

# EXPRESSION OF INTEREST

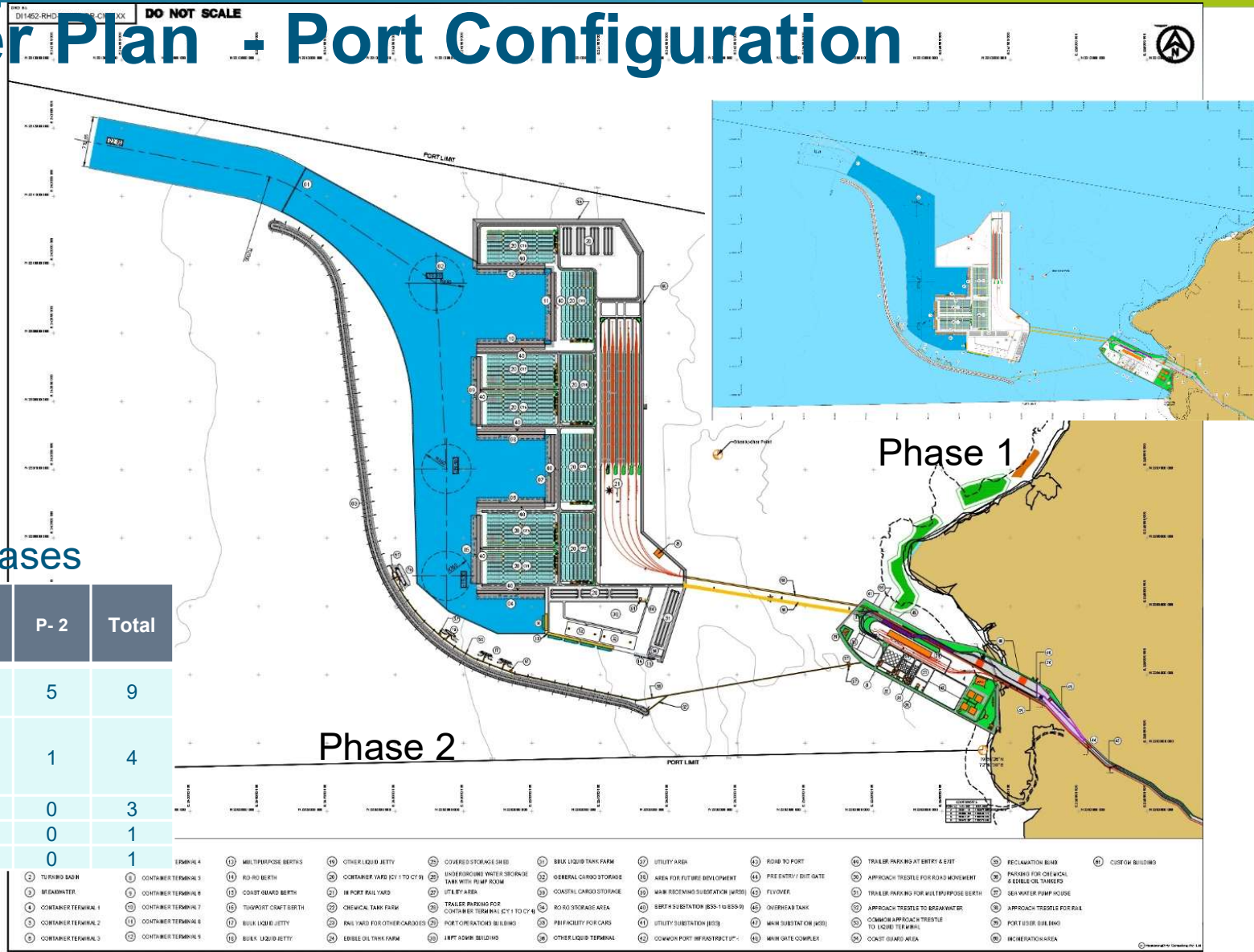
DEVELOPMENT AND MAINTENANCE OF LAND TO BE CREATED IN OFFSHORE OF VADHAVAN COAST BY DREDGING, RECLAMATION & CONSTRUCTION OFFSHORE PROTECTION BUND FOR VADHAVAN PORT ON PPP (HAM & ANNUITY MODEL)



# SALIENT FEATURES OF VADHAVAN PORT

- ❑ SPV VadHAVAN Port Project Limited (VPPL) (JV of JNPT and MMB)
- ❑ Notification as Major Port on 19<sup>th</sup> Feb. 2020
- ❑ Located ~150 Km north of Mumbai
- ❑ On completion, container capacity of ~24.5 Million TEUs
- ❑ Reduction in logistic cost and provide hinterland connectivity through Mumbai-Delhi western railway line and NH-48
- ❑ Mode of Implementation – Landlord Model
- ❑ Investment Approval from Union Cabinet on 19<sup>th</sup> July 2024

# Master Plan - Port Configuration



Port will be developed in phases

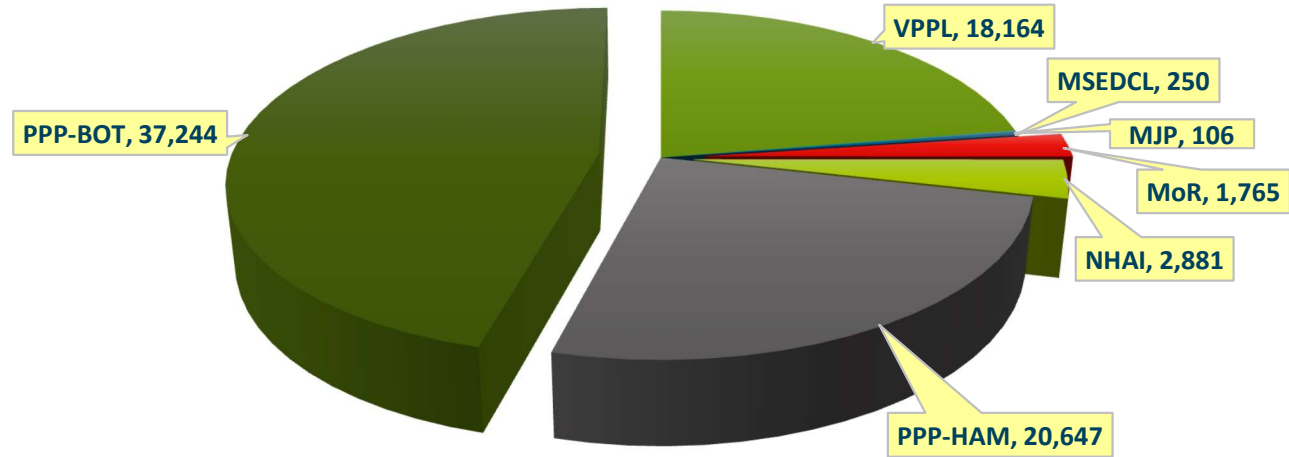
Berths/ Terminals	Berth/ quay length (m)	Ship max draft (m)	P- 1	P- 2	Total
Container quay (1,000 m each)	1,000	18.0	4	5	9
Multi-purpose berths (250 m each)	250	10.5	3	1	4
Liquid bulk berths	300	12	3	0	3
Ro-Ro berth	250	11.3	1	0	1
Coastguard berth			1	0	1

- ① TURNING BASIN
- ② BEAKWATER
- ③ CONTAINER TERMINAL 1
- ④ CONTAINER TERMINAL 2
- ⑤ CONTAINER TERMINAL 3
- ⑥ CONTAINER TERMINAL 4
- ⑦ CONTAINER TERMINAL 5
- ⑧ CONTAINER TERMINAL 6
- ⑨ CONTAINER TERMINAL 7
- ⑩ CONTAINER TERMINAL 8
- ⑪ CONTAINER TERMINAL 9
- ⑫ MULTIPURPOSE BERTHS
- ⑬ RO-RO BERTH
- ⑭ COAST GUARD BERTH
- ⑮ TRAMP CRAFT BERTH
- ⑯ BULK LIQUID JETTY
- ⑰ BULK LIQUID JETTY
- ⑱ OTHER LIQUID JETTY
- ⑳ CONTAINER YARD (CY 1 TO CY 9)
- ㉑ CHEMICAL TANK FARM
- ㉒ RAIL YARD FOR OTHER CARGOES
- ㉓ EDIBLE OIL TANK FARM
- ㉔ INERT ASH BUILDINGS
- ㉕ COVERED STORAGE SHEDS
- ㉖ UNDERGROUND WATER STORAGE TANK WITH PUMP ROOM
- ㉗ UTILITY AREA
- ㉘ TRAILER PARKING FOR CONTAINER TERMINAL CY 1 TO CY 4
- ㉙ PORT OPERATORS BUILDING
- ㉚ INPT ASH BUILDINGS
- ㉛ BULK LIQUID TANK FARM
- ㉜ GENERAL CARGO STORAGE
- ㉝ COASTAL CARGO STORAGE
- ㉞ RO-RO STORAGE AREA
- ㉟ PFI FACILITY FOR CARS
- ㊱ OTHER LIQUID TERMINAL
- ㊲ UTILITY YARD
- ㊳ AREA FOR FUTURE DEVELOPMENT
- ㊴ MAIN RECEIVING SUBSTATION (MRS)
- ㊵ BERTH'S SUBSTATION (BS-1 TO BS-9)
- ㊶ UTILITY SUBSTATION (US)
- ㊷ COMMON PORT INFRASTRUCTURE
- ㊸ ROAD TO PORT
- ㊹ PRE-ENTRY BITT GATE
- ㊺ FLYOVER
- ㊻ OVERHEAD TANK
- ㊼ MAIN SUBSTATION (MS)
- ㊽ MAIN GATE COMPLEX
- ㊾ TRAILER PARKING AT ENTRY & EXIT
- ㊿ APPROACH TRESTLE FOR ROAD MOVEMENT
- 1 TRAILER PARKING FOR MULTIPURPOSE BERTH
- 2 APPROACH TRESTLE FOR BREW WATER
- 3 COMMON APPROACH TRESTLE TO LIQUID TERMINAL
- 4 COAST GUARD AREA
- 5 RECLAMATION MOUND
- 6 PARKING FOR CHEMICAL & EDIBLE OIL TANKS
- 7 SEA WATER PUMP HOUSE
- 8 APPROACH TRESTLE FOR ROAD
- 9 PORT USER SUBSIDY
- 10 INCUBATOR AREA
- 11 CUSTOM BUILDING

# Project Envisioned to have the following components

VPPL (Landlord)	Concessionaires	External Govt Agencies Components
<ol style="list-style-type: none"> <li>1. Offshore breakwater of total length of 10.14 km</li> <li>2. Near Shore reclamation and shore protection bund</li> <li>3. Approach Trestle and connectivity to Break water</li> <li>4. Port craft/Tug berth of 200 m and Aids to Navigation</li> <li>5. Road inside the port: 33.4 km</li> <li>6. Pavements inside the port.</li> <li>7. Miscellaneous Buildings with Port area &amp;</li> <li>8. Land acquisition</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Total Reclamation area inside the port: 1,227 hectares by Dredging in Port area and at Daman offcoast.</b></li> <li>2. Container terminals including yard storage, equipment, internal terminal pavements, drainage, utilities networks, etc., with berth length of 4,000 m (4 berths; each of 1,000 m length) capable of handling upto 24,000 TEU vessels with 24,000 TEU design container vessels.</li> <li>3. Multipurpose berths of 750 m (3 berths; each of 250 m) including equipment, storage yard / shed</li> <li>4. One Roll-On-Roll-Off (Ro-Ro) berth of 250 m including storage and onshore facilities.</li> <li>5. Three Liquid berths with service platform, mooring and breasting dolphin arrangement including pipelines and tankfarm.</li> </ol>	<ol style="list-style-type: none"> <li>1. External road connectivity – by National Highways Authority of India (NHAI)</li> <li>2. External Rail Connectivity and linkage to Indian Railways and Dedicated Freight Corridor (DFC) – by Western Railways (WR)</li> <li>3. External utilities               <ol style="list-style-type: none"> <li>(i) Water supply – by Maharashtra Jeevan Pradhikaran (MJP)</li> <li>(ii) Power supply – by Maharashtra State Electricity Transmission Corporation Limited (MSETCL)</li> </ol> </li> </ol>

# Allocation of Development Works



■ VPPL 
 ■ MJP 
 ■ MSEDCL 
 ■ MoR 
 ■ NHAH 
 ■ PPP-HAM 
 ■ PPP-BOT

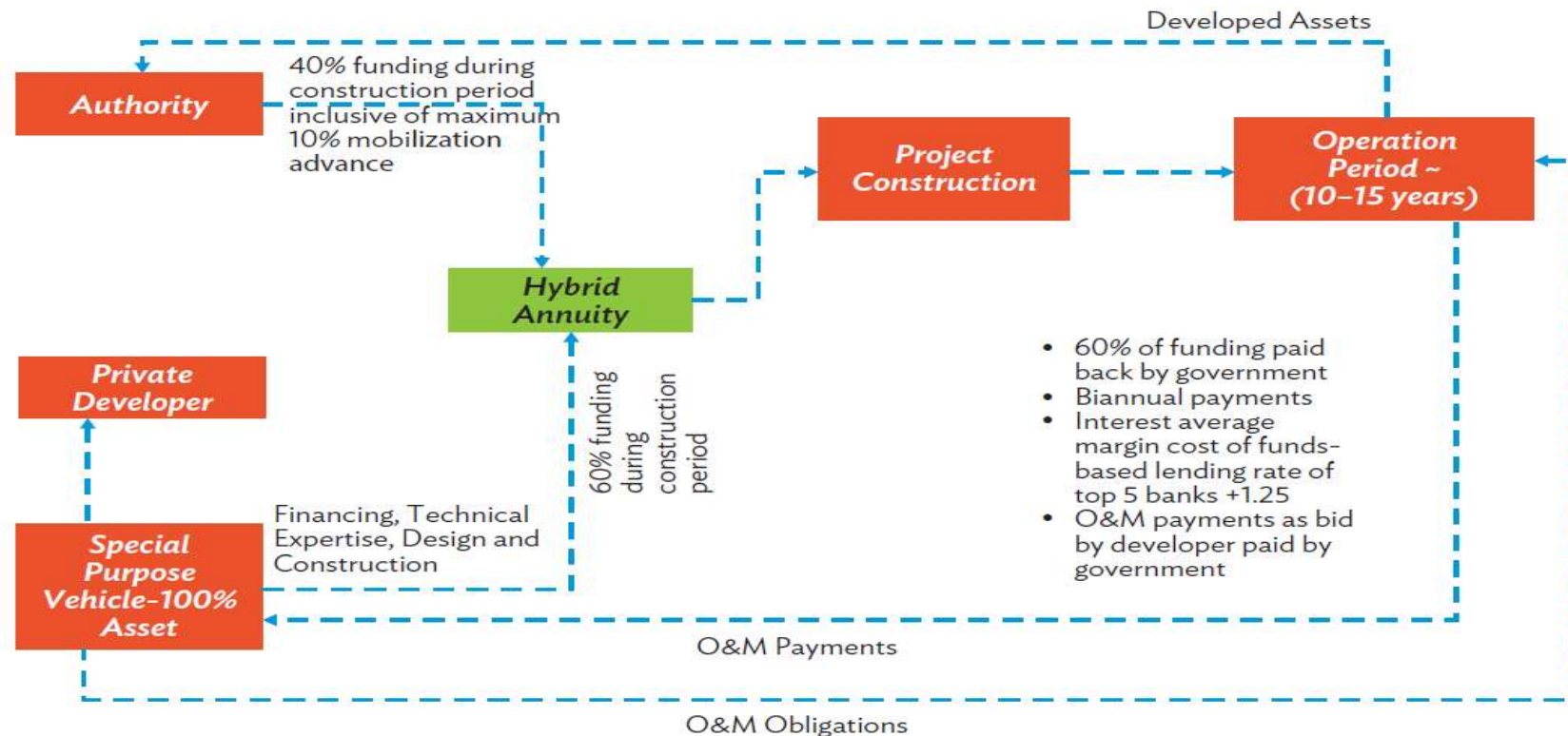
VPPL	Deposit Works		Government Partners		PPP-HAM	PPP
	Water Supply - MJP	Power supply - MSEDCL	External Rail MoR/IR/WR	External Road MoRTH /NHAH		
18,164	106	250	1,765	2,881	20,647	37,244

# Dredging, Offshore Reclamation upto +5.0 m and offshore Shore Protection Works

## □ Objective

- Dredging, develop land parcel through reclamation for the development
  - Shore protection bund for the offshore land development
  - Carrying out Dredging of approach channel, harbour basin,
  - Dredging of sand / material for filling/ Reclamation of total offshore area of 1,227 ha
- To be developed on PPP- preferably on Annuity Model or Hybrid (HAM).
- Maintenance of the developed area for the period as per the Model Agreement.
- Authority will further develop Port infrastructure on Concession basis for Port Operations through PPP.

# Hybrid Annuity Model Process: From Project Procurement to Implementation



O&M = operation and maintenance.

Source: ADB Paper on HAM

# Obligations under HAM

## □ Developer's Obligation

- Development of Dredging of approach channel, harbour basin, dredging of material for filling/ Reclamation of total offshore area of 1,227 ha.
- Maintenance of the developed area for the period as per the model agreement.
- No revenue collection right for the developer.

## □ Employer's Obligation

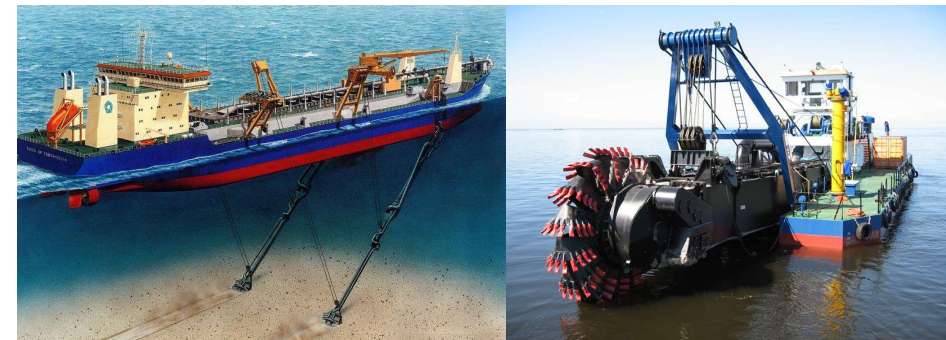
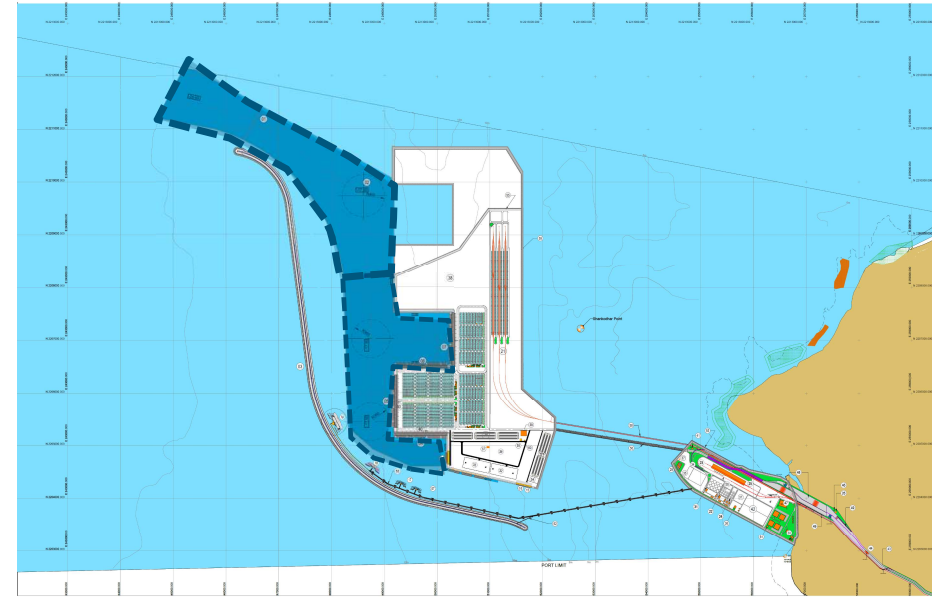
- Development of other common port infrastructure for the project.
- Investment contribution of 40% of the project cost in the first [3-4] years.
- 60% payment as variable annuity amount after completion of the project depending on the values of the asset created.
- Revenue collection would be the responsibility of the Authority [VPPL].
- Occupy the reclaimed land for the development and maintenance of the terminals on PPP basis for containers, Multipurpose, RO-RO, in-port rail yard and Coastguard, etc.



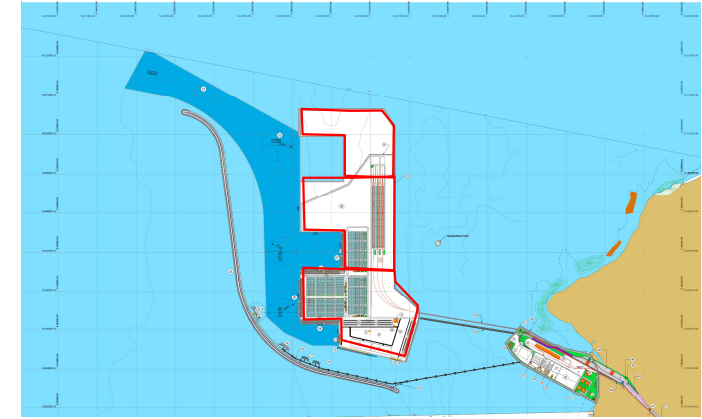
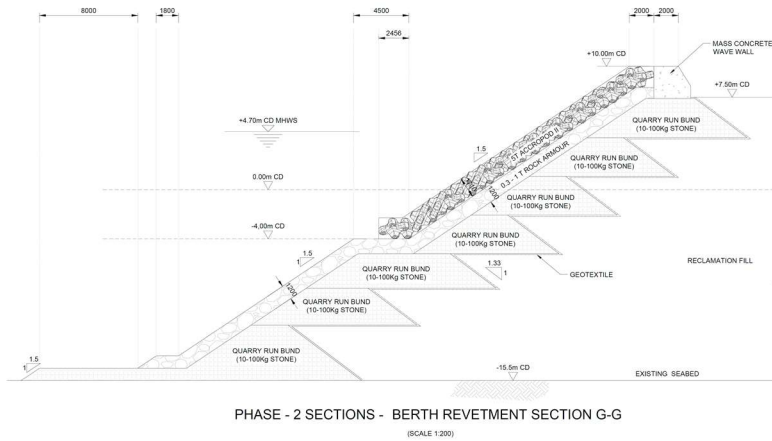
# Dredging, Offshore Reclamation upto +5.0 m CD and SPB

## □ Dredging

- Dredging in approach channel, harbour basin and manoeuvring area
- Dredged Depths in Phase 1
  - Berth pockets – 19.5 m CD
  - Inner approach, Harbour basin – 17.5 m CD
  - Outer approach channel - 20 m CD
- Dredging quantity
  - Soil – ~ 18.3 M cum [3.5 + 14.8]
  - Weathered Rock – 10.1 M cum [3.5 + 6.6]
- Suitable dredged material used for reclamation and unsuitable material to be dumped at designated dumping ground within Port Limit

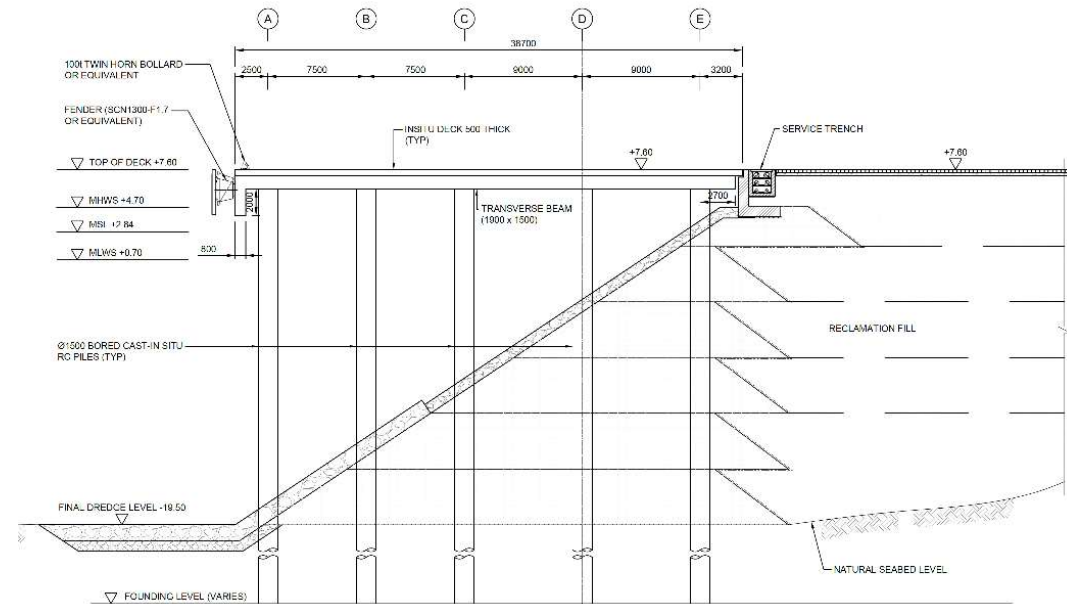


# Dredging, Offshore Reclamation upto +5.0 m CD and Shore Protection Bund



## Shore Protection Works

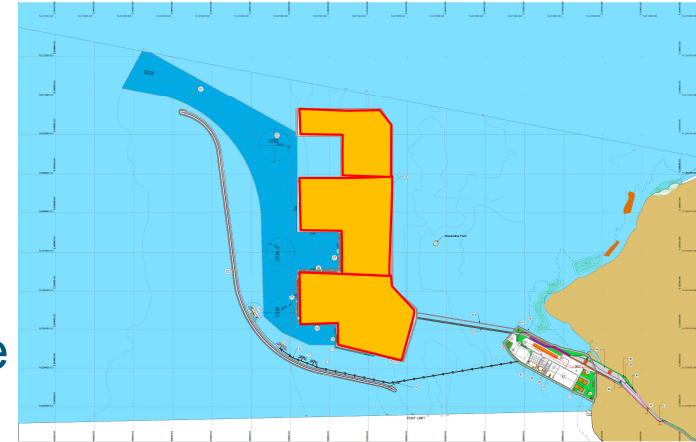
- Proposed all along the edge of the reclamation area
- Depth varies from 6.5 m along the east to 19.5 m CD along the west [ CD at MSL 2.25m]
- Offshore Reclamation Bund - ~22.4 km
- Total rock quantity - ~20.4 million tonnes
- 5T Accropodes II – 18,000 Nos of 2 Cum each



# Dredging, Offshore Reclamation upto +5.0 m CD and SPB

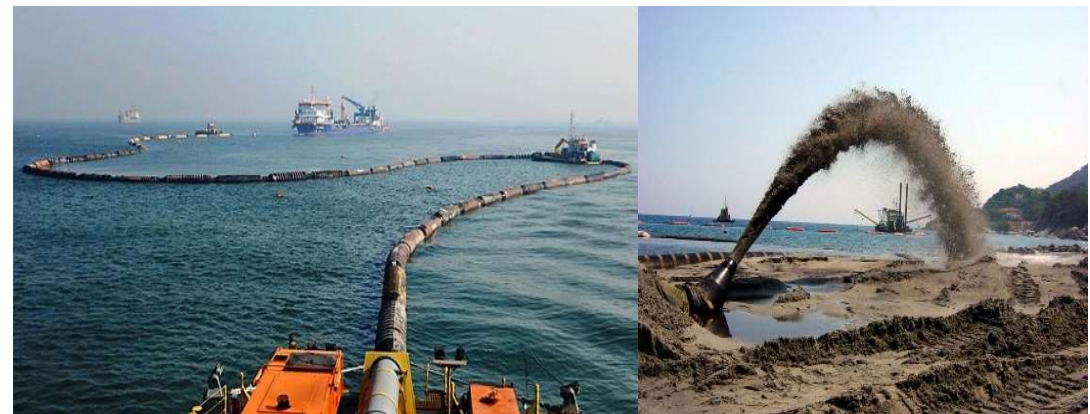
## □ Offshore Reclamation

- Offshore Reclamation carried out at depths varying from 6 m to 15 m CD with an area of 1,227 ha.
- Reclamation of 212 M cum
- Reclamation through material sourced from marine borrow pit



# Reclamation Process

- ❑ The reclamation process comprises of creating bunds in the reclamation areas of suitable heights to receive the dredged material.
- ❑ 5 - 7 THSDs of 24,000 cum capacity would be required to carrying out the dredging and reclamation process
- ❑ The entire activity is to be carried out in a timeframe of ~106 weeks excluding monsoon but including the downtime towards the rough weather conditions
- ❑ Ground improvement if any would be required to be carried out by means of vibro-compaction to ascertain proper compaction of dumped material to avoid any differential settlement.



# Sources of Materials - Rocks & Sea Sand

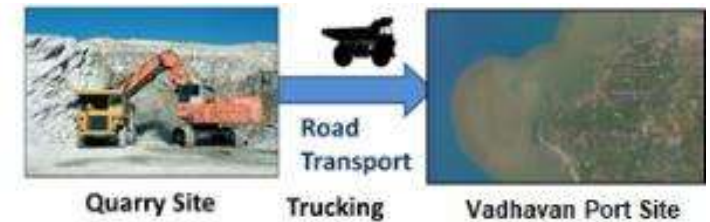
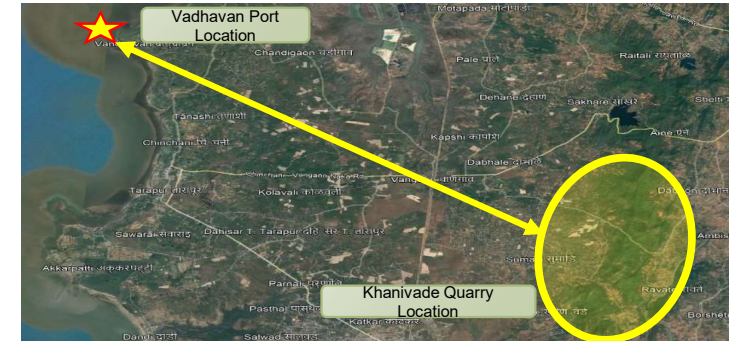
## Stone

- Quarry site is at Khanivade located 20 km from Vadhavan. Identified hillocks are situated in villages of Palghar Taluka

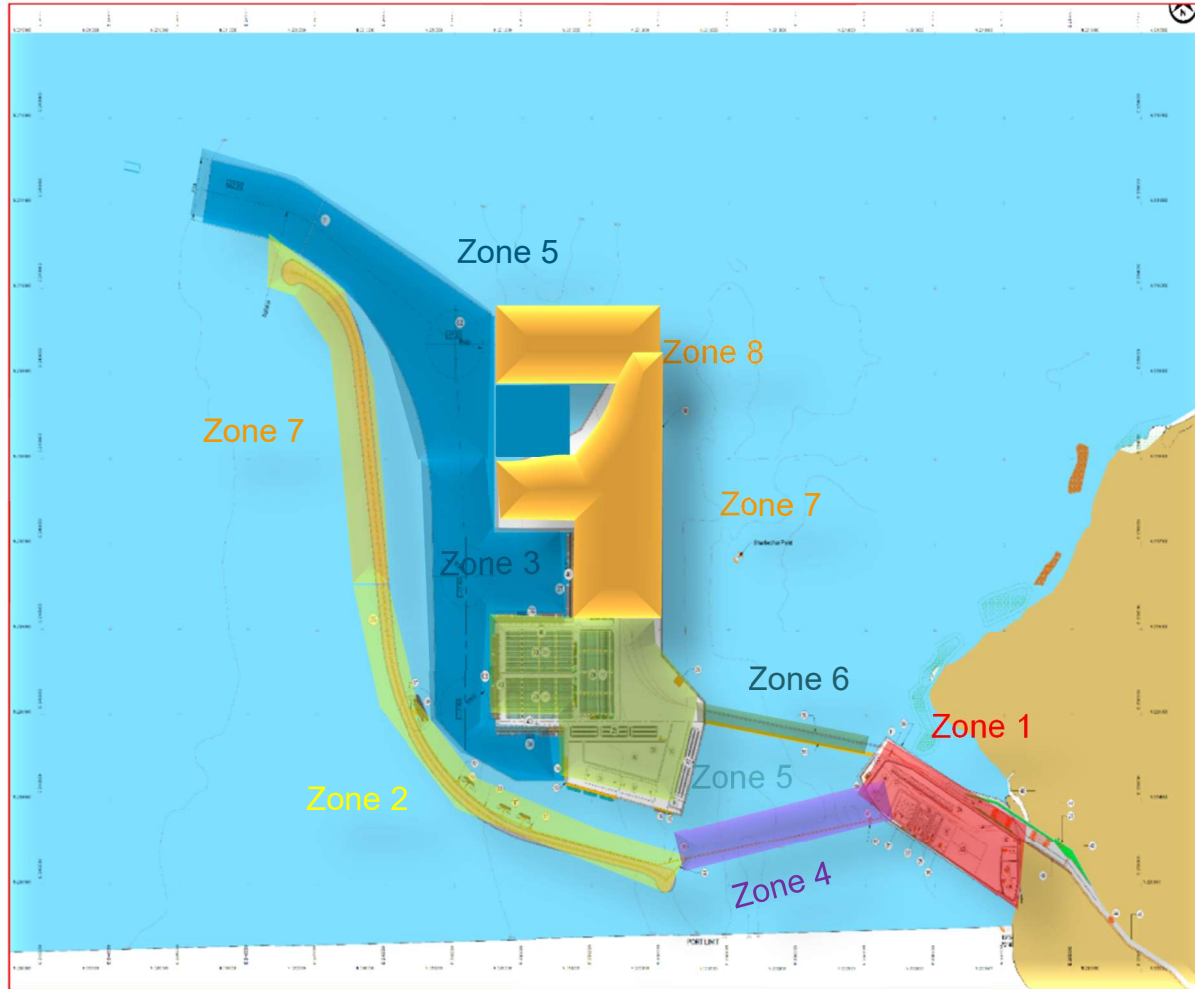
S. No.	Component	Quantity
1.	Rock for Shore protection bund	20.4 (Million T)
2.	Material from Borrow pit	212 (Million cum)

## Sea Sand

- Reclamation fill material will be sourced from the Marine borrow Pit located north of Vadhavan port along the Daman coast. Borrow pit is ~50 km from Vadhavan at a depth of 20 to 25 m..



# Sequence of Construction



# Introduction to Hybrid Annuity Model for Port Development Project

- ✓ HAM- Model requires part of the Private Sector financing by the concessionaire during the construction phase be paid by the Authority during the operation and maintenance (O&M) phase
- ✓ HAM is a variation of the DBOT-Annuity model incorporating a milestone-based payment mechanism during construction as found in EPC contracts.
- ✓ Authority assumes the risks of revenue collection and forecast
- ✓ Private Sector partially shares the financial risk by infusing a part of the project cost during the construction period, and hedges inflation by ensuring indexation of construction costs and O&M payments
- ✓ Balances the financial risks between Authority and the Private Sector.
- ✓ Bidding parameter for HAM projects is referred to as life-cycle costs which consider the NPV of the quoted BPC along with the NPV of O&M costs to be incurred for the entire operations period

# Obligations of Concessionaire and Authority

Phase	Obligations of Concessionaire	Obligations of Authority
<b>Development Phase</b>	<ul style="list-style-type: none"> <li>• Submit performance security</li> <li>• Procure and execute escrow agreement and substitution agreement</li> <li>• Procure all applicable permits</li> <li>• Execute financing agreements</li> </ul>	<ul style="list-style-type: none"> <li>• Procure right-of-way (site) for the project</li> <li>• Procure all applicable permits for environmental protection and forest clearance</li> <li>• Secure approvals for general arrangement drawings for road over-bridges or road under-bridges on the project, if any</li> <li>• Appoint independent engineer to administer the concession agreement Concession Period</li> </ul>
<b>Concession Period</b>	<ul style="list-style-type: none"> <li>• Partly finance and construct as per specifications of Concession Agreement</li> <li>• Fulfil O&amp;M obligations as per provisions of concession agreement</li> </ul>	<ul style="list-style-type: none"> <li>• Pay to the concessionaire as per the achievement of construction Milestones during construction period</li> <li>• Pay annuities, including interest on annuities, make O&amp;M payments during operation period.</li> </ul>



# Bidding Process for HAM Model

- **Bid parameter - Life Cycle Cost (Net present Value (NPV)** of the quoted bid project cost plus NPV of the O & M cost for the entire Concession Period shall be the bid parameter for selection.
- **Cash construction support 40% of the Bid Project Cost** shall be payable to the Concessionaire by the Authority in equal instalments linked to project completion milestones
- **Concessionaire shall have to initially bear the balance 60%** of the bid project cost through a combination of equity and debt and construct the project facilities.
- **Semi Annual Annuity Payment** shall be made to the concessionaire by the Authority on completion of the project for the balance 60% of the project cost along with annuity payment interest shall be paid on the reducing balance of cost. Interest rate for the same shall be **Bank rate plus 1.25%**

## HAM Model - Payments Obligations

- **Project Cost shall be inflation index** through a price index multiple which is the weightage Average of [Wholesale Price Index (WPI) and Consumer Price Index for Industrial Workers (CPI-IW) in the ratio of 70:30.]
- **Concessionaire shall remain responsible for the maintenance** of the project facilities till the end of the Concession Period.
- **O & M payment** shall be made to the Concessionaire by the Authority in accordance with the amount coated which will be the inflation indexed.
- **Concession Period shall comprise construction period**, which is about 3-4 years [project specific] and fixed **concession period** for a period of 15 years [ may be lesser as well]
- **Fees / Charges if any** collection shall be the responsibility of the **Authority**

# Pre- Qualification criteria for selection of the Concessionaires

Technical capacity for demonstrating Technical Capacity and experience the Bidder shall have over the last [5] years financial years preceding the bid due date have ;

- i. paid or received payment for construction of '**Eligible Projects**' and/ or
- ii. paid for development of '**Eligible Projects**' under category 1 & 2 and/or
- iii. collected and appropriated revenue from '**Eligible Projects**' under category 1 & 2 such that total sum & further adjusted by factoring sector specific categories which shall be more than **Rs. 20,647** Crore [100% EPC] '**Technical Capacity**'
- iv. provided that 1/4<sup>th</sup> of the threshold Technical Capability from the eligible project category 1 & 3.
- v. "**Financial Capacity**" minimum Net Worth of Rs. **5,161** Crore [25%of EPC] at the close of the preceding financial year.
- vi. In case of consortium rules as applicable in per RFP, however, the member shall have minimum Net worth at Rs. **2,580** Crore [12.5% of EPC]
- vii. Bidder shall engage experience **O&M contractor** or higher qualified and trained personnels.

## Pre- Qualification criteria for selection of the Concessionaire

Category	Eligible Projects					
	Sector	Qualifiable Project	Min Size of project	Min Share holding	During Last [Y]	Factor
1	Port	PPP	10% EPC	26%	[5 Y]	1.45
2	Core*	PPP	10% EPC	26%	[5 Y]	1.0
3	Port	i. Paid for or received payment for Construction ii. Collected appropriated revenue from users of infra sector projects	10% EPC (Min Receipt/ payments)	-	[5 Y]	1.0
4	Core* [Defined]	i. Paid for or received payment for Construction ii. Collected appropriated revenue from users of infra sector projects	10% EPC (Min Receipt/ payments)	-	[5 Y]	0.70

# Statutory Approvals

S. No.	Approvals / Clearances	Agency concerned	Availability (Y/N)
1	In-Principle Approval for setting of Major Port at Vadhavan in Maharashtra	MoSPW	Y
2	Declaration of port limits under Indian Port Act 1908	MoPSW	Y
3	Approval for port limits	Govt of Maharashtra	Y
4	Environmental Clearances (EC)	MoEF&CC To be obtained by VPPL on behalf of Ministry of RT&H/ Railways with assistance of State Governments	Y
5	Forest Clearance	To be obtained by VPPL on behalf of Ministry of RT&H/ Railways with assistance of State Governments	In Progress
6	Land Acquisition	Land acquisition for road and rail ROW by MoRTH/ NHAI	In progress
7	NOC for development of port	Tarapur Atomic Power Station (TAPS) by VPPL	Y
8	Mining in offshore for Non-Mineral (Sea Sand)	Ministry of Mines by VPPL	Y
9	Leasing of land for Minor mineral mining (Stone Quarry)	State Government by VPPL	In Progress
10	National Security	For Selection of Concessionaire/ Contractors	After Bidding
11	No objection certificate for Development of port	DTEPA by VPPL	Y
12	Water availability Commitment	Maharashtra Jeevan Pradhikaran, GoMP by VPPL	Y
13	Power availability Commitment	Maharashtra State Electricity Distribution Co Ltd. by VPPL	Y
14	Road Connectivity to Port	NHAI	Y
15	Rail Connectivity to Port	Indian Railways	Y

## What is expected from Participants ?

- ❖ Whether the **Applicants** meets the Eligible Criteria as per Model Documents ?
- ❖ Whether **Applicants** able to invest up to 60% of EPC in the project ?
- ❖ **Authority** will be interested to know about the following ;
  - ❖ Experience of previous 5 years of PDD ?
  - ❖ 15 Years Concession Period ?
  - ❖ Will the Applicant take responsibility of Sourcing of Stone Material ?
  - ❖ Any suggestions for improving Methodology and Scope of Work ?
  - ❖ ?

## Schedule for Applicants

S. No.	Event Description	Date & Time
1.	Employer's response to queries	Within one week after Pre-application conference.
2.	Due date of Online Submission of Application	<b>20.08.2024 till 1500 hrs</b>
3.	Opening of Applications	21.08.2024 at 1500 hrs

<b>Address:</b>	<b>Vadhvan Port Project Limited 15<sup>th</sup>. Floor, Express Towers, Nariman Point, Mumbai, Maharashtra 400 021</b>
Tel/Mobile no:	+91- 22 6616 5600/ +91 –9553847474
Email:	<a href="mailto:cmppd@jnport.gov.in">cmppd@jnport.gov.in</a> , <a href="mailto:vishwanathgharat@jnport.gov.in">vishwanathgharat@jnport.gov.in</a>
Vadhvan Port Details	<a href="https://vadhvanport.in/index.php/media-center/">https://vadhvanport.in/index.php/media-center/</a>



Thank You!

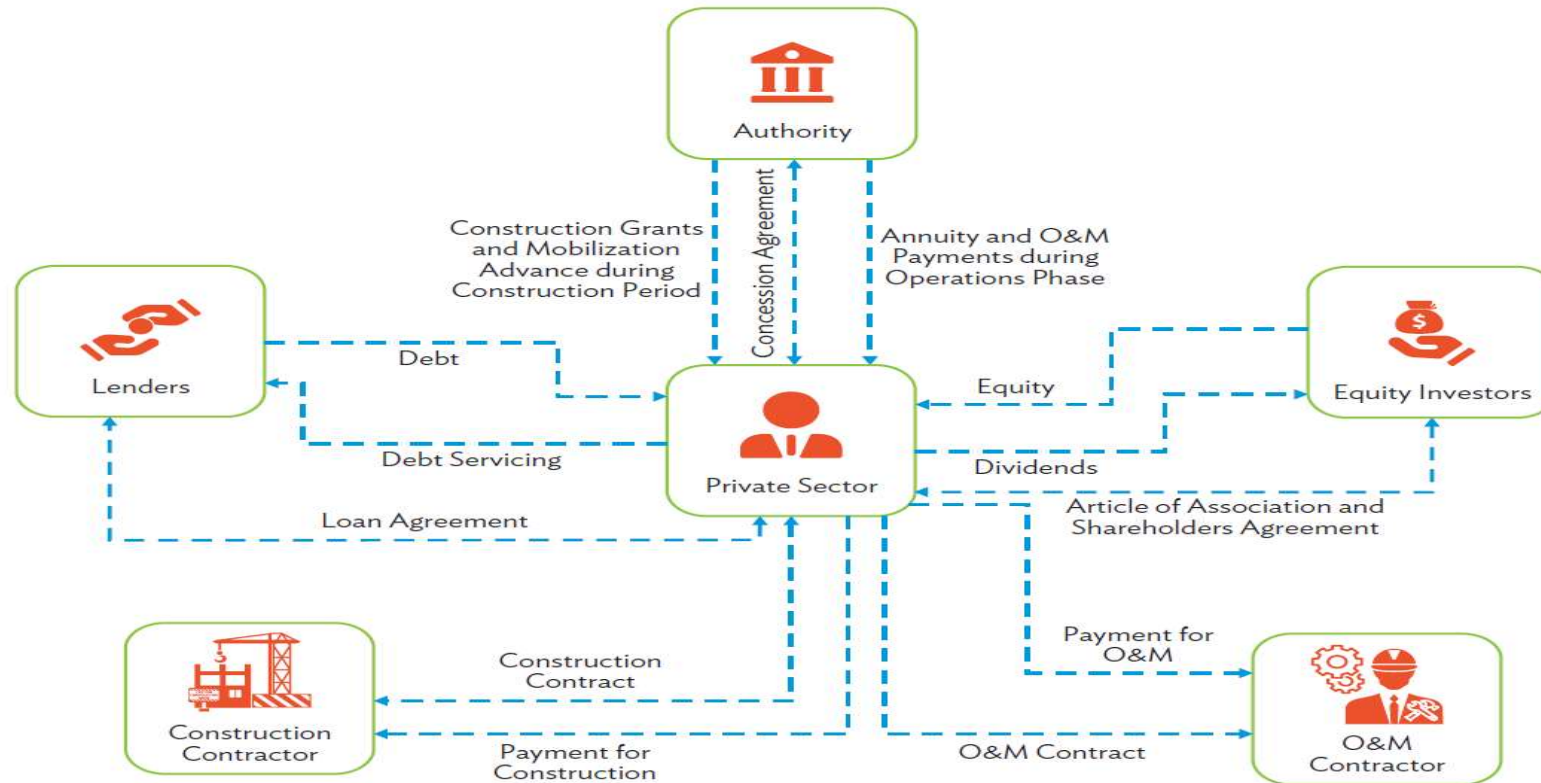


વાઢવણ બંદર  
**VADHVAN**  
— P O R T —  
VADHVAN PORT PROJECT LTD.



# HAM Model Process: From Project Procurement to Implementation

Figure 3: Schematic Depiction of Stakeholder Ecosystem in Hybrid Annuity Model Contracts



O&M = operation and maintenance.

Source: Analysis by authors based on Ministry of Road Transport and Highways Circular: Hybrid Annuity Model for Implementing Highway Projects. Government of India (8 February 2016).