

DEENDAYAL PORT AUTHORITY
(Erstwhile: DEENDAYAL PORT TRUST)



www.deendayalport.gov.in

Administrative Office Building
Post Box NO. 50
GANDHIDHAM (Kutch).
Gujarat: 370 201.
Fax: (02836) 220050
Ph.: (02836) 220038

CN/WK/1600 - A/ (EC & CRZ Clearance onwards - Muldwarka) /85

Dated: 05/07/2024

To,
The Director (Environment) & Member Secretary,
Gujarat Coastal Zone Management Authority,
Govt. of Gujarat,
Forest & Environment Department,
Block No.14, 8th floor,
Sachivalaya,
Gandhinagar – 382 010.

Sub: Development of Setting up of RoRo/RoPax Facility at, Muldwarka, Gujarat, by Deendayal Port Authority at Survey No. 74/3 for Onshore area -6 Ha, Muldwarka, Kodinar, Gir Somnath. (Offshore Facility: 320m waterfront & Onshore Facility: 6Ha. Area Development) – **Pointwise Compliances of the conditions stipulated in the CRZ recommendation reg.**

Ref.: Letter no. ENV-10-2022-63-T dated 20/05/2023 of Director (Environment) & Additional Secretary, Forest & Environment Department, GoG

Sir,

It is requested to kindly refer the above cited references for the said subject.

In this connection, it is to state that, the Gujarat Coastal Zone Management Authority vide above referred letter dated 20/05/2023 (**Annexure 1**) had granted CRZ recommendation for the subject proposal of Deendayal Port Authority (Erstwhile: Deendayal Port Trust). Subsequently, the SEIAA, Gujarat had accorded the Environmental & CRZ Clearance vide letter dated 30/12/2023.

Now, as directed under Specific Condition No. 27 mentioned in the CRZ Clearance letter dated 20/05/2023 i.e. **A six-monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by DPA on a regular basis to this Department**, please find enclosed herewith compliance report (For Period upto May, 2024) of stipulated conditions along with necessary annexure, for kind information & record please (**Annexure 2**).

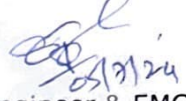
Further, as per the MoEF&CC, Notification S.O.5845 (E) dated 26.11.2018, which stated that "**In the said notification, in paragraph 10, in sub-paragraph (ii), for the words "hard and soft copies" the words "soft copy" shall be substituted**". Accordingly, we are submitting herewith soft copy of the same through e-mail ID gczma.crz@gmail.com & direnv@gujarat.gov.in.

.....Cont.....

This has the approval of Chief Engineer, Deendayal Port Authority.

Encl.: As above

Yours faithfully,



Dy. Chief Engineer & EMC(I/c)
Deendayal Port Authority

Copy to:

The Member Secretary,
State Level Environment Impact Assessment Authority, Gujarat,
Office: Gujarat Pollution Control Board, "Paryavaran Bhavan"
Sector-10 A, Gandhinagar-382010.
E-mail : msseiaagj@gmail.com, seiaaguj@yahoo.com.

Annexure -1



203/c

GOVERNMENT OF GUJARAT
Forests & environment department block
no. 14, 8th floor,
Sachivalaya, gandhinagar - 382 010.
Ph : (079) 23252260
E-mail: dlrenv@gujarat.gov.in

D M. Thaker
Director (Environment)&
MS, GCZMA

File No: ENV-10-2022-63-T

Date: 20 MAY 2023.

To,

The Member Secretary
State Level Environment Impact Assessment Authority- Gujarat
Gujarat Pollution Control Board
Paryavaran Bhavan, Sector – 10/A,
Gandhinagar.

Sub: CRZ Clearance for Setting up of RORO/ RO PAX Facility by M/s. Deendayal Port Authority at, MulDwarka, Gujarat– reg.

Ref: CRZ Clearance Application dated – 04.05.2022 made by M/s Deendayal Port Authority (DPA).

M/s Deendayal Port Authority (Erstwhile Deendayal Port Trust) vide latter dated 04.05.2022 has submitted an application seeking the recommendation from Gujarat Coastal Zone Management Authority for obtaining CRZ Clearance from State Level Impact Assessment Authority, Government of Gujarat for proposed development of Setting up of RORO/ RO PAX Facility by M/s. Deendayal port Authority (East While) at, MulDwarka, Gujarat.

The Ministry of Ports, Shipping and Waterways, Government of India had directed M/s. Deendayal Port Authority for "Setting up of RO-RO/RO-PAX Facility at MulDwarka, Gujarat. Proposed facility will be used for public conveyance. It will enhance the economic growth of Saurashtra and Kachchh region by way of providing the sea route transportations and curtailing the distance by 1/4th, i.e. from 380 km by road to just under 96 by the proposed ferry. The said facility will in turn reduce the travel time, fuel cost and help in reducing carbon footprint & reduce pollution, resulting in economic development of State of Gujarat as a whole and Saurashtra in particular.

M/s Deendayal Port Authority has submitted the following documents along with their application:

1. Form-1 as per CRZ Notification, 2011
2. Various undertakings as per guidelines of this Department
3. Necessary scrutiny fees of Rs. 5.00 lakhs
4. EIA & EMP Report prepared by M/s Ultra Tech Environmental Consultancy & Labs, Pune (QCI/NABET Accredited EIA consultant), as per the TOR prescribed by the SEIAA, Gujarat

5. CRZ Maps in 1:4000 scale, prepared by Institute of Remote Sensing, Anna University, Chennai, along with Report
6. Risk and Disaster Management Plan
7. No Objection certificate of M/s Ambuja Cement Limited
8. In-Principle approval accorded by Gujarat Maritime Board
9. Advance Possession of land (6 Ha from S.no. 74/3) issued by the Collector, Gir-Somnath District.

The Ultra Tech Environmental Consultancy & Labs in its EIA report has included Project Description (Chapter-2), Baseline Environment (Chapter- 3), Anticipated Environment Impact (chapter-4), Analysis of Alternatives (chapter-5), Environment Monitoring Program (chapter-6), Additional Studies (chapter-7), Project Benefits (chapter-8), Environmental Cost Benefit Analysis (chapter-9), Environment Management Plan (chapter-10), Summary And Conclusion (Chapter -11) and Disclosure of Consultant (Chapter -12).

The proposed RO-RO/ RO-PAX facility is consisting of developing an Offshore Facility (320-meter waterfront) and onshore facilities (6 Ha. Area). The proposed facility will be constructed north-west of the existing Ambuja Cement Limited (ACL) berth no. 3. The main RO-RO/ RO-PAX jetty consists of approach trestle cum end platform, link span, pontoon and guide pin structure for loading or unloading of vehicles and passengers and the berthing and mooring dolphin structures. The jetty will provide a facility for berthing RO-RO/ RO-PAX vessels with a capacity of 2,000 DWT to 10,000 DWT. The total estimated cost of the project is Rs. 140 crores (Offshore and Onshore Facility).

Location:

Description	Label	Latitude	Longitude
Proposed Ro-Ro/ Ro-PAX Berth	A	20° 45 30.005" N	70° 39 51.784" E
	B	20° 45 23.931" N	70° 39 53.634" E
	C	20° 45 22.428" N	70° 39 53.851" E
	D	20° 45 22.103" N	70° 39 56.168" E
	E	20° 45 24.553" N	70° 39: 54.674" E
	F	20° 45 43.025" N	70° 39 15.433" E
Proposed on shore Facility	G	20° 45 45.231" N	70° 39: 17.826" E
	H	20° 45: 38.973" N	70° 39 25.656" E
	I	20° 45 38.845" N	70° 39: 34.894" E
	J	20° 45 35.615" N	70° 39 34.887" E
	K	20° 45 35.530" N	70° 39' 25.648"

The CRZ mapping/demarcation has been carried out by IRS, Anna University, Chennai. As per the CRZ Map & report, the proposed development falls in CRZ- IV A, CRZ- III, CRZ -IA, and CRZ- IB:

Description	CRZ Classification	Area In Sq.Mt.	Total Area in Sq. meter
Proposed RO-RO/RO-PAX facilities	CRZ - IVA	5606.88	5606.88

Proposed Onshore facilities	CRZ - IA	34756.26	59791.04
	CRZ - III (NDZ)	25034.78	
Proposed Approach Road	CRZ - IB	1674.2	12223.00
	CRZ - III (NDZ)	5064.06	
	CRZ - IVA	5484.74	

No mangroves are present near project site. Mangroves patches are 18 km away from project site. No liquid or solid cargo handling is envisaged in RoRo/ Ro PAX development hence; impacts on marine ecology due to accidental spillages of chemicals are not envisaged. Impacts of oil spill due to ship collision are remotely possible. A mitigation measure for impacts on marine ecology mainly includes:

- To mitigate impacts on marine ecology, measures such as selection of equipment and dredgers, environmental monitoring and regulating activities based on monitoring results must be adopted.
- Providing silt screen to avoid movement suspended solid for a longer distance.
- Uniform disposal of dredged material at identified disposal location.
- Littering must be avoided and strict regulations must be implemented for the same.
- Proper navigation system for directions, management & maintenance of boats including the utilities must be present, so as to avoid accidents.

The proposal of the M/s. Deendayal Port Authority was discussed in the 64th meeting of Gujarat Coastal Zone Management Authority.

The authority discussed that coast of Muldwarka is known for Sea turtle species that is Green Sea turtle reported nest on this coast sandy beach and green turtle (Cheloniemydasspp) which belong to schedule-1 as per the Wildlife Protection Act- 1972. The said area therefore earmarked as CRZ -1A area in CZMP approved by MoEF & CC, GOI.

The authority discussed the detailed proposal and CRZ applicability. The Proposed activity is permissible activities under CRZ notification except "Parking" proposed in the area. The main thrust of the proposed proposal is to for Setting up of RoRo/Ro PAX Facility at Muldwarka. Further, it is noted that the as per EIA study proper dilution for dredge material is available and there will be no significant impacts on surrounding environment. However, it was suggested that PP can use the option for multilevel parking facility so that probable impacts can be minimized.

The Authority deliberated the proposal of M/s Deendayal Port Authority, after detailed discussion, and considering it is decided to recommend to the State Level Impact Assessment Authority to grant CRZ Clearance for Setting up of Roro/Ro PAX facility, Muldwarka with conditions.

In view of above, it is hereby recommended to grant the CRZ Clearance under the CRZ Notification- 2011 for proposed Setting up of RORO/ RO PAX facility by M/S. Deendayal Port Authority at Muldwarka, Gujarat with following specific conditions:

1. The provisions of the CRZ notification, 2011 and as amended from time to time shall be strictly adhered to by the DPA.

2. DPA shall obtain all necessary clearances/NOC from competent authorities/ departments before construction and commissioning of the activities.
3. All the recommendations and suggestions given by the Ultra Tech Environmental Consultancy and Laboratory in their Environment Impact Assessment Study shall be implemented strictly by DPA.
4. DPA shall adhere to their undertaking dated.15/09/2022. DPA shall not undertake any development for onshore parking facility in CRZ-1A area as mentioned in CRZ map prepared by IRS, Anna University, Chennai and submitted to CRZ authority. No parking facility shall be provided in CRZ- 1A area. Instead multiple parking shall be provided outside CRZ 1A area.
5. Dredging shall be as per the Dredging Plan of study report submitted by IIT, Madras on "Hydrodynamic and Dredge Disposal Modelling/ EIA/EMP/ Undertaking and disposal of Dredged materials to the tune of 3,00,000 cu.mt shall be carried at designated area only.
6. DPA shall submit the Sea Turtle Conservation Plan to PCCF [WL] for approval and provide due financial assistance to PCCF [WL] for its implementation or implement by its own based on approval of Sea turtle Conservation Plan from PCCF [WL]. PP has to use its CSR/CER amounting Rs. 1.00 crore fund for Sea turtle and other coastal and marine flora & fauna conservation.
7. DPA shall need to prepare Shore Line Management Plan [SMP of MulDwarika port] through reputed institutions like NCSCM, NIO, NIOT, IIT etc and shall submit to GCZMA. PP shall also monitor and implement the steps or action proposed in Shore Line Management Plan and report of that shall be submitted to GCZMA periodically.
8. No effluent or sewage shall be discharged into the sea / creek or in the CRZ area and shall be treated to conform to the norms prescribed by the Gujarat Pollution Control Board and shall be reused/ recycled as per the approval of the Board.
9. The labour camps shall be located outside the CRZ area and labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the labours.
10. The groundwater shall not be tapped to meet with the water requirements in any case.
11. The ferry vessels and Jetty sites shall have sign boards so that the passengers do not leave the food leftovers and other wastes in the sea and at jetty site and training in these aspects shall be given to the crew.
12. The noise level during transport and construction of marine facilities shall be kept minimum and shall not exceeded prescribed norms under their Rules.
13. All construction materials are to be kept covered in storage depots or in any other enclosed space to minimize the impact on ambient air quality.
14. The construction debris generated during the construction phase shall not be discharged into the creek, sea, estuary or into the CRZ area. The debris shall be removed from the construction site immediately after the construction is over and shall be disposed off as per the guidance of the GPCB.
15. The construction camps shall be located outside the CRZ area and the construction labours shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.

- supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.
16. DPA shall take up greenbelt development activities in consultation with the Gujarat Institute of Desert Ecology / Forest Department / Gujarat Ecology Commission.
 17. The cost of the external agency that may be appointed by this department supervision / monitoring of the project activities during construction/ operational phases shall be paid by DPA.
 18. DPA shall contribute financially for any common study or project that may be proposed by this Department for environmental management / conservation / improvement for the areas.
 19. DPA shall prepare and regularly update their local Oil Spill Contingency and Disaster Management Plan in consonance with the National Oil Spill and Disaster Contingency Plan.
 20. DPA shall adopt the necessary soil conservation measures to prevent any exposed soil from being eroded or blown over.
 21. A Disaster Management Plan to meet with any eventualities that may arise during construction and/or operation phase shall be prepared implemented.
 22. A separate Environmental Cell with qualified personnel shall be created to implement the Environmental Management Plan and a separate budget shall be provided for this purpose.
 23. The cost of the external agency that may be appointed by this department for supervision / monitoring of the project activities during construction/ operational phases shall be borne by DPA.
 24. DPA shall exercise extra precautions to ensure the navigation safety and mitigation of the risk associated with the project activities especially due to collision, sinking or accidents of the ships and would deploy the latest communication and navigation aids for this purpose.
 25. A separate environmental management cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.
 26. DPA shall implement programs in line with the commitments made in the Environment Management Plan submitted and shall submit the reports to GCZMA periodically.
 27. A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by DPA on a regular basis to this Department.
 28. A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department. The details with respect to the expenditure from this budget head shall also be furnished.
 29. DPA shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forests and Environment Department and the District Collector / District Development Officer.
 30. An Environmental report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by DPA.
 31. Environmental Audit report shall be submitted every year. The report shall also

over the change in the coastal and marine environment due to commissioning of the proposed activities.

32. Any additional condition that may be imposed by this department/ SEIAA, from time to time shall have to be complied with by DPA.

Thanking You,

Yours Sincerely,

J. M. Thaker
20/5/2023
[D M. Thaker]

Copy to,

The Chief Engineer, Deendayal Port Authority, PO Box No. 50, Administration Office Building, Tagore Road, Gandhidham (Kutch). Gujarat – 370201... for your Information.

જી/સી
સહી
20/5/2023
MAY 2023/

Annexure -2

COMPLIANCE REPORT (up to May, 2024)

Subject: Compliance of conditions stipulated in CRZ recommendations issued by GCZMA for the proposal "Setting up of RORO/ RO PAX Facility by M/s. Deendayal Port Authority (Erstwhile: Deendayal Port Trust) at MulDwarka, Gujarat".

Ref.: Letter No. ENV-10-2022-63-T dated 20/05/2023 of Director (Environment) & Member Secretary, GCZMA, Forest & Environment Department, GoG.

Sr. No.	Conditions in CRZ Recommendation Letter	Compliance
	Specific Conditions	
1	The provisions of the CRZ notification, 2011 and as amended from time to time shall be strictly adhered to by the DPA.	No construction activity has been started. However, it is assured that provisions of the CRZ notification, 2011 and as amended from time to time shall be strictly adhered to by the DPA.
2	DPA shall obtain all necessary clearances/ NOC from authorities/ departments before construction and commissioning of the activities.	No construction activity has been started. However, it is assured that DPA shall obtain all necessary clearances/ NOC from authorities/ departments before construction and commissioning of the activities. DPA had already obtained CTE from GPCB vide letter no 16135 dated 9/5/2022 <u>(Copy – Annexure A)</u> .
3	All the recommendations and suggestions given by the Ultra Tech Environmental Consultancy and Laboratory in their Environment Impact Assessment Study shall be implemented strictly by DPA.	No construction activity has been started. However, it is assured that all the recommendations and suggestions given in Environment Impact Assessment Study shall be implemented by DPA.
4	DPA shall adhere to their undertaking dated 15/09/2022. DPA shall not undertake any development for onshore parking facility in CRZ-1A area as mentioned in CRZ map prepared by IRS, Anna University, Chennai and submitted to CRZ authority. No parking facility shall be provided in CRZ-1A area. Instead multiple parking shall be provided outside CRZ 1A area.	No construction activity has been started. However, it is assured that DPA shall adhere to with the undertaking dated 15/09/2022 submitted to the GCZMA. A copy of revised planning of onshore parking facility (after excluding CRZ 1 A area), which had already been submitted to the GCZMA at the time of obtaining CRZ Recommendation, is once again attached herewith as <u>Annexure B</u> .
5	Dredging shall be as per the Dredging plan of study report submitted by IIT, Madras on "Hydrodynamic and Dredge Disposal Modelling/ EIA/ EMP/ Undertaking and disposal of Dredged materials to the tune of 3,00,000 cu.mt shall be carried at designated area only.	No dredging activity has been started. However, it is assured that, DPA shall comply with the stipulated condition and dredged materials shall be disposed in designated area, as per IIT, Madras report.
6	DPA shall submit the Sea Turtle Conservation Plan to PCCF [WL] for its implementation or implement by its own based on approval of Sea Turtle Conservation Plan from PCCF [WL]. PP has to use its CSR/CER amounting Rs. 1.00	The Chief Wildlife Warden, Gujarat State, Gandhinagar vide letter no. WLP/32/C/TE-2/511-513/2024-25 dated 24/1/2024 has accorded approval to the Conservation Plan (<u>revised</u>) (Sea Turtle, Indian Peafowl & Asiatic

	crore fund for Sea turtle and other coastal and marine flora & fauna conservation.	Lion) submitted by DPA for the project of "Setting up of Ro-Ro/Ro-Pax Facility at Muldwarka, Gujarat", vide letter dated 2/8/2023 to the Dy.CF, Gir (West Division), Junagadh. A copy of the said approval of the Chief Wildlife Warden dated 24/1/2024 along with conservation plan submitted is attached herewith as Annexure C (with Financial Outlay of Rs. 1 crore).
7	DPA shall need to prepare Shore Line Management Plan [SMP of MulDwarka port] through reputed institutions like NCSCM, NIO, NIOT, IIT etc and shall submit to GCZMA. PP shall also monitor and implement the steps or action proposed in Shoreline Management Plan and report of that shall be submitted to GCZMA periodically.	No construction activity has been started. However, it is assured that DPA shall prepare shoreline management plan and report of that shall be submitted.
8	No effluent or sewage shall be discharged into the sea/ creek or in the CRZ area and shall be treated to conform to the norms prescribed by the Gujarat Pollution Control Board and shall be reused/ recycled as per the approval of the Board.	No construction activity has been started. However, it is assured that No effluent or sewage shall be discharged into the sea/ creek or in the CRZ area and shall be treated to conform to the norms prescribed by the Gujarat Pollution Control Board and shall be reused/ recycled as per the approval of the Board.
9	The labour camps shall be located outside the CRZ area and labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the labours.	No construction activity has been started. However, it is assured that the labour camps shall be located outside the CRZ area and labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the labours
10	The groundwater shall not be tapped to meet with the water requirements in any case.	No construction activity has been started. However, it is assured that the groundwater shall not be tapped to meet with the water requirements.
11	The ferry vessels and Jetty sited shall have sign boards so that the passengers do not leave the food leftovers and other wastes I the sea and at jetty site and training in these aspects shall be given to the crew.	Point Noted for compliance
12	The noise level during transport and construction of marine facilities shall be kept minimum and shall not exceeded prescribed norms under their Rules.	No construction activity has been started. Point Noted for compliance.
13	All construction materials are to be kept covered in storage depots or in any other enclosed space to minimize the impact on ambient air quality.	No construction activity has been started. However, it is assured that all construction materials shall be kept covered in storage depots or in any other enclosed space to minimize the impact on ambient air quality

14	The construction debris generated during the construction phase shall not be discharged into the creek, sea, estuary or into the CRZ area. The debris shall be removed from the construction site immediately after the construction is over and shall be disposed off as per the guidance of the GPCB.	No construction activity has been started. However, it is assured that the construction debris generated during the construction phase shall not be discharged into the creek, sea, estuary or into the CRZ area. The debris shall be removed from the construction site immediately after the construction is over and shall be disposed off as per the guidance of the GPCB.
15	The construction camps shall be located outside the CRZ area and the construction labours shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.	No construction activity has been started. However, it is assured that the construction camps shall be located outside the CRZ area and the construction labours shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.
16	DPA shall take up greenbelt development activities in consultation with the Gujarat Institute of Desert ecology/ Forest department/ Gujarat Ecology Commission.	No construction activity has been started. However, it is assured that DPA shall take up greenbelt development activities.
17	The cost of the external agency that may be appointed by this department supervision/ monitoring of the project activities during construction/ operational phases shall be paid by DPA.	Point Noted for compliance
18	DPA shall contribute financially for any common study or project that may be proposed by this Department for environmental management / conservation/ improvement for the areas.	Point Noted for compliance
19	DPA shall prepare and regularly update their local Oil Spill Contingency and Disaster Management Plan in consonance with the National oil spill and Disaster Contingency Plan.	Point Noted for compliance
20	DPA shall adopt the necessary soil conservation measures to prevent any exposed soil from being eroded or blown over.	Point Noted.
21	A Disaster Management Plan to meet with any eventualities that may arise during construction and/ or operational phase shall be prepared implemented.	Point Noted for compliance
22	A separate Environmental Cell with qualified personnel shall be created to Implement the Environmental Management Plan and a separate budget shall be provided for this purpose.	DPA is already having well established environmental Cell.

23	The cost of the external agency that may be appointed by this department for supervision/monitoring of the project activities during construction/ operational phases shall be borne by DPA.	Point Noted for compliance
24	DPA shall exercise extra precautions to ensure the navigation safety and mitigation of the risk associated with the project activities especially due to collision, sinking or accidents of the ships and would deploy the latest communication and navigation aids for this purpose.	Point Noted for compliance
25	A separate environmental management cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	DPA is already having well established environmental Cell for environmental monitoring and management during construction and operational phases of the project.
26	DPA shall implement programs in line with the commitments made in the Environment Management Plan submitted and shall submit the reports to GCZMA periodically.	Point Noted for compliance
27	A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by DPA on a regular basis to this Department.	Point Noted for compliance
28	A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department. The details with respect to the expenditure from this budget head shall also be furnished.	Point Noted for compliance
29	DPA shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forests and Environment Department and the District Collector/ District Development Officer.	Point Noted for compliance
30	An Environmental report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by DPA.	Point Noted for compliance
31	Environmental Audit report shall be submitted every year. The report shall also over the change in the coastal and marine environment due to commissioning of the proposed activities.	Point Noted for compliance
32	Any additional condition that may be imposed by this department/ SEIAA, from time to time shall have to be complied with by DPA.	Point Noted.

Annexure -A



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382010

Phone : (079) 23222425

(079) 23222152

Fax : (079) 23232156

Website : www.gpcb.gov.in

Application For CTE After TOR

File No : GPCB/ (PCB ID. - 86592)

CTE-54262

To,

M/s. Deendayal Port Trust,

74/3, Muldwarka Port Survey No. 74/3, ,

City : Muldwarka ,

Dist : Gir Somnath ,

Taluka : Kodinar

Sub: Consent to Establish (After obtaining Terms Of Rference For Environment Clearance) under Section 25 of Water Act 1974 and Section 21 of Air Act 1981.

Ref: (1) Your online application No. 225299 dated 11/04/2022

(2) TOR issued by State Authority vide their letter no. SEIAA/GUJ/TOR/7(e)/1795/2021 Dated 17/11/2021

Sir,

Without prejudice to the powers of this Board under the Water (Prevention and Control of Pollution) Act-1974, the Air Act-1981 and the Environment (Protection) Act-1986 and without reducing your responsibilities under the said Acts in any way, this is to inform you that this Board grants **Consent to Establish (After obtaining Terms Of Rference For Environment Clearance) under Section 25 of Water Act 1974 and Section 21 of Air Act 1981** for manufacturing of products as mentioned into the application of Environment Clearance (EC) for which TOR is granted vide letter under reference no (2) above.

Consent To Establish Is Granted Subject To The Following Conditions: -

- 1) The validity period of this CTE shall be Seven Years from the issue of this order.
- 2) Applicant shall strictly comply with all conditions stipulated by competent authority in the order of Environment Clearance to be issued in reference to TOR issued vide letter under reference No. : 2 above.
- 3) The applicant shall however , not without the prior concern of the Board. Bring into use any new or altered outlet for the discharge of effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to this Board for this purpose in the prescribed forms under the provisions of the water Act - 1974, the Air - 1981 and the Environment (Protection) Act - 1986.



For and on behalf of
Gujarat Pollution Control Board

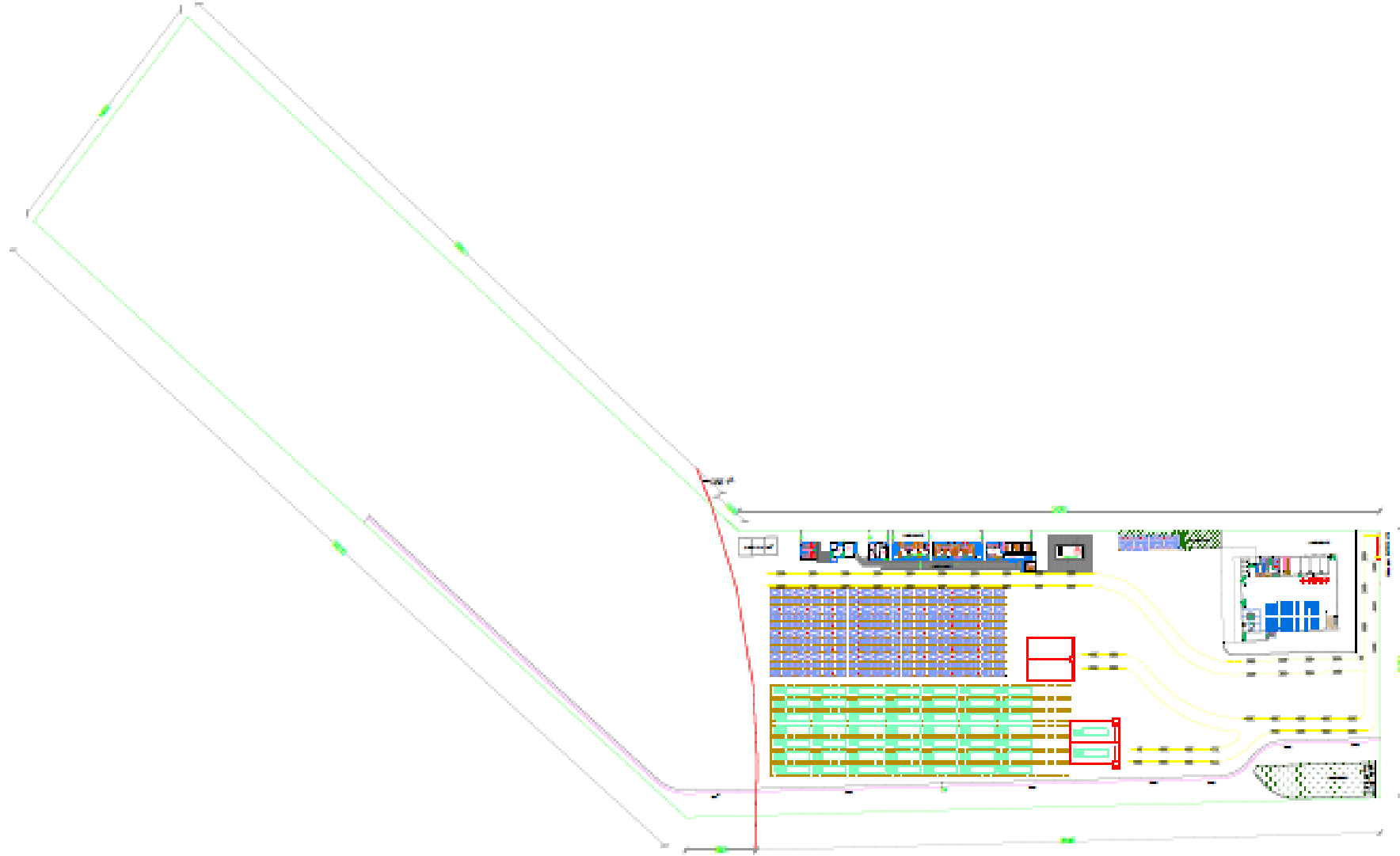
M. R. Macwana

M. R. Macwana
ROH - Junagadh

- This order is issued to 74/3, Muldwarka Port Survey No. 74/3, , City : Muldwarka, Dist : Gir Somnath, Taluka : Kodinar (86592) for CTE amendment after obtaining EC.

Annexure -B

Onshore Facility (Revised Planning)



Annexure -C

511-513

No. WLP/32/C/ TE-2 /2024-25

Office of the
Principal Chief Conservator of Forests
Block No. B/1, Aranya Bhavan,
Ch-3 Circle, Sector - 10/A,
Gujarat State, Gandhinagar.

Date 24.01.2024

Sub:- Approval of Conservation Plan for for setting up of RO-RO/RO-PAX FACILITY at Muildwarka, Gujarat by Deendayal Port Authority.

Ref:- Your Office letter No. CN/WK/1600-A(EC &CRZ Clearence)/263, Dated 11.01.2024

With reference to the subject and proposal quoted above, the Conservation plan for setting up of RO-RO/RO-PAX FACILITY at Muildwarka, Gujarat by Deendayal Port Authority.

The Conservation Plan of Rs. 100 lakh/- (Hundred lakhs only) for three years will be provided for field work has been approved. A copy of the Conservation Plan is enclosed herewith.

The applicant will later be required to submit the amount for the conservation activities when asked. As per the attached letter it is approved. The details of the conservation plan is as below.

Budget for wildlife and biodiversity conservation

Activities	Amount Sanctioned (LAKH)
Portable X ray CR system	40
Vehicle for patrolling	20
Plantations	03
Conservation and Awareness activities	03
Beach Monitoring	03
Control room- Caostal	08
CCTV, Drone, Turtle Hatchery other required Equip	16
Motorcycle-Patrolling	07
TOTAL	100


(N. Srivastava)

Chief Wildlife Warden
Gujarat State, Gandhinagar

To,
The Conservator of Forests, Jamnagar
Copy to: Deputy Conservator of Forests, Jamnagar, for information and necessary action.

✓ Copy to: RSPL limited, harish.ramchandani@rsplgroup.com

Environmental Impact Assessment of Setting up of RoRo/RoPax Facility

At

Muldwarka Gujarat

M/s. Deendayal Port Authority (DPA)

Conservation Plan

Sea Turtle, Indian Peafowl & Asiatic Lion



ULTRA TECH

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Certificate No.: NABET/EIA/2023/RA 0194 -Rev 01 Valid Till 18/10/2024

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1. Project Introduction

The proposed RoRo/RoPax Facility (Latitude 20°45'25.26"N and Longitude 70°39'54.27"E) is situated Muldwarka port which is located on the southern tip of Gujarat facing Arabian Sea.

Ministry of Ports, shipping & water ways – GOI in its endeavour to develop passenger and cargo connectivity between ports especially the RoRo/RoPax to facilitate easy movement of passengers and reduce travel time and fuel costs. A feasibility study carried out for this purpose was presented to the Honourable Minister for Port, Shipping and Waterways and officials during interaction. Deendayal Port Authority has been directed to proceed with the development of RoRo/RoPax facility at Muldwarka as per the selected option in the feasibility study report presented on 29th April 2021. The proposed facility is to be constructed north west of the existing Ambuja cement berth 3. The facility will provide berthing and discharging of cargo and passengers, including trailer trucks and cars. The said jetty with facilities shall be allowed to use to run the RoRo/RoPax vessel service operating from Muldwarka to Hazira, Mumbai and any selected locations, so that as a social needful to reduce pollution resulting in economic development of State of Gujarat. as a whole and Saurashtra in particular.

2. Project Location:

Proposed Project is located at Mul Dwarka (Kodinar), a small coastal village near Kodinar, about 45 km. from Somnath, Project site is well connected to Kodinar city by road. The main transport connections for Kodinar city and project site are Diu Airport, Veraval Railway Station, and Veraval Port. Diu Airport are 46 km away from project site, Kodinar Railway Station is 6.7 km away from project site.



Plate 1: View of Project Site

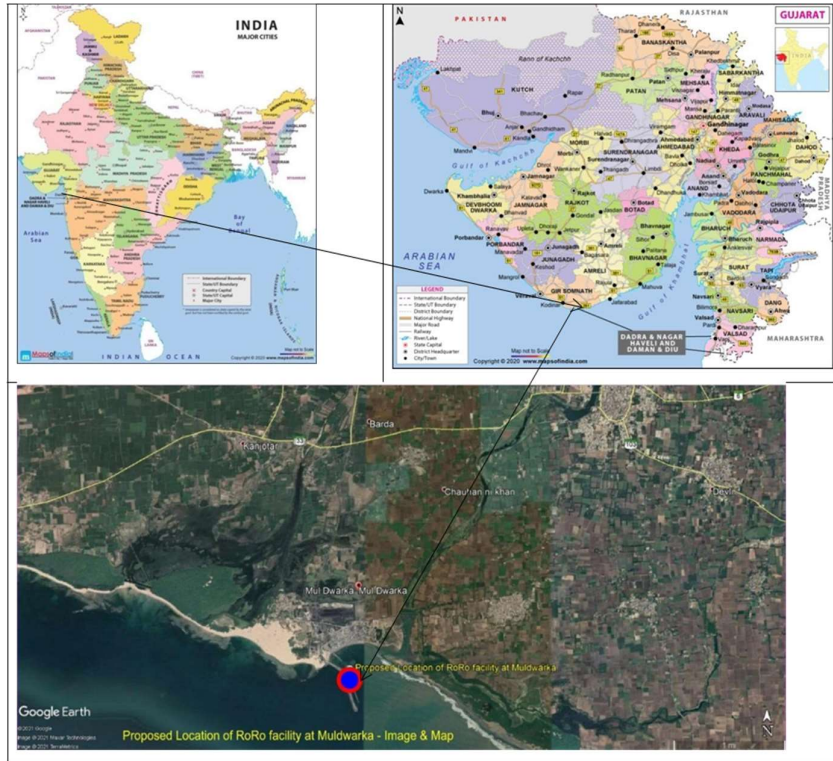


Figure 1: Project Location Map

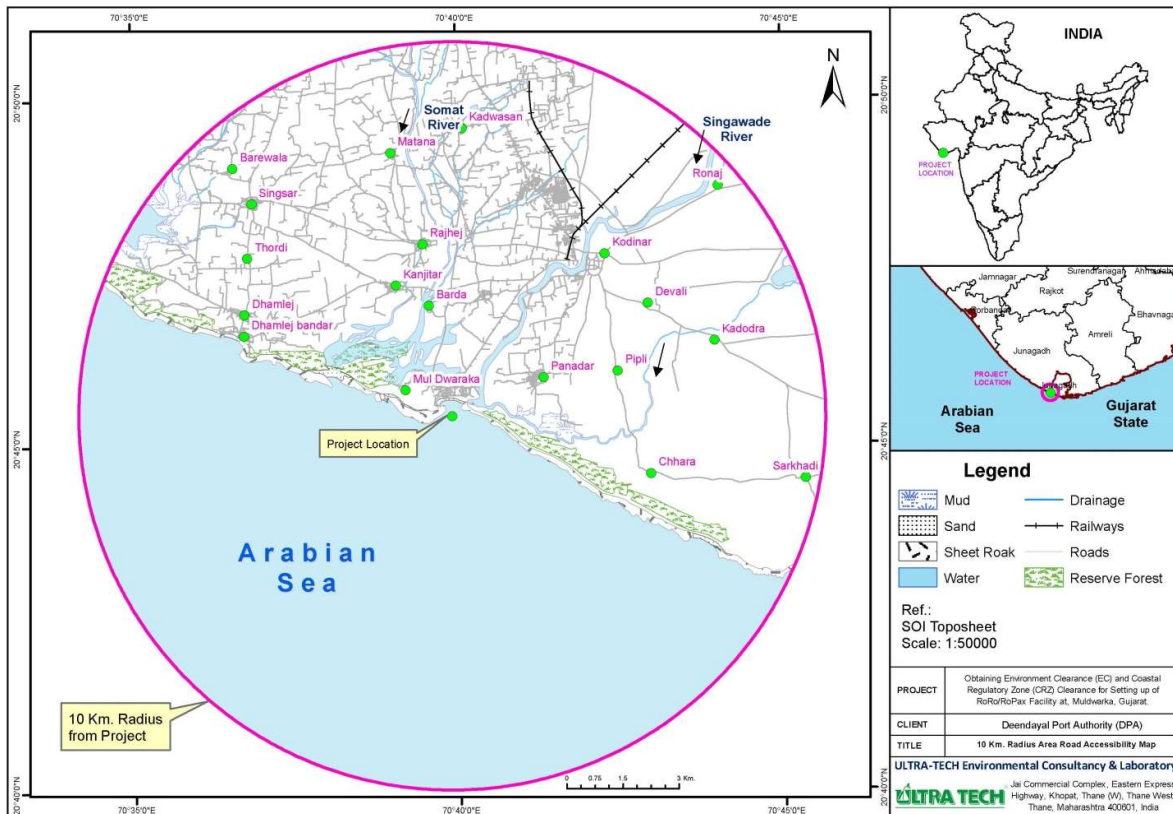


Figure 2: Road Accessibility Map of project site

3. Schedule I Species in study area

There are 3 species of conservation concern which are present in impact zone (10km) of the proposed Port site. These species are Sea turtle, Peacock and Asiatic Lion.

A. Sea Turtle

The following image shows the location of Turtle nesting grounds, within 5km, 10 km & 15 km of the project site, according to the data obtained from Office of the Range Forest Officer, Veraval Range & WWF Report Marine turtle along the Indian Coast. The location marked as present within 10 km. There are 3 locations (stretches 2, 3 & 4) within 10 km of the project site stretch 3 is the nearest turtle nesting ground but not identified as potential sea turtle

Nesting site and two stretches 1, 6 within a 15 km radius are identified as Potential Turtle nesting beaches the details of these locations are given in the table below Table 1



Figure 3: Map showing Turtle nesting site within 15 km of study area

Table 1: Sea Turtle Nesting Locations in study area

S.N	Surveyed beach stretches	Surveyed distance	Number of Nests (green turtle)	Co-ordinates
JUNAGADH DISTRICT				
1	Zala-na-Vadodara- Dhamlej*	6 km.	10	N20 °46' 44.38" E 70.35'49.06"
2	Dhamlej-Barda	2 km.	2	N20 °46' 17.92" E 70.36' 56.30"
3	Barda-Mul Dwarka	1 km.	4	N20 °46' 06.60" E 70 38' 10.32"
4	Mul Dwarka-Chara	4 km.	5	N 20°45'43.27" E 70°39'56.18"
5	Chara-Sarkhadi	3 km.	6	N20° 44' 0.72" E 70° 42' 41.90"
6	Sarkhadi-Santeshwar*	9 km.	8	N20° 43' 21.13" E 70 45' 25.43"
7	Santeshwar-Madhada*	1 km.	12	N20° 42' 08.22" E 70 48' 16.78"
*Potential Turtle Nesting Beaches				
Ref:	<ol style="list-style-type: none"> 1. WWF Report 2. Marine Turtles along the Indian Coast 3. Distribution, Status, Threats and Management Implications 4. WWF-India 2013 			

I. Ecological Importance & Conservation Plan

Nomenclature: Green sea turtle (*Chelonia mydas*)

Classification:

Kingdom	Animalia
Phylum	Chordata
Class	Reptilia
Order	Testudines
Family	Cheloniidae
Genus	Chelonia
Species	<i>Chelonia mydas</i>
Vernacular name	Green sea turtle

II. Conservation Status

Green turtles (*Chelonia mydas*) are listed as Endangered in the IUCN Red List. Same species are listed as endangered under Schedule 1 of the Indian Wild Life (Protection) Act, 1972.

III. Introduction

Kodinar Coast in Gir somnath district & Junagad coast is known for nesting of Sea turtles species i.e. Green Sea turtle which is reported nest on this coast on flat sandy beaches.

As per biological survey of the core zone (Project site) and buffer zone (10 km radius from periphery of the project) there was no turtle sighted in the project site during field study. Only Green Turtles are reported .As per nesting survey carried out, the direct sightings of the turtles were located only in the buffer areas. As per nesting survey carried out, Zala-na-Vadodara-Dhamlej, Sarkhadi- Santeshwar, Santeshwar-Madhwad are Potential Turtle Nesting beach stretches are from our study area.While turtle nesting beach stretches like Mul Dwarka-Chhara, Chhara- Sarkhadi Barda- Muldwarka & Dhamlej-Barda (Table 2) Are present within 10km study area but these are not identified as Potential Turtle Nesting Beaches.

Table 2: Surveyed beach stretches & Distances

Study area	Stretch No	Surveyed beach stretches
5 km Radius area	2	Dhamlej-Barda
	3	Barda-Mul Dwarka
	4	Mul Dwarka-Chara
10 km Radius area	1	Southern part of Zala-na-Vadodara- Dhamlej*
	5	Chara-Sarkhadi
15 km Radius area	1	Northern part of Zala-na-Vadodara- Dhamlej*
	6	Sarkhadi-Santeshwar*
*Potential Turtle Nesting Beaches		

Only Green Turtles are reported in this area. However, Green turtles (*Chelonia mydas*) which belong to schedule 1 of the Wildlife (Protection) Act 1972 are commonly found in buffer of study

area. These turtle species are endangered and they placed in schedule I list of the Indian Wildlife Protection Act 1972 as well as in Appendices I of the Conservation on International Trade in Endangered species of Wild fauna and flora (CITES). This reports were based on the studies carried out by Prakruti Nature Club (PNC) and State Forest Department. & WWF Report Marine Turtles along the Indian Coast.

Five of the seven species of sea turtles are found in Indian coastal waters. Sea turtles have received considerable attention in recent years. All five species that occur in Indian waters are listed in out of these single species were reported in study area are.

Green turtles (*Cheloniemydas*) are listed as Endangered in the IUCN Red List. Same species are listed as endangered under Schedule 1 of the Indian Wild Life (Protection) Act, 1972 the single most important law for species protection in India.

Though the importance of these sea turtles is acknowledged in state, union and international legislation and policies, they are under severe threat from fishery related mortality, depredation of eggs and developmental activities.

IV. Distribution

There are seven living species of sea turtle in the world are endangered, and conservation efforts all over the world are attempting to prevent their extinction. They occupy specific niche in the marine water ecosystem. Five of the seven species of sea turtles are found in Indian coastal waters. Sea turtles have received considerable attention in recent years. All five species that occur in Indian waters are listed in out of these single species of green turtle were reported in study area.



Plate 2: Stranded green sea turtle in Gujarat

V. Habitat:

Sea turtles are marine animals with special adaptations. They are also sometimes referred to as “marine turtles,” referencing the fact that they have adapted to live primarily in the marine

environment.

Though the importance of these sea turtles is acknowledged in state, union and international legislation and policies, they are under severe threat from fishery related mortality, depredation of eggs and developmental activities. However, large numbers of eggs are deposited in holes dug into mud or sand. They are then covered and left to incubate by themselves. When the turtles hatch, they squirm their way to the surface and head toward the water. There are no known species in which the mother cares for the young. Sea turtles lay their eggs on dry, sandy beaches. Immature sea turtles are not cared for by the adults. Most are endangered largely as a result of beach development and over harvesting. Turtles can take many years to reach breeding age, and in many cases breed every few years rather than annually.

VI. Nesting

The peak nesting period for green turtle extends from September to January with peak in December and January along the Saurashtra coast.

Even though the proposed port project will not have any direct impact on sea turtle nesting it is recommended that as a part of CER, should support the groups working for sea turtle conservation in the area.



Plate 3: Green turtle nesting & Nest Protection along Gujarat coast

a. Crawl Distance and Nest Location

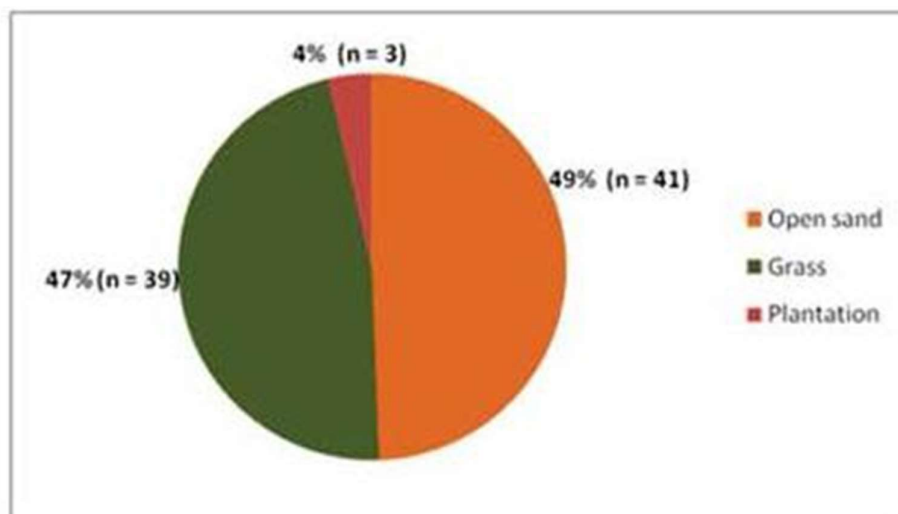
A recent study on Green turtles along the Junaghad coast revealed that most of the nests were placed more than 10 m from the HTL and also beyond 25 meter .The present study also observed, out of 93 nests only 49% (41) out of the nest were placed in the open sandy beach,while 47% (39) and 14% (13) of the nests were located in the grass patches and plantations respectively (Figure 1). The most of the nests placement was in dune with grass and plantation;

it may be due to availability of narrow beach. However, these beaches need to be studied covering, nest location, profile (depth, temperature and moisture) nesting beach soil quality, and hatchling success rate.

This ecological study should cover the peak nesting season of green sea turtles it was between November and January (Source.: Evaluation of sea turtle -Gujarat ecology Commission)



Plate 4: Nesting crawl at beach



Status of Nest location -Junagad coast

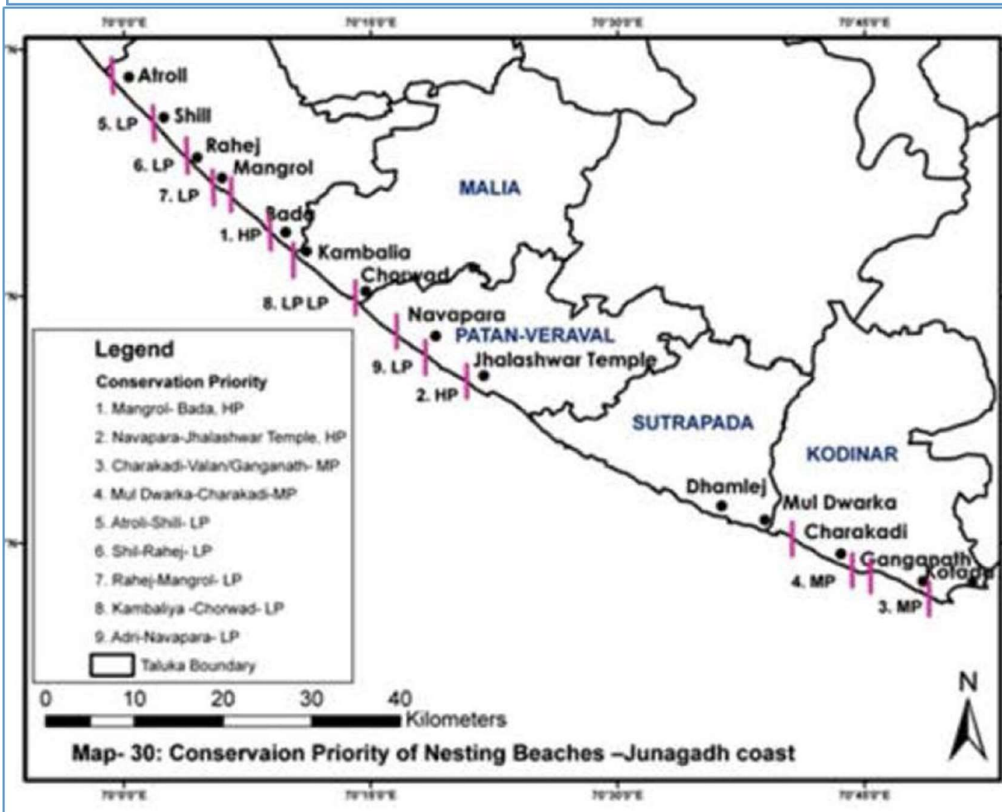
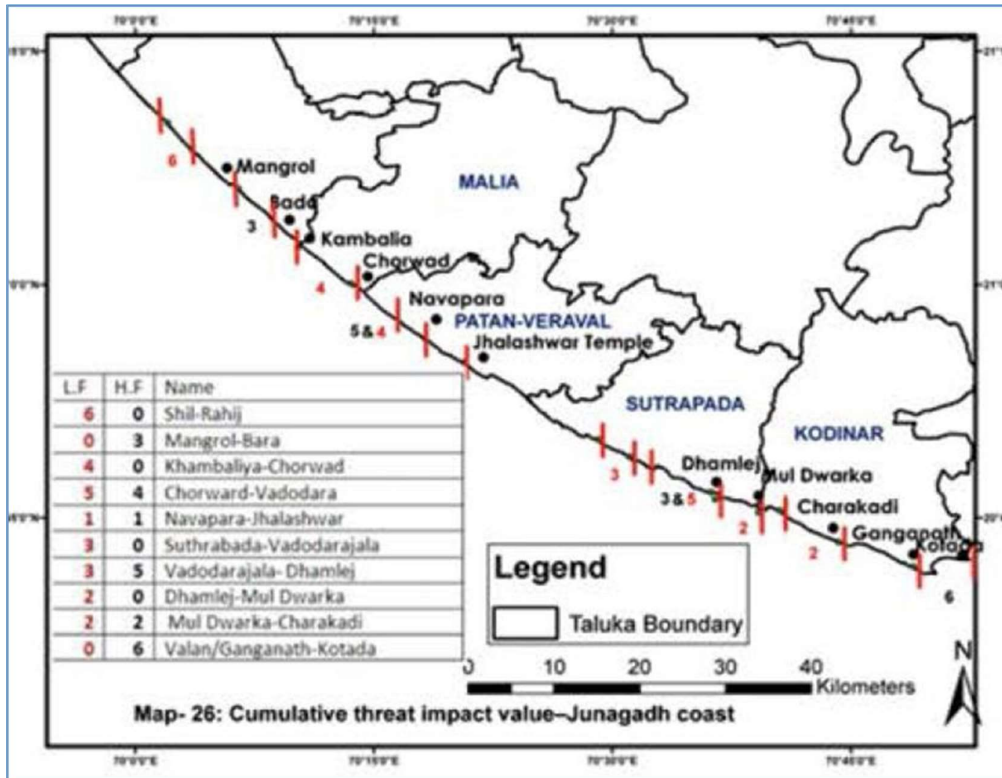


Figure 4: Nesting Status Junagad Coast

(Source: Evaluation of sea turtle -Gujarat ecology Commission)

b. Clutch Size

In Junagadh coast clutch size estimated based on number of nests and total eggs collected for Green turtle this cost showed a minimum clutch size of 65 and maximum of 106 with a mean of 81eggs/nest.

c. Hatchery

Local NGO -PNC use to relocate the clutches and assess the hatchling success, which showed an average emergence rate of 83.65%

Hatchery management is a common practice where there is severe threat to eggs and hatchlings. Given the rates of depredation, it is suggested that hatcheries be established at Veraval along the Junagadh coast

Establishment of smaller hatcheries will facilitate safe and timely transport of eggs, improve management, and even reduce egg-loss due to predation.



Plate 5: Hatchlings emerging from a nest



Plate 6: Artificial Hatchery

(i) Human and Animal Evidences:

Overall predation rate estimated for Junagadh was 42%.among that 17% of net loss was due to human, while animal disturbed 25% of nests.

(ii) Lighting

Sea turtles and their hatchlings often misguided by the illumination on the coast, therefore, it is suggested to orient lights on port in such a way that minimum illumination is visible from outside. This would ensure natural movement of the turtles in this region. Lighting was also going to be a major problem both during and after construction. Adult turtles typically shy away from brightly lit areas but hatchlings are attracted to it, and might become distracted from their journey to the sea if the lighting was too bright. Scientific studies have shown that excess ambient light influences turtle hatchling orientation.

IUCN recommended the use of low-pressure sodium vapor lamps or other light sources that exclude wavelengths less than 520 nm as these wavelengths are not visible to turtles. The recommended IUCN area lighting, for roadway, wharf, mast or elevated structure lights should use full 90° cutoff light fixtures. To minimize light spill to the sky, fixtures were to be installed at around 15° below the horizontal plane. All lighting should be of minimum lamp wattage, an alert to engineers who tend to err on the side of caution and provide more lighting than necessary. There should be no use of fluorescent, mercury vapor, metal halide, or other broad-spectrum high-intensity discharge lamps. There should be no flood lighting, up- lighting, or other forms of directional lighting aimed above the horizon. **(Source: Protecting the sea turtle the story of the Dhamra Port)**





Plate 7: Down-facing lights at the port reduce sky glow

VII. Nesting Ecology

There are many parameters that need to be studied to understand the nesting ecology, however only selected parameters are studied.

VIII. Conservation Plan:

- It is suggested to avoid construction in project side during nesting season to avoid disturbance to the Sea turtle species.
- Implementing light and noise reduction strategies during the breeding season of turtles will be ensured Light should be kept off when not needed during construction time. Light of Longer wavelength (ambers and reds) will be used during construction phase at night time with low intensity. Lighting should be fully shielded with proper mounting and fixtures and it should be checked that light should not escape upwards and outwards.
- Sea turtle Conservation plan has to be aligned with national marine turtle action plan (2021-2026) on the Gujarat coast or support Gujarat Forest Department in their ongoing conservation and protection activities.
- Take up beach improvement activities along with local forest department & local NGOs to enhance beach patrolling by the forest department and other interested local people through NGOs during the peak turtle nesting season is crucial.
- In coastal shrimp trawl fisheries, promote the use of turtle excluder devices (TEDs) to reduce sea turtle by-catch or incidental catch and mortality.
- Raising awareness among the coastal villagers about the importance of turtles and the value of Turtle Excluder De- vices and disseminating information on the conservation of turtles through educational and other institutions.
- Activities that are generally perceived as environmentally unfriendly activities during construction phase could be planned during lean fishing season.

- During dredging operation all possible precaution to control and reduce dispersal of suspended load will be employed including scheduling the dredging operation during a tidal condition so as to cause least increase in suspended load and siltation.
- To conduct Wildlife Week celebrations, Van- Mahotsav celebrations and creating awareness amongst the staff, children in the vicinity and general public through awareness generating posters in collaboration with forest department pancyayat, NGO, Schools accordingly funding should be allotted.
- Sponsor training- Workshops and training programme may be organized for field staff of the forest and fisheries departments and researchers, providing information on the status of sea turtles, research techniques and problems in conservation.
- The participants of the training programme should be to locate and identify the nests of different species based on the nest size, crawl pattern and size. Further they should how to differentiate nests that were predated along with differentiation of predators based on the field tracks and signs present in and around the model nests.
- Community participation- Awareness programmes and community participation in support with funds to coastal village Pancyayats conservation efforts is important for getting positive results. Hatchery programme involving the public and incentives towards alternate livelihoods for fishermen should increase the success of sea turtle conservation initiatives. Accordingly sufficient fund should be allotted and spent through village Panchayets.
- In addition, all the forest divisions of the concerned coastal area need to conduct regular camps and turtle conservation awareness programs for school students, local fishery folks with the help of local NGOs and Nature club members.
- The department should encourage the local NGO s and other Nature club members to start Student's Turtle club so that their service can be utilized for beach cleaning and eggs translocation activities, user agency should provide for funds to local school & other support.
- All the frontline trained department staffs should be involved in regular beach monitoring and patrolling more frequently during the nesting season.

B. Indian Peafowl (*Pavo cristatus*)



Plate 8: INDIAN PEAFOWL (*Pavo cristatus*)

I Classification

☑ Kingdom	Animalia
☑ Phylum	Chordata
☑ Class	Aves
☑ Order	Galliformes
☑ Family	Phasianidae Genus:
☑ Species	<i>Pavo cristatus</i>
☑ Vernacular name	Indian Peafowl

II Introduction:

A detailed biological survey of the 10 km radius from periphery of the project was carried out giving details of flora and fauna. However, peacock which belongs to Schedule-I of the Wildlife (Protection) Act 1972 are commonly found in the buffer zone of study area.

The Indian Peafowl appears so frequently in religion, folklore, art and craft, that it is possibly the most recognised bird across India. Having been declared the national bird in 1963, the species finds legal protection in the country, being placed in Schedule-I of the Wildlife (Protection) Act, 1972 and further amendments.

III Distribution:

Peafowl are spread across the plains and hills of India, except in extremely dry or wet regions. The abundance trend is that of a general increase, both in the long term and currently. This trend appears to result from a combination of range expansion, and a population increase virtually throughout its distribution. The protection (and associated penalties for poaching and poisoning) afforded by being in Schedule-I may also have contributed to increase. Some parts of the country report greater levels of crop damage by peafowl, a trend that calls for careful conflict assessment and management. According to the State of India's Birds 2020 Report, Peacock population more than doubled in India during the past one decade. According to the IUCN Red list, Peacock is falling in the least concern (LC) category.

Peacock or Indian peafowl (*Pavo cristatus*) is a familiar and universally known large pheasant. It is a National Bird of India, belongs to Schedule-I of the Wildlife (Protection) Act 1972 was reported from some villages of the study area. The male has a spectacular glossy green long tail feathers that may be more than 60 percent of the bird's total body length. These feathers have blue, golden green and copper colored ocelli (eyes). The long tail feathers are used for mating rituals like courtship displays. The feathers are arched into a magnificent fan shaped form across the back of the bird and almost touching the ground on both sides. Females do not have these graceful tail feathers. They have the fan like crest with whitish face and throat, chestnut brown crown and hind neck, metallic green upper breast and mantle, white belly and brown back rump and tail.

Body length: 180-230 cm Weight: 2750-6000 gm Habitat

In the undergrowth in deciduous forests near streams, Tall trees for roosting Size of the male tail feathers, its coloration and numbers of eyes presents determine the dominance of the male in peacock hierarchy. The females are believed to be attracted towards the male with longest and most colourful tail feathers.

IV CONSERVATION IUCN STATUS

Least Concern IWPA: Schedule I CITES: Not listed, Peacocks are gregarious by nature. In the breeding season they are usually seen in small parties of one male with three to five females whereas in the nonbreeding season they remain in separate parties of adult males and females with juveniles. Peacocks roost in tall trees and emerge from the dense thickets to feed in fields and openings in forests and fields.

V Life Cycle

Breeding: April-September (Project area)

Nest site: On ground in undergrowth (wild) on buildings by semi-feral birds in villages.

VI Habitat Use

All the direct sightings of the peacock were located near the human dominated areas. This species is well adapted to natural village environment setting. According to the villagers, peacock is present in both, village and forest areas. Day time they temporarily move towards the surrounding agriculture areas for feeding while during night time roosts on the trees present in the village.

VII Food Habits

Peafowls are omnivores, eating plant parts, flower petals, seed heads, insects and other arthropods, reptiles and amphibians. Moreover, local people are against hunting and poaching of the Peacocks. In the study area peafowl uses agriculture (adjacent to village) as a feeding and breeding ground. Some of the peacocks are taking shelter in the village adjacent habitats while some prefer to forest habitats.

VIII Conservation Plan:

Peacock is a large and beautiful flying bird and rightly crowned as the National Bird. It occurs all over India both in forest and non-forest areas. The Peacocks worshipped as the Vahana/ carriers of Karthikeya / Subrahmanya Swamy/ Murugan in India. Hence, there is no threat from locals. In the project under consideration, Peacocks were found in the buffer zone mainly in local temples where they are protected. They were not found in the project site or core area.

There are two major kinds of threats to Peacock. One is illegal poaching for meat and feathers and the other is due to consumption of pesticide treated seeds sown by farmers. In spite of the above, there are healthy populations according to the State of India's Birds 2020 Report and there is no risk of extinction. If allowed to domesticate, Peacocks shall become pet birds and their numbers can increase very rapidly.

The project proponent is prohibited by law to capture the Peacocks and domesticate them or breed them under captivity. Any plan designed to conserve and manage a Schedule I species should take in to the account the basic scientific principles and criteria. Conservation does not mean preservation. Species conservation implies sustainable management under in-situ conditions. When an isolated male or female is found in one place within the buffer zone, no one can conserve the species by taking care of that solitary bird without violating the WPA. The conservation plan should be need based, realistic, practically feasible, scientific and technical.

In case of Peacocks found in the buffer zone, the only thing that the project proponent can do

is to create of awareness among the public in general and the project dependent people in particular about the need to conserve them and to motivate them to act as protectors of Peacocks through mass media, social media, public awareness and education. Increasing the tree cover in the buffer area for shelter and roosting of peacocks. This will be achieved by planting of tree groves (a group of trees that grow close together, generally without many bushes or other plants) in buffer area. Some local species such as Neem, Ardu, Shesham, Dhak, Peepal tree etc. will be planted. Planting of tree groves in school compounds in the villages of buffers area will be planted as per the plantation programme.

In order to encourage the propagation of insects and worms, as food of peafowl, it is needed to plant flowering and fruit bearing trees and shrubs. Butterfly diversity and community composition are dependent on flowering plants, as their caterpillars are highly specific to host plants, on which they feed and metamorphose into the adults. Therefore, richness of host plant diversity contributes to butterfly diversity. Calatropis sp. and Lantana sp. are common nectar plants, favoured by many species of butterflies. As the butterfly population increases, a variety of organisms including praying mantis, spiders, lizards and birds also colonize the area leading to a stabilization of habitats and better functioning of the ecosystem.

By conducting awareness programmes (community and school level) for conservation of peacocks in the area and also through organizing competitions during Wildlife week & Van Mahotsav celebrations.

Carrying out census and research to know the potential threats and population status of the species. Provision of veterinary care and cages for injured or sick deformed birds & Provision of water

· Suggest strategies to minimize negative impacts of changing environment in nearby area of Peacock populations and to promote conservation of peacock habitats

Project proponent, local population and local forest department will be involved to execute the proposed conservation plan.

C. *Panthera leo* (Asiatic Lion)



Plate 9: *Panthera leo* (Asiatic Lion)



Figure 5: Map Showing Movement of Asiatic Lion in Study Area

Table 3: Details of wildlife hotspots in study area

SN	Area/Place	GPS	
		Latitude	Longitude
1	Sarkhedi Village	20°43'50.04"N	70°45'27.90"E
2	Sarkhedi Village	20°43'36.13"N	70°46'2.47"E
3	Velan Village	20°43'2.61"N	70°48'4.45"E
4	Velan Village	20°43'8.89"N	70°48'27.01"E

Source: Forest Department Gir west, Junagad

a. Classification

Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Felidae
Genus	Panthera
Species	<i>Panthera leo</i>
Vernacular name	Asiatic Lion

b. Introduction:

Detailed biological survey of the core zone (Project site) and buffer zone (10 km radius from periphery of the project) was carried out giving details for fauna. However, Asiatic Lion which belongs to Schedule-I of the Wildlife (Protection) Act 1972 are commonly found in the buffer zone of study area. Asiatic Lion was not reported during survey but as per discussion with forest department movement of lion are observed in buffer zone (Sarkhedi & Velan village)

c. Distribution

The Asiatic Lion (also known as the Persian Lion or Indian Lion) is a member of the *Panthera Leo*, Leo subspecies that is restricted to India. Its previous habitats consisted of West Asia and the Middle East before it became extinct in these regions. The Asiatic Lion is one of the five pantherine cats native to India.

d. Characteristics

The colour of the Asiatic Lion ranges from sandy or buffish grey to silvery sheen in certain lightings. The males have a moderate mane growth at the top, compared to their African counterparts, as such their ears are visible. The mane is scarcely present around the cheeks and throat. It has a larger tail buff compared to the African lion. The most striking characteristic character of the Indian lion is a longitudinal fold of skin along its belly.

Table 4: Characteristics of an Asiatic Lion

Characteristics of an Asiatic Lion	
• Shoulder Height	Males: 107 - 120 cm Females: 80 - 107 cm
• Weight	Males: 160 to 190 kg Females: 110 to 120 kg
• Length	2.92 m
• Skull Length	Males: 330 to 340 mm Females: 292 to 302 mm

e. Conservation Status

Wildlife (Protection) Act 1972: Schedule 1

CITES Appendix I

IUCN Red List: Endangered

f. Food Habits

Domestic cattle have been the preferred prey for the Indian Lion for a long time. Other than these they Lions can be reliably identified from camera trap pictures, so camera trapping system will be helpful in monitor lion population.

g. Conservation Measures

- Workshops and training Programme may be organized for field staff of the forest department and researchers, providing information on the status of research techniques and problems in conservation.
- Provision of control room and rest room will be given in Muldwarka port or in coastal belt for tracking of lion in forest area
- Provision of binocular should be available.
- Provision of Manchan for farmers.
- Drinking water facilities should be available in study area.
- Patrolling vehicles should be provided for forest staff.
- Parapet wall should be constructed for an open wells in study area.
- Forest area will be monitored regularly by field staff of the forest department and its patrolling by the forest department and other interested local people through NGOs during night time.
- Some provision of rewards to informers for the control of poaching and illegal trade in wildlife.
- By conducting awareness programs (community and school level) for conservation in the area and also through organizing competitions during Van Mahotsav celebrations.
- All the conservation measures will be implemented with the help of and in consultation with the district forest department & ongoing work will be monitored by them at every six month.
- Carrying out census and research projects to know the potential threats and population status of the species in collaboration of local schools, colleges, panchayats and forest department.

- Conservation plan will help to reduce the accidents of lion on railway track, indiscriminate lion killing, attack of lion on human being & will Promote awareness about lion conservation.

4. Financial Estimate for Conservation Activities

Following budgetary provision are provided for implementation of conservation plan.

The funding agency will be DPA. The details are provided in **Table.5**

Table 5: Financial Estimate for Conservation Activities

Sr. No.	Activity	Agency	Duration	Cost/ Year (in Lakhs)	Total Cost for 3 Years (in Lakhs)
1	Portable X-Ray CR System for Health Monitoring of Lions and other Wild Animals	DPA	-	-	40
2	Two Mahindra Bolero (One for Patrolling of wild life and One Bolero for Rescue)	DPA	-	-	20
3	Native Plant Species plantation	DPA	3 Years	1	3
4	Conservation & awareness activities for local community & school going children about sea turtle, Peacock & Asiatic lion	DPA	3 Years	1	3
5	Beach monitoring & surveillance of Sea turtle, Survey of Peacock & Asiatic lion in study area.	DPA	3 Years	1	3
6	Control room at coastal area	DPA	-	-	8
7	CCTV, Drone Camera, Manchan, Night vision Binocular, Turtle hatchery, Drinking water sources & other modern technology	DPA	-	-	16
8	Patrolling Motorcycle (05 no)	DPA	-	-	7
Total Amount					100