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General Consultant for Mumbai Trans Harbour Link Project

# Ref No: MTHL/GC/MMRDA/LT/QPR-1953/2021

## 1<sup>st</sup> March 2021

To, The Chief Engineer **Engineering Division** Mumbai Metropolitan Regional Development Authority (MMRDA) 2<sup>nd</sup> Floor, New MMRDA Building, Plot No R-06 & R-12, 'E' Block Bandra Kurla Complex, Bandra (E), Mumbai, Maharashtra, India 400051.

Sub: General Consultancy services for Mumbai Trans Harbour Link (MTHL) project -Submission of Quarterly Progress Report (QPR) No. 14 for July to September 2020

MTHL/GC/MMRDA/LT/QPR - 1813/ 2021 dated 12th January 2021 Ref:

Dear Sir.

With reference to the above subject, please find enclosed 1 hard copy of the corrected Quarterly Progress Report (QPR) No. 14 for the period of 1<sup>st</sup> July to 30<sup>th</sup> September 2020. In this report, we have incorporated all the corrections after your review of the draft report.

You may forward the same to JICA, India at your earliest convenience.

Thanking you, Yours faithfully,

m man

1 March 2021

Dr. S H Robin Sham, CBE (BSc, PhD, DIC, FCGI, FRSA, CEng, FICE, FIStructE, FHKIE) The Engineer General Consultant (MTHL)

Encl: 1 copy of Quarterly Progress Report No. 14 (July - September 2020)

CC: Superintendent Engineer – MMRDA - Mr. Sakhalkar Executive Engineer – MMRDA – Mr. Bhisikar Executive Engineer – MMRDA – Mr. Vishal Jambhale Executive Engineer – MMRDA – Mr. Ganesh Deshpande

By Email



# Mumbai Trans Harbour Link Project Quarterly Progress Report No. 14 1<sup>st</sup> July 2020 to 30<sup>th</sup> September 2020 Loan Agreement No. ID-P255 (Tranche–I)

# **ORGANIZATION INFORMATION**

	Mumbai Metropolitan Region Development Authority				
	Person in	Metropolitan Commissioner, MMRDA			
	Charge				
Borrower	Contact	M.M.R.D.A. New Office Building, Bandra-Kurla Complex,			
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	Mumbai Trans Harbour Link Project Implementation Unit				
	Headed by:	Chief Engineer			
Executing		Mumbai Trans Harbour Link Project Implementation Unit			
Agency	Contact	M.M.R.D.A. New Office Building, Bandra-Kurla Complex,			
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# **Details of JICA Loan**

	JICA ODA Loan Portion:	238,572 million Japanese YEN (JPY)
Source of Finance	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)
Terms and Conditions of JICA ODA Loan (Tranche-1)	Repayment Period:	30 years, including 10 years of grace period.

PROJ	ECT NAME	Mumbai Trans Harbour Link Project				
DOC	NO.	14	DATE OF	ISSUE	06/0	1/2021
DOC	FITLE	Quarterly Progress Report No. 14	·			
REV No.	DATE OF ISSUE	DESCRIPTION	PREPARED BY	CHECKED	BY	APPROVED BY
R0	05/07/2017	Quarterly Progress Report No. 1 (Apr-Jun 17)	J Senthil	Dr T K Sund	Dr T K Sundaram	
R0	05/10/2017	Quarterly Progress Report No. 2 (Jul-Sep 17)	J Senthil	Dr T K Sund	aram	Dr Robin Sham
R0	05/01/2018	Quarterly Progress Report No. 3 (Oct-Dec 17)	J Senthil	Dr T K Sund	aram	Dr Robin Sham
R0	05/04/2018	Quarterly Progress Report No. 4 (Jan-Mar 18)	J Senthil	Dr T K Sund	aram	Dr Robin Sham
R0	24/07/2018	Quarterly Progress Report No. 5 (Apr-Jun 18)	Prashant B	Dr T K Sund	aram	Dr Robin Sham
R0	10/10/2018	Quarterly Progress Report No. 6 (Jul-Sep 18)	Prashant B	Dr T K Sund	aram	Dr Robin Sham
R1	08/02/2019	Quarterly Progress Report No. 7 (Oct-Dec 18)	Prashant B	J Senthil/ Dr T K Sundaram		Dr Robin Sham
R0	05/04/2019	Quarterly Progress Report No. 8 (Jan-Mar 19)	Prashant B	J Senthil		V. D. Sharma/ Dr Robin Sham
R0	18/09/2019	Quarterly Progress Report No. 9 (Apr-Jun 19)	Prashant B	Mr. Som Ghosh		Dr Robin Sham
R0	13/11/2019	Quarterly Progress Report No. 10 (Jul-Sep 19)	Prashant B	Mr. Som Gl	nosh	Dr Robin Sham
R0	11/02/2020	Quarterly Progress Report No.11 (Oct-Dec 19)	Prashant B	Mr. Som Gl	nosh	Dr Robin Sham
R0	25/11/2020	Quarterly Progress Report No.12 (Jan-Mar 20)	Prashant B	Mr. Som Gl	nosh	Dr Robin Sham
R0	15/12/2020	Quarterly Progress Report No.13 (Apr-Jun 20)	Prashant B	Mr. Som Gl	nosh	Dr Robin Sham
R0	06/01/2021	Quarterly Progress Report No.14 (Jul-Sept 20)	Prashant B	Mr. Som Gl	nosh	Dr Robin Sham
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# DOCUMENT VERIFICATION AND REVISION RECORD

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# **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

- 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**

1. 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:

Vehicle Type		Sewri Interc ar 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	
Total	39,300	103,900	145,500	9,800	29,600	55,000	

Table 1.3.1 Demand Projections Over the Period

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

- 2. 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.
- 3. 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

- 4. 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.
- 5. 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.
- 6. 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).
- 7. 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.
- 8. 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).

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

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

## 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-Classifier (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

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

# Table 2.1.2 Comparison of Original and Actual Scope

Items	Original	Actual
Construction	work: 6-lane Marine Bridge Road (21.8 km)	
Package-1 Ch 0+000- 10+380 (10.380 km)	<ul> <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> <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> <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

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Items	Original	Actual	
Package-4 ITS (Intelligent Transport System)	<ul> <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/R and PCR)	
Consulting Services	<ul> <li>Tender Assistance</li> <li>Construction Supervision</li> <li>Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP).</li> </ul>	(P/R and PCR)	

#### 2.2 Implementation Schedule

#### 2.2.1 The Original Implementation Schedule

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

	mparison of Original and Actua	
Items	Original	Status (P/R and PCR) as on 30 <sup>th</sup> September 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	3 (Civil)	
a) Pre-Qualification Process	May – December 2016	May – December 2016
b) Main Bidding	January – December 2017	January – December 2017
<ul> <li>c) JICA's Concurrence of Contract</li> </ul>	February-2018	February-2018
Package-4 (ITS)	·	
a) Pre-Qualification Process	January 2019 – May 2019	January 2020 – May 2020
b) Main Bidding	June 2019 – September 2020	June 2020 – May 2021
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 (progress) updated at the end of 2<sup>nd</sup> quarter (July-September 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

	Foreign	Currency	Portion	Local (	Local Currency Portion			Total			
Cost Breakdown	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		
Total	75,451	72,032	3,419	154,013	105,967	48,046	317,501	238,572	78,929		

(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.

	Foreign	Currency	Portion	Local	Currency I	Portion		Total	
Cost Breakdown	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	6,030	6,030	-	18,573	18,573		34,308	34,308	
Package-2	5,003	5,003	-	12,578	12,578		24,152	24,152	
Package-3	72	72	-	3,494	3,494		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	-			2,515		2,515	3,949		3,949
GST	-			4,964		4,964	7,794		7,794
Import Tax	-			-			-		-
Interest during construction	-			-			-		-
Front End Fee	-			-			-		-
Total	11,358	11,358	-	48,701	35,011	13,690	85,808	64,315	21,493

Table 2.3.1.a.(ii) Actual	y Incurred Cost BY ITEM
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(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	Total		Others (MMRDA			
Breakdown	Total	Tranche I	Tranche II	Tranche III	Sub Total	Portion)
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
Total	317,501	144,795	66,909	26,868	238,571	78,929

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

(All Figures are in JPY mil)

Cost	Total		Others (MMRDA			
Breakdown	Total	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	3,648	1,175	-	-	1,175	2,473
FY 2021						
FY 2022						
FY 2023						
FY 2024						
Total	84,603	63,110	-	-	63,110	21,493

(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 26thJanuary 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	Selection Method							
Package	Original: (P/M)		Actual: (P/R and PCR)					
Construction	Construction Works							
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					
Consulting	Consulting Services							
1	Consulting Service for Supervision	Short List Method (QCBS)	No Change					

#### 2.4.2.2 Performance

#### Consultant's Progress:

#### July 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: IPC-28 & IPC-29 Detailed Verification and IPC-30 80% Ad-hoc.
  - ii) Package-2: IPC-24 80% Ad-hoc.
  - iii) Package-3: IPC-17 & IPC-18 Detailed Verification and IPC-19 & IPC-20 80% Ad-hoc.
- 2 GC has prepared and submitted a total reimbursement claim of 422.7 Million JPY to MMRDA / JICA in July 2020.

#### August 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: IPC-30 Detailed Verification and IPC-31 R1 80% Ad-hoc.
  - ii) Package-2: IPC-24 Detailed Verification and IPC-25 80% Ad-hoc
  - iii) Package-3: IPC-19 & IPC-20 Detailed Verification and IPC-21 80% Ad-hoc
- 2 GC has prepared and submitted a total reimbursement claim of 315.48 Million JPY to MMRDA / JICA in August 2020.

#### September 2020:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
  - i) Package-1: IPC-30 & IPC-031 Detailed Verification and IPC-32 80% Ad-hoc
  - ii) Package-2: IPC-24A Detailed Verification and IPC-26 80% Ad-hoc.
  - iii) Package-3: Nil. Detailed Verification of IPC-021 and IPC-022 80% Ad-hoc

# Contractor's Progress:

# Package-1 Physical Progress till 30<sup>th</sup> September 2020

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Temporary Access Bridge					
1.1	Bridge Deck	2953	Rmt	2953	100%	
2	Test Pile					
2.1	Test Piles	5	No.	4	80%	
3	Permanent Bridge Works - L	and/ Inte	rchange	Zone		
3.1	Piles	524	No.	249	48%	
3.2	Pile Caps	158	No.	44	28%	
3.3	Piers	228	No.	81	36%	
3.4	Pier Caps	215	No.	5	2%	
4	Permanent Bridge Works - Ir	ntertidal Z	Zone			
4.1	Piles	316	No.	223	71%	
4.2	Pile Caps	76	No.	48	63%	
4.3	Piers	148	No.	85	57%	
4.4	Pier Caps	148	No.	56	38%	
5	Permanent Bridge Works - M	larine Zo	ne			
5.1	Piles	399	No.	283	71%	
5.2	Pile Caps	79	No.	28	35%	
5.3	Piers	160	No.	10	6%	
5.4	Pier Caps	160	No.	4	3%	
6	Permanent Bridge Works - T	otal				
6.1	Piles	1239	No.	755	61%	
6.2	Pile Caps	313	No.	120	38%	
6.3	Piers	536	No.	176	33%	
6.4	Pier Caps	523	No.	65	12%	
7	Precast Segments				·	
7.1	Segment Casting	6713	No.	591	8.8%	
7.2	Segment Erection	446	Spans	5	1.1%	

Pack	Package-2 Physical Progress till 30 <sup>th</sup> September 2020					
S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Temporary Access Bridge					
1.1	Bridge Deck	2682	Rmt	2682	100%	
2	Test Pile					
2.1	Test Piles	2	No.	2	100%	
3	Permanent Bridge Works -	Land/ Inte	erchange	Zone		
3.1	Open Foundation	113	No.	81	72%	
3.3	Piers	119	No.	32	28%	
3.3	Pier Caps	104	No.	5	4%	
3.4	Portal Beams- Land	6	No.	2	33%	
3.5	Pier Head Segments -Land	42	No.	0	0%	
4	Permanent Bridge Works -	Intertidal	& CRZ Zo	one		
4.1	Piles	290	No.	288	99%	
4.2	Pile Caps	72	No.	49	68%	Scope of Works has been revised
4.3	Piers	72	No.	18	25%	Scope of Works has been revised
4.4	Pier Caps	18	No.	0	0%	
4.5	Pier Head Segments	54	No.	0	0%	Scope of Works has been revised
5	Permanent Bridge Works -	Marine Z	one			
5.1	Piles	514	No.	111	22%	
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%	
6	Permanent Bridge Works -	Total	•			
6.1	Open Foundation	113	No.	81	72%	
6.2	Piles	804	No.	399	50%	
6.3	Pile Caps	194	No.	49	25%	Scope of Works has been revised
6.4	Piers	313	No.	50	16%	Scope of Works has been revised
6.5	Pier Caps	170	No.	5	1.6%	
6.6	Portal Beams	6	No.	2	33%	
6.7	Pier Head Segments	170	No.	0	0%	Scope of Works has been revised
7	Precast Segments					
7.1	Segment Casting	3142	No.	177	5.63%	
7.2	Segment Erection	271	Spans	0	0%	

# Package-3 Physical Progress till 30<sup>th</sup> September 2020

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Permanent Bridge Works					
1.1	Open Foundations	195	No.	137	70%	
1.2	Piers	195	No.	92	47%	
1.3	Pier Caps	189	No.	41	22%	
1.4	Segment Casting	750	No.	131	15%	
1.5	Segment Erection	53	Span	0	0%	

#### Package-4 (ITS) Progress till 30<sup>th</sup> September 2020

Preparation of Bid Documents for the Package-4 – ITS (Intelligent Transport System) Works is in progress. The GC has resolved the queries raised by the bidders. MMRDA has received only one PQ Application from M/S Tata Projects Ltd & EFCON India Pvt Ltd (JV). Accordingly, as recommended by the GC and based on the suggestions received from the prospective bidder, MMRDA requested JICA to allow them to go for direct bidding without PQ Stage process. Concurrence for the same is awaited from JICA.

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 July to September 2020	Cumulative
1	Total Man Hours Since Inception	20,11,844	1,71,23,126
2	Number of Man-Hours (Accident Free Man-Hours)	20,11,844	46,13,138
3	Number of Man-Days	2,51,480	21,40,389
4	Number of Reportable Fatal Accidents	0	2
5	Number of Non-Fatal Accidents	0	1
6	Number of Near Miss Incidents	15	70
7	Number of First Aid Cases	10	110
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	96,448
11	Number of Man-Days Lost	0	12,058
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	3
13	Number of Inspections done for Offices & Sites	564	1,161
14	Number of Training/ Induction done for Offices & Sites	85	333
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	5,291	6,204
16	Details of Safety Committee meetings	2	23
17	No. of toolbox talks	4,250	31,968
18	No. of critical excavations.	2	18
19	Pre-employment Medical check-up	3,498	17,639
20	No. of Safety Walk down	8	125
21	No. of Safety Inductions completed	3,498	17,639

# Package-2 Safety Report

Sr. No	Description	From July to September 2020	Cumulative
1	Total Man Hours Since Inception	9,60,729	79,88,803
2	Number of Man-Hours (Accident Free Man-Hours)	9,60,729	15,21,368
3	Number of Man-Days	87,429	7,27,592
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	3
6	Number of Near Miss Incidents	1	34
7	Number of First Aid Cases	8	65
8	Number of Dangerous Occurrences	0	5
9	Number of Reportable Sick Cases	0	1
10	Number of Man-Hours Lost	0	924
11	Number of Man-Days Lost	0	97
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	3
13	Number of Inspections done for Offices & Sites	77	696
14	Number of Training/ Induction done for Offices & Sites	38	478
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	3,503	834
16	Details of Safety Committee meetings	3	27
17	No. of toolbox talks	578	3,970
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	1,489	7,849
20	No. of Safety Walk down	11	83
21	No. of Safety Inductions completed	1,496	8,066

# Package-3 Safety Report

Sr. No	Description	From July to September 2020	Cumulative
1	Total Man Hours Since Inception	2,66,860	15,77,178
2	Number of Man-Hours (Accident Free Man-Hours)	2,66,860	15,77,178
3	Number of Man-Days	33,357	1,97,147
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	8	51
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	34	230
14	Number of Training/ Induction done for Offices & Sites	16	139
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	786	4,810
16	Details of Safety Committee meetings	3	23
17	No. of toolbox talks	501	3,635
18	No. of critical excavations.	0	3
19	Pre-employment Medical check-up	745	3,644
20	No. of Safety Walk down	9	88
21	No. of Safety Inductions completed	745	3,644

# 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)
3.2.1 General Issues	(P/R and PCR)
1. Toll Arrangement/ Toll Rate	
Fixed toll rate as per the type of vehicle	Appropriate Tolling Policy/ Rates will be finalized
will be levied for the road users after the	by December 2021.
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.	
2. Operation and Maintenance	
MMRDA proposes to appoint separate	
agencies for Operation & Maintenance of	Single Operation and Maintenance Contractor
the bridge and for Toll Management	will be appointed by December 2021.
System. Both the agencies for O & 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.	
3.2.2 Environmental and Social	(P/R and PCR)
Consideration	• MMRDA has disclosed Supplemental EIA &
a. CRZ Clearance	SIA on MMRDA website.
i. Supplemental EIA has been approved	• The renewed CRZ clearance was granted on
by MMRDA and disclosed on the	25/1/2016 from MoEF&CC and the approval
website of JICA. Supplemental EIA	conditions have been imposed on the
report has been disclosed also on the	Contractors as the Employer's requirements.
website of MMRDA.	MMRDA has actively monitored the
ii. Furthermore, renewed CRZ Clearance	compliances of the approval conditions and
has been obtained in January 2016.	maintains throughout the construction phase.
iii. In accordance with the conditions for	<ul> <li>MMRDA appointed Mangroves &amp; Marine</li> </ul>

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.
• Rs 91.42 Crore has been transferred to
Mangroves & Marine Biodiversity
Foundation, Mumbai for the development &
conservation of mangrove area and its
afforestation. Such funds will be managed by
the Mangrove Foundation of Maharashtra
State.
• 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.

# b. Required Permits

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

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 /Transplantati on	Respective Tree Authorities	Contractor for respective Packages	-	Pkg-1:TreeCutting/Transplantation permission is awaited from the TreeAuthority.Pkg-2:TreeCutting/Transplantation permission obtained & completed.Pkg-3:Forest Department has issued a concurrence on 19/05/2019.19/05/2019.CIDCO's permission for Tree Cutting/ Transplantation obtained on 25th November 2019.
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	

Table 3.2.2 Present Status of some Important Permits

# 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
10000(0)	remaining problem(s)
1. Establishment of Effective	Cell is established by MMRDA
Environmental and Social Cell in PIU	(Annexure III, Organization chart)
MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.	
2. Rehabilitation and Land Acquisition	Sewri: Involuntary resettlement in Sewri section
Issues	has been further validated by Social Development
<b>a. Affected Area and Population</b> Due to the Project, 1282 non-	Cell of MMRDA. Out of 297 Project Affected Households (PAHs) have given consents as follows:
Due to the Project, 1282 non- titleholders will be involuntary resettled,	
and 108.09 ha of land will be handed	<ul> <li>164 PAHs Kanjurmarg for residential</li> </ul>
over by CIDCO.	25 PAHs Kanjurmarg for commercial
	<ul> <li>7 PAHs (Satsangi Plot) Kanjurmarg for Commercial</li> </ul>
	<ul> <li>1 PAHs (commercial to residential) for Bhakti Park</li> </ul>
	100 PAHs HDIL Kurla for residential
	<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.
b. Entitlement Policy	
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)	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.

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

	lssue(s)	Action or countermeasure(s) taken and		
		remaining problem(s)		
g.	Qualitative Independent Evaluation			
	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.	Updated <b>Attachment 2-10</b> is enclosed in the report.		
h.	RAP Implementation Budget			
	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.	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.		
i.	Environmental Management Plan			
	("EMP") 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. (Attachment 2-1). During the detailed design stage, MMRDA, with assistance of the Consultant, will update the EMP, as necessary.	EMP will be updated, if required, in due course of construction activities/progress.		
j.	Environmental Monitoring Plan			
	("EMoP") 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	Environmental Monitoring Plan with the package wise budgeted cost is reported in <b>Attachment 2-</b> <b>3</b> . Environmental Monitoring Results during the construction phase are reported in <b>Attachment 2-</b> <b>4</b> .		

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
as a part of Progress Status Report (PSR) by filling in the Reporting Form of Environmental Monitoring Result. (Attachment 2-4). 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.	
k. Long Term Bird Monitoring 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.	<ul> <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

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

<sup>\*2</sup> 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.

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

#### 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. 14 is submitted for the period of 1<sup>st</sup> July to 30<sup>th</sup> September 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)

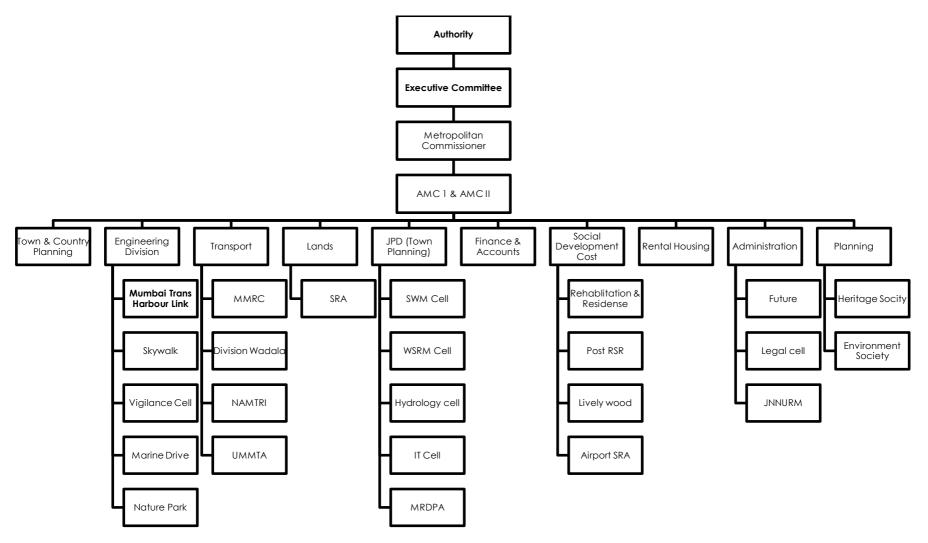
# 5.3 Lessons Learnt and Recommendations

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.

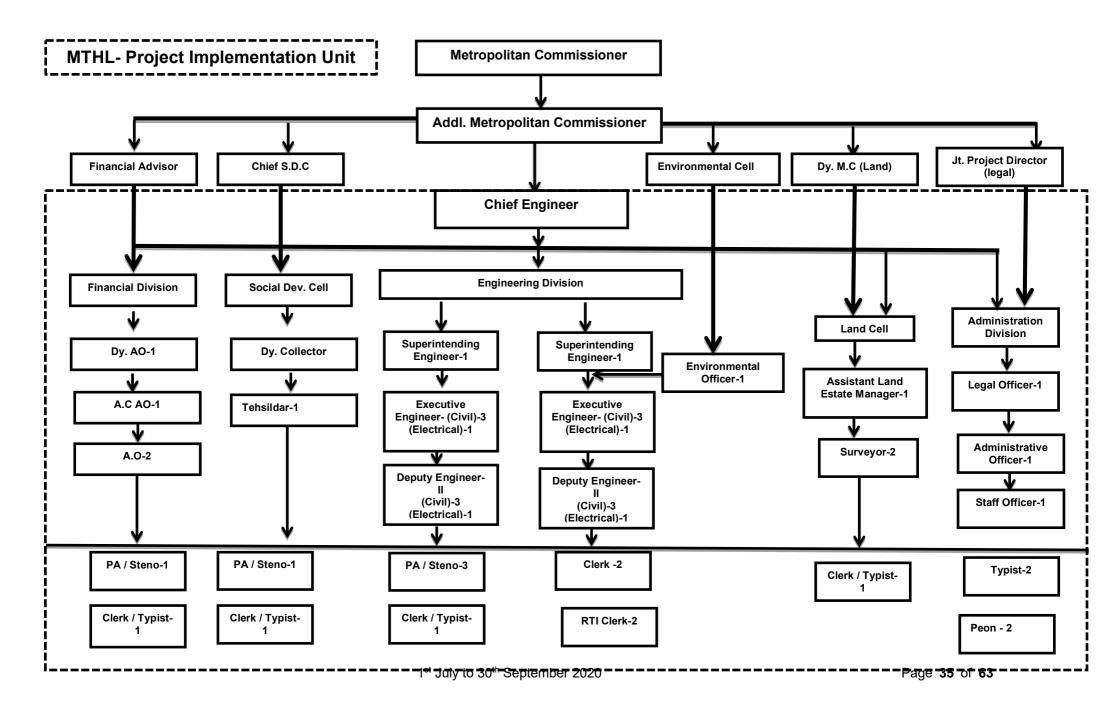
(PCR)

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

# MMRDA Organization chart



# Mumbai Trans Harbour Link Project - Quarterly Progress Report No.14 (Jul-Sept 2020)



## 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

#### 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
	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						<ul> <li>SO<sub>2</sub>: 80 / 80µg/m<sup>3</sup></li> </ul>	P3 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
												<ul> <li>NO<sub>2</sub>: 80 / 80µg/m<sup>3</sup></li> <li>РМ<sub>10</sub>: 100 / 100µg/m<sup>3</sup></li> <li>РМ<sub>25</sub>: 60 / 60µg/m<sup>3</sup></li> </ul>	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 biding. 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 frequecy would change after obtaining CTE.
	2	Water pollution	pH, BOD, DO,	IS / AWWA	1. Sewri & Sewri bay area	Quarterly	810,000	2,400,000	810,000	0	3,210,000	<ul> <li>O<sub>3</sub>: 180 / 180µg/m<sup>3</sup></li> <li>CO: 0.4 / 0.4mg/m<sup>3</sup></li> <li>Marine water quality Standards - Class SW-IV Harbour</li> </ul>	Water Pollution not
			Turbidity and O&G		for package I 2. Nhava temporary bridge & casting yard in Gavhan for	4 Times / Year						Waters (MPCB) <ul> <li>pH : 6.5-9</li> </ul>	applicable for Pkg. 3
Ę					package II 3. Gavhan & Chirle for package III	Not applicable						<ul> <li>D0: 3 mg/l</li> <li>Turbidity: 30 NTU</li> <li>BOD: 5 mg/l</li> <li>0 &amp; G: 10 mg/l</li> </ul>	
Pollution	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.

#### Attachmemt 2-3

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
					<ol> <li>2. Nhava temporary bridge &amp; casting yard in Gavhan for package II</li> <li>3. Gavhan &amp; Chirle for package III</li> </ol>	4 Times / Year Once site clearing work/execution part of work start.						Municipal Soild Waste Management Rules, 2013 Generated waste shall be reused or disposed at designated site. Sites have been identified and the location for Pkg. 1 is at Bhayandar Pada in Thane. For Pkg. 2 & 3 is in Navi Mumbai at Pushpak Node nera "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
	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	<ol> <li>Sewri &amp; Sewri bay area for package I</li> <li>Nhava temporary bridge &amp; casting yard in Gavhan for package II</li> </ol>	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	150,000	1,500,000	150,000	100,000	1,750,000	Soil Pollution Standard in India (MOEF) <ul> <li>Cd: 0.01mg/l</li> </ul>	
						*If any spillage/ leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon						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 $(dB(A)L_{Aeq})$	IS Standard	<ol> <li>Sewri &amp; Sewri bay area for package I</li> <li>Nhava temporary bridge &amp; casting yard in Gavhan for package II</li> </ol>	at Storage area only Fortnightly 2 Times / Year	150,000	54,000	150,000	369,000	573,000	-Construction Noise; 85dB(A) -Ambient Noise Standards in India (dB (A) Leq)	-
					package III	Fortnightly	75 000		PF 000		100 000	1.Industrial AreaDay 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 ZoneDay Time: 50 (6-22hr)Night Time: 50 (6-22hr)Night Time: 50 (6-22hr)Night Time: 50 (6-22hr)Night Time: 50 (6-22hr)	
			Vibration (dB L10 or mm/sec)		1 Location Gavan area for package III	Half yearly	75,000	0	75,000	400,000	475,000	- Construction vibration 75dB     -Vibration Standards roadside     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	Ocular inspection and quantitative survey	Along MTHL alignment and mangrove replant area for Package I	Quarterly during the construction Period	6,500,000	7,200,000	6,500,000	0	13,700,000		Not applicable for Pkg. 3
			2. Monitoring of Cutting Tree and replantation/ transplanting area 3.Monitoring of Mangrove Plantation	1-1. Fauna-Flora Line-Point census and record number	Along MTHL alignment and mangrove replant area for package II Not applicable for Package III	4 Times / Year						Significant impacts are not caused by the project Note)	
			area appointed by MoEF	and appeared species									

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 (18items on Supplemental EIA Table 6.1.15 for soil and 7 items such as 1)Netprimary productivitye, 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	
ž				1-3: Benthos Survey			-						
				2-1: Cutting trees			-					Standard for Soil; Supplemental EIA Table 6.1.15	
				confirmation 3-1: Mangrove								Standard for Ecological Parameter:	
				survey in the replanted area			-					Netprimary Productivity	
												<1,500 mgC/m3/day at surface	
							-					· Chlorophyll-a <4mg/m3	
												• Phosphate: 0.1-90µg/l	
							-					<ul> <li>Nitrate: 1.0-500µg/l</li> <li>Nitrite: &lt;125µg/l</li> </ul>	
												Particulate Organic Carbon: 10-100mg/m <sup>3</sup>	
	11	Hydrology	Flooding situation	Flood level	Not applicable for Package I		350,000	0	350,000	0	350,000	<ul> <li>SiO2: 10-5,000μg/l</li> <li>Project activities and structures does not cause flooding</li> </ul>	Not applicable for Pkg 1 & 3
	11	nyurology	Flooting situation	measurement during high precipitation periods			330,000	U	330,000	U	330,000	and impacts on tidal conditions	Not applicable for Fig. 1 & 5
					2 Locations (CRZ at Sewri and Shivaji Nagar) for	4 Times / Year							
					Package II Not applicable for Package						<u> </u>		
	12	Topography and	Conditions in embankment area		III 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
		Geology	embankment area	Stability of embankment	Interchange in Shivaji Nagar for Package II	4 Times / Year						anu tidiks	
$\vdash$	13	Local economy			Not applicable for Package Affected area		As per Actuals						
	15	such as employment and livelihood			initia alta								
ment	14	Local conflict of interests	Construction worker's township	Confirmation of workers list from	Sewri and Shivaji Nagar) for	2 Times / Year	125,000	0	125,000	0	125,000	Employment opportunity shall be provided fairly	
viron	15	Infectious	Number of infected	contractor Confirmation of		4 times / year x 4.5	525,000	0	525,000	0	525,000	Infection disease rate shall not be caused by the project	
Social environment		diseases such as HIV/AIDS	patient	health check list from contractor		years							
Soc	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 Emloyment 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	
				Total			8140500	325,354,000	12,000,000	2,211,500	339,565,500		

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

Monitoring Period - July to September 2020

1. Environmental Monitoring during Construction for 4.5 years

1. Enviro	nmental	Nonitoring during	g Construction for 4.5	years				Monitoring Res	ult	
Area	No.	Item	Parameter	Location	Frequency a year	Item and Stanadard	Location 1- Pkg 1	Location 2	Location 3- Pkg 3	
				1. Sewri & Sewri bay area for package I	Quarterly monitoring ia conducted at all locations.	National Ambient Air Quality Standards (NAAQS)				
	1	Air pollution	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	(Standard for 24hrs: Industrial and Residential)	Sewri	Shivaji Nagar	Chirle	
				3. Gavhan & Chirle for package III	From march -2019 onwards monitoring is conducted quarterly as	1. SO <sub>2</sub> : 80µg/m <sup>3</sup>	BDL	BDL	20	
					per MOEF and CPCB	2. NO <sub>2</sub> : 80μg/m <sup>3</sup>	23	28	34	
					norms	3. PM <sub>10</sub> : 100µg/m <sup>3</sup>	58	86	96	
						4. PM <sub>2.5:</sub> : 60μg/m <sup>3</sup>	24	34	56	
						5.CO:02mg/m3	1.1	1.3	0.45	
						6.VOCs	1.11	1.8	3.05	
				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	Water pollution	pH, BOD, DO, Turbidity and O&G	2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	1. pH : 6.5-9	7.4	7.9	Not applicable	
				3. Gavhan & Chirle for	Not applicable	2. DO: 3 mg/l	5.7	5.9	Not applicable	
				package III		3. Turbidity: 30 NTU	23	22	Not applicable	+
						4. BOD: 5 mg/l	4	BDL	Not applicable	
						5. O & G: 10 mg/l	BDL (DL=2)		Not applicable	
						6.COD	18	12	Not applicable	
				1. Sewri & Sewri bay area for package I	Daily	Municipal Soild 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	<u>2322.1 m3</u>	App. 14000 CuM Collected in jumbo bags and Disposed off in EBB Location and Casting Yard	NA	
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.	Generated cutting treel (ha) total	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting so far NIL		306 Trees are cut	
						Generated domestic waste (t/month) total	2.53 T for the quarter	3.5 T/quarter. It is disposed	0.990 m3 for quarter	
						Confirmation of adequate disposal (visualt survey)		through CIDCO daily.		-
				1. Sewri & Sewri bay area for package I	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	Soil Pollution Standard in India (MOEF)	Muck Soil at Mudflat(MP53)	Muck Testing Done on september 2020 and Reports submitted to GC	Not applicable	
				2. Nhava temporary		1. Cadmium: 0.01mg/l	0.03	BDL		
				bridge & casting vard in 3. Gavhan & Chirle for	*If any spillage/ leakage	2. total cyanide : not detected		BDL		+
				package III	take place from chemical,			000		
u					fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at		0.23	0.12	Not applicable for package-3	
Pollution					Storage area only	5. chromium (VI): 0.05mg/l	< 0.05	BDL	•	
Pol						6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)	< 0.01	BDL		
						7. total mercury: 0.005mg/l	<0.01	BDL		
						8. alkyl mercury: not detected			Regarding	g soil conta
		Soil	Heavy Metals & Oil &			9. PCBs: not detected		BDL	25 standa	ards items
	4	Contamination/sedim entation	Grease			10. copper: 125mg/kg (only paddy field soil )	4.86	36.3	JICA, and	the rest of
		citation				11. dichloromethane: 0.02mg/l	<1	BDL		
						12. carbon tetrachloride: 0.002mg/l	<1	BDL		
						13. 1,2-dichloroethane: 0.004mg/l		BDL		
						14. 1,1-dichloroethylene: 0.02mg/l 15. cis-1,2-dichloroethylene: 0.04mg/l	+	BDL BDL		+
I	I	I	I	I	I	15. cis-1,2-dicinoroculyiciic. 0.04ifig/1	I			1

#### 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 perameters in EMoP are covered.

Location 4	Remark - reasons why the data is exceeding standard - counter measures when the data is exceeding
	Due to COVID 19 Lockdown, water monitoring could not be conducted for this quarter. (Package-I)
	The site work was restricted due to COVID 19 Lockdown in this period (Package-I)
	Frequency is Once in a year. If any minor or major incident has not occure at storage area. (Package-III)
	Hazardous Storeage is situated in low laying area at Gavan area. Due to this reason complete ground area is covered by boulders to avoid further water logging in rainy season. Therefore soil sample is impossible to taken out from in and around the Oil & chemical
	ation, some items shall be selected from the total Design. Only the selected items shall be reported t ed from this form.

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

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - July to September 2020

nental Monitoring during	g Construction for 4.5	years						
				16. 1,1,1-trichloroethane: 1mg/l		BDL		
				17. 1,1,2-trichloroethane: 0.006 mg/l		BDL		
				18. trichloroethylene: 0.03mg/l		BDL		
				19. tetrachloroethylene: 0.01mg/l		BDL		
				20. 1,3-dichloropropene: 0.002mg/l		BDL		
				21. thiuram: 0.006mg/l		BDL		
				22. simazine: 0.003mg/l		BDL		
				23. thiobencarb: 0.02mg/l		BDL		
					4	1.4		+
				24. benzene: 0.01mg/l				
		1.0	n	25. selenium: 0.01mg/l	< 0.01	BDL		+
		1. Sewri & Sewri bay area for package I	Fortnightly	Construction area Standard 85 dB(A) daytime (Japan standard) Not constuction 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)	
		2. Nhava temporary bridge & casting yard in Gavhan for package II	2 Times / Year	Day time : 6-22 hr (continious) dB(A)		70.1	66.8	
		3. Gavhan & Chirle for	Fortnightly	Night time: 22-6 hr (continious) dB(A)		60.7	65.3	
		package III	ginury	(only sea section)	+	30.7	00.0	+
	Ambient and road side	· ······			+	1		+
	noise (dB(A)LAeq)			Day time : 6-22 hr (10 min during 9-17 hrs)				
				Night time: 22-6 hr (10 min 22-24 hr)				
				Note (standard values in Not construction area)				
				1.Industrial Area				
				Day Time: 75 (6-22hr)				
				Night Time: 70 (22-6hr)				
				2.Commercial Area:				
Noise and vibration				Day Time: 65 (6-22hr)				
				Night Time: 55 (22-6hr)				
		1 Location Gavan area	Half yearly	Construction area Standard 75 dB daytime (Japan				
		for package III		standard) Not constuction area : Vibration Standard (Japan Standard along the road)	Sewri (ST 200-500) (Industrial area)	Shivaji Nagar (Commercial area)	Chirle	
				Day time : 6-22 hr (continious)		Not Applicable	Not applicable	
	Vibration (dB) shall be converted from			Night time: 22-6 hr (continious)				
	mm/s to dB			Note (standard values in Not construction area)				
				1. Commercial /Industrial Area				
				Der Time 70 (7 20kg)			(7.4	
				Day Time: 70 (7-20hr)			67.4	-
		Along MTHL -1:	Quantanla	Night Time: 65 (20-7hr)			64.8	
		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)	Mango area a
		Along MTHL alignment and mangrove replant area for package II		1-1. Fauna-Flora (number of species and quantity			N/A	N/A
				(1) Number of species of bird			Regarding protected area term monitoring plan will monitoring form shall be u	be extablis
	1.Monitoring of mudflat conditions including fauna-			(2) Number of species of fish				
	flora			(3) Estimated number of Flamingo	1			1
	2. Monitoring of Cutting Tree and replantation/transplation			1-2: Mangrove density and community survey			1	

#### 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 perameters in EMoP are covered.

68.8	Due to monsoon season, ambient noise monitoring
	could not be conducted for this quarter (Package-I)
64.0	
64.9	
	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
	(Package-I)
	Due to covid -19 lockdown, since March 2020,
	vibration monitoring was not conducted at the
	Package-3 Site. GC sent a letter to the Package-3
	Contractor (& a copy to MMRDA) but the Vendor
	denied to carry out the works. (Please Refer letter
	No.0001810 Dated 14.07.2020)
ngorove Replantation a appointed by State Government	
d Important Bird Area)	and ecosystem, detailed long-
	survay of birds. This tentative
	long-term monitoring plan.

#### The Project for Construction of Mumbai Trans Harbour Link

Reporting Form of Environmental Monitoring during Construction Attachment 2-4

ntal Monitoring during Construction for 4.5

Monitoring Period - July to September 2020	

1. Enviro	nmental	Monitoring during	Construction for 4.5 y	ears					-	
			3.Monitoring of Mangrove Plantation area appointed			(1) Number of species of mangorve				
			by MoEF			(2) Density of mangrove (xx trees/10m x 10m)				
	6	Protected Area	4. Monitoring of			1-3: Benthos Survey				
			sedimentation soil and ecological parameter (25 items on EIA main text Table 6.1.15 for soil and 7			(1) Number of species and quantity by species	470 Species and 298 No/m2			
Natural Environment			items such as 1)Net primary productivity, 2)Chlorophyll-a,			2-1: Cutting tree confirmation	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting NIL			
Env			3)Phosphate, 4)Nitrate,			(1) Number of cutting tree and species				
ıral			5)Nitrite, 6)Particulate			3-1: Mangrove survey in the replant area			Nil	
Natı			Organic Carbon, 7) SiO2)			(1) Number of species of mangorve				
						(2) Density of mangrove (xx trees/10m x 10m)				
						4. Ecologial Parameter				
						(1) Net primary Productivity : <1,500 mgC/m3/day at surface	733			
						(2) Chlorophyll-a: <4mg/m3	4.4			
						(3) Phosphate: 0.1-90µg/l	385			
						(4) Nitrate: 1.0-500µg/l	684			
						(5) Nitrite: <125µg/l				
			-			(6) Particulate Organic Carbon: 10-100mg/m <sup>3</sup>				
		Ecosystem		Nat analizable fan		(7) SiO2: 10-5,000µg/l Criteria for evaluation	5716			
	7	Hydrology	Flooding situation	Not applicable for Package I		Project activities and structures does not cause flooding and impacts on tidal conditions	Sewri	Shivaji Nagar		
	,	ilyalology		2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year	Monitoring of flooding situation	No Flooding	No flooding	No Flooding	
				Not applicable for Package III						
		Tananakarant	Conditions in embankment	2 Locations (1. Embankment of Inter		Criteria for evaluation Embankment shall be stabilized without any landslide and cracks	Shivaji Nagar	Chilre	Chirle	
	8	Topography and Geology	0700	Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle)	4 times / year x 4.5 years	Monitoring of embankment	done			
	9	Local conflict of	Construction worker's	2 Locations (major camp site in Sewri and Shivaji	4 times / year x 4.5 years	Criteria for evaluation Employment opportunity shall be provided fairly	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle	
		interests	township	Nagar)		Number of hired workers by community	400 in July2020, 385 in August 2020 and 324 in September in 2020	125-150		
						Criteria for evaluation Infection disease rate shall not be caused by the project	Sewri Camp Site	Shivaji Nagar Camp Site		
	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	Confirmation of health check record and inspect project site	During this quarter 39, COVID 19 positive cases reported who have been treated and discharged.	Health Checks carried out but HIV/AIDS parameter is not there.	Health Checkups conducted by site doctor. HIV AIDS awareness programme has conducted in 2019 by NGO.	
						Criteria for evaluation "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	
	11	Labour Environment	Construction worker's cond	2 Locations (major camp site in Sewri and Shivaji Nagar)	2 times / year x 4.5 years	Site Visual Inspection	All provisions as per BOCW have been provided. *1150 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. *Daily temperature Check of workmen at site and colony is conducted. Daily sanitisation at work site, of working equipment and the buses used for communiting is conducted.	Conforming with BOCW Act 1996	Conforming with BOCW Act 1996	

#### 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 perameters in EMOP are covered.

Due to COVID 19 Lockdown, marine biology sampling and monitoring could not be conducted for this quarter (Package-I)
Due to COVID 19 Lockdown, marine biology sampling and monitoring could not be conducted for this quarter (Package-I)

The Project for Construction of Mumbai Trans Harbour Link

Reporting Form of Environmental Monitoring during Construction Attachment 2-4

Attachmer	0	or Environm	cintar Wromtor ing du	ring Construction		Monitoring	required parameters are included in this form, and not all perameters in EMoP are covered.				
1. Enviro	nmental N	Aonitoring duri	ng Construction for 4.5	years							
ther	12	Accident	Number of accidents	2 Locations (major camp site in Sewri and Shivaji	4 times / year x 4.5 years	Criteria for evaluation Any accidents are not caused by construction	Sewri Camp Site	Shivaji Nagar Camp Site	Other area		
0				Nagar)		Number of recorded accident	NIL	NIL	Nil		

#### 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 perameters in EMOP are covered.

#### 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 December 2020.

	Required 1 ha		Acquired ha	Balance Land to be acquired in ha	Anticipated date for Land Acquisition	Payment status (Payment made to Land Owners by CIDCO)	Remarks
Govt.	Govt. Private		Private	Private*			
98.75	9.34	98.75	7.595	1.745	31-12-2020		The payment status to the land owners are awaited from CIDCO. The same would be communicated to JICA on receipt of the same.
Total 108.09		98.75	7.595	1.745			

#### \*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
	Total Area	9.34	7.595	1.745

#### Attachment 2-8

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

#### 1. General Information

- a. RAP Implementation Monitoring Results:
- b. Date of Preparing This form
- c. Person Preparing This form

Progress Status Report (PSR) of 3rd quarter of 2020

30-09-2020

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	Titleholders: 0 persons
	(194 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

Structures	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	178	52	230	Funds for 230 nos C1
RoW (250 m.)				category fishermen are
				transferred to
				Commissioner of
				Fisheries on 17.03.2020
				for payment to the
				beneficiaries.

## QPR No. 14 (July to September 2020) Attachment 2-8

C2: Fishing Stakes and Nets within 500 m. of RoW (Southern side)	429	566	995	<ol> <li>Funds for 496 nos C2 category fishermen are transferred to Commissioner of Fisheries in the 2017-18.</li> <li>The list of balance 499 Nos. of C2 category fishermen are submitted to ACF Raigad, ACF Thane and ACF Mumbai suburban for their verifications.</li> </ol>
C3: Hand Pickers	1453	3690	5143	Funds for 4206 nos of C3 category fishermen are already transferred to Commissioner of Fisheries and balance 937 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 Red H	•	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	
Total	118.179		108.839	7.595	1.745	

## QPR No. 14 (July to September 2020) 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						

## QPR No. 14 (July to September 2020) 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					
Redress	No. of Grievances Disposed by FLGRC	1					
	No. of Grievances Received by SLGRC	0					
	No. of Grievances Disposed by SLGRC	0					
Post Resettlement	No. of CHSs Registration helped						
Assistance	No. of CHSs provided Tenements for Social Amenities						
	No. of CHSs' Maintenance Fund Invested						
	No. of CHSs' Office Bearers provided training						

-		Total number	Total	approv	ed eligib	le family units
Sr. No.	Village Name	of forms Received	<b>C1</b>	C2	C3	Total
1	Bamandongri	273	1	0	25	26
2	Belapur	110	0	5	14	19
3	Belpada	1185	0	7	473	480
4	Diwale	455	10	237	12	259
5	Ganeshpuri	276	0	33	32	65
6	Gavhan	2162	0	14	1304	1318
7	Jasai	926	0	0	18	18
8	Jawale	51	0	1	0	1
9	Kombadbhuja	413	1	24	126	151
10	Kopar	994	2	5	230	237
11	Mahul	1198	129	170	599	898
12	Moha	475	22	35	134	191
13	Mora	471	0	83	213	296
14	Morave	539	14	17	79	110
15	Nhava	1646	0	32	304	336
16	Sarsole	266	0	30	83	113
17	Sewri	305	0	1	70	71
18	Shelghar	241	0	0	15	15
19	Shivajinagar	202	1	4	61	66
20	Trombay	1253	49	258	784	1091
21	Ulwa	218	1	4	12	17
22	Uran & Hanuman Koliwada	683	0	33	554	587
23	Vahal	411	0	2	1	3
	Total	14753	230	995	5143	6368
Total applications						14753
	Duplicate/Repeated		1643			
	Net Applications					13110
	Approved applicatio	ns				6368

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

No. of Cases referred to GRC	No. of Cases		No. of Cases Rejected	No. of Cases under Consideration
	Allowed	<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	Fisher-folks Compensation	08-10-2015	23-12-2015
	Policy	Committee (FCC)		
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	23-12-2015	Up to 30.09.2020
		upto list 1 (1165 Nos) & 2 (1399		1. Total up to date applications scrutinized = 13110 Nos.
		Nos) are finalized by the		2. Eligible = 6368 nos
		Fisheries Department.		3. Rejected = 6742 nos
		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.		
5	Validation of compensation plan	Fisher-folks Compensation	23-12-2015	1. Approval to the Fisher-folk PAP list obtained from Fisheries
		Committee (FCC)		Department for Fisherfolk from Sewri, Mahul & Trombay
				(Mumbai side) – 12th September 2017 and 20th November
				2018 for C-2 & C3 Category only.

Attachment 2-10

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
			23-12-2015	<ol> <li>Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk of Navi Mumbai of C2 &amp; C3 on 25th April 2018.</li> <li>Validation of compensation is in progress and would be completed in phases.</li> </ol>
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: -

	quired in la.	Land Acq	uired 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	31-12-2020		<ol> <li>CIDCO is the land acquisition authority for land acquisition for Navi Mumbai</li> <li>MMRDA has paid an amount of INR 59.16 Cr to CIDCO as per their demand.</li> <li>The payment status to the landowners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.</li> </ol>
Total	108.09	106	6.345	1.745			

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#### Attachment 2-10

Task No.	Task Designation	Start Date	Completion / Forecast Date
1	Preparation of Final SIA		FUIECASI Dale
1.1		October 2015	January 2016
	MMRDA Approval		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
2	LARP Implementation		
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
3	Monitoring & Evaluation		
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

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

\*Subject to open 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 Cor	ncurrence
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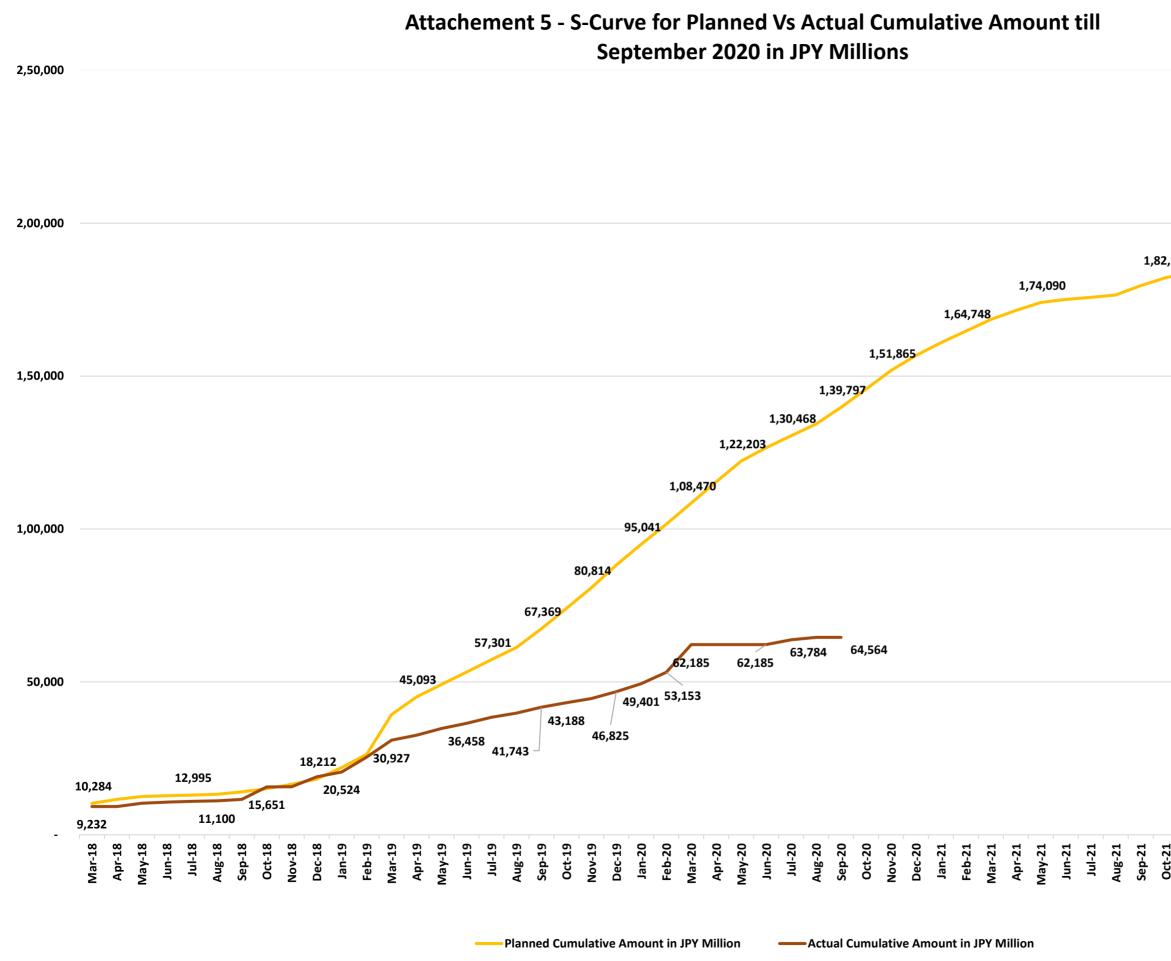
			Bid C	ost			JICA's Con	currence on		
SI No		Procurement procedure	Local Currency (Cr Rs.)	Total (Cr Rs)	PQ Documents	PQ Evaluation	Bid Documents	Technical Evaluation	Financial Evaluation	Contract
1.	Package-1 (CH 0+000 km to CH10+380 km)	ICB with PQ (2P)	7637.30	7637.30	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22 <sup>nd</sup> Dec 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 12 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018
2.	Package-2 (CH 10+380 km to CH18+187 km)	ICB with PQ (2P)	5612.61	5612.61	JICA's Concurrence - 9 <sup>th</sup> May 2016	JICA's Concurrence - 22 <sup>nd</sup> Dec 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 12 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018
3.	Package-3 (CH18+187 to CH21+800)	ICB with PQ (2P)	1013.79	1013.79	JICA's Concurrence - 9 <sup>th</sup> May 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 15 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018
4	Package-4 Intelligent Transport System	ICB with PQ (2P)	181.49	181.49	JICA's Concurrence - 23 <sup>rd</sup> August 2019	-	-	-	-	-

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

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

Туре	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> September 2020	% of Overall Financial Progress (Including Mobilization Advance) till 30 <sup>th</sup> September 2020
	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	March 2018	Sep 2022	28.96%	37.13%
CIVIL	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO- TPL JV	March 2018	Sep 2022	23.96%	37.23%
	Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	March 2018	Sep 2021	40.05%	49.64%
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



0	2			1,	86,5	53		1,	88,0	1, 66	2,	01,770 <mark>7</mark> 6
	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22

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

nce % \	RDA /ariance - BL1 Start		Total Float	2018 2019 2020 2021 2022 2023
mplete	Date	Finish Date	110	
3.96% 3.96%	0	-447	-448	
100%	0	-447 0	-448	
0%	-148	-530	-531	
0%	0	0	200	· · · · · · · · · · · · · · · · · · ·
0% 0%	0	-754 -446	-376	
0%	0	-440		Ĩv
0%	0	-322		\ <b>v</b>
0%	0	0		
0% 0%	0	-147		
0%	-76	- 147		
0%	0	-347	526	$ \mathbf{v}_{i} ^{-1} =  \mathbf{v}_{i} $
0%	0	2		
0% 0%	0	-347 -122	-238	
0%	0	- 122 - 265		
0%	-47	49		
0%	0	-538	-524	
0%	0	-538	-524	
0% 0%	0	-533 -332	-534 -261	
0%	0	-172	201	
0%	0	-83		, <del>,</del>
0%	0	-332	-261	
0% 0%	0	-433 -410	-304	
0%	-8	-693	-603	<b>↓</b>
0%	-22	-651	-478	,
0%	-67	-640	-550	
0% 0%	-90 -165	-612 -593	-535 -379	
0%	-120	-572	-560	↓
0%	-138	-526	-328	↓
0%	-129	-493	-407	<₹
0% 0%	0	-498 -198	-178	·~.  ▼▼
0%	0	-349		\ <b>v</b>
0%	0	-488		
0% 0%	0	-332 -419		
0%	-82	-419 -544		
0%	-120	-304		t second s
0%	-113	-498	-387	
0% 0%	-113 -298	-379 -496	-328	
0%	-298 -437	-496 -554	-328 -418	,
0%	-193	-396	-309	
0%	-13	-498	-178	
0% 0%	-13 -168	-41 -85		
0%	- 108 -388	-85 -554	-418	
0%	-97	-7		
0%	0	-794	-640	
0% .69%	-104 0	-745 -460	-433 -385	
.02%	-121	-460 -461	-385 -289	
.55%	-163	-407	-235	
.73%	-163	-290	-139	· · · · · · · · · · · · · · · · · · ·
90% .65%	-53 -163	-347 -290	-298 -169	
.65% 0%	-163 -290	-290 -290	-169 -169	· · · · · · · · · · · · · · · · · · ·
0%	-290	-290	-139	
.53%	-175	-321	-181	×
.89%	-43	-342	-299	· · · · · · · · · · · · · · · · · · ·

Activity Norse	DI 4 Ctart	PI 1 Einint		Original Stort	Finich	Schodule 0/			Variance - BL1	Total Elect	2019	2010	2000	0004	0000	0000
Activity Name	BL1 Start	BL1 Finish	BL1 Duration	Original Start Duration	Finish	Schedule % Complete	Performance % Variance Complete	Date	Variance - BL1 Finish Date	TURI PIURI	2018 A JJAS J	2019			2022	
R30 MTHL P1 - Sep'20 Month Progress	23-Mar-18	22-Sep-22	1062			57.77%	28.96%	0	-447	-448						
PR30.1 Mumbai Trans Harbour Link - Package 1	23-Mar-18	22-Sep-22	1062		05-Mar-24	57.77%	28.96%	0	-447	-448						
M10000 Commencement Date MPR30.1.1 Key Milestones	23-Mar-18 19-Sep-18	22-Sep-22	0	0 23-Mar-18 A 1809 15-Feb-19 A	05-Mar-24	100% 0%	100%	0 -148	0 -530	521						
MPR30.1.2 Contractual Interface	09-Oct-18	05-Mar-22	1243		05-Mar-24	0%	0%	0	0	200						
MPR30.1.3 Access to Site	23-Mar-18	03-Sep-18	165	165 23-Mar-18 A	26-Sep-20	0%	0%	0	-754	-376						
MPR30.1.4 Document Submittals	23-Mar-18	18-Sep-18	180			0%	0%	0	-446				▼			
MPR30.1.5 Survey MPR30.1.6 Geotechnical Investigation	23-Mar-18	03-Jun-18 03-Sep-18	73		03-Jun-18 A 23-Jul-19 A	0%	0%	0	-322							
MPR30.1.6.1 Phase 1	23-Mar-18 23-Mar-18	21-May-18	165 60		23-Jul-19 A 21-May-18 A	0%	<mark>0%</mark> 0%	0	-322			•				
MPR30.1.6.2 Phase 2	22-May-18		25			0%	0%	0	0		₩					
MPR30.1.6.3 Phase 3	16-Jun-18	04-Aug-18	50		30-Dec-18 A	0%	0%	0	-147		<b>*</b>					
MPR30.1.6.4 Phase 4	21-Jul-18	03-Sep-18	45		23-Jul-19 A	0%	0%	-76	-322		<b>Y</b>					
MPR30.1.7 Infrasturcture Facilities MPR30.1.7.1 Project Site Office Construction (Contractor + Employer + GC)	23-Mar-18 04-Apr-18	05-Feb-19 27-Nov-18	188		28-Sep-20 25-Nov-18 A	0%	<mark>0%</mark> 0%	0	-347	526						
MPR30.1.7.2 Casting Yard	20-Apr-18	05-Feb-19	120			0%	0%	0	-347	-238						
MPR30.1.7.3 Fabrication Yard	23-Mar-18	30-Nov-18	133			0%	0%	0	-122							
MPR30.1.7.4 Rebar Yard	23-Mar-18	30-Nov-18	133			0%	0%	0	-265							
MPR30.1.7.5 Batching Plant Installation - CP30 & CP60	20-Apr-18	05-Feb-19	164			0%	0%	-47	49		<b></b>			1       1		
MPR30.1.8 Procurement Plan MPR30.1.8.1 Plant & Machinery Deployment Plan	04-Apr-18 04-Apr-18	07-Sep-22 07-Sep-22	1618 1618		27-Feb-24 27-Feb-24	0%	<mark>0%</mark> 0%	0	-538 -538	-						
MPR30.1.8.4 Bulk Material Procurement Plan	01-Sep-18	13-Jul-22	1412	·		0%	0%	0	-533		· · · · · · · · · · · · · · · · · · ·					
MPR30.1.9 Design & Engineering (Civil)	23-Mar-18		302	638 23-Mar-18 A		0%	0%	0	-332					<del></del>		
MPR30.1.9.1 Initial Design (General & Preliminary Design, DBR)	23-Mar-18	09-Jun-18	79	79 23-Mar-18 A	29-Nov-18 A	0%	0%	0	-172		·····					
MPR30.1.9.2 Finalization of Alignment		18-Jun-18	88	88 23-Mar-18 A		0%	0%	0	-83					<u> </u>		
MPR30.1.9.3 Detailed Design and Construction Design MPR30.1.9.3.1 GIR	01-May-18 22-May-18	21-Sep-19	269 133			0%	0% 0%	0	-332 -433							
MPR30.1.9.3.2 Test Pile	01-May-18		113	<b></b>		0%	0%	0	-433 -410					•		
MPR30.1.9.3.3 Design Phase -1 (Accelerated Design of Initial Items)	19-Jun-18	02-Nov-18	137		25-Sep-20	0%	0%	-8	-693	-603	· · · • • • • • • • • • • •					
MPR30.1.9.3.4 Design Phase -2 (Accelerated Design of Initial Items)	04-Jul-18	13-Dec-18	163	163 26-Jul-18 A	25-Sep-20	0%	0%	-22	-651	-478	▼					
MPR30.1.9.3.5 Design Phase -3	19-Jun-18	25-Jan-19	221	<b>_</b>		0%	0%	-67	-640	-550	×			<b>Y</b>		
MPR30.1.9.3.6 Design Phase -4 MPR30.1.9.3.7 Design Phase -5	07-Jul-18 07-Jul-18	11-Feb-19 05-Mar-19	220 242		15-Oct-20 19-Oct-20	0%	0% 0%	-90 -165	-612 -593							
MPR30.1.9.3.8 Design Phase -6	26-Aug-18	03-Apr-19	242			0%	0%	-120	-572					•		
MPR30.1.9.3.9 Design Phase -7		24-May-19	272		01-Nov-20	0%	0%	-138	-526	-328	•			▼		
MPR30.1.9.3.10 Design Phase -8		21-Sep-19	355		27-Jan-21	0%	0%	-129	-493	-407		<b>-</b>		<b></b>		
MPR30.1.10 Design, Engineering & Material Procurement (OSD) MPR30.1.10.1 Initial Design	23-Mar-18 23-Mar-18	17-Feb-20 14-May-18	697 53	1195 23-Mar-18 A 53 23-Mar-18 A	29-Jun-21 29-Nov-18 A	0%	<mark>0%</mark> 0%	0	-498 -198	-178				· · · · · · · · · · · · · · · · · · ·		
MPR30.1.10.3 Aerodynamic Analysis	23-Mar-18	14-iviay-18 14-Aug-18	145			0%	0%	0	- 198 - 349							
MPR30.1.10.4 Technical Design		21-Mar-19	311			0%	0%	0	-488							
MPR30.1.10.4.1 OS01NS/SS	15-May-18	11-Oct-18	150	150 15-May-18 A	09-Sep-19 A	0%	0%	0	-332	-		<b></b>				
MPR30.1.10.4.2 OS02NS/SS		06-Dec-18	164		30-Jan-20 A	0%	0%	0	-419		• • • • • • • • • • • • • • • • • • •		7			
MPR30.1.10.4.3 OS03NS/SS MPR30.1.10.4.4 OS04NS/SS	14-Aug-18 09-Oct-18	24-Jan-19 21-Mar-19	164		22-Jul-20 A 20-Jan-20 A	0%	0%	-82	-544 -304							
MPR30.1.10.5 Construction Design	12-Oct-18	21-Mar-19 20-Sep-19	164 344		20-Jan-20 A 30-Jan-21	0%	0% 0%	-120 -113	-304 -498					······	·       ·	
MPR30.1.10.5.1 OS01NS/SS	12-Oct-18	30-Apr-19	201		14-May-20 A	0%	0%	-113	-379	-						
MPR30.1.10.5.2 OS02NS/SS		25-Jul-19	231		02-Dec-20	0%	0%	-298	-496	i		•		➡		
MPR30.1.10.5.3 OS03NS/SS	25-Jan-19	26-Jul-19	183	'	30-Jan-21	0%	0%	-437	-554					<b>-</b>		
MPR30.1.10.5.4 OS04NS/SS MPR30.1.10.6 Material Procurement (1st Lot)	22-Mar-19 02-Mar-19	20-Sep-19 17-Feb-20	183 353		21-Oct-20 29-Jun-21	0%	0% 0%	-193 -13	-396 -498			V				
MPR30.1.10.6.1 OS01NS/SS			210			0%	0%	-13	-490	-		<b>.</b>				
MPR30.1.10.6.2 OS02NS/SS			210			0%	0%	-168	-85					·       ·		
MPR30.1.10.6.3 OS03NS/SS			210		29-Jun-21	0%	0%	-388	-554	-418					1       1	
MPR30.1.10.6.4 OS04NS/SS MPR30.1.11 Tree Cutting and Transplantation	23-Jul-19	17-Feb-20 02-Nov-18	210 225		25-Feb-20 A 04-Jan-21	0% 0%	0%	-97	-7 - <b>794</b>	(10)						
MPR30.1.11 Tree Cutting and Transplantation MPR30.1.12 Utility Diversion	23-1Viar-18 19-Jun-18	14-Jan-19	225	1019 23-Mar-18 A 1043 01-Oct-18 A	28-Jan-21	0%	0%	-104	-794 -745	-640	· · · · · · · · · · · · · · · · · · ·					
MPR30.1.13 Construction	11-Jun-18	22-Jun-22	919		22-Dec-23	54.53%	23.69%	0	-460	-385	<b>V</b>					
MPR30.1.13.1 Sewri Interchange Section	03-Nov-18	28-Feb-22	779		30-Aug-23	54.39%	14.02%	-121	-461							
MPR30.1.13.1.1 Sewri Interchnage - Work Front - 1		28-Feb-22	779			57.4%	13.55%	-163	-407							······
MPR30.1.13.1.1.1 Sewri Interchange - Work Front - 1 - Piling MPR30.1.13.1.1.1.1 Piling - Land Viaduct	03-Nov-18 13-Apr-19	15-Dec-20 16-Sep-19	490 54		01-Mar-22 09-Feb-21	87.79% 100%	43.73% 90%	-163	-290 -347	-139 -298						· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.1.1.1 Plling - Land Viaduct MPR30.1.13.1.1.1.2 Piling - Ramp A	· · · · ·		54 442			94.85%	90% 41.65%	-53 -163	-347 -290	-298 -169		<b>V</b>			·····	
MPR30.1.13.1.1.1.3 Piling - Ramp E	20-Oct-20	01-Dec-20	36		15-Feb-22	0%	0%	-290	-290	-169						
MPR30.1.13.1.1.1.4 Piling - Ramp F	02-Dec-20	15-Dec-20	12	12 15-Feb-22	01-Mar-22	0%	0%	-290	-290	-139					₩	
MPR30.1.13.1.1.2 Sewri Interchange - Work Front - 1 -Pile Cap	19-Nov-18	24-Mar-21	560		13-Jul-22	78.33%	24.53%	-175	-321			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		
MPR30.1.13.1.1.2.1 Pile Cap - Land Viaduct	25-Apr-19	15-Oct-19	68	130 06-Sep-19 A	04-Mar-21	100%	88.89%	-43	-342	-299					<u></u>	

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				AECOM PADECO Der dar al-handasah ber and partners Der dar al-handasah
MMR				General Consultant for Mumbai Trans Harbour Link Project
	nce - BL1 Start	Variance - BL1 T	otal Float	2018 2019 2020 2021 2022 2023 2024
Complete	Date	Finish Date		
16.13% 16.67%	-175 211	-334 -322	-265 -162	
0%	-321	-321	-232	
18.07%	-155	-310	-153	
78.33% 9.76%	-43	-349	-292 -285	
27.27%	-155 337	-334 -310	-285 -206	
0%	-341	-321	-123	<del></del>
0%	-445	-342	-30	
0% 0%	-394 -445	-397 -337	-340 -288	
0%	-342	-342	-30	· · · · · · · · · · · · · · · · · · ·
0%	-341	-321	-107	·····
0%	-321	-321	-172	
0%	-441 -393	-407 -393	-365 -379	
0%	-393 -492	-393	-379	
0%	-411	-411	-371	• • • • • • • • • • • • • • • • • • • •
0%	-411	-411	-369	
18.25% 39.63%	-121 -121	-475 -302	-403 -256	
95.92%	-121	-315	-256	
8.57%	-108	-369	-256	•••••
8.32%	227	-302	-256	
23.44% 81.77%	-140 -140	-298 -329	-236 -241	
6.67%	-128	-365	-263	
7.14%	184	-298	-236	
38.74% 82.04%	-155 -155	-295 -329	-112	
25.51%	- 155 -64	-329 -365	-241 -263	· · · · · · · · · · · · · · · · · · ·
34.09%	168	-295	-112	······································
3.62%	-206	-314	-130	
3.91% 4.99%	-206 -277	-341 -375	-253 -277	·····
2.27%	112	-375	-277	······································
0%	-398	-398	158	
0%	-304	-475	-403	<u>Y</u>
0% 0%	-304 -480	-454 -480	-382 -408	
0%	-480	-480	-408	· · · · · · · · · · · · · · · · · · ·
0.72%	-65	-315	-219	· · · · · · · · · · · · · · · · · · ·
4.17%	-65	-309	-256	
0% 11.11%	-315 -11	-315 -309	-256 -256	
0%	-309	-309	-256	
0.08%	-87	-309	-98	
0% 0.22%	-315 -33	-315 -309	-146 -74	
0.22%	-309	-309	-74 -109	·····
0%	-315	-309	-149	
0%	-315	-315	-194	
0% 0%	-309 -309	-309 -309	-122 -160	
0%	-309	-309	-149	
0%	-315	-315	-194	······································
0%	-309	-309	-122	
0% 0%	- <mark>309</mark> -315	-309 -315	-160 -219	
0%	-315	-315	-205	
0%	-315	-315	-205	······································
61 99%	-315	-315	-219	
61.88% 0%	0 0	-464 -25	-437 139	
0%	0	-23		····

UPDATED BASI		ARBOUR LI )GRAMME		,			MMR	DA		General Consultant for Mumbai Trans Harbour L	ink Projec
Activity Name	BL1 Start	BL1 Finish	BL1 Duration	Original Start Duration	Finish	Schedule % Complete	Performance % Varian Complete	ice - BL1 Start Date	Variance - BL1 Tota Finish Date	al Float 2018 2019 2020 2021 2022	
MPR30.1.13.1.1.2.2 Pile Cap - Ramp A	19-Nov-18	15-Jan-21	504	821 21-Jun-19 A	24-May-22	83.33%	16.13%	-175	-334	-265	
MPR30.1.13.1.1.2.3 Pile Cap - Ramp E	07-Jan-21	27-Feb-21	44	74 26-Jan-20 A	21-Jun-22	0%	16.67%	211	-322	-162	
MPR30.1.13.1.1.2.4 Pile Cap - Ramp F	01-Mar-21	24-Mar-21	20		13-Jul-22	0%	0%	-321	-321	-232	
MPR30.1.13.1.1.3 Sewri Interchange - Work Front - 1 - Pier	12-Dec-18	20-May-21	588	547 30-Jul-19 A	26-Aug-22	51.94%	18.07%	-155	-310	-153	· · · · · · · · · · · · · · · · ·
MPR30.1.13.1.1.3.1 Pier - Land Viaduct MPR30.1.13.1.1.3.2 Pier - Ramp A	29-May-19	30-Oct-19	52	97 21-Oct-19 A	26-Mar-21	100%	78.33%	-43	-349	-292	
MPR30.1.13.1.1.3.2 Pier - Ramp A MPR30.1.13.1.1.3.3 Pier - Ramp E	12-Dec-18 27-Jan-21	09-Feb-21 20-May-21	504 96	487 30-Jul-19 A 146 31-Jul-19 A	16-Jun-22 26-Auq-22	74.03% 0%	9.76% 27.27%	-155 337	-334 -310	-285 -206	
MPR30.1.13.1.1.3.4 Pier - Ramp F	23-Dec-20	01-Apr-21	83		20 Aug 22 21-Jul-22	0%	0%	-341	-321	-123	
MPR30.1.13.1.1.4 Sewri Interchange - Work Front - 1 - Pier Cap	05-Jan-19	11-Jun-21	587	484 24-Dec-20	27-Oct-22	49.54%	0%	-445	-342	-30	▼
MPR30.1.13.1.1.4.1 Pier Cap - Land Viaduct	16-Sep-19	14-Nov-19	49	52 05-Apr-21	05-Jun-21	100%	0%	-394	-397	-340	
MPR30.1.13.1.1.4.2 Pier Cap - Ramp A	05-Jan-19	26-Feb-21	499		07-Jul-22	69.89%	0%	-445	-337	-288	
MPR30.1.13.1.1.4.3 Pier Cap - Ramp E	13-Feb-21	11-Jun-21	100	100 29-Jun-22	27-Oct-22	0%	0%	-342	-342	-30	•
MPR30.1.13.1.1.4.4 Pier Cap - Ramp F	31-Dec-20	13-Apr-21	86		02-Aug-22	0%	0%	-341	-321	-107	
MPR30.1.13.1.1.5 Sewri Interchange - Embankment Works - Ramp F MPR30.1.13.1.1.6 Sewri Interchange - Work Front - 1 - Super Structure Erection	14-Apr-21 04-May-19	01-Nov-21 28-Feb-22	90 628	90 02-Aug-22 594 17-Apr-21	19-Nov-22 28-Jun-23	0% 43.75%	0% 0%	-321 -441	-321 -407	-172 -365	
MPR30.1.13.1.1.6.1 Erection - Land Viaduct	19-Nov-19	11-Mar-20	96	· · ·	29-Dec-21	100%	0%	-393	-407	-379	
MPR30.1.13.1.1.6.2 Erection - Ramp A	04-May-19	09-Apr-21	486	405 17-Apr-21	15-Oct-22	61.86%	0%	-492	-411	-371	▼
MPR30.1.13.1.1.6.3 Erection - Ramp E	10-Apr-21	02-Dec-21	146	146 15-Oct-22	04-Apr-23	0%	0%	-411	-411	-371	• <del>••••</del> •
MPR30.1.13.1.1.6.4 Erection - Ramp F	28-Dec-21	28-Feb-22	52		28-Jun-23	0%	0%	-411	-411	-369	•
MPR30.1.13.1.2 Sewri Interchange - Work Front - 2	03-Nov-18	11-Feb-22	765		30-Aug-23	56.99%	18.25%	-121	-475	-403	
MPR30.1.13.1.2.1 Sewri Interchange - Work Front - 2 - Piling	03-Nov-18	01-Mar-21	553	894 29-Mar-19 A		64.91%	39.63%	-121	-302	-256	
MPR30.1.13.1.2.1.1 Piling - Ramp C2	03-Nov-18	27-Feb-20	325	586 29-Mar-19 A		100%	95.92%	-121	-315	-256	
MPR30.1.13.1.2.1.2 Piling - Ramp C1	03-Apr-19	18-Dec-19	140	242 12-Nov-19 A		100%	8.57%	-108	-369	-256	
MPR30.1.13.1.2.1.3 Piling - Ramp B MPR30.1.13.1.2.2 Sewri Interchange - Work Front - 2 - Pile Cap	21-Nov-20 19-Nov-18	01-Mar-21 29-Apr-21	84 591	192 22-Nov-19 A 939 05-May-19 A	,	0% 62.39%	8.32% 23.44%	227 -140	-302 -298	-256	
MPR30.1.13.1.2.2.1 Pile Cap - Ramp C2	19-Nov-18	24-Apr-20	361	739 05-May-19 A		100%	81.77%	-140	-329	-241	
MPR30.1.13.1.2.2.2 Pile Cap - Ramp C1	12-Apr-19	04-Feb-20	172		21-Oct-21	100%	6.67%	-128	-365	-263	
MPR30.1.13.1.2.2.3 Pile Cap - Ramp B	25-Nov-20	29-Apr-21	131	242 16-Jan-20 A	22-Jul-22	0%	7.14%	184	-298	-236	
MPR30.1.13.1.2.3 Sewri Interchange - Work Front - 2 - Pier	12-Dec-18	21-May-21	589	587 04-Sep-19 A	09-Aug-22	66.89%	38.74%	-155	-295	-112	
MPR30.1.13.1.2.3.1 Pier - Ramp C2	12-Dec-18	09-May-20	353	384 04-Sep-19 A	11-Dec-21	100%	82.04%	-155	-329	-241	
MPR30.1.13.1.2.3.2 Pier - Ramp C1	01-Apr-19	18-Feb-20	194	313 10-Sep-19 A	04-Nov-21	100%	25.51%	-64	-365	-263	
MPR30.1.13.1.2.3.3 Pier - Ramp B	25-Apr-20	21-May-21	248	305 08-Oct-19 A	09-Aug-22	24.81%	34.09%	168	-295	-112	
MPR30.1.13.1.2.4 Sewri Interchange - Work Front - 2 - Pier Cap MPR30.1.13.1.2.4.1 Pier Cap - Ramp C2	26-Dec-18 26-Dec-18	28-May-21 27-May-20	583 356	531 02-Dec-19 A 331 02-Dec-19 A	07-Sep-22 13-Jan-22	61.42%	3.62% 3.91%	-206 -206	-314 -341	-130 -253	
MPR30.1.13.1.2.4.2 Pier Cap - Ramp C1	18-Apr-19	12-Mar-20	198	173 07-Aug-20 A	08-Dec-21	100%	4.99%	-200	-375	-277	• • • • • • • • • • • • •
MPR30.1.13.1.2.4.3 Pier Cap - Ramp B	19-May-20	28-May-21	235	206 07-Jan-20 A	07-Sep-22	11.67%	2.27%	112	-314	-130	
MPR30.1.13.1.2.5 Sewri Interchange - Embankment Works - Ramp C2	23-May-19	02-Nov-19	60		26-May-21	0%	0%	-398	-398	158	
MPR30.1.13.1.2.6 Sewri Interchange - Work Front - 2 - Super Structure erection	18-Mar-19	11-Feb-22	654	719 29-Jun-20 A	30-Aug-23	44.46%	0%	-304	-475	-403	
MPR30.1.13.1.2.6.1 Erection - Ramp C2	18-Mar-19	02-Nov-20	343	387 29-Jun-20 A	29-Jul-22	73.95%	0%	-304	-454	-382	
MPR30.1.13.1.2.6.2 Erection - Ramp C1	08-Oct-19	26-May-20	194	194 04-Sep-21	25-Apr-22	100%	0%	-480	-480	-408	
MPR30.1.13.1.2.6.3 Erection - Ramp B MPR30.1.13.1.3 Sewri Interchange - Work Front - 3 (Cast in situ Spans)	28-Nov-20	11-Feb-22	316		30-Aug-23	0%	0%	-480	-480	-408	
MPR30.1.13.1.3.1 Sewri Interchange - Work Front - 3 - Piling	28-Feb-20 28-Feb-20	01-Feb-22 20-Nov-20	431			<u>33.42%</u> 67.36%	0.72% 4.17%	-65 -65	-315 -309	-219	
MPR30.1.13.1.3.1.1 Piling - Ramp B	28-Feb-20	02-May-20	54		19-Nov-21	100%	4.17%	-315	-315	-256	
MPR30.1.13.1.3.1.2 Piling - Ramp E	04-May-20	07-Oct-20	54			79.63%	11.11%	-11	-309	-256	
MPR30.1.13.1.3.1.3 Piling - Ramp C1	08-Oct-20	20-Nov-20	36		28-Feb-22	0%	0%	-309	-309	-256	
MPR30.1.13.1.3.2 Sewri Interchange - Work Front - 3 - Pile Cap	07-Mar-20	15-Dec-20	159	153 21-Sep-20 A	25-Mar-22	54.63%	0.08%	-87	-309	-98	
MPR30.1.13.1.3.2.1 Pile Cap - Ramp B	07-Mar-20	10-Jun-20	81		28-Dec-21	100%	0%	-315	-315	-146	
MPR30.1.13.1.3.2.2 Pile Cap - Ramp E	11-May-20	17-Nov-20	81		24-Feb-22	45.68%	0.22%	-33	-309	-74	
MPR30.1.13.1.3.2.3 Pile Cap - Ramp C1	23-Oct-20	15-Dec-20	45		25-Mar-22	0%	0%	-309	-309	-109	
MPR30.1.13.1.3.3 Sewri Interchange - Work Front - 3 - Pier MPR30.1.13.1.3.3.1 Pier - Ramp B	18-Mar-20 18-Mar-20	05-Mar-21 27-Nov-20	216 135	210 04-Oct-21 135 04-Oct-21	10-Jun-22 15-Mar-22	30.56% 60.74%	0% 0%	-315 -315	-309 -315	-149 -194	
MPR30.1.13.1.3.3.1 Pier - Ramp B MPR30.1.13.1.3.3.2 Pier - Ramp E	18-1Mar-20 21-May-20	01-Feb-21	135	135 04-0ct-21 135 30-Nov-21	15-1viar-22 10-May-22	20.74%	0% 0%	-315 -309	-315 -309	-194	
MPR30.1.13.1.3.3.3 Pier - Ramp C1	18-Nov-20	05-Mar-21	90		10-101ay-22 10-Jun-22	0%	0%	-309	-309	-160	
MPR30.1.13.1.3.4 Sewri Interchange - Work Front - 3 - Pier Cap	24-Apr-20	19-Mar-21	196		24-Jun-22	21.53%	0%	-315	-309	-149	
MPR30.1.13.1.3.4.1 Pier Cap - Ramp B	24-Apr-20	11-Dec-20	115	115 11-Nov-21	29-Mar-22	46.3%	0%	-315	-315	-194	
MPR30.1.13.1.3.4.2 Pier Cap - Ramp E	08-Jun-20	15-Feb-21	132	132 17-Dec-21	24-May-22	11.11%	0%	-309	-309	-122	
MPR30.1.13.1.3.4.3 Pier Cap - Ramp C1	17-Dec-20	19-Mar-21	77		24-Jun-22	0%	0%	-309	-309	-160	
MPR30.1.13.1.3.5 Sewri Interchange - Work Front - 3 - Super Structure	23-May-20	01-Feb-22	360		11-Feb-23	5.8%	0%	-315	-315	-219	
MPR30.1.13.1.3.5.1 Super Structure - Ramp B	23-May-20	30-Jan-21	132		16-May-22	16.67%	0%	-315	-315	-205	
MPR30.1.13.1.3.5.2 Super Structure - Ramp E	16-Jan-21	24-Sep-21	132	132 02-May-22	06-Oct-22	0%	0%	-315	-315	-205	
MPR30.1.13.1.3.5.3 Super Structure - Ramp C1 IPR30.1.13.2 Intertidal Section	09-Jun-21	01-Feb-22	120	120 22-Sep-22	11-Feb-23	0%	0%	-315	-315	-219	<b>.</b>
MPR30.1.13.2 Intertidal Section MPR30.1.13.2.1 Intertidal - Temporary Access Bridge Work	11-Jun-18 11-Jun-18	23-Oct-21 26-Sep-20	467		28-Apr-23 27-Oct-20	67.64% 0%	61.88% 0%	0	-464 -25	-437	
	11-Jun-18	12-Jun-20	407		27-0ct-20 27-May-20 A		0%	0	-25		• • • • • • • • • • • • •
MPR30.1.13.2.1.1 ACCESS Bridge			1.57			010	0.0				
MPR30.1.13.2.1.1 Access Bridge MPR30.1.13.2.1.2 Fingers	13-Oct-18	26-Sep-20	441	559 26-Sep-18 A	27-Oct-20	0%	0%	16	-25	139	

	MMR	DA			
	Performance % Variand Complete	ce - BL1 Start Date	Variance - BL1 Total Finish Date	loat 2018 2019	2020         2021         2022         2023           JF         A         J
	91.53%	26	-76	-42	
	82.46% 74.47%	-15 -59		245	
	49.56%	-115		245	· · · · · · · · · · · · · · · · · · ·
	4.65%	-110		137	<u> </u>
_	0% 24.78%	-85 -73	-125 -464	-40 143	· · · · · · · · · · · · · · · · · · ·
	0%	-274		443	
	24.78%	-34		143	
	60.62% 23.08%	-34 -225		178 298	
	5%	-321		234	· · · · · · · · · · · · · · · · · · ·
	0%	-392		<mark>197</mark>	•
	100% 72.62%	-34	50 24	122	
	72.62% 93.75%	66 -85	24 28	132	
	26.53%	-43		274	
	0%	-458		348	
	0% 0%	-458 -426		337 197	· · · · · · · · · · · · · · · · · · ·
	60.45%	-43	-133	-81	
	0%	-123	-123	-58	
	0% 5.09%	-275 -146	-86 -401	30 315	
	0%	-458		338	
	0%	-458		341	•
	0%	-425		197	
	11.54% 0%	-146 -240		146	
	0%	-288	-127	0	
	2.02%	-206		277	Y
	0% 0%	-458 -458		238 341	· · · · · · · · · · · · · · · · · · ·
	0%	-424		197	v.
	4.64%	-206		146	Y
	0% 0%	-240 -275	-267 -115	230 38	· · · · · · · · · · · · · · · · · · ·
	0%	-276		443	
	0%	-276		143	
	0% 9%	-332 -154	-332 -505	-11 175	
	3.28%	-317	-501	-94	•
	22.54%	-194		331	
	1.83% 3.36%	-135 -9		175 210	
	0%	5		307	
	0%	5		368 · · · · ·	
	0% 0%	5 -521	-219 -521	-68 416	······································
	0%	181		368	
	0%	5	-144	-80	
	0% 0%	5 -225	-5 -294	213	
	0%	-225 242	-294 -137	-73	· · · · · · · · · · · · · · · · · · ·
	0%	-35	-196	<mark>138</mark>	
	0% 0%	-35 -196	-196 -196	-61 138	· · · · · · · · · · · · · · · · · · ·
	4.8%	- 196 -15		138 188	
	0%	-238	-391	188	· · · · · · · · · · · · · · · · · · ·
	0%	-238	-219	-68	
	0% 0%	-521 -461		360 188	
	14.33%	-15	-144	-80	
	70%	-15	-57	276	
	0% 0%	-283 -103	-264 -137	213 -73	
	0%	-205		114	••••••••••••••••••••••••••••••••••••••

	AI TRANS HA			AGE 1, TEMBER 2020			MMR			General Consultant for Mumbai Trans Harbour Link Pro
Activity Name	BL1 Start	BL1 Finish	BL1 Duration	Original Start Duration	Finish	Schedule % Complete	Performance % Varia Complete	nce - BL1 Start Date	Variance - BL1	Image: Total Float         2018         2019         2020         2021         2022           [A]         [J]         [J]
MPR30.1.13.2.2.1 Intertidal - Main Bridge Work - Piling	14-Dec-18	16-Mar-21	531	686 14-Nov-18 A	19-Jun-21	78.95%	91.53%	26	-76	-42
MPR30.1.13.2.2.2 Intertidal - Main Bridge Work - Pile Cap MPR30.1.13.2.2.3 Intertidal - Main Bridge Work - Pier	29-Dec-18 17-Jan-19	06-Apr-21 25-May-21	536 562	913 17-Jan-19 A 941 29-Mar-19 A	14-Jun-22 16-Jul-22	74.09%	82.46% 74.47%	-15 -59	-285 -272	-256 -245
MPR30.1.13.2.2.4 Intertidal - Main Bridge Work - Pier Cap	30-Jan-19	05-Jun-21	562		28-Jul-22	69.56%	49.56%	-115	-272	
MPR30.1.13.2.2.5 Intertidal - Main Bridge Work - Super Structure Erection	18-Apr-19	23-Oct-21	534	783 29-Nov-19 A	28-Apr-23	43.98%	4.65%	-110	-464	-437
MPR30.1.13.2.3 Intertidal - Finger Removal & Reuse	07-Mar-19	29-Dec-20	400		28-May-21	0%	0%	-85	-125	
MPR30.1.13.3 Marine Section MPR30.1.13.3.1 Temporary Access Bridge Work -2 (MP70 to MP51- 21 Spans)	18-Sep-18	17-Jun-22	911	1406 14-Dec-18 A	22-Dec-23	60.17%	24.78%	-73	-464 -464	
MPR30.1.13.3.1 Temporary Access Bridge Work -2 (MP70 to MP31- 21 Spans) MPR30.1.13.3.2 Marine - Main Bridge	18-Sep-18 03-Nov-18	17-Jun-22 23-Feb-22	911		22-Dec-23 29-Aug-23	<u> </u>	<u> </u>	-274 -34	-404 -464	
MPR30.1.13.3.2.1 Marine - Piling	03-Nov-18		564	962 14-Dec-18 A	03-Jun-22	74.37%	60.62%	-34	-296	
MPR30.1.13.3.2.1.1 Piling - Stretch - 1 - OSD-1 MP51 to MP53 (320m)	20-Sep-19	22-Jan-20	104	80 21-Jul-20 A	28-Dec-21	100%	23.08%	-225	-434	-298
MPR30.1.13.3.2.1.2 Piling - Stretch - 2 - Marine - MP54 to MP68 (856m)	25-Feb-19	13-Oct-20	344	340 16-Aug-20 A	03-Jun-22	93.33%	5%	-321	-422	-234
MPR30.1.13.3.2.1.3 Piling - Stretch - 3 - OSD-2&3 MP69 to MP80 (1.5 Km)	10-Dec-18	26-Feb-21	521	370 25-Sep-20 A	25-Apr-22	65.77%	0%	-392	-275	
MPR30.1.13.3.2.1.4 Piling - Stretch - 4 - Marine MP81 to MP123 (2.6 Km) MPR30.1.13.3.2.1.5 Piling - Stretch - 5 - OSD-4 MP124 to MP128 (600m)	03-Nov-18 22-Apr-20	21-Apr-20 16-Jan-21	370 147	489 14-Dec-18 A 112 04-Feb-20 A	22-Feb-20 A 19-Dec-20	100% 35.37%	100% 72.62%	-34 66	50 24	
MPR30.1.13.3.2.1.6 Piling - Stretch - 6 - Marine MP129 to MP148 (1.2 Km)	25-May-19		395	148 06-Dec-19 A	10-Feb-21	25.83%	93.75%	-85	24	
MPR30.1.13.3.2.3 Marine - Pile Cap	23-Nov-18	12-Apr-21	572		22-Oct-22	63.48%	26.53%	-43	-390	
MPR30.1.13.3.2.3.1 Pile Cap - Stretch - 1 - OSD-1 MP51 to MP53 (320m)	25-Dec-19	23-Mar-20	75		29-Mar-22	100%	0%	-458	-458	-348
MPR30.1.13.3.2.3.2 Pile Cap - Stretch - 2 - Marine - MP54 to MP68 (856m)	28-Mar-19	20-Jan-21	400	400 01-Apr-21	22-Oct-22	60.53%	0%	-458	-458	-337
MPR30.1.13.3.2.3.3 Pile Cap - Stretch - 3 - OSD-2&3 MP69 to MP80 (1.5 Km) MPR30.1.13.3.2.3.4 Pile Cap - Stretch - 4 - Marine MP81 to MP123 (2.6 Km)	28-Jan-19	27-Mar-21	505	354 23-Dec-20	23-May-22	62.15%	0% 60.45%	-426	-275 133	-197
MPR30.1.13.3.2.3.4 Pile Cap - Stretch - 4 - Marine MP81 to MP123 (2.6 Km) MPR30.1.13.3.2.3.5 Pile Cap - Stretch - 5 - OSD-4 MP124 to MP128 (600m)	23-Nov-18 11-Nov-20	10-Nov-20 08-Apr-21	444 125	637 14-Jan-19 A 125 06-Apr-21	17-Apr-21 04-Dec-21	89.62% 0%	60.45% 0%	-43 -123	-133 -123	-58
MPR30.1.13.3.2.3.6 Pile Cap - Stretch - 6 - Marine MP 129 to MP 148 (1.2 Km)	08-Jun-19	12-Apr-21	407	218 05-Nov-20	27-Oct-21	20.67%	0%	-275	-86	30
MPR30.1.13.3.2.4 Marine - Pier	22-Dec-18	02-Jun-21	590	791 12-Sep-19 A	26-Dec-22	57.55%	5.09%	-146	-401	-315
MPR30.1.13.3.2.4.1 Pier - Stretch - 1 - OSD-1 MP51 to MP53 (320m)	24-Jan-20	21-Apr-20	75		27-Apr-22	100%	0%	-458	-458	-338
MPR30.1.13.3.2.4.2 Pier - Stretch - 2 - Marine - MP54 to MP68 (856m)	26-Apr-19	26-Mar-21	429		26-Dec-22	53.89%	0%	-458	-458	-341
MPR30.1.13.3.2.4.3 Pier - Stretch - 3 - OSD-2&3 MP69 to MP80 (1.5 Km) MPR30.1.13.3.2.4.4 Pier - Stretch - 4 - Marine MP81 to MP123 (2.6 Km)	26-Feb-19 22-Dec-18	24-Apr-21 12-Jan-21	504 472	354 21-Jan-21 519 12-Sep-19 A	20-Jun-22 05-Feb-22	57.64% 81.85%	0% 11.54%	-425 -146	-275 -247	-197
MPR30.1.13.3.2.4.5 Pier - Stretch - 5 - OSD-4 MP124 to MP128 (600m)	13-Jan-21	02-Jun-21	472		19-Jul-22	0%	0%	- 140	-247 -267	
MPR30.1.13.3.2.4.6 Pier - Stretch - 6 - Marine MP129 to MP148 (1.2 Km)	27-Sep-19	28-Apr-21	419		16-Dec-21	15.63%	0%	-288	-127	0
MPR30.1.13.3.2.2 Marine - Pier Cap	21-Jan-19	14-Jun-21	576	727 26-Dec-19 A	06-Jan-23	54.78%	2.02%	-206	-401	-277
MPR30.1.13.3.2.2.1 Pier Cap - Stretch - 1 - OSD-1 MP51 to MP53 (320m)	04-Feb-20	16-May-20	87	87 09-Feb-22	21-May-22	100%	0%	-458	-458	-238
MPR30.1.13.3.2.2.2 Pier Cap - Stretch - 2 - Marine - MP54 to MP68 (856m) MPR30.1.13.3.2.2.3 Pier Cap - Stretch - 3 - OSD-2&3 MP69 to MP80 (1.5 Km)	27-May-19		414 497	414 31-May-21 348 19-Feb-21	06-Jan-23 11-Jul-22	48.67%	0%	-458 -424	-458	-341
MPR30.1.13.3.2.2.4 Pier Cap - Stretch - 4 - Marine MP81 to MP123 (2.6 Km)	28-Mar-19 21-Jan-19	17-May-21 23-Jan-21	497	454 26-Dec-19 A	17-Feb-22	50% 78.13%	0% 4.64%	-424 -206	-275 -247	-197
MPR30.1.13.3.2.2.5 Pier Cap - Stretch - 5 - OSD(4) MP124 to MP128 (600m)	12-Feb-21	14-Jun-21	103	131 26-Feb-22	30-Jul-22	0%	0%	-240	-267	-230
MPR30.1.13.3.2.2.6 Pier Cap - Stretch - 6 - Marine MP129 to MP148 (1.2 Km)	12-Oct-19	11-May-21	403	243 09-Dec-20	28-Dec-21	20.82%	0%	-275	-115	38
MPR30.1.13.3.2.5 Marine - Super Structure Erection	19-Apr-19	23-Feb-22	636	775 23-Jun-20 A	29-Aug-23	39.73%	0%	-276	-464	-443
MPR30.1.13.3.2.5.1 Erection - Main Concrete Viaduct	19-Apr-19	23-Feb-22	636	775 23-Jun-20 A	29-Aug-23 07-Mar-22	39.1%	0%	-276 -332	-464 -332	-443
MPR30.1.13.3.2.5.2 Rescue Span (MP98 to MP99) MPR30.1.13.4 Precast Segments	07-Mar-20 06-Feb-19	29-Oct-20 21-Aug-21	120 778	120 13-Oct-21 1021 07-Aug-19 A	17-Apr-23	75.83% 62.21%	0% 9%	-332 -154	-332	
MPR30.1.13.4.1 Precast Segement - Sewri Interchange	06-Feb-19	24-May-21	701	817 20-Feb-20 A	11-Jan-23	74.45%	3.28%	-317	-501	
MPR30.1.13.4.2 Precast Segement - Intertidal	28-Feb-19	14-Aug-21	753	744 18-Oct-19 A	30-Nov-22	68.66%	22.54%	-194	-394	-331
MPR30.1.13.4.3 Precast Segement - Marine	28-Feb-19		759		17-Apr-23	53.22%	1.83%	-135	-505	
MPR30.1.13.5 Orthotropic Steel Deck (OSD) - Fabrication, Shipping, Assembly & Erection		15-Mar-22	608		29-May-23	7.75%	3.36%	-9	-370	
MPR30.1.13.5.1 OSD - Fabrication MPR30.1.13.5.1.1 Fabrication - Factory A	28-Sep-19 28-Sep-19	12-Oct-21 16-Sep-21	746	925 23-Sep-19 A 925 23-Sep-19 A	12-Oct-22 12-Oct-22	0%	0% 0%	5	-365 -391	
MPR30.1.13.5.1.1.1 OSD 01 - RHS Fabrication - MP50 to MP53 (320m)	28-Sep-19	22-Aug-20	330	363 23-Sep-19 A	29-Mar-21	0%	0%	5	-219	
MPR30.1.13.5.1.1.2 OSD 03 - RHS Fabrication - MP75 to MP81 (770m)	26-Jan-20	19-Apr-21	450	450 29-Jun-21	22-Sep-22	0%	0%	-521	-521	-416
MPR30.1.13.5.1.1.3 OSD 04 - RHS Fabrication - MP124 to MP128 (560m)	22-Sep-20	16-Sep-21	360	307 25-Mar-20 A	12-Oct-22	0%	0%	181	-391	-368
MPR30.1.13.5.1.2 Fabrication - Factory B	28-Sep-19	16-Sep-21	720		07-Feb-22	0%	0%	5	-144	
MPR30.1.13.5.1.2.1 OSD 01 - LHS Fabrication - MP50 to MP53 (320m) MPR30.1.13.5.1.2.2 OSD 02 - RHS Fabrication - MP69 to MP75 (683m)	28-Sep-19 26-Jan-20	22-Aug-20 19-Apr-21	330 450	379 23-Sep-19 A 432 07-Sep-20 A	28-Aug-20 A 07-Feb-22	0%	0% 0%	-225	-5 -294	
MPR30.1.13.5.1.2.3 OSD 02 - KHS Pablication - MP134 to MP128 (560m)	20-Jan-20 22-Sep-20	16-Sep-21	360	432 07-3ep-20 A 214 24-Jan-20 A	31-Jan-22	0%	0%	-225	-294 -137	-73
MPR30.1.13.5.1.3 Fabrication - Factory C	23-Dec-19	12-Oct-21	660	558 27-Jan-20 A	26-Apr-22	0%	0%	-35	-196	-138
MPR30.1.13.5.1.3.1 OSD 02 - LHS Fabrication - MP69 to MP75 (683m)	23-Dec-19	14-Feb-21	420	318 27-Jan-20 A	29-Aug-21	0%	0%	-35	-196	
MPR30.1.13.5.1.3.2 OSD 03 - LHS Fabrication - MP75 to MP81 (770m)	19-Aug-20	12-Oct-21	420		26-Apr-22	0%	0%	-196	-196	
MPR30.1.13.5.2 OSD - Shipping MPR30.1.13.5.2.1 Shipping - Factory A	24-Jun-20 24-Jun-20	11-Dec-21 15-Nov-21	536 510		11-Dec-22 11-Dec-22	11.27% 15.3%	4.8% 0%	-15 -238	-365 -391	
MPR30.1.13.5.2.1.1 OSD 01 - RHS Shipping - MP50 to MP53 (320m)	24-Jun-20	21-Oct-20	120	102 16-Feb-21	28-May-21	78.91%	0%	-238	-219	-68
MPR30.1.13.5.2.1.2 OSD 03 - RHS Shipping - MP75 to MP81 (770m)	22-Oct-20	18-Jun-21	240	240 26-Mar-22	21-Nov-22	0%	0%	-521	-521	-360
MPR30.1.13.5.2.1.3 OSD 04 - RHS Shipping - MP124 to MP128 (560m)	20-May-21	15-Nov-21	180	5	11-Dec-22	0%	0%	-461	-391	-188
MPR30.1.13.5.2.2 Shipping - Factory B	24-Jun-20	15-Nov-21	510	525 09-Jul-20 A	08-Apr-22	16.15%	14.33%	-15	-144	
MPR30.1.13.5.2.2.1 OSD 01 - LHS Shipping - MP50 to MP53 (320m) MPR30.1.13.5.2.2.2 OSD 02 - RHS Shipping - MP69 to MP75 (683m)	24-Jun-20 21-Nov-20	21-Oct-20 18-Jul-21	120 240	77 09-Jul-20 A 221 31-Aug-21	17-Dec-20 08-Apr-22	78.91% 0%	70% 0%	-15 -283	-57 -264	-213
MPR30.1.13.5.2.2.3 OSD 02 - KHS Shipping - MP09 to MP75 (66511) MPR30.1.13.5.2.2.3 OSD 04 - LHS Shipping - MP124 to MP128 (560m)	21-100V-20 20-May-21	18-Jui-21 15-Nov-21	180	221 31-Aug-21 214 31-Aug-21	08-Apr-22 01-Apr-22	0%	0%	-283	-204 -137	-73
MPR30.1.13.5.2.3 Shipping - Factory C	18-Sep-20	11-Dec-21	450		25-Jun-22	1.45%	0%	-205	-196	-114
al Level of Effort Remaining Work ♦ ♦ Milestone	,			ge 3 of 4			t this Monthly Rolli			

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<b>- IH</b>		MUMBAI T UPDATED BASEL				,			MMR	<b>D</b> A				bai Trans Harbour Link Project
Activity Name			BL1 Start	BL1 Finish	BL1 Duration	Original Start Duration	Finish	Schedule % Complete	Performance % Variand Complete	ce - BL1 Start Date	Variance - BL1 To Finish Date	tal Float 2018 2019	2020 2021	2022 2023 8     J     J JAS     J   A   J JA
MPR30.1.13.5.2.3.1 OSD 02	- LHS Shipping - MP69 to M	IP75 (683m)	18-Sep-20	15-Apr-21	210	202 10-Apr-21	28-Oct-21	3.07%	0%	-205	-196	-32		₩
MPR30.1.13.5.2.3.2 OSD 03	- LHS Shipping - MP75 to M	IP81 (770m)	16-May-21	11-Dec-21	210	210 28-Nov-21	25-Jun-22	0%	0%	-196	-196	-114		•
MPR30.1.13.5.3 OSD - Custom	Clearance and Inland Transp	oort (Last Module)	07-Sep-20	01-Jan-22	482	793 13-Aug-20 A	01-Jan-23	4.37%	3.7%	25	-365	-188		<del>: : : : : : : : : : : :</del>
MPR30.1.13.5.3.1 OSD 1 - MP	50 to MP53 (320m)		07-Sep-20	20-Nov-20	75	240 13-Aug-20 A	27-Jun-21	31.87%	26.95%	25	-219	99	······································	
MPR30.1.13.5.3.2 OSD 2 - MP	69 to MP75 (683m)		17-Nov-20	17-Aug-21	274	334 09-Jun-21	08-May-22	0%	0%	-205	-264	-194		<del> </del>
MPR30.1.13.5.3.3 OSD 3 - MP	· · ·		21-Dec-20	01-Jan-22	377	329 27-Jan-22	21-Dec-22	0%	0%	-402	-354	-272		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.5.3.4 OSD 4 - MP	124 to MP128 (560m)		19-Jul-21	06-Dec-21	141	429 30-Oct-21	01-Jan-23	0%	0%	-103	-391	-188		▼ <u> </u>
MPR30.1.13.5.4 OSD - Assembl			07-Oct-20	16-Feb-22	337	634 31-Oct-20	28-Feb-23	0%	0%	-20	-317	-156	•	
MPR30.1.13.5.4.1 OSD 1 - MP			07-Oct-20	11-Jan-21	80	232 31-Oct-20	06-Nov-21	0%	0%	-20	-172	15		<b></b>
MPR30.1.13.5.4.2 OSD 2 - MP			17-Dec-20	13-Oct-21	252	279 09-Jul-21	06-Jun-22	0%	0%	-172	-198	-128	<b>V</b>	•
MPR30.1.13.5.4.3 OSD 3 - MP	75 to MP81 (770m)		20-Jan-21	16-Feb-22	329	295 26-Feb-22	11-Feb-23	0%	0%	-337	-303	-255		
MPR30.1.13.5.4.4 OSD 4 - MP	124 to MP128 (560m)		18-Aug-21	04-Feb-22	142	384 29-Nov-21	28-Feb-23	0%	0%	-85	-327	-156		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.5.5 OSD - Erection			11-Jun-19	15-Mar-22	608	534 29-May-21	29-May-23	0%	0%	-444	-370	-210	• • • • • • • • • • • • • • • • • • • •	
MPR30.1.13.5.5.1 OSD 1 - MP	50 to MP53 (320m)		21-May-20	26-Feb-21	157	95 26-May-22	15-Sep-22	0%	0%	-458	-396	-227		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.5.5.2 OSD 2 - MP	69 to MP75 (683m)		11-Jun-19	24-Dec-21	542	298 29-May-21	19-Aug-22	0%	0%	-444	-200	-150	•••••••••••••••••••••••••••••••••••••••	<del> </del>
MPR30.1.13.5.5.3 OSD 3 - MP	75 to MP81 (770m)		07-Jan-21	10-Mar-22	279	319 07-Mar-22	20-Mar-23	0%	0%	-275	-315	-267		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.5.5.4 OSD 4 - MP	124 to MP128 (560m)		05-May-21	15-Mar-22	185	315 18-May-22	29-May-23	0%	0%	-240	-370	-210		• • • • • • • • • • • • • • • • • • •
MPR30.1.13.6 Post Erection Segn	ental Stitch Concrete (incl. I	Bearing Installation and Prest	24-Apr-19	10-Mar-22	644	785 01-Feb-20 A	07-Sep-23	0%	0%	-159	-460	-296		
MPR30.1.13.6.1 Stitch Concrete	- Sewri Interchange		24-Apr-19	10-Mar-22	644	675 25-Mar-21	07-Sep-23	0%	0%	-429	-460	-296		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.6.2 Stitch Concrete	- Intertidal		29-Nov-19	22-Dec-21	475	704 01-Feb-20 A	03-Jun-23	0%	0%	-54	-443	-437		• • • • • • • • • • • • • • • • • • • •
MPR30.1.13.6.3 Stitch Concrete	- Marine		21-Oct-19	26-Feb-22	563	695 23-Feb-21	01-Sep-23	0%	0%	-332	-464	-291	•••••	· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.7 Crash Barrier Work	S		05-Oct-19	11-Mar-22	585	779 01-Dec-20	18-Sep-23	0%	0%	-274	-468	-305		
MPR30.1.13.7.1 Crash Barrier -	Sewri Interchange		05-Oct-19	11-Mar-22	585	624 04-Jun-21	18-Sep-23	0%	0%	-429	-468	-305	· · · · · · · · · · · · · · · · · · ·	
MPR30.1.13.7.2 Crash Barrier -	Intertidal		17-Dec-19	04-Jan-22	470	699 01-Dec-20	15-Jun-23	0%	0%	-214	-443	-257	• • • • • • • • • • • • • • • • • • • •	<del> </del>
MPR30.1.13.7.3 Crash Barrier -	Marine		26-Nov-19	09-Mar-22	541	673 31-Mar-21	11-Sep-23	0%	0%	-332	-464	-303	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •
MPR30.1.13.7.4 Crash Barrier -	Orthotropic Steel Deck		23-Dec-20	10-Mar-22	291	286 11-Jun-22	19-May-23	0%	0%	-371	-366	-207		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.8 Bridge Deck (Super	structure) Water Proofing		15-Oct-19	16-Mar-22	581	774 12-Dec-20	23-Sep-23	0%	0%	-276	-469	-310		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.8.1 Water Proofing	- Sewri Interchange		15-Oct-19	14-Mar-22	579	621 14-Jun-21	23-Sep-23	0%	0%	-429	-471	-310		
MPR30.1.13.8.2 Water Proofing	- Intertidal		28-Dec-19	10-Jan-22	465	694 12-Dec-20	21-Jun-23	0%	0%	-214	-443	-230		<del> </del>
MPR30.1.13.8.3 Water Proofing	- Marine		18-Dec-19	14-Mar-22	526	658 22-Apr-21	15-Sep-23	0%	0%	-332	-464	-303		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.8.4 Water Proofing	- Orthotropic Steel Deck		11-Jan-21	16-Mar-22	281	285 18-Jun-22	25-May-23	0%	0%	-362	-366	-207		•••••
MPR30.1.13.9 Stone Mastic Aspha	alt Pavement		23-Dec-21	22-Mar-22	74	366 20-Jul-22	29-Sep-23	0%	0%	-177	-469	-371		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.9.1 Sewri Interchar	ge		27-Dec-21	21-Mar-22	70	147 10-Apr-23	29-Sep-23	0%	0%	-393	-470	-371		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.9.2 Main Bridge			23-Dec-21	22-Mar-22	74	360 20-Jul-22	22-Sep-23	0%	0%	-177	-463	-423		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.10 Bridge Anclilaries	and Misc. Works		31-Jan-20	22-Jun-22	575	807 15-Jan-21	06-Dec-23	0%	0%	-214	-446	-371		· · · · · · · · · · · · · · · · · · ·
MPR30.1.13.10.1 Bridge Ancilla	ries		31-Jan-20	22-Jun-22	575	807 15-Jan-21	06-Dec-23	0%	0%	-214	-446	-371		*****
MPR30.1.13.10.1.1 Noise Bar	rier, View Barrier and Safety	Fence	31-Jan-20	26-May-22	552	796 15-Jan-21	23-Nov-23	0%	0%	-214	-458	-360		
MPR30.1.13.10.1.2 Traffic Sig	nages and Marking		17-Mar-22	22-Jun-22	84	94 16-Aug-23	06-Dec-23	0%	0%	-436	-446	-371		
MPR30.1.15 Handing Over			31-Mar-22	22-Sep-22	148		05-Mar-24	0%	0%	-436	-447	-448		•
MPR30.1.14 Invoice Schedule (Show	s the Invoice items which a	re not covered in the above C	23-Mar-18		1062	1509 23-Mar-18 A	05-Mar-24	60.1%	32.74%	0	-447	A48		

Actual Level of Effort Remaining Work    Milestone	Page 4 of 4	Please note that this Mo
Actual Work Critical Remaining Work Summary		submitted with the EOT-

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

#### MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7.807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) ACROSS THE MUMBAI BAY INCL SHIVAJI NAGAR INTERCHANGE UNDER IDENTIFICATION NO MMRDA/ENG/000753

ANNEXURE-5 CONSTRUCTION UPDATED PROGRAMME (PACKAGE-2)

# A	ctivity ID	Activity Name	Orig Dura		Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete	2018 2019 DJF A JJAS N JF A JJAS 2 34567891111111111112222
1	MTHL-PKG2-DETA	LED WORK PROGRAMME_25092020_APPRO\		.17 17-		21-Sep-24	17-Nov-17		53.6%	23.96%	
2	PROJECT PRE-CO	MMENCEMENT ACTIVITY	120	.00 17-	Nov-17	22-Mar-18	17-Nov-17	16-Mar-18	0%	0%	
3	PRE-COMMENCEM	IENT ACTIVITY	55	.00 15-	Dec-17	07-Feb-18	15-Dec-17	20-Mar-18	0%	0%	20-Mai-18A, PRE-COMMENCEMEN
1	JV FORMATION AND R			.00 15-		07-Feb-18	15-Dec-17	20-Mar-18	0%	0%	20-Mar-18A, JV FORMATIONAND F
	PROJECT EVENT			.50 23-		21-Mar-23	23-Mar-18		0%	0%	
-	PROJECT KEY MILEST			.50 23-		22-Sep-22	23-Mar-18		0%	0%	
	INTERFACE MILESTON	AND INTERFACE DATE ADD2-ATTACHMENT 25		.50 19-		21-Mar-23 22-Jun-22	03-Apr-18 31-Aug-18		0% 0%	0% 0%	
	CONSTRUCTION KEY N			.34 03-		06-Jul-21	25-Oct-18		0%	0%	
)	MANAGEMENT			.00 20-		18-Aug-18	12-Jan-18	22-Aug-19	0%	0%	
	SITE ORGANISATION		3:	.00 20-	Jan-18	23-Feb-18	07-Mar-18	07-Mar-18	0%	0%	_▼ 07-Mar-18A, SITE ORGANISATION
	DEVELOPMENT OF MA	ANAGEMENT SYSTEM	61:	.00 20-	Jan-18	27-May-18	20-Jan-18	22-Aug-19	0%	0%	•
		UMENT CONTROL SYSTEM		.38 20-		10-May-18	20-Jan-18	24-Oct-18	0%	0%	Period Contraction of the Contra
-		ND MANAGEMENT SYSTEM IVIRONMENTAL MANAGEMENT SYSTEM		.00 23- .00 23-		10-May-18 10-May-18	23-Mar-18 23-Mar-18	24-Oct-18 22-Aug-19	0% 0%		
5	INTERFACE MANAGEMEN			.00 23-		10-May-18	23-Mar-18	24-Oct-18	0%	0%	
7	RISK MANAGEMENT PLA			.00 23-		27-May-18	23-Mar-18	24-Oct-18	0%		
3	DEVELOPMENT OF WO			.00 23-		24-May-18	23-Mar-18	21-Sep-18	0%	0%	21-Sep-18A, DEVELO
) )	CONTRACTOR'S WORK P OTHER CONTRACTUAL			.00 23-		24-May-18 20-Apr-18	23-Mar-18 24-Mar-18	21-Sep-18 23-Apr-18	0%	0% 0%	
1	PERMIT & APPROVAL			.00 20-		18-Aug-18	12-Jan-18	03-Aug-19	0%	0%	•
2	SURVEYING & GEOTECH	NICAL INVESTIGATION	3	.00 20-	Jan-18	23-Feb-18	12-Jan-18	09-Feb-18	0%	0%	VZ 09+Feb-18A, SURVEYING & GEOTEC
3				.00 20-		30-Mar-18	25-Jan-18	23-Apr-18	0%	0%	23-Apt-18A, CUTTING OF MANG
4 5	SETTING UP BATCHING P PC YARD & CAMP			.00 06-		18-Aug-18 01-Jun-18	06-Apr-18 21-Mar-18	28-Nov-18 01-Oct-18	0% 0%	0% 0%	28-Nov-18A, SET
3	CONNECTION FOR ELEC	TRICITY & WATER		.00 18-		20-Jul-18	06-Apr-18	03-Aug-19	0%		0
7	CUTTING OF TREES			.00 23-		26-Apr-18	10-May-18	02-Aug-18	0%	0%	
3 9		CES FOR EQUIPMENTS & GOODS		.00 23-		31-May-18 31-May-18	15-May-18 16-Aug-18	31-May-18 28-Nov-18	0% 0%	<u> </u>	31-May-18A, MPORT PERMIT
, )		DAD FOR MAIN BRIDGE & INTERCHANGE		.00 23-		19-May-18	23-Mar-18	28-Jul-18	0%	0%	128-Jul-18A, TEMPORARY
	DESIGN		1139	.00 20-	Jan-18	04-Sep-19	01-Jan-18		100%	100%	
	EARLY STAGE DESIGN	WORK / INFORMATION COLLECTION	678	.38 20-	Jan-18	17-Jul-18	01-Jan-18	12-Nov-19	100%	100%	<b>•</b>
_	INDEPENDENT DESIGN C	HECKER APPROVAL		.00 20-		23-Feb-18	20-Jan-18	13-Apr-18	0%		13-Apr-18A, INDEPENDENT DES
-	BATHYMETRIC SURVEY			.33 20-		16-May-18 04-Apr-18	01-Jan-18 25-Jan-18	20-Apr-18 20-Mar-18	0% 0%	0%	20-Mar-18A, BATHMETRIC SURV
; ;		NGC & BPCL PHYSCIAL VERIFICATION		.00			21-Mar-18	05-Aug-19	0%	0%	
	GEOTECHNICAL INVESTI			.08 20-	Jan-18	17-Jul-18	12-Jan-18	25-Jun-19	100%	100%	<b>19</b> 25~
	ADDITIONAL WORKS FOR TEMPORARY WORK	R DESIGN INITIATION OF STEEL MODULE 1		.00	lan 18	01-Nov-18	26-Jun-19 20-Jan-18	12-Nov-19 20-Aug-20	0%	0% 100%	<b>V</b>
) )	PROJECT OFFICE LAYOU	Л		.13 04-		02-Jun-18	04-May-18	17-Jul-18	0%		
1	CASTING YARD LAYOUT		71	.33 22-	Jan-18	04-Apr-18	20-Jan-18	09-Oct-18	0%	0%	09-Oct-18A, CASTING
2				.33 26-		31-May-18	24-Feb-18	30-Aug-18	100%	100%	30-Aug-18A, TEMPORA
3 1	CASTING YARD STRUCTU STEEL BRIDGE FABRICAT			.38 10-		10-Aug-18 01-Nov-18	20-Mar-18 11-Nov-19	20-Nov-18 20-Aug-20	0% 0%		
5	CONCRETE MIX DESIG			.38 23-		31-Aug-18	12-May-18	15-Nov-18	0%	0%	▼ 15-Nov-18A,CON
3	JFE DESIGN PROGRAM	MME	103	.67 01-	May-18	04-Sep-19	09-Apr-18		100%	100%	
7	PROCUREMENT, M	ANUFACTURING AND LOGISTICS	130	.38 20-	Jan-18	23-Aug-20	22-Dec-17		100%	100%	<b>V</b>
3	SURVEY & INVESTIGAT			.33 20-		02-Apr-18	22-Dec-17	04-Apr-18	0%	0%	04-Apr-18A, SURVEY&INVESTIG
9	TOPOGRAPHIC SURVEY, BATHYMETRIC SURVEY/			.00 20-		09-Feb-18 09-Feb-18	01-Jan-18 01-Jan-18	22-Jan-18 23-Jan-18	0% 0%	0%	🕊 22-Jan-18A, TOPOGRAPHIC SURVEY
0 1	GEOTECHNICAL INVESTI			.00 20-		09-Feb-18	22-Dec-17	04-Apr-18	0%		VE 04-Apr-18A, GEOTECHNICAL INV
2	TEMPORARY WORK			.33 20-		20-Oct-18	20-Jan-18	11-May-20	0%	0%	
3	MAIN WORK_SUBCON	TRACT WORK		25 23-		20-Jul-19	23-Mar-18		0%	0%	
4	EQUIPMENTS			.00 23-		12-Sep-19	23-Mar-18		100%	100%	22 Mot 10
5 6	BATCHING PLANT RCD MACHINE			.00 23-		31-Jul-18 11-Nov-18	23-Mar-18 23-Mar-18	23-Mar-19 24-Aug-19	0% 0%	0%	23-Mai-19
7	GANTRY CRANE			.00 23-		08-Feb-19	23-Mar-18	247/ug-13	100%	100%	
3	SEGMENT LAUNCHER		77(	.41 24-	Jul-18	12-Sep-19	24-Jul-18	09-Mar-20	0%	0%	
	Ducia at Dana lina Dan	Critical Remaining Work Summar							CONTRACT	O.D.	Date
			y   <u>EMPLOYER:</u>					I	CONTRACT		
	Project Baseline Bar	-		דו ו∩סו							25-Sep-20
	Actual Work Remaining Work	<ul> <li>Milestone</li> <li>% Complete</li> </ul>	MUMBAI METRO (MMRDA)	POLIT	AN REGIO	ON DEVELOPI	MENT AUTH	IORITY	DAEWOO		V 25-Sep-20

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22-Aug-19A, MANAGEM		<b></b>
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22-Aug-19A, DEVELOPN		
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OPMENT OF WORK PROG		
RACTOR'S WORK PROGRA	MME	
03-Aug-19A, PERMIT & AP	PROVAL	
ECHNICAL INVESTIGATION		
TTING UP BATCHING PLAN	π	
1D& CAMP 03-Aug-19A, CONNECTION	NFOR ELECTRICITY& W	/ATER
OF TREES		
AITS/LICENCES FOR EQUIP		
RYACCESS ROAD FOR MAI		
12-Nov-19A, EARLY	23-Dec-20, DESIC	
SIGN CHECKER APPROV		
URVEY √EY	I         I	
05-Aug-19A, ADDITIONAL	TIME FOR ONGC & BPC	PHYSCIAL VERIFICATI
5-Jun-19A, GEOTECHNICAL	- INVESTIGATION ONAL WORKS FOR DES	IGN INITIATION OF STE
	0-Aug-20A, TEMPORAR	
FFICE LAYOUT		
RARYBRIDGE	I         I	
STING YARD STRUCTURE	0-Aug-20A, STEEL BRID	GE FABRICATION YAR
NCRETE MIX DESIGN		
	23-Dec-20, JFE D	ESIGN PROGRAMME
IGATION	•••••••••••••••••••••••••••••••••••••	
EYAGENT		
Y/UTILITY SURVEYAGENT		
11-May-	20 A, TEMPORARY WOR	
	09-Feb-21,M	
19'A, BATCHING PLANT		
24-Aug-19A, RCD MACHI	NE 21-Feb-21,G	ANTRYCRANE
09-Mar-20A	SEGMENT LAUNCHER	
Revision	Checked	Approved
R0		

#### MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7.807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) ACROSS THE MUMBAI BAY INCL SHIVAJI NAGAR INTERCHANGE UNDER IDENTIFICATION NO MMRDA/ENG/000753

ANNEXURE-5 CONSTRUCTION UPDATED PROGRAMME (PACKAGE-2)

ctivity ID	Activity Name	Original BL Project Duration	Start BL Project Fi	nish Actual Start	Actual Finish	Schedule % Complete	Performance % Complete	DJF A I	018 JJAS N JF
PRECAST MOULD AND SY	STEM FORM	714.91 07-Aug-18	24-Mar-19	04-Sep-18	25-Sep-20	100%	100%	12134961	
PRECAST MOULD_CASTING	BED	332.00 20-Aug-18	24-Mar-19	03-Jun-19	25-Sep-20	100%	100%		
SYSTEMFORM		446.91 07-Aug-18	04-Mar-19	04-Sep-18	31-Aug-20	0%	0%		
MATERIAL SUPPLIERS		1028.38 02-Jun-18	15-Oct-19	20-Apr-18		0%			
MATERIAL PROCUREMEN	r	0.00		08-Aug-18		0%			
TEMPORARY BRIDGE		0.00		08-Aug-18	15-Feb-20	0%			
PERMANENT WORKS		0.00	00.4	25-Mar-19		0%			+++++++++++++++++++++++++++++++++++++++
PROCUREMENT OF STEE		673.00 07-May-19	23-Aug-20	01-Aug-19	00.1.1.00	0%			
·	EL MOUDLE-2_MP177 - MP182) EL MOUDLE-2 MP177 - MP182)	513.00 04-Jun-19 438.00 07-May-19	13-Jul-20 16-Apr-20	08-Aug-19 01-Aug-19	02-Jul-20 12-May-20	0%			
``````````````````````````````````````	ELMOUDLE-2_MP177-MP102)	315.00 01-Jul-19	10-Api-20	01-Nov-19	17-Aug-20	0%			
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STEEL PLATE FOR (RHS.STE	EL MOUDLE-1_MP176 - MP171)	286.00 30-Jul-19	23-Aug-20	01-Apr-20		0%			
STEEL PLATE FOR (LHS.STE	L MOUDLE-1_MP176 - MP171)	327.00 02-Jul-19	26-Jul-20	29-Mar-20		0%	0%		
<b>IMPACT OF COVID-19</b>		50.67		22-Mar-20	25-May-20	0%	0%		
CONSTRUCTION		2153.21 02-Apr-18	21-Jun-22	02-Apr-18		51.83%	21.49%		· · · · · · · · · · ·
TEMPORARYWORK		212321 02-Apr-18	21-Jun-22	02-Apr-18		97.95%	97.88%		<b></b>
PREPARATION WORK		368.33 02-Apr-18	16-Jan-19	02-Apr-18	25-Jul-19	0%			<u></u>
ESTABLISHMENT OF EMPOLY	ER & CONTRACTOR OFFICE	194.04 20-Jun-18	27-Nov-18	27-Jun-18	18-Jan-19	100%			18
ESTABLISHMENT OF LABOUR		463.92 20-Jun-18	05-Apr-19	03-Jul-18	04-Apr-19	0%			
ESTABLISHMENT OF CONCRI		1054.00 04-May-18	25-Apr-19	14-Jun-18		100%			
ESTABLISHMENT OF STEELS	PAN ASSEMBLY YARD	454.17 02-Nov-18	06-Mar-20	01-Nov-19		0%	0%		
TEMPORARY BRIDGE		2070.88 20-May-18	21-Jun-22	27-Jul-18		96.49%	96.49%	<b>•</b>	
PERMANENT WORK		1886.21 03-Sep-18	24-May-22	08-Dec-18		45.8%			
PRE-FABRICATION AND ASSE		1090.29 18-Apr-19	19-Feb-22	16-Oct-19		29.36%	7.94%		
		633.38 18-Apr-19	15-Sep-21	06-Nov-19		59.7%	5.57%		
	T THE SUPPLIER'S WORK SHOP INCLUDING LOGISTIC	981.38 02-Jun-19	24-Jan-22 17-Feb-22	16-Oct-19		24.06%	8.78%		
	IT THE CONTRACTOR'S ASSEMBLY YARD	522.63 05-Sep-20 433.00 30-Sep-20	17-Feb-22 19-Feb-22			2.22%			
MAIN BRIDGE		1886.21 03-Sep-18		08-Dec-18		55.35%			
MAIN BRIDGE FOUNDATION		1281.21 03-Sep-18	23-Mar-21	08-Dec-18		74.27%	43.57%		
MAIN BRIDGE PILE FOUNDA	TION	1178.14 03-Sep-18	23-Jan-21	08-Dec-18		90.15%	59.06%		
PILE LOAD TEST		259.25 03-Sep-18	19-Nov-18	08-Dec-18	11-Nov-19	100%	100%		
	ATION_LAND 17+414~18+187 FROM MP250 TO MP266	322.99 30-Nov-18	15-May-19	17-Jan-19	11-Jun-20	100%			
	ATION_CRZ 15+890~17+414 FROM MP226 TO MP250	268.00 20-Dec-18	27-Nov-19	12-Jun-19	21-Feb-20	100%			
	ATION_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225 ATION MARINE 13+610~14+800 FROM MP187 TO MP205	417.08 27-Feb-19	06-Jun-20	15-Oct-19	26-Aug-20	100%			
	ATION_MARINE (STEEL) 11+880~13+610 FROM MP107 TO MP205 ATION_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	532.06 12-Dec-19 518.24 27-Nov-19	28-Nov-20 23-Jan-21	01-Oct-19 17-Mar-20		81.67% 61.47%	29.36% 14.78%		
	ATION MARINE 10+380~11+880 FROM MP146 TO MP170	585.13 24-Nov-18	28-Dec-19	19-Feb-19		100%	24.82%		
MAIN BRIDGE PILE CAP INS	-	1014.13 22-Dec-18	23-Mar-21	01-May-19		57.68%	27.41%		
MAIN BRIDGE PILE CAP BO	ITTOM SLAB INSTALLATION	980.13 22-Dec-18	17-Feb-21	19-Aug-19		0%	0%		
MAIN BRIDGE PILE CAP IN	TALLATION	998.13 27-Dec-18	23-Mar-21	01-May-19		57.68%	27.41%		
	AND 17+414~18+188 FROM MP251 TO MP266	376.96 27-Dec-18	13-Jun-19	01-May-19	27-Jun-20	100%	100%		
	CRZ 15+890~17+414 FROM MP226 TO MP250	328.33 04-Mar-19	08-Jan-20	28-Aug-19	19-Sep-20	100%			
	NTERTIDAL 14+800~15+890 FROM MP206 TO MP225	199.00 18-Apr-19	05-Sep-20	29-Jan-20		100%	40.38%		
	IARINE 13+610~14+800 FROM MP187 TO MP205 IARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	394.00 01-Feb-20 368.34 20- Jap-20	06-Jan-21 23-Mar-21	13-Jan-20		62.09% 7.2%			0     0     0     0     1     1     0     1     1       0     0     0     0     0     0     0     0     0       0     0     0     0     0     0     0     0     0       0     0     0     0     0     0     0     0     0
	IARINE (STEEL) 11+880 FROM MP146 TO MP170	368.34 20-Jan-20 263.00 03-Jan-19	17-Feb-20			100%	0%		
MAIN BRIDGE SUB-STRUCTL		1043.21 09-Jan-19	24-Sep-21	04-Nov-19		80.48%	8.44%		
MAIN BRIDGE PIER INSTALL		1016.29 09-Jan-19	28-Jul-21	04-Nov-19		81.14%			
MAIN BRIDGE PIER_LAND	17+414~18+188 FROM MB251 TO MB266	375.04 09-Jan-19	08-Nov-19	06-Nov-19		100%	10.68%		
MAIN BRIDGE PIER_CRZ 1	+890~17+414 FROM MB226 TO MB250	367.33 26-Mar-19	06-Feb-20	04-Nov-19		100%	61.83%		
	TIDAL 14+800~15+890 FROM MB206 TO MB225	451.98 11-May-19	16-Oct-20	10-Feb-20		95.7%	4.55%		
	E 13+610~14+800 FROM MB187 TO MB205	217.00 19-Mar-20	18-Feb-21			52.48%			
	E (STEEL) 11+880~13+610 FROM MB171 TO MB186	409.34 17-Feb-20 260.00 07 Feb 10	28-Jul-21			21.13%	0%		
MAIN BRIDGE PIER_MARIN MAIN BRIDGE PIER CAP INS	E 10+380~11+880 FROM MB146 TO MB170 TALLATION	269.00 07-Feb-19 774.13 08-Feb-19	13-Mar-20 27-Aug-21	25-Feb-20		100% 78.21%	0% 2.08%		
	AND 17+414~18+188 FROM MB251 TO MB266	52.31 08-Feb-19	27-Aug-21 23-Nov-19	20-1 - 20-20		100%	2.00%		
	RZ15+890~17+414 FROM MB226 TO MB250	244.25 19-Apr-19	25-Feb-20	25-Feb-20		100%	11.11%		
	TERTIDAL 14+800~15+890 FROM MB206 TO MB225	446.98 06-Jun-19	05-Nov-20			89.53%			
	ARINE 13+610~14+800 FROM MB187 TO MB205	203.00 23-Apr-20	10-Mar-21			43.22%			
MAIN BRIDGE PIER CAP_N	ARINE (STEEL) 11+880~13+610 FROM MB171 TO MB186	378.34 30-Apr-20	27-Aug-21			18.72%	0%		
Project Baseline Bar	Critical Remaining Work Summary	EMPLOYER:				CONTRACT	OR·		
		MUMBAI METROPOLITAN R						<b>N</b> 7	25-Sep
Actual Work $\blacklozenge$	Milestone     % Complete	(MMRDA)		OF WIENT AUT		DAEWO	J - IPL .	V	<u> </u>
Remaining Work									

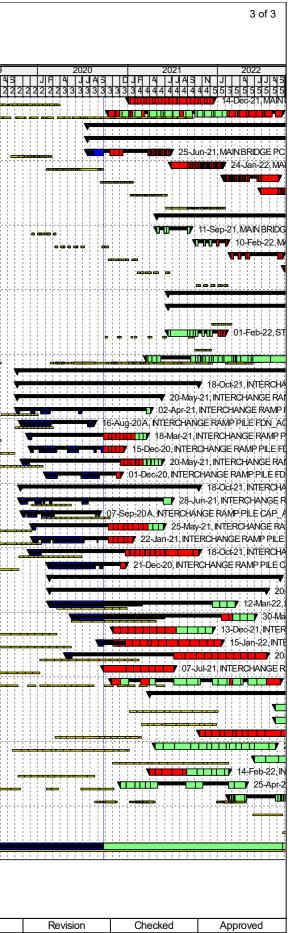
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	144-144444444		MOULDAND SYSTEM
		25-Sep-20A, PRECAS	MOULD_CASTING BEI
	3	1-Aug-20A, SYSTEMF	ЭRM
		26-Mar-21,	MATERIAL SUPPLIERS
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	15-Feb-20A, T	EMPORARYBRIDGE	
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	12-May-2	20 A, STEEL PLATE FOR	R(LH\$.\$TEEL MOUDLE
		Aug-20A, STEEL PLA	
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	<b>∠</b> ∠5-May	-20A, MPACTOF COVID	ria I
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		DLYER & CONTRACTOR	OFFICE
19A	ESTABLISHMENTOF I	ABOURCAMP	
i (		23-Mar-21,	ESTABLISHMENT OF O
		24-May	-21, ESTABLISHMENT (
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	<b>7</b> 11-Nov-19 A, PILE LO	DADTEST	28-J ▼ 17-Mai-22,
		DADTEST -20 A, MAIN BRIDGE PIL	
	11-Jur 21-Feb-20A, I	+20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU	E FOUNDATION_LAND
	11-Jur 21-Feb-20A, I	-20 A, MAIN BRIDGE PIL	E FOUNDATION_LAND NDATION_CRZ15+890 E PILE FOUNDATION_
	11-Jur 21-Feb-20A, I	+20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU	EFOUNDATION_LAND NDATION_CRZ15+890 EPILE:FOUNDATION_ UULDININT
	11-Jur 21-Feb-20A, I	1-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6 Aug-20 A, MAIN BRIDG 4400 - 20 A, MAIN BRIDG	EFOUNDATION_LAND NDATION_CRZ15+890 BEPILE:FOUNDATION_ INTERNET 28-Oct-21 (MAINBRI 28-Oct-21 (MAINBRI
	11-Jur 21-Feb-20A, I	1-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6 Aug-20 A, MAIN BRIDG 4400 - 20 A, MAIN BRIDG	EFOUNDATION_LAND NDATION_CR215+890 EPILE:FOUNDATION_ 28-00:21 (MAINBRI 12-21 (MAINBRIDGE PIL U-21 (MAINBRIDGE PIL
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	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 24-0) 24-0) 25-May 25-May 25-May 24-0) 25-May 24-0) 25-May 24-0) 2
	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 24-0) 24-0) 25-May 25-May 25-May 25-May 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 24
	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 24-0) 24-0) 25-May 25-May 25-May 24-0) 25-May 24-0) 25-May 24-0) 2
	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 24-0) 24-0) 25-May 25-May 25-May 25-May 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 25-May 24-0) 24
	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 23-00:21 (MAINBRID 23-00:21 (MAINBRID 24-00:20 25-Nov-21 (MAINBRID 27-00:21 (MAINBRID 27-
	21-Feb-20A   24-Feb-20A   24-Feb-20A   24-Feb-20A   27-J	20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 23-00:21 (MAINBRID 23-00:21 (MAINBRID 24-00:21 (MAINBRID 24-00:21 (MAINBRID 25-Nov-21 (MAINB
	7 11-Jun 21-Feb-20A 2	-20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE:FOUNDATION_ 28-00:21 (MAINBRID 12:1 (MAINBRIDGE PIL 23-00:21 (MAINBRID 23-00:21 (MAINBRID 23-00:21 (MAINBRID 24-00:20 25-Nov-21 (MAINBRID 27-00:21 (MAINBRID 27-
	21-Feb-20A   24-Feb-20A   24-Feb-20A   24-Feb-20A   27-J	20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE FOUNDATION_ 28-00-21 (MAINBRID 12-11 (MAINBRIDSE PIL 23-00-21 (MAINBRID 23-May 23-May 23-May 23-May 23-May 23-May 23-May 24-MainBRIDSE PILE 24-00-21 (MAINBRID 25-Nov-21 (MAINBRID 25-N
	Revision	20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE FOUNDATION_ 28-00-21 (MAINBRID 12-11 (MAINBRIDSE PIL 23-00-21 (MAINBRID 23-May 23-May 23-May 23-May 23-May 23-May 23-May 24-MainBRIDSE PILE 24-00-21 (MAINBRID 25-Nov-21 (MAINBRID 25-N
	Revision	20 A, MAIN BRIDGE PIL MAIN BRIDGE PILE FOU 6-Aug-20 A, MAIN BRIDGE 1000000000000000000000000000000000000	E FOUNDATION_LAND NDATION_CR215+890 E PILE FOUNDATION_ 28-00-21 (MAINBRID 12-11 (MAINBRIDSE PIL 23-00-21 (MAINBRID 23-May 23-May 23-May 23-May 23-May 23-May 23-May 24-MainBRIDSE PILE 24-00-21 (MAINBRID 25-Nov-21 (MAINBRID 25-N

#### MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7.807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) ACROSS THE MUMBAI BAY INCL SHIVAJI NAGAR INTERCHANGE UNDER IDENTIFICATION NO MMRDA/ENG/000753

ANNEXURE-5 CONSTRUCTION UPDATED PROGRAMME (PACKAGE-2)

#	Activity ID Activity Name	Original Duration	BL Project Sta	t BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete	DJFA		NJF	2019 A JJAS
121	MAIN BRIDGE PIER CAP MARINE 10+380~11+880 FROMMB146 TO MB170	255.00	15-Mar-19	01-Apr-20	1		100%	0%	234567	<u> 1                                   </u>		11444
122	MAIN BRIDGE BEARING PAD AND BEARING INSALLATION	708.09	22-Feb-19	24-Sep-21			91.02%	0%				
123	MAIN BRIDGE SUPER STRUCTURE BOX GIRDER INSTALLATION	1137.92	12-Sep-19	01-Mar-22	20-Jul-20		33.93%	0%				
124	MAIN BRIDGE CONCRETE GIRDER INSTALLATION	1109.92	12-Sep-19	02-Feb-22	20-Jul-20		39.75%	0%				
125	MAIN BRIDGE PC GIRDER_LAND 15+890~17+414 FROM MP251 TO MP266	297.04	12-Sep-19	27-Feb-20	20-Jul-20		100%	0%				
126	MAIN BRIDGE PRECAST GIRDER_CRZ 15+890~17+414 FROM MP226 TO MP250		04-Feb-20	25-Sep-20			99.61%	0%				
127	MAIN BIDGE PRECAST GIRDER_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225		12-Sep-20	23-Jan-21			5%	0%				
128	MAIN BRIDGE PRECAST GIRDER_MARINE 13+610~14+800 FROM MP187 TO MP205		12-Jan-21	10-Jun-21			0%	0%				
129 130	MAIN BRIDGE PRECAST GIRDER_MARINE 10+380~11+880 FROM MP146 TO MP170 STITCH JOINT CASTING		04-Jun-21 07-Dec-19	02-Feb-22 12-Feb-22			0% 0%	0% 0%				
130	MAIN BRIDGE STITCH JOINT CASTING_LAND 15+890~17+414 FROM MP251 TO MP266		07-Dec-19	16-Mar-20			0%	0%				
132	MAIN BRDIGE STITCH JOINT CASTING CRZ 15+890~17+414 FROM MP226 TO MP250		11-Mar-20	13-Oct-20			0%	0%				
133	MAIN BRIDGE STITCH JOINT CASTING_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	159.13	14-Oct-20	10-Feb-21			0%	0%				
134	MAIN BRIDGE STITCH JOINT CASTING_MARINE 13+610~14+800 FROM MP187 TO MP205	112.00	11-Feb-21	21-Jun-21			0%	0%				
135	MAIN BRIDGE STITCH JOINT CASTING_MARINE 10+380~11+880 FROM MP146 TO MP170	170.00	06-Oct-21	12-Feb-22			0%	0%				
136	MAIN BRIDGE STEEL GIRDER INSTALLATION	562.29	03-Oct-20	01-Mar-22			0%	0%				
137	MAN BRIDGE STEEL GIRDER INSTALLATION_MARINE 11+880~13+610 FROM MP171 TO MP186		03-Oct-20	01-Mar-22			0%	0%				
138	STEEL MODULE-01_MP176 - MP171 (INSTALLATION)		07-Dec-21	01-Mar-22			0%	0%				
139	STEEL MODULE-02_MP182 - MP177 (INSTALLATION)		03-Oct-20	30-Sep-21			0%	0%				
140	STEEL MODULE-03_MP186 - MP183 (INSTALLATION)		30-Sep-21	07-Dec-21			0%	0%				-+-+-+-+-+
141	MISCELLANEOUS & FINISHING WORKS		16-May-19	24-May-22	09-Oct-19		14.71%	0%				
142 143	INTERCHANGE INTERCHANGE FOUNDATION		24-Dec-18 24-Dec-18	28-Apr-22 22-Oct-20	09-Oct-19		81.13% 99.31%	<u>13.17%</u> 56.1%				
143	INTERCHANGE FOUNDATION		24-Dec-18	05-Mar-20	09-Oct-19		100%	56.13%				
145	INTERCHANGE RAMP PILE FDN_MA		05-Aug-19	03-Jan-20	09-Oct-19		100%	87.61%				
146	NTERCHANGE RAMP PILE FDN_AC		01-Oct-19	05-Mar-20	25-Oct-19	16-Aug-20	100%	100%	·			-+-+
147	INTERCHANGE RAMP PILE FDN_JM	143.00	03-Jan-19	05-Aug-19	26-Nov-19	Ŭ	100%	8.29%				
148	INTERCHANGE RAMP PILE FDN_MJ	94.25	03-Jan-19	01-Oct-19	04-Dec-19		100%	64.46%				
149	INTERCHANGE RAMP PILE FDN_CA	143.00	28-May-19	23-Jan-20	01-Nov-19		100%	8.29%				
150	INTERCHANGE RAMP PILE FDN_AM	220.33	24-Dec-18	27-May-19	06-Feb-20		100%	90.07%			; ; <del>; ; ; ; ; ; ;</del>	÷
151	INTERCHANGE RAMP PILE CAP INSTALLATION		08-Jan-19	22-Oct-20	22-Oct-19		98.33%	56.06%				
152			06-Dec-19	15-May-20	22-Oct-19		100%	87.5%				
153			15-Jan-20	22-Oct-20	02-Nov-19	07-Sep-20	88.97%	100%				
154 155	INTERCHANGE RAMP PILE CAP_JM INTERCHANGE RAMP PILE CAP_MJ		18-Jan-19 18-Jan-19	06-Dec-19 15-Jan-20	11-Dec-19 16-Dec-19		100% 100%	8.33% 64.29%				
156	NTERCHANGE RAMP PILE CAP_CA		15-Oct-19	27-Jun-20	02-Dec-19		100%	8.33%	$\cdot - \frac{1}{1} - \frac{1}{1}$		r++ <b></b>	
157	NTERCHANGE RAMP PILE CAP_AM		08-Jan-19	15-Oct-19	15-Feb-20		100%	90%				
158	INTERCHANGE SUBSTRUCTURE & BEARING	717.08	29-Jan-19	31-May-21	19-Feb-20		76.1%	11.28%				
159	INTERCHANGE RAMP PIER INSTALLATION	717.08	29-Jan-19	27-Apr-21	19-Feb-20		76.1%	11.28%				
160	INTERCHANGE RAMP PIER_MA	100.00	18-Mar-20	29-Dec-20	19-Feb-20		58.28%	34.03%				
161	INTERCHANGE RAMP PIER_AC		16-May-20	27-Apr-21	19-May-20		24.41%	32.1%				
162			08-Feb-19	18-Mar-20			100%	0%				
163			08-Feb-19	16-May-20	07-Sep-20		100%	3.75%				
164 165	INTERCHANGE RAMP PIER_CA INTERCHANGE RAMP PIER_AM		08-Jan-20 29-Jan-19	16-Feb-21 08-Jan-20	27-Apr-20		58.54% 100%	8.81% 0%				
166	INTERCHANGE BEARING INSTALLATION		27-Feb-19	31-May-21			0%	0%				
167	INTERCHANGE SUPERSTRUCTURE INSTALLATION		20-Sep-19	15-Feb-22			35.87%	0%				
168	INTERCHANGE BOX GIRDER INSTALLATION MA		09-Jan-21	03-Jan-22			0%	0%				
169	INTERCHANGE BOX GIRDER INSTALLATION_AC	146.38	27-Feb-21	27-Dec-21			0%	0%				
170	INTERCHANGE BOX GIRDER INSTALLATION_JM	250.00	11-Mar-20	26-Feb-21			26.75%	0%				
171	INTERCHANGE BOX GIRDER INSTALLATION_MJ	330.88	20-Sep-19	08-Jan-21			73.68%	0%				
172	INTERCHANGE BOX GIRDER INSTALLATION_CA		30-Oct-20	15-Feb-22			0%	0%				
173	INTERCHANGE BOX GIRDER INSTALLATION_AM		14-Oct-19	19-Aug-20			100%	0%				
174			11-Mar-19	06-Nov-20			92.12%	0%			+	+++
175 176	MISCELLANEOUS & FINISHING WORKS		19-Aug-20	28-Apr-22			11.77% 0%	0% 0%				
	PROJECT HANDINGOVER		24-May-22	22-Sep-22								
177	DEFECT LIABILITY PERIOD (DLP)	730.00	22-Sep-22	21-Sep-24			0%	0%				
178	PRICE SCHEDULE	2421.21	23-Mar-18	21-Mar-23	23-Mar-18		64.19%	33.69%				

Project Baseline Bar Critical Remaining Work Summary	EMPLOYER:	CONTRACTOR:	Date	Revision	Checked	Approved
Actual Work $\blacklozenge$ $\blacklozenge$ Milestone	MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY	DAEWOO - TPL JV	25-Sep-20	R0		
	(MMRDA)	DAEWOO - IFL JV				
Remaining Work % Complete						



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

ID	Activity Name	BL1 Start	BL1 Finish	BL1 Start	l. Finish	Activity %	Schedule %	Performance %	edule Layout Budgeted Total Cost	Actual Total Cost	Schedule	Cost Performance	Planned Value	
				Duration		Complete	Complete	Complete	-		Performance Index	Index	Cost	t
MTHL Pkg 3_C	Construction Schedule Sep'2	23-Mar-18	21-Sep-21	969 23-Mar-18 A	11-Jul-23		91.79%	40.05%	Rs10,135,349,233	Rs2,855,346,745	0.44		Rs9,580,368,705	
Procurement	of Mumbai Trans Harbour Li	23-Mar-18	21-Sep-21	969 23-Mar-18 A	11-Jul-23		91.79%	40.05%	Rs10,135,349,233	Rs2,855,346,745	0.44		Rs9,580,368,705	Rs4,180,047
🕳 t	Commencement Date (CD)	10.0 10		0 23-Mar-18A		100%	0%	100%	Rs0	Rs0	0.00	0.00		
Physical Miles		18-Sep-18	21-Sep-21	1099 30-Oct-20	11-Jul-23	00/	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	
KD1002 KD1003	KD 2 [NOC for technical design c KD 3 [NOC for Good for construc		17-Dec-18 15-Jun-19	0 29-Dec-20 0 04-Feb-21	29-Dec-20 04-Feb-21	0% 0%	100% 100%	0% 0%	Rs0 Rs0	Rs0 Rs0	0.00	0.00 0.00		
KD1003	KD 4 [Substantial completion of t	21-Mar-20	21-Mar-20	0 03-Nov-21	03-Nov-21	0%	100%	0%	Rs0	Rs0	0.00	0.00		
KD1005	KD 5 [Substantial completion of	19-Sep-20	19-Sep-20	0 18-Dec-21	18-Dec-21	0%	100%	0%	Rs0	Rs0	0.00	0.00		
E KD1006	KD 6 [Substantial completion sur	20-Mar-21	20-Mar-21	0 24-Dec-22	24-Dec-22	0%	0%	0%	Rs0	Rs0	0.00	0.00		
🛑 KD1007	KD 7 [Substantial completion of	24-Jul-21	24-Jul-21	0 03-Jun-23	03-Jun-23	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	i -
🛑 KD1008	KD 8 [Final completion & handin;	21-Sep-21	21-Sep-21	0 11-Jul-23	11-Jul-23	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	J
🛑 KD1001	KD1 [Construction programme, c	18-Sep-18	18-Sep-18	0 30-Oct-20	30-Oct-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	I.
💾 Financial Miles		18-Sep-18	21-Sep-21	1099 23-Mar-18 A	11-Jul-23		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	
FM1010	Completion of the works amounti		22-Mar-19	0 23-Mar-18 A	31-Jan-20 A	100%	100%	100%	Rs0	Rs0	0.00	0.00		
FM1020	Completion of the works amounti		23-Sep-19	0 23-Mar-18A	22-Mar-20 A	100%	100%	100%	Rs0	Rs0	0.00	0.00		
FM1030	Completion of the works amounti		21-Mar-20	0 23-Mar-18A	31-May-20 A	100%	100%	100%	Rs0	Rs0	0.00	0.00		
FM1000 FM1040	Completion of the works amounti	18-Sep-18 21-Mar-21	18-Sep-18	0 23-Mar-18A 0 21-Mar-21	31-Jul-19 A	100% 0%	100% 0%	100% 0%	Rs0	Rs0 Rs0	0.00	0.00 0.00		
	Completion of the works amounti Final Completion and Handing ov	21-War-21 21-Sep-21	21-Mar-21 21-Sep-21	0 21-War-21 0 08-May-22	08-Oct-21 11-Jul-23	0%	0%	0%	Rs0 Rs0	Rs0	0.00	0.00		
FM1060 FM1050	Substantial completion of all Wo		21-Sep-21 24-Jul-21	0 09-Oct-21	24-Mar-22	0%	0%	0%	Rs0	Rs0	0.00	0.00		
Interface Miles		17-Dec-18	06-Mar-21	810 25-Sep-20	24-Dec-22	070	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	
Document Sub		23-Mar-18	06-May-18	45 06-Apr-18 A	30-Sep-19 A		100%	100%	Rs74,992,895	Rs74,992,895	1.00	1.00	Rs74,992,895	
	bligation / Land Handover	19-Apr-18	18-Sep-18	152 23-Mar-18 A	25-Sep-20		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	
	[CD +180 days]	19-Apr-18	18-Sep-18	152 23-Mar-18A	25-Sep-20		0%	0%	Rs0	Rs0	0.00	0.00		
Casting Yard	19.16 Ha [CD+120 days]	20-Jul-18	20-Jul-18	0 20-Dec-18 A	21-Dec-18 A		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	
	ce (Sch 01- General Item)	20-Aug-18	16-Sep-21	861 25-Jan-19 A	06-Apr-22		92.44%	88.16%	Rs142,351,965	Rs125,502,765	0.95	1.00	Rs131,583,709	
the second se	of Employer office	20-Aug-18	11-Dec-18	90 30-May-19 A	31-Oct-19 A		100%	100%	Rs112,791,965	Rs112,791,965	1.00	1.00		
	technical Investigation Works	12-Dec-18 19-Apr-18	16-Sep-21 22-Oct-18	1010 25-Jan-19 A 130 19-Apr-18 A	06-Apr-22 30-Oct-20		<u>63.57%</u> 100%	43% 95.75%	Rs29,560,000 Rs242,300,773	Rs12,710,800 Rs181,725,579	0.68	1.00		^
Topographica		19-Apr-18	22-Oct-10 22-Oct-18	130 19-Apr-18 A	25-Sep-20		100%	99.85%	Rs0	Rs0	1.00			
	al Investigation work	17-May-18	17-Sep-18	78 10-Sep-18 A	30-Oct-20		100%	95.75%	Rs242,300,773	Rs181,725,579	0.96	1.28		
Design Works		07-May-18	14-Jun-19	313 25-Apr-18 A	05-Aug-21		100%	84.18%	Rs159,122,500	Rs133,070,219	0.84	1.01	Rs159,123,270	Rs133,9
Design Basis	s Report	07-May-18	30-Jun-18	48 25-Apr-18 A	08-Dec-18 A		100%	100%	Rs0	Rs0	1.00	0.00	Rs51	
Preliminary I		02-Jul-18	25-Aug-18	23 26-Jul-18 A	25-Sep-20		100%	80%	Rs286,875	Rs286,875	0.80	0.80		
	al Interpretative Report Submission & G(		08-Oct-18	28 07-Dec-18A	03-Nov-20		100%	91%	Rs0	Rs0 Rs0	0.91	0.00		
Plan & Profile		06-Jun-18 16-Aug-18	14-Aug-18 26-Feb-19	41 23-Feb-19A 155 20-Aug-18A	29-Sep-20 10-Mar-21		<u>100%</u> 100%	80% 73.17%	Rs0 Rs85,075,000	Rs0 Rs61,541,313	0.80	1.01		
Foundation 8	<b>.</b>	05-Oct-18	14-Jun-19	211 06-Nov-18 A	04-Dec-20		100%	98.27%	Rs28,434,375	Rs27,721,406	0.98	1.01		
Abutment & F	Foundation	15-Oct-18	16-Jan-19	78 31-Dec-18 A	13-Aug-20 A		100%	100%	Rs0	Rs0	1.00	0.00	Rs81	
Pier Cap		24-Oct-18	10-May-19	166 11-Jan-19 A	05-Aug-21		100%	98.7%	Rs0	Rs0	0.99	0.00	Rs290	
Bearings & D		17-Nov-18	03-Apr-19	115 21-Jan-19 A			100%	89.97%	Rs18,005,625	Rs16,200,000	0.90		Rs18,005,625	
Pavement De Pavement De		01-Jul-18 12-Sep-18	27-Aug-18 08-Jun-21	24 15-Oct-18 A 788 15-Feb-19 A			<u>100%</u> 94.32%	48.67%	Rs27,320,625 Rs1,387,160,466	Rs27,320,625 Rs67,750,370	1.00 0.52		Rs27,320,625 Rs1,589,414,195	
For Main Brid		12-Sep-18	08-Jun-21	788 15-Feb-19 A			89.1%	48.67%	Rs877,933,218	Rs50,891,469	0.13		Rs782,223,211	·
For Road Wo		04-Apr-19	13-Jan-21	497 01-Mar-19 A			77.86%	29.07%	Rs0	Rs0	0.37	0.00		
Imported Pro	ocurement	22-Jan-19	10-Aug-19	170 04-Dec-19A	20-Aug-21		100%	89%	Rs509,227,248	Rs16,858,901	0.89	42.61	Rs807,190,658	Rs718,3
Co-ordinated F	Fabrication & Manufracturing Works	27-Sep-18	10-Feb-20	394 21-Feb-19 A	05-Feb-22		100%	0%	Rs390,605,953	Rs0	0.00	0.00	Rs390,606,723	
the second se	Norks fabrication	27-Sep-18	06-Jan-20	364 21-Feb-19 A			100%	0%	Rs390,605,953	Rs0	0.00		Rs390,606,183	
	Norks Assembly	22-Oct-18 20-Jul-18	10-Feb-20 23-Jul-21	374 25-Feb-19A 844 26-Sep-18A			100% 93.28%	44.44%	Rs0 Rs7.060.913.657	Rs0 Rs2,252,304,916	0.44			
Construction V		20-Jul-18	01-Jul-19	271 26-Sep-18 A			100%	49.56%	Rs7,000,913,037 Rs0	Rs2,252,504,916 Rs0	0.42		Rs6,588,657,851 Rs565	
- الجوال -	res (Open Foundation, Pier ,Pier Cap )	08-Dec-18	07-Nov-20	539 30-Sep-18 A			98.56%	55.75%	Rs3,390,255,160	Rs1,891,417,708	0.57		Rs3.344.089.628	
Super Struct		27-Feb-19	12-Apr-21	601 11-Sep-19 A			86.92%	6.12%	Rs1,408,927,165	Rs71,264,634	0.07	1.21	Rs1,224,647,672	Rs86,2
Bearings & E	Expansion Joints	03-Aug-20	12-Apr-21	201 06-Aug-22	07-Apr-23		9.8%	0%	Rs10,454,697	Rs0	0.00	0.00	Rs1,024,970	
	laries & Miscellaneous Item	12-Aug-20	23-Jul-21	274 25-Dec-21	02-Jun-23		6.85%	0%	Rs180,921,987	Rs0	0.00		Rs12,398,796	
RE Wall		27-Feb-19	18-Feb-21	557 30-Nov-20	08-Oct-22		97.5%	0%	Rs461,687,248	Rs0	0.00		Rs450,167,535	
Road Work	Interface Activity	20-Apr-19 19-Sep-20	18-May-21 06-Mar-21	587 16-Feb-19A 141 25-Sep-20	21-Mar-23 24-Dec-22		96.75%	49.42%	Rs1,608,667,400 Rs0	Rs289,622,574 Rs0	0.51	2.75	Rs1,556,328,685 Rs0	
		23-Apr-18	23-Aug-21	924 30-Nov-18 A	24-Dec-22 26-May-23		59.4%	3.05%	Rs677,901,024	Rs20,000,000	0.00	1.04		
Provisional Su														

Actual Level of Effort Actual Work

Remaining Work

♦ ♦ Milestone Critical Remaining Work Summary

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



Package 1- Site Progress Photos

Photo No. 1: High altitude view of MTHL - Package-1



Photo No. 2: LG-2 Erection - Intertidal Section in progress



Photo No. 3: MP 43 Pile Cap Bottom Reinforcement Inspections - Intertidal in progress



Photo No. 4: AP 39 Pile Cap Concreting in progress

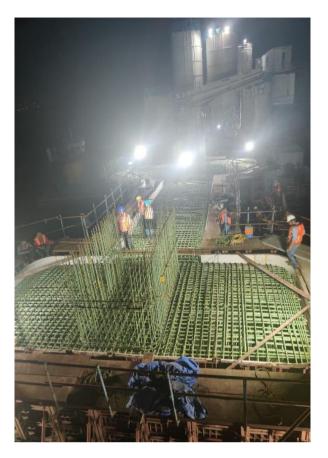


Photo No. 5: MP 108 Pile Cap pre-pour inspection in progress



Photo No. 6: Trial Assembly of OSD Girder Bridge P1-OS04-NG (Lot6) / Seg. 28~32 in Vietnam in progress



Photo No. 7: Transportation of OSD Girder Bridge P1-OS01-NG Package to Port for Shipment-3 in progress

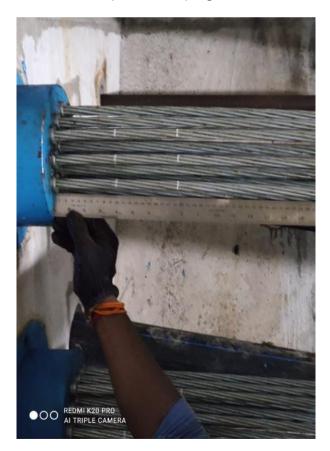


Photo No. 8: Slip Check After 24 Hrs of Stressing at MP17-18 N Tendons in progress

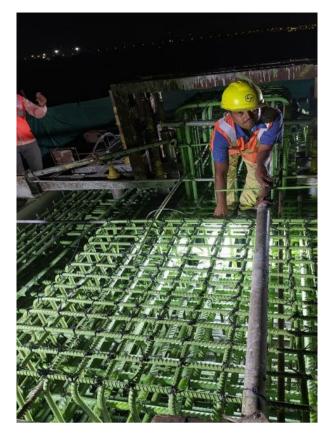


Photo No. 9: MP 19 N Pier Cap Pre-Pour checking in progress

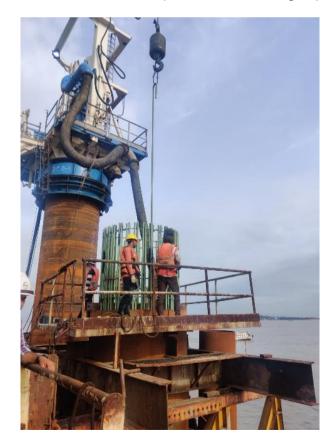


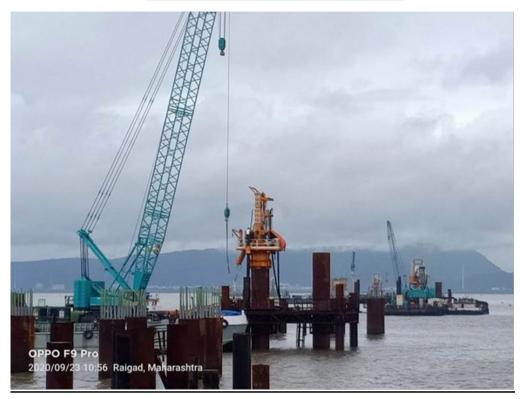
Photo No. 10: MP 126 N2 Top Cage Welding - Marine Area in progress



Photo No. 11: AP 39 Pile Cap concreting in progress



Photo No. 12: MP-19 N Pier Head Segment Erection - Intertidal Section in progress



Package 2 – Site Progress Photos

Photo No. 1: Pile drilling at MP 202 LHS in progress



Photo No. 2: Pile Cap Reinforcement Works at MP 216 RHS in progress



Photo No. 3: Pile concreting at MP 181 LHS in progress



Photo No. 4: Pier Cap bottom formwork preparatory works at MP 241 LHS and RHS in progress

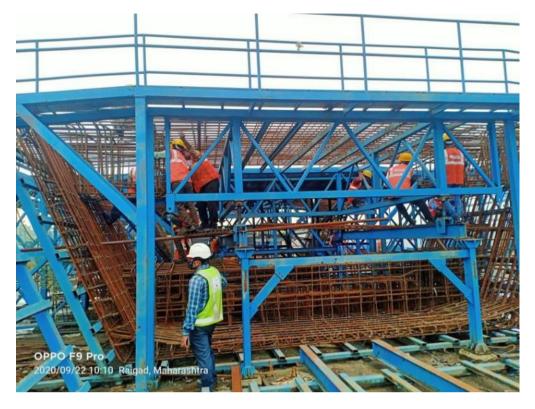


Photo No. 5: Segment Reinforcement Cage Works at Bay-1 in progress



Photo No. 6: Pier Formwork fixing at MP 265 LHS in progress



Photo No. 7: Pier Cap concreting at MP 243 LHS in progress



Photo No. 8: LG assembling works in progress



Photo No. 9: Pier final lift concreting at MP 206 RHS in progress



Photo No. 10: Pile Cap curing Works at MP 212 LHS and RHS in progress



Photo No. 11: Pile Cap concreting at MP 212 RHS in progress

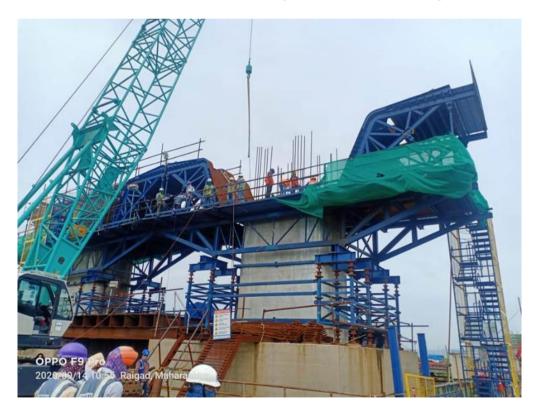


Photo No. 12: Pier Head Segment Reinforcement Works in progress at MP 237 LHS in progress



Package 3 – Site Progress Photos

Photo No. 1: Foundation RP-38 (Chirle) concrete pouring completed



Photo No. 2: JMP-10 (Chirle) Pier reinforcement inspection completed

Mumbai Trans Harbour Link Project - Quarterly Progress Report No.14 (Jul-Sept 2020)



Photo No. 3: MPP12 Pier concrete pouring in progress



Photo No. 4: LP-06 (Jasai) Pier Cap Pre-pour inspection completed



Photo No. 5: LP06 Pier cap concrete pouring in progress



Photo No. 6: JMP02 (Jasai) Pier Cap concreting in progress



Photo No. 7: Pier Cap PMP-08 (Chirle) Pre-pour inspection completed



Photo No. 8: RMP 281 Pier Cap concrete pouring in progress



Photo No. 9: A View taken from RMP 281 Pier



Photo No. 10: RP 03 Portal Pier Cap reinforcement in progress



Photo No. 11: LMP A2 Abutment Foundation concrete pouring in progress



Photo No. 12: Staging Arrangement for Cast in-situ voided slab of span MJP-7 to 8 (Chirle) in progress