

No. MMRDA/MTHL-PIU/JICA/QPR-13/ 0115/2021

Date: 15<sup>th</sup> February 2021

**To**

**Mr. Katsuo Matsumoto**

**Chief Representative**

Japan International Cooperation Agency (JICA)

16<sup>th</sup> Floor, Hindustan Times House,

18-20, Kasturba Gandhi Marg, New Delhi – 110001

**Sub: Mumbai Trans Harbour Link Project (I) (ID-P255)**

- **Quarterly Progress Report-13 (April 2021-June 2021)**

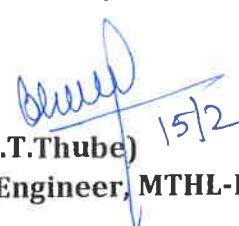
Sir,

1. The Quarterly Progress Report-13 for the Mumbai Trans Harbour Link Project for the period of April 2021 – June 2021 is enclosed herewith for information.
2. Please note that the Quarterly Progress Report-13 could not be submitted earlier because of the unprecedented situation caused by COVID-19 pandemic.

Thanking you,

Yours faithfully

**Encl: QPR-13 (April 2021 – June 2021)**

  
**(Dr. D.T. Thube)** 15/2  
**Chief Engineer, MTHL-PIU**

Copy submitted to,

-**Mr. K.A. Sivadas**, Under Secretary, BC Division (JICA Projects Section), Department of Economic Affairs, Ministry of Finance, North Block, New Delhi – 110001

**Encl: QPR-13 (April 2021 – June 2021)**

**Mumbai Metropolitan Region Development Authority**

Bandra-Kurla Complex, Bandra East, Mumbai 400 051

T +91 22 2659 1234 EPABX +91 22 2659 0001 / 4000 F +91 22 2659 1112 / 1264

<https://mmrda.maharashtra.gov.in>



**एम एम आर डी ए**  
**MMRDA**

Mumbai Metropolitan Region Development Authority

# Mumbai Trans Harbour Link Project

## Quarterly Progress Report - No.13

(From 1<sup>st</sup> April 2020 to 30<sup>th</sup> June 2020)



**Mumbai Trans Harbour Link Project  
Quarterly Progress Report No. 13  
1<sup>st</sup> April 2020 to 30<sup>th</sup> June 2020  
Loan Agreement No. ID-P255 (Tranche-I)**

**ORGANIZATION INFORMATION**

<b>Borrower</b>	<b>Mumbai Metropolitan Region Development Authority</b>	
	Person in Charge	<b>Metropolitan Commissioner, MMRDA</b>
	Contact Address	M.M.R.D.A. New Office Building, Bandra-Kurla Complex, Plot no. R-5, R-6 & R-12, E Block, Bandra (East), Mumbai - 400051 Phone: +91-22-26594000 Fax No:+91-22-2659 1264
<b>Executing Agency</b>	<b>Mumbai Trans Harbour Link Project Implementation Unit</b>	
	Headed by:	Chief Engineer Mumbai Trans Harbour Link Project Implementation Unit
	Contact Address	M.M.R.D.A. New Office Building, Bandra-Kurla Complex, Plot no. R-5, R-6 & R-12, E Block Bandra (East), Mumbai - 400 051 Phone: +91-22-2659 4034 Fax No: +91-22-2659 4179

**Details of JICA Loan**

<b>Source of Finance</b>	JICA ODA Loan Portion:	238,572 million Japanese YEN (JPY)
	Tranche-I:	144,795 million Japanese YEN (JPY) (Loan Agreement signed on 31 <sup>st</sup> March 2017)
	Tranche-II:	66,909 Million Japanese YEN (JPY) (Loan Agreement signed on 27 <sup>th</sup> March 2020)
<b>Terms and Conditions of JICA ODA Loan (Tranche-1)</b>	Interest Rate:	0.10000% (LIBOR (-0.04817%) + SPREAD RATE (0.10000%)) from 20 <sup>th</sup> September 2019 to 19 <sup>th</sup> March 2020.
	Repayment Period:	30 years, including 10 years of grace period.



## Contents

<b>1.0 PROJECT DESCRIPTION</b> .....	<b>5</b>
1.1 Project Objective.....	5
1.2 Necessity of the Project.....	5
1.3 Rationale of the Project Design.....	7
<b>2.0 PROJECT IMPLEMENTATION</b> .....	<b>9</b>
2.1 Project Scope.....	9
2.2 Implementation Schedule.....	11
2.3 Project Cost.....	12
2.3.1.a Comparison of Originally Planned and Actually Incurred Cost BY ITEM.....	12
2.3.1.b Comparison of Originally Planned and Actually Incurred Cost BY YEAR.....	14
2.4 Organization for Implementation.....	15
2.4.1 Executing Agency.....	15
2.4.2 Contractor(s)/ Supplier(s), and Consultant(s) and their Performance:.....	16
2.4.2.1 Procurement & Consultant.....	16
2.4.2.2 Performance.....	17
Consultant's Progress:.....	17
Contractor's Progress:.....	18
Package-1 Physical Progress till 30 <sup>th</sup> June 2020.....	18
Package-2 Physical Progress till 30 <sup>th</sup> June 2020.....	19
Package-3 Physical Progress till 30 <sup>th</sup> June 2020.....	20
Package-4 (ITS) Progress till 30 <sup>th</sup> June 2020.....	20
Health & Safety and Environment (HSE).....	21
Package-1 Safety Report.....	21
Package-2 Safety Report.....	22
Package-3 Safety Report.....	23
<b>3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)</b> .....	<b>24</b>
3.1 Operational and Physical Condition.....	24
3.2 Precautions (Measures To Be Adopted/ Points Which Require Special Attention).....	24
3.3 Environmental and Social Impacts.....	26
3.4 Qualitative and Quantitative Data of Monitoring Indicators.....	29
3.5 Monitoring Plan for the indicators.....	30
3.6 Achievement of the Project Objective.....	30
<b>4.0 OPERATION AND MAINTENANCE (O&amp;M) (SUSTAINABILITY)</b> .....	<b>31</b>
4.1 O&M and Management.....	31
4.2 O&M Cost and Budget.....	31
<b>5.0 EVALUATION</b> .....	<b>32</b>
5.1 JICA and Borrower / Executing Agency performance.....	32
5.2 Overall Evaluation.....	32
5.3 Lessons Learnt and Recommendations.....	32
Attachment 1- MMRDA & PIU Organization Chart.....	33
Attachment 2- Environmental & Social Impacts Attachments.....	36
Attachment 3- JICA's Concurrence Status.....	37
Attachment 4- Project Procurement and Financial Status till 30th June 2020.....	39
Attachment 5- S-Curve for Cumulative Planned Vs Actual Amount in JPY Million.....	41
Attachment 6- Package-1's Construction Programme Updated as on 25th June 2020.....	42
Attachment 7- Package-2's Construction Programme Updated as on 25th June 2020.....	43
Attachment 8- Package-3's Construction Programme Updated as on 25th June 2020.....	44
Attachment 9- Project Progress Photos.....	45

## 1.0 PROJECT DESCRIPTION

### 1.1 Project Objective

#### **Original:**

To improve connectivity in Mumbai Metropolitan region by constructing the Mumbai Trans Harbour Link connecting Mumbai with Navi Mumbai, thereby contributing to mitigation of traffic congestion and promoting regional economic development.

Actual (*P/R, PCR*)

There is no change in the Project Objective.

### 1.2 Necessity of the Project

**The Project is consistent with the development policy, sector plan, national/regional development plans and demand of target group of the recipient country.**

#### **Benefits from MTHL Project**

- Saving in travel time for commuters from Mumbai to Navi Mumbai.
- Improved comfort and accessibility between the island and the mainland.
- Reduced operating costs of vehicles due to lesser congestion.
- Smooth traffic flow from Navi Mumbai airport to Mumbai Island.
- Accelerated economic development of Navi Mumbai and nearby regions.
- Greater economic integration of Mumbai island with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug.
- Improvement in environment and reduced pollution levels.
- Improved safety due to reduction in accidents.
- Improvement in trade competitiveness through faster and improved logistics.
- Accelerated growth of Navi Mumbai.
- Decongestion of Mumbai Island and dispersal of population to Navi Mumbai region & beyond.

#### **Necessity of the Project**

1. Although the urbanization in India has been rapidly progressing, infrastructure development in the urban areas has not caught up its progress. Particularly, the traffic congestion in the urban areas due to a lack of road network hinders the economic development. Thus, Government of India (GOI) places transport and connectivity as one of the “Growth Enablers” and plans to enhance road network in the “Three Year Acton Agenda 2017-2018 to 2019-20 (NITI Aayog)”.
2. Mumbai Metropolitan Region, which includes Mumbai and Navi Mumbai, has about 18.4 million people in population as of 2011 (Census 2011) and the population density reaches 20,694 people per square km in the center of Mumbai, which is one of the most overpopulated and high-density cities in the world.
3. Mumbai, the narrow stretch of land that has traditionally been the epicentre of India’s commerce, has seen a steady increase in population in the last three decades despite obvious spatial constraints. Thus, the development of Navi Mumbai has been identified as an urgent requirement for broad development in Mumbai Metropolitan Region.

4. The Government of Maharashtra (GoM), of which Mumbai Metropolitan Region is under jurisdiction, has been facilitating various development plans particularly in Navi Mumbai area, which stands at the opposite site of Mumbai across the Mumbai Bay and still has spacious area for development, such as a new international airport, Special Economic Zone (SEZ) and expansion of Jawaharlal Nehru Port in order to promote the sustainable economic development in Mumbai Metropolitan Region.
5. Furthermore, a lack of connectivity in Mumbai has stunted its growth. The GoM has given importance to construct the faster connection with Mumbai to Navi Mumbai International Airport, Jawaharlal Nehru Port, Mumbai-Pune expressway and main hinterland.
6. Accordingly, the Mumbai Trans Harbour Link (MTHL) has been identified as the important infrastructure to improve the connectivity between Mumbai and Navi Mumbai and continue economic development in Mumbai Metropolitan Region.

The MTHL is proposed to be developed as an expressway link comprising of a dual three-lane main carriageway bridge connecting Sewri in Mumbai to Chirle in Navi Mumbai. When completed, MTHL will reduce the distance between Mumbai and Navi Mumbai and will help save approximately an hour in travel time. Also, development of Navi Mumbai along with the imminent construction of the Navi Mumbai airport will lead to increased traffic between Mumbai and Navi Mumbai. Consequently, the project is envisaged to; improving accessibility between Mumbai and Navi Mumbai, accelerating growth of Navi Mumbai, smooth traffic flow from Navi Mumbai airport to Mumbai, accelerating economic development of Navi Mumbai and surrounding regions, greater economic integration of Mumbai with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug, and decongestion of Mumbai and dispersal of population to Navi Mumbai region and beyond.

7. The Comprehensive Transportation Study (CTS) for Mumbai Metropolitan Region which was guided by Mumbai Metropolitan Region Development Authority (MMRDA) and supported by World Bank, was completed in July 2008, which was over 25 years after the issuance of the last comprehensive transport study. The report provided a vision for Mumbai's future transportation as seamless and integrated system, in which commuters can make their journeys safely and conveniently by various modes of transport, particularly by public transport, and recommended the development of Multi Modal Corridor to take care of the varied travel demands of the region for the period up to 2031. The CTS proposed to develop the highway network in the region. The MTHL has been regarded as the priority road for Mumbai, considering its function and importance connecting between Mumbai and Navi Mumbai.
8. Necessity of the Project: - To promote economic development in Mumbai Metropolitan Region it is essential to improve the connectivity between Mumbai and Navi Mumbai, by constructing MTHL.

**Actual (P/R, PCR)**

There is no change in the Necessity of the Project preamble.

### 1.3 Rationale of the Project Design

- Timing, Scale, Technology of the Project:

#### Demand Analysis

- At the opening year 2022, the daily traffic on the main bridge is expected to be 39,300 PCU. The traffic is projected to increase up to 103,900 by 2032 and up to 145,500 by the year 2042. The daily breakdown by vehicle class on the main bridge link is presented in the Table 1.3.1 below:

**Table 1.3.1 Demand Projections Over the Period**

Vehicle Type	Between Sewri Interchange and Shivaji Nagar Interchange			Between Shivaji Nagar Interchange and Chirle Interchange		
	2022	2032	2042	2022	2032	2042
Car	24,100	66,400	94,100	4,900	21,300	43,300
Taxi	2700	14,100	20,200	100	400	2,300
Bus	2,700	3,700	3,700	2,700	3,700	3,700
LCV	2,200	4,100	5,600	700	1,300	1,800
HCV	3,000	6,500	8,100	1,000	2,000	2,200
MAV	4,600	9,100	13,800	400	900	1,700
<b>Total</b>	<b>39,300</b>	<b>103,900</b>	<b>145,500</b>	<b>9,800</b>	<b>29,600</b>	<b>55,000</b>

LCV: Light Commercial Vehicle; HCV: Heavy Commercial Vehicle; MAV: Multi Axle Vehicle

- At the opening year in 2022, the traffic flow on MTHL represents a diversion of 10% on the traffic across Thane creek which will increase up to 16% in 2032. If only Thane Creek Bridge is considered, then the diverted traffic from the bridge will be 21% in 2022 which will rise up to 35% in 2032.
- 6-lane of main carriageway was decided by GoM. It was reviewed based on the forecasted result of future traffic volume by Manual of Specification and Standards for Expressways (IRC: SP:99-2013). The result of the review shows that 6-lane will be required in 2032 (10 years later after traffic open). Although, 8-lane will be required in 2042, it is assumed that the level of service of MTHL would be maintained as additionally metro might be constructed in parallel with MTHL.

#### Design Parameters / Overall Design

- The MTHL which is 21.8 km long road bridge partly on the land and partly over the creek across the Mumbai Bay between Sewri in Mumbai and Chirle in Navi Mumbai, is to be constructed with the approach sections and interchanges. ITS (Intelligence Transport System) and the other necessary facilities will be provided for full access-controlled bridges.
- As per the provisions of IRC (Indian Road Congress) SP:99-2013, the Width of each lane of the Main Carriageway is 3.5 meters.
- When the design speed is 100 km/h according to the traffic demand forecast the large vehicle, ratio will be as low as 9.4% (2022).
- The shoulder width of bridge towards outside of each carriageway is 2.5 meters and towards median side of each carriageway is 0.75 meters.
- The major portion of MTHL structure is on sea and partly towards ends is on land with



different type and with different span, viz., PC box girder with 50 m spans which is typically applied on marine viaduct since, it is economical, easy to construct and maintain.

9. On the land portion, the PC box girder having span of generally 30m is used.
10. As far as the location in which long span (150-180 m) is required to cross significant obstacles, such as navigation channels, pipelines and creeks, the steel box girder bridge with steel deck is proposed with large block erection method to shorten the construction period.
11. The project is coded with three lanes of traffic in each direction. The reference toll is presented in the Table 1.3.2 below for each vehicle class in Year 2022 (based on 2015 monetary value reflecting price escalation).

**Table 1.3.2: Base Toll Rates (Rs) for different class of vehicles between Interchanges**

Vehicle Type	Sewri to Shivaji Nagar	Shivaji Nagar to Chirle	Total
Car	180	60	240
Bus	420	130	550
LCV	240	70	310
HCV	420	130	550
MAV	600	180	780

**Intelligent Transport Systems (ITS) and Toll Management System (TMS)**

12. The Toll Management System will be implemented in MTHL to collect tolls from all road users of MTHL. Two types of toll collection method will be adopted; Electronic Toll Collection (ETC) and Manual (paying by cash).
13. The lanes corresponding to these toll collection methods are dedicated ETC lanes and Manual lanes, and Manual system shall be installed to ETC lanes for backup to be able to cope at the time of the trouble of ETC equipment failure.

**Traffic management System**

14. Traffic Management System is a support system to Manage the traffic on MTHL safely and efficiently. The System consists of the information collection system including Closed-Circuit Television (CCTV), Emergency Call Box (ECB), Automatic Traffic Counter-Cum-Classifer (ATCC) and Meteorological Data System (MDS), and Information Dissemination System including Variable message Sign (VMS).
15. CCTV Cameras shall be installed at around three places per 1 km, on Both side of main route and the monitoring of the traffic condition of the whole stretch of MTHL will be almost enabled in the Traffic Control Centre and VMS displays the appropriate information for road users on the collated information.
16. The Information collected by these devices shall be transmitted to the Command Control Centre through the medium of an Optical Fiber Cable laid in MTHL.

Actual (P/R, PCR)

There is no change in the Rationale of the Project Design.

## 2.0 PROJECT IMPLEMENTATION

### 2.1 Project Scope

Refer Table 2.1.1 and 2.1.2 for details on Scope of the Project.

**Table 2.1.1 Comparison of Original and Actual location**

<b>Location</b>	<b>Original: (P/M)</b> Mumbai Metropolitan Region Development Authority, Mumbai, State of Maharashtra	<b>Actual: (P/R and PCR)</b>
-----------------	--	------------------------------

**Table 2.1.2 Comparison of Original and Actual Scope**

Items	Original	Actual
<b>Construction work: 6-lane Marine Bridge Road (21.8 km)</b>		
Package-1 Ch 0+000-10+380 (10.380 km)	<ul style="list-style-type: none"> <li>1 Interchange (Sewri)</li> <li>Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder)</li> <li>Viaduct Substructure (RC Concrete Structure)</li> <li>Viaduct Foundation (Bored piles)</li> <li>Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)</li> </ul>	(P/R and PCR)
Package-2 Ch 10+380-18+187 (7.80 km)	<ul style="list-style-type: none"> <li>1 Interchange (Shivaji Nagar)</li> <li>Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder)</li> <li>Viaduct Substructure (RC Concrete Structure)</li> <li>Viaduct Foundation (Bored piles)</li> <li>Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)</li> </ul>	(P/R and PCR) Actual: No View Barriers
Package-3 Ch 18+187-21+800 (3.61 km)	<ul style="list-style-type: none"> <li>2 Interchanges (State Highway-54, National Highway-4B)</li> <li>Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder &amp; Steel Truss Girder for Rail-over-Bridges (ROB))</li> <li>Viaduct Substructure (RC Concrete Structure)</li> <li>Viaduct Foundation (Bored piles)</li> <li>Cutting Section (6-lane with Slope Protection)</li> <li>Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)</li> </ul>	(P/R and PCR) Actual: No Noise Barriers & View Barriers

Items	Original	Actual
Package-4 ITS (Intelligent Transport System)	<ul style="list-style-type: none"> <li>• Administrative Buildings</li> <li>• Toll Booths (1 for main alignment and each on and off rumps for 3 interchanges)</li> <li>• Traffic Management System (Traffic Control Centre, Closed Circuit Television (CCTV), Meteorological Observation System (MET), Emergency Call Box (ECB), Automatic traffic Counter-cum-Classifier (ATCC), Variable Message Sign (VMS))</li> <li>• Highway Lighting (Whole sections Low-positioned lighting for some sections)</li> <li>• Electrical Powering System including HV/ LV Ring Network across the Bridge.</li> </ul>	<p style="text-align: center;"><i>(P/R and PCR)</i></p>
Consulting Services	<ul style="list-style-type: none"> <li>• Tender Assistance</li> <li>• Construction Supervision</li> <li>• Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP).</li> </ul>	<p style="text-align: center;"><i>(P/R and PCR)</i></p>

## 2.2 Implementation Schedule

### 2.2.1 The Original Implementation Schedule

**Table 2-2-1 Comparison of Original and Actual Schedule**

Items	Original	Status (P/R and PCR) as on 30 <sup>th</sup> June 2020
1) Completion of Land Acquisition and Resettlement	March 2019	December 2020
2) Consulting Services		
a) Selection of Consultant	May – December 2016	May – December 2016
b) Consultancy Works	December 2016 – September 2024	December 2016 – September 2024
3) Selection of Contractor		
Package-1, Package-2 & Package-3 (Civil)		
a) Pre-Qualification Process	May – December 2016	May – December 2016
b) Main Bidding	January – December 2017	January – December 2017
c) JICA's Concurrence of Contract	February-2018	February-2018
Package-4 (ITS)		
a) Pre-Qualification Process	January 2019 – May 2019	January 2020 – April 2020
b) Main Bidding	June 2019 – September 2020	May 2020 – September 2020
4) Civil Construction		
Package-1 and Package-2	March 2018 – September 2022	March 2018 – September 2022
Package-3	March 2018 – September 2021	March 2018 – September 2021
Package-4	October 2020 – September 2022	June 2021 – September 2022
5) Defect Liability Period		
Package-1, Package-2 and Package-4	October 2022 – September 2024	October 2022 – September 2024
Package-3	October 2021 – September 2023	October 2021 – September 2023
6) Commencement of Toll Collection	September -2022	September -2022
7) Selection of O&M Organization	October 2020 – September 2021	October 2021 – September 2022

**Attachment 6, 7 & 8:** Package wise construction schedules updated at the end of 1st quarter (April-June 2020).

### 2.2.2 Reasons for changes of the schedule and their effects to the Project

(P/R and PCR)

No change in the Implementation Schedule except the selection of O&M Organization timeline.

## 2.3 Project Cost

### 2.3.1.a Comparison of Originally Planned and Actually Incurred Cost BY ITEM

Table 2.3.1.a.(i) Originally Planned Cost BY ITEM

Cost Breakdown	Foreign Currency Portion			Local Currency Portion			Total		
	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mil)	Others (Rs. mil)	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)
Package-1	34,398	34,398	0	45,376	45,376	0	105,713	105,713	0
Package-2	26,513	26,513	0	32,617	32,617	0	77,774	77,774	0
Package-3	759	759	0	8,276	8,276	0	13,766	13,766	0
Package-4 (ITS)	0	0	0	1,444	1,444	0	2,269	2,269	0
Package-5 (Geotechnical Investigation)	0	0	0	166	0	166	260	0	260
Dispute Boards (Package-1, 2, 3 & 4)	63	63	0	45	45	0	134	134	0
Price Escalation	2,251	2,251	0	7,133	7,133	0	13,460	13,460	0
Physical Contingency	6,398	6,398	0	9,506	9,489	17	21,338	21,312	26
Consulting Services	1,650	1,650	0	1,587	1,587	0	4,145	4,145	0
Land Acquisition*	0	0	0	11,293	0	11,293	17,748	0	17,748
Administration Cost	0	0	0	4,898	0	4,898	7,698	0	7,698
GST	0	0	0	18,238	0	18,238	28,663	0	28,663
Import Tax	0	0	0	13,435	0	13,435	21,114	0	21,114
Interest during construction	2,942	0	2,942	0	0	0	2,942	0	2,942
Front End Fee	477	0	477	0	0	0	477	0	477
<b>Total</b>	<b>75,451</b>	<b>72,032</b>	<b>3,419</b>	<b>154,013</b>	<b>105,967</b>	<b>48,046</b>	<b>317,501</b>	<b>238,572</b>	<b>78,929</b>

(Note) 1. Exchange Rate: US\$1=Rs. 71.9, US\$1=JPY 113.0, Rs.1 = JPY 1.57

2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.

(b) Local Currency Portion: 4.13% p.a.

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

\* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.

**Table 2.3.1.a.(ii) Actually Incurred Cost BY ITEM**

Cost Breakdown	Foreign Currency Portion			Local Currency Portion			Total		
	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mil)	Others (Rs. mil)	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)
Package-1	5,618	5,618	-	17,446	17,446		32,653	32,653	
Package-2	5,417	5,417	-	12,299	12,299		23,427	23,427	
Package-3	72	72	-	3,185	3,185		4,950	4,950	
Package-4 (ITS)	-		-	-			-		
Package-5 (Geotechnical Investigation)	-			196		196	308		308
Dispute Boards (Package-1, 2, 3 & 4)	-			-			-		-
Price Escalation	-			4	4		6	6	-
Physical Contingency	-			-			-		-
Consulting Services	253	253		362	362		899	899	
Land Acquisition*	-			6,014		6,014	9,442		9,442
Administration Cost	-			2,281		2,281	3,582		3,582
GST	-			4,639		4,639	7,283		7,283
Import Tax	-			-			-		-
Interest during construction	-			-			-		-
Front End Fee	-			-			-		-
<b>Total</b>	<b>11,360</b>	<b>11,360</b>	<b>-</b>	<b>46,426</b>	<b>33,295</b>	<b>13,130</b>	<b>82,550</b>	<b>61,935</b>	<b>20,614</b>

(Note) 1. Exchange Rate: Rs.1 = JPY 1.57 for MMRDA Portion only

2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.

(b) Local Currency Portion: 4.13% p.a.

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

\* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.

2.3.1.b Comparison of Originally Planned and Actually Incurred Cost BY YEAR

Table 2.3.1.b.(i) Originally Planned Cost BY YEAR

(All Figures are in JPY mil)

Cost Breakdown	Total	JICA Portion				Others (MMRDA Portion)
		Tranche I	Tranche II	Tranche III	Sub Total	
FY 2017	12,679	10,134	0	0	10,134	2,545
FY 2018	30,771	22,707	0	0	22,707	8,064
FY 2019	72,379	56,816	0	0	56,816	15,563
FY 2020	92,944	55,138	16,040	0	71,178	21,765
FY 2021	66,397	0	50,869	0	50,869	15,527
FY 2022	27,683	0	0	20,113	20,113	7,570
FY 2023	3,723	0	0	565	565	3,158
FY 2024	10,925	0	0	6,189	6,189	4,735
<b>Total</b>	<b>317,501</b>	<b>144,795</b>	<b>66,909</b>	<b>26,868</b>	<b>238,571</b>	<b>78,929</b>

Table 2.3.1.b.(ii) Actually Incurred Cost BY YEAR

(All Figures are in JPY mil)

Cost Breakdown	Total	JICA Portion				Others (MMRDA Portion)
		Tranche I	Tranche II	Tranche III	Sub Total	
FY 2017	13,738	9,232	-	-	9,232	4,506
FY 2018	26,813	21,695	-	-	21,695	5,118
FY 2019	40,404	31,008			31,008	9,396
FY 2020	1,594	-	-	-	-	1,594
FY 2021						
FY 2022						
FY 2023						
FY 2024						
<b>Total</b>	<b>82,549</b>	<b>61,935</b>	<b>-</b>	<b>-</b>	<b>61,935</b>	<b>20,614</b>

(Note) 1. Exchange Rate used: Rs.1 = JPY 1.57 for MMRDA Portion only

2. Fiscal Year starting from 1<sup>st</sup> April and ending on 31<sup>st</sup> March.

2.3.2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(P/R and PCR)

There is no major gap between the original and actual cost.

## 2.4 Organization for Implementation

### 2.4.1 Executing Agency

#### Original:

##### Executing Agency

Mumbai Metropolitan Region Development Authority (MMRDA) was established on 26th January 1975 in accordance with the Mumbai Metropolitan Development Act, 1974 to make Mumbai Metropolitan Region (MMR) a destination for economic activity by promoting infrastructure and regional planning. MMRDA takes all the necessary measures, required from time to time, in an effective manner and be fully responsible for the Project implementation. After completion of the Project, MMRDA continues to be responsible for the efficient operation and maintenance of the Project.

The GoM appointed MMRDA as the implementing/ executing agency of MTHL vide Government Resolution dated 4th February 2009 and further the ownership of MTHL would be with MMRDA vide Government Resolution dated 8th June 2011.

##### Organization's Role

To construct, execute, carryout, improve, work, develop, administer, manage, control or maintain in MMR all types of roads, highways, express routes, paths, streets, bridges, sideways, tunnels and other infrastructure, works and conveniences, approach road, etc. Under the Project, MMRDA is responsible for all the tendering process including employment of consultants, as well as for the construction process.

##### Project Implementation Unit (PIU)

The PIU is in charge of the Projects. The PIU is headed by Chief Engineer, comprising of 6 Divisions/Cells (Finance Division, Social Development Cell, Engineering Division, Land Cell, Administrative Division and Environmental Cell), Supervision/ ITS Consultant and supporting staff.

##### Procurement

MMRDA shall have to adopt the JICA's Standard Biding Documents of the latest version, as stipulated in Section 4.01 (2) of "Guidelines for Procurement under Japanese ODA Loans.

Procurement of goods and services, except for consulting services, converted by the Japanese ODA Loan should be implemented in accordance with "Guidelines for Procurement under Japanese ODA Loans", dated in April 2012. Employment of consultants should be implemented in accordance with "Guidelines of Employment of Consultant under Japanese ODA Loans", dated in April 2012. "Principles of Procurement under the Project" is attached for brief explanation of the above Guidelines.

#### **Actual, if changed: (P/R and PCR)**

There is no change made in original Organisation Set-up & Implementation methods. Refer Annexure III Organisation Chart.



2.4.2 Contractor(s)/ Supplier(s), and Consultant(s) and their Performance:

2.4.2.1 Procurement & Consultant

Table 2.4.2 Procurement of Contractor(s)/ Supplier(s) and Consultant(s)

Contract Package	Selection Method		
	Original: (P/M)	Actual: (P/R and PCR)	
<b>Construction Works</b>			
1	<u>Package-1:</u> From CH 0+000 - To CH 10+380 (10.38 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
2	<u>Package-2:</u> From CH 10+380 - To CH 18+187 (7.80 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
3	<u>Package-3:</u> From CH 18+187 - To CH 21+800 (3.61 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
4	<u>Package-4:</u> To install ITS (Toll Management System and Highway Traffic Management System)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
5	<u>Package-5:</u> To conduct the geotechnical investigation	Local Competitive Bidding Process	No Change
<b>Consulting Services</b>			
1	Consulting Service for Supervision	Short List Method (QCBS)	No Change

### 2.4.2.2 Performance

#### Consultant's Progress:

##### April 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: IPC-026 (80% ad-hoc) & IPC-027 (80% ad-hoc) and IPC-024 (20% detailed verification) & IPC-024 (20% detailed verification) – Mobilization Advance Recovery done for INR and EURO.
  - ii) Package-2: IPC-021 (20% detailed verification)
  - iii) Package-3: IPC-016 (80% ad-hoc) and IPC 015 (20% detailed verification) – Mobilization Advance Recovery done for INR
- 2 GC has prepared and submitted a total reimbursement claim of 3158.89 Million JPY to MMRDA / JICA in April 2020.
- 3 Due to Corona Virus Pandemic, countrywide lockdown has been implemented since 23rd March 2020. The construction activities were completely stopped across all the 3 Packages of MTHL. During this period, most of the GC staff were working from home.

##### May 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: No AIPC certification done in May 2020
  - ii) Package-2: Recovery of Mobilization Advance after 6% legislation adjustment in IPC-023
  - iii) Package-3: No AIPC certification done in May 2020.
- 2 GC has prepared and submitted a total reimbursement claim of 1391.68 Million JPY to MMRDA / JICA in May 2020.
- 3 Due to Corona Virus Pandemic, there was a countrywide lockdown throughout May 2020. However, the construction works has been partially resumed since 26<sup>th</sup> April 2020 onwards with mobility restriction conditions. During this period, although the GC staff started working from home, the required number of staff were present at the site for the supervision purpose.

##### June 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: IPC-26 (20% Detailed Verification) & IPC-27 (20% Detailed Verification) and IPC-28 (80% Ad-hoc) & IPC-29 (80% Ad-hoc).
  - ii) Package-2: IPC-22 (20% Detailed Verification) which was certified in May'20 is now superseded in June'20 (with updated submission as IPC-23)
  - iii) Package-3: IPC-16 (20% Detailed Verification) and IPC-18 (80% Ad-hoc).
- 2 GC has prepared and submitted a total reimbursement claim of 1472.03 Million JPY to MMRDA / JICA in June 2020.
- 3 Government announced some relaxation in the lockdown from 26<sup>th</sup> April 2020 for resumption of some critical and monsoon preparedness activities at the site.

**Contractor's Progress:**

**Package-1 Physical Progress till 30<sup>th</sup> June 2020**

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
<b>1</b>	<b>Temporary Access Bridge</b>					
1.1	Bridge Deck	2953	Rmt	2953	100%	
<b>2</b>	<b>Test Pile</b>					
2.1	Test Piles	5	No.	4	80%	
<b>3</b>	<b>Permanent Bridge Works - Land/ Interchange Zone</b>					
3.1	Piles	524	No.	249	48%	
3.2	Pile Caps	158	No.	42	27%	
3.3	Piers	228	No.	81	36%	
3.4	Pier Caps	215	No.	0	0%	
<b>4</b>	<b>Permanent Bridge Works - Intertidal Zone</b>					
4.1	Piles	316	No.	206	65%	
4.2	Pile Caps	76	No.	44	58%	
4.3	Piers	148	No.	76	51%	
4.4	Pier Caps	148	No.	45	30%	
<b>5</b>	<b>Permanent Bridge Works - Marine Zone</b>					
5.1	Piles	399	No.	270	68%	
5.2	Pile Caps	79	No.	25	32%	
5.3	Piers	160	No.	7	4%	
5.4	Pier Caps	160	No.	3	2%	
<b>6</b>	<b>Permanent Bridge Works - Total</b>					
<b>6.1</b>	<b>Piles</b>	<b>1239</b>	<b>No.</b>	<b>725</b>	<b>59%</b>	
<b>6.2</b>	<b>Pile Caps</b>	<b>313</b>	<b>No.</b>	<b>111</b>	<b>35%</b>	
<b>6.3</b>	<b>Piers</b>	<b>536</b>	<b>No.</b>	<b>164</b>	<b>31%</b>	
<b>6.4</b>	<b>Pier Caps</b>	<b>523</b>	<b>No.</b>	<b>48</b>	<b>9%</b>	
<b>7</b>	<b>Precast Segments</b>					
7.1	Segment Casting	6713	No.	423	6%	
7.2	Segment Erection	446	Spans	3	1%	

**Package-2 Physical Progress till 30<sup>th</sup> June 2020**

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
<b>1</b>	<b>Temporary Access Bridge</b>					
1.1	Bridge Deck	2682	Rmt	2682	100%	
<b>2</b>	<b>Test Pile</b>					
2.1	Test Piles	2	No.	2	100%	
<b>3</b>	<b>Permanent Bridge Works - Land/ Interchange Zone</b>					
3.1	Open Foundation	113	No.	70	62%	
3.3	Piers	119	No.	24	20%	
3.3	Pier Caps	104	No.	0	0%	
3.4	Portal Beams- Land	6	No.	0	0%	
3.5	Pier Head Segments -Land	42	No.	0	0%	
<b>4</b>	<b>Permanent Bridge Works - Intertidal &amp; CRZ Zone</b>					
4.1	Piles	290	No.	270	93%	
4.2	Pile Caps	70	No.	37	53%	
4.3	Piers	70	No.	13	19%	
4.4	Pier Caps	18	No.	0	0%	
4.5	Pier Head Segments	52	No.	0	0%	
<b>5</b>	<b>Permanent Bridge Works - Marine Zone</b>					
5.1	Piles	514	No.	76	15%	
5.2	Pile Caps	122	No.	0	0%	
5.3	Piers	122	No.	0	0%	
5.4	Pier Caps	48	No.	0	0%	
5.5	Pier Head Segments	74	No.	0	0%	
<b>6</b>	<b>Permanent Bridge Works - Total</b>					
6.1	Open Foundation	113	No.	70	62%	
6.2	Piles	804	No.	346	43%	
6.3	Pile Caps	192	No.	37	19%	
6.4	Piers	311	No.	37	12%	
6.5	Pier Caps	170	No.	0	0%	
6.6	Portal Beams	6	No.	0	0%	
6.7	Pier Head Segments	168	No.	0	0%	
<b>7</b>	<b>Precast Segments</b>					
7.1	Segment Casting	3142	No.	151	5%	
7.2	Segment Erection	271	Spans	0	0%	

**Package-3 Physical Progress till 30<sup>th</sup> June 2020**

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
<b>1</b>	<b>Permanent Bridge Works</b>					
1.1	Open Foundations	195	No.	132	68%	
1.2	Piers	195	No.	68	35%	
1.3	Pier Caps	189	No.	22	12%	
1.4	Segment Casting	750	No.	92	12%	
1.5	Segment Erection	53	Span	0	0%	

**Package-4 (ITS) Progress till 30<sup>th</sup> June 2020**

Preparation of Bid Documents for the Civil Works & ITS (Intelligent Transport system) system is in progress. GC has resolved the queries raised by the bidders during the PQ (Pre-Qualification) Stage. Employer received only one PQ Application from M/S Tata Projects Ltd & Efcon India Pvt Ltd (Joint Venture). Further line of action is under progress.

Please refer **Attachment 9 - Site Progress Photos** showing the development of the project.

**Health & Safety and Environment (HSE)**

The HSE Plans have been submitted by the respective construction agencies for the Packages which are being monitored by the GC on a regular basis.

**Package-1 Safety Report**

Sr. No	Description	From April to June 2020	Cumulative
1	Total Man Hours Since Inception	4,33,734	15111282
2	Number of Man-Hours (Accident Free Man-Hours)	4,33,734	2601294
3	Number of Man-Days	54,217	1888909
4	Number of Reportable Fatal Accidents	0	2
5	Number of Non-Fatal Accidents	0	1
6	Number of Near Miss Incidents	11	55
7	Number of First Aid Cases	2	100
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	96448
11	Number of Man-Days Lost	0	12058
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	3
13	Number of Inspections done for Offices & Sites	354	597
14	Number of Training/ Induction done for Offices & Sites	38	248
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	1,213	1680
16	Details of Safety Committee meetings	0	21
17	No. of toolbox talks	1,423	27718
18	No. of critical excavations.	0	16
19	Pre-employment Medical check-up	151	14141
20	No. of Safety Walk down	0	119
21	No. of Safety Inductions completed	151	14141

**Package-2 Safety Report**

Sr. No	Description	From April to June 2020	Cumulative
1	Total Man Hours Since Inception	9,80,023	7028074
2	Number of Man-Hours (Accident Free Man-Hours)	4,37,173	560692
3	Number of Man-Days	39,743	640163
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	3
6	Number of Near Miss Incidents	0	33
7	Number of First Aid Cases	3	57
8	Number of Dangerous Occurrences	1	5
9	Number of Reportable Sick Cases	0	1
10	Number of Man-Hours Lost	88	924
11	Number of Man-Days Lost	8	97
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	3
13	Number of Inspections done for Offices & Sites	52	619
14	Number of Training/ Induction done for Offices & Sites	16	437
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	1,851	818
16	Details of Safety Committee meetings	2	24
17	No. of toolbox talks	314	3292
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	95	6360
20	No. of Safety Walk down	3	72
21	No. of Safety Inductions completed	95	6570

**Package-3 Safety Report**

Sr. No	Description	From April to June 2020	Cumulative
1	Total Man Hours Since Inception	1,16,831	1309669
2	Number of Man-Hours (Accident Free Man-Hours)	1,16,831	1309669
3	Number of Man-Days	14,604	163709
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	0
6	Number of Near Miss Incidents	0	6
7	Number of First Aid Cases	3	43
8	Number of Dangerous Occurrences	0	0
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	0
11	Number of Man-Days Lost	0	0
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	0
13	Number of Inspections done for Offices & Sites	15	196
14	Number of Training/ Induction done for Offices & Sites	4	123
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	346	4024
16	Details of Safety Committee meetings	1	20
17	No. of toolbox talks	420	3134
18	No. of critical excavations.	0	3
19	Pre-employment Medical check-up	27	2899
20	No. of Safety Walk down	3	79
21	No. of Safety Inductions completed	27	2899



**3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)**

**3.1 Operational and Physical Condition**

(This section will be developed when the operational plan is available)

Facilities	Description of condition	Problems, its Background and Remedial Action Plan
(P/R and PCR)	(P/R and PCR)	(P/R and PCR)

**3.2 Precautions (Measures To Be Adopted/ Points Which Require Special Attention)**

Original Issues and Countermeasure(s)	Actual Issues and Countermeasure(s)
<p><b>3.2.1 General Issues</b></p> <p><b>1. Toll Arrangement/ Toll Rate</b> Fixed toll rate as per the type of vehicle will be levied for the road users after the completion of the Project. An appropriate tolling policy/ rates will be finalized in consultation with the state government prior to the completion of Civil works.</p> <p><b>2. Operation and Maintenance</b> MMRDA proposes to appoint separate agencies for Operation &amp; Maintenance of the bridge and for Toll Management System. Both the agencies for O &amp; M and Toll Management System may be appointed through open tendering process. Overall monitoring of the two agencies would be done by MMRDA in house through a separate cell which could be constituted for the purpose. MMRDA has confirmed to allocate adequate budget for engaging the Contractors.</p>	<p>(P/R and PCR)</p> <p>Appropriate Tolling Policy/ Rates will be finalized by December 2021.</p> <p>Single Operation and Maintenance Contractor will be appointed by December 2021.</p>
<p><b>3.2.2 Environmental and Social Consideration</b></p> <p><b>a. CRZ Clearance</b></p> <p>i. Supplemental EIA has been approved by MMRDA and disclosed on the website of JICA. Supplemental EIA report has been disclosed also on the website of MMRDA.</p> <p>ii. Furthermore, renewed CRZ Clearance has been obtained in January 2016.</p> <p>iii. In accordance with the conditions for</p>	<p>(P/R and PCR)</p> <ul style="list-style-type: none"> <li>• MMRDA has disclosed Supplemental EIA &amp; SIA on MMRDA website.</li> <li>• The renewed CRZ clearance was granted on 25/1/2016 from MoEF&amp;CC and the approval conditions have been imposed on the Contractors as the Employer’s requirements. MMRDA has actively monitored the compliances of the approval conditions and maintains throughout the construction phase.</li> <li>• MMRDA appointed Mangroves &amp; Marine</li> </ul>

<p>CRZ Clearance, appropriate measures shall be taken, and necessary budget shall be secured by MMRDA.</p>	<p>Biodiversity Foundation for bird monitoring and implementation of Flamingos and bird monitoring program for the MTHL project during the construction as well as the long-term monitoring after the construction.</p> <ul style="list-style-type: none"> <li>• Rs 91.42 Crore has been transferred to Mangroves &amp; Marine Biodiversity Foundation, Mumbai for the development &amp; conservation of mangrove area and its afforestation. Such funds will be managed by the Mangrove Foundation of Maharashtra State.</li> <li>• As per the renewed CRZ clearance condition, IIT Mumbai has been appointed for the DPR study to develop a Mahul creek Effluent Treatment Plant (ETP). Rs 4.98 Crore was secured for IIT services. The Draft DPR has been reviewed and approved by MMRDA.</li> </ul>
--	---

**b. Required Permits**

The Permits to be obtained by MMRDA/ Contractors and the present status is given in the following Table.

**Table 3.2.2 Present Status of some Important Permits**

Clearance Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status
Mangrove Cutting	Hon. Bombay High Court	MMRDA/ Contractor	Approval received from Hon. Bombay High Court on 28 <sup>th</sup> November 2016	Mangrove cutting operation was completed with full compliance and as of now, no further follow up work is required.
Tree Cutting /Transplantation	Respective Tree Authorities	Contractor for respective Packages	-	<p><b>Pkg-1:</b> Tree Cutting/ Transplantation permission is awaited from the Tree Authority.</p> <p><b>Pkg-2:</b> Tree Cutting/ Transplantation permission obtained &amp; completed.</p> <p><b>Pkg-3:</b> Forest Department has issued a concurrence on 19/05/2019. CIDCO's permission for Tree Cutting/ Transplantation obtained on 25<sup>th</sup> November 2019.</p>
Consent to Establish	Maharashtra Pollution Control Board	Contractor for respective Packages	Pkg-1-18.07.2018 Pkg-2-16.08.2018 Pkg-3-29.05.2019	

### 3.3 Environmental and Social Impacts

Major environmental and social impacts have occurred during project implementation (e.g. involuntary resettlement, poverty reduction, impacts on the natural environment).

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p><b>1. Establishment of Effective Environmental and Social Cell in PIU</b></p> <p>MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.</p>	<p>Cell is established by MMRDA (Annexure III, Organization chart)</p>
<p><b>2. Rehabilitation and Land Acquisition Issues</b></p> <p><b>a. Affected Area and Population</b></p> <p>Due to the Project, 1282 non-titleholders will be involuntary resettled, and 108.09 ha of land will be handed over by CIDCO.</p>	<p><b>Sewri:</b> Involuntary resettlement in Sewri section has been further validated by Social Development Cell of MMRDA. Out of 297 Project Affected Households (PAHs) have given consents as follows:</p> <ul style="list-style-type: none"> <li>• 164 PAHs Kanjurmarg for residential</li> <li>• 25 PAHs Kanjurmarg for commercial</li> <li>• 7 PAHs (Satsangi Plot) Kanjurmarg for Commercial</li> <li>• 1 PAHs (commercial to residential) for Bhakti Park</li> <li>• 100 PAHs HDIL Kurla for residential</li> </ul> <p><b>Navi Mumbai:</b> CIDCO has been finalizing the land acquisition closely monitored by Land Cell of MMRDA. Except private land and forest, CIDCO has possessed all required land of 108.09 ha. Out of the 108.09 ha, 106.345 ha has been handed over by CIDCO to MMRDA. CIDCO is going to acquire the balance 1.745 Ha with the help of Collector, Raigad.</p>
<p><b>b. Entitlement Policy</b></p> <p>MMRDA prepared the entitlement matrix for resettlement of non-title holders in Sewri, which meets the Resettlement and Rehabilitation Policy for Mumbai Urban Transportation Project (1997, amended in 2000) and JICA guidelines for Environmental and social considerations (2010)</p>	<p>There have been no changes during the enforcement. As per the <b>Attachment 2-5</b> of JICA MoD, MMRDA has committed to enforce the agreed/ approved policy.</p>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p>("Guidelines") (<b>Attachment 2-5</b>).</p>	
<p><b>c. Compensation to Project affected Fishermen</b></p> <p>Detailed baseline survey will be undertaken by MMRDA in order to identify fishermen who are affected by the Project. Based on the result of the baseline survey, MMRDA will compensate them in accordance with compensation policy prior to the construction. Monitoring will be conducted by MMRDA with assistance of the Consultant to gasp the exact impact during construction and operation phase.</p>	<p>Updated <b>Attachments 2-8 and 2-10</b> are enclosed in the report.</p>
<p><b>d. Implementation Schedule</b></p> <p>The Implementation schedule for land acquisition, resettlement and rehabilitation is attached as per <b>Attachment 2-10</b>.</p>	<p>Updated <b>Attachment 2-10</b> is enclosed in the report.</p>
<p><b>e. Grievance Redressal Mechanism</b></p> <p>Grievance Redressal Committee ("GRC") set under MMRDA will deal with grievances raised by PAPs in Sewri and fishermen to be affected by the Project. Any grievances raised by PAPs whose land is acquired by CIDCO shall be resolved by CIDCO.</p>	<p><b>Sewri:</b> FLGRC (Field Level Grievance Redressal Committee) and SLGRC (Senior Level Grievance Redressal Committee) were set as per the RAP and in operation. Compensation Committee has been constituted to address the issues of Compensation to Lease Holders at Sewri.</p> <p><b>Fishermen:</b> GRC for resolving grievances of the fisherfolk was set up as per the compensation policy and is in operation.</p>
<p><b>f. Internal Monitoring</b></p> <p>Internal Monitoring of the Resettlement Action Plan (RAP) implementation will be conducted by MMRDA in accordance with the RAP with necessary assistance of the consultant. RAP Internal Monitoring Form (<b>Attachment 2-8</b>) will be submitted to JICA on a quarterly basis as a part of PSR during the RAP implementation.</p>	<p>Internal Monitoring updates are mentioned in <b>Attachment 2-8</b>.</p>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p><b>g. Qualitative Independent Evaluation</b></p> <p>An Independent Evaluation Agency will be hired by MMRDA for evaluation of RAP implementation. An external evaluation report will be submitted to MMRDA at mid-term and end-term. MMRDA would submit the evaluation report to JICA in a timely manner.</p>	<p>Updated <b>Attachment 2-10</b> is enclosed in the report.</p>
<p><b>h. RAP Implementation Budget</b></p> <p>The amount of estimated resettlement and compensation budget is Rs.906.26 Cr MMRDA informed to the JICA Mission that RAP implementation cost would be borne by MMRDA and ensured sufficient and timely allocation of funds for smooth implementation.</p>	<p>As updated in MOD dated 03/09/2019 for MTHL-II, the base cost Budget towards RAP Implementation is updated as Rs 1129.3 Cr.</p>
<p><b>i. Environmental Management Plan (“EMP”)</b></p> <p>The mitigation measures against air pollution, waste, noise, and water pollution etc. shall be taken during construction and operation phase. Mitigation measures such as installation of noise barrier, appropriate waste management, etc. have been prepared by MMRDA. The mitigation measures are listed in the EMP matrix. (<b>Attachment 2-1</b>). During the detailed design stage, MMRDA, with assistance of the Consultant, will update the EMP, as necessary.</p>	<p>EMP will be updated, if required, in due course of construction activities/progress.</p>
<p><b>j. Environmental Monitoring Plan (“EMoP”)</b></p> <p>MMRDA takes overall responsibility for implementation of EMoP. During construction, environmental monitoring will be carried out by contractors under supervision by Construction Supervision consultant. The result shall be reported to the JICA India Office on a quarterly basis</p>	<p>Updated Environmental Monitoring Plan with package wise updated cost is reported in <b>Attachment 2-3</b>.</p> <p>Environmental Monitoring Results during the construction phase are reported in <b>Attachment 2-4</b>.</p>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p>as a part of Progress Status Report (PSR) by filling in the Reporting Form of Environmental Monitoring Result. <b>(Attachment 2-4)</b>. After completion of the construction, EMoP shall be implemented by MMRDA, and the results shall be submitted to the JICA India Office semi-annually until two years after complementation of construction. The required amount of estimated environmental monitoring budget is borne by MMRDA.</p>	
<p><b>k. Long Term Bird Monitoring</b></p> <p>MMRDA committed to conduct the long-term monitoring of birds and its habitat in Sewri mud-flats with the assistance of hired bird expert. During the long-term monitoring, MMRDA will share information and receive advices from external experts including the one from NGOs and civil society.</p>	<ul style="list-style-type: none"> <li>• MMRDA has entrusted the work of bird monitoring and implementation of Flamingos and birds related mitigation measures &amp; bird monitoring program to Mangrove and Marine Biodiversity Foundation.</li> <li>• Rs. 31.92 Crore deposited to Mangrove foundation, Mumbai for periodical disbursement to BNHS.</li> </ul>

### 3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

Indicators	Original (Year 2015)	Target (Year 2024) 2 Years After Commercial Operation
Average Annual Daily Traffic (PCU/ day)	-	47,400
Daily Average Travel Time (min) * 1	61 min	15.8 min
Number of Users (Persons/ year) * 2	-	46,077,504
Cargo Volume (tons/ year) * 3	-	13,511,759

\*1 Section on Sewri – Chirle

\*2 Assumptions: average passengers of car and taxi (2.6 persons), bus (37.2 persons) based on JICA study. Number of passengers of LCV, HCV and MAV is assumed as 1 person each.

\*3 Assumptions: the maximum capacity of respective vehicle (LCV: 1 ton, HCV and MAV: 15 tons) is used for estimation.

<b>EIRR</b>	<b>Original:</b> 15.4% Cost: Project cost (excluding Price Escalation, Tax and Duties and Administration cost) O&M cost, Land Acquisition Benefit: Travel Time cost and Vehicle Operation cost Project Life: 32 Years	<b>Actual: (PCR)</b> _____% Cost: Benefit: Project Life: <b>Attachment(s):</b> <b>Supporting data for computing EIRR</b>
<b>FIRR</b>	<b>Original:</b> 1.5% Cost: Project Cost, O&M cost, Land Acquisition cost Benefit: Toll Revenue Project Life: 32 Years	<b>Actual: (PCR)</b> _____%

### 3.5 Monitoring Plan for the indicators

Monitoring Methods, Section(s)/ department(s) in charge of monitoring, frequency, the term and so forth are given below:

**Original: (P/M and PCR)**

#### Monitoring Organization

PIU shall be In-Charge of Monitoring activities for the Project.

#### Submission of QPR and PCR

The timely submission of the following documents is required by MMRDA.

- a. **Quarterly Progress Report (QPR):** The progress report for the Project should be submitted by MMRDA to JICA on quarterly basis, not later than 30 days after the concerned quarter, in the form of Project Status Report (PSR) attached hereto as per **Annex I**; Updated status land Acquisition, milestone achieved with respect to Action Plan with Timetable, the monitoring form for environmental and social consideration should also be appended to the PSR. In addition, MMRDA shall also forward the Monthly & Quarterly Progress Reports (including S-Curve Chart) prepared by the Consultant to JICA India Office on regular basis till project completion.
- b. **Project Completion Report (PCR):** A project completion report should be submitted by MMRDA to JICA promptly, but in any event not later than six months after completion of the Project, in the form of Project Status Report (PSR) attached hereto as per **Annex I**.

**Actual: (P/R and PCR)**

#### **Monitoring Organization**

PIU for MTHL has been established for monitoring the Project.

#### **Submission of QPR and PCR**

This QPR No. 13 is submitted for the period of 1<sup>st</sup> April to 30<sup>th</sup> June 2020.

### 3.6 Achievement of the Project Objective

(PCR)

## 4.0 OPERATION AND MAINTENANCE (O&M) (SUSTAINABILITY)

### 4.1 O&M and Management

- Organization Chart of O&M
- Operational and maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc.)

#### **Original:** (P/M)

#### Operation & Maintenance, Toll Management and ITS

MMRDA proposes to engage two separate agencies for O&M and Toll Management System. Though MMRDA will not directly carry out O&M, the overall monitoring over the O&M agency will be the responsibility of MMRDA. O&M Budget will be allocated by MMRDA. O&M and increase in toll rate will be done in accordance with the NHAI's manuals such as "NHAI Works manuals".

#### **Actual:** (PCR)

### 4.2 O&M Cost and Budget

- The actual annual O&M cost for the duration of the project, as well as the annual O&M budget.

(PCR) This will be reported when the outcome of the above work study is available.



## 5.0 EVALUATION

### 5.1 JICA and Borrower / Executing Agency performance

**JICA:**

(PCR)

**Borrower/ Executing Agency:**

(PCR)

### 5.2 Overall Evaluation

Please describe your evaluation on the overall outcome of the project.

(PCR)

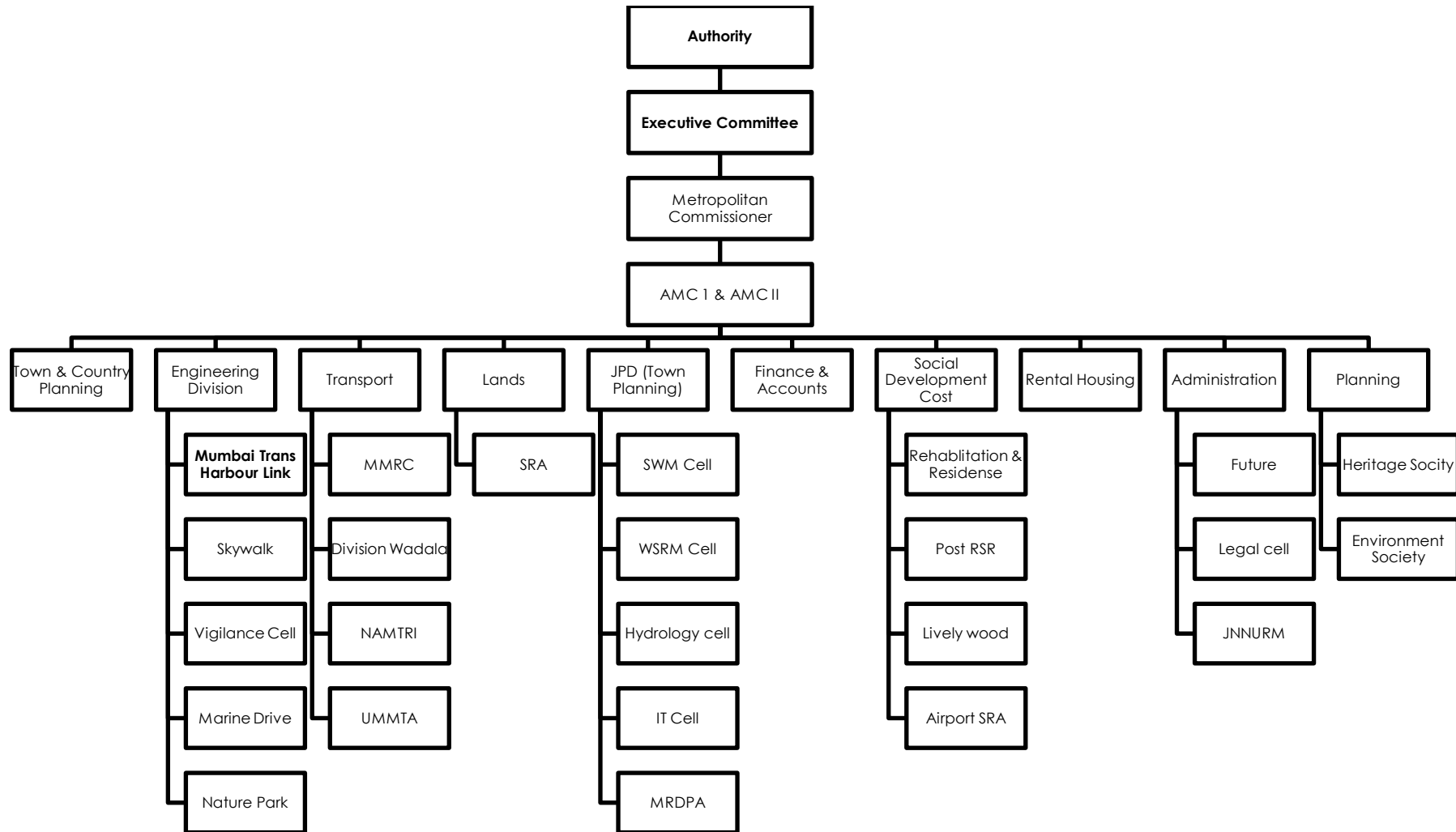
### 5.3 Lessons Learnt and Recommendations

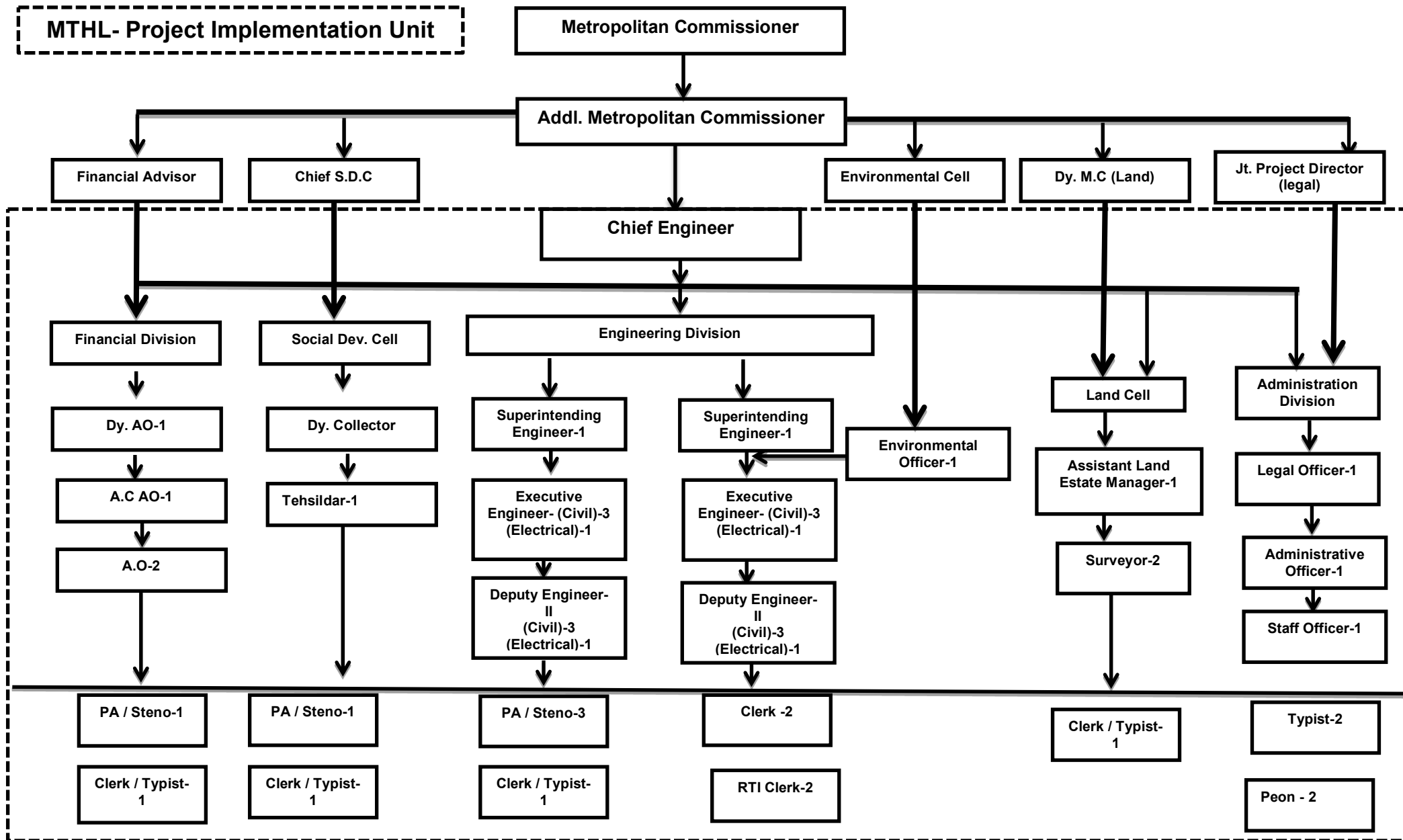
*Please raise any lessons learned from the project experience, which might be valuable for the future JICA assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.*

(PCR)

## **Attachment 1- MMRDA & PIU Organization Chart**

**MMRDA Organization chart**





## **Attachment 2- Environmental & Social Impacts Attachments**

**Attachment 2-3 - Environmental Monitoring Plan**

**Attachment 2-4 – Environmental Monitoring Result Reporting Form**

**Attachment 2-6 – MTHL Land Acquisition Status**

**Attachment 2-8 – RAP Internal Monitoring Form**

**Attachment 2-10 – Schedule of the RAP Implementation**

Updated Environmental Monitoring Plan with Packagewise Estimated Cost

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) - Ministry of Environment & Forest (MoEF)	Remarks
Pollution	1	Air pollution	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , O <sub>3</sub> , CO, (6 Items)	National Ambient Air Quality Standards, 2009	1. Sewri & Sewri bay area for package I	Fortnightly at all locations except 2 locations each near Batching plants	1,800,000	15,000,000	1,800,000	742,500	17,542,500	National Ambient Air Quality Standards (NAAQS) by Central Pollution Control Board (CPCB)	P1 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						(Standard for 24hrs: Industrial and Residential/ Ecological Sensitive area)	P 2 contractor Monitoring plan has been designed as per EIA of 2015
					3. Gavhan & Chirle for package III	Fortnightly only for 3 months (jan-2019 to Mar-2019). Then quarterly monitoring as per MOEF and CPCB norms						SO <sub>2</sub> : 80 / 80µg/m <sup>3</sup>	P3 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
												NO <sub>2</sub> : 80 / 80µg/m <sup>3</sup>	P 1 received Consents CTE & CTO from MPCB and they are following MPCB frequency in addition to frequency set by Environment Expert from GC. The NAAQ standards are showing High rate as that is the usual procedure. The frequency of monitoring is set by us which varies for different parameters as either Statutory requirements or as required by us to ensure we have sufficient data in hands if there are additional claims for Compensation in C5 category. Summary : Although the contract conditions for all packages were same at the time of bidding. Later modifications suggested by GC were not accepted by P 2. P1 and P3 accepted the modifications and hence the difference. Second point is P 1 carrying out monitoring as per the obatiend CTE and CTO. Both other packages have applied for CTE but haven't obtained it yet. So we expect the monitoring frequency would change after obtaining CTE.
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	IS / AWWA	1. Sewri & Sewri bay area for package I	Quarterly	810,000	2,400,000	810,000	0	3,210,000	Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)	Water Pollution not applicable for Pkg. 3
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						pH : 6.5-9	
					3. Gavhan & Chirle for package III	Not applicable						DO: 3 mg/l Turbidity: 30 NTU BOD: 5 mg/l O & G: 10 mg/l	
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	Volumetric	1. Sewri & Sewri bay area for package I	Daily	500,000	299,200,000	500,000	600,000	300,300,000		The cost of waste disposal for P1 includes C&D waste, Pile muck etc. from all areas like, interchange, intertidal and marine. The disposal location is at MCGM approved location Bhayandarpada, Thane.

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) - Ministry of Environment & Forest (MoEF)	Remarks
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						<b>Municipal Solid Waste Management Rules, 2013</b> Generated waste shall be reused or disposed at designated site. Sites have been identified and the location for <b>Pkg. 1</b> is at Bhayandar Pada in Thane. For <b>Pkg. 2 &amp; 3</b> is in Navi Mumbai at Pushpak Node near "Teen Taki Junction" along the Amar Marg.	P2 contractor has considered only Domestic garbage with respect to CIDCO. Other wastes are not considered. Construction wastes will be
				3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.								
4 and 8	Soil Contamination/ sedimentation	Heavy Metals & Oil & Grease (5-10 items shall be selected from Soil pollution standards)	IS / Methods Manual Soil Testing in India by Department of Agriculture and Cooperation, January 2011	1. Sewri & Sewri bay area for package I 2. Nhava temporary bridge & casting yard in Gavhan for package II 3. Gavhan & Chirle for package III	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year  *If any spillage/leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only	150,000	1,500,000	150,000	100,000	1,750,000	Soil Pollution Standard in India (MOEF)  Cd: 0.01mg/l  Lead: 0.01mg/l Chromium (VI): 0.05mg/l Arsenic: 0.01mg/l T-Mercury: 0.0005mg/l Copper: 125mg/kg (some items shall be selected from totally 25 standards items)		
5	Noise and vibration	Ambient and road side noise (dB(A) <sub>L<sub>eq</sub></sub> )	IS Standard	1. Sewri & Sewri bay area for package I 2. Nhava temporary bridge & casting yard in Gavhan for package II 3. Gavhan & Chirle for package III	Fortnightly 2 Times / Year Fortnightly	150,000	54,000	150,000	369,000	573,000	<b>-Construction Noise; 85dB(A)</b>  <b>-Ambient Noise Standards in India (dB (A) <sub>Leq</sub>)</b>  1.Industrial Area Day Time: 75 (6-22hr) Night Time: 70 (22-6hr) 2.Commercial Area: Day Time: 65 (6-22hr) Night Time: 55 (22-6hr) 3.Residential Area: Day Time: 55 (6-22hr) Night Time: 45 (22-6hr) 4.Silence Zone Day Time: 50 (6-22hr) Night Time: 40 (22-6hr)		
			Vibration (dB L10 or mm/sec)		1 Location Gavan area for package III	Half yearly	75,000	0	75,000	400,000	475,000	<b>- Construction vibration 75dB</b>  <b>-Vibration Standards roadside</b> 1. Commercial /Industrial Area Day Time: 70 (7-20hr) Night Time: 65 (20-7hr) 2. Residential Area: Day Time: 65 (7-20hr) Night Time: 60 (20-7hr)	Not applicable for Pkg. 1
9 and 10	Protected Area /Ecosystem	1. Monitoring of mudflat conditions including fauna-flora 2. Monitoring of Cutting Tree and replantation/transplanting area 3. Monitoring of Mangrove Plantation area appointed by MoEF	Ocular inspection and quantitative survey  1-1. Fauna-Flora Line-Point census and record number and appeared species	Along MTHL alignment and mangrove replant area for Package I  Along MTHL alignment and mangrove replant area for package II Not applicable for Package III	Quarterly during the construction Period  4 Times / Year	6,500,000	7,200,000	6,500,000	0	13,700,000	Significant impacts are not caused by the project  <b>Note)</b>	Not applicable for Pkg. 3	

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) - Ministry of Environment & Forest (MoEF)	Remarks
Natural environment			4. Monitoring of sedimentation soil and ecological parameter (18 items on Supplemental EIA Table 6.1.15 for soil and 7 items such as 1) Net primary productivity, 2) Chlorophyll-a, 3) Phosphate, 4) Nitrate, 5) Nitrite, 6) Particulate Organic Carbon, 7) SiO <sub>2</sub> )	1-2: Mangrove density and community survey								Detailed monitoring plan will be setup during basic design stage  Standard for Soil; Supplemental EIA Table 6.1.15 Standard for Ecological Parameter: · Net primary Productivity <1,500 mgC/m <sup>3</sup> /day at surface · Chlorophyll-a <4mg/m <sup>3</sup> · Phosphate: 0.1-90µg/l · Nitrate: 1.0-500µg/l · Nitrite: <125µg/l · Particulate Organic Carbon: 10-100mg/m <sup>3</sup> · SiO <sub>2</sub> : 10-5,000µg/l	
				1-3: Benthos Survey									
				2-1: Cutting trees confirmation									
				3-1: Mangrove survey in the replanted area									
	11	Hydrology	Flooding situation	Flood level measurement during high precipitation periods	Not applicable for Package I		350,000	0	350,000	0	350,000	Project activities and structures does not cause flooding and impacts on tidal conditions	Not applicable for Pkg. 1 & 3
					2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year							
					Not applicable for Package III								
	12	Topography and Geology	Conditions in embankment area	Visual survey about Stability of embankment	Not applicable for Package I		115,000	0	115,000	0	115,000	Embankment shall be stabilized without any landslide and cracks	Not applicable for Pkg. 1 & 3
					Interchange in Shivaji Nagar for Package II	4 Times / Year							
					Not applicable for Package								
Social environment	13	Local economy such as employment and livelihood			Affected area		As per Actuals						
	14	Local conflict of interests	Construction worker's township	Confirmation of workers list from contractor	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	2 Times / Year	125,000	0	125,000	0	125,000	Employment opportunity shall be provided fairly	
	15	Infectious diseases such as HIV/AIDS	Number of infected patient	Confirmation of health check list from contractor	2 Locations	4 times / year x 4.5 years	525,000	0	525,000	0	525,000	Infection disease rate shall not be caused by the project	
	16	Labour Environment	Construction worker's condition	Confirmation of safety devices and conditions via interviews	2 Location (camp site in Sewri and Shivaji Nagar) for Package II	2 times / year	500,000	0	500,000	0	500,000	"Building And Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996", "The building and other construction worker's welfare cess Act, 1996" and international standards such as "IFC Performance Standard 2 Labor and Working Conditions"	
Other	17	Accidents	Number of accidents	Confirmation of accidents list from local government and State Traffic Police Department	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	4 Times / Year	400,000	0	400,000	0	400,000	Any accidents are not caused by construction	
							<b>8140500</b>	<b>325,354,000</b>	<b>12,000,000</b>	<b>2,211,500</b>	<b>339,565,500</b>		



The Project for Construction of Mumbai Trans Harbour Link  
Reporting Form of Environmental Monitoring during Construction

Attachment 2-4

Attachment 2-4

This form is prepared for reporting the monitoring results to JICA India Office. Only minimum required parameters are included in this form, and not all parameters in EMOp are covered.

Monitoring Period - April to June 2020
--

1. Environmental Monitoring during Construction for 4.5 years

Area	No.	Item	Parameter	Location	Frequency a year	Item and Standard	Monitoring Result				Remark - reasons why the data is exceeding standard - counter measures when the data is exceeding						
							Location 1- Pkg 1	Location 2	Location 3- Pkg 3	Location 4							
Pollution	1	Air pollution	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	1. Sewri & Sewri bay area for package I	Quarterly monitoring is conducted at all locations.	National Ambient Air Quality Standards (NAAQS)  (Standard for 24hrs: Industrial and Residential)	Sewri	Shivaji Nagar	Chirle								
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year												
				3. Gavhan & Chirle for package III	From march -2019 onwards monitoring is conducted quarterly as per MOEF and CPCB norms							1. SO <sub>2</sub> : 80µg/m <sup>3</sup>	Refer Remark	Refer Remark	Refer Remark		Due to COVID 19 Lockdown, Ambient air monitoring could not be conducted for this quarter.
												2. NO <sub>2</sub> : 80µg/m <sup>3</sup>					
												3. PM <sub>10</sub> : 100µg/m <sup>3</sup>					
												4. PM <sub>2.5</sub> : 60µg/m <sup>3</sup>					
			5.CO:02mg/m <sup>3</sup>														
			6.VOCs														
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	1. Sewri & Sewri bay area for package I	Quarterly	Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)	Zone I	Zone II	Zone III								
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year							1. pH : 6.5-9	Refer Remark	Refer Remark	....	Due to COVID 19 Lockdown, water monitoring could not be conducted for this quarter.	
				3. Gavhan & Chirle for package III	Not applicable							2. DO: 3 mg/l					
												3. Turbidity: 30 NTU					
												4. BOD: 5 mg/l					
												5. O & G: 10 mg/l					
			6.COD														
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	1. Sewri & Sewri bay area for package I	Daily	Municipal Solid Waste Management Rules, 2013	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle Camp Site								
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year							Generated waste soil (t) total	117.02 m <sup>3</sup>	Approx 1000 kg waste generated in total from the labour camp	NIL	The site work was restricted due to COVID 19 Lockdown in this period	
				3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.							Generated cutting tree (ha) total	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting so far NIL.		Permission from both CIDCO and forest department . Tree cutting so far is nil		
												Generated domestic waste (t/month) total	2.45 T for the quarter	0.750 T quarter is disposed through Gram panchayat.			
												Confirmation of adequate disposal (visual survey)					
4	Soil Contamination/sedimentation	Heavy Metals & Oil & Grease	1. Sewri & Sewri bay area for package I	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	Soil Pollution Standard in India (MOEF)	Refer Remark					Testing Done on september 2019 and Reports submitted to GC	Muck analysis was conducted in April 2019, and report is already submitted to GC.					
			2. Nhava temporary bridge & casting yard in Gavhan for package II										1. Cadmium: 0.01mg/l				
			3. Gavhan & Chirle for package III	*If any spillage/ leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only									2. total cyanide : not detected				
													3. organic phosphorus: not detected				
													4. lead: 0.01mg/l				
													5. chromium (VI): 0.05mg/l				
													6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)				
													7. total mercury: 0.005mg/l				
													8. alkyl mercury: not detected				
													9. PCBs: not detected				
													10. copper: 125mg/kg (only paddy field soil )				
													11. dichloromethane: 0.02mg/l				
													12. carbon tetrachloride: 0.002mg/l				
													13. 1,2-dichloroethane: 0.004mg/l				
													14. 1,1-dichloroethylene: 0.02mg/l				
													15. cis-1,2-dichloroethylene: 0.04mg/l				
													16. 1,1,1-trichloroethane: 1mg/l				
													17. 1,1,2-trichloroethane: 0.006 mg/l				
													18. trichloroethylene: 0.03mg/l				
													19. tetrachloroethylene: 0.01mg/l				
		20. 1,3-dichloropropene: 0.002mg/l															

Regarding soil contamination/sedimentation, some items shall be selected from the total 25 standards items during the Detailed Design. Only the selected items shall be reported to JICA, and the rest of items shall be deleted from this form.

The Project for Construction of Mumbai Trans Harbour Link  
Reporting Form of Environmental Monitoring during Construction  
Attachment 2-4

Attachment 2-4

This form is prepared for reporting the monitoring results to JICA India Office. Only minimum required parameters are included in this form, and not all parameters in EMoP are covered.

Monitoring Period - April to June 2020
--

1. Environmental Monitoring during Construction for 4.5 years

5	Noise and vibration	Ambient and road side noise (dB(A)LAeq)	1. Sewri & Sewri bay area for package I	Fortnightly	21. thiuram: 0.006mg/l 22. simazine: 0.003mg/l 23. thiobencarb: 0.02mg/l 24. benzene: 0.01mg/l 25. selenium: 0.01mg/l						
			2. Nhava temporary bridge & casting yard in Gavhan for package II	2 Times / Year	Construction area Standard 85 dB(A) daytime (Japan standard) Not construction area : Ambient Noise Standard in India (dB(A) LAeq)	Sewri (ST 200-500) (Industrial area)	Sea Section (ST5000-5500) Migratory Bird Area(no standard on sea section)	Shivaji Nagar (Commercial area)			
			3. Gavhan & Chirle for package III	Fortnightly	Night time: 22-6 hr (continuous) dB(A) (only sea section) Day time : 6-22 hr (10 min during 9-17 hrs) Night time: 22-6 hr (10 min 22-24 hr)	Refer Remark			66.8		Due to COVID 19 Lockdown, ambient noise monitoring could not be conducted for this quarter.
					Note (standard values in Not construction area)						
					1.Industrial Area						
					Day Time: 75 (6-22hr)						
					Night Time: 70 (22-6hr)						
					2.Commercial Area:						
					Day Time: 65 (6-22hr)						
				Night Time: 55 (22-6hr)							
								Refer Remark		Due to covid -19 lockdown april vibration monitoring was not conducted but in June we planned it again as suggested by GC but vendor denied due to covid-19 lockdown ( same mail we sendto GC/ MMRDA along with letter). Ref letter No.0001810 Dated on 14.07.2020	
				Vibration (dB ) shall be converted from mm/s to dB	1 Location Gavhan area for package III	Half yearly	Construction area Standard 75 dB daytime (Japan standard) Not construction area : Vibration Standard (Japan Standard along the road)	Sewri (ST 200-500) (Industrial area)	Shivaji Nagar (Commercial area)	Chirle	
							Day time : 6-22 hr (continuous)	Refer Remark			There is no reference standard in India for Vibration monitoring in marine area. GC has confirmed that vibration monitoring is not required for the project.
							Night time: 22-6 hr (continuous)				
							Note (standard values in Not construction area)				
					1. Commercial /Industrial Area						
					Day Time: 70 (7-20hr)						
					Night Time: 65 (20-7hr)						
			Along MTHL alignment and mangrove replant area for Package I	Quarterly during the construction Period	Standard is not existing, but quantity and quality should not be worsen	Sewri side (ST500-5500)	Sea Section (ST5500-16000)	Shivaji Nagar side (app. ST16000-19000)	Mangrove Replantation area appointed by State Government		
			Along MTHL alignment and mangrove replant area for package II	4 Times / Year	1-1. Fauna-Flora (number of species and quantity)			N/A	N/A		
					(1) Number of species of bird						
					(2) Number of species of fish						
					(3) Estimated number of Flamingo						
		1. Monitoring of mudflat conditions including fauna-flora 2. Monitoring of Cutting			1-2: Mangrove density and community survey						

Regarding protected area (CRZ and Important Bird Area) and ecosystem, detailed long-term monitoring plan will be established during baseline survey of birds. This tentative monitoring form shall be updated based on the detailed long-term monitoring plan.

The Project for Construction of Mumbai Trans Harbour Link  
Reporting Form of Environmental Monitoring during Construction  
Attachment 2-4

Attachment 2-4

This form is prepared for reporting the monitoring results to JICA India Office. Only minimum required parameters are included in this form, and not all parameters in EMOp are covered.

Monitoring Period - April to June 2020
--

1. Environmental Monitoring during Construction for 4.5 years

Natural Environment	6	Protected Area	Tree and replantation/transplantation area 3. Monitoring of Mangrove Plantation area appointed by MoEF 4. Monitoring of sedimentation soil and ecological parameter (25 items on EIA main text Table 6.1.15 for soil and 7 items such as 1)Net primary productivity, 2)Chlorophyll-a, 3)Phosphate, 4)Nitrate, 5)Nitrite, 6)Particulate Organic Carbon, 7) SiO2)			(1) Number of species of mangrove					
						(2) Density of mangrove (xx trees/10m x 10m)					
						1-3: Benthos Survey					
						(1) Number of species and quantity by species	Refer Remark				Due to COVID 19 Lockdown, marine biology sampling and monitoring could not be conducted for this quarter.
						2-1: Cutting tree confirmation	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting NIL	All the tree cutting and mangrove cutting had been carried out as per approval received from GC and MMRDA and job was completed in 2018 itself and after that no trees and mangroves have been cut till date	Nil		
						(1) Number of cutting tree and species					
						3-1: Mangrove survey in the replant area			Nil		
						(1) Number of species of mangrove					
						(2) Density of mangrove (xx trees/10m x 10m)					
						4. Ecological Parameter					
						(1) Net primary Productivity : <1,500 mgC/m3/day at surface					Due to COVID 19 Lockdown, marine biology sampling and monitoring could not be conducted for this quarter.
						(2) Chlorophyll-a: <4mg/m3					
(3) Phosphate: 0.1-90µg/l											
(4) Nitrate: 1.0-500µg/l											
(5) Nitrite: <125µg/l											
(6) Particulate Organic Carbon: 10-100mg/m <sup>3</sup>											
(7) SiO2: 10-5,000µg/l											
7	Hydrology	Flooding situation	Not applicable for Package I		<b>Criteria for evaluation</b> Project activities and structures does not cause flooding and impacts on tidal conditions	Sewri	Shivaji Nagar				
			2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year	Monitoring of flooding situation	No Flooding					
			Not applicable for Package III								
8	Topography and Geology	Conditions in embankment area	2 Locations (1. Embankment of Inter Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle)	4 times / year x 4.5 years	<b>Criteria for evaluation</b> Embankment shall be stabilized without any landslide and cracks	Shivaji Nagar	Chirle	Chirle			
					Monitoring of embankment						
9	Local conflict of interests	Construction worker's township	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	<b>Criteria for evaluation</b> Employment opportunity shall be provided fairly	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle			
					Number of hired workers by community	165 in May 2020 and 260 in June 2020	Nil	Nil			
10	Infectious diseases such as HIV/AIDS	Number of infected patient	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	<b>Criteria for evaluation</b> Infection disease rate shall not be caused by the project	Sewri Camp Site	Shivaji Nagar Camp Site				
					Confirmation of health check record and inspect project site	During this quarter three COVID 19 positive cases reported in this quarter who have been treated and discharged.	Nil	Nil			
11	Labour Environment	Construction worker's cond	2 Locations (major camp site in Sewri and Shivaji Nagar)	2 times / year x 4.5 years	<b>Criteria for evaluation</b> "Building And Other Construction Workers (Regulation of Employment and Conditions of Service) Act,1996", "The building and other construction worker's welfare cess Act, 1996" and international standards such as "IFC Performance Standard 2 Labor and Working Conditions"	Sewri Camp Site	Shivaji Nagar Camp Site	Gavan Camp site			
					Site Visual Inspection	All provisions as per BOCW have been provided. *900 nos. for Food (lunch & Dinner) provided to workmen from BOCW. * Face mask provided to workmen, * Calcium & Vitamins tablets provided to workmen to boost up the immunity of workmen, * Sanitizers & Liquids soaps also provides to different location for workmen.	All provisions as per BOCW have been provided.	All provisions as per BOCW have been provided.			
Other	12	Accident	Number of accidents	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	<b>Criteria for evaluation</b> Any accidents are not caused by construction	Sewri Camp Site	Shivaji Nagar Camp Site	Other area		
						Number of recorded accident	NIL				

**MTHL Land Acquisition Status (Attachment 2-6):**

Total land required on Navi Mumbai side- 108.09 ha

Land in possession in MMRDA – 106.5 ha

Balance land acquisition- 1.59 ha

Note: The acquisition of 1.59 ha is in progress by CIDCO. The balance acquisition would be likely completed by the end of September 2020.

Land Required in ha		Land Acquired in ha		Balance Land to be acquired in ha	Anticipated date for Land Acquisition	Payment status (Payment made to Land Owners by CIDCO)	Remarks
Govt.	Private	Govt.	Private	Private*			
98.75	9.34	98.75	7.595	1.745	30-09-2020	--	The payment status to the land owners are awaited from CIDCO. The same would be communicated to JICA on receipt of the same.
<b>Total</b>		<b>98.75</b>	<b>7.595</b>	<b>1.745</b>			
<b>108.09</b>							

**\*Portions of Private Land**

Sr. No.	Name of Village	Area (Hectare)	Acquired	Non-acquired
1	Gavhan	0.15	0.15	0.00
2	Jasai	8.72	7.306	1.414
3	Chirle	0.47	0.139	0.331
<b>Total Area</b>		<b>9.34</b>	<b>7.595</b>	<b>1.745</b>

## RAP Implementation Monitoring Form For Mumbai Trans Harbour Link Project (MTHL)

### 1. General Information

a. RAP Implementation Monitoring Results:	Progress Status Report (PSR) of 2 <sup>nd</sup> quarter of 2020
b. Date of Preparing This form	30-06-2020
c. Person Preparing This form	Name: Robin Sham Position: Engineer and Team Leader Department/Organizations: General Consultants

### 2. Scale of Impact

#### 2.1 Project Affected Households (PAHs) and Project Affected Persons (PAPs) for Sewri side

Total Project Affected Households (PAHs)	297 Hhs	Titleholders: 0 Hhs Non-titleholders: 297 Hhs
Total PAPs	1,282 persons*	Titleholders: 0 persons Non-titleholders: 1,282 persons*
PAHs who need relocation (as residents)	231 Hhs	Titleholders: 0 persons Non-titleholders: 231 (1,088 persons) *
PAPs who do not need relocation (as residents)	0 persons	Titleholders: 0 persons Non-titleholders: 0 persons
Commercial PAPs who need relocation	66 (194 persons) *	Titleholders: 0 persons Non-titleholders: 66 (194 persons) *
Commercial PAPs who do not need relocation	0 persons	Titleholders: 0 persons Non-titleholders: 0 persons

\* - Figures for number of persons do not include no. of family members of few additional PAPs.

#### 2.2 Structures

<b>Structures</b>	Residential: 231 Commercial: 65 Residential + Commercial: 1 (counted in Commercial) Community: 9 (Religious Properties 6, Public Toilets 3) Government: 16 (MbPT Structures 9, Occupants of Leased Plots 6 & Police Chowky1) Total: 322
-------------------	--

#### 2.3 Fishery

Categories of Fisher-folks	Identified Number		Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in RoW (250 m.)	178	52	230	Funds for 230 nos C1 category fishermen are transferred to Commissioner of Fisheries on 17.03.2020 for payment to the beneficiaries.

## Attachment 2-8

C2: Fishing Stakes and Nets within 500 m. of RoW (Southern side)	430	552	982	1. Funds for 496 nos C2 category fishermen are transferred to Commissioner of Fisheries in the 2017-18. 2. The list of balance 440 Nos. of C2 category fishermen are submitted to ACF Raigad, ACF Thane and ACF Mumbai suburban for their verifications.
C3: Hand Pickers	1453	3691	5144	Funds for 4205 nos of C3 category fishermen are already transferred to Commissioner of Fisheries and balance 939 Nos. of C3 category fishermen are in process of transfer to Commissioner of Fisheries.
C4: Commercial and Artisanal Fisher-folks (Loss of Time and Increased Operating Costs)	Will be observed during construction period	Will be observed during construction period	---	Nil
C5: Fisher-folks with Loss due to Turbidity	Will be observed during construction period	Will be observed during construction period	----	Nil
C6: Fisher-folks with Damages due to Accidents	Will be observed during construction period	Will be observed during construction period	----	Nil

### 2.4 Land Acquisition / Transfer

Location	Land Required in Ha.		Land Acquired in Ha.		Balance Land to be acquired in Ha	Remarks
	Govt.	Private	Govt.	Private		
Sewri	10.089	0	10.089	0	0	
Navi Mumbai	98.75	9.34	98.75	7.595	1.745	
<b>Total</b>	<b>118.179</b>		<b>108.839</b>	<b>7.595</b>	<b>1.745</b>	

## Attachment 2-8

### 3. Monitoring Results

#### 3.1 Sewri Section

Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulative Achievement of Total Target (%)	Remarks, If Any
Resettlement	No. of Residential PAHs provided with Allotment Letters of Alternate Tenements	231	141	0	141	62%	
	No. of Residential PAHs given possession of Alternate Tenements	231	139	0	139	60%	
	No. of Commercial/R+C PAPs provided with Allotment Letters of Alternate Shops/Tenements	66	21	0	21	30%	
	No. of Commercial R+C PAPs given possession of Alternate Shops/Tenements	66	20	0	20	26%	
	No. of Occupants of MbPT Leased Plots provided Compensation	6	5	0	5	84%	
	No. of Religious properties Relocated / Removed	6	1	0	1	17%	Jivdani Mandir allotment letter given
	No. of Other Community properties Relocated / Removed	4	0	0	0	0%	
	No. of Structures in possession of MbPT Dismantled / Cleared	9	0	0	0	0%	
	No. of PAHs/PAPs provided Shifting Charges / Arrangement	297	0	0	0	0%	
Rehabilitation	No. of PAHs / PAPs identified for Livelihood Support in Post Resettlement Assessment						
	No. of PAHs / PAPs provided Livelihood Support under Program-I (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-II (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-III (to be identified)						
	No. of new enterprises started						

Attachment 2-8

Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulative Achievement of Total Target (%)	Remarks, If Any
Grievance Redress	No. of Grievances Received by FLGRC	4					
	No. of Grievances Disposed by FLGRC	1					
	No. of Grievances Received by SLGRC	0					
	No. of Grievances Disposed by SLGRC	0					
Post Resettlement Assistance	No. of CHSs Registration helped						
	No. of CHSs provided Tenements for Social Amenities						
	No. of CHSs' Maintenance Fund Invested						
	No. of CHSs' Office Bearers provided training						



<b>SUMMARY OF FISHER FOLKS OF MTHL PROJECT (Influence Zone of 23 villages) Up to 30<sup>th</sup> June 2020.</b>																																															
<b>Sr. No.</b>	<b>Village Name</b>	<b>Total number of forms Received</b>	<b>Total approved eligible family units</b>				<b>No. of Rejected Applications</b>																																								
			<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>Total</b>																																									
<b>1</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>11</b>																																								
1	Bamandongri	273	1	0	25	<b>26</b>	230																																								
2	Belapur	110	0	5	14	<b>19</b>	86																																								
3	Belpada	1185	0	7	473	<b>480</b>	476																																								
4	Diwale	455	10	236	12	<b>258</b>	132																																								
5	Ganeshpuri	276	0	33	32	<b>65</b>	164																																								
6	Gavhan	2167	0	14	1305	<b>1319</b>	575																																								
7	Jasai	926	0	0	18	<b>18</b>	908																																								
8	Jawale	51	0	1	0	<b>1</b>	50																																								
9	Kombadbhuja	413	1	24	126	<b>151</b>	219																																								
10	Kopar	994	2	5	230	<b>237</b>	551																																								
11	Mahul	1198	129	170	600	<b>899</b>	190																																								
12	Moha	475	22	34	134	<b>190</b>	212																																								
13	Mora	466	0	75	213	<b>288</b>	175																																								
14	Morave	539	14	17	79	<b>110</b>	301																																								
15	Nhava	1646	0	32	304	<b>336</b>	1009																																								
16	Sarsole	266	0	30	83	<b>113</b>	135																																								
17	Sewri	305	0	1	70	<b>71</b>	234																																								
18	Shelghar	241	0	0	15	<b>15</b>	214																																								
19	Shivajinagar	200	1	4	61	<b>66</b>	133																																								
20	Trombay	1253	49	259	783	<b>1091</b>	121																																								
21	Ulwa	218	1	4	12	<b>17</b>	173																																								
22	Uran & Hanuman Koliwada	685	0	29	554	<b>583</b>	87																																								
23	Vahal	411	0	2	1	<b>3</b>	367																																								
<b>Total</b>		<b>14753</b>	<b>230</b>	<b>982</b>	<b>5144</b>	<b>6356</b>	<b>6742</b>																																								
<table border="1"> <tr> <td>Total applications</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>14753</td> </tr> <tr> <td>Duplicate/Repeated Application</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1655</td> </tr> <tr> <td>Net Applications</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>13098</td> </tr> <tr> <td>Approved applications</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6356</td> </tr> <tr> <td>Rejected application</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6742</td> </tr> </table>								Total applications							14753	Duplicate/Repeated Application							1655	Net Applications							13098	Approved applications							6356	Rejected application							6742
Total applications							14753																																								
Duplicate/Repeated Application							1655																																								
Net Applications							13098																																								
Approved applications							6356																																								
Rejected application							6742																																								

<b>SUMMARY OF FISHER FOLKS OF MTHL PROJECT (Out of Influence Zone of 21 villages)</b>						
<b>Sr. No.</b>	<b>Village Name</b>	<b>Total number of Applications Received</b>	<b>Total approved eligible family units</b>			<b>No. of Rejected Applications</b>
			<b>C1</b>	<b>C2</b>	<b>Total</b>	
<b>1</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>7</b>	<b>10</b>	<b>11</b>
1	Airoli	76	0	29	29	47
2	Dhutun	398	0	1	1	395
3	Dighode	708	0	17	17	662
4	Diwa-Koliwada	122	0	12	12	107
5	Fanaspada	4	0	1	1	3
6	Ghansoli	340	0	30	30	310
7	Gharapuri	261	0	17	17	222
8	Juhugaon	201	0	7	7	171
9	Karave	178	0	44	44	126
10	Kelavane	105	0	2	2	102
11	Kopar Khairane	245	0	5	5	236
12	Koprol	70	0	4	4	66
13	Kundegaon	548	0	33	33	323
14	Nerul	5	0	1	1	4
15	Shahabaj	6	0	1	1	5
16	Takigaon	21	0	1	1	20
17	Talvali	54	0	2	2	51
18	Targhar	110	0	2	2	85
19	Vashigaon	257	0	51	51	176
20	Vindhane	12	0	2	2	10
21	Waghivali	112	0	4	4	104
<b>398Total</b>		<b>3833</b>	<b>0</b>	<b>0</b>		<b>3225</b>

**Grievance Redressal Committee (GRC) for Fisher-folk Compensation**

<b>No. of Cases referred to GRC</b>	<b>No. of Cases</b>		<b>No. of Cases Rejected</b>	<b>No. of Cases under Consideration</b>
	<b>Allowed</b>	<b>Compensation Paid</b>		
Nil	Nil	Nil	Nil	Nil

**Implementation Schedule for Fisher-folks Compensation & Land Acquisition in Navi Mumbai****A. Implementation Schedule for Fisher-folks Compensation: -**

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
1	Approval of fisher-folks' compensation Policy	Fisher-folks Compensation Committee (FCC)	08-10-2015	23-12-2015
2	Approval by MMRDA	MMRDA	10-12-2015	23-12-2015
3	Submission to JICA	MMRDA	--	04-01-2016
4	Detailed list of PAP and compensation plan	1. Detailed list of Fisher-folk PAP upto list 1 (1165 Nos) & 2 (1399 Nos) are finalized by the Fisheries Department. 2. From 2018, FEVC committee is the approval authority of PAF and approved C1- 230 Nos; C2-440 Nos and C3- 2580 Nos are approved.	23-12-2015	<b>Up to 30.06.2020</b> 1. Total up to date applications scrutinized = 13098 Nos. 2. Eligible = 6356 nos 3. Rejected = 6742 nos
5	Validation of compensation plan	Fisher-folks Compensation Committee (FCC)	23-12-2015	1. Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk from Sewri, Mahul & Trombay (Mumbai side) – 12th September 2017 and 20th November 2018 for C-2 & C3 Category only.

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
			23-12-2015	2. Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk of Navi Mumbai of C2 & C3 on 25th April 2018. 3. Validation of compensation is in progress and would be completed in phases.
6	Approval of compensation plan	FCC	23-11-2015	28-12-2017
7	Approval by MMRDA	MMRDA	23-11-2015	09-03-2021

**B. Implementation Schedule for Land Acquisition in Navi Mumbai: -**

Land Required in Ha.		Land Acquired in Ha.		Balance Land to be acquired in Ha	Anticipated date for Land Acquisition	Payment status (Payment made to Landowners by CIDCO)	Remarks
Govt.	Private	Govt.	Private	Private			
98.75	9.34	98.75	7.595	1.745	30-09-2020	--	1. CIDCO is the land acquisition authority for land acquisition for Navi Mumbai 2. MMRDA has paid an amount of INR 59.16 Cr to CIDCO as per their demand. 3. The payment status to the landowners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.
<b>Total</b>	<b>108.09</b>	<b>106.345</b>		<b>1.745</b>			

**Implementation Schedule for SIA (Sewri Section)**

<b>Task No.</b>	<b>Task Designation</b>	<b>Start Date</b>	<b>Completion / Forecast Date</b>
<b>1</b>	<b>Preparation of Final SIA</b>		
1.1	MMRDA Approval	October 2015	January 2016
1.2	JICA Approval	November 2015	January 2016
1.3	Posting of project Information on MMRDA		
1.4	Translation and disclosure of entitlement policy in local language to all PAP's	December 2015	January 2016
<b>2</b>	<b>LARP Implementation</b>		
2.1	Grievance redress mechanism established	August 2016	August 2016
2.2	Staff deployment SIA implementation	June 2016	Dec. 2020
2.3	Staff Deployment Public Relation	June 2016	June 2016
2.4	Hiring of Independent Evaluation Agency	November 2018	November 2020
2.5	Preparation and issue of allotment letters to PAPs	June 2018	Dec. 2020*
2.6	Notice of PAPs for shifting (Sewri Section)	December 2018	Dec. 2020
2.7	Allotment of dwelling units to PAP's	September 2016	Dec. 2020
2.8	Shifting of PAPs to resettlement Colony	December 2018	Dec. 2020
2.9	Transfer of compensation / allowance/ assistance to PAPs	December 2018	Dec. 2020
2.10	Creation of Community Revolving fund (within 3 months post handing over)	April 2019	Feb. 2021
2.11	Assessment of economic rehabilitation needs by individual household (within 6 months after handing over)	September 2019	June 2021
2.12	Registration of Co-operative housing societies, transfer of maintenance funds. (6 months period)	December 2019	June 2021
2.13	Signing of Civil Contract		January 2018
2.14	Notice of Civil works to proceed		March 2018
<b>3</b>	<b>Monitoring &amp; Evaluation</b>		
3.1	Internal Monitoring- Monthly/ Quarterly	June 2016	January 2020
3.2	Independent Evaluation Mid-term and End term evaluation		
	Mid Term	May 2019	June 2020
	End Term	November 2019	March 2021

\*Subject to opening of the lockdown upto September 2020 and get the Occupation certificate of Kurla Bhandari R&R site from SRA department upto Jan. 2021.

## **Attachment 3- JICA's Concurrence Status**

### Status of JICA'S Concurrence

Sl. No.	Brief description	Procurement procedure	Bid Cost		JICA'S Concurrence on					
			Local Currency (Cr Rs.)	Total (Cr Rs)	PQ Documents	PQ Evaluation	Bid Documents	Technical Evaluation	Financial Evaluation	Contract
1.	Package-1 (CH 0+000 km to CH10+380 km)	ICB with PQ (2P)	7637.30	7637.30	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22nd Dec 2016	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 12th Sep 2017	JICA's Concurrence - 12th Oct 2017	JICA's Concurrence - 15th Feb 2018
2.	Package-2 (CH 10+380 km to CH18+187 km)	ICB with PQ (2P)	5612.61	5612.61	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22nd Dec 2016	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 12th Sep 2017	JICA's Concurrence - 12th Oct 2017	JICA's Concurrence - 15th Feb 2018
3.	Package-3 (CH18+187 to CH21+800)	ICB with PQ (2P)	1013.79	1013.79	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 15th Sep 2017	JICA's Concurrence - 12th Oct 2017	JICA's Concurrence - 15th Feb 2018
4.	Package-4 Intelligent Transport System	ICB with PQ (2P)	181.49	181.49	JICA's Concurrence - 23rd August 2019	JICA's Concurrence - 18th June 2020	-	-	-	-

## **Attachment 4- Project Procurement and Financial Status till 30<sup>th</sup> June 2020**

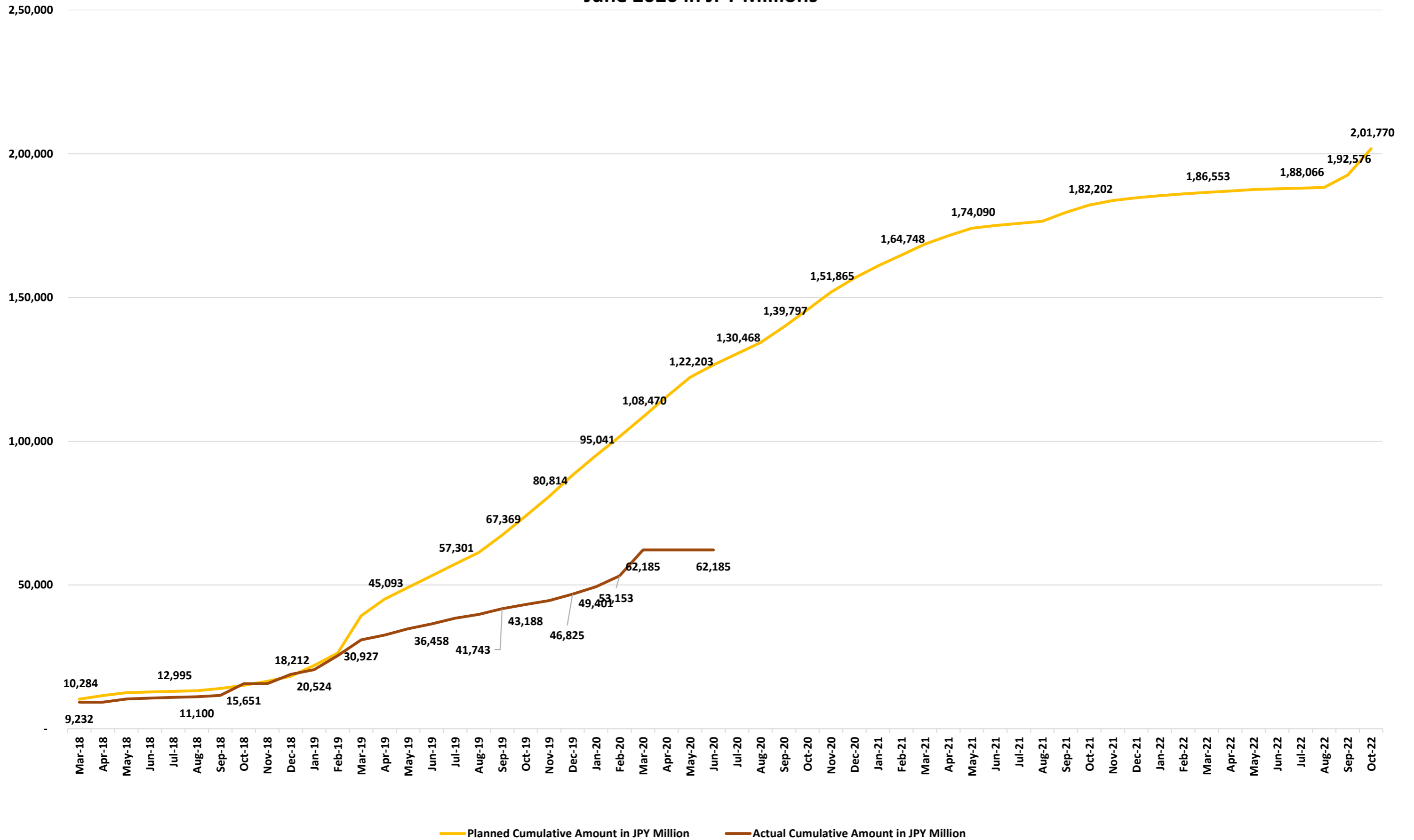


PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 30<sup>th</sup> JUNE 2020

Type	Contract	Awarded or Estimated Value (in Rs. Crore)	Current Status	Contractors	Project Commencement Date	Stipulated Project Completion Date	% of Overall Project completion (Design/ Procurement/ Construction) till 25 <sup>th</sup> June 2020	% of Overall Financial Progress (Including Mobilization Advance) till 30 <sup>th</sup> June 2020
CIVIL	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	March 2018	Sep 2022	26.92%	36.40%
	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO-TPL JV	March 2018	Sep 2022	21.01%	35.36%
	Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	March 2018	Sep 2021	29.51%	44.91%
ITS	Package-4 Intelligent Transport System (ITS)	181.49 (Estimated)	Design Stage	--	June 2021 (Estimated)	Sep 2022	NA	NA

## **Attachment 5- S-Curve for Cumulative Planned Vs Actual Amount in JPY Million**

**Attachement 5 - S-Curve for Planned Vs Actual Cumulative Amount till  
June 2020 in JPY Millions**



**Attachment 6- Package-1's Construction Programme  
Updated as on 25<sup>th</sup> June 2020**



MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR JUNE 2020



General Consultant for Mumbai Trans Harbour Link Project

Main project schedule table with columns for Activity ID, Activity Name, BL1 Duration, BL1 Start, BL1 Finish, Original Duration, Start, Finish, Schedule % Complete, Performance % Complete, Variance - BL1 Start Date, Variance - BL1 Finish Date, Total Float, and a monthly Gantt chart from 2018 to 2023.

Legend for work status: Actual Level of Effort (blue line), Remaining Work (green line), Actual Work (orange line), Critical Remaining Work (red line), Milestone (diamond), summary (arrow).

Please note that this Monthly Rolling Plan has been updated based on the actual progress and will not match with impacted schedule submitted with the EOT-03 proposal for the contractor's eligibility for extension of time



MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR JUNE 2020



General Consultant for Mumbai Trans Harbour Link Project

Table with columns: Activity ID, Activity Name, BL1 Duration, BL1 Start, BL1 Finish, Original Duration, Start, Finish, Schedule % Complete, Performance % Complete, Variance - BL1 Start Date, Variance - BL1 Finish Date, Total Float. Includes a Gantt chart on the right showing project progress from 2018 to 2023.

Legend for activity types: Actual Level of Effort, Remaining Work, Actual Work, Critical Remaining Work, Milestone, summary.

Please note that this Monthly Rolling Plan has been updated based on the actual progress and will not match with impacted schedule submitted with the EOT-03 proposal for the contractor's eligibility for extension of time





MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR JUNE 2020



General Consultant for Mumbai Trans Harbour Link Project

Table with columns: Activity ID, Activity Name, BL1 Duration, BL1 Start, BL1 Finish, Original Start, Original Finish, Schedule % Complete, Performance % Complete, Variance - BL1 Start Date, Variance - BL1 Finish Date, Total Float, and monthly progress bars from 2018 to 2023.

Legend for work status: Actual Level of Effort, Remaining Work, Actual Work, Critical Remaining Work, Milestone, summary.

Please note that this Monthly Rolling Plan has been updated based on the actual progress and will not match with impacted schedule submitted with the EOT-03 proposal for the contractor's eligibility for extension of time



**Attachment 7- Package-2's Construction Programme  
Updated as on 25<sup>th</sup> June 2020**







**Attachment 8- Package-3's Construction Programme  
Updated as on 25<sup>th</sup> June 2020**

Activity ID	Activity Name	Original Duration	BL1 Start	BL1 Finish	Start	Finish	Activity % Complete	Schedule % Complete	Performance % Complete	Budgeted Total Cost	Actual Total Cost	Schedule Performance Index	Cost Performance Index	Planned Value Cost	Earned Value Cost
<b>MTHL Pkg 3_Construction Schedule Jun"20</b>															
<b>Procurement of Mumbai Trans Harbour Link Proj</b>															
t	Commencement Date (CD)	0	23-Mar-18	23-Mar-18 /			100%	0%	100%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
<b>Physical Milestones</b>															
KD1001	KD1 [Construction programme, completion of Soil Investigatic	0	18-Sep-18	18-Sep-18	20-Sep-20	20-Sep-20	0%	100%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1002	KD 2 [NOC for technical design doc & drawing for foundation,	0	17-Dec-18	17-Dec-18	06-Nov-20	06-Nov-20	0%	100%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1003	KD 3 [NOC for Good for construction drawing for foundation, &	0	15-Jun-19	15-Jun-19	22-Mar-21	22-Mar-21	0%	100%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1004	KD 4 [Substantial completion of foundation, piles (if applicable)	0	21-Mar-20	21-Mar-20	04-Sep-21	04-Sep-21	0%	100%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1005	KD 5 [Substantial completion of pile caps (if applicable), piers	0	19-Sep-20	19-Sep-20	21-Dec-21	21-Dec-21	0%	0%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1006	KD 6 [Substantial completion superstructure (PC/CIS/SS) & i	0	20-Mar-21	20-Mar-21	09-Nov-22	09-Nov-22	0%	0%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1007	KD 7 [Substantial completion of kerb/traffic signs, Marking & i	0	24-Jul-21	24-Jul-21	19-Apr-23	19-Apr-23	0%	0%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
KD1008	KD 8 [Final completion & handing over]	0	21-Sep-21	21-Sep-21	27-May-23	27-May-23	0%	0%	0%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
<b>Financial Milestone</b>															
<b>Interface Milestone</b>															
<b>Document Submittals</b>															
<b>Employer's Obligation / Land Handover</b>															
<b>ROW 75 Ha [CD +180 days]</b>															
E Ob1(	ROW 24 Ha (from ch 18+187 to 18+930 and ch 20+170 to 21+	0	19-Apr-18	19-Apr-18	23-Mar-18 /	29-Jun-20	90%	100%	90%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
E Ob1(	ROW [51 Ha, unencumbered (Part 1) from ch 21+232 to 21+H	0	16-May-18	16-May-18	23-Mar-18 /	25-Jun-20	66%	100%	66%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
E Ob1(	ROW [51 Ha, unencumbered (Part 2) from ch 18+930 to 20+1	0	18-Sep-18	18-Sep-18	23-Mar-18 /	29-Jun-20	97%	100%	97%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
<b>CASTING YARD 9.16 Ha [CD+120 days]</b>															
E Ob1(	Unobstructed access to casting yard with fence [4.08 Ha (45)	0	20-Jul-18	20-Jul-18	20-Dec-18 /	21-Dec-18	100%	100%	100%	Rs0.00	Rs0.00	0.00	0.00	Rs0.00	Rs0.00
<b>Employer Office (Sch 01- General Item)</b>															
<b>Survey &amp; Geotechnical Investigation Works</b>															
<b>Design Works</b>															
<b>Design Basis Report</b>															
<b>Preliminary Design</b>															
<b>Geotechnical Interpretative Report Submission &amp; GC Approval (NON)</b>															
<b>Plan &amp; Profile Alignment</b>															
<b>Superstructure Design</b>															
<b>Drawing Submissions</b>															
<b>GC Approval (NONO)</b>															
<b>Issue of GFC Drawings</b>															
<b>Foundation &amp; Pier</b>															
<b>Phase 1 [24 Ha (from ch 18+187 to 18+930 and ch 20+170 to 21+232)]</b>															
<b>Phase 1 [24 Ha (from ch 18+187 to 18+930 and ch 20+170 to 21+232)]</b>															
<b>Phase 2 [51 Ha (rest area)], Drawing Submissions &amp; GC Approval</b>															
<b>Phase 2 [51 Ha (rest area)], Issue of GFC Drawings</b>															
<b>Abutment &amp; Foundation</b>															
<b>Pier Cap</b>															
<b>Phase 1 [24 Ha (from ch 18+187 to 18+930 and ch 20+170 to 21+232)]</b>															
<b>Phase 2 [51 Ha (rest area)]</b>															
<b>Bearings &amp; Drainage</b>															
<b>DES10 Drawing Submissions &amp; GC Approval (NONO)</b>															
<b>Issue of GFC Drawings</b>															
<b>Pavement Design</b>															
<b>Procurement Works</b>															
<b>For Main Bridge</b>															
<b>Launching Girder with factory testing.....(Using Underslung)</b>															
<b>Segments Moulds</b>															
<b>Steel Structure</b>															
<b>Steel for superstructure</b>															
<b>Formwork &amp; staging requirement</b>															



## **Attachment 9- Project Progress Photos**



**Package 1- Site Progress Photos**



Photo No. 1: C2P9 S Pier Head Reinforcement Works at Interchange in Progress



Photo No. 2: EP-15 Pier Concreting – Interchange Area in progress



Photo No. 3: AP-44 Pier Final Lift Concreting in progress



Photo No. 4: MP15-16 N Pier Head Erection at Intertidal Section in progress



Photo No. 5: MP29 N Pedestal, Shear Key Concreting in progress



Photo No. 6: MP 15-16 Pier Head Erection Intertidal Section In Progress



Photo No. 7:- MP 44 N1 Pile Concreting - Intertidal Section in progress



Photo No. 8: MP 02 N Pile Cap Concreting in progress



Photo No. 9: MP 44 S1 Pile Concreting – Intertidal in progress



Photo No. 10: MP84 N Pier Works- Marine Section



Photo No. 11: Marine Section- Progress View looking at MP 81-85



Photo No. 12: MP102 Pile Cap Works in progress

**Package 2 – Site Progress Photos**



Photo No. 1: Concreting at Open Foundation MP 259 RHS in progress



Photo No. 2: Pier final lift concreting at MP 242 LHS in progress



Photo No. 3: Pier cap formwork at MP238 LHS and RHS in progress



Photo No. 4: Formwork for Pier Head Segment at MP 237 LHS and RHS in progress





Photo No. 5: Excavation at Open Foundation MAA2 in progress



Photo No. 6: Segment concreting at Bay-2 in progress



Photo No. 7: Pile drilling at MP 219 RHS in progress



Photo No. 8: Frame erection for Launching Girder in progress



Photo No. 9: Pile concreting at MP 220/02 RHS in progress



Photo No. 10: Open foundation concreting at MP 251 RHS in progress



Photo No. 11: Pier reinforcement tying at MP 233 LHS in progress



Photo No. 12: Segment Mould erection at Bay-3 in progress

**Package 3 – Site Progress Photos**



Photo No. 1: PCC for Foundation No. MPP-05 (Chirle) completed



Photo No. 2: Chirle RP 01 LHS foundation reinforcement work is in progress



Photo No. 3: Concreting Works at Foundation No. RP 01 LHS in progress



Photo No. 4: Concreting Works at Foundation No. LP 38 at Chirle in progress

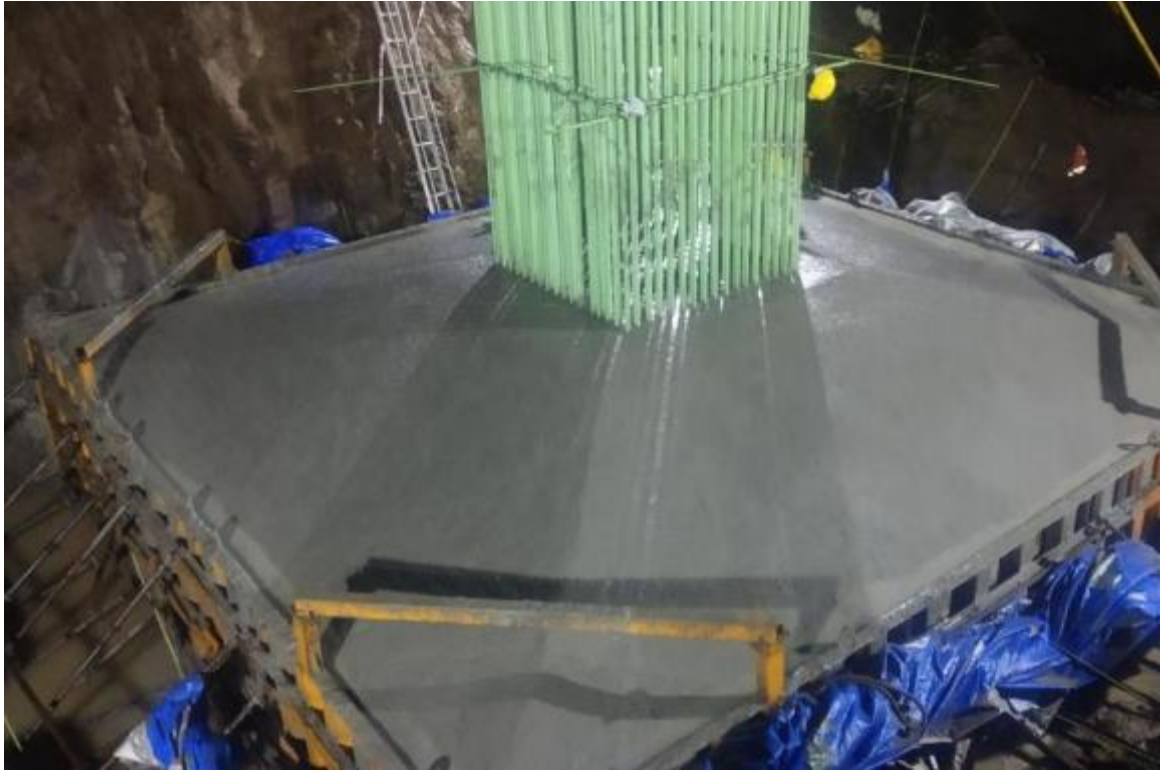


Photo No. 5: Concrete pouring at Foundation No. LP 38, Chirle completed



Photo No. 6: Annular filling at Foundation RP-33 LHS (Chirle) in progress



Photo No. 7: Final lift concrete pouring at Pier No. PMP-13 (Chirle) in progress



Photo No. 8: Final lift (8.135M) concrete pouring AT Pier No. LP-31 (Chirle) in progress





Photo No. 9: Reinforcement inspection for Segment N (15) in progress



Photo No. 10: Segment Profile checking in progress



Photo No. 11: Segment concrete pouring at bay 2, precast yard in progress



Photo No. 12: Stacking of HT strand in Jasai Godown