Transport nodes
- High density land use and limited space;
- Travel patterns
- User demand
- Technological constraints

The details of Routes studied and their locations are given below:



Figure 52. Alternate Routes Assessed

Three Alternative routes were studied out of which **Alternative route no. 1** was selected.

A geotechnical assessment of the proposed route has been carried out, based on which a site investigation programme should be designed and implemented. The

design of foundations for the rail and roller shall be in accordance with the requirements of the Geotechnical Manual for Slopes and shall be submitted for approval to the appropriate Government Office/Department as required by statute or any project design brief. Adequate consultation on various details of the project shall be conducted with relevant organizations and the local community.

5.1.1. Merits of the selected Route:

The route for the proposed ropeway project was selected based on the following guidelines:

- Availability of adequate space for proposed terminal stations;
- Major points/locations to be connected along the route
- Opportunity for Traffic Congestion Reduction and Reduction in emission of green gases & consumption of fossil fuel
- Overcome Topographical Barriers
- Low Impact on flora and fauna as no trees were present on the track selected for Funicular System (ropeway).
- No rehabilitation or relocation involved
- Stability of the location vis-à-vis geology; and
- Financial feasibility of constructing terminal stations.
- Environmental friendly manner of transportation
- Opportunity of Use in Emergencies
- Opportunity of Service utilization the whole year.

5.2. Alternative Technologies

There are various types of ropeway technologies which are described below:

The Managing Trust for the Temple, Shree Jivdani Devi Temple trust got the study of various alternatives to provide transport facilities to the devotees to climb the hill assessed, and finally selected the “Funicular System” as the most suitable option to carry the large numbers of devotees from the bottom of the Jivdani hill to the level of the Jivdani Temple on the hill. Specifically, the Funicular system was chosen due to its high safety and large carrying capacity with the maximum comfort.

5.2.1. Alternative I :Monocable Detachable system:

Monocable detachable gondola lifts have one rope acting as carrying and hauling rope at the same time. The cabins are available in different designs, e.g., rectangular or round, and always have an aluminum frame. The large windows offer passengers

a panoramic view. The cabins of this type of installation transport up to 10 passengers per cabin.

5.2.2. Alternative II :Monocable Fixed Grip Pulsated Gondola System:

A pulse Gondola is a hybrid technology containing elements of fixed grip chairlifts and detachable grip gondolas. The cabins are attached to a single continuous haul rope that circulates between the two end terminals. The cabins are attached to the haul rope with fixed grips, however instead of being equally spaced along the line, the cabins are grouped in clusters and then the clusters are spaced at equal intervals along the line. As a cluster of cabins enters either of the terminals, the haul rope speed slows to 0.3 metre per second to facilitate loading and unloading. Once the last gondola in the cluster departs the station, the rope speed automatically increases to a maximum speed of 5.0 meter per second. The rope speed slows down again as the next cluster enters either of the terminals. It is this speeding up and slowing down of the haul rope that the term “pulse” refers to.

5.2.3. Alternative III: Jivdani Passenger Funicular System (Ropeway)

In the Funicular System, even though the Cabins run on Rail tracks, they are pulled by wire ropes. A funicular railway employs a pair of passenger vehicles which are pulled on a slope by the same cable which loops over a pulley wheel at the upper end of a track. The vehicles are permanently attached to the ends of the cable and counterbalance each other. They move synchronously: while one vehicle is ascending, the other one is descending the track. These particularities distinguish funiculars from other types of cable railways.

Funiculars run on tracks and are mainly used to overcome altitude differences. Car capacity varies as individual cars can be combined to form train sets. Funiculars are the fastest ropeway systems: with line speeds of up to 14 m/s and high levels of availability, they are often used as public transportation means in cities.

Alternative selected: Alternative III has been selected for this project. In funicular operation two cars are always attached to each other by a cable, which runs through a pulley at the top of the slope. Counterbalancing of the two cars, with one going up and one going down, minimizes the energy needed to lift the car going up. Winching is done by an electric drive that turns the pulley. Sheave wheels guide the cable to and from the drive mechanism and the slope cars.

The rails are secured to the track substructure with special rail fasteners at intervals of approximately 80 cm. Line sheaves ensure smooth guidance of the haul rope. Funicular systems rank amongst the safest means of transport in existence. This is due to extensive experience and the many safety devices used.

Hydrostatic auxiliary or emergency drives ensure that the vehicles can be safely brought back to the stations in the event of a failure, such as a power outage. If the funicular is blocked, the passengers have to be evacuated from the vehicles. This is a relatively straightforward operation thanks to the steps along the track. In the event of overspeed or a slack haul rope, the rail brakes incorporated in the bogies are engaged. These firmly grip the rails and bring the vehicles to a safe stop.

Advantages

- High transport capacity for passengers and cargo
- Extremely energy efficient and pollution free
- Exceptionally resilient to wind and weather
- Amongst the safest means of transport.
- Long service life and high operational efficiency.
- Requires minimal staff and incur low maintenance costs.

The specifications and guidelines are provided for the various project components (Ropeway System, associated infrastructure) including, but not limited to the following major provisions:

The Concessionaire shall consider Specifications provided by Bureau of Indian Standards and other applicable statutory code of practices like Indian Electricity Act, National Building Code, Municipal Building Bylaws of Maharashtra, Maharashtra ropeway Act etc for design, construction, operation and applicable maintenance of the project facilities. In case of Cabins and its associated part to be mandatorily procured imported, suitable international standards with justification may be followed.

5.3. Energy Conservation Measures

Usage of electricity will mainly be for the operation of ropeway & services. However, conservation of energy will be practiced by the following:

- Daylight provision shall be made in the terminal stations (use of sunlight in lieu of conventional power).
- LED & T5 in common areas like waiting areas etc.

- Local Building material with low embodied energy shall be preferred. The construction material shall be bought from nearby areas, thereby reducing transportation thus reducing carbon footprint.
- Glass opening in the building proposed for ancillary activities will be provided with-in the ECBC limit of 40%.
- Buildings proposed for ancillary activities will have appropriate design to shut out excess heat and gain loss.
- 1% solar power provision of connected load shall be provided.
- Solar lights shall be provided.
- Low loss electronic ballast for all lights used in the electrical rooms.
- Energy efficient motors & VFD shall be used as per ECBC Norms
- D.G. sets would be provided with auto cut and auto start mechanism & shall be of latest standards .
- Transformer will be having efficiencies as per ECBC Norms.

The water supply pumping system shall be provided with variable speed drive to conserve energy at part load.

6. Environmental Monitoring Program

6.1. Details of Monitoring to Judge Effectiveness of Measures

To check the efficiency of the system with proposed modifications a regular monitoring programme has been drawn. The program has been outlined for the construction and operation phase. In order to facilitate this, the regular site inspections and their noting will be documented by the PP/Contractor. The organisational structure (Environment Management Cell or EMC) of the Shree Jivdani Devi Sansthan Virar is discussed in Chapter 10 Section 10.2.1.

6.1.1. During Construction and Operation Phase

Table 72. Monitoring Plan-Construction and Operation Phase

S. N o.	Type of Monitoring	Construction Phase			Operation Phase			Responsibility
		Frequency	Parameter	Location	Frequency	Parameter	Location	
1.	Ambient Air Quality	Six Monthly	Particulate Matter (PM _{2.5}) Particulate Matter (PM ₁₀) Sulphur Dioxide (SO ₂) Nitrogen Oxides (NO ₂)	LTP, UTP, and two nearest habitat around the project site	Six Monthly	Particulate Matter (PM _{2.5}) Particulate Matter (PM ₁₀) Sulphur Dioxide (SO ₂) Nitrogen Oxides (NO ₂) Carbon Monoxide (CO)	LTP, UTP, and two nearest habitat around the project site	EMC and 3rd party consultant
2.	Stack Monitoring	Six Monthly	Particulate Matter, Sulphur Dioxide	DG sets of capacity 125 kva	Six Monthly	Particulate Matter, Sulphur Dioxide (SO ₂),	All DG sets installed for backup	EMC and 3rd party consultant

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			(SO ₂), Nitrogen Oxides (NO ₂)	install ed for constr uction purpos es		Nitrogen Oxides (NO ₂)	purposes 500 KVA and auxiliary - 25 kW	
3.	Water Quality Monitor ing for drinkin g water	Six Mont hly	All parame ters mentio ned in IS:1050 0	One drinkin g water sampl e	Six Monthly	All paramete rs mentione d in IS:10500	One drinking water sample	EMC and 3rd party consultant
4.	Water Quality Monitor ing for Constru ction purpos e	Six Mont hly	All parame ters mentio ned in IS:456	One constr uction water sampl e	-	-	-	EMC and 3rd party consultant
5.	Sewage Treatm ent Plant	--	--	--	Six Monthly	BOD, COD, TSS, oil and Grease and pH	Inlet and Outlet of STP at LTP	EMC and 3rd party consultant
6.	Ambien t Noise Level	Six Mont hly	Day and Night noise level	Two locatio ns	Six Monthly	Day and night noise level	Two Locations	EMC and 3rd party consultant
7.	DG Set Room Noise level	Six Mont hly	With or without DG Set enclosu re	-	Six Monthly	With or without DG Set enclosure	One Location	EMC and 3rd party consultant
8.	Soil Quality Monitor ing	Six Mont hly	All parame ters to check soil Fertility	Four Locati ons in and around the project site	Six Monthly	All paramete rs to check soil fertility	Four locations in and around the project	EMC and 3rd party consultant
9.	Waste generat ion and	Six Mont hly	Manual record	Manua l record	Six Monthly	Manual record Keeping	Manual record Keeping	EMC and 3rd party consultant

	other polluta nt control aspects		Keepin g	Keepin g				
	Total Cost	Rs. 131000 /-			Rs. 141000/-			

6.2. Submission of Six Monthly Compliances

As per the standard environment clearance conditions, six monthly compliances of the conditions mentioned in the EC letter has to be submitted to various concerned officials of MOEF, SPCB and Regional office of CPCB. These compliances have to be submitted in the months of June and December for the periods April to September and October to March respectively every year for construction phase until the construction is completed and operation phase for the life of the project.

6.3. Environment Audit

Annual Environment Audits with Form V statements are regularly conducted to check the compliance of environmental conditions for the existing operational industry to MoEF&CC R.O. and Regional State Pollution Control Board (Maharashtra).

6.4. Compliance of Environmental Approvals

6.4.1. Consent

After getting Environmental Clearance from the MoEFCC, Consent to Establish will be taken from the State Pollution Control Board (Maharashtra) to start the construction of the proposed project and consent to Operate (CTO) will be taken from MPCB before start of operation of the project.

6.4.2. Authorisation

For the safe disposal of the Hazardous waste, An agreement with approved recycler will be made for its safe disposal of used oil.

6.4.3. CGWA Clearance

Not Required, as No water abstraction is there all the freshwater will be sourced from VVMC. The Agreement with VVMC is enclosed in Section D.

6.4.4. Conservation Plan

There are fifteen schedule I Species found in the buffer zone. Conservation plan for the Schedule 1 Species shall be submitted for approval to the Chief Wildlife Warden.

6.4.5. Forest Clearance

Forest Clearance has been obtained for area 1.95 ha vide letter no. 8B/37/97-FCW/1513 dated 15.07.1999 and subsequent letter vide letter no. 8B/37/97-FCW/982 dated 02.05.2000 and enclosed in Section D.

6.4.6. Annual returns

The Proponent with the help of 3rd party Environmental consultants annually submit the Environment Audit with the Form V statement, FORM 13 of Hazardous waste, CTO Compliance. Similarly six monthly EC compliance shall be submitted to MoEF&CC R.O. and Regional State Pollution Control Board (Maharashtra) after the grant of the Environmental clearances.

7. Additional Studies

7.1. Public Consultation

Public hearing is a very significant part of the process of public participation envisaged under the guidelines issued by MoEF&CC, Government of India. It facilitates involvement of all the stakeholders of the project which is essential for ensuring the smooth running of the project and benefiting all sections of society in the process of economic development of the region.

The Public Consultation was held on 30.12.2020 at Shree Jivdani Devi Sansthan, Jivdani Devi Mangal Karyalaya, 3rd Floor, Jivdani Mandir Road Virar (east), Virar, Vasai, Palghar, Maharashtra. The Public Hearing was preceded through Digital Platform & Public participation. The hearing commenced at 11:15 a.m. Member Secretary, Maharashtra Pollution Control Board, Mumbai constituted a Public Hearing Panel. Shri Ishwar Thakare, Sub Regional Officer, Thane-2, MPCB, Thane and Convener of the Public Hearing Committee welcomed the attendees. All the concerned were informed of the hearing and details made available. Requisite publicity through local newspapers/ media, Daily Loksatta Dated 26.11.2020 was given 30 days in advance of the date; as fixed for public hearing through the District Collector-Palghar and Maharashtra State Pollution Control Board officials in the matter. The views and grievances of the attendees were listened to. The project proponent has given commitment to fulfil the environmental and social responsibility for development of the community of nearby villages. Further, public hearing proceedings and minutes of public hearing is included and given below:

All the participants welcomed & supported the Funicular system (Ropeway). Total 26 suggestions were received for supporting the project. One Objection is received for the technical reason from Shri Sunil Bajaj, Resident-Virar. All the points discussed are given below:

Table 73. PH Minutes of meeting queries/suggestions with replies

S.No	Name of the Participant	Suggestions/Objection	Reply & Remarks
1.	Ms. Maya Chaudhari, Resident-Virar, Tal-Vasai,	Ms. Maya Chaudhari remarked that she thanked officials of the Consulting Firm for giving a good presentation. We, the common people, do not know various points and how the study is carried out. Here the capacity of the land, present status	Project Environmental Consultant thanked for supporting the

	Dist-Palghar	water level is studied. She said that we are staying here for a long time. This hill/mountainous area was deserted. But this Jivdani Trust has converted it totally and now the deserted mountainous area has become totally green. Here Afforestation is carried every year by spending nearly rupees 30-35 lakhs. We are watching the change. Our Saving Group does take part in an afforestation programme every year. While afforesting, we carry it from upward to downside. We have observed that the rainwater harvesting system is commissioned due to which saplings will grow fast. She further informed that every year it is observed that many devotees are overwhelmed to take darshan of the Jivdani Devi/Goddesses. But due to the tremendous rush of the devotees, the plastic wrappers and eatables are thrown on the hill/mountain. Due to commissioning of the Funicular System (Rope Way), plastic pollution on the mountain will be avoided. There are few people in society who have 'Height Phobia.' Due to installation of Rope Way, they will be able to take darshan of Jivdani Devi. Maya Chaudhari further informed that she is a social worker. Hence, she knows how the Trust has helped the needy people by providing them cooked food in the days of Covid-19. The Anna Dan/Donation of Food programme will be continued forever by the Trust. This project will be beneficial to all. Hence, we support the Funicular Ropeway.	project.
2.	Shri Hardik Ravindra Raut, Resident-Virar, Tal-Vasai, Dist - Palghar	My birth place is Virar. I have been watching the various developments carried by the Trust since my childhood. Not a single tree was there on the Jivdani hill/mountain. Now the hill/mountain is converted into greenery. We are experiencing the development of this area by the Jivdani Devi Trust and Local Corporation. I am 35 years old and just as my age is increasing, the greenery is increasing. We have the Morning Walk Group. It gives mental strength when we come here, but there is always a heavy rush. The devotees should get the good darshan. Hence, by commissioning of the Funicular System (Rope Way), the large people coming here will	Project Environment Consultant thanked for supporting the project.

		get the darshan as not only people from Virar are coming, but devotees from throughout the State of Maharashtra and our country are coming here. The time management of the devotees should be maintained. Due to Jivdani Trust, the people residing the nearby areas have got various occupations /business opportunities. The tea, flower and garland vendors, rickshaw drivers have got the source of livelihood. The flower and horticulture farmers residing nearby areas have also got a platform to sell. There are local people who prepare and sell the prasad of coconut sweets (Nariyal Barfi). It is experienced that Jivdani Trust is always ahead in extending help at the time of natural disaster e.g., in flood affected areas, earthquakes. In the days of lock down due to pandemic Coronavirus, the Trust had provided prepared foods to the needy people for 7-8 months. The coconut sweet (Nariyal Barfi) vendors are local people only. They have got the source of livelihood. Jivdani Trust is always ahead to help the people in natural disasters. It may not have happened anywhere else. As large number of people should get the darshan properly, the Funicular System (Rope Way) is necessary and we all support the same. All the participants supported each other by clapping their hands.	
3.	Advocate Ramakant Waghtaude , Resident - Nalasopara, Dist - Palghar	He congratulated Maharashtra Pollution Control Board for arranging public hearing. He informed that though he is from Satara district, he is staying here since many years and observing the social work of Jivdani Devi Trust. He said that he has seen many religious institutes, but the social work carried by Jivdani Devi Trust is remarkable and right and it has set an example to others. Though this Trust is religious, its active part for implementing various programs for health, education and social is remarkable. The participation of this Trust in various other social welfare programs is pioneering. He said that the help and rehabilitating work carried during the natural disaster, flood by the Trust of Jivdani Devi is as per Government only. It has extended helping hands to millions of needy	Project Environment Consultant thanked for supporting the project.

		and poor people and gained the confidence of local people. We came here to support the project, we are supporters. This passenger funicular ropeway will be beneficial to many people. The physically and mentally challenged people, senior citizens, school children will be benefited by this passenger funicular ropeway. Hence, on behalf of the people of Nalasopara and other citizens, I support the project. This is the way of development. Here also one or others may oppose the project due to some or other reasons. It is requested to District Collector and MPCB officials to look into the matter seriously and as construction of a funicular ropeway is towards development, it should be approved. He supported the project.	
4.	Advocate N. Jain, Resident - Virar, Tal - Vasai, Dist - Palghar	He informed that all have come here to support the nice project of Rope Way. Those people who could not come here, they are also supporting the project. Our support is for the development of Virar. This project is needed for the Virar for the development. We were not imagining that we will get the Darshan of Jivdani Devi within three minutes. The presentation is given very nicely. Hence, I request the Government to sanction the project. There will be no ill-effects on nature due to this project. The local people will get job opportunities and the name of the Virar will be known at national and international level. I request Pollution Control Board to think seriously about the project and the commissioning work should be started at the earliest. We support the project and many thousands will come to support the project.	Project Environment Consultant thanked for supporting the project.
5.	Ms. Swati Marathe, Resident-Virar, Tal-Vasai, Dist - Palghar	Ms. Marathe informed that she is a teacher and stays at Virar since her childhood. This project will help the development of Virar. We bring here school children for the trip. The small children and old persons will be benefited due to this passenger funicular ropeway. Local people will get job opportunities. The saplings have been planted by the Jivdani Devi Trust. The devotees from Mumbai come every day for the darshan. Hence local people can get job opportunities. The suggestion is already made by	Project Environment Consultant thanked for supporting the project.

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		the participant to install the project at the earliest.	
6	Shri Sunil Bajaj, Resident-Virar, Tal-Vasai, Dist - Palghar	Shri Sunil Bajaj informed, as this project is to the benefit of all, though it is supported by me, I have certain reservations/objections in a manner it is approved and public hearing is called at the background of Covid-19. He said that he has objected to it and written submission is already given.	Project Environment Consultant thanked for supporting the project and replied that the Public hearing is conducted meeting all the requirements/norms and guidelines given as per the EIA Notification 2006 and its subsequent amendments and as per OM F.No.22-25/2020-IA.III dated 14.09.2020 regarding Conducting Public Hearing during the COVID19 pandemic restrictions-reg.
7.	Shri Jay Desai, Resident - Virar, Tal-Vasai, Dist - Palghar	He informed, that his name is Jay Desai and he is an MBA student. He is young student and desires to raise views for Passenger Funicular Ropeway. If more than 100 devotees are able to go for darshan by Rope Way than the stairs, it will be beneficial to people. We are aware that due to Covid-19, the tourism industry has come in trouble. Due to this passenger funicular ropeway, the number of tourists will increase. There are many sea shores in the Vasai Virar area. Hence, local tourism and income of local people will increase. The trust has carried very dedicated work. He informed that he has been coming to the temple since childhood and his grandfather used	Project Environment Consultant thanked for supporting the project.

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		to take darshan upto the age of 90 years. Many engineering students will like to come and study this project. Hence, this project should be commissioned at the earliest for the convenience of the public. We support the project.	
8.	Shri Jagdish Tare, Village is from Saphale Station	Shri Jagdish Tare informed that Kali communities are habitants in our village. They have faith in the Jivdani Devi. He said that he has been coming here since childhood. Without offering/ breaking the coconut in the name of Goddess, the boats are not sent into the Sea. We see the temple while boating in the sea. We have faith in the Goddess. Shri Tare further informed that the development work carried by the Jivdani Devi Trust is definitely praiseworthy. We believe that the Goddess is blessing from the mountain. In the days of Corona, all the trustees were working very hard for the people. When the prepared food was not getting at most places, trustees used to visit and donate the prepared food. We Koli community salute Jivdani Devi Sanstha. At these critical days, each human being needs another human being. This Jivdani Devi Trust is preserving humanity. We support the project. Best Luck to project.	Project Environment Consultant thanked for supporting the project.
9.	Shri N'aresh Jadhav, Resident- Nalasopara', Dist - Palghar	Shri Naresh Jadhav said that he extends thanks to Maharashtra Pollution Control Board, due to which we gathered here for the cause of the environment. He informed, that he has stayed in this area for the last 35 years. The hill/mountains which are now green, the credit goes to Bhiwandi Nizampur Municipal Corporation and Vasai-Virar Municipal Corporation and Jivdani Devi Trust. The 1-2 crores of trees were planted in the area. The Goddesses Jivdani is archaic and not only just devotees from Vasai Virar and Nalasopara area, but from all over Maharashtra and the whole country are coming to take darshan. The work carried by the trustees is so good, that the faith of devotees will not be disturbed. In the days of Covid-19, the Trust has served prepared food and vegetables to nearly 70 lakh needy people. This great humanitarian work will be appreciated in our country. Hence, considering the feelings of the people, the passenger funicular ropeway	Project Environment Consultant thanked for supporting the project.

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		project should be sanctioned.	
10.	Shri Sandip Sakharam Nadkar, Sainath Nagar, Virar, Tal-Vasai, DistPalghar	He said that now we are watching green mountains. The credits go to Jivdani Devi Trust for their dedicated hard work. Also, in the days of Covid-19, water and prepared food is served to all needy people. Today, the public hearing is arranged for the commissioning of the Ropeway project. It will be very useful to devotees. The local rickshawalls, flower and garland vendors will get job opportunities. Hence, my request is to sanction the project at the earliest.	Project Environment Consultant thanked for supporting the project.
11.	Shri Ohan jay Zha, Resident -Virar, Tai - Vasai, Dist-Palghar	I have stayed here for the last 22 years. I am from Bihar and came here for livelihood. I observed the custom here that those who come to stay here, take the darshan of Jivdani Mata. The mountains which I have seen 22 years back have been totally changed. It does not happen in one day, it is due to hard efforts taken since 20-25 years. I am grateful to Jivdani Trust for it. Here 5-6 lakh people used to stay in small houses. Now they are staying in their flats. This is due to blessings of Jivdani Mata only. The social work of Jivdani Trust makes all of us stay here. We all believe in the Jivdani Devi Trust. He thanked Project Consultant for giving an informative presentation. He remarked that though this Trust and place is known in Maharashtra, after inception of the project, it will be known throughout our country. Just as devotees throughout India go to Mata Vaishnavi Devi, they will come here for darshan. He said that I extend my thanks to the Jivdani Trustee for taking in hand the Ropeway project. Due to this, the time for darshan of the devotees will be saved. He informed many people left the staying place, as they did not get food in the days of Corona, but from Virar, nobody left as Trustees took tremendous efforts to provide cooked food in the days of Corona to people in the area. The Trust also donated cooked food, medicines and extended full security. I request Maharashtra Pollution Control Board to sanction the Ropeway project.	Project Environment Consultant thanked for supporting the project.
12.	Shri Shirish Krishna	1 am staying here for the last 60 years. Since childhood, I have been watching this hill/	Project Environment

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	Raut, Resident - Virar, Tai - Vasai, Dist- Palghar	mountain. It was totally deserted. There was not a single tree on the road. There was a high road to the temple above. The devotees, people and other visitors used to slip. Now the hill / mountain is converted into lush green cover. It is due to the tireless efforts of Jivdani Trust and Mahanagar Palika. This Rope way will be beneficial to all people residing in the area. The time, money and unnecessary trouble will be saved. There will not be any environment degradation due to this passenger funicular ropeway. There will not be any smoke. The speakers here already raised the suggestions. Hence, I request the Public Hearing Committee to sanction the project.	Consultant thanked for supporting the project.
13.	Mrs. Kanchan Zha, Social Worker, Resident-Virar, Tai - Vasai, Dist - Palghar	Mrs. Zha informed that in Maharashtra the people are well connected by cultural relations. Many people do worship Goddess by Vrat I Vow. Just as Mumbaikars worship Mumbadevi, here at Virar we worship Jivdani Devi. Due to Rope Way, all the sections of society will be benefitted. As expressed earlier, there is a huge scope for tourism industries. The small children also can get darshan after following security. There will be a boost to our cultural heritages. We support the project.	Project Environment Consultant thanked for supporting the project.
14.	Shri Vivek Madan Patil, Resident-Sopara Gaon, Dist-Palghar	I am a local person. We have been here since our childhood. At a young age, we used to come by walk. But as the age is increasing, we middle aged people require Ropeway. Secondly, regarding Environment. It is understood that this project will run on solar energy. It will be operated on electricity. Hence, there will not be any smoke. This project will be beneficial to the people. The people have to take rest at 2-3 places while going by stairs. After eating the biscuits, the people keep the plastic covers and plastic bottles there only. The plastic pollution on the hill/mountains will be avoided and the time will be saved. I personally appeal to other Trusts to imitate the Trust of Jivdani Devi for the activities in social, educational, medical and emergency situations. It is observed by me that there is an increase in the numbers of monkeys. It shows the nourishment of nature.	Project Environment Consultant thanked for supporting the project.
15.	Shri	I retired in 2011 . Now I am carrying the work at	Project

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	Chandrakan t Shankar Katare, Resident-Vi rar, Tai - Vasai, Dist - Palghar:-	Jivdani Goddess Mountain. Since last year, I am extending the support to Jivdani Devi Trust as an Environmentalist. Since last year, I have been working near the Funicular Systems. The 60 meters a green drive is carried at both sides. There will be fogging and drip system in two stages. This project will bring the happiest moments to all. Due to this project, old persons, daughters and daughter-in-laws, small children will get the darshan of the Mata. He further informed that he is submitting written suggestions. He read the suggestions and objections which are as under:- a) The kitchen is used for preparation of Prasad for many thousand devotees. The domestic effluent/ sewage is treated in Sewage Treatment Plant (STP), which is installed by the Trust and the treated domestic effluent/sewage is reused for toilet and green belt development; b) I have seen the workings of the Trust very closely during the Corona period. The Trust has donated cooked foods and vegetables to nearly 25 lakh needy people. The whole Taluka is indebted for this generous act. c) I have been staying at the feet of the goddess for the last 50 years. I have written a book on Jivdani Goddess as "Jivdani Gatha." It is in Marathi and in Hindi. At that time, my wishes were mentioned in the book that when there will be a stoppage of animal sacrifice, it will be a golden day. Now, the Trust has already banned the method of sacrificing the animals. d) The Jivdani Hill/ Mountain is of black stone. It is a difficult challenge to sow the tree. Now there are trees, which are of years. The trees have been kept alive.	Environment Consultant thanked for supporting the project.
16.	Shri Anupra singh, Resident- Virar, Tai -Vasai, Dist-Palgha r	I am from Uttar Pradesh and have been staying at Virar since last 17 years. We go to take darshan of Jivdani Devi every Tuesday. Here in Public Hearing on Environment, I am telling 2-3 examples how the Trust is carrying good work:- a) For the protection and preservation of Environment, green belt development, tree plantation is carried out. The Trust protects all the planted trees and total forest area; b) The Trust has already banned the use of plastic on the Jivdani Devi Mountain.	Project Environment Consultant thanked for supporting the project.

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		c) We support the project.	
17.	Shri Parag Kamble, Resident- Nalasopara, Dist- Palghar	I stay at Nalasopara. All the participants have expressed their suggestions. The Jivdani Devi Trust is implementing various social welfare projects. My family deity Renuka Devi is in Karnataka. But now I believe Jivdani as Family Deity and take darshan every year. Last year my age-old mother and father couldn't take darshan. Hence, I request to complete the project at the earliest, so that my father and mother can be brought to take the darshan. On behalf of Nalasopara, I request to complete the project at the earliest.	Project Environment Consultant thanked for supporting the project. The scheduled completion of the project will be within 12 to 16 Months after getting all the approval.
18.	Shri Gajendra Kayekar, Resident- Virar, Tai - Vasai, Dist- Palghar	I request Maharashtra Pollution Control Board to sanction this project at the earliest. There is no word how the Jivdani Devi Trust has helped the needy and poor people who donated cooked food & medicines in the days of Corona. Due to this project, local people will get the job opportunities. Hence, the Government should give sanction at the earliest.	Project Environment Consultant thanked for supporting the project.
19.	Shri Amol Chaudhari, Resident- Virar, Tal- Vasai, Dist- Palghar	I am from Bihar, but I have been staying here for the last 19 years. I have become a devotee of Jivdani Mata. In the days of lockdown, the Trust has provided cooked food to more than 50-60 thousand. Also the doctors and ambulance are also provided. Needy students have been provided books. Hence, those who want to oppose, may think first of the social work of the Trust and then support. We support the project.	Project Environment Consultant thanked for supporting the project.
20.	Shri L.N.Gosavi, Resident - Nalasopara, Dist - Palghar	It is understood by me that 90% of the work of the Funicular System is completed and only 10% remains. The Jivdani Devi Trust implements various social programs at various villages. The free medication is provided. I am from Khandesh Region and came here in 1973. My whole life is spent at Vasai, Virar and Nallasopara. I was Headmaster at Secondary School. I here desires to inform the participants that with blessings of Jivdani Mandir, this project will be completed.	Project Environment Consultant thanked for supporting the project.
21.	Shri Balkrishna Shttety,	We are senior citizens and we have 360 members. It is very difficult for seniors to climb by the stairs. Hen9e, we are not able to take	Project Environment Consultant

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	Ranga Senior Citizen Sanstha, Virar, Tal-Vasai, Dist - Palghar	darshan. Hence, MPCB should sanction the project at the earliest.	thanked for supporting the project.
22.	Shri Prafulla Sane, Resident - Virar, Tai - Vasai, Dist - Palghar	When I was one year old, my parents came to Virar. I have been watching Mandir since my childhood. Previously, there was a very small temple. Afterwards stairs were built. Then the rope way was prepared. A few years back, the population and devotees has increased tremendously. As per the need of the time, the Trust has given various facilities: The facility of drinking water system is definitely good. The Trust is carrying various social welfare schemes. The medical help is provided at rural areas by the Trust. This place is developed as a pilgrim place. Now the school is started and there are 3,000 students studying in the school. As Mumbai and Thane districts are near, this area should be developed as Tourist Spots. Hence, Rope Way is essential.	Project Environment Consultant thanked for supporting the project.

It was concluded that people were in favour of the installation and commissioning of the Funicular System (Ropeway).

The Public Hearing Minutes of the meeting issued by MPCB for the project are enclosed in Section D.



7.2. Risk Assessment

Risk is the probability or severity of occurrence of a harmful consequence due to hazards.

Hazard is a situation that poses a level of threat to life, health or environment.

Disaster is a natural or man-made hazard resulting in an event of substantial extent causing significant physical damage or destruction, loss of life or drastic change in environment.

Risk Assessment: Qualitative and quantitative measurement of the potential loss of life, personal injury, economic injury, and property damage resulting from hazards.

Risk assessment involves the following:

- Hazard Identification
- Vulnerability Analysis
- Risk Analysis
- Emergency Plan

7.2.1. Hazard Identification

Funicular System at Jivdani Temple, Virar may present a number of hazards to the general public, operating and maintenance staff. Funicular System will be liable to suffer from two types of disasters:

1. **Natural Disasters:** Natural disasters include earthquakes, landslides, rock falls, floods, storms, avalanche, lightning etc. Risk Analysis due to Natural Hazards are discussed ahead in this chapter.
2. **Human -caused occurrences:** Man-made occurrences include:
 - Fire
 - Electrical faults
 - Technical faults like rope with broken wires in service, drive / return sheave shaft failure / tension system failure, mount assembly parts failure, over speeding of ropeway / brake failure, rollback, slippage / fall of cabin, entanglement of cabin, swinging of cabin resulting in fall of material outside cabin, cabin derailment at station etc.
 - Security threat

Hazard analysis for the Natural & Man-made Disasters is discussed in the Table below:

Table 74. Hazard Analysis

Hazards	Severity (1-5)	likelihood (1-5)	Severity x likelihood (1-25) (Hazards scoring 1-12 are less serious hazards & 13-25 are very serious hazards & need prior attention)
Natural hazard			
Earthquake	5	1	5
Landslides	5	2	10
Flood	3	4	12
Wind & cyclone	3	3	9
Lightening	4	2	8
Drought	3	2	6
Man-made hazard			
Fire & explosion	5	2	10
Electrical	3	5	15
Technical/ Accident	4	5	20
Security	3	1	3

7.2.2. Vulnerability Analysis

As per the hazards analysis given in the above Table, the vulnerable areas during construction phase are mainly the immediate areas under construction.

The vulnerability analysis during operation phase is given for natural as well as man-made hazards as given in tables below:

Due to Natural Hazards

Table 75. Vulnerable locations/ areas for natural hazards

Hazards	Vulnerability
Earthquake	Damage to Towers, Terminal Stations, cabins
Landslide	Damage to Towers if slope stability is not maintained.
Flooding	due to cloud burst or excess rain
Wind & cyclone	There are very minimal chances of wind & cyclone; this can cause damage to the cable car.
Lightning	Though the area is susceptible to the lightning but the frequency of lightning is quite low i.e one per year. This can damage terminal station buildings and towers.

Due to Man Made Hazards

Table 76. vulnerable locations of different man-made hazards

Hazard	Vulnerable Locations
Fire	Cabin, Terminal Stations, Control Room
Electrical	Cabin, Transformer, Control room
Mechanical/ Accident	Cabin, Ropes, Terminal Stations, Funicular System
Technical	Funicular System, Cable car, Terminal Stations
Security	Terminal Stations, Parking, Population at site

7.2.3. Risk Analysis

7.2.3.1. Environmentally Induced Risks and Hazards

Natural Calamity Hazard Profile

Hazard profile map of India (published by Home Ministry of India as a part of document 'Disaster Management Plan in India) is depicted in figure given below:

The region having project site is prone to following Hazards:

- Earthquake
- Landslides

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- Flooding
- Wind & Cyclone
- Cloud Burst

Above findings are supported by a profile map of India for earthquakes, Landslides, flooding and wind & cyclone as depicted in Fig. below:

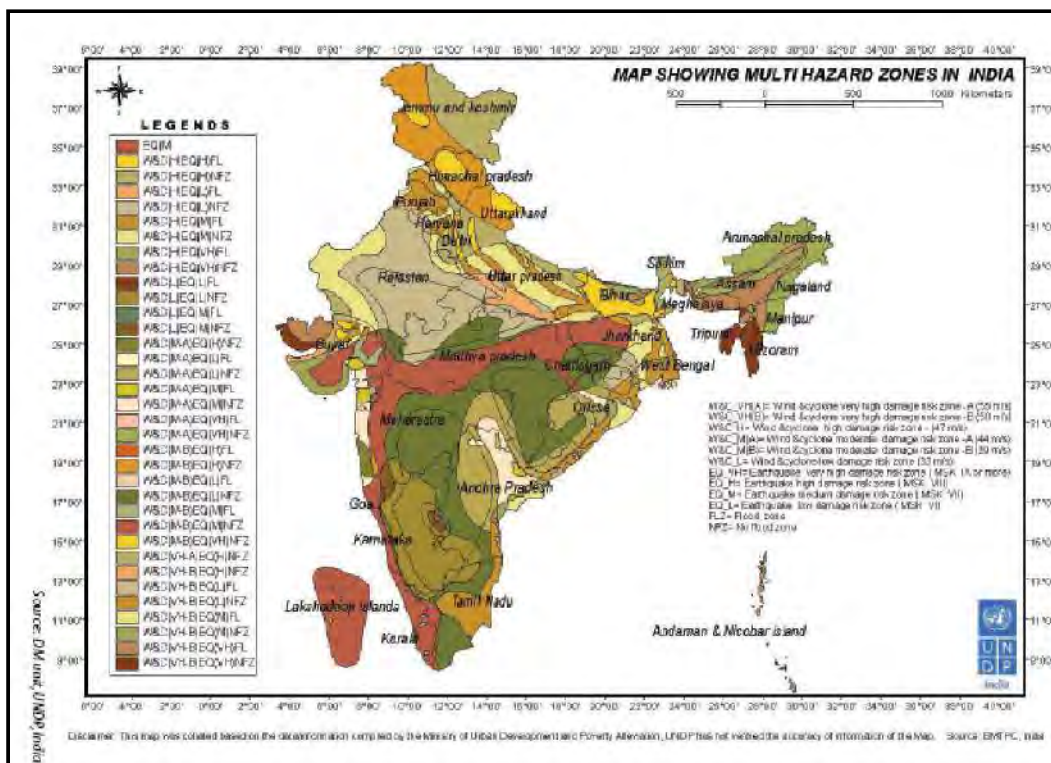


Figure 53. Natural Calamity Hazard Profile Of India

Seismicity: The project site is located in seismic zone III which indicates moderate damage risk zone. Earthquakes in Maharashtra are showing major alignment along the west coast and Western Ghats region. Seismic activity can be seen near Palghar, along the western coast, Koyna Nagar, Batas and Surrey areas of Thane district. In north Maharashtra, the seismic activities near Dhule, Akola, Jalgaon and Amravati could be due to movements on the faults present in the area associated with the complex system of Narmada, Tapi and Purna. In the north-east corner of Maharashtra, the earthquake activities in Nagpur and Bhandara districts may be associated with Deolapar thrust or sheared and faulted zones of Ramtek and Sakoli Basins.

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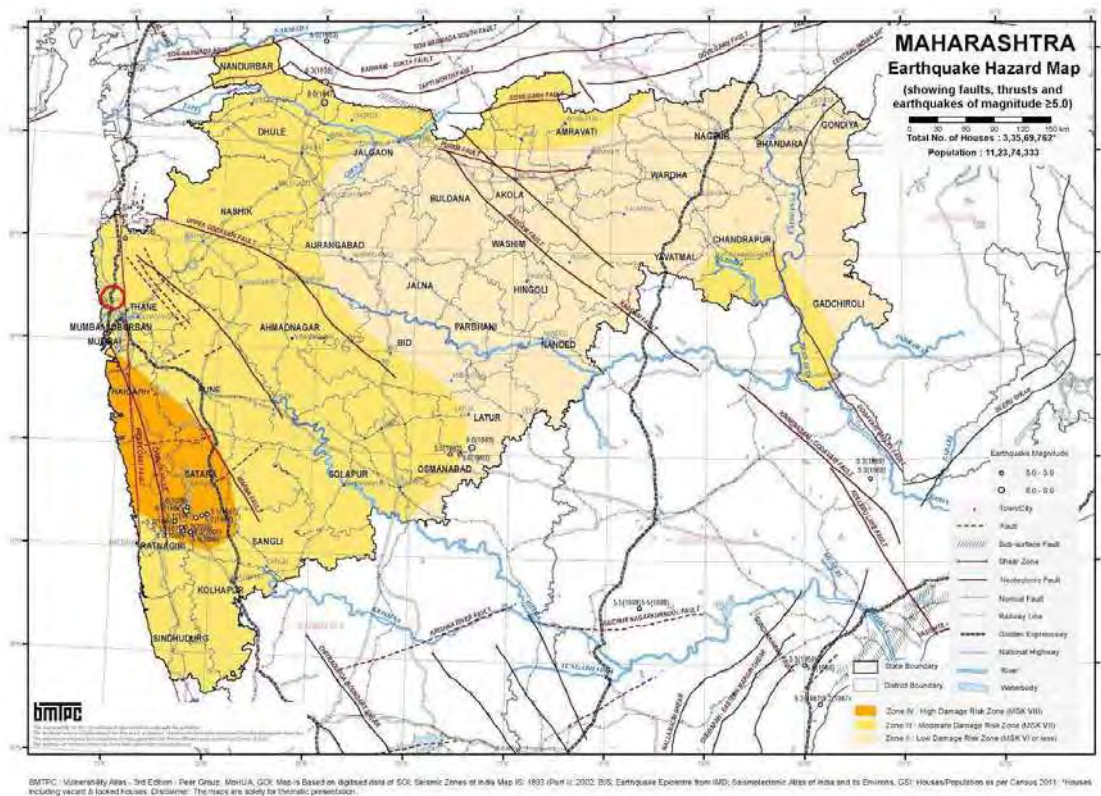


Figure 54. Earthquake Hazard Map (Source: BMTPC-Vulnerability Atlas- 3rd Edition (2019): Peer Group, MoHUA, GOI)

Landslide: In Maharashtra, often landslides are triggered by heavy rains in the Western Ghats. Major landslide major incidents have occurred in monsoon seasons due to anthropogenic development along the landslide prone regions. Landslides have primarily resulted in loss of life and property, but have more importantly led to secondary and tertiary impacts such as chemical accidents, road accidents, rail accidents, flood, fire, gas leaks, etc.

Landslides occur, mainly due to vertical cutting of hills, for construction of houses, roads, railway lines, etc. In absence of proper embankment material, heavy rains lead to falling of earth matter and debris. Most cases of landslides occur during heavy rains associated with high velocity winds. Many regions in the state face the risk of landslides due to increased pressure on land. For example, in the Greater Mumbai region, many vacant sites on hill slopes or bottoms of hills have turned into inhabited areas and thereby become vulnerable to landslides. Landslides sometimes result in loss of human lives and damage to structures such as houses and roadways. Landslides may occur at the project site, if slope stability is not maintained.

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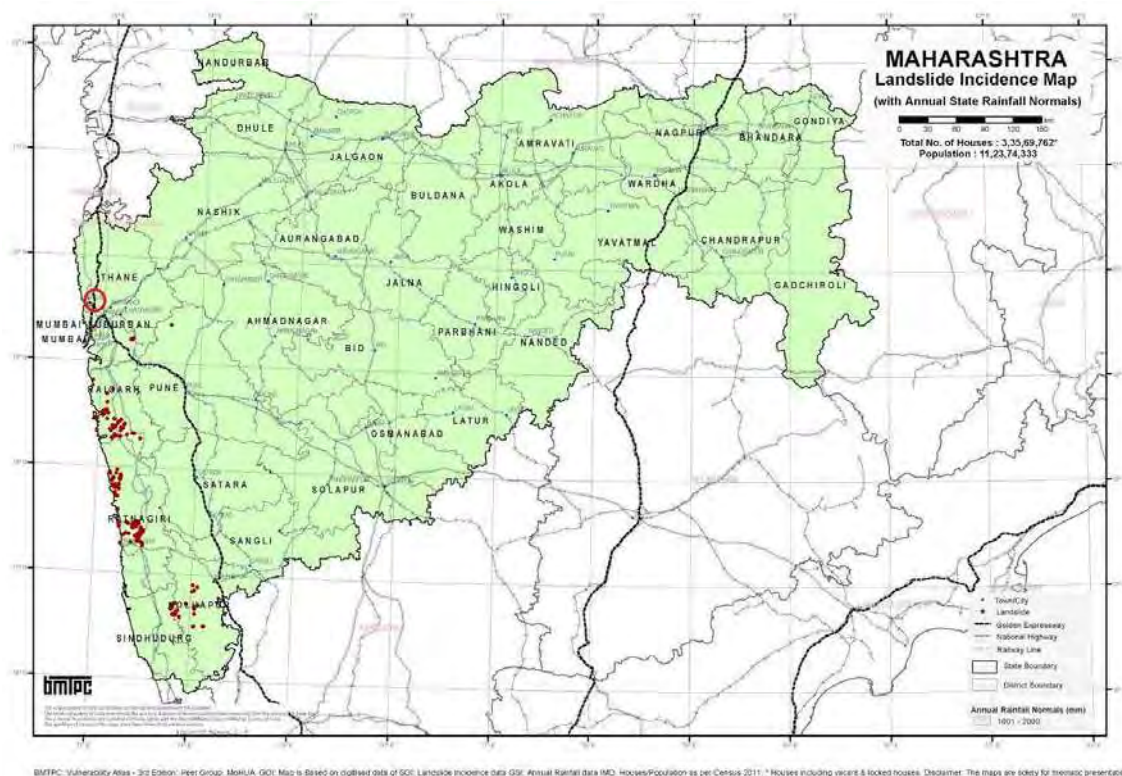


Figure 55. Landslide incidence map of Maharashtra (Source: BMTPC: Vulnerability Atlas - 3rd Edition (2019) : Peer Group, MoHUA, GOI)

Flooding: As per Flood Risk map of Maharashtra given below & topography of the project, the site falls under flood zone.

More than two lakh hectares of land in Maharashtra is prone to floods and Patur taluka in Akola district has the largest flood prone area in the State. Nanded and Nashik are frequently affected by floods in the monsoons. The eastern parts of the state are more prone to floods. The Tapi, Wardha and occasionally the Pen Ganga are the rivers causing floods in the State. In some cities like Mumbai land reclamation over the years has disturbed the natural drainage system.

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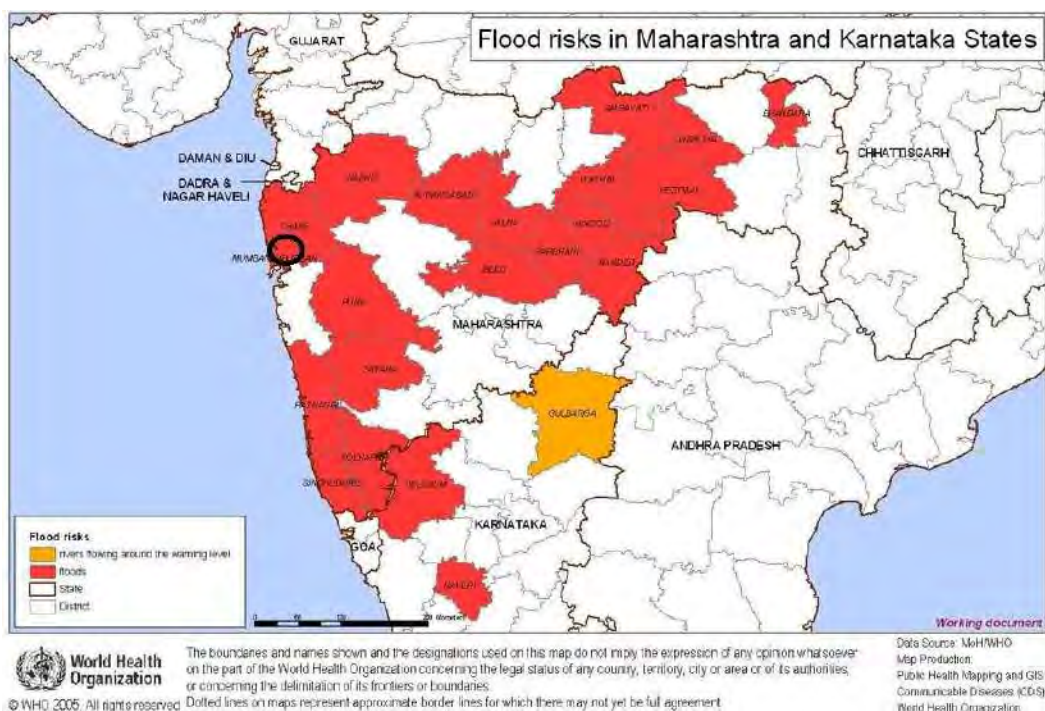
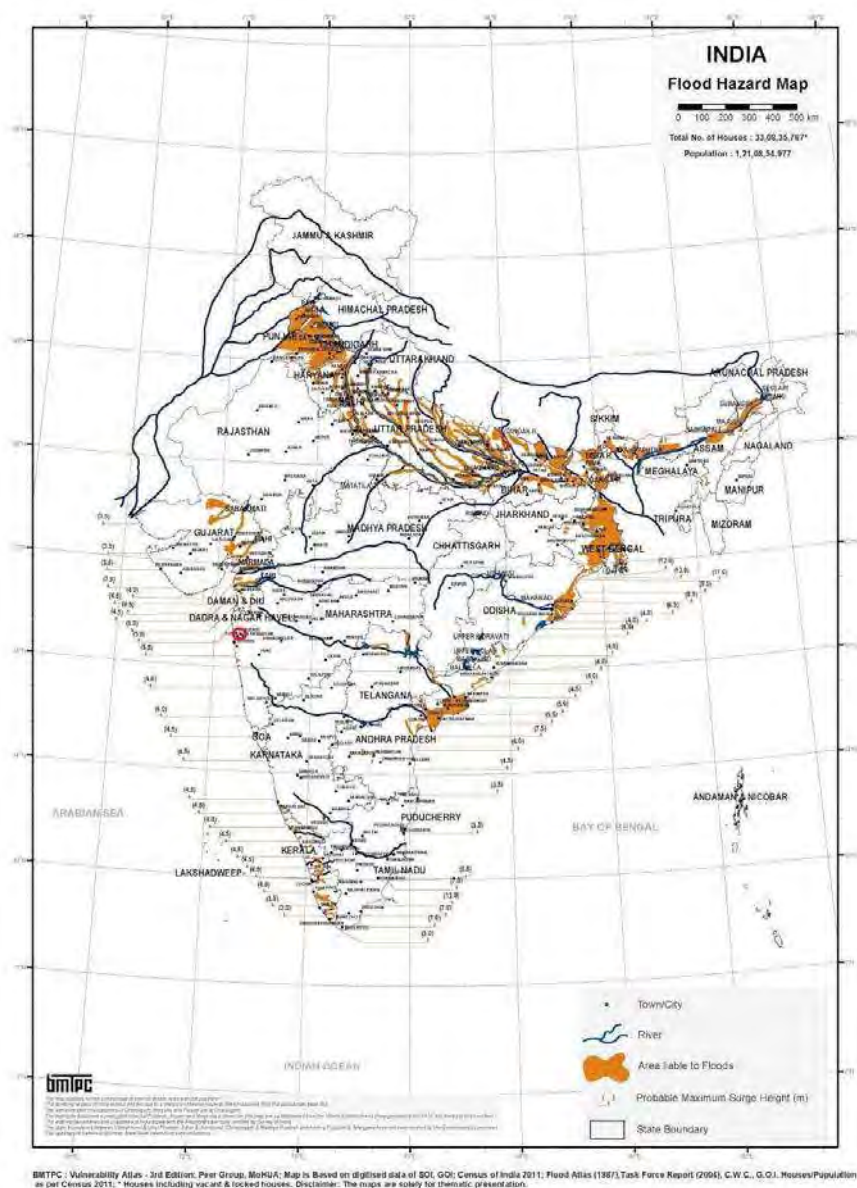


Figure 56. Flood risk map of Maharashtra

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Wind & Cyclone: The temperature variation and wind speed are directly proportional to avalanches. The yearly distribution of tropical cyclones in the north Indian Ocean indicates large year to-year variations in the frequency of cyclonic disturbances and tropical cyclones, but no distinct periodicity. However, the trend indicates a slight decrease with time. The Cyclone hazard map of India as depicted in the figure below, gives the vulnerability map of hazards due to cyclones. As per this map, the project area falls under a zone where moderate wind & cyclones are seen.

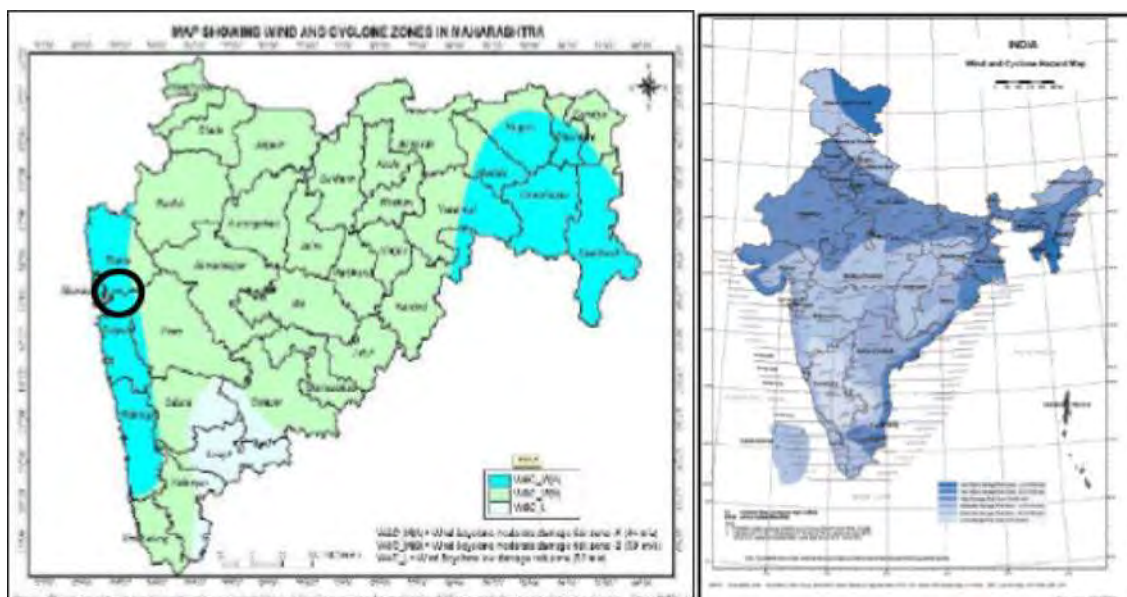


Figure 57. Wind & cyclone map of India and Maharashtra

Cloud Burst:

Though not a regular phenomenon, cloudbursts lead to exceptionally heavy rainfall and sudden flash floods in the mountainous streams and rivers, leading to breaching of banks and overflowing of dams.

7.2.3.2. Human Induced Risks and Hazards

Fire & Explosion: Since it is a Funicular system (Ropeway) project, fire can mainly be caused due to electric spark in the electrical room, fire in the surrounding forest area, fire in fuel storage places, etc. The Fire & explosion can cause suffocation due to harmful gases generation & panic in people.

Electrical: The Funicular system (Ropeway) will run on electricity & hence electrical current can pass through cable cars & wires due to inadequate insulation or accidently.

Technical Failures/ Accident: As the ropeway consists of cable cars, ropes & big & heavy machineries, technical failures as discussed above can cause risks to people working in the area during construction phase & pilgrims (for Emergency evacuation) who will travel through the Funicular system (Ropeway) in operation phase. Consequences of the discussed hazards may result in an accident.

Security Threat: War, crisis & terrorists can cause panic among the public and staff.

7.2.4. Emergency Plans

Classification of Emergencies

Level of emergency should be declared as per criteria given hereunder:

Level 1 Emergency

- No immediate danger to the public or environment;
- Incident is confined to the lease or company property;
- Low potential for situation to escalate;
- Handled by company personnel; etc

Level 2 Emergency

- Potential for risk to the public/environment; the emergency could extend beyond company property;
- Control of incident is still possible;
- May require the involvement of external emergency services, federal, provincial or local agencies; etc

Level 3 Emergency

- There exists an immediate danger to the public or environment;
- Control of the situation has been lost;
- Extensive involvement of external emergency services, federal and/or provincial agencies;
- Emergency extends beyond company property;

Proposed Funicular system (Ropeway) shall involve Level-1 and Level-2 emergencies. However, in the case of natural calamity such as an earthquake, it may have Level-3 emergencies.

The Funicular system (Ropeway) manager will establish and draw up any special instructions necessary to be observed by staff to ensure the safety and shall ensure that such instructions are implemented and enforced by the staff.

Communication: Both an audible signal system and a two-way voice communication system shall be maintained between the drive station and all loading and unloading stations. If only one system fails to operate, the Funicular system (Ropeway) may continue to run, provided the remote attendant stop system is fully operational. In the event of the failure of both communication systems, the Funicular system (Ropeway) shall not be operated. In the latter event, provided that adequate special precautions are taken, the Funicular system (Ropeway) may be run for the purpose of evacuation only.

Funicular system (Ropeway) shall not be operated without a functioning dedicated communication system.

7.2.4.1. Disaster Management

- Establish direct contact with district administration and District Disaster Management Authority (DDMA) for any update on forecast (warning);
 - Follow up agencies for forecast and keep records;
 - Indian Meteorological Department for cyclone and earthquake;
 - Central water commission for flood forecast;
- Establish an in-house rescue team of volunteers from each unit and impart training as per DDMA;
- Establish a first aid team of volunteers from each unit and impart training as per DDMA;
- Organize mock drills in association with DDMA;
- Establishment of Central Control Room for communication with Government agencies;
- Updated contact details should be kept for the following:
 - District Magistrate
 - District Police Administration
 - DDMA
 - District Fire Service
 - District Hospital
 - District electricity Supply Agency
 - District Water Supply Agency
- Development of Standard Operating Procedures for the role and responsibility of the individual of the response team.
- Warning System
- Inspection of design of buildings and towers with respect to severity of hazards presents;
- Removal of encroachments and keeping basic infrastructure like roads, power & water supply, waste and storm water drainage system, parking etc in healthy conditions;
- Demarcation of assembly points and evacuation routes for workers and the general public in case of emergency;
- Keep records of chemical inventorization and associated hazards with each unit;
- Planning for risk reduction measures due to chemical storage and traffic parking & movements;
- Assessment of impacts and design & implementation of remedial measures; etc

- An Emergency management Cell will be developed, which is discussed in Section 7.7.

7.3. Preventive Measures

7.3.1. Natural Occurrences

Earthquake: The project will be situated in the Seismic zone-III area. Attention shall be given to the structural design of foundation, elements of masonry, timber, plain concrete, reinforced concrete, pre-stressed concrete, and structural steel. All applicable guidelines will also be followed in this regard to ensure the safety of the building.

Landslide: The area where the Funicular system (Ropeway) is proposed is not prone to landslides. However, Structural stability & safety is a must to prevent ropeway damage due to landslides. Slope stability in the area shall be maintained at 45°.

Flooding:

- Although the site is away from the coast and less prone to flooding hence the probability of flooding is less, however, proper designing of drainage systems shall be done to avoid any mishappening.
- All the wastewater shall be disposed to STP for treatment.
- Structures shall be built in such a way that no harm occurs to the people working there & structures due to flooding due to natural calamities.

7.3.2. Man-made Occurrences

Fire and Life Safety:

- Smoking must be prohibited.
- Electrical equipment must be explosion-proof to meet national electrical code requirements.
- Dry chemical extinguishers should be accessible for small fires. An adequate supply of handheld and wheeled types should be available.
- Hydrants should be strategically placed with adequate hoses.
- Small spills should be remediated with sand, earth, or other non-combustible absorbent material, and the area is then flushed with water.

Technical Faults & Accidents

- The carriage will be provided with a door lock.

- Carriage of each cabin shall be provided with detachable rope grips.
- The Funicular system (Ropeway) will be provided with a minimum of two braking systems- Normal/ Emergency Brake and Service Brake. The emergency brake shall be weight operated & thrustor released brake which should be provided on the brake ring fitted on the drive sheave. The service brake shall be weight operator thrustor released brake shall be provided on high speed brake drum coupling.
- In the event of main power supply failure, the system should have a fully rated Diesel Generator to supply power to run drive motors.
- Standby diesel engines should be provided for each station to run ropeway at slow speed in case of failure of the main DC motor.
- Line safety devices should be installed on each trestle holds down & pressure frames which immediately stop the ropeway in the unlikely event of rope derailment. This should comprise an electrical trip limit switch with attachment mounted on a line sheave mount. In an accidental acse, if the hauling rope comes out of line sheaves it should automatically trip the ropeway by the actuation of the limit switch through the attachment.
- Rope catcher will be provided on mount beams on line trestle, P.F. and Stations to arrest/ support the hauling rope in case of deropement.
- Emergency push buttons will be provided at stations to stop the ropeway, if required.
- The ropeway main drive motors to be tripped if:
 - Set rope speed exceed by 5 %
 - Wind speed exceeds the set limit
- The project shall be provided with anemometers to monitor the wind speed and to provide trip signals to the main drive in case wind speed exceeds a predetermined set speed.
- Each station will have a first-aid medical facility.

7.4. Maintenance & Management of Ropeway

7.4.1. Maintenance Record

The Funicular system (Ropeway) operator will ensure that:

- Written procedures are developed for operating the equipment under all reasonably foreseeable conditions, and that all safety requirements are incorporated into these procedures.

- Records are kept of every critical safety stage in the operation of the Funicular system (Ropeway).
- Operating procedures and all other relevant operating records are freely available to any person who operates the equipment.
- All operational data are available for inspection by any authorised person who is involved with the ropeway, including equipment inspectors.

7.4.2. Daily Operational Requirements

Starting of ropeway: The ropeway will be started by the competent person authorised by the management.

Daily inspections: Prior to transporting material/ pilgrims (for Emergency evacuation), a daily inspection will be conducted by competent personnel. As a minimum, the inspection will consist of the following:

- Inspect visually each terminal, station, and the entire length of the Funicular system (Ropeway), including grips, hangers and carriers:
- Note the position of tension carriages and counterweights, and ensure that the tensioning system is free to move in both directions.
- Test the operation of all manual and automatic switches in terminals, stations, and loading and unloading areas, as per the manufacturer's specifications.
- Test the operation of main drive and braking systems.
- Test the operation of communication systems.
- Note the general condition of the hauling rope.

7.4.3. Operation Log

- A daily operational log shall be maintained for the Funicular system (Ropeway).
- The daily operational log shall include at least the following:
 - Date;
 - Names and duty stations of operating personnel;
 - Operating hours and purpose of operations;
 - Temperature, wind, and weather conditions and changes, with times of changes noted;
 - Record of compliance with daily operational inspection;
 - Position and condition of the tensioning carriage and of the counterweight or other tensioning devices;
 - Accidents, malfunctions, or abnormal occurrences during operation; and
 - Signature of the operator.

7.4.4. Maintenance of Ropeway

The maintenance program will consist of procedures for addressing all components subject to load, wear, corrosion or fatigue. This would include:

- The types of lubricants required and frequency of application;
- The types of testing required and frequency of testing;
- The definitions and measurements to determine excessive wear and replacement criteria.
- The recommended frequency of service to specific parts and details of the service required.
- Identification of other areas that might require specific attention.

7.4.5. Ropeway Management

The Funicular system (Ropeway) management shall ensure that:

- The Funicular system (Ropeway) including all safety devices is maintained in accordance with the maintenance and inspection schedules and are kept in safe working condition at all times.
- A procedure is in place which requires any faults found in the ropeway to be reported immediately by the person who finds the fault, investigated and, where necessary, maintained, adjusted, repaired or altered.
- A Funicular system (Ropeway) that has been subject to maintenance, whether routine maintenance or maintenance in response to a fault found, shall be appropriately tested before re-entering service, to ensure their design compliance.
- All maintenance procedures relating to the ropeway shall be kept in controlled status regularly updated and continually improved and shall be executed by competent persons.

The operator of the ropeway will ensure that:

- The date, time and full details of any maintenance work undertaken and the results of any maintenance procedure carried out.
- Ensure that maintenance records are available for examination by all persons concerned, including equipment inspectors.
- Keep record of running hours and/or number of loading cycles operated by a Funicular system (Ropeway) and its condition, where a Funicular system (Ropeway), or any of its components, is subject to condition monitoring.

7.4.6. Inspection of Ropeway

The owner /operator of the ropeway shall ensure that:

- Commissioning inspection has been carried out by an equipment inspector, who shall also witness all relevant tests.
- Formal pre- season inspections are carried out.
- The Funicular system (Ropeway) is inspected in-service at least annually for the issue of certificate of inspection.
- Daily and periodic maintenance inspections are carried out.

Inspection Intervals: The operator will ensure that the Funicular system (Ropeway) is inspected in-service and is:

- Inspected at commissioning, after the first year of service and thereafter at least once in a year.
- Inspected after their re-erection or re-commissioning;
- Inspected after major repairs or alterations; and
- Inspected in the event that they are seriously damaged.

Records: A list of parts to be inspected will be maintained. The operator of the Funicular system (Ropeway) will maintain records of the date, time, time and results of any inspection carried out and the name of the inspection body engaged.

7.4.7. Tests of Ropeway Operation

The Funicular system (Ropeway) operator will ensure that:

- All routine tests of emergency procedures, and of alarms, and safety devices, relating to the Funicular system (Ropeway), will be carried out at appropriate intervals.
- Every overload test will be carried out under strict conditions, is monitored at all times and does not exceed the limits specified in the relevant design or operating standard; and
- The Funicular system (Ropeway) will not be loaded above its safe working load, except for the purposes of an overload test.

The records of the following will be maintained:

- The date, time, details and results of any tests carried out are recorded.
- Comments on the performance of Funicular system (Ropeway) in any test, and on any maintenance done or any adjustment, alteration, or repair made as a result of any test are recorded; and

- Any data arising from testing are readily available for inspection by authorised persons including equipment inspectors.

7.5. Security Threat Plan and Action Plan to Meet the Eventualities

ISO 27001 and 27002, which are the international best practice information security management standards, defining and guiding Information Security Management System (ISMS) development shall be adopted. These will provide the necessary benchmarking for individual users to know the type of cover and the responsibilities that are defined and provided by that institution for its guests. Most importantly, training staff needs to be regularly imparted in dealing with such situations.

A four tier security plan will be designed for the project:

Tier I: Protection against attack from Sky

Tier II: Securing Funicular system (Ropeway) Terminal Building Externally and Ropeway corridor area

Tier III: Security of Funicular system (Ropeway) Terminal Building from Internal Threats

Tier IV: Provision of:

1. proper Surveillance System
2. Training and Security Drills (including Contingency plans)
3. Security of Infrastructure Support Service System
4. Making of Standard Operating Procedures

Tier V: Emergency Response Team

7.5.1. Description of the Tiers:

Tier 1 Protection against attack from Sky

1. In case Terrorists are launched through Helicopters, then Mobile quick reaction team to move on terrace of stations with suitable arms and ammunitions which will be backed by reaction team.
2. Coordination of Security Control Room with Army Defense system through Central Control System of the city/Army/Air Force.

Tier II Securing Funicular system (Ropeway) Terminal Building Externally and corridor

1. **Manual Checks:** At all terminals manual checking will be done for passengers travelling and will be asked for IDs.
2. **CCTV:** At all important locations with a remote viewing facility and record back up. With highest resolution and picture quality. DVR being the backbone, its recording and replaying capabilities must be considered.
3. **X-Ray Scanners:** This may be installed and the bell desk may ensure that all the baggage while being shifted out or goes through the machines. One scanner shall be installed at terminal stations entry.
4. **RFID based access** control and smart card applications can also control the movements of guests as well as staff.
5. **Zoning System:** Apart from these equipment there are agencies providing Zoning systems. This system would be integrated with the BMS and in the event of terrorists strike it automatically will close the fire exit door and stairs door thus limiting the movement of the terrorist in one place.

Tier III Security of Building from Internal Threats

1. **Staff Profiling:** All the staff shall be required after proper verification of identity and residential proof. Smart card identification shall be given.
2. **Metal Detectors:** Every staff person will walk through metal detectors. There will be one metal detector at the staff entry gate.
3. **Bomb Blankets:** This will reduce the impact of an explosion.
4. **Central Control Room:** This will control the security system from inside.
5. **Safety of weapons:** The weapons shall be kept in security.
6. **Communication Systems:** Proper communication systems to security staff shall help them to coordinate better during emergencies.

Tier IV Provision of:

A. Proper Surveillance System

1. **Bio – Metric Access:** All the electronic locks are replaced as bio matrix access control in the rooms. It is a suitable way to have fingerprints of staff/Visitors in the name of a high-end technology.
2. **Wireless Mobile Devices:** These can be installed at various locations to intercept staff communications.
3. **Glass protection System:** This will be a unique product combination of high security laminate films with chemicals which makes it blast resistant and thus protecting human life and property which will be transported from the damage caused by splinters.

4. **Explosive detectors:** With the help of this detector, the security personnel can check various zones and baggage, visitors which will be transported for traces of explosives.

B. Training and Security Drills (including Surveillance System)

Disaster planning is the responsibility of all sections of the community. The police, fire brigade, civil defense, Home Guards, press, clergy, industrial groups, and community groups must participate in the pre-disaster planning. The community as a whole has the responsibility to teach first aid to groups in the community that could be utilized in disaster situations. The disaster may involve the normal communication network itself. Therefore, two-way radio systems and messenger systems must be included as backups in the event of a communication-system failure.

Proper training, security drill and evacuation drill shall be conducted in a defined time period, so as to train the management people, security personnel, senior staff and all other staff to take control of all odds whatsoever come in the way. These training shall be conducted for use of weapons and Arms by some trained agencies for the said training. The training shall be done periodically.

C. Security of Infrastructure Support Service System

1. Hourly checking of buildings including Toilets and dust bins.
2. Regular checking of material which is being transported
3. Installation and Precautions of Public Addressing system.
4. Preventive measures for attack on D.G. Sets, Water Treatment System, Water Storages, Ventilation System.
5. Security against Chemical War & Anti hacking devices

D. Making of Standard Operating Procedures

A standard operating procedure manual shall be prepared, followed and maintained for all the eventualities due to attack by armed intruders.

Tier V Emergency Response Team

An emergency response team shall be formed.

7.6. Rescue Arrangement for visitors

The Funicular system would be provided with a rescue arrangement to enable the passengers being evacuated in case of an extreme emergency where cabins are stopped on line.

The rescue of stranded passengers shall be carried out by the following method:

- Two independent hydrostatic emergency drives:
 - Auxiliary electric driven motor drive via gear rim on the bullwheel at the Drive station.
 - Auxiliary electric driven motor drive via gear rim on the bullwheel at the Return station.
- In emergency cases the passengers will normally stay in the cabins and will be brought back to the stations by means of emergency drives. The innovative recovery concept which will be implicated in the project uses technical and organizational measures to ensure that all passengers can be safely returned to the stations in the carriers at all times. This concept enables you to offer your passengers maximum safety and comfort. This is achieved by duplicating all function-related parts and equipment, and making them independently operable, or ensuring that they can be restored to function at short notice so that the haul rope can always be moved.
- As mentioned elsewhere the Auxiliary Drive with diesel engine enables the passengers to be evacuated in the event of power failure.

7.6.1. Emergency Access

Adequate access to terminal stations by emergency vehicles as is required by the Fire Services Department (abbreviated to "FSD") shall be provided. A rescue plan shall also be drawn up in consultation with FSD and EMSD to deal with emergencies during operation.

- The earthquake loading shall be assumed to be equivalent to a ground horizontal force of 0.08 times the total weight of the building, structure or rail.
- Prior to the construction of a funicular railway the manufacturer shall furnish a full set of engineering drawings, together with the design calculations to the Director. During construction and testing, submission of test certificates, reports from the manufacturers and the commissioning team shall also be required.
- It is necessary to ensure that on a funicular railway the rope will be required to keep its normal position by the rope guidance devices and supports under any condition of operational speed or load and, in addition, under the influence of any external factors such as wind effects.
- The sheave guides etc., shall be designed to accommodate any side thrusts, if applicable.
- Standards for material strength such as yield stress, tensile strength, safety factor for general applications, etc. shall be determined in accordance with

the recommendation of established national/international standards or codes for funicular railway systems or similar applications.

7.6.2. Travelling Speed

The operating speed of a system shall be designed having regard to:-

- the safe and steady operation of the vehicle;
- the operational capability of the braking systems;
- the condition of the track;
- static and dynamic forces on the vehicle; and
- comfort of the ride.
- Normally, operating speeds of up to 3.5m/s are permitted. However, in view of technological advancement, operating speeds of up to 10m/s are permitted, provided that:-
 - all effects of the higher speed have been taken into account;
 - the track is not accessible to the general public;
 - the operating speed is continuously adjustable over the whole length of travel;
 - the whole track, except for cross-over, is straight or the radius of any curve (in m) is at least $6 \times V^2$ where V is the operating speed in m/s
 - The vehicle is equipped with a suitable type of suspension.
- The maximum operating speed may be exceeded under test conditions, without passengers, for the purpose of inspecting the overspeed safety devices. The test shall be carried out by competent and responsible staff and under no circumstances the carrying out of the test should prejudice safety.
- For operating speed exceeding 6m/s, the haulage rope shall be guided and guarded properly and prevented from coming into contact with adjacent surfaces/objects.
- When the vehicle is powered by emergency supply, the operating speed shall be suitably reduced to prevent overloading the emergency supply system. The emergency supply must be, however, able to drive the vehicles to reach either terminal station from any location within one hour.
- Emergency supply system could be an emergency generator or a standby supply from the power company.

7.6.3. Rollers, Sheaves and Drums

- The diameter of lined sheaves and drums for haulage rope shall be at least measured in terms of nominal rope diameters. For unlined sheaves and drums, the values given above shall be increased by at least 25%.

- The maximum allowable deflection shall be 10% for lined rollers, and 7.5% for unlined rollers.
- The distance between successive rollers shall be designed such that even when it oscillates, the haulage rope shall not come into contact with the sleepers on the track.

7.6.4. Rope Requirements

- Before the commencement of operation, and to provide a datum for comparison with the inspection of ropes during operation, it is recommended that the new ropes shall be examined by means of an electromagnetic testing instrument (deflectograph), or by any other non-destructive testing system which can locate defects in the wires.
- Lubricant shall be supplied to the wires at the manufacturing stage and any fibre core shall be similarly impregnated. In operation, the rope shall be lubricated at recommended intervals. In both cases, the lubricants (preferably the same) shall be compatible with each other as well as having no corrosive action on any part of the haulage system with which it may have contact, especially rubber liners on sheaves and drive wheels.
- The ropes are generally of the steel wire stranded type. A safety factor of 8 must be used with respect to the maximum axial load of the rope compared to the calculated breaking load; but in such a case allowance for the line friction (resistance of the line rollers) shall be taken into account when determining the maximum axial load.
- For telephone and signalling cables the safety factor shall be at least 3.3 times the maximum designed axial stress. Cables used for telephone and signalling purposes shall not come into contact with the haulage ropes under the worst possible operating conditions.
- Testing and Certification of Ropes.
- The testing and acceptance (or rejection) of ropes shall be fully documented in accordance with British Standard BS 302: Part 5: 1987 or other equivalent international standards. The British Standard may not cover specifically stranded ropes for funicular railways, but the procedures laid out therein are considered suitable for this application and shall be adopted.
- After the testing and acceptance of a rope the purchaser shall obtain a certificate from the manufacturer as to the detailed specifications of the rope and the constituent wires with regard to their strength, size and dimensional stability.

7.6.5. Splicing and Rope Terminations

- Splicing of the haulage rope is not permitted.

- The haulage rope fastening to the vehicle shall be easily accessible for inspection and adjustment.
- Reel-type fastening to vehicles shall have a safety factor of 4 as measured against the greatest traction force in the rope. Other types of fastening shall be designed for the breaking load of the rope.
- The fixing of the ropes onto the haulage drum shall be carried out using a system of blocking with wedges, or using at least two clamps or any other system of equivalent design from the safety point of view. These attachments shall be easily accessible for inspection and tightening. If the size of the drum permits, the rope shall first pass through a hole in the drum barrel or flange and be secured on the inside of the barrel or on the outside of the flange. The termination shall be able to resist at least 80% of the breaking load of the rope.
- If end sockets are to be used, they must be fitted with care. For this purpose only firms who specialize in this technique and can prove their experience, both as regards the making of the sockets and the choice of correct materials, shall be employed, unless the funicular railway company has its own qualified personnel who have proper experience in this work. During service the rope ends shall be easily accessible for inspection.
- The sockets shall be fitted with a white metal that may be applied at a temperature below that of any critical temperature which will alter the metallurgical or mechanical properties of the wire.
- The wires in the cap shall be spread to evenly distribute the load and arranged that no bending moment is applied to the rope as it leaves the socket.
- On installation of an end socket a transverse reference mark shall be made so that any displacement can be readily detected visually.
- The end socket shall have a strength at least that of the parent rope. It shall be protected from the ingress of water or any other substance that may be corrosive or affect the integrity of the fixing.

7.6.6. Rope Replacement

A rope on a funicular railway shall be replaced in the event of wear, corrosion, broken or damaged wires. The followings are situations requiring rope replacement:-

- there is a reduction of 25% in effective bearing cross sectional area within a rope length equal to 40 times the rope diameter;
- if within a rope length equal to twice of the rope diameter, more than half of the crown wires (or an equivalent cross section) in one and the same strand are broken;

- the condition of the rope or its performance leaves any doubt as to its integrity and safety in operation.
- For the purpose of calculation of reduction in effective bearing cross sectional area, the following are relevant -
 - if the reduction of cross sectional area is the result of broken wires, the sum of the cross sectional areas of all the broken wires within the relevant length shall constitute the total amount of reduction;
 - if there are several breaks in one and the same wire within the relevant length, only one wire's cross sectional area has to be taken into account; and
 - loose wires and wires having strand deformation shall be considered as broken.

7.6.7. Drive

- The main drive shall be able to operate under any loading condition from rest to any selected speed within the design range. As far as practicable the speed selected shall be suitably controlled and be constant with variation limited to $\pm 5\%$ of the selected value.
- The maximum designed speed shall be governed to produce an indication at $+5\%$ with power trip off at 10% . Lower values may be used if desired.
- The starting of the motor shall be smooth and without jerking regardless of the load. Starting acceleration shall be adjusted according to the track characteristics, and passenger comfort considerations.
- For funicular railways with travelling speed exceeding 4 m/s, the speed control shall be continuously variable.
- Flat belts and chains shall not be used for the main drive.
- It shall be possible for the motor to drive the rope at 0.3m/s or at such a speed so as to allow the entire length of the rope to be inspected.
- For the purpose of calculating the necessary drive output of the motor and the rope tension, the weight of a person shall be taken as 75 kg.
- The running resistance of lined rollers shall be taken as at least 3%, and of unlined rollers as at least 1% of the load exerted on each roller when the rollers are provided with anti-friction bearings.
- The resistance of rope sheaves shall be taken into account in calculating the necessary drive output.

7.6.8. Brakes

- When the vehicle is to stop in a normal manner, the deceleration shall be achieved by means of an electrical brake at, as far as practicable, a constant deceleration sufficient to slow down the vehicle. In this respect, a

deceleration value of at least 0.2m/s^2 shall be achieved. The deceleration shall be monitored by the deceleration monitoring circuit.

- The main drive shall be provided with a service brake and an emergency brake, each capable of independently stopping the vehicle. Both brakes shall be operable in both directions of travel. Normally the two brakes shall not come into operation simultaneously.
- The service brake, with deceleration control, shall be set to achieve a retardation of 0.6m/s^2 . After normal stopping of the vehicle, the full braking power of the service brake shall be brought into action. When the vehicle stops, the power supply to the driving motor shall be turned off. If self retardation due to gravity exceeds 0.6m/s^2 then the brake shall remain ineffective until the system stops and then they shall act at full power. The emergency brake, without deceleration control, shall be set to achieve a retardation of at least 0.6m/s^2 in the most adverse line conditions for full downhill load/empty uphill load and a maximum of 1.5m/s^2 in the most adverse line conditions for full uphill load/empty downhill load. In all cases, the emergency brake, when applied at any point during the normal deceleration phase during entry to the station, must be capable of stopping the vehicles before the buffers at the terminal stations, irrespective of the load.

With an electrical main drive motor, the service brake shall operate automatically as soon as:

- The speed controller is brought into neutral position, if speed controller is installed;
- The electrical braking is almost completed;
- The supply power is lost, interrupted or the voltage falls below a permissible level, or in the case of three-phase circuits, the supply fails in any one phase;
- The power demand rises above a permissible level;
- The maximum permissible running speed is exceeded by 10%;
- Any of the safety devices listed in Part 12 operates.
- The service brake shall be designed that it can be operated from the vehicle. If necessary, the operation of the service brake shall be load dependent. The braking power of the service brake during normal braking shall be controlled as to develop a deceleration from 0.3m/s^2 to the maximum value.
- The service brake and emergency brake must operate directly upon the driving wheel or a brake rim attached thereto. The braking force shall be applied in two positions on the wheel or the rim diametrically opposite. For funicular railways with a travelling speed of less than 3m/s , one of the brakes may operate on the transmission gear, on condition that adequate heat dissipation arrangement is to be provided.

- For funicular railways with travelling speed exceeding 3 m/s the speed sensor for the emergency brake and its automatic application shall be effected directly from the driving wheel.

The emergency brake shall be able to be brought into action by hand at the control console either mechanically or electrically. Emergency stop switch or push button to stop the vehicle shall be provided at the following locations:-

- control console in the control room;
- on the platforms;
- control panel in the vehicle;
- in the machine room; and
- in the passenger compartments if the vehicle is not attended.
- in the vehicle inspection pit.

The emergency brake shall come into operation automatically under the following conditions:-

- when the maximum permissible running speed is exceeded by 15-20%;
- when the vehicle overshoots its normal stopping position at the driving station;
- when the service brake fails; or
- when the pressure in the auxiliary electric or pneumatic circuit for holding open the brake drops below the specified level.
- In the event of overspeed, the emergency brake shall operate automatically in both directions of travel and shall be fail-safe, i.e. not dependent upon the power derived from mains supply or batteries. The braking force of the emergency brakes shall be produced by weights or compression spring. The overspeed governor shall have an accuracy of $\pm 5\%$. Automatic resetting of the governor shall not be allowed.
- When the emergency brake is applied, the electrical supply to the drive motor shall be tripped-off. When the emergency brake is controlled (held open) auxiliary electric or pneumatically, air pressure shall be completely released immediately. To avoid excessive deceleration, the operation of the emergency brake may be delayed.
- The braking force of all brakes shall be easily adjustable. When the brakes are held open Auxiliary electric driven or pneumatically, the corresponding pressure shall be capable of being monitored.
- The components of the brakes shall be designed with a minimum factor of safety of 3.5 as measured against the tensile yield strength.
- Due consideration shall be given to the temperature rises when calculating the dimensions and efficiency of the brakes.

7.6.9. Safety Devices and Control Circuit

- The control room shall be located in the driving terminal and shall be so orientated as to afford the best possible view of the line. The approaching vehicle and the boarding and alighting of passengers shall be clearly visible in front of the control console inside the control room. However, the use of CCTV will be accepted as an alternative.
- All control and safety circuits/devices shall be monitored and enunciated by means of indicator lights or audible alarms. All instruments and devices required for monitoring of the operation shall be housed and made easily accessible in the control room.
- All instruments and lamps shall be clearly labelled as to their functions, in both English and Marathi. Signal lamps shall be clearly visible when lit. When necessary, the signal lamp can be accompanied by an audible signal.
- To safeguard the failure of the control system at the vehicles, a manual control system shall be provided at the control room which makes it possible to run the vehicle at a maximum speed of 2m/s.
- Starting up of the vehicle shall only be possible when:-
 - the corresponding start command has been initiated from both vehicles;
 - "Door Closed" signal(s) from both vehicles; or
 - the corresponding "Start" command from the control console at the control room.
- Any intended reversal of the direction of travel shall be possible only after the vehicles are brought to a complete standstill/stop.
- Vehicle position indicator to show the vehicle position in meter and with the indication derived from the signal of a counting device at a deflection sheave of the haulage rope or main haulage drum (in case of winch drive) shall be provided. The position of all stations and crossing points shall also be shown. When two vehicle position indicators are provided at different locations, their indication shall be synchronized. The vehicle position indicator shall be capable of automatically corrected so that it is set to the starting positions when the vehicles are in the termini.
- In particular, the following shall be monitored with indication displayed at the control room:-
 - the status of drive, i.e. by main drive or auxiliary drive. Interlocks shall be provided that both drives shall not operate simultaneously;
 - the position of the brakes;
 - the condition of wear of the brake shoes.
- The funicular railway shall be provided with end switches and buffers. The end switches shall bring about automatic stopping and impose change of direction of travel.

- The speed of the vehicle shall be reduced gradually to the comfort of the passengers before entry to the terminal station. The reduction in speed shall be effected by an entry deceleration circuit.
- For funicular railways which may be remotely controlled, two independent arrival monitoring systems shall be provided.
- The arrival monitor shall activate the safety circuit to slow down or stop the vehicle if the speed of the vehicle has not been reduced to the permissible 0.7 m/s or less on its approach to the end switches.
- Upon actuation of the arrival monitoring circuit, the vehicle must be brought to a complete halt in front of the buffers by the emergency brake.
- The speed sensing device for at least one of the arrival monitors shall be driven directly by the driving drum or deflection sheave. The output signal from the speed sensing device shall be continuously monitored.
- Additional safety devices shall be provided after the end switches which will actuate the emergency brake.
- For funicular railways with a speed of travel less than 2m/s, a speed dependent arrival control is not required.
- For manually controlled railways, the approach of the vehicle to the terminus shall be indicated by an audible signal in the control room.
- Automatic stopping must occur as soon as any breakdown occurs in the safety or control circuits. No restart shall be possible until the fault is cleared. The operation of any safety circuit shall be clearly enunciated in the control room giving information as to the type and location of the fault.
- Emergency stop buttons provided at locations shall be distinguished by colour and label.
- Bridging Circuits
- If a fault is occasioned by a breakdown or malfunction of the control circuitry it may be permissible, under certain circumstances, to by-pass that part of the circuit component with a bridging circuit. Any such devices should be correctly engineered and their functions clearly described in the design documentation. Their use, however, will be restricted to responsible staff and under no circumstances must their use prejudice safety.
- The bridging circuit shall only be made possible by a key switch.
- The travelling speed shall not exceed 2m/s during bridging of the control circuitry.

7.6.10. Remote Monitoring System

- If the travelling speed is greater than 5m/s, the haulage rope shall be monitored by a monitoring circuit.
- Trackside and overhead signal cables which carry information relating to the railway safety shall be monitored by a monitoring circuit.

- Stoppage of the funicular railway shall be initiated whenever the monitoring circuits are interrupted, short circuited with other monitoring circuits, or earthed.
- Voltages up to 50 volts are allowed in the monitoring circuits between circuit and earth, and between circuit and circuit.
- The vehicle shall be brought to stop by a monitoring circuit when the earthing resistance of the haulage rope drops below 500 ohms.
- The activation of vehicle stop as mentioned in Section 13.5 may be delayed for at most 0.5 second to allow for accidental or temporary interruption, earthing or atmosphere effect.
- The monitoring circuits shall have an impedance of not less than 20,000 ohms at a testing voltage of 500 volts.

7.6.11. Communication

- For manually controlled funicular railways with relatively straight and short tracks, one set of signalling equipment shall be sufficient.
- A communication system between the driver in the driver cabin of the vehicle and the duty technician in the control room shall be provided. The communication or signalling equipment shall continue to work in the event of mains supply failure, application of any brakes, tripping of end switches or actuation of safety circuits.
- If permanently applied current collectors are used for passing signals and instructions, those contact points or shoes shall be checked regularly for interruptions.
- The vehicle shall be provided with a public address system that is audible at any point inside the vehicle. Annunciation informing passengers on action to be taken in the event of the vehicle coming to a halt between normal stopping places shall be given through the system. For vehicles without an attendant, an intercommunication system between the passenger and the control room shall be provided.
- Part 15 Vehicle
- The design calculation of the structure and load bearing components of the vehicle shall take into account all anticipated static and dynamic forces that will be encountered in operation including:-
 - vehicle own weight plus payload;
 - wind effect during operation;
 - impact force due to passenger loading and unloading;
 - braking force of service and emergency brake; and
 - vehicle colliding buffers.

- All components of the structure of the vehicle shall be easily accessible for inspection and maintenance. All internal and external surfaces shall be protected against corrosion.
- The enclosure of the vehicle shall have the following provisions to ensure maximum safety to the passengers:
- Vehicle shall be provided with a body panel up to 0.4m above the seating surface or 1.1m above the floor surface for cabin with standing passengers. Sharp edges and abrupt protrusion inside the vehicle and near the door openings shall be avoided. Body panel material may be metal or fiberglass.
- Enclosed vehicles shall be adequately ventilated by means of operable windows or mechanical ventilators. Windows shall be of non-splintering materials e.g. safety glass or synthetic plastic material;
- Doors shall be so secured that they can be opened only by a proposed action. For power operated doors, the closing force shall not exceed 150 N. The edges of the doors shall be
- buffered with a soft material. In case of power failure, the doors shall be kept locked and shall be capable of being opened by hand from both inside or outside of the vehicle with the aid of a key. Keys of this type shall be kept only by responsible persons;
- For vehicles which are unattended, all door opening mechanisms should be operated from the outside and shall not be able to be opened from inside;
- Folding doors shall be opened only into the vehicle. Doors which open outwards shall be secured by locking devices and can only be opened from the outside;
- The funicular railway shall not be operated for carrying passengers with the vehicle doors in the opening position
- An emergency exit door, not on the same side as the normal exit door, shall be provided to give an adequate means of exit from the vehicle direct to the track in case of vehicle/system breakdown
- A separate compartment at both ends of the vehicle shall be provided for the driver.
- The maximum permitted number of persons and the live load in kg to be carried by each vehicle shall be conspicuously displayed in all vehicles.
- The passenger carrying capacity shall be calculated as follows:-
- For seated passengers:
- Seat width : 0.4 m
- Seating pitch : 0.7 m
- (b) For standing passengers:
- Floor area of 0.25 m² for each standing passenger.
- Standing passengers are allowed provided that at no time during the whole journey the slope of the floor allocated for standing passengers exceeds an angle of 15° to the true horizontal.

- Vehicles that allow standing passengers shall be provided with adequate handrails etc. Unattended vehicles shall be equipped with a device which indicates that there is an overload. This should be interlocked with the starting mechanism.
- The vehicle shall be provided with an independent track braking system capable of stopping and holding indefinitely the vehicle at any location on the track and shall be actuated automatically when :-
- failure of haulage rope;
- excessive slack in haulage rope, that is when the traction force of the rope is less than 3 kN; or
- vehicle exceeding its maximum permissible speed by 30 %.
- 15.8 All vehicle parts shall be connected together electrically and shall be earthed. Only low voltage electrical appliances shall be used in the vehicle.
- If the vehicle has two compartments, they shall be connected by a double fastening, each having a minimum factor of safety of 6. Each compartment shall also be provided with an emergency track brake of its own.
- The track brake shall be capable of operation, by the vehicle attendant, from the control console in the vehicle. All components of the track brake shall have a factor of safety of at least 2 against the tensile yield strength.
- The direction of travel and speed may be controlled from the vehicle. The instructions to proceed shall be made subordinate to instructions to stop and to instructions to reduce speed.
- Vehicles shall be fitted with interior lighting and headlamps, and shall be earthed. Flooring shall be of non-slippery material.
- Vehicles shall be numbered or coloured for identification.
- All switches, controllers, meters and lamps on the control console in the vehicles shall be clearly labelled in English and Marathi, as to their functions.

7.6.12. Track

- The track, including rails, switches, sleepers, foundation and any bridges, shall be so designed, constructed and maintained to absorb any forces from the vehicles under the most adverse conditions of loading and during emergency braking, without undue deflection or permanent deformation.
- After every application of the vehicle track brakes, the track shall be inspected by experienced technical personnel in detail, in particular the 50 metres length on either side of the point of application of the track brakes.
- The track shall be kept clear at all times of debris, soil and rocks, allowing free passage of the vehicles and causing no impediment to the natural drainage along the track.
- The track shall be laid in the straightest possible manner and with the most even angle of inclination possible.

- Lateral curve radii shall be as large as possible. They shall be at least $6V^2$ in metre, where V is the speed of vehicle in m/s, and shall not be less than 100 metres.
- Means shall be provided to keep the haulage rope in touch with the rollers at all times even where the track has a concave profile.
- The track shall be protected from unauthorized access as far as practicable.
- A walkway shall be provided along the whole length of the track. Where this is not practical, proper means of emergency evacuation from the vehicles shall always be provided.
- At the ends of the track, inspection pits shall preferably be provided in which work can be carried out by maintenance staff in an upright position. In order to protect the safety of staff working in the pit, the following safety installation shall be provided:
 - an emergency stop switch inside the pit to stop the vehicle through the activation of the emergency brake or the service brake; or
 - a master switch within the control panel of the vehicle which will be locked off during the maintenance work and the key is to be kept by staff working at the pit.

7.6.13. End Buffers

- The distance between the buffer and the normal stopping position of the vehicle shall be at least equal to the braking distance with the application of the emergency brake.
- The capacity of the buffers shall be designed to be capable of absorbing the kinetic energy of the vehicle under loaded condition. The permissible 0.7 m/s or less, shall be used for calculating the kinetic energy as well as the braking distance

7.6.14. Stations

- The drive and control equipment shall be housed in purposely designed plant rooms. One terminal station shall include a workshop and storerooms. The building structures and facilities shall be constructed with reference to the Buildings Ordinance (Cap. 123). The design of the terminal buildings shall take account of all the imposed forces, including rope tensions and an earthquake loading, lightning protection shall be in accordance with BS 6651: 1999.
- The layout and disposition of the stations shall be such that the access and exit points are clear, even at times of maximum passenger flow. The circulation of passengers is, as far as possible, unhindered. Sufficient covered

space shall be provided, under average passenger flow conditions, for waiting passengers.

- The width of the station embarking platforms shall be at least one metre wider than that of the vehicle body. However, if the station is manned with staff for controlling the passengers, and with additional waiting area, the width of the embarking platform can be suitably reduced. When passenger flow is low at intermediate stations, the width of those platforms shall be at least 1.2m.
- The clearance between the edge of the platform and the door opening of the vehicle shall preferably not exceed 50 mm.
- Passengers shall not have access to any area housing machinery or operational equipment and shall be given access only to the boarding and alighting areas.
- Notices to the passengers shall be posted in conspicuous positions and shall be written in both Marathi and English. Pictograms are allowed. Entry and exit points in a station shall be clearly illustrated.
- Adequate lighting either natural or artificial, shall be provided for public areas, machine room, control room and maintenance areas.
- Emergency lighting shall be available from a secure supply. Such supply should conform to the Code of Practice for Minimum Fire Service Installations and Equipment and Inspection and Testing of Installations and Equipment issued by the Fire Services Department.
- Upon receipt of building plans, the Director of Fire Services will be responsible for formulating requirements/recommendations for the intended use of such terminal stations. In addition, proper management of terminal stations with specific reference to good
- housekeeping, effective control of passengers, unobstructed entrances/exits, etc. are essential for prevention of fire. Any such requirement of the Director of Fire Services shall be complied with.

7.6.15. Operation and Maintenance Schedule

- This section of the Code of Practice is intended to give guidelines on the operation and maintenance aspects of the funicular railways.
- It is not the intention of this section to prohibit the adoption of innovative and improved operation and maintenance practices. However, all such practices should be supported by proven field applications.
- The Director will make revisions to this section from time to time to suit the technological development in the field of funicular railways.

7.6.16. Test Trip and Daily Tests

Before commencement of daily operation, and after the stoppage of the funicular railway due to inclement weather conditions such as typhoons, a test trip without passengers shall be carried out. The following conditions must be observed:-

- the laying of the rope and the running of the rope in rollers;
- the clearance of trees and obstacles from the track.

The daily tests shall comprise at least the following:-

- the functioning of the safety circuit and monitoring circuit;
- the indicated current readings and the signals of remote monitoring installations;
- the functioning of intercommunication system;
- the accessibility of all emergency stop button or switch;
- the functioning of door monitoring system;
- the laying of rope in rollers and sheaves;
- the condition of the brake;
- the condition of the auxiliary electric driven system and main drive;
- the functioning of load measuring equipment, if installed;
- the functioning of the public address system.

7.6.17. Weekly Inspection of Haulage Rope

The visual inspection of the haulage rope shall be carried out weekly at maximum inspection speed of 2.5m/s, or with testing apparatus.

7.6.18. Monthly Inspection and Testing

The monthly inspection shall cover at least inspection on:-

- the wear of grooves of the sheaves, rollers, and brake shoes;
- the pressure accumulators of the auxiliary electric driven or pneumatic system;
- the conditions of vehicles, including the car coupling, rope fastening, door locks and emergency door release; and
- the condition of the track brakes of the vehicle.

7.6.19. Monthly testing

The monthly testing shall at least include testing on:-

- the service and the emergency brakes;
- the arrival monitors in both directions;

- the rope monitoring circuits under short circuit, earthing or interruption conditions;
- the entry deceleration circuit.

7.6.20. Quarterly Inspection and Testing

The quarterly inspection and testing shall cover at least:-

- testing of the slack rope switch;
- inspection of the conditions of track bed, viaducts, bridges, cuttings, embankments, cross drainage and station works.

7.6.21. Annual Survey

The annual survey, which shall be performed by an approved surveyor, shall cover at least the following items:-

- the normal operating data and general condition of the installation;
- checking of main gearbox for lubrication and measurement of backlash;
- checking of main haulage drum shaft and output shaft for clearance;
- checking of haulage drum and deflection sheaves for surface cracks or defects;
- checking of overload protection for motors and generator;
- checking of auxiliary electric circuit for correct pressure settings and testing of their function;
- checking and testing of safety devices installed at terminal including the vehicle position indicators and over-travel limit switches;
- checking and testing of electrical safety circuit;
- checking of rope monitoring circuit;
- checking of arrival monitors and the associated control circuit;
- checking of overspeed protection at 10%, 15% and 25% overspeed;
- checking of electrical installation at the intermediate stations and along the route;
- checking of lightning protection at terminals;
- testing of service brake and emergency brake in control room;
- testing of service brake and emergency brake upon activation in a vehicle with one vehicle fully loaded, another empty, travelling at rated speed, in both directions of travel. Record the braking distance and time
- checking and testing of the track brakes installed in both vehicles with the tested vehicle fully loaded, another empty, travelling at reduced speed at the steepest slope of the track. Record the braking distance and time for each vehicle;

- checking of haulage ropes by taking measurement of the diameter of some sections of the rope, visual inspection of the condition of the rope, and taking the defectograph reading of the rope;
- checking of vehicle for corrosion, deformation or damages;
- checking of tightness of bolts and rivets in vehicle;
- checking the condition of the track and its structure such as bridges, for looseness of bolts, corrosion, and deformation;
- checking of rollers along the track for wear and misalignment;
- checking the stability of slope, embankment and protective walls along the track;
- checking of force bearing components in stations and machine room; and
- recommendations to improve the safety standard of the installation.

7.6.22. First Aid will be provided with the following facilities

- Emergency telephone numbers for emergency medical services (EMS) 1092/102/108
- Sterile gauze pads (dressings) in small and large squares to place over wounds
- Disinfectants like Dettol or savlon
- Medicines like pain killers (ibuprofen) and antibiotics
- Roller bandages to hold dressings in place
- Adhesive tape
- Adhesive bandages in assorted sizes
- Scissors
- Tweezers
- Safety pins
- Antiseptic wipes or soap
- Thermometer
- Barrier devices, such as a pocket mask or face shield

7.7. Emergency Management Cell (Off-site Emergency Planning)

The actions necessary in an emergency depend upon the circumstances. It is imperative that required actions should be initiated and directed by a nominated team having specified responsibilities. An Emergency Management Cell will be

formed, so that at the time of any Emergency, the team can work as a coordinator between all affected pilgrims and medical facilities/ requisite measures.

This avoids confusion arising out of a panic situation. The details of proposed Incident Emergency Response Team are as per given hereunder:

1. Site Controller
2. Incident Controller
3. Safety & Security Coordinator
4. Information Officer
5. First aid coordinator
6. Medical Officer
7. Primary Controller

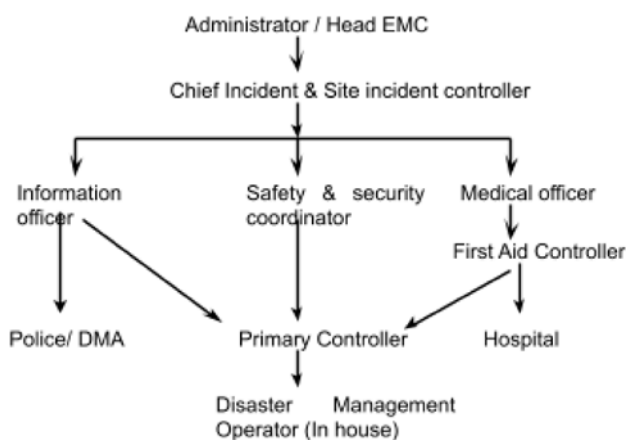


Figure 58. Emergency Management Cell teams outline

7.8. Role of External Agencies During Emergency

It is expected that the following roles shall be performed by various agencies:

Nearest Hospitals: Shubham Hospital-1.14 km NWW, Balaji Hospital- 1.16 Km NW of UTP, Tondare Hospital- 1.21 km SW, Jivdani Hospital- 1.29 km SW

Airport Facility: About 41.70 km S , is CSIT Airport

8. Project Benefits

After installation of the Funicular the following benefits to the local people/ pilgrims of the area is envisaged:

Tourists

- Save time & energy,
- Convenient to children, old, ladies, infirm.
- Tedious climb reduces efficiency for a week
- Physical fatigue distracts from basic aim

Local Community:

- Increased income for the tourism sector.
- Development of transportation and civic amenities.
- Direct & indirect employment.
- Benefit from company Social activities.

8.1. Employment potential –skilled; semi-skilled and unskilled

The project would require local people, who are accustomed to living under the existing conditions, for skilled / unskilled activities in the course of construction and operations of the project. The project will provide direct and indirect employment opportunities to the local people hence improving their status of living.

8.2. Tangible benefits

1. **Safety & Comfort:** Funicular System will provide a more safe and comfortable journey to the pilgrims. Old people can also reach Funicular with an alternative mode of transport to Jivdani Devi Mandir as the funicular system will provide a more convenient way to reach the Temple, thereby handling the capacity of the existing temple increases.
2. **Monitoring:** With the Funicular in place, the concerned officials would be able to take up monitoring of the environment and weather conditions in the surroundings more frequently and at regular intervals with ease.
3. **Traffic Regulation:** The area being less visited due to less infrastructure availability is likely to increase no. of visitors with the introduction of this Funicular system. Hence even in the peak season and traffic

concentration/dispersion at different times of the year, the Passenger Funicular System (Ropeway) will overcome these constraints efficiently and cost effectively. The proposed Funicular will provide better transportation means without requiring much space for stations/terminals.

4. **Corridor Pollution:** Funicular provides a stable and consistent alternative to road & combination transport and thus, there will be reduced pollution. With the Funicular in place, human intervention would be restricted to terminal stations only and the corridor would remain largely undisturbed and unpolluted.
5. It Provides High transport capacity for passengers and cargo
6. The travel time to reach the temple will reduce from 45 minutes to 3 minutes.
7. Amongst the safest means of transport. Rails are secured to the track substructure with special rail fasteners and hydrostatic auxiliary or emergency drives ensure that the vehicles can be safely brought back to the stations in the event of a failure, such as a power outage.
8. Long service life and high operational efficiency

8.3. Improvements in the physical infrastructure

Infrastructure development or facilities like bio-toilets, drinking water, sewage treatment, solid waste management, medical facilities, etc. will be helpful in maintaining the beauty as well as ecology of such alluring places. And, the medical facilities will help the casualties caused to be addressed on time & in a proper way.

8.4. Improvements in the social infrastructure

The Proposed Project will increase the Socio-economic scenario of the area. It will be ensured that matters like Safety/ Security, Traditional Customs and beliefs are not altered.

9. Environmental Cost Benefit Analysis

As per EIA Notification 2006, Chapter 9 i.e. Environmental Cost Benefit Analysis to be prepared if recommended at the Scoping Stage.

However, during the Scoping Stage, no such conditions are mentioned in the TOR letter.

10. Environment Management Plan

10.1. Introduction

The Environment Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all stakeholders including the project proponents, contractors and subcontractors, including consultants, understand the potential environmental risks arising from the proposed project and take appropriate actions to properly manage that risk. Adequate environment management measures need to be incorporated during the entire planning, construction and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area.

The Environment Management Plan presented below will be followed and regular monitoring of relevant parameters as stated in post – project monitoring schedule will be carried out. The Environment Management Plan will be proactive in nature and will be upgraded if new facilities or modification of existing facilities, with environmental concerns, come up at a later stage.

10.2. Organizational Role and Responsibility

Shree Jivdani Devi Sansthan, Virar understand the responsibility to operate the Funicular System (Ropeway) properly with respect to the Environment and the Health and Safety of its employees and the other people who are associated with the project and maybe get affected by the activities and to conduct the operations of the proposed Funicular System (Ropeway) with proper protection and safety to the environment.

Management Policy

The company will have a written policy for the Safety, Health and Environment Management. Through this policy, the company management commits itself to the following objectives.

- Meet all the relevant laws, regulations and international agreements

- Conduct its activities safely, protecting the health of all employees and the products users
- Reduce the adverse environmental impacts to a practicable minimum at an acceptable cost to the company and society
- Encourage continuous improvement in safety, health and environment performance.

Environment Management

- Periodic review of environmental status;
- Implementation and maintenance of green buffer areas;
- Review of STP and maintenance of DG Set and Solid & Hazardous waste;
- Monitoring of collection and treatment of waste;
- Compliance to conditions stipulated in Environmental Clearances (EC) and consents;
- Implementation of EMP;

Social Management

- Undertake continuous engagement with local community;
- Address grievances of the complex, local community and residents.

10.2.1. Role of Project proponent (Top Management)

Shree Jivdani Devi Sansthan, Virar will have ultimate responsibility for implementing the provisions of the EMP. This will include the management of environmental impacts, monitoring of contractor performance as well as development of mechanisms for dealing with environmental problems. The proponent will also ensure that the activities of its contractors during the construction phase are conducted in accordance with Good practice measures, implementation of which will be required through contractual documentation. In order to facilitate this, the regular site inspections and their noting will be documented by the PP/Contractor. The organisational structure is presented below:

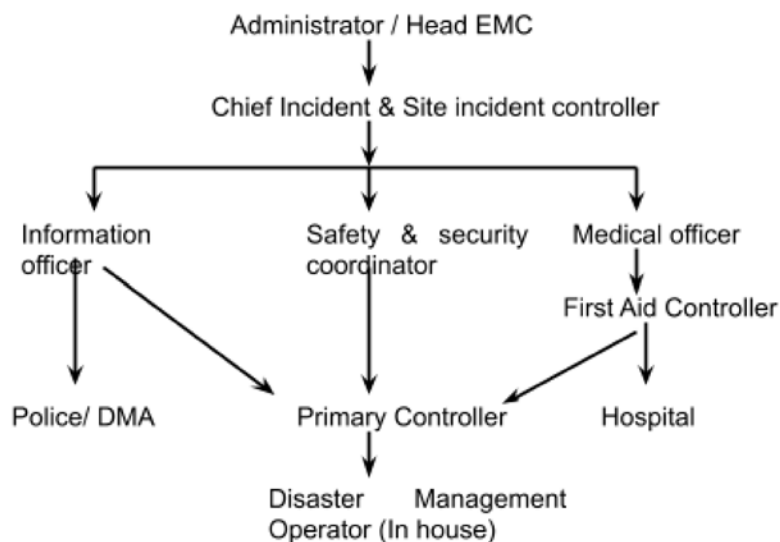


Figure 59. Environment Management Cell

10.2.2. Role of Contractor

Contractors will also be expected to demonstrate commitment to the environmental monitoring programs at all levels in the contractor's management structure. It will be ensured the following:

- The Contractors involved in the project will be responsible for implementation of and adherence to, all the mitigation measures outlined in the EIA;
- Appropriate experienced and qualified personnel are employed as the Contractor's Environmental Manager
- All the environmental incidents to be reported to the Shree Jivdani Devi Sansthan, Virar at the earliest;
- To maintain records of all the inspection conducted;
- A program of regular self-inspection and audit will be developed and implemented and results reporting will be done to the Shree Jivdani Devi Sansthan, Virar EHS team on a regular basis.

10.2.3. Inspection, Monitoring and Audit

This will increase the effectiveness of the EMP. Through this process Shree Jivdani Devi Sansthan, Virar will ensure the conditions stipulated in the Environmental Clearance (EC), Consent to Establish (CTE), Consent to Operate (CTO) etc are complied with. The Audit will be conducted by the team for the implementation of the management system. The entire process of inspection and audit will be documented and findings of the above will be implemented by the Proponent

10.2.4. Monitoring, Reporting and Documentation

- Reporting of environmental, health, safety and social performance reports or check list, incident record register etc. will be developed and implemented through a program of reporting and reviewing throughout the project.
- Reports from inspection, audits and other improvement program will be regularly communicated;
- All complaints and enquiries will be addressed with records maintained in an assigned register by the safety officer of each contractor;
- Internal and external reporting mechanisms will be developed, internal reporting will comprise the concerned officials from the Environment management team, the representatives of the contractors and the top management of Project Proponent.
- The internal reporting will be undertaken on quarterly basis while the external reporting will be undertaken half yearly.
- Annual environmental report known as 'Environment statement' as per FORM V of the EPA Rules, 1986, six monthly compliance reports as per EC of MoEFCC, compliance reports as per CTE/CTO etc. will be submitted to the regulatory authorities.

All the above reports will be documented in the documentation system as per the requirement of MoEFCC and other relevant regulatory authorities.

10.2.5. Internal Monitoring, Reporting and Communication

The EHS head will be responsible for the internal monitoring. Inspection and audit findings along with the improvement program will be reported to the senior management regularly. Records should be maintained for regulatory, monitoring and operational issues.

10.2.6. Documentation

It is the most important step in the implementation of the Environment Management plan. Shree Jivdani Devi Sansthan, Virar will have a well established record keeping and management system as per the requirement. Responsibilities will be assigned to the relevant personnel ensuring that the EMP documentation and records are maintained. Typical record keeping requirements for the proposed project is summarized below.

- Master Environment Management System document
- Legal register

- Operation control Procedures
- Work Instructions
- Incident reports
- Emergency preparedness and response procedure
- Training records
- Monitoring reports
- Audit reports
- Compliance Report
- Safety Committee meeting record.
- Complaints/Suggestions register and issue attended/closed
- Solid Waste and Hazardous waste generation, Handling and Disposal
- Quantity of wastewater and Treated water generated and its quality
- Survival rate/ratio of the Trees planted.
- Environmental Permits / Consents from MOEF
- Employee environmental, health and safety records
- Equipment inspection and calibration records, where applicable
- Vehicle maintenance and inspection record

10.2.7. EMP Review & Amendments

The EMP will be reviewed periodically to update it addressing any changes in the organisation, process or regulatory requirements. The EHS Head will have all the mandate for coordination of the actions required for environment mitigation and management and monitoring the progress of the proposed management plans and various action plans to be implemented for the project

10.3. Environment Management Plan

An Environment Plan has been developed following the identification of impacts and mitigation measures. The mitigation measures suggested will be as according to the monitoring schedule.

The EMP includes the following:

- Mitigations suggested for adverse environmental and social impacts and associated risks;
- Personnel responsible for implementing the mitigation measures at various stages of the project;
- The mitigation measures suggested in Chapter 4 would be implemented. This will reduce the impact on the environment due to the project activities. To facilitate easy implementation, the recommendations suggested are grouped in different phases.

10.3.1. Environment Management Plan during Construction Phase

Table 77. EMP- Construction Phase

S. No.	Parameters	Mitigation Measures
1.	Air Environment	- Water sprinkling shall be done at the location where dust generation is anticipated. - No excavation of soil shall be carried out without adequate dust mitigation measures in place. - No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered. - Sprinkling shall be done every hour by a fixed sprinkling system. - Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited - Only covered vehicles carrying construction material and machinery and waste shall be permitted. - Construction and Demolition Waste processing and disposal sites shall be identified and required dust mitigation measures be notified at the site. - To minimize the occupational health hazard, proper masks shall be provided to the workers who are engaged in dust generation activity. - DG set of capacity 1 x 125 kVA shall be provided with adequate stack height.
2.	Water	- Total 3 KLD of water shall be required during the construction phase for domestic purposes of labours and construction activities which shall be sourced through tankers water supplier. - Domestic wastewater generated from labours will be discharged to a septic tank followed by a soak pit. - During the construction period, runoff from the construction site shall not be allowed to stand (water logging) or shall not be allowed to flow down the hill or enter into the roadside. Construction of site boundary silt fences for both LTP & UTP to avoid soil runoff. Construction of storm water drainage line to divert storm runoff to catchment tank. The runoff shall be collected to the maximum extent possible & shall be treated for reuse in sprinkling & curing activities.
3.	Noise	During the installation stage, expected noise levels shall be in the range of 80-100 dBA, which will decrease with increase in distance. Hence all the activities shall be carried out during the day time.

		• There will be some noise generation due to movement of vehicles carrying materials during the installation phase and as this is only a temporary phenomenon it can be managed by properly regulating the movement of vehicular traffic so that the ambient air quality with respect to noise is not adversely affected. • To prevent any occupational hazard earmuffs/earplugs shall be given to the workers working around or operating plants/ machinery emitting high noise levels. Use of machinery shall be strictly prohibited during night hours. Careful planning of machinery operation and scheduling of operation shall be done to minimize such impact. • Manual cutting & drilling operations may be followed for excavation of site to avoid noise & vibration generation. • Temporary noise barriers shall be provided around the construction area so that the noise generated due to construction machineries & activities can be suppressed.
4.	Solid Waste Management	• Approx. 12 kg/day of Municipal Solid waste shall be generated from labors, which shall be sent to solid waste/landfill site.. • The debris of construction material shall be used in backfilling, roads etc. & rest shall be disposed off to C&D facility as per C&D Waste Management Rules, 2016.
5.	Soil Management	• Excavation during pillar foundations & building foundation will lead to generation of excavated soil. To minimize the problem of reduced rock stability, landslides, etc. no blasting will be done, instead, the foundation will be dug manually with the help of drillers, chained excavators and manual stone cutting. The excess soil generated due to foundation excavation shall be used as a raw material in construction & top soil shall be preserved for & used for landscaping near UTP and LTP & along the corridor, wherever possible.

10.3.2. Environment Management Plan during Operation Phase

Table 78. EMP-Operation phase

S. No.	Parameters	Mitigation Measures
1.	Air Environment	• Although the Funicular System (Ropeway) operation is an environmentally friendly non-polluting transport system, the main source of pollution will be the machineries, DG sets and the dust emissions due to human traffic. • DG sets of capacity 1 x 500 kVA and auxiliary DG of 1 x 25 KW is proposed for backup power supply. These D.G. Sets

		will be provided with proper stack height as per the CPCB norms.
2.	Water	Waste water generated will be treated STP which will be installed at LTP. The total water requirement has been estimated as during Normal days -43 KLD and Festive days -164 KLD. Fresh water requirements will be met by VVMC. Rest of water requirement will be met by reusing treated water generated from Sewage Treatment Plant of capacity 165 KLD (MBBR Technology).
3.	Noise	- Acoustically enclosed DG Sets will be bought to reduce Noise emission. The system will be operated mainly on electricity provided by Grid. DG sets will be used as a stand-by only at the time of power failure. DG sets shall be installed on proper vibration pads to avoid vibration impacts. - The normal ropeway operations are always lower than 50 dB (A) of noise level. Proper maintenance of the Funicular System (Ropeway) during the operational phase will be done to ensure low or no noise and environmental impacts.
4.	Waste Management	- During normal days-350 Kg/day & during festive days-1400 kg/day of organic waste will be generated which will be treated in an Organic Waste Converter converted into compost. - During normal days-150 Kg/day & during festive days- 600 kg/day of recyclable waste will be given to the approved recycler. - Used oil whenever generated will be sent to authorize hazardous waste disposal authority.
4.	Socio-Economic Management Plan	The project would require local people, who are accustomed to living under the existing conditions, for skilled / unskilled activities in the course of construction and operations of the project. The project will provide direct and indirect employment opportunities to the local people hence improving their status of living.
5.	Wildlife Conservation Plan	- Through secondary surveys there are a total 15 schedule I species are found in the buffer zone. Following Conservation measures will be adopted - Awareness generation meeting with local people - Habitat Improvement program for birds and mammals - Plantation along the roadside of the villages - Plantation of tree grooves within the study area - Pasture development in the study area
7.	Tree Cutting and Plantation	A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint forest management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are

		already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar.

10.4. EMP Implementation Budget

Table 79. Environment Management Plan & Budget- Capital & Recurring Expenditure

S. No	Description	Capital Cost (Rs. In Lacs)	Recurring Cost (Rs. in Lacs/Year)
1	Landscaping	5	1
2	STP Water treatment	80	6
3	Solar Panel, D.G. set Stack	10	1
4	Solid Waste Management/ OWC	40	1.8
5	Environmental Monitoring	0	3
6	Social Activities	64	-
	Total	199 lacs	12.8 lacs/Yr

As per Office Memorandum of MOEF F.No.22-65/2017-IA.III dated 30th September 2020, deliberation on the commitments made by Project Proponent for Environment Clearance in lieu of Corporate Environment Responsibility (CER). It is directed that all the activities proposed by the Proponent shall be a part of the Environment Management Plan.

Social Activities:

Table 80. Social activities proposed by company in different villages

Sr. No.	Provisions	Activity	1st Year	2nd Year	3rd Year	Total (Lakhs)
1	Medical facility	Providing a well equipped ambulance facility for the people of Nalasopara village.	25	2	2	29
2	Group Marriage	Development of marriage halls in different villages of Palghar district.	5	12	8	25
3	Sports	Organizing sports meets for the employees and villagers of Vasai every year.	1	2	3	6
4	Afforestation	Beautification of Jivdani hills by planting native species and providing facility for watering of plants by use of excess treated water generated from their STP.	1	1	2	4
Total			32	17	15	64

				lakhs

10.5. Rehabilitation & Resettlement Plan

There will be no displacement or immigration of the human population due to the proposed project hence R & R plan is not envisaged as no human habitat exists at the planned stations area & track for the funicular system.

11. Summary & Conclusion

11.1. Project Description

The proposed project titled “Jivdani Passenger Funicular System (Ropeway)” shall be developed at Village-Virar, Tal- Vasai, District-Palghar, Maharashtra- 401305 by Shree Jivdani Devi Sansthan Virar, which is a Special Purpose Vehicle (SPV) incorporated under the Companies Act for implementation and operation of Jivdani Passenger Funicular System (Ropeway) at Shree Jivdani Devi temple, at S. No. 398, Virar -E, Virar, Maharashtra in order to promote tourism & model shift to transit and reduction in traffic congestion in the region.

The project falls under item 7 (g) of the EIA notification, 2006 and its amendments. The project lies at 4.4 km E from Notified Tungareshwar Wildlife Sanctuary and 2.5 km from the Notified ESZ of Tungareshwar Wildlife Sanctuary as per Gazette notification dated 11th September 2019 vide S.O. 3250(E) under Wildlife Protection Act 1972, hence, General conditions are applied and the proposal is considered as category ‘A’.

The project was granted Terms of Reference vide letter no. **F. No. 10-46/2019-IA-III dated 3rd December 2019** by MoEFCC.

11.2. Description of the Environment

Study Period: Monitoring was carried out in the **Summer Season** (March 2019-May 2019).

Ambient Air Quality: All the sampling locations PM_{10} , CO, SO_2 , NO_2 , & $PM_{2.5}$ values are within the limits of National Ambient Air Quality Standards. As per the Air Quality Index by CPCB the air quality of the buffer zone is found to be good to Satisfactory.

Ambient Noise Quality: The noise level ranges from 53.4-57.5 dB (A). At the site N6 & N7 the values are slightly higher than the standard limit of residential area that is ~55 dB(A) due to regular vehicular movement at connecting roads & market area. During the night, the noise level at all the residential sites were recorded between 46.9 dB (A) – 47.3 dB (A) which is exceeding the standard limit of residential area that is ~45 dB(A). The noise level of NH-8 is 67.6 dB(A) at day time and 60.3 dB(A) at night time while at N8 (Approach road) it is 58.2 dB(A) which is

exceeding the standard limits of commercial area at day and night that is ~ 65.0 dB(A) and ~ 55.0 dB(A) due to increased vehicular movement.

Groundwater Quality: The ground water quality parameters of all the sampling locations are well within the drinking water standards (IS:10500) except at Location W7. Thus, the water quality of the study area is fit for the consumption.

Surface water Quality: The surface water quality of the collected sampling locations was found in compliance with the Class “D” i.e. Propagation of Wildlife and Fisheries as per CPCB surface water quality- Designated Best Use Water Quality Criteria.

Soil Quality

The colour of the soil is reddish brown to blackish brown, pH ranges from 6.5 to 7.4. Amount of primary nutrients like Organic matter 0.5 % to 2.2 %, the Available Nitrogen 33.6 mg/kg to 60.2 mg/kg that is low in range, the Available Phosphorus 6.2 mg/kg – 27.1 mg/kg is medium to high in range, Available Potassium 10.4 mg/kg to 32.1 mg/kg that is low in range. Primary nutrient profile shows that soil is average fertile due to the availability of low amounts of nitrogen, available potassium.

Biological Environment

Endangered Species: There are 15 Schedule 1 Species present in the study area named as *Hemidactylus maculatus*, *Psammophilus blanfordianus*, *Python molurus*, *Varanus bengalensis*, *Panthera pardus*, *Moschiola meminna*, *Tetracerus quadricornis*, *Athene brama*, *Glaucidium radiatum*, *Gracula religiosa*, *Gyps bengalensis*, *Gyps indicus*, *Ictinaetus malaiensis*, *Ocyrceros griseus* & *Pavo cristatus*.

Socio-economic Environment: This area is moderately developed with well connectivity of roadways, proper drinking water facility available for the villagers. amenities like schools and sanitation facilities available for the villagers and market are easily accessible with good transportation facilities. Most of the people depend on agricultural activities like fishing and farming for their livelihood. The well developed roads in the area directly connect the villages with the cities which made easy access to schools, hospitals and markets. The availability of industries in the areas provides employment opportunities to the local people which increase the income and lead to better lifestyle of the people.

11.3. Anticipated environmental impact and mitigation measures

Air environment

During the installation phase, impacts on ambient air would be mainly due to dust emissions and movement of vehicles. However, these impacts would be short term in nature and limited only to the construction period. Dust suppression systems (water spray) will be used. Construction materials shall be fully covered during transportation to the project site by road.

During the operational phase, To prevent emissions, DG set will be installed with appropriate stack in accordance with CPCB norms and to avoid emissions from process pollutants. Plantation will be done all along the roadside.

Water Environment

During the installation period, Total 3 KLD of water shall be required during the construction phase for domestic purposes for labours and 2 KLD for construction activities which shall be sourced through tankers water supplier & STP treated water respectively. Domestic wastewater generated from labours will be discharged to a septic tank followed by a soak pit

During the Operation Phase: Waste water generated will be treated in STP which will be installed at LTP. The total water requirement has been estimated as during Normal days is 43 KLD and Festivedays is 164 KLD. The freshwater requirements will be met by VVMC. Wastewater generated will be treated in the Sewage Treatment Plant of capacity 165 KLD (MBBR Technology). All the treated water shall be reused. Thus it will be a Zero Liquid Discharge (ZLD) project.

Land Use and Soil quality

The project lies in the reserve forest area. The Boundaries of the forest area - North, East, West, & South are defined by reserved forest survey no. 398 of village Virar. The total land of 1.95 Ha has been transferred by Forest Department to Shree Jivdani Devi Mandir Trust, Virar vide letter no. कक्ष - १ /२०/जमीन /६३५७ dated 1.02.2005. Total 4866.43 m² is to be used for Funicular out of 19500 sq. m land which is converted from forest land to non-forest land by the forest department in favour of Shree Jivdani Devi Mandir Trust, Virar. The diversion of forest land has been carried out as per the guidelines of the Forest (Conservation) Act, 1980. A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint forest management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the

temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar. The excavation shall only be done to provide foundation and column foundation. The excavated soil & rocks shall be reused to the extent possible. Top soil shall be used in Landscaping. The remaining excavated soil and stones shall be utilized in re-filling of foundation, road works, etc.

Noise Levels

DG set of 1 x 500KVA for main power and 1 x 25 KVA for auxiliary backup are proposed. These D.G. Sets will be acoustically enclosed. DG sets will be used as a stand-by only at the time of power failure. Regular maintenance will be carried out for the Funicular System (Ropeway). Regular maintenance of equipment will be done. Equipment generating noise will be provided with a noise shield.

Solid and Hazardous Waste

During installation phase: Approx. 12 kg/day of Solid waste will be generated from laborers which will be sent to solid waste/landfill sites (organic waste) & Approved recycler (non-Biodegradable waste).

During Operation Phase: During the operation phase, 350 kg/day of Biodegradable waste generated during normal days and 1400 kg/day during festival days will be treated in Organic Waste Convertor to get converted to manure. It will be used for horticulture purposes. No disposal of the waste on land and to the nearby rivers will be done. Used oil generated from the DG sets will be sent to registered recyclers for hazardous waste authorized by CPCB.

Flora and fauna: The total land allotted to Shree Jivdani Devi Sansthan, Virar is about 1.95 ha out of which 4866.43 m² area will be used for the Funicular system. The route falls within a Forest land for development of terminal stations & line columns for the proposed project. The diversion of forest land has been carried out vide letter no. कक्ष - १/२०/जमीन/६३५७ dated 1.02.2005 for various activities. No tree shall be cut for the proposed project. A micro plan was approved by the Thane Forest Division for the rehabilitation of degraded forest areas under joint forest management around Shree Jivdani Temple at Virar. As per the microplan at least 500 ha of degraded forest area around the temple shall be rehabilitated through Joint Forest Management as envisaged in the State Govt. Resolution. Around 2 Lakh trees are already grown for the same purpose and are taken care of by the Shree Jivdani Devi Mandir Trust, Virar. Proper noise control measures shall be adopted during the construction phase to ensure minimum or no disturbance to the fauna of the area.

Socio-economic environment: No rehabilitation and resettlement are required. Employment opportunities will be generated for the local population during the construction/installation phase. Job opportunities for local people will be generated.

11.4. Environmental Monitoring Programme

Shree Jivdani Devi Sansthan, Virar will ensure that the environmental performances of all the activities are monitored throughout the execution of the various project activities. Monitoring will include all the aspects and parameters related to the emissions from the DG set, storage area, quantities of waste generated, effluent generation and its characteristics, Environmental quality of components like Air, water, Soil, Noise are being verified that they meet the prescribed standards. Occupational health and safety monitoring will include Effective Health and safety management of the workers engaged, reporting of all the incidents during the installation and operation phase. All the reports will be periodically submitted to the concerned regulatory authorities as compliance, audit reports.

11.5. Additional Studies

Funicular System (ropeway) is liable to suffer from environmentally induced threats, risks and hazards as well as human -caused occurrences. Natural disasters include earthquakes, landslides, rock falls, storms, lightening etc. and human caused occurrences include fire, electrical faults, security threat, technical failures may include rope with broken wires in service, drive / return sheave shaft failure / tension system failure, mount assembly parts failure, over speeding of Funicular System (Ropeway)/ brake failure, rollback, slippage / fall of cabin, entanglement of cabin, swinging of cabin resulting in fall of material outside cabin, cabin derailment at station etc.

Natural Occurrence- The project site is located in seismic zone III which indicates moderate damage risk zone.

Human Caused Occurrences- Fire can mainly be caused due to electric spark in the electrical room, fire in the surrounding forest area, fire in fuel storage places, etc. The Funicular System (Ropeway) will run on electricity & hence electrical current can pass through cable cars & wires due to inadequate insulation or accidentally. The technical failures can cause risks to people working in the area during the construction phase. Consequences of the discussed hazards may result in an accident. War, crisis & terrorists can cause panic among the public and staff.

General Safety measures include:

- Back-up Generators – In the event of a primary engine failure, secondary diesel generators are typically available to continue operation.
- Secondary Bearing System – The main bull wheels in each terminal may have a secondary set of bearings in the event of primary bearing failure.
- Tire Conveyor Redundancy – Both the accelerator and decelerator conveyors have secondary lines with separate power in the event of a primary failure.
- Recovery concept -If secondary power fails and on-line rescue is required, comprehensive evacuation guidelines are implemented and carried out by specially trained personnel. The form of the evacuation depends on lift type and site conditions.
- In order to enhance system reliability, besides the electric main drive unit (AC motor), two independent hydrostatic emergency drive units allow for operation of the system at a reduced capacity and in emergency cases for each section.
- A hydraulic emergency drive will be installed for each section in case of a power failure back to a station. The sections can be separated at every moment to allow independent movement of every section.
- The detachable system features friction sheaves at the incoming and outgoing sides of the stations. These sheaves transmit the speed of the rope via double V-belts to the conveyors which transport the carriers through the stations. This configuration ensures positive control and synchronization of rope speed and carrier conveying speed in each station in both forward and reverse directions, irrespective of the drive selected.
- Key functions of the Funicular System (Ropeway), such as rope speed and grip opening and closing operations, are monitored and controlled by electronic safety circuits in order to ensure smooth operation and maximum safety.
- Fixed rope tensioning is achieved by two hydraulic cylinders in the tensioning terminal for each rope loop.

11.6. Project Benefits

The benefits due to the proposed project are given below:

- Passenger Funicular system (Ropeway) with approved international code of practice, provides more safe transportation of materials.
- It will provide a more convenient way to reach the Temple, thereby handling the capacity of the existing temple increases.
- It provides a stable and consistent alternative to road & combination transport and thus, there will be reduced pollution.

- The project has been planned to be “PLASTIC-FREE ZONE” for conservation of forest area and water body. Noise and air pollution will be reduced after the operation of the system.
- The project would require local people, who are accustomed to living under the existing conditions, for skilled/unskilled activities in the course of construction and operations of the project. The project will provide direct and indirect employment opportunities to the local people hence improving their status of living.

11.7. Environment Management Plan

The effective management system involves proper and regular monitoring of the environment components for continual improvement. Based on the project descriptions and the activities associated, the Environment Management plan has been prepared for all the valued Components for which the Budget of Rs. 199 lakhs as capital cost & Rs. 12.8 Lakhs/year as recurring cost has been proposed by the Project Proponent. Environment Monitoring shall be carried out by the HSE department for the pollutants and dust. Records will be kept in standard Form Location for sampling shall be identified. Quarterly and half yearly monitoring will be done by 3rd party during the operation phase.

11.8. Conclusion

Thus, it can be concluded on a positive note that after the implementation of the mitigation measures and Environmental Management Plan, the normal operation of the project will have negligible impact on the environment.

12. Disclosure of Consultants Engaged

About Environmental Consultant

Perfact Enviro Solutions Pvt. Ltd, established by experienced environmental and related experts, provides specialized services in the field of Environment and Pollution Control for all types of Industrial, Construction, Nuclear Sciences, Biodiversity Mining, Aerial Ropeway and other related fields. Our transparent and professional approach, commitment to excellent quality and service, timely deliveries have contributed to create a name in the field of environment. We have a core group of highly qualified experts from various fields like Environment, Forestry, Chemistry, Civil Engineering, Geology, Social Sciences, Electronics and Telecommunication with rich and diversified experience in the field of environment and pollution control. Perfact Enviro Solutions Pvt. Ltd management, experience, excellence, professionalism and ultimate satisfaction has helped in achieving the heights of success in their specialized field of environment.

Core Team

Table 80. Core Team

Sr. No.	Name of the Expert	Qualification	Experience (yrs)
1	Mr. Praveen Bhargava, Managing Director	Pursuing Ph.D , M.Sc (Chemistry), M.Phil (Chemistry),	33
2	Mrs. Rachna Bhargava, Director & C.E.O	Pursuing PhD, M.Sc. (Environment Sc.) Advanced EMS Auditor	28
3	Mr. Nipun Bhargava	Pursuing Ph.D, M.Phil (Chem) M.Tech Chemical Engineering, B.E (Hons) Chemical Engineering	6
4	Prof. R. P. Mathur, Mentor	Ph.D	60
5	Dr Vinay Bhargava, Mentor	Ph.D	52
6	Mr. Santosh Pant, Director	M. Tech	42
7	Mr. U.S. Pandey, Director	B.Sc Engineering (Mining)	46
8	Mr. Rajiv Kumar (ex I.F.S)	M.Sc (Botany), A.I.F.C	34
9	Mrs. Akta Chugh, Director	M Sc Chemistry	14
10	Mrs. Rachna Dogra, Director	M Phil Chemistry	10

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

11	Dr. Anil Kumar	PhD(Chem)	40

ACCREDITATIONS OBTAINED

- ISO-9001:2015 Certification
- ISO-14001:2015 Certification
- QCI – NABET Scheme for Accreditation of EIA Consultant Organizations

Declaration by EIA Coordinator(s) & Experts Contributing to the EIA Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra by Shree Jivdani Devi Sansthan, Virar

I hereby declare that I was involved in the following EIA Report submitted to the **Ministry of Environment, Forest and Climate Change (MoEFCC) EAC** as **EIA Coordinator**. I further certify that the **data** given in this report is **true** and **correct** to the best of my knowledge.

EIA Coordinator: Mrs. Rachna Bhargava

Assistant to EC: Ms. Shipra Varshney

Period of Involvement: Jan 2019 - till date

Office Address: Perfact Enviro Solutions Pvt. Ltd.
5th floor, NN Mall, Mangalam Palace,
Sector – 3, Rohini, New Delhi – 110085

Table 81. Functional Area Experts- Category A

S. No	Function al Areas	Name of Expert(s)	Involvement (Period & Task)
1.	EIA Coordinator	Mrs. Rachna Bhargava	I had visited the site with the FAEs to assess the project site and the study area. Coordinated With the experts and prepared the impact assessment methodology. Identification and Prediction of the impact assessment, Formulation of the Environment Management Plan, Technical Review. Jan 2019- till date
2	AP	Mr. Nipun Bhargava	I had visited the site to assess the site conditions and the surrounding area. After assessing the Air pollution sources have prepared the Impact Mitigation measures and development of the Environment management Plan (EMP), Selections of Air Quality Monitoring stations. Jan 2019- till date

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

3	AQ	Mr. Nipun Bhargava	I had visited the site for the assessment of the sources and the emissions. After studying, calculated the model input data related to the proposed emissions and micrometeorology interpretation of modelling results and development of EMP. Jan 2019- till date
4	WP	Mr. Nipun Bhargava	I had visited the site to assess the water sources and its water quality in the study area. After studying the Water pollution sources have prepared the Impact report and suggested Mitigation measures, Selection of the water Monitoring stations and development of EMP. Jan 2019- till date
5	LU	Mr. Rajneesh Maurya	I was involved in the preparation of the Land Use report and identification of the impacts and suggested Mitigation measures, development of the EMP. Nov 2020- till date
6	EB	Mr. Rajiv Kumar	I had visited the site to collect the baseline status of Ecology and Biodiversity conditions in the core and buffer zone. With the help of the literature and the data collected during the site visit the report was prepared and related impact and mitigation measures and EMP was prepared. Jan 2019- till date
7	SE	Mrs. Rachna Bhargava	I had visited the site to collect the baseline status of socio-economic conditions up to 3 km radius. Studied Villages in study area using Topographical map and extracted Secondary data from Census of India. Then was involved in preparing a socio economic study report using the primary survey and secondary data which includes impact and mitigation measures. Jan 2019- till date
8	Noise	Mr. Praveen Bhargava	I had visited the site to assess the Noise sources and its quality in the study area. After studying the Noise pollution sources have prepared the Impact report and suggested Mitigation measures, Selection of the Noise Monitoring stations and development of EMP.

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			Jan 2019- till date
9	SHW	Mr. Praveen Bhargava	I had visited the site to assess the Solid waste sources and status in the study area. After studying the sources have prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date
10	RH	Mr. Nipun Bhargava	I had visited the site to assess the Risk associated and its Hazards in the study area. After studying the possible sources have prepared the Impact, risk report and suggested Mitigation measures and development of EMP. Jan 2019- till date
11	HG & Geo	Mr. Santosh Pant	Evaluated the data collected from the site visit team to assess the Hydrology and Geology status in the Study area. After studying, I prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date
12	SC	Mr. Praveen Bhargava	I had visited the site to assess the Soil Quality in the study area. After studying the possible sources have prepared the Impact report and suggested Mitigation measures and development of EMP. Jan 2019- till date

Table 82. Functional Area Associates (FAA)

S. No	Functional Areas	Name of Expert(s)	Involvement (Period & Task)
1	AQ	Ms. Parul Badalia	Assisted FAE in the calculation of proposed emissions and micrometeorology interpretation of modelling results and development of EMP. Jan 19-till date
2	EB	Ms. Parul Badalia	Assisted FAE in Preparation of EB report with Conservation Plan & reviewed the secondary data w.r.t to conservation plan. Identified impact and suggested mitigation for the impact identified.

Jivdani Passenger Funicular System (Ropeway) at Virar, Maharashtra
by Shree Jivdani Devi Sansthan, Virar

			Jan 19-till date



SCHEME FOR ACCREDITATION OF EIA CONSULTANT ORGANIZATIONS

NATIONAL ACCREDITATION BOARD FOR EDUCATION AND TRAINING



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Accredited EIA Consultant Organisations (as on March 08, 2021)

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SL. No.	Name and Address EIA Consultant Organization	Scope of Accreditation				Downloads
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments	
		Sector Number	Name of Sector	Category		
1	Perfact Enviro Solutions Pvt. Ltd. Address: 5th Floor, NN Mall, Sector – 3, Rohini, New Delhi - 110085 Email: info@perfectgroup.in; Tel: 011 – 49281360, 09871591330 Remarks: *Conditions apply	1	Mining of minerals including open cast/ underground mining	A	1 (a) (i)	
		4	Thermal power plants	B	1 (d)	
		7	Mineral beneficiation including pelletisation	A	2 (b)	

8	Metallurgical industries (ferrous & non-ferrous)	B	3 (a)
9	Cement plants	A	3 (b)
15	Leather/skin/hide processing industry	A	4 (f)
19	Manmade fibers manufacturing	B	5 (d)
21	Synthetic organic chemicals industry (dyes and dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	A	5 (f)
22	Distilleries	A	5 (g)
25	Sugar Industry	B	5 (j)
28	Isolated storage & handling of hazardous chemicals (As per threshold planning quality indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	B	-
29	Airports	A	7 (a)
31	Industrial estates/ parks/ complexes/ Areas, export processing zones(EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	A	7 (c)
32	Common hazardous waste treatment, storage and disposal facilities(TSDFs)	B	7 (d)
32 A	Bio-Medical waste treatment Facilities	B	7(da)
35	Aerial ropeways	A	7 (g)

Certificate No.:

NABET/EIA/1922/RA 0184

Validity: 05/27/2022**Validity Extension Letter****No.:** NA**Validity:**NA

Human Resource

36	Common Effluent Treatment Plants (CETPs)	B	7 (h)
37	Common Municipal Solid Waste Management Facility (CMSWMF)	B	7 (i)
38	Building and construction projects	B	8 (a)
39	Townships and Area development projects	B	8 (b)

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EDS details related with Proposals					
Sno.	Proposal No.	Essential Details Sought by MS	Copy of Essential Details Sought letter	Sought on(Date)	Query From (Member Secretary)
1	IA/MH/MIS/119943/2019	1. please specify status of Stage-1 Forest Clearance. 2. As per NGT order, the construction of facility amounts to violation. Please specify the status physical progress of facility since 2009.		04/04/2021	Infrastructure and Miscellaneous Projects & CRZ

S.No	Proposal Details		Location		Important Dates		Category	Company/Proponent	Type of project	* Attached File
1	Proposal No	: IA/MH/MIS/119943/2019	State	: Maharashtra	Date of Submission for TOR	: NA	INFRA-2	SHREE JIVDANI DEVI SANSTHAN, VIRAR	New	 (Down)
	File No	:	District	: Palghar	Date of TOR Granted	:				 (Down)
	Proposal Name	: Jivdani Passenger Funicular Ropeway	Tehsil	: Vasai	Date of Submission for EC	: 03 Jun 2021				 (Down)
										 (Down)
										 (auth/E)



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TimeLine Details**Proposal received date at each stage of flow.**

Submitted by Proponent	Query for Shortcoming(if any) by MS	Resubmission of Proposal by Proponent	Accepted by MS	Proposal considered by EAC	Minutes uploaded on	Additional Detail sought (if any) by MS	Replied by proponent	Delist/Relist	TOR Granted	EC Granted
18 Mar 2021	04 Apr 2021	N/A	N/A	N/A	N/A	N/A	N/A	Delisted : 05 May 2021	03 Dec 2019	N/A

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31st December, 2020

To,

1. The Chairman,
Maharashtra Pollution Control Board,
Kalpataru Point, 3rd & 4th Floor,
Sion-Matunga Scheme Road No.8,
Opp. Cine Planet Cinema,
Near Sion Circle,
Sion (East), Mumbai 400 022.
2. Mr. Ashok Shingare,
Member Secretary,
Maharashtra Pollution Control Board,
Kalpataru Point, 3rd & 4th Floor,
Sion-Matunga Scheme Road No.8,
Opp. Cine Planet Cinema,
Near Sion Circle,
Sion (East), Mumbai 400 022.

Sirs,

**Sub: Construction of Jivdani Passenger Funicular System (Ropeway)
at Shree Jivdani Devi Sansthan, Virar (East), District: Palghar.**

It has come to my notice that Jivdani Passenger Funicular System (Ropeway) at Shree Jivdani Devi Sansthan, Virar (East), District: Palghar was constructed on forest land which falls in Item 7(g) of the Schedule of the EIA Notification dated 14th September, 2006 by M/s. Yashita Automotive Engineering Pvt. Ltd. without getting any necessary environmental clearance. The construction was carried out in willful disregard of the Environmental Laws. The land used and environmental damage caused are exponentially high.

It appears that EC was applied for on 30th September, 2019 after making substantial progress of construction work and no EC has been granted till date. However, the construction is complete as on date.

In these circumstances, I filed an Application before Hon'ble National Green Tribunal, Principal Bench at New Delhi being O.A. No.100/2020 (WZ). The Hon'ble Tribunal has been pleased to pass an Order on 24th December, 2020 and posted the matter for further consideration on 12th March, 2021 after directing the MoEF&CC to furnish a report in this regard. The Hon'ble NGT will adjudicate the matter upon receiving the report.

LAW CHAMBERS OF SAMUDRALA

2, Rewa Chambers, 31 New Marine Lines, Mumbai 400 020
Tel: 91-22-22090909, Telefax: 91-22-22080404, Cell: 91-9820340180
E-mail: ussamudrala@gmail.com / samudrala_udaya@rediffmail.com

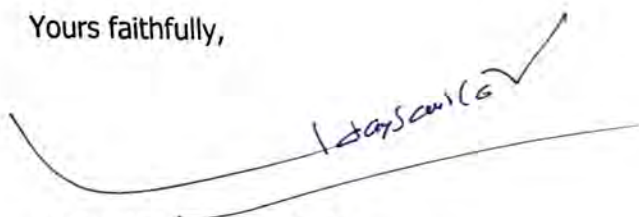
Hence, it is requested that the process of EC be stayed and remained in abeyance till the time the said Application is decided finally by the Hon'ble NGT after receiving the report of MoEF&CC.

A copy of the said Order is annexed hereto for your ready reference. This is for your kind information.

The said proceeding was reported in an article in the Business World, a copy of which has also been enclosed herein.

Thanking you,

Yours faithfully,

A handwritten signature in black ink, reading "Udaya Sankar Samudrala", is written over a horizontal line. The signature is slanted upwards to the right and includes a checkmark at the end.

Udaya Sankar Samudrala
Advocate, High Court Bombay

Encls: As stated above.

**REPRESENTATION BEFORE MAHARASHTRA POLLUTION
CONTROL BOARD IN RESPECT OF PROPOSED JIVDANI
PASSENGER FUNICULAR SYSTEM (ROPEWAY)**

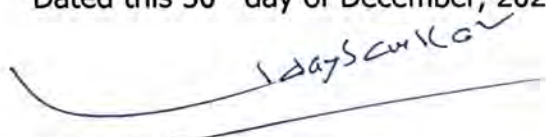
1. The project involves huge scale destruction of nature and forest land.
2. Blatant violations have been carried out in willful disregard of the Environmental Laws.
3. The project falls within Item 7(g) of the Schedule of EIA Notification, 2006.
4. The project does not have any environmental clearance.
5. The land used and environmental damage caused are exponential higher.
6. It appears that Sri Jivdani Devi Sansthan applied for environmental clearance on 30th September, 2019, after substantial progress was made to the Funicular System (Ropeway).
7. Sri Jivdani Devi Sansthan applied for environmental clearance on 30th September, 2019 in terms of reference annexed with the Application and it was mentioned that the said clearance is for future projects. (The intention is *mala fide*).
8. It is pertinent to mention that Sri Jivdani Devi Sansthan applied for environmental clearance after initiation of the project and the present public hearing is being held after the project is almost complete.
9. Construction of Funicular System (Ropeway) is initiated without obtaining a prior environmental clearance.



10. There is a non-disclosure of construction already made in the Application for environmental clearance and it amounts to material suppression.

11. If the environmental clearance is now given and if the project is allowed to be completed, much damage shall be caused to the forest land and the environment.

Dated this 30th day of December, 2020.



Udaya Sankar Samudrala
Advocate, High Court Bombay



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3rd February, 2021

To,

1. The Secretary,
Ministry of Environment, Forest & Climate Change,
Government of India,
Indira Paryavaran Bhawan,
Jor Bagh Road,
New Delhi 110 003.
2. The Member Secretary,
Infrastructure and Miscellaneous Projects & CRZ Committee,
Ministry of Environment, Forest & Climate Change,
Government of India,
Indira Paryavaran Bhawan,
Jor Bagh Road,
New Delhi 110 003.
3. Deputy Conservator of Forest (Central),
Ministry of Environment, Forest & Climate Change,
Government of India,
Regional Office, Western Region,
Kendriya Paryavaran Bhawan,
Link Road No.3,
E-5, Ravishankar Prasad Road,
Bhopal 462 016.
4. The Chairman,
Maharashtra Pollution Control Board,
Regional Office,
5th Floor, Office Complex Building,
Near Mulund Check Naka,
Wagale Estate,
Thane 400 604.

Sirs,

Sub: Construction of Jivdani Passenger Funicular System (Ropeway) at Shree Jivdani Devi Sansthan, Virar (East), District: Palghar.

Ref: Minutes of Public Hearing held on 30th December, 2020 in respect of proposed Jivdani Passenger Funicular System (Ropeway) at Shree Jivdani Devi Sansthan, Virar (East), District: Palghar duly circulated by the Regional Officer, Maharashtra Pollution Control Board.

I am the Applicant in Original Application No.100/2020 (WZ) filed before the National Green Tribunal, Principal Bench, New Delhi and I have to submit as under:

LAW CHAMBERS OF SAMUDRALA

2, Rewa Chambers, 31 New Marine Lines, Mumbai 400 020

Tel: 91-22-22090909, Telefax: 91-22-22080404, Cell: 91-9820340180

E-mail: ussamudrala@gmail.com / samudrala_udaya@rediffmail.com

It has come to my notice that Jivdani Passenger Funicular System (Ropeway) at Shree Jivdani Devi Sansthan, Virar (East), District: Palghar was constructed on forest land which falls in Item 7(g) of the Schedule of the EIA Notification dated 14th September, 2006 by M/s. Yashita Automotive Engineering Pvt. Ltd. without getting any necessary environmental clearance. The construction was carried out in willful disregard of the Environmental Laws. The land used and environmental damage caused are exponentially high.

It appears that EC was applied for on 30th September, 2019 after making substantial progress of construction work and no EC has been granted till date. However, the construction is complete as on date. It is pertinent to mention here that the entire construction was done without obtaining any EC.

In these circumstances, I filed an Application before Hon'ble National Green Tribunal, Principal Bench at New Delhi being O.A. No.100/2020 (WZ). The Hon'ble Tribunal has been pleased to pass an Order on 24th December, 2020 and posted the matter for further consideration on 12th March, 2021 after directing the MoEF&CC to furnish a report in this regard. The Hon'ble NGT will adjudicate the matter upon receiving the report.

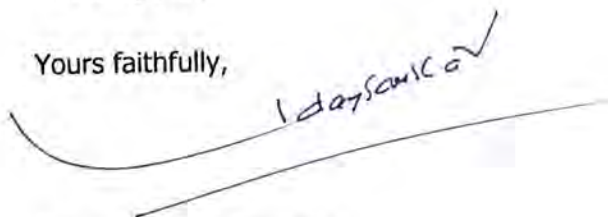
In the meanwhile the Maharashtra Pollution Control Board, Regional Office, Thane convened a Public Meeting on 30th December, 2020. Though I attended the meeting and took objection and I could not stay longer due to my pre-occupations and, therefore, I had submitted a Written Note which was sent vide my letter dated 31st December, 2020. Copy of my said letter along with the said Note is annexed hereto for your kind reference.

It is once again submitted that construction of the project cannot be commenced and completed without the grant of EC and in the present case the construction work was commenced and completed without any EC.

Therefore, appropriate and necessary may please be taken in this regards.

Thanking you,

Yours faithfully,



Udaya Sankar Samudrala
Advocate, High Court Bombay

Encls: As stated above.



//TRUE COPY//



Utkarsha Sharma <utkarshas046@gmail.com>

||Regarding seeking compliance with the order dated 24.12.2021 passed by the National Green Tribunal Principal Bench, New Delhi in Original Application No. 100/2020(WZ)||

Utkarsha Sharma <utkarshas046@gmail.com>

Fri, May 21, 2021 at 3:20 PM

To: secy-moef@nic.in

Sir,

I am the Advocate for the Applicant in the Original Application No. 100/2020 (WZ) pending before National Green Tribunal Principal Bench, New Delhi. Pursuant to the order dated 24.12.2021 passed by the Tribunal in the captioned matter, I am writing this email inquiring about the the status of the report to be furnished before the Tribunal by the Ministry regarding the action taken in the captioned matter. Please find attached the letter with specific details regarding the same.

Awaiting for your response to the attached letter.

Thank You.

--

Regards,
Utkarsha Sharma
Advocate
High Court of Delhi
(M) - 09977238101



Letter to Ministry_OA No. 100 of 2020.pdf

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Utkarsha Sharma <utkarshas046@gmail.com>

Regarding compliance with the order dated 24.12.2021 passed by the National Green Tribunal Principal Bench, New Delhi in Original Application No. 100/2020(WZ).

Utkarsha Sharma <utkarshas046@gmail.com>
To: secy-moef@nic.in

Fri, May 28, 2021 at 10:10 AM

Dear Sir,

I am the Advocate for the Applicant in the Original Application No. 100/2020 (WZ) pending before National Green Tribunal Principal Bench, New Delhi. In furtherance to the previous email, I want to bring to your kind notice the material breaches done by the Jivdani Devi Temple Trust and the continuous flouting of the environmental laws of the country every passing day. Please find attached the letter with specific details regarding the same.

I hope that your office would be pleased to take appropriate action on it.

Awaiting for your response.

Thank You.

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Regards,
Utkarsha Sharma
Advocate
High Court of Delhi
(M) - 09977238101



Letter to MoEF.pdf
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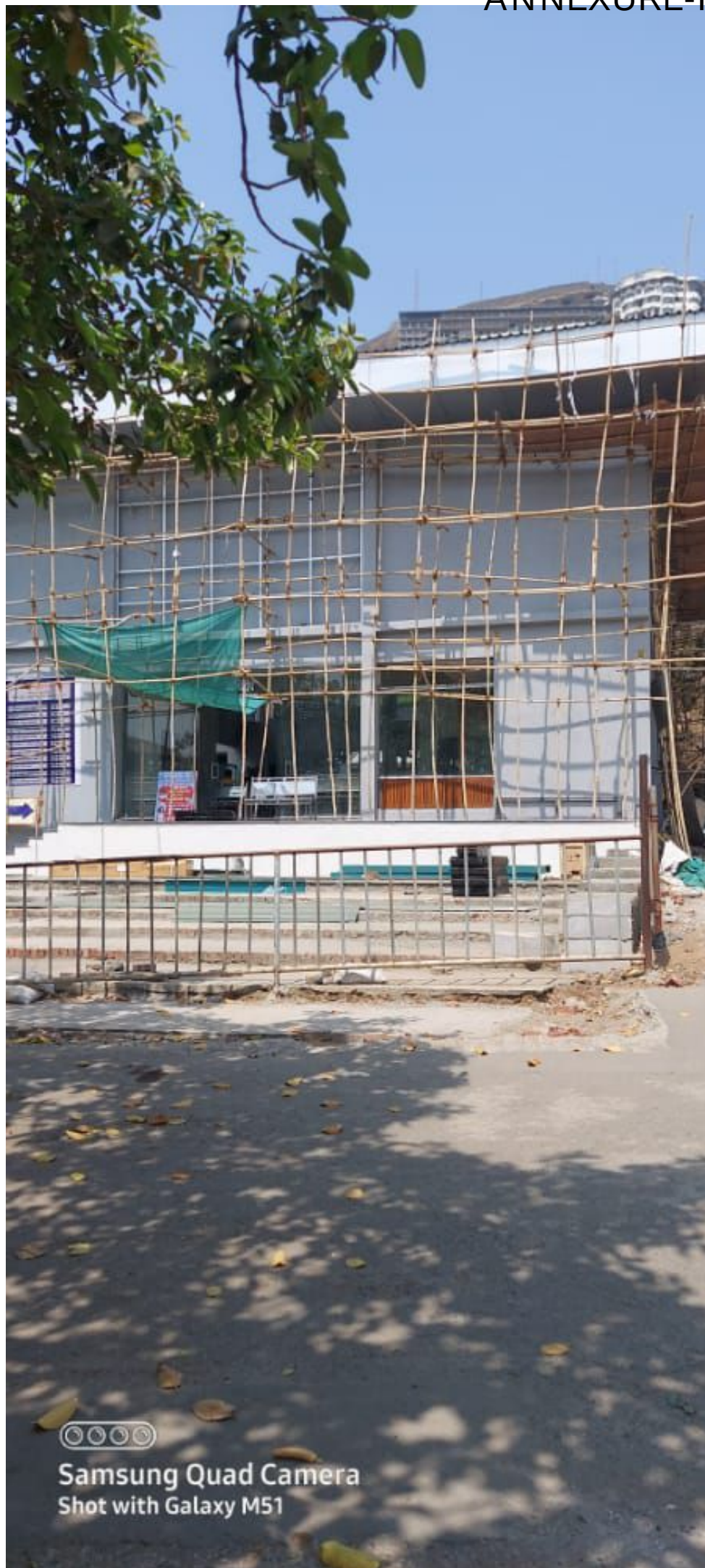
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ANNEXURE-G

श्री जीवदानी देवी संस्थान, विरार (मोदनी ग्राम ए-397, ठाणे)	
ला. वसई, जि. पालघर-401 305	
फोन नं. कार्यालय : 0250-2523696, 2523396, 2521777.	
चाली क. : 180840	दिनांक : 19/03/2021
नाम श्री/श्रीमती : AVINASH WAGHAMARE	
पता :	
विवरण	रुपये
DONATION	200.00
एकूट	200.00
अक्षरी क. Two Hundred Only	मिळाले
धनदेस क.	
टिप : 1. अक्षरेवारी वेळ सहाटे 4.00 वाजता.	
2. अक्षरेकारांचे संपन्न दरट तारी पुरविले जाईल.	
3. अक्षरे-सकाळी 5.30वा. दुपारी 12.00 वा. सायं 7.30 वा.	
E-mail : jivdanidtt@gmail.com	553
Website : www.jivdanidevi.com	12:52

Samsung Quad Camera
Shot with Galaxy M51

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Samsung Quad Camera
Shot with Galaxy M51



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Shot with Galaxy M51



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Utkarsha Sharma <utkarshas046@gmail.com>

Service Rejoinder in O.A.No.100/2020 Pending before NGT(WZ)

Utkarsha Sharma <utkarshas046@gmail.com>
To: advgupte@gmail.com

Mon, Jul 12, 2021 at 11:24 AM

Dear Sir,
Please find attached the Rejoinder in O.A.No.100/2020 Pending before NGT(WZ). Please acknowledge the receipt of the same.

Regards,
Utkarsha Sharma
Advocate
+91 9977238101



NGT_Rejoinder_Final_05.07.2021.pdf
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