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MMRDA

Mumbai Metropolitan Region Development Authority

Mumbai Trans Harbour Link Project

Quarterly Progress Report - No.12

(From 1st January 2020 to 31st March 2020)

Mumbai Trans Harbour Link Project
Quarterly Progress Report No. 12
1st January 2020 to 31st March 2020
Loan Agreement No. ID-P255 (Tranche–I)

ORGANIZATION INFORMATION

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

Details of JICA Loan

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

DOCUMENT VERIFICATION AND REVISION RECORD

PROJECT NAME	Mumbai Trans Harbour Link Project		
DOC NO.	12	DATE OF ISSUE	25/11/2020
DOC TITLE	Quarterly Progress Report No. 12		

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 Sundaram	Dr Robin Sham
R0	05/10/2017	Quarterly Progress Report No. 2 (Jul-Sep 17)	J Senthil	Dr T K Sundaram	Dr Robin Sham
R0	05/01/2018	Quarterly Progress Report No. 3 (Oct-Dec 17)	J Senthil	Dr T K Sundaram	Dr Robin Sham
R0	05/04/2018	Quarterly Progress Report No. 4 (Jan-Mar 18)	J Senthil	Dr T K Sundaram	Dr Robin Sham
R0	24/07/2018	Quarterly Progress Report No. 5 (Apr-Jun 18)	Prashant B	Dr T K Sundaram	Dr Robin Sham
R0	10/10/2018	Quarterly Progress Report No. 6 (Jul-Sep 18)	Prashant B	Dr T K Sundaram	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 Ghosh	Dr Robin Sham
R0	11/02/2020	Quarterly Progress Report No.11 (Oct-Dec 19)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
R0	25/11/2020	Quarterly Progress Report No.12 (Jan-Mar 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham

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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

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

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

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

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

Actual *(P/R, PCR)*

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

1.3 Rationale of the Project Design

- Timing, Scale, Technology of the Project:

Demand Analysis

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:

Table 1.3.1 Demand Projections Over the Period

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

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).

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

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

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

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

Traffic management System

14. Traffic Management System is a support system to Manage the traffic on MTHL safely and efficiently. The System consists of the information collection system including Closed-Circuit Television (CCTV), Emergency Call Box (ECB), Automatic Traffic Counter-Cum-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

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

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)	• 1 Interchange (Sewri) • Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder) • Viaduct Substructure (RC Concrete Structure) • Viaduct Foundation (Bored piles) • Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)	*(P/R and PCR)*
Package-2 Ch 10+380-18+187 (7.80 km)	• 1 Interchange (Shivaji Nagar) • Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder) • Viaduct Substructure (RC Concrete Structure) • Viaduct Foundation (Bored piles) • Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)	*(P/R and PCR)* Actual: *No View Barriers*
Package-3 Ch 18+187-21+800 (3.61 km)	• 2 Interchanges (State Highway-54, National Highway-4B) • Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder & Steel Truss Girder for Rail-over-Bridges (ROB) • Viaduct Substructure (RC Concrete Structure) • Viaduct Foundation (Bored piles) • Cutting Section (6-lane with Slope Protection) • Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)	*(P/R and PCR)* Actual: *No* Noise Barriers & *View Barriers*

Items	Original	Actual
Package-4 ITS (Intelligent Transport System)	• Administrative Buildings • Toll Booths (1 for main alignment and each on and off rumps for 3 interchanges) • 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)) • Highway Lighting (Whole sections Low-positioned lighting for some sections) • Electrical Powering System including HV/ LV Ring Network across the Bridge.	*(P/R and PCR)*
Consulting Services	• Tender Assistance • Construction Supervision • Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP).	*(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

Items	Original	Status *(P/R and PCR)* as on 31st March 2020
1) Completion of Land Acquisition and Resettlement	March 2019	June 2020
2) Consulting Services		
a) Selection of Consultant	May – December 2016	May – December 2016
b) Consultancy Works	December 2016 – September 2024	December 2016 – September 2024
3) Selection of Contractor		
Package-1, Package-2 & Package-3 (Civil)		
a) Pre-Qualification Process	May – December 2016	May – December 2016
b) Main Bidding	January – December 2017	January – December 2017
c) JICA's Concurrence of Contract	February-2018	February-2018
Package-4 (ITS)		
a) Pre-Qualification Process	January 2019 – May 2019	January 2020 – April 2020
b) Main Bidding	June 2019 – September 2020	May 2020 – September 2020
4) Civil Construction		
Package-1 and Package-2	March 2018 – September 2022	March 2018 – September 2022
Package-3	March 2018 – September 2021	March 2018 – September 2021
Package-4	October 2020 – September 2022	September 2020 – September 2022
5) Defect Liability Period		
Package-1, Package-2 and Package-4	October 2022 – September 2024	October 2022 – September 2024
Package-3	October 2021 – September 2023	October 2021 – September 2023
6) Commencement of Toll Collection	September -2022	September -2022
7) Selection of O&M Organization	October 2020 – September 2021	October 2021 – September 2022

Attachment 6, 7 & 8: Package wise construction schedules updated at the end of fourth quarter (January-March 2020).

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

(P/R and PCR)

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

2.3 Project Cost

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

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

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

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

Cost Breakdown	Foreign Currency Portion			Local Currency Portion			Total		
	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mil)	Others (Rs. mil)	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)
Package-1	5,618	5,618	-	17,446	17,446		32,653	32,653	
Package-2	5,417	5,417	-	12,299	12,299		23,427	23,427	
Package-3	72	72	-	3,185	3,185		4,950	4,950	
Package-4 (ITS)	-		-	-			-		
Package-5 (Geotechnical Investigation)	-			196		196	308		308
Dispute Boards (Package-1, 2, 3 & 4)	-			-			-		-
Price Escalation	-			4	4		6	6	-
Physical Contingency	-			-			-		-
Consulting Services	253	253		362	362		905	905	
Land Acquisition*	-			5,391		5,391	8,464		8,464
Administration Cost	-			2,268		2,268	3,561		3,561
GST	-			4,260		4,260	6,688		6,688
Import Tax	-			-			-		-
Interest during construction	-			-			-		-
Front End Fee	-			-			-		-
Total	**11,360**	**11,360**	**-**	**45,411**	**33,295**	**12,115**	**80,962**	**61,941**	**19,020**

(Note) 1. Exchange Rate: Rs.1 = JPY 1.57 for MMRDA Portion only
2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.
(b) Local Currency Portion: 4.13% p.a.
3. Physical Contingency: 10%
4. Base Year for Cost Estimation: December 2018
* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.

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

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

(All Figures are in JPY mil)

Cost Breakdown	Total	JICA Portion				Others (MMRDA Portion)
		Tranche I	Tranche II	Tranche III	Sub Total	
FY 2017	12,679	10,134	0	0	10,134	2,545
FY 2018	30,771	22,707	0	0	22,707	8,064
FY 2019	72,379	56,816	0	0	56,816	15,563
FY 2020	92,944	55,138	16,040	0	71,178	21,765
FY 2021	66,397	0	50,869	0	50,869	15,527
FY 2022	27,683	0	0	20,113	20,113	7,570
FY 2023	3,723	0	0	565	565	3,158
FY 2024	10,925	0	0	6,189	6,189	4,735
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 Breakdown	Total	JICA Portion				Others (MMRDA Portion)
		Tranche I	Tranche II	Tranche III	Sub Total	
FY 2017	13,738	9,232	-	-	9,232	4,506
FY 2018	26,813	21,695	-	-	21,695	5,118
FY 2019	25,050	15,654			15,654	9,396
FY 2020						
FY 2021						
FY 2022						
FY 2023						
FY 2024						
Total	**65,601**	**46,581**	**-**	**-**	**46,581**	**19,020**

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

2. Fiscal Year starting from 1st April and ending on 31st 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 Package	Selection Method		
	Original: *(P/M)*		**Actual:** *(P/R and PCR)*
Construction Works			
1	Package-1: 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	Package-2: 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	Package-3: 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	Package-4: 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	Package-5: To conduct the geotechnical investigation	Local Competitive Bidding Process	No Change
Consulting Services			
1	Consulting Service for Supervision	Short List Method (QCBS)	No Change

2.4.2.2 Performance

Consultant's Progress:

January 2020:

1 GC conducted Monthly Progress Review Meeting with the Package-1 Contractor on 16th January 2020 and with the Package-2 & the Package-3 Contractors on 17th January 2020 to review the status of Design and Physical progress of the project.

2 GC scrutinized & certified the following invoices claimed by the Contractors:
   i) Package-1: IPC-022 & IPC-023 (80% ad-hoc) and IPC-021 (detailed verification)
   ii) Package-2: IPC-018 (80% ad-hoc) and IPC-017 (detailed verification)
   iii) Package-3: IPC-013 (80% ad-hoc) and IPC-012 (detailed verification)

3 GC has prepared and submitted a total reimbursement claim of 7069.47 Million JPY to MMRDA / JICA in January 2020.

4 GC has deployed adequate number of staff at MTHL Project sites for the construction supervision works. Also, they are rigorously monitoring the quality, health & safety and environmental aspects of the project.

February 2020:

1 GC scrutinized & certified the following invoices claimed by the Contractors:
   i) Package-1: IPC-024 (80% ad-hoc) and IPC-022 & IPC-023 (detailed verification)
   ii) Package-2: IPC-019 & IPC-020 (80% ad-hoc) and IPC-018 (detailed verification)
   iii) Package-3: IPC-014 (80% ad-hoc) and IPC-013 (detailed verification)

2 GC has prepared and submitted a total reimbursement claim of 6192.32 Million JPY to MMRDA / JICA in February 2020.

3 GC has deployed adequate number of staff at MTHL Project sites for supervision of the construction works. Also, they are rigorously monitoring the quality, health & safety and environmental aspects of the project.

March 2020:

1 GC scrutinized & certified the following invoices claimed by the Contractors:
   i) Package-1: IPC-025 (80% ad-hoc) and IPC-024 (detailed verification) – Mobilization Advance Recovery done for INR and EURO.
   ii) Package-2: IPC-021, IPC-022 & IPC-023 (80% ad-hoc) and IPC-020 (detailed verification)
   iii) Package-3: IPC-015 (80% ad-hoc) and IPC-014 (detailed verification) – Mobilization Advance Recovery done for INR

2 3 GC has prepared and submitted a total reimbursement claim of 2255 Million JPY to MMRDA / JICA in March 2020.

3 Approximately 91% of the Technical Design Modules have been submitted by the Contractors across all the 3 Packages; out of which 77% of the modules have been reviewed and approved by GC.

4 From 23rd March 2020, countrywide lockdown implemented following the Corona Virus Pandemic situation across the globe forcing all the construction activities to be completely stopped.

Contractor's Progress:

Package-1 Physical Progress till 31st March 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 - Land/ Interchange Zone**					
3.1	Piles	524	No.	246	47%	
3.2	Pile Caps	158	No.	42	27%	
3.3	Piers	228	No.	77	34%	
3.4	Pier Caps	215	No.	0	0%	
4	**Permanent Bridge Works - Intertidal Zone**					
4.1	Piles	316	No.	202	64%	
4.2	Pile Caps	76	No.	40	53%	
4.3	Piers	148	No.	76	51%	
4.4	Pier Caps	148	No.	39	26%	
5	**Permanent Bridge Works - Marine Zone**					
5.1	Piles	399	No.	266	67%	
5.2	Pile Caps	79	No.	22	28%	
5.3	Piers	160	No.	4	3%	
5.4	Pier Caps	160	No.	2	1%	
6	**Permanent Bridge Works - Total**					
6.1	**Piles**	**1239**	**No.**	**714**	**58%**	
6.2	**Pile Caps**	**313**	**No.**	**104**	**33%**	
6.3	**Piers**	**536**	**No.**	**157**	**29%**	
6.4	**Pier Caps**	**523**	**No.**	**41**	**8%**	
7	**Precast Segments**					
7.1	**Segment Casting**	**6713**	**No.**	**408**	**6%**	
7.2	**Segment Erection**	**446**	**Spans**	**1**	**0.2%**	

Note: Please note that the scope of works has been little changed due to the design amendment.

Package-2 Physical Progress till 31st March 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	2677	99%	
2	**Test Pile**					
2.1	Test Piles	2	No.	2	100%	
3	**Permanent Bridge Works - Land/ Interchange Zone**					
3.1	Open Foundation	113	No.	58	51%	
3.3	Piers	119	No.	16	13%	
3.3	Pier Caps	104	No.	0	0%	
3.4	Portal Beams- Land	6	No.	0	0%	
3.5	Pier Head Segments -Land	42	No.	0	0%	
4	**Permanent Bridge Works - Intertidal & CRZ Zone**					
4.1	Piles	290	No.	251	87%	
4.2	Pile Caps	70	No.	32	46%	
4.3	Piers	70	No.	9	13%	
4.4	Pier Caps	18	No.	0	0%	
4.5	Pier Head Segments	52	No.	0	0%	
5	**Permanent Bridge Works - Marine Zone**					
5.1	Piles	514	No.	66	13%	
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.**	**58**	**51%**	
6.2	**Piles**	**804**	**No.**	**317**	**39%**	
6.3	**Pile Caps**	**192**	**No.**	**32**	**17%**	
6.4	**Piers**	**311**	**No.**	**25**	**8%**	
6.5	**Pier Caps**	**170**	**No.**	**0**	**0%**	
6.6	**Portal Beams**	**6**	**No.**	**0**	**0%**	
6.7	**Pier Head Segments**	**168**	**No.**	**0**	**0%**	
7	**Precast Segments**					
7.1	**Segment Casting**	**3142**	**No.**	**135**	**4.3%**	
7.2	**Segment Erection**	**271**	**Spans**	**0**	**0%**	

Note: Please note that the scope of works has been little changed due to the design amendment.

Package-3 Physical Progress till 31st March 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.	126	65%	
1.2	Piers	195	No.	63	32%	
1.3	Pier Caps	189	No.	21	11%	
1.4	Segment Casting	750	No.	78	9%	
1.5	Segment Erection	53	Span	0	0%	

Package-4 (ITS)

Pre-Qualification (PQ) process is on-going. Also, preparation of Bid Documents for ITS system is in progress. GC is resolving the queries raised by the prospective bidders.

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 January to March 2020	Cumulative
1	Total Man Hours Since Inception	3,803,304	14,677,548
2	Number of Man-Hours (Accident Free Man-Hours)	3,538,320	2,167,560
3	Number of Man-Days	475,413	1,834,693
4	Number of Reportable Fatal Accidents	1	2
5	Number of Non-Fatal Accidents	0	1
6	Number of Near Miss Incidents	16	44
7	Number of First Aid Cases	16	98
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	48,000	96,448
11	Number of Man-Days Lost	6,000	12,058
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	1	3
13	Number of Inspections done for Offices & Sites	46	243
14	Number of Training/ Induction done for Offices & Sites	51	210
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	10,673	1,702
16	Details of Safety Committee meetings	2	21
17	No. of toolbox talks	8,630	26,295
18	No. of critical excavations.	8	16
19	Pre-employment Medical check-up	1,925	13,990
20	No. of Safety Walk down	12	119
21	No. of Safety Inductions completed	4,304	13,990

Package-2 Safety Report

Sr. No	Description	From January to March 2020	Cumulative
1	Total Man Hours Since Inception	1,796,751	6,618,885
2	Number of Man-Hours (Accident Free Man-Hours)	1,253,901	1,51,470
3	Number of Man-Days	163,348	6,03,100
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	1	3
6	Number of Near Miss Incidents	7	33
7	Number of First Aid Cases	8	54
8	Number of Dangerous Occurrences	0	4
9	Number of Reportable Sick Cases	1	1
10	Number of Man-Hours Lost	88	924
11	Number of Man-Days Lost	8	97
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	1	3
13	Number of Inspections done for Offices & Sites	77	567
14	Number of Training/ Induction done for Offices & Sites	34	434
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	5,774	870
16	Details of Safety Committee meetings	2	22
17	No. of toolbox talks	488	3,078
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	1,595	6,389
20	No. of Safety Walk down	10	69
21	No. of Safety Inductions completed	1,622	6,411

Package-3 Safety Report

Sr. No	Description	From January to March 2020	Cumulative
1	Total Man Hours Since Inception	365,618	1,191,474
2	Number of Man-Hours (Accident Free Man-Hours)	365,618	1,191,474
3	Number of Man-Days	45,703	148,934
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	0
6	Number of Near Miss Incidents	2	7
7	Number of First Aid Cases	6	39
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	41	181
14	Number of Training/ Induction done for Offices & Sites	14	120
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	1,095	3678
16	Details of Safety Committee meetings	2	19
17	No. of toolbox talks	586	2,714
18	No. of critical excavations.	0	3
19	Pre-employment Medical check-up	693	2825
20	No. of Safety Walk down	11	76
21	No. of Safety Inductions completed	693	2825

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

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

CRZ Clearance, appropriate measures shall be taken, and necessary budget shall be secured by MMRDA.	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.

Table 3.2.2 Present Status of some Important Permits

Clearance Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status
Mangrove Cutting	Hon. Bombay High Court	MMRDA/ Contractor	Approval received from Hon. Bombay High Court on 28th November 2016	Mangrove cutting operation was completed with full compliance and as of now, no further follow up work is required.
Tree Cutting /Transplantation	Respective Tree Authorities	Contractor for respective Packages	-	**Pkg-1:** Tree Cutting/ Transplantation permission is awaited from the Tree Authority. **Pkg-2:** Tree Cutting/ Transplantation permission obtained & completed. **Pkg-3:** Forest Department has issued a concurrence on 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	

3.3 Environmental and Social Impacts

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

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
1. Establishment of Effective Environmental and Social Cell in PIU MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.	Cell is established by MMRDA (Annexure III, Organization chart)
2. Rehabilitation and Land Acquisition Issues **a. Affected Area and Population** Due to the Project, 1282 non-titleholders will be involuntary resettled, and 108.09 ha of land will be handed over by CIDCO.	**Sewri:** Involuntary resettlement in Sewri section has been further validated by Social Development Cell of MMRDA. Out of 297 Project Affected Households (PAHs) have given consents as follows: • 164 PAHs Kanjurmarg for residential • 25 PAHs Kanjurmarg for commercial • 7 PAHs (Satsangi Plot) Kanjurmarg for Commercial • 1 PAHs (commercial to residential) for Bhakti Park • 100 PAHs HDIL Kurla for residential **Navi Mumbai:** 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 **Attachment 2-5** 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 Detailed baseline survey will be undertaken by MMRDA in order to identify fishermen who are affected by the Project. Based on the result of the baseline survey, MMRDA will compensate them in accordance with compensation policy prior to the construction. Monitoring will be conducted by MMRDA with assistance of the Consultant to gasp the exact impact during construction and operation phase.	Updated **Attachments 2-8 and 2-10** are enclosed in the report.
d. Implementation Schedule The Implementation schedule for land acquisition, resettlement and rehabilitation is attached as per **Attachment 2-10.**	Updated **Attachment 2-10** is enclosed in the report.
e. Grievance Redressal Mechanism Grievance Redressal Committee ("GRC") set under MMRDA will deal with grievances raised by PAPs in Sewri and fishermen to be affected by the Project. Any grievances raised by PAPs whose land is acquired by CIDCO shall be resolved by CIDCO.	**Sewri:** FLGRC (Field Level Grievance Redressal Committee) and SLGRC (Senior Level Grievance Redressal Committee) were set as per the RAP and in operation. Compensation Committee has been constituted to address the issues of Compensation to Lease Holders at Sewri. **Fishermen:** GRC for resolving grievances of the fisherfolk was set up as per the compensation policy and is in operation.
f. Internal Monitoring Internal Monitoring of the Resettlement Action Plan (RAP) implementation will be conducted by MMRDA in accordance with the RAP with necessary assistance of the consultant. RAP Internal Monitoring Form **(Attachment 2-8)** will be submitted to JICA on a quarterly basis as a part of PSR during the RAP implementation.	Internal Monitoring updates are mentioned in **Attachment 2-8.**

Issue(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 **Attachment 2-10** 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	Updated Environmental Monitoring Plan with package wise updated cost is reported in **Attachment 2-3.** Environmental Monitoring Results during the construction phase are reported in **Attachment 2-4**.

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.	• MMRDA has entrusted the work of bird monitoring and implementation of Flamingos and birds related mitigation measures & bird monitoring program to Mangrove and Marine Biodiversity Foundation. • Rs. 31.92 Crore deposited to Mangrove foundation, Mumbai for periodical disbursement to BNHS.

3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

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

*1 Section on Sewri – Chirle
*2 Assumptions: average passengers of car and taxi (2.6 persons), bus (37.2 persons) based on JICA study. Number of passengers of LCV, HCV and MAV is assumed as 1 person each.
*3 Assumptions: the maximum capacity of respective vehicle (LCV: 1 ton, HCV and MAV: 15 tons) is used for estimation.

EIRR	**Original:** 15.4% Cost: Project cost (excluding Price Escalation, Tax and Duties and Administration cost) O&M cost, Land Acquisition Benefit: Travel Time cost and Vehicle Operation cost Project Life: 32 Years	**Actual:** *(PCR)* ____% Cost: Benefit: Project Life: **Attachment(s): Supporting data for computing EIRR**
FIRR	**Original:** 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. 12 is submitted for a period of 1st January to 31st March 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)

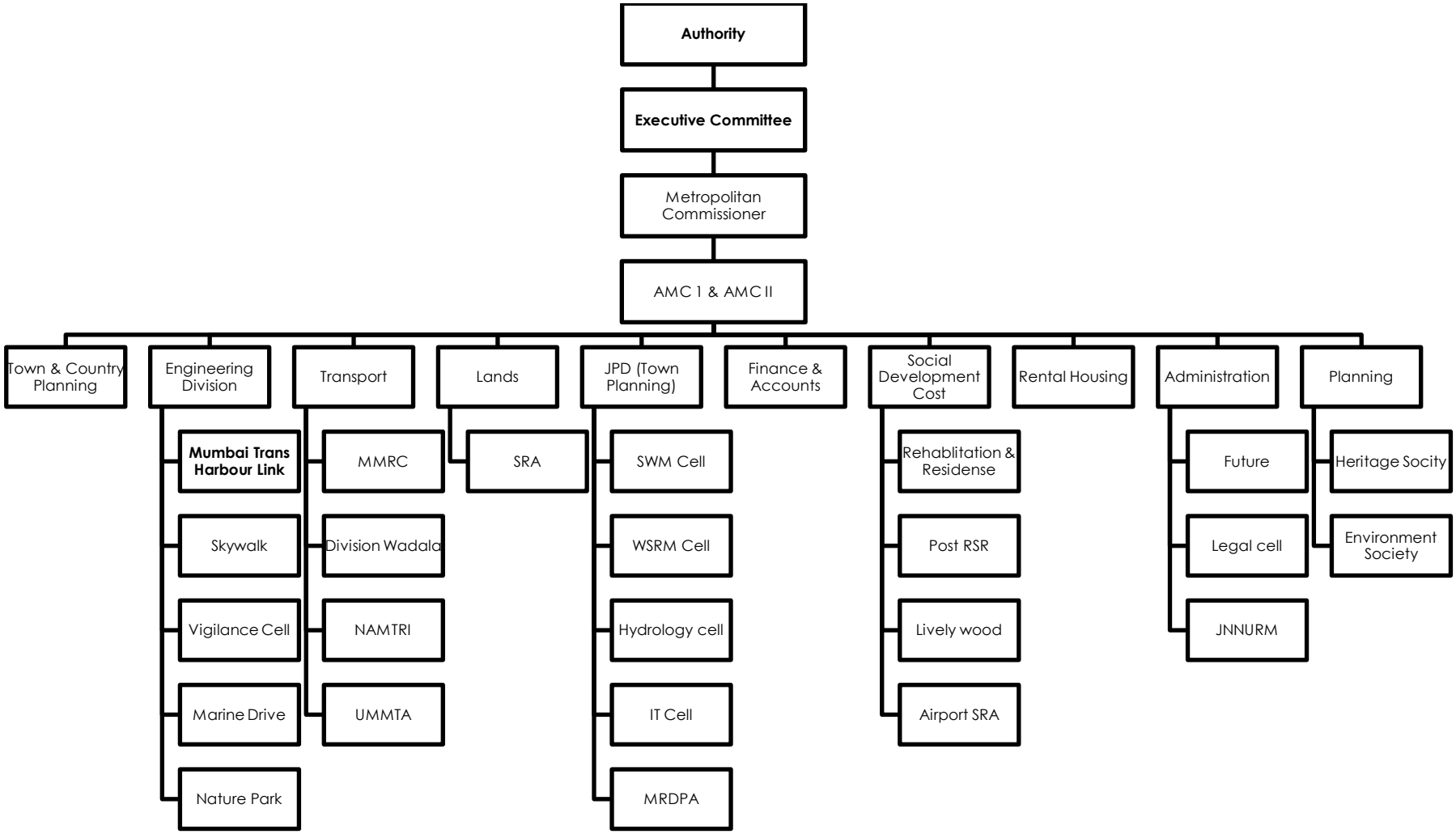
5.3 Lessons Learnt and Recommendations

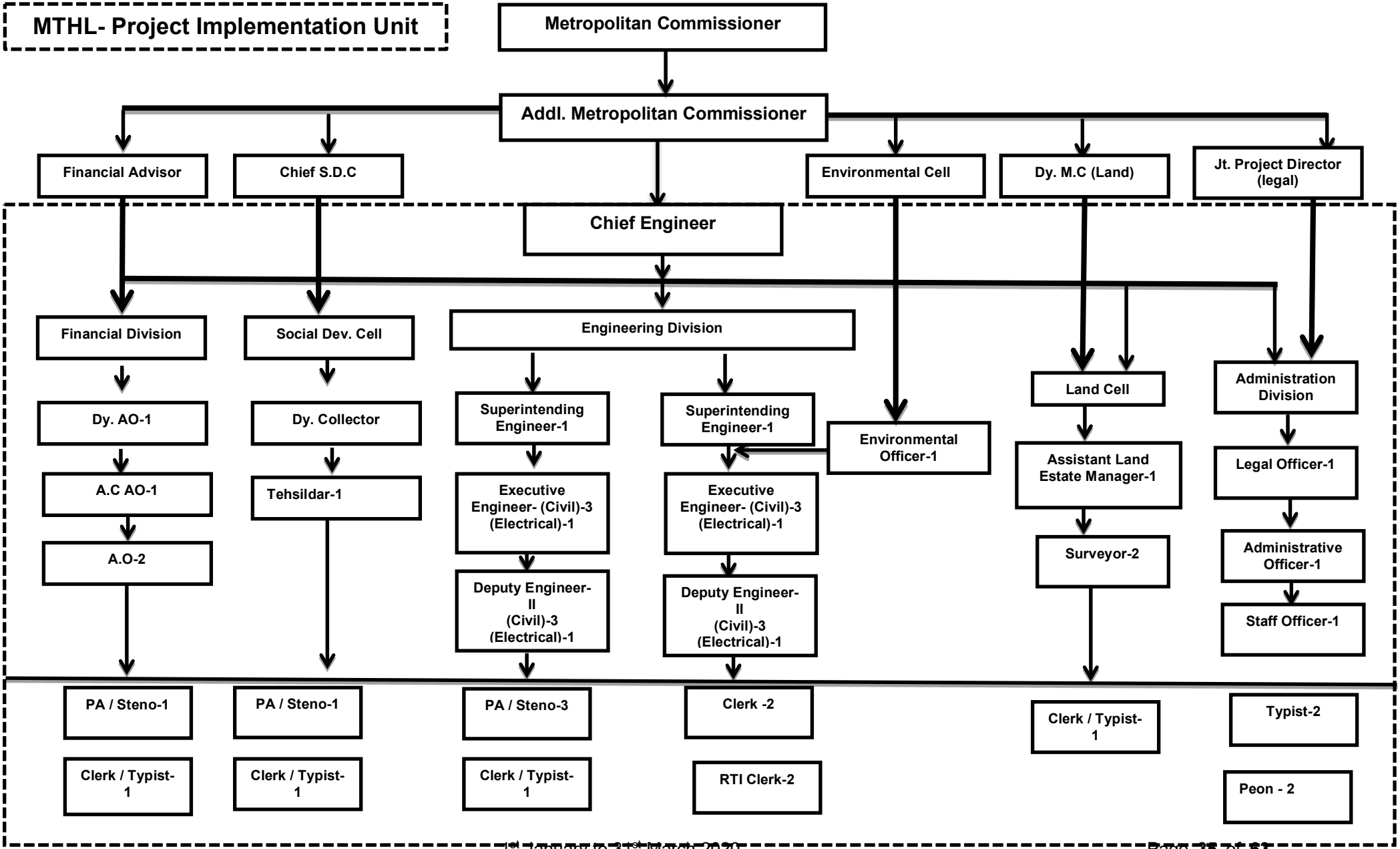
Please raise any lessons learned from the project experience, which might be valuable for the future JICA assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

(PCR)

Attachment 1- MMRDA & PIU Organization Chart

MMRDA Organization chart




MTHL- Project Implementation Unit
Metropolitan Commissioner
Addl. Metropolitan Commissioner
Financial Advisor
Chief S.D.C
Environmental Cell
Dy. M.C (Land)
Jt. Project Director (legal)
Chief Engineer
Financial Division
Social Dev. Cell
Engineering Division
Land Cell
Administration Division
Dy. AO-1
A.C AO-1
A.O-2
Dy. Collector
Tehsildar-1
Superintending Engineer-1
Executive Engineer- (Civil)-3 (Electrical)-1
Deputy Engineer-II (Civil)-3 (Electrical)-1
Superintending Engineer-1
Executive Engineer- (Civil)-3 (Electrical)-1
Deputy Engineer-II (Civil)-3 (Electrical)-1
Environmental Officer-1
Assistant Land Estate Manager-1
Surveyor-2
Legal Officer-1
Administrative Officer-1
Staff Officer-1
PA / Steno-1
Clerk / Typist-1
PA / Steno-1
Clerk / Typist-1
PA / Steno-3
Clerk / Typist-1
Clerk -2
RTI Clerk-2
Clerk / Typist-1
Typist-2
Peon - 2

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

Attachmemt 2-3

Updated Environmental Monitoring Plan with Packagewise Estimated Cost

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) – Ministry of Environment & Forest (MoEF)	Remarks
Pollution	1	Air pollution	SO_2, NO_2, PM_{10}, $PM_{2.5}$, O_3, CO, (6 Items)	National Ambient Air Quality Standards, 2009	1. Sewri & Sewri bay area for package I	Fortnightly at all locations except 2 locations each near Batching plants	1,800,000	15,000,000	1,800,000	742,500	17,542,500	National Ambient Air Quality Standards (NAAQS) by Central Pollution Control Board (CPCB)	P1 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						(Standard for 24hrs: Industrial and Residential/ Ecological Sensitive area)	P 2 contractor Monitoring plan has been designed as per EIA of 2015
					3. Gavhan & Chirle for package III	Fortnightly only for 3 months (jan-2019 to Mar-2019). Then quarterly monitoring as per MOEF and CPCB norms						· SO_2: 80 / 80µg/m^3	P3 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
												· NO_2: 80 / 80µg/m^3	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.
												· PM_{10}: 100 / 100µg/m^3	
												· $PM_{2.5}$: 60 / 60µg/m^3	
												· O_3: 180 / 180µg/m^3	
												· CO: 0.4 / 0.4mg/m^3	
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	IS / AWWA	1. Sewri & Sewri bay area for package I	Quarterly	810,000	2,400,000	810,000	0	3,210,000	Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)	Water Pollution not applicable for Pkg. 3
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						· pH : 6.5-9	
					3. Gavhan & Chirle for package III	Not applicable						· DO: 3 mg/l	
												· Turbidity: 30 NTU	
												· BOD: 5 mg/l	
												· O & G: 10 mg/l	
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	Volumetric	1. Sewri & Sewri bay area for package I	Daily	500,000	299,200,000	500,000	600,000	300,300,000		The cost of waste disposal for P1 includes C&D waste, Pile muck etc. from all areas like, interchange, intertidal and marine. The disposal location is at MCGM approved location Bhayandarpada, Thane.

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) – Ministry of Environment & Forest (MoEF)	Remarks
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						**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
					3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.							
	4 and 8	Soil Contamination/ sedimentation	Heavy Metals & Oil & Grease (5-10 items shall be selected from Soil pollution standards)	IS / Methods Manual Soil Testing in India by Department of Agriculture and Cooperation, January 2011	1. Sewri & Sewri bay area for package I	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)	
					2. Nhava temporary bridge & casting yard in Gavhan for package II							· Cd: 0.01mg/l	
					3. Gavhan & Chirle for package III	*If any spillage/ leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only						· 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	1. Sewri & Sewri bay area for package I	Fortnightly	150,000	54,000	150,000	369,000	573,000	**-Construction Noise; 85dB(A)**	
					2. Nhava temporary bridge & casting yard in Gavhan for package II	2 Times / Year						**-Ambient Noise Standards in India (dB (A) $_{Leq}$)**	
					3. Gavhan & Chirle for package III	Fortnightly						1.Industrial Area Day Time: 75 (6-22hr) Night Time: 70 (22-6hr) 2.Commercial Area: Day Time: 65 (6-22hr) Night Time: 55 (22-6hr) 3.Residential Area: Day Time: 55 (6-22hr) Night Time: 45 (22-6hr) 4.Silence Zone Day Time: 50 (6-22hr) Night Time: 40 (22-6hr)	
			Vibration (dB L10 or mm/sec)		1 Location Gavan area for package III	Half yearly	75,000	0	75,000	400,000	475,000	**- 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/		Along MTHL alignment and mangrove replant area for package II	4 Times / Year						Significant impacts are not caused by the project	
			transplanting area	1-1. Fauna-Flora	Not applicable for Package III								
			3.Monitoring of Mangrove Plantation area appointed by MoEF	Line-Point census and record number and appeared species								**Note)**	

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_2)	1-2: Mangrove density and community survey								**Detailed monitoring plan will be setup during basic design stage**	
				1-3: Benthos Survey									
				2-1: Cutting trees confirmation								Standard for Soil; Supplemental EIA Table 6.1.15	
				3-1: Mangrove survey in the replanted area								Standard for Ecological Parameter:	
												· Netprimary Productivity	
												<1,500 mgC/m3/day at surface	
												· Chlorophyll-a	
												<4mg/m3	
												· Phosphate: 0.1-90µg/l	
												· Nitrate: 1.0-500µg/l	
												· Nitrite: <125µg/l	
												· Particulate Organic Carbon: 10-100mg/m^3	
												· SiO2: 10-5,000µg/l	
	11	Hydrology	Flooding situation	Flood level measurement during high precipitation periods	Not applicable for Package I		350,000	0	350,000	0	350,000	Project activities and structures does not cause flooding and impacts on tidal conditions	Not applicable for Pkg. 1 & 3
					2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year							
					Not applicable for Package III								
	12	Topography and Geology	Conditions in embankment area	Visual survey about Stability of embankment	Not applicable for Package I		115,000	0	115,000	0	115,000	Embankment shall be stabilized without any landslide and cracks	Not applicable for Pkg. 1 & 3
					Interchange in Shivaji Nagar for Package II	4 Times / Year							
					Not applicable for Package								
Social environment	13	Local economy such as employment and livelihood			Affected area		As per Actuals						
	14	Local conflict of interests	Construction worker's township	Confirmation of workers list from contractor	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	2 Times / Year	125,000	0	125,000	0	125,000	Employment opportunity shall be provided fairly	
	15	Infectious diseases such as HIV/AIDS	Number of infected patient	Confirmation of health check list from contractor	2 Locations	4 times / year x 4.5 years	525,000	0	525,000	0	525,000	Infection disease rate shall not be caused by the project	
	16	Labour Environment	Construction worker's condition	Confirmation of safety devices and conditions via interviews	2 Location (camp site in Sewri and Shivaji Nagar) for Package II	2 times / year	500,000	0	500,000	0	500,000	"Building And Other Construction Workers (Regulation of 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

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - January 2020 to March 2020

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.

Area	No.	Item	Parameter	Location	Frequency a year	Item and Stanadard	Monitoring Result				Remark - reasons why the data is exceeding standard - counter measures when the data is exceeding
							Location 1- Pkg 1	**Location 2- Pkg-2**	**Location 3- Pkg 3**	**Location 4**	
Pollution	1	Air pollution	SO_2, NO_2, PM_{10}, $PM_{2.5}$	1. Sewri & Sewri bay area for package I	Quarterly monitoring ia conducted at all locations.	**National Ambient Air Quality Standards (NAAQS)**	**Sewri**	**Shivaji Nagar**	**Chirle**		
				2. Nhava temporary bridge & casting yard in	4 Times / Year	**(Standard for 24hrs: Industrial and Residential)**					
				3. Gavhan & Chirle for package III	From march -2019 onwards monitoring is conducted quarterly as per MOEF and CPCB norms	1. SO_2: 80µg/m^3	BDL (DL =5)	BDL	16		BDL- Below Detectable Limit
						2. NO_2: 80µg/m^3	21	16	39		
						3. PM_{10}: 100µg/m^3	175	87	86		
						4. $PM_{2.5}$: 60µg/m^3	55	37	41		
						5.CO:02mg/m3	1.3	1.3	0.66		
						6.VOCs	1.3	1.8	2.9		Benzene is analysed in ambient air
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	1. Sewri & Sewri bay area for package I	Quarterly	**Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)**	**Zone I**	**Zone II**	**Zone III**		
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	1. pH : 6.5-9	7.6	7.9			
				3. Gavhan & Chirle for package III	Not applicable	2. DO: 3 mg/l	4.7	5.5			
						3. Turbidity: 30 NTU	11.7	11.8	Not applicable		NOT applicable For MTHL Package-03
						4. BOD: 5 mg/l	BDL (DL =2)	BDL	Not applicable		
						5. O & G: 10 mg/l	BDL (DL =2)	BDL	Not applicable		
						6.COD	21	32	Not applicable		
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	1. Sewri & Sewri bay area for package I	Daily	**Municipal Soild Waste Management Rules, 2016**	**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	27105.51 m3	App. 3000 CuM Collected in jumbo bags and Disposed off in EBB (named by MbPT)Location and Casting Yard	NIL		
				3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.	Generated cutting tree (ha) total	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting so far NIL	Not Applicable	Permission from both CIDCO and Forest dept. Tree cutting so far is nil.		
						Generated domestic waste (t/month) total	3.58 T for the quarter	3 T per quarter is disposed by CIDCO	1.5 T quarter is disposed through Gram panchayat.		
						Confirmation of adequate disposal (visualt survey)					
	4	Soil Contamination/sedimentation	Heavy Metals & Oil & Grease	1. Sewri & Sewri bay area for package I	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	**Soil Pollution Standard in India (MOEF)**		Testing Done on september 2019 and Reports submitted to GC.	Not applicable		Frequency is Once in a year.If any minor or major incident has not occure at storage area.
				2. Nhava temporary bridge & casting yard in Gavhan for package II		1. Cadmium: 0.01mg/l					
				3. Gavhan & Chirle for package III	*If any spillage/ leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only	2. total cyanide : not detected	Refer Remark				Muck analysis for package-I was conducted in April 2019, and report is already submitted to GC.
						3. organic phosphorus: not detected					
						4. lead: 0.01mg/l			Not applicable for package-3		
						5. chromium (VI): 0.05mg/l					
						6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)					
						7. total mercury: 0.005mg/l					
						8. alkyl mercury: not detected					
						9. PCBs: not detected					
						10. copper: 125mg/kg (only paddy field soil)					
						11. dichloromethane: 0.02mg/l					
						12. carbon tetrachloride: 0.002mg/l					
						13. 1,2-dichloroethane: 0.004mg/l					
						14. 1,1-dichloroethylene: 0.02mg/l					

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

The Project for Construction of Mumbai Trans Harbour Link

Reporting Form of Environmental Monitoring during Construction

Attachment 2-4

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - January 2020 to March 2020

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.

					15. cis-1,2-dichloroethylene: 0.04mg/l						
					16. 1,1,1-trichloroethane: 1mg/l						
					17. 1,1,2-trichloroethane: 0.006 mg/l						
					18. trichloroethylene: 0.03mg/l						
					19. tetrachloroethylene: 0.01mg/l						
					20. 1,3-dichloropropene: 0.002mg/l						
					21. thiuram: 0.006mg/l						
					22. simazine: 0.003mg/l						
					23. thiobencarb: 0.02mg/l						
					24. benzene: 0.01mg/l						
					25. selenium: 0.01mg/l						
	5	Noise and vibration	Ambient and road side noise (dB(A)LAeq)	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)	65.2	72.8	66.8		
				3. Gavhan & Chirle for package III	Fortnightly	Night time: 22-6 hr (continious) dB(A)	59.1	65.5	65.3		
						(only sea section)					
						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)	Not Applicable	Not Applicable	Not Applicable		
						Night Time: 70 (22-6hr)	Not Applicable	Not Applicable	Not Applicable		
						2.Commercial Area:					
						Day Time: 65 (6-22hr)	Not Applicable	Not Applicable	Not Applicable		
						Night Time: 55 (22-6hr)	Not Applicable	Not Applicable	Not Applicable		
			Vibration (dB) shall be converted from mm/s to dB	1 Location Gavan area for package III	Half yearly	**Construction area Standard 75 dB daytime (Japan 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)	Refer Remark	Not Applicable	Not applicable		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)
						Night time: 22-6 hr (continious)					
						Note (standard values in Not construction area)					
						1. Commercial /Industrial Area		Not Applicable			
						Day Time: 70 (7-20hr)			1.6		
						Night Time: 65 (20-7hr)			0.2		
			1.Monitoring of mudflat conditions including fauna-flora 2. Monitoring of Cutting Tree and replantation/transplation	Along MTHL alignment and mangrove replant area for Package I	Quarterly during the construction Period	**Standard is not existing, but quantity and quality should not be worsen**	**Sewri side (ST500-5500)**	**Sea Section (ST5500-16000)**	**Shivaji Nagar side (app. ST16000-19000)**	**Mangrove Replantation agency appointed by State Government**	
				Along MTHL alignment and mangrove replant area for package II	4 Times / Year	1-1. Fauna-Flora (number of species and quantity			N/A	N/A	
						(1) Number of species of bird	9715 (Jan-Feb 2020) (refer remark)	7142(Jan-Feb 2020) (refer remark)			BNHS report (October 2019- March 2020)
						(2) Number of species of fish					
						(3) Estimated number of Flamingo	287 (Greater Flamingo), 8841 (Lesser Flamingo) (refer remark)	1500 (Greater Flamingo), 25 (Lesser Flamingo) (refer remark)			
						1-2: Mangrove density and community survey					

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

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

Attachment 2-4

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

Monitoring Period - January 2020 to March 2020

1. Environmental Monitoring during Construction for 4.5 years

Natural Environment	6	Protected Area	area 3.Monitoring of Mangrove Plantation area appointed by MoEF 4. Monitoring of sedimentation soil and ecological parameter (25 items on EIA main text Table 6.1.15 for soil and 7 items such as 1)Net primary productivity, 2)Chlorophyll-a, 3)Phosphate, 4)Nitrate, 5)Nitrite, 6)Particulate Organic Carbon, 7) SiO2)			(1) Number of species of mangorve					
						(2) Density of mangrove (xx trees/10m x 10m)					
						1-3: Benthos Survey					
						(1) Number of species and quantity by species	503 Species and 289 No/m2 (refer remark)				Environmental monitoring reports (Pkg-1)
						2-1: Cutting tree confirmation	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting NIL	All the tree cutting and mangrove cutting had been carried Out as per approval received from GC and MMRDA and job was completed in 2018 itself and after that no trees and mangroves have been cut till date	Nil		
						(1) Number of cutting tree and species	Nil				
						3-1: Mangrove survey in the replant area			Nil		
						(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	600 (refer remark)				Environmental monitoring reports (Pkg-1)
						(2) Chlorophyll-a: <4mg/m3	4.4 (refer remark)				Environmental monitoring reports (Pkg-1)
						(3) Phosphate: 0.1-90µg/l	278 (refer remark)				Environmental monitoring reports (Pkg-1)
						(4) Nitrate: 1.0-500µg/l	740 (refer remark)				Environmental monitoring reports (Pkg-1)
						(5) Nitrite: <125µg/l					
						(6) Particulate Organic Carbon: 10-100mg/m^3	Done as a part of Soil analysis once in a year				
		Ecosystem				(7) SiO2: 10-5,000µg/l	6561				
	7	Hydrology	Flooding situation	Not applicable for Package I		**Criteria for evaluation** **Project activities and structures does not cause flooding and impacts on tidal conditions**	**Sewri**	**Shivaji Nagar**	**Chirle**		
				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							
	8	Topography and Geology	Conditions in embankment area	2 Locations (1. Embankment of Inter Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle)	4 times / year x 4.5 years	**Criteria for evaluation** **Embankment shall be stabilized without any landslide and cracks**	**Shivaji Nagar**	**Chilre**	**Chirle**		
						Monitoring of embankment	NA	NA	NA		
	9	Local conflict of interests	Construction worker's township	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	**Criteria for evaluation** **Employment opportunity shall be provided fairly**	**Sewri Camp Site**	**Shivaji Nagar Camp Site**	**Chirle**		Data from the log book and attendence register of respective Packages
						Number of hired workers by community	360 (refer remark)	125-150 (refer remark)	Skilled labours; 270 (from outside) (refer remark)		
	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	**Criteria for evaluation** **Infection disease rate shall not be caused by the project**	**Sewri Camp Site**	**Shivaji Nagar Camp Site**	**Chirle**		
						Confirmation of health check record and inspect project site	Doctors conduct regular health checkup of all workers at site.	Doctors conduct regular health checkup of all workers at site.	Doctors conduct regular health checkup of all workers at site.		
	11	Labour Environment	Construction worker's condi	2 Locations (major camp site in Sewri and Shivaji Nagar)	2 times / year x 4.5 years	**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**		
						Site Visual Inspection	All provisions as per BOCW	Conforming with BOCW Act 1996	Conforming with BOCW Act 1996 as per IM -26A checklist		
Other	12	Accident	Number of accidents	2 Locations (major camp site in Sewri and Shivaji Nagar)	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**		
						Number of recorded accident	2	NIL	NIL		

MTHL Land Acquisition Status (Attachment 2-6):

Total land required on Navi Mumbai side- 108.09 ha
Land in possession in MMRDA – 106.5 ha
Balance land acquisition- 1.59 ha

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

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

***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:	Progress Status Report (PSR) of 1st quarter of 2020
b.	Date of Preparing This form	31-03-2020
c.	Person Preparing This form	Name: Robin Sham Position: Engineer and Team Leader Department/Organizations: General Consultants

2. Scale of Impact

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

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

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

2.2 Structures

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

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

2.4 Land Acquisition / Transfer

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

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						

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

SUMMARY OF FISHER FOLKS OF MTHL PROJECT (Influence Zone of 23 villages) Up to 31st March 2020.							
Sr. No.	**Village Name**	**Total number of forms Received**	**Total approved eligible family units**				**No. of Rejected Applications**
			C1	**C2**	**C3**	**Total**	
1	**2**	**3**	**6**	**7**	**8**	**10**	**11**
1	Bamandongri	273	1	0	25	**26**	230
2	Belapur	110	0	5	14	**19**	86
3	Belpada	1185	0	7	473	**480**	476
4	Diwale	455	10	236	12	**258**	132
5	Ganeshpuri	276	0	33	32	**65**	164
6	Gavhan	2167	0	14	1305	**1319**	575
7	Jasai	926	0	0	18	**18**	908
8	Jawale	51	0	1	0	**1**	50
9	Kombadbhuja	413	1	24	126	**151**	219
10	Kopar	994	2	5	230	**237**	551
11	Mahul	1198	129	170	600	**899**	190
12	Moha	475	22	34	134	**190**	212
13	Mora	466	0	75	213	**288**	175
14	Morave	539	14	17	79	**110**	301
15	Nhava	1646	0	32	304	**336**	1009
16	Sarsole	266	0	30	83	**113**	135
17	Sewri	305	0	1	70	**71**	234
18	Shelghar	241	0	0	15	**15**	214
19	Shivajinagar	200	1	4	61	**66**	133
20	Trombay	1253	49	259	783	**1091**	121
21	Ulwa	218	1	4	12	**17**	173
22	Uran & Hanuman Koliwada	685	0	29	554	**583**	87
23	Vahal	411	0	2	1	**3**	367
Total		**14753**	**230**	**982**	**5144**	**6356**	**6742**

	Total applications			14753
	Duplicate/Repeated Application			1655
	Net Applications			13098
	Approved applications			6356
	Rejected application			6742

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

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	Compensation Paid		
Nil	Nil	Nil	Nil	Nil

Implementation Schedule for Fisher-folks Compensation & Land Acquisition in Navi Mumbai

A. Implementation Schedule for Fisher-folks Compensation: -

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
1	Approval of fisher-folks' compensation Policy	Fisher-folks Compensation Committee (FCC)	08-10-2015	23-12-2015
2	Approval by MMRDA	MMRDA	10-12-2015	23-12-2015
3	Submission to JICA	MMRDA	--	04-01-2016
4	Detailed list of PAP and compensation plan	1. Detailed list of Fisher-folk PAP upto list 1 (1165 Nos) & 2 (1399 Nos) are finalized by the Fisheries Department. 2. From 2018, FEVC committee is the approval authority of PAF and approved C1- 230 Nos; C2-440 Nos and C3- 2580 Nos are approved.	23-12-2015	**Up to 31.03.2020** 1. Total up to date applications scrutinized = 13098 Nos. 2. Eligible = 6356 nos 3. Rejected = 6742 nos
5	Validation of compensation plan	Fisher-folks Compensation Committee (FCC)	23-12-2015	1. Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk from Sewri, Mahul & Trombay (Mumbai side) – 12th September 2017 and 20th November 2018 for C-2 & C3 Category only.

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

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

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

Implementation Schedule for SIA (Sewri Section)

Task No.	Task Designation	Start Date	Completion / Forecast Date
1	**Preparation of Final SIA**		
1.1	MMRDA Approval	October 2015	January 2016
1.2	JICA Approval	November 2015	January 2016
1.3	Posting of project Information on MMRDA		
1.4	Translation and disclosure of entitlement policy in local language to all PAP's	December 2015	January 2016
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 End Term	 May 2019 November 2019	 June 2020 March 2021

*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 Concurrence

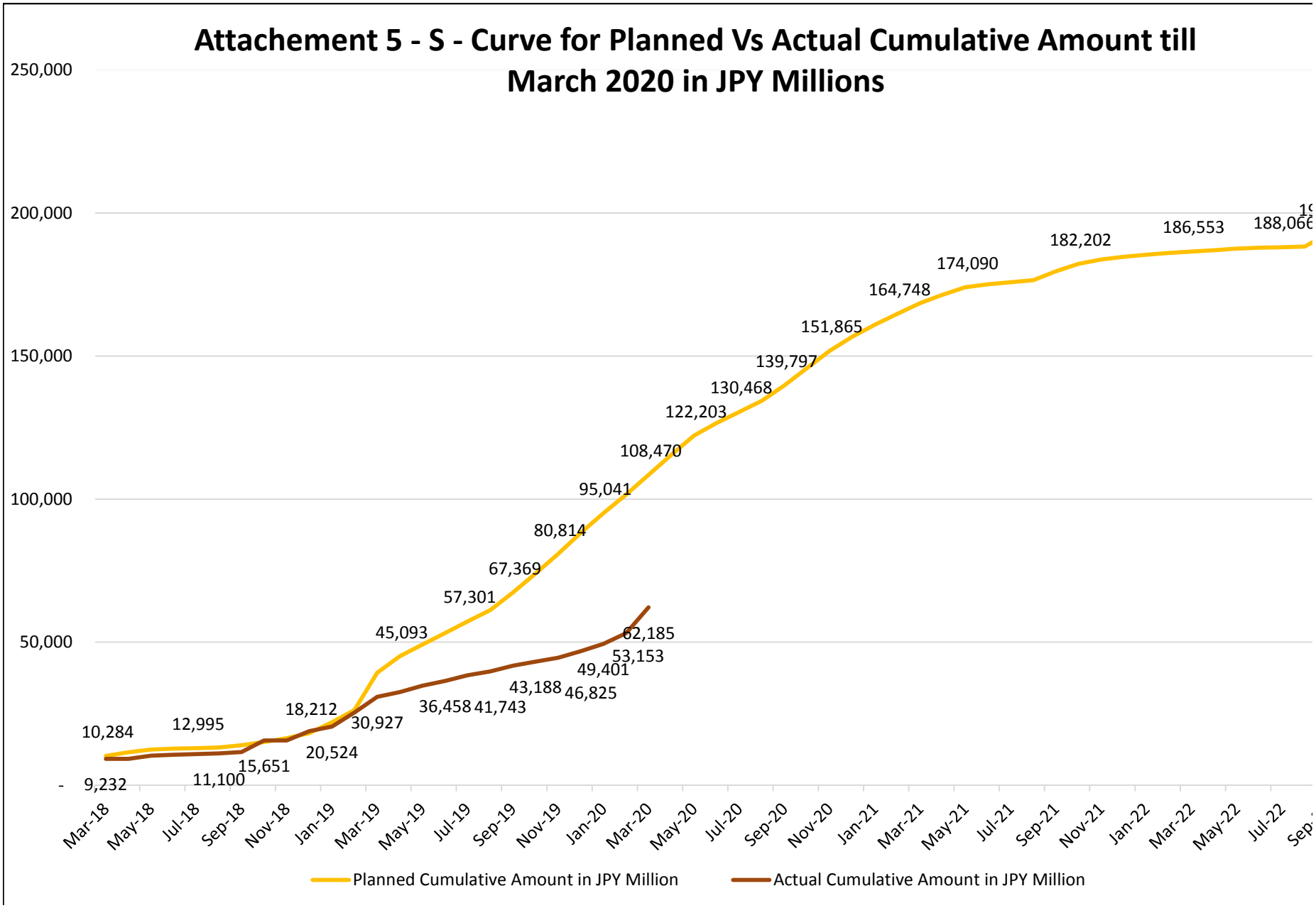
Sl. No.	Brief description	Procurement procedure	Bid Cost		JICA's Concurrence on					
			Local Currency (Cr Rs.)	Total (Cr Rs)	PQ Documents	PQ Evaluation	Bid Documents	Technical Evaluation	Financial Evaluation	Contract
1.	Package-1 (CH 0+000 km to CH10+380 km)	ICB with PQ (2P)	7637.30	7637.30	JICA's Concurrence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

Attachment 4- Project Procurement and Financial Status till 31st March 2020

PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 31st March 2020

Type	Contract	Awarded or Estimated Value (in Rs. Crore)	Current Status	Contractors	Project Commencement Date	Stipulated Project Completion Date	% of Overall Project completion (Design/ Procurement/ Construction) up to 25th March 2020	% of Overall Financial Progress ((Including Mobilization Advance & Price Adjustment) till 31st March 2020
CIVIL	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	March 2018	Sep 2022	25.59%	34.54%
	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO-TPL JV	March 2018	Sep 2022	19.05%	35.20%
	Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	March 2018	Sep 2021	27.38%	43.45%
	Package-4 Intelligent Transport System	181.49 (Estimated)	Design Stage	--	Jul 2020 (Estimated)	Sep 2022	NA	NA

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


Attachement 5 - S - Curve for Planned Vs Actual Cumulative Amount till March 2020 in JPY Millions
250,000
200,000
150,000
100,000
50,000
-
9,232
10,284
11,100
12,995
15,651
18,212
20,524
30,927
45,093
57,301
67,369
80,814
95,041
108,470
122,203
130,468
139,797
151,865
164,748
174,090
182,202
186,553
188,066
36,458
41,743
43,188
46,825
49,401
53,153
62,185
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
Jul-20
Sep-20
Nov-20
Jan-21
Mar-21
May-21
Jul-21
Sep-21
Nov-21
Jan-22
Mar-22
May-22
Jul-22
Planned Cumulative Amount in JPY Million
Actual Cumulative Amount in JPY Million

Attachment 6- Package-1's Construction Programme Updated as on 25th March 2020

L&T - IHI

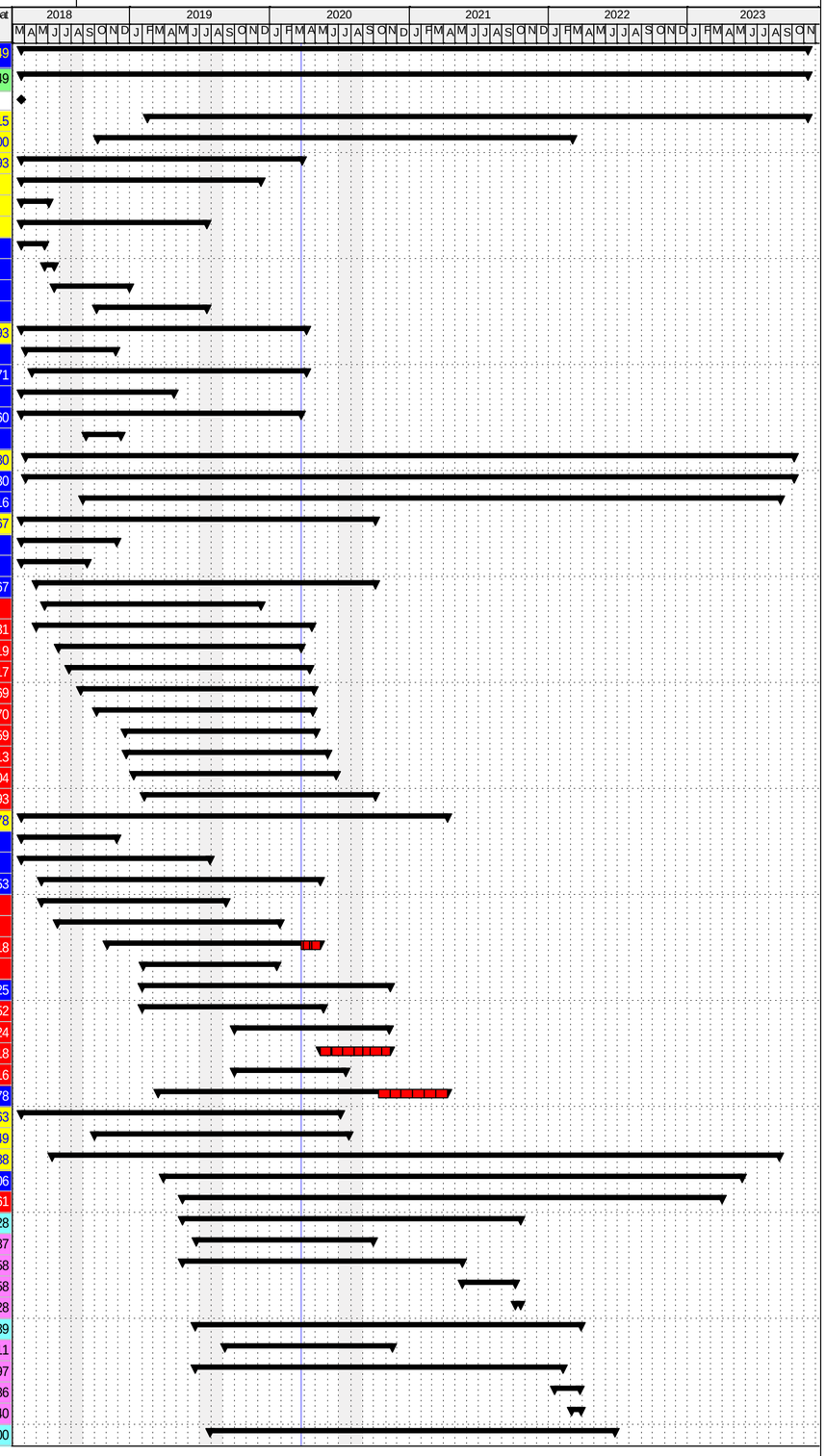
MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR MARCH 2020

MMRDA

AECOM | PADECO | dar al-handasah | TYLIN INTERNATIONAL

General Consultant for Mumbai Trans Harbour Link Project

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Original Duration	Start	Finish	Schedule % Complete	Performance % Complete	Variance - BL1 Start Date	Variance - BL1 Finish Date	Total Float
MPR24	MTHL P1 - Mar'20 Month Progress	1062	23-Mar-18	22-Sep-22	1445	23-Mar-18 A	10-Nov-23	42.96%	25.59%	0	-348	-349
MPR24.1	Mumbai Trans Harbour Link - Package 1	1062	23-Mar-18	22-Sep-22	1445	23-Mar-18 A	10-Nov-23	42.96%	25.59%	0	-348	-349
M10000	Commencement Date	0	23-Mar-18		0	23-Mar-18 A		100%	100%	0	0	
MPR24.1.1	Key Milestones	1464	19-Sep-18	22-Sep-22	1693	15-Feb-19 A	10-Nov-23	0%	0%	-148	-414	-415
MPR24.1.2	Contractual Interface	1243	09-Oct-18	05-Mar-22	1243	09-Oct-18 A	05-Mar-22	0%	0%	0	0	200
MPR24.1.3	Access to Site	165	23-Mar-18	03-Sep-18	165	23-Mar-18 A	26-Mar-20	0%	0%	0	-570	-293
MPR24.1.4	Document Submittals	180	23-Mar-18	18-Sep-18	180	23-Mar-18 A	09-Dec-19 A	0%	0%	0	-446	
MPR24.1.5	Survey	73	23-Mar-18	03-Jun-18	73	23-Mar-18 A	03-Jun-18 A	0%	0%	0	0	
MPR24.1.6	Geotechnical Investigation	165	23-Mar-18	03-Sep-18	165	23-Mar-18 A	23-Jul-19 A	0%	0%	0	-322	
MPR24.1.6.1	Phase 1	60	23-Mar-18	21-May-18	60	23-Mar-18 A	21-May-18 A	0%	0%	0	0	
MPR24.1.6.2	Phase 2	25	22-May-18	15-Jun-18	25	22-May-18 A	15-Jun-18 A	0%	0%	0	0	
MPR24.1.6.3	Phase 3	50	16-Jun-18	04-Aug-18	50	16-Jun-18 A	30-Dec-18 A	0%	0%	0	-147	
MPR24.1.6.4	Phase 4	45	21-Jul-18	03-Sep-18	45	05-Oct-18 A	23-Jul-19 A	0%	0%	-76	-322	
MPR24.1.7	Infrasturcture Facilties	188	23-Mar-18	05-Feb-19	376	23-Mar-18 A	07-Apr-20	0%	0%	0	-280	593
MPR24.1.7.1	Project Site Office Construction (Contractor + Employer + (	120	04-Apr-18	27-Nov-18	120	04-Apr-18 A	25-Nov-18 A	0%	0%	0	2	
MPR24.1.7.2	Casting Yard	164	20-Apr-18	05-Feb-19	355	20-Apr-18 A	07-Apr-20	0%	0%	0	-280	-171
MPR24.1.7.3	Fabrication Yard	133	23-Mar-18	30-Nov-18	133	23-Mar-18 A	26-Apr-19 A	0%	0%	0	-122	
MPR24.1.7.4	Rebar Yard	133	23-Mar-18	30-Nov-18	376	23-Mar-18 A	26-Mar-20	0%	0%	0	-324	-160
MPR24.1.7.5	Batching Plant Installation - CP30 & CP60	164	20-Apr-18	05-Feb-19	164	08-Sep-18 A	08-Dec-18 A	0%	0%	-47	49	
MPR24.1.8	Procurement Plan	1618	04-Apr-18	07-Sep-22	2088	04-Apr-18 A	06-Oct-23	0%	0%	0	-394	-380
MPR24.1.8.1	Plant & Machinery Deployment Plan	1618	04-Apr-18	07-Sep-22	2088	04-Apr-18 A	06-Oct-23	0%	0%	0	-394	-380
MPR24.1.8.4	Bulk Material Procurement Plan	1412	01-Sep-18	13-Jul-22	1679	31-Aug-18 A	01-Sep-23	0%	0%	0	-415	-416
MPR24.1.9	Design & Engineering (Civil)	302	23-Mar-18	21-Sep-19	525	23-Mar-18 A	05-Oct-20	0%	0%	0	-238	-167
MPR24.1.9.1	Initial Design (General & Preliminary Design, DBR)	79	23-Mar-18	09-Jun-18	79	23-Mar-18 A	29-Nov-18 A	0%	0%	0	-172	
MPR24.1.9.2	Finalization of Alignment	88	23-Mar-18	18-Jun-18	88	23-Mar-18 A	10-Sep-18 A	0%	0%	0	-83	
MPR24.1.9.3	Detailed Design and Construction Design	269	01-May-18	21-Sep-19	525	01-May-18 A	05-Oct-20	0%	0%	0	-238	-167
MPR24.1.9.3.1	GIR	133	22-May-18	01-Oct-18	193	22-May-18 A	09-Dec-19 A	0%	0%	0	-433	
MPR24.1.9.3.2	Test Pile	113	01-May-18	15-Dec-18	468	01-May-18 A	22-Apr-20	0%	0%	0	-335	-231
MPR24.1.9.3.3	Design Phase -1 (Accelerated Design of Initial Items)	137	19-Jun-18	02-Nov-18	137	27-Jun-18 A	25-Mar-20	0%	0%	-8	-509	-419
MPR24.1.9.3.4	Design Phase -2 (Accelerated Design of Initial Items)	163	04-Jul-18	13-Dec-18	163	26-Jul-18 A	15-Apr-20	0%	0%	-22	-488	-317
MPR24.1.9.3.5	Design Phase -3	221	19-Jun-18	25-Jan-19	144	25-Aug-18 A	28-Apr-20	0%	0%	-67	-458	-369
MPR24.1.9.3.6	Design Phase -4	220	07-Jul-18	11-Feb-19	220	05-Oct-18 A	24-Apr-20	0%	0%	-90	-438	-370
MPR24.1.9.3.7	Design Phase -5	242	07-Jul-18	05-Mar-19	579	19-Dec-18 A	01-May-20	0%	0%	-165	-422	-259
MPR24.1.9.3.8	Design Phase -6	221	26-Aug-18	03-Apr-19	799	24-Dec-18 A	02-Jun-20	0%	0%	-120	-425	-413
MPR24.1.9.3.9	Design Phase -7	272	26-Aug-18	24-May-19	806	11-Jan-19 A	25-Jun-20	0%	0%	-138	-398	-204
MPR24.1.9.3.10	Design Phase -8	355	02-Oct-18	21-Sep-19	399	08-Feb-19 A	05-Oct-20	0%	0%	-129	-379	-293
MPR24.1.10	Design, Engineering & Material Procurement (OSD)	697	23-Mar-18	17-Feb-20	1115	23-Mar-18 A	10-Apr-21	0%	0%	0	-418	-178
MPR24.1.10.1	Initial Design	53	23-Mar-18	14-May-18	53	23-Mar-18 A	29-Nov-18 A	0%	0%	0	-198	
MPR24.1.10.3	Aerodynamic Analysis	145	23-Mar-18	14-Aug-18	145	23-Mar-18 A	30-Jul-19 A	0%	0%	0	-349	
MPR24.1.10.4	Technical Design	311	15-May-18	21-Mar-19	782	15-May-18 A	12-May-20	0%	0%	0	-418	-153
MPR24.1.10.4.1	OS01NS/SS	150	15-May-18	11-Oct-18	150	15-May-18 A	09-Sep-19 A	0%	0%	0	-332	
MPR24.1.10.4.2	OS02NS/SS	164	26-Jun-18	06-Dec-18	530	26-Jun-18 A	30-Jan-20 A	0%	0%	0	-419	
MPR24.1.10.4.3	OS03NS/SS	164	14-Aug-18	24-Jan-19	691	04-Nov-18 A	12-May-20	0%	0%	-82	-474	-418
MPR24.1.10.4.4	OS04NS/SS	164	09-Oct-18	21-Mar-19	425	06-Feb-19 A	20-Jan-20 A	0%	0%	-120	-304	
MPR24.1.10.5	Construction Design	344	12-Oct-18	20-Sep-19	944	02-Feb-19 A	11-Nov-20	0%	0%	-113	-418	-325
MPR24.1.10.5.1	OS01NS/SS	201	12-Oct-18	30-Apr-19	731	02-Feb-19 A	22-May-20	0%	0%	-113	-388	-152
MPR24.1.10.5.2	OS02NS/SS	231	07-Dec-18	25-Jul-19	367	01-Oct-19 A	10-Nov-20	0%	0%	-298	-474	-324
MPR24.1.10.5.3	OS03NS/SS	183	25-Jan-19	26-Jul-19	183	13-May-20	11-Nov-20	0%	0%	-474	-474	-418
MPR24.1.10.5.4	OS04NS/SS	183	22-Mar-19	20-Sep-19	253	01-Oct-19 A	19-Jul-20	0%	0%	-193	-303	-216
MPR24.1.10.6	Material Procurement (1st Lot)	353	02-Mar-19	17-Feb-20	481	15-Mar-19 A	10-Apr-21	0%	0%	-13	-418	-178
MPR24.1.11	Tree Cutting and Transplantation	225	23-Mar-18	02-Nov-18	835	23-Mar-18 A	04-Jul-20	0%	0%	0	-610	-463
MPR24.1.12	Utility Diversion	210	19-Jun-18	14-Jan-19	859	01-Oct-18 A	28-Jul-20	0%	0%	-104	-561	-249
MPR24.1.13	Construction	919	11-Jun-18	22-Jun-22	1349	11-Jun-18 A	29-Aug-23	39.54%	20.58%	0	-363	-288
MPR24.1.13.1	Sewri Interchange Section	779	03-Nov-18	28-Feb-22	1196	29-Mar-19 A	24-May-23	40.73%	13.27%	-121	-378	-206
MPR24.1.13.1.1	Sewri Interchnage - Work Front - 1	779	03-Nov-18	28-Feb-22	1151	18-May-19 A	01-Apr-23	44.46%	12.46%	-163	-333	-161
MPR24.1.13.1.1.1	Sewri Interchange - Work Front - 1 - Piling	490	03-Nov-18	15-Dec-20	708	18-May-19 A	20-Oct-21	71.98%	43.73%	-163	-179	-28
MPR24.1.13.1.1.1.1	Piling - Land Viaduct	54	13-Apr-19	16-Sep-19	298	25-Jun-19 A	28-Sep-20	100%	90%	-53	-236	-187
MPR24.1.13.1.1.1.2	Piling - Ramp A	442	03-Nov-18	17-Oct-20	698	18-May-19 A	21-May-21	75.26%	41.65%	-163	-179	-58
MPR24.1.13.1.1.1.3	Piling - Ramp E	36	20-Oct-20	01-Dec-20	36	21-May-21	05-Oct-21	0%	0%	-179	-179	-58
MPR24.1.13.1.1.1.4	Piling - Ramp F	12	02-Dec-20	15-Dec-20	12	05-Oct-21	20-Oct-21	0%	0%	-179	-179	-28
MPR24.1.13.1.1.2	Sewri Interchange - Work Front - 1 -Pile Cap	560	19-Nov-18	24-Mar-21	772	21-Jun-19 A	26-Mar-22	61.97%	20.85%	-175	-229	-89
MPR24.1.13.1.1.2.1	Pile Cap - Land Viaduct	68	25-Apr-19	15-Oct-19	110	06-Sep-19 A	18-Nov-20	100%	77.78%	-43	-254	-211
MPR24.1.13.1.1.2.2	Pile Cap - Ramp A	504	19-Nov-18	15-Jan-21	745	21-Jun-19 A	09-Feb-22	62.9%	14.76%	-175	-246	-197
MPR24.1.13.1.1.2.3	Pile Cap - Ramp E	44	07-Jan-21	27-Feb-21	54	18-Jan-22	24-Mar-22	0%	0%	-237	-246	-86
MPR24.1.13.1.1.2.4	Pile Cap - Ramp F	20	01-Mar-21	24-Mar-21	20	03-Mar-22	26-Mar-22	0%	0%	-229	-229	-140
MPR24.1.13.1.1.3	Sewri Interchange - Work Front - 1 - Pier	588	12-Dec-18	20-May-21	494	30-Jul-19 A	24-Jun-22	41.15%	15.29%	-155	-257	-100



Actual Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | summary

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

L&T - IHI

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

MMRDA

AECOM | PADECO | dar al-handasah shair and partners | TYLIN INTERNATIONAL

General Consultant for Mumbai Trans Harbour Link Project

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Original Duration	Start	Finish	Schedule % Complete	Performance % Complete	Variance - BL1 Start Date	Variance - BL1 Finish Date	Total Float
	MPR24.1.13.1.1.3.1 Pier - Land Viaduct	52	29-May-19	30-Oct-19	35	21-Oct-19 A	04-Jan-21	100%	77.78%	-43	-281	-224
	MPR24.1.13.1.1.3.2 Pier - Ramp A	504	12-Dec-18	09-Feb-21	422	30-Jul-19 A	01-Apr-22	55.65%	6.71%	-155	-269	-220
	MPR24.1.13.1.1.3.3 Pier - Ramp E	96	27-Jan-21	20-May-21	93	31-Jul-19 A	24-Jun-22	0%	22.73%	337	-257	-153
	MPR24.1.13.1.1.3.4 Pier - Ramp F	83	23-Dec-20	01-Apr-21	63	18-Jan-22	04-Apr-22	0%	0%	-249	-229	-31
	MPR24.1.13.1.1.4 Sewri Interchange - Work Front - 1 - Pier Cap	587	05-Jan-19	11-Jun-21	481	25-Sep-20	25-Jul-22	38.62%	0%	-370	-264	48
	MPR24.1.13.1.1.4.1 Pier Cap - Land Viaduct	49	16-Sep-19	14-Nov-19	52	05-Jan-21	09-Mar-21	100%	0%	-319	-322	-265
	MPR24.1.13.1.1.4.2 Pier Cap - Ramp A	499	05-Jan-19	26-Feb-21	398	25-Sep-20	19-Apr-22	51.29%	0%	-370	-269	-220
	MPR24.1.13.1.1.4.3 Pier Cap - Ramp E	100	13-Feb-21	11-Jun-21	104	25-Mar-22	25-Jul-22	0%	0%	-260	-264	48
	MPR24.1.13.1.1.4.4 Pier Cap - Ramp F	86	31-Dec-20	13-Apr-21	66	27-Jan-22	15-Apr-22	0%	0%	-249	-229	-15
	MPR24.1.13.1.1.5 Sewri Interchange - Embankment Works - Ramp F	90	14-Apr-21	01-Nov-21	90	15-Apr-22	29-Jul-22	0%	0%	-229	-229	-80
	MPR24.1.13.1.1.6 Sewri Interchange - Work Front - 1 - Super Structu	628	04-May-19	28-Feb-22	595	18-Jan-21	01-Apr-23	31.41%	0%	-366	-333	-291
	MPR24.1.13.1.1.6.1 Erection - Land Viaduct	96	19-Nov-19	11-Mar-20	96	08-Mar-21	01-Oct-21	100%	0%	-318	-318	-304
	MPR24.1.13.1.1.6.2 Erection - Ramp A	486	04-May-19	09-Apr-21	405	18-Jan-21	16-Jul-22	40.11%	0%	-417	-336	-296
	MPR24.1.13.1.1.6.3 Erection - Ramp E	146	10-Apr-21	02-Dec-21	146	16-Jul-22	06-Jan-23	0%	0%	-336	-336	-296
	MPR24.1.13.1.1.6.4 Erection - Ramp F	52	28-Dec-21	28-Feb-22	52	31-Jan-23	01-Apr-23	0%	0%	-336	-336	-294
	MPR24.1.13.1.2 Sewri Interchange - Work Front - 2	765	03-Nov-18	11-Feb-22	1196	29-Mar-19 A	24-May-23	46.95%	17.88%	-121	-392	-320
	MPR24.1.13.1.2.1 Sewri Interchange - Work Front - 2 - Piling	553	03-Nov-18	01-Mar-21	810	29-Mar-19 A	18-Feb-22	64.91%	39.63%	-121	-218	-172
	MPR24.1.13.1.2.1.1 Piling - Ramp C2	325	03-Nov-18	27-Feb-20	586	29-Mar-19 A	25-Feb-21	100%	95.92%	-121	-225	-172
	MPR24.1.13.1.2.1.2 Piling - Ramp C1	140	03-Apr-19	18-Dec-19	151	12-Nov-19 A	17-Feb-21	100%	8.57%	-108	-278	-172
	MPR24.1.13.1.2.1.3 Piling - Ramp B	84	21-Nov-20	01-Mar-21	108	22-Nov-19 A	18-Feb-22	0%	8.32%	227	-218	-172
	MPR24.1.13.1.2.2 Sewri Interchange - Work Front - 2 - Pile Cap	591	19-Nov-18	29-Apr-21	855	05-May-19 A	14-Apr-22	59.3%	23.44%	-140	-214	-152
	MPR24.1.13.1.2.2.1 Pile Cap - Ramp C2	361	19-Nov-18	24-Apr-20	649	05-May-19 A	10-May-21	86.02%	81.77%	-140	-238	-150
	MPR24.1.13.1.2.2.2 Pile Cap - Ramp C1	172	12-Apr-19	04-Feb-20	179	14-Dec-19 A	01-Apr-21	100%	6.67%	-128	-274	-172
	MPR24.1.13.1.2.2.3 Pile Cap - Ramp B	131	25-Nov-20	29-Apr-21	158	16-Jan-20 A	14-Apr-22	0%	7.14%	184	-214	-152
	MPR24.1.13.1.2.3 Sewri Interchange - Work Front - 2 - Pier	589	12-Dec-18	21-May-21	503	04-Sep-19 A	02-May-22	52.04%	38.74%	-155	-211	-28
	MPR24.1.13.1.2.3.1 Pier - Ramp C2	353	12-Dec-18	09-May-20	294	04-Sep-19 A	24-May-21	76.55%	82.04%	-155	-238	-150
	MPR24.1.13.1.2.3.2 Pier - Ramp C1	194	01-Apr-19	18-Feb-20	223	10-Sep-19 A	15-Apr-21	100%	25.51%	-64	-274	-172
	MPR24.1.13.1.2.3.3 Pier - Ramp B	248	25-Apr-20	21-May-21	221	08-Oct-19 A	02-May-22	0%	34.09%	168	-211	-28
	MPR24.1.13.1.2.4 Sewri Interchange - Work Front - 2 - Pier Cap	583	26-Dec-18	28-May-21	442	02-Dec-19 A	26-May-22	51.03%	0.35%	-206	-226	-42
	MPR24.1.13.1.2.4.1 Pier Cap - Ramp C2	356	26-Dec-18	27-May-20	249	02-Dec-19 A	08-Oct-21	67.95%	2.1%	-206	-259	-171
	MPR24.1.13.1.2.4.2 Pier Cap - Ramp C1	198	18-Apr-19	12-Mar-20	172	06-Nov-20	01-Jun-21	100%	0%	-320	-293	-195
	MPR24.1.13.1.2.4.3 Pier Cap - Ramp B	235	19-May-20	28-May-21	200	30-Sep-21	26-May-22	0%	0%	-261	-226	-42
	MPR24.1.13.1.2.5 Sewri Interchange - Embankment Works - Ramp C	60	23-May-19	02-Nov-19	60	27-Nov-20	08-Feb-21	0%	0%	-307	-307	249
	MPR24.1.13.1.2.6 Sewri Interchange - Work Front - 2 - Super Structu	654	18-Mar-19	11-Feb-22	701	04-Nov-20	24-May-23	30.15%	0%	-345	-392	-320
	MPR24.1.13.1.2.6.1 Erection - Ramp C2	343	18-Mar-19	02-Nov-20	368	04-Nov-20	22-Apr-22	52.94%	0%	-345	-370	-298
	MPR24.1.13.1.2.6.2 Erection - Ramp C1	194	08-Oct-19	26-May-20	194	26-Mar-21	14-Jan-22	66.05%	0%	-396	-396	-324
	MPR24.1.13.1.2.6.3 Erection - Ramp B	316	28-Nov-20	11-Feb-22	316	17-May-22	24-May-23	0%	0%	-396	-396	-324
	MPR24.1.13.1.3 Sewri Interchange - Work Front - 3 (Cast in situ Spans	431	28-Feb-20	01-Feb-22	431	25-Feb-21	26-Oct-22	4.08%	0%	-225	-225	-129
	MPR24.1.13.1.3.1 Sewri Interchange - Work Front - 3 - Piling	144	28-Feb-20	20-Nov-20	144	25-Feb-21	18-Nov-21	14.58%	0%	-225	-225	-172
	MPR24.1.13.1.3.1.1 Piling - Ramp B	54	28-Feb-20	02-May-20	54	25-Feb-21	30-Apr-21	38.89%	0%	-225	-225	-172
	MPR24.1.13.1.3.1.2 Piling - Ramp E	54	04-May-20	07-Oct-20	54	30-Apr-21	06-Oct-21	0%	0%	-225	-225	-172
	MPR24.1.13.1.3.1.3 Piling - Ramp C1	36	08-Oct-20	20-Nov-20	36	06-Oct-21	18-Nov-21	0%	0%	-225	-225	-172
	MPR24.1.13.1.3.2 Sewri Interchange - Work Front - 3 - Pile Cap	159	07-Mar-20	15-Dec-20	159	05-Mar-21	13-Dec-21	6.94%	0%	-225	-225	-14
	MPR24.1.13.1.3.2.1 Pile Cap - Ramp B	81	07-Mar-20	10-Jun-20	81	05-Mar-21	09-Jun-21	18.52%	0%	-225	-225	-56
	MPR24.1.13.1.3.2.2 Pile Cap - Ramp E	81	11-May-20	17-Nov-20	81	08-May-21	15-Nov-21	0%	0%	-225	-225	10
	MPR24.1.13.1.3.2.3 Pile Cap - Ramp C1	45	23-Oct-20	15-Dec-20	45	21-Oct-21	13-Dec-21	0%	0%	-225	-225	-25
	MPR24.1.13.1.3.3 Sewri Interchange - Work Front - 3 - Pier	216	18-Mar-20	05-Mar-21	216	16-Mar-21	03-Mar-22	1.67%	0%	-225	-225	-65
	MPR24.1.13.1.3.3.1 Pier - Ramp B	135	18-Mar-20	27-Nov-20	135	16-Mar-21	25-Nov-21	4.44%	0%	-225	-225	-104
	MPR24.1.13.1.3.3.2 Pier - Ramp E	135	21-May-20	01-Feb-21	135	19-May-21	29-Jan-22	0%	0%	-225	-225	-38
	MPR24.1.13.1.3.3.3 Pier - Ramp C1	90	18-Nov-20	05-Mar-21	90	15-Nov-21	03-Mar-22	0%	0%	-225	-225	-76
	MPR24.1.13.1.3.4 Sewri Interchange - Work Front - 3 - Pier Cap	196	24-Apr-20	19-Mar-21	196	22-Apr-21	17-Mar-22	0%	0%	-225	-225	-65
	MPR24.1.13.1.3.4.1 Pier Cap - Ramp B	115	24-Apr-20	11-Dec-20	115	22-Apr-21	09-Dec-21	0%	0%	-225	-225	-104
	MPR24.1.13.1.3.4.2 Pier Cap - Ramp E	132	08-Jun-20	15-Feb-21	132	05-Jun-21	12-Feb-22	0%	0%	-225	-225	-38
	MPR24.1.13.1.3.4.3 Pier Cap - Ramp C1	77	17-Dec-20	19-Mar-21	77	14-Dec-21	17-Mar-22	0%	0%	-225	-225	-76
	MPR24.1.13.1.3.5 Sewri Interchange - Work Front - 3 - Super Structu	360	23-May-20	01-Feb-22	360	21-May-21	26-Oct-22	0%	0%	-225	-225	-129
	MPR24.1.13.1.3.5.1 Super Structure - Ramp B	132	23-May-20	30-Jan-21	132	21-May-21	28-Jan-22	0%	0%	-225	-225	-115
	MPR24.1.13.1.3.5.2 Super Structure - Ramp E	132	16-Jan-21	24-Sep-21	132	13-Jan-22	18-Jun-22	0%	0%	-225	-225	-115
	MPR24.1.13.1.3.5.3 Super Structure - Ramp C1	120	09-Jun-21	01-Feb-22	120	04-Jun-22	26-Oct-22	0%	0%	-225	-225	-129
	MPR24.1.13.2 Intertidal Section	715	11-Jun-18	23-Oct-21	1109	11-Jun-18 A	17-Nov-22	52.55%	54.65%	0	-327	-300
	MPR24.1.13.2.1 Intertidal - Temporary Access Bridge Work	467	11-Jun-18	26-Sep-20	486	11-Jun-18 A	28-Apr-20	0%	0%	0	49	212
	MPR24.1.13.2.1.1 Access Bridge	457	11-Jun-18	12-Jun-20	482	11-Jun-18 A	06-Apr-20	0%	0%	0	58	221
	MPR24.1.13.2.1.2 Fingers	441	13-Oct-18	26-Sep-20	486	26-Sep-18 A	28-Apr-20	0%	0%	16	49	212
	MPR24.1.13.2.2 Intertidal - Main Bridge Work	638	14-Dec-18	23-Oct-21	1044	14-Nov-18 A	17-Nov-22	52.55%	54.65%	26	-327	-300
	MPR24.1.13.2.2.1 Intertidal - Main Bridge Work - Piling	531	14-Dec-18	16-Mar-21	683	14-Nov-18 A	10-Jun-21	64.99%	87.54%	26	-73	-39
	MPR24.1.13.2.2.2 Intertidal - Main Bridge Work - Pile Cap	536	29-Dec-18	06-Apr-21	829	17-Jan-19 A	07-Mar-22	61.54%	69.74%	-15	-201	-172
	MPR24.1.13.2.2.3 Intertidal - Main Bridge Work - Pier	562	17-Jan-19	25-May-21	857	29-Mar-19 A	08-Apr-22	57.88%	67.26%	-59	-188	-161
	MPR24.1.13.2.2.4 Intertidal - Main Bridge Work - Pier Cap	562	30-Jan-19	05-Jun-21	606	10-Aug-19 A	20-Apr-22	56.11%	37.3%	-115	-188	-161

Actual Level of Effort | Remaining Work | Milestone
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L&T - IHI

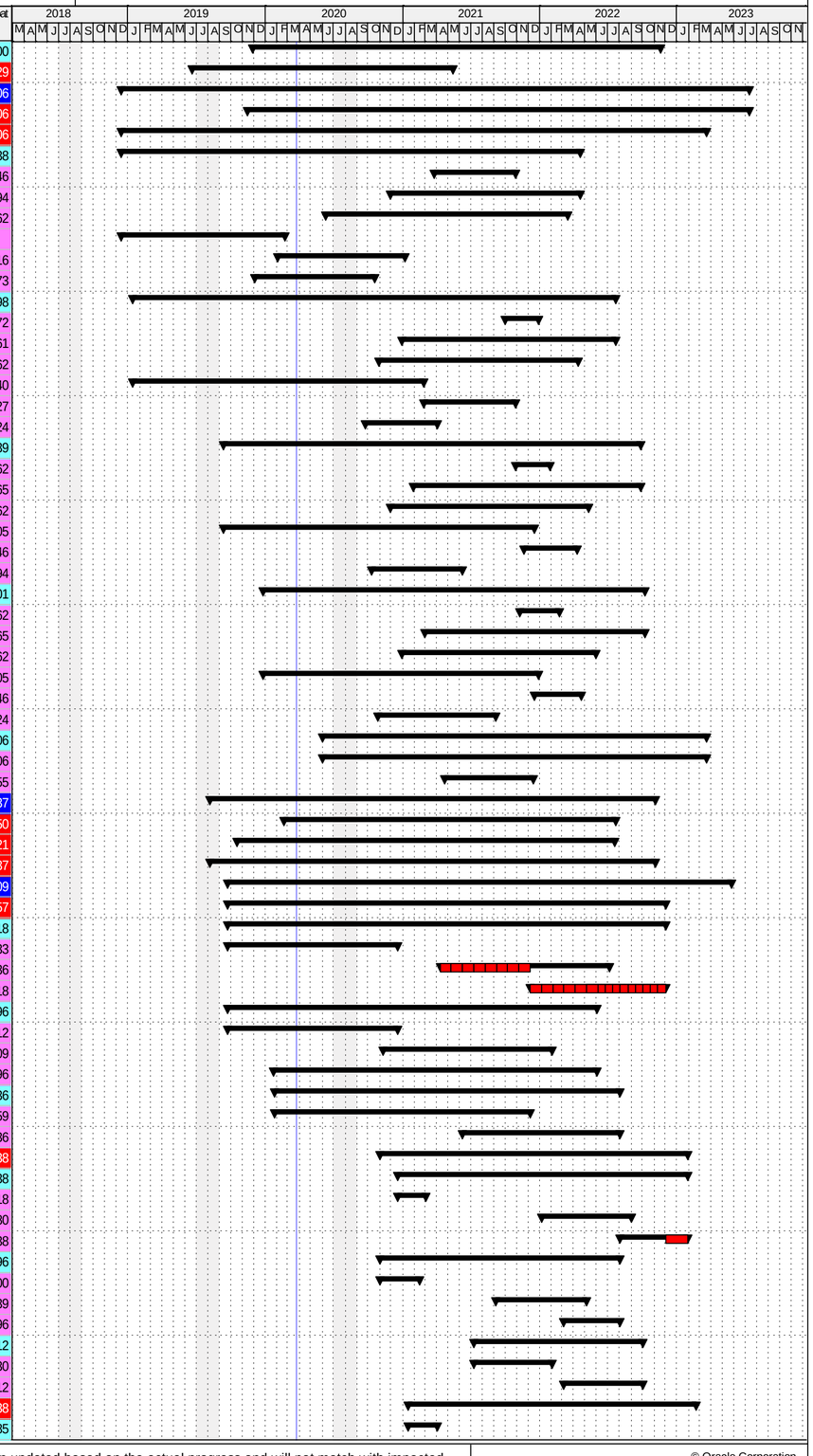
MUMBAI TRANS HARBOUR LINK PACKAGE 1, UPDATED BASELINE PROGRAMME FOR MARCH 2020

MMRDA

AECOM | PADECO | dar al-handasah | TYLIN INTERNATIONAL

General Consultant for Mumbai Trans Harbour Link Project

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Original Duration	Start	Finish	Schedule % Complete	Performance % Complete	Variance - BL1 Start Date	Variance - BL1 Finish Date	Total Float
	MPR24.1.13.2.2.5 Intertidal - Main Bridge Work - Super Structure Er	534	18-Apr-19	23-Oct-21	646	29-Nov-19 A	17-Nov-22	22.87%	1.53%	-110	-327	-300
	MPR24.1.13.2.3 Intertidal - Finger Removal & Reuse	400	07-Mar-19	29-Dec-20	360	20-Jun-19 A	15-May-21	0%	0%	-85	-114	-29
	MPR24.1.13.3 Marine Section	911	18-Sep-18	17-Jun-22	1269	14-Dec-18 A	12-Jul-23	44.15%	21.9%	-73	-327	-306
	MPR24.1.13.3.1 Temporary Access Bridge Work -2 (MP70 to MP51- 21	911	18-Sep-18	17-Jun-22	908	14-Nov-19 A	12-Jul-23	0%	0%	-274	-327	-306
	MPR24.1.13.3.2 Marine - Main Bridge	775	03-Nov-18	23-Feb-22	1172	14-Dec-18 A	20-Mar-23	44.15%	21.9%	-34	-327	-306
	MPR24.1.13.3.2.1 Marine - Piling	564	03-Nov-18	15-Mar-21	890	14-Dec-18 A	18-Apr-22	58.88%	55.36%	-34	-256	-138
	MPR24.1.13.3.2.1.1 Piling - Stretch - 1 - OSD-1 MP51 to MP53 (320	104	20-Sep-19	22-Jan-20	104	25-Mar-21	28-Oct-21	100%	0%	-382	-382	-246
	MPR24.1.13.3.2.1.2 Piling - Stretch - 2 - Marine - MP54 to MP68 (85	344	25-Feb-19	13-Oct-20	344	30-Nov-20	18-Apr-22	61.67%	0%	-382	-382	-194
	MPR24.1.13.3.2.1.3 Piling - Stretch - 3 - OSD-2&3 MP69 to MP80 (1	521	10-Dec-18	26-Feb-21	379	11-Jun-20	15-Mar-22	50.89%	0%	-382	-240	-162
	MPR24.1.13.3.2.1.4 Piling - Stretch - 4 - Marine MP81 to MP123 (2.(	370	03-Nov-18	21-Apr-20	489	14-Dec-18 A	22-Feb-20 A	94.52%	100%	-34	50	
	MPR24.1.13.3.2.1.5 Piling - Stretch - 5 - OSD-4 MP124 to MP128 (6	147	22-Apr-20	16-Jan-21	130	04-Feb-20 A	07-Jan-21	0%	36.19%	66	8	116
	MPR24.1.13.3.2.1.6 Piling - Stretch - 6 - Marine MP129 to MP148 (1	395	25-May-19	15-Mar-21	148	06-Dec-19 A	20-Oct-20	5%	92.5%	-85	122	173
	MPR24.1.13.3.2.3 Marine - Pile Cap	572	23-Nov-18	12-Apr-21	947	14-Jan-19 A	22-Jul-22	45.11%	22.42%	-43	-314	-198
	MPR24.1.13.3.2.3.1 Pile Cap - Stretch - 1 - OSD-1 MP51 to MP53 (3	75	25-Dec-19	23-Mar-20	75	30-Sep-21	27-Dec-21	100%	0%	-382	-382	-272
	MPR24.1.13.3.2.3.2 Pile Cap - Stretch - 2 - Marine - MP54 to MP68	400	28-Mar-19	20-Jan-21	400	30-Dec-20	22-Jul-22	40.27%	0%	-382	-382	-261
	MPR24.1.13.3.2.3.3 Pile Cap - Stretch - 3 - OSD-2&3 MP69 to MP8(	505	28-Jan-19	27-Mar-21	363	31-Oct-20	12-Apr-22	43.4%	0%	-382	-240	-162
	MPR24.1.13.3.2.3.4 Pile Cap - Stretch - 4 - Marine MP81 to MP123	444	23-Nov-18	10-Nov-20	597	14-Jan-19 A	27-Feb-21	66.83%	50.44%	-43	-92	-40
	MPR24.1.13.3.2.3.5 Pile Cap - Stretch - 5 - OSD-4 MP124 to MP128	125	11-Nov-20	08-Apr-21	125	27-Feb-21	29-Oct-21	0%	0%	-92	-92	-27
	MPR24.1.13.3.2.3.6 Pile Cap - Stretch - 6 - Marine MP 129 to MP 14	407	08-Jun-19	12-Apr-21	159	24-Sep-20	03-Apr-21	5%	0%	-240	8	124
	MPR24.1.13.3.2.4 Marine - Pier	590	22-Dec-18	02-Jun-21	715	12-Sep-19 A	27-Sep-22	41.35%	3.19%	-146	-325	-239
	MPR24.1.13.3.2.4.1 Pier - Stretch - 1 - OSD-1 MP51 to MP53 (320m	75	24-Jan-20	21-Apr-20	75	30-Oct-21	27-Jan-22	68%	0%	-382	-382	-262
	MPR24.1.13.3.2.4.2 Pier - Stretch - 2 - Marine - MP54 to MP68 (856	429	26-Apr-19	26-Mar-21	429	30-Jan-21	27-Sep-22	40%	0%	-382	-382	-265
	MPR24.1.13.3.2.4.3 Pier - Stretch - 3 - OSD-2&3 MP69 to MP80 (1.5	504	26-Feb-19	24-Apr-21	362	01-Dec-20	10-May-22	40.63%	0%	-382	-240	-162
	MPR24.1.13.3.2.4.4 Pier - Stretch - 4 - Marine MP81 to MP123 (2.6 I	472	22-Dec-18	12-Jan-21	478	12-Sep-19 A	17-Dec-21	61.74%	7.25%	-146	-206	-105
	MPR24.1.13.3.2.4.5 Pier - Stretch - 5 - OSD-4 MP124 to MP128 (60(	118	13-Jan-21	02-Jun-21	120	19-Nov-21	11-Apr-22	0%	0%	-181	-183	-146
	MPR24.1.13.3.2.4.6 Pier - Stretch - 6 - Marine MP129 to MP148 (1.2	419	27-Sep-19	28-Apr-21	199	12-Oct-20	08-Jun-21	5%	0%	-253	-33	94
	MPR24.1.13.3.2.2 Marine - Pier Cap	576	21-Jan-19	14-Jun-21	651	26-Dec-19 A	08-Oct-22	39.43%	0.99%	-206	-325	-201
	MPR24.1.13.3.2.2.1 Pier Cap - Stretch - 1 - OSD-1 MP51 to MP53 (3	87	04-Feb-20	16-May-20	87	10-Nov-21	21-Feb-22	34.92%	0%	-382	-382	-162
	MPR24.1.13.3.2.2.2 Pier Cap - Stretch - 2 - Marine - MP54 to MP68	414	27-May-19	07-Apr-21	414	01-Mar-21	08-Oct-22	40%	0%	-382	-382	-265
	MPR24.1.13.3.2.2.3 Pier Cap - Stretch - 3 - OSD-2&3 MP69 to MP8(	497	28-Mar-19	17-May-21	355	30-Dec-20	31-May-22	33.33%	0%	-382	-240	-162
	MPR24.1.13.3.2.2.4 Pier Cap - Stretch - 4 - Marine MP81 to MP123	458	21-Jan-19	23-Jan-21	413	26-Dec-19 A	29-Dec-21	59%	2.28%	-206	-206	-105
	MPR24.1.13.3.2.2.5 Pier Cap - Stretch - 5 - OSD(4) MP124 to MP12	103	12-Feb-21	14-Jun-21	105	18-Dec-21	22-Apr-22	0%	0%	-181	-183	-146
	MPR24.1.13.3.2.2.6 Pier Cap - Stretch - 6 - Marine MP129 to MP14(	403	12-Oct-19	11-May-21	192	28-Oct-20	06-Sep-21	12.54%	0%	-240	-29	124
	MPR24.1.13.3.2.5 Marine - Super Structure Erection	636	19-Apr-19	23-Feb-22	697	02-Jun-20	20-Mar-23	24.97%	0%	-266	-327	-306
	MPR24.1.13.3.2.5.1 Erection - Main Concrete Viaduct	636	19-Apr-19	23-Feb-22	697	02-Jun-20	20-Mar-23	25.18%	0%	-266	-327	-306
	MPR24.1.13.3.2.5.2 Rescue Span (MP98 to MP99)	120	07-Mar-20	29-Oct-20	120	22-Apr-21	15-Dec-21	12.5%	0%	-266	-266	55
	MPR24.1.13.4 Precast Segments	778	06-Feb-19	21-Aug-21	883	07-Aug-19 A	04-Nov-22	42.37%	6.67%	-154	-367	-37
	MPR24.1.13.4.1 Precast Segement - Sewri Interchange	701	06-Feb-19	24-May-21	684	20-Feb-20 A	22-Jul-22	53.23%	0.78%	-317	-358	50
	MPR24.1.13.4.2 Precast Segement - Intertidal	753	28-Feb-19	14-Aug-21	672	18-Oct-19 A	19-Jul-22	45.96%	17.3%	-194	-284	-221
	MPR24.1.13.4.3 Precast Segement - Marine	759	28-Feb-19	21-Aug-21	883	07-Aug-19 A	04-Nov-22	35.86%	1.54%	-135	-367	-37
	MPR24.1.13.5 Orthotropic Steel Deck (OSD) - Fabrication, Shipping, Ass	608	11-Jun-19	15-Mar-22	808	23-Sep-19 A	27-May-23	0%	0%	-9	-369	-209
	MPR24.1.13.5.1 OSD - Fabrication	746	28-Sep-19	12-Oct-21	975	23-Sep-19 A	01-Dec-22	0%	0%	5	-415	-357
	MPR24.1.13.5.1.1 Fabrication - Factory A	720	28-Sep-19	16-Sep-21	975	23-Sep-19 A	01-Dec-22	0%	0%	5	-441	-418
	MPR24.1.13.5.1.1.1 OSD 01 - RHS Fabrication - MP50 to MP53 (32	330	28-Sep-19	22-Aug-20	262	23-Sep-19 A	18-Dec-20	0%	0%	5	-118	33
	MPR24.1.13.5.1.1.2 OSD 03 - RHS Fabrication - MP75 to MP81 (77	450	26-Jan-20	19-Apr-21	450	11-Apr-21	04-Jul-22	0%	0%	-441	-441	-336
	MPR24.1.13.5.1.1.3 OSD 04 - RHS Fabrication - MP124 to MP128 (	360	22-Sep-20	16-Sep-21	360	07-Dec-21	01-Dec-22	0%	0%	-441	-441	-418
	MPR24.1.13.5.1.2 Fabrication - Factory B	720	28-Sep-19	16-Sep-21	794	23-Sep-19 A	03-Jun-22	0%	0%	5	-260	-196
	MPR24.1.13.5.1.2.1 OSD 01 - LHS Fabrication - MP50 to MP53 (32(	330	28-Sep-19	22-Aug-20	262	23-Sep-19 A	18-Dec-20	0%	0%	5	-118	12
	MPR24.1.13.5.1.2.2 OSD 02 - RHS Fabrication - MP69 to MP75 (68	450	26-Jan-20	19-Apr-21	450	11-Nov-20	03-Feb-22	0%	0%	-290	-290	-209
	MPR24.1.13.5.1.2.3 OSD 04 - LHS Fabrication - MP124 to MP128 (5	360	22-Sep-20	16-Sep-21	330	24-Jan-20 A	03-Jun-22	0%	0%	242	-260	-196
	MPR24.1.13.5.1.3 Fabrication - Factory C	660	23-Dec-19	12-Oct-21	632	27-Jan-20 A	02-Aug-22	0%	0%	-35	-294	-236
	MPR24.1.13.5.1.3.1 OSD 02 - LHS Fabrication - MP69 to MP75 (68:	420	23-Dec-19	14-Feb-21	392	27-Jan-20 A	05-Dec-21	0%	0%	-35	-294	-159
	MPR24.1.13.5.1.3.2 OSD 03 - LHS Fabrication - MP75 to MP81 (77(	420	19-Aug-20	12-Oct-21	420	09-Jun-21	02-Aug-22	0%	0%	-294	-294	-236
	MPR24.1.13.5.2 OSD - Shipping	536	24-Jun-20	11-Dec-21	819	02-Nov-20	30-Jan-23	0%	0%	-132	-415	-238
	MPR24.1.13.5.2.1 Shipping - Factory A	510	24-Jun-20	15-Nov-21	773	18-Dec-20	30-Jan-23	0%	0%	-178	-441	-238
	MPR24.1.13.5.2.1.1 OSD 01 - RHS Shipping - MP50 to MP53 (320m	120	24-Jun-20	21-Oct-20	75	18-Dec-20	03-Mar-21	0%	0%	-178	-133	18
	MPR24.1.13.5.2.1.2 OSD 03 - RHS Shipping - MP75 to MP81 (770m	240	22-Oct-20	18-Jun-21	240	06-Jan-22	02-Sep-22	0%	0%	-441	-441	-280
	MPR24.1.13.5.2.1.3 OSD 04 - RHS Shipping - MP124 to MP128 (56	180	20-May-21	15-Nov-21	180	04-Aug-22	30-Jan-23	0%	0%	-441	-441	-238
	MPR24.1.13.5.2.2 Shipping - Factory B	510	24-Jun-20	15-Nov-21	638	02-Nov-20	02-Aug-22	0%	0%	-132	-260	-196
	MPR24.1.13.5.2.2.1 OSD 01 - LHS Shipping - MP50 to MP53 (320m	120	24-Jun-20	21-Oct-20	106	02-Nov-20	16-Feb-21	0%	0%	-132	-118	200
	MPR24.1.13.5.2.2.2 OSD 02 - RHS Shipping - MP69 to MP75 (683m	240	21-Nov-20	18-Jul-21	240	07-Sep-21	04-May-22	0%	0%	-290	-290	-239
	MPR24.1.13.5.2.2.3 OSD 04 - LHS Shipping - MP124 to MP128 (56(	180	20-May-21	15-Nov-21	150	06-Mar-22	02-Aug-22	0%	0%	-290	-260	-196
	MPR24.1.13.5.2.3 Shipping - Factory C	450	18-Sep-20	11-Dec-21	450	09-Jul-21	01-Oct-22	0%	0%	-294	-294	-212
	MPR24.1.13.5.2.3.1 OSD 02 - LHS Shipping - MP69 to MP75 (683m	210	18-Sep-20	15-Apr-21	210	09-Jul-21	03-Feb-22	0%	0%	-294	-294	-130
	MPR24.1.13.5.2.3.2 OSD 03 - LHS Shipping - MP75 to MP81 (770m	210	16-May-21	11-Dec-21	210	06-Mar-22	01-Oct-22	0%	0%	-294	-294	-212
	MPR24.1.13.5.3 OSD - Custom Clearance and Inland Transport (Last M	482	07-Sep-20	01-Jan-22	765	16-Jan-21	20-Feb-23	0%	0%	-132	-415	-238
	MPR24.1.13.5.3.1 OSD 1 - MP50 to MP53 (320m)	75	07-Sep-20	20-Nov-20	76	16-Jan-21	02-Apr-21	0%	0%	-132	-133	185



Actual Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | summary

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

L&T - IHI

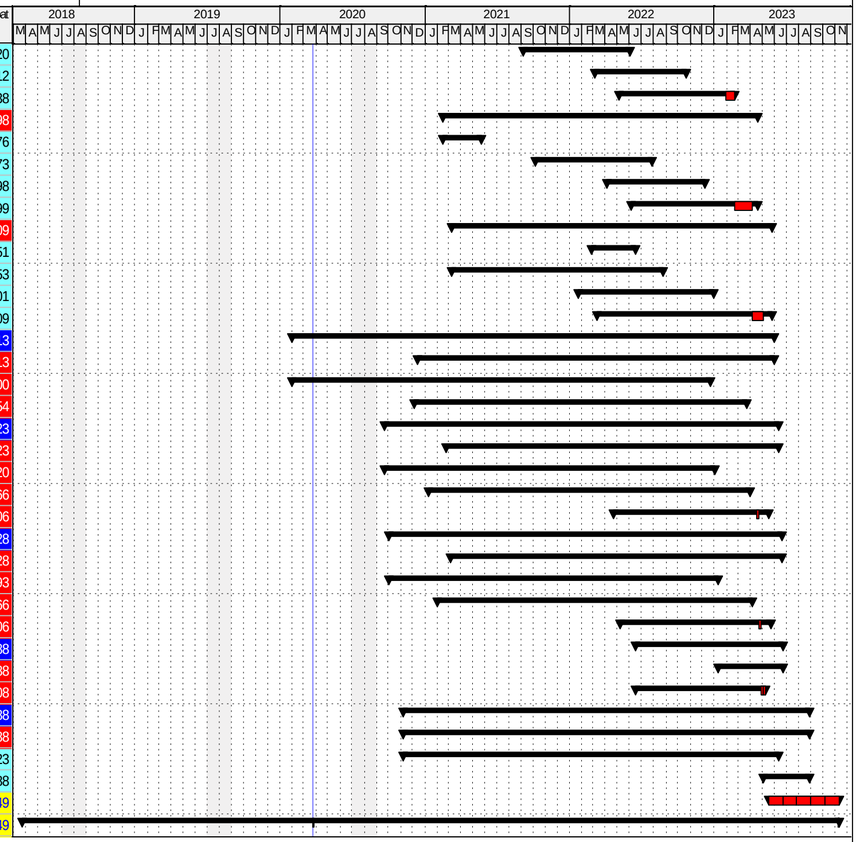
MUMBAI TRANS HARBOUR LINK PACKAGE 1, UPDATED BASELINE PROGRAMME FOR MARCH 2020

MMRDA

AECOM | PADECO | dar al-handasah | TYLIN INTERNATIONAL

General Consultant for Mumbai Trans Harbour Link Project

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Original Duration	Start	Finish	Schedule % Complete	Performance % Complete	Variance - BL1 Start Date	Variance - BL1 Finish Date	Total Float
	MPR24.1.13.5.3.2 OSD 2 - MP69 to MP75 (683m)	274	17-Nov-20	17-Aug-21	270	07-Sep-21	03-Jun-22	0%	0%	-294	-290	-220
	MPR24.1.13.5.3.3 OSD 3 - MP75 to MP81 (770m)	377	21-Dec-20	01-Jan-22	230	07-Mar-22	22-Oct-22	0%	0%	-441	-294	-212
	MPR24.1.13.5.3.4 OSD 4 - MP124 to MP128 (560m)	141	19-Jul-21	06-Dec-21	292	05-May-22	20-Feb-23	0%	0%	-290	-441	-238
	MPR24.1.13.5.4 OSD - Assembly	337	07-Oct-20	16-Feb-22	587	15-Feb-21	19-Apr-23	0%	0%	-109	-359	-198
	MPR24.1.13.5.4.1 OSD 1 - MP50 to MP53 (320m)	80	07-Oct-20	11-Jan-21	82	15-Feb-21	24-May-21	0%	0%	-109	-111	76
	MPR24.1.13.5.4.2 OSD 2 - MP69 to MP75 (683m)	252	17-Dec-20	13-Oct-21	249	07-Oct-21	28-Jul-22	0%	0%	-246	-243	-173
	MPR24.1.13.5.4.3 OSD 3 - MP75 to MP81 (770m)	329	20-Jan-21	16-Feb-22	206	06-Apr-22	07-Dec-22	0%	0%	-369	-246	-198
	MPR24.1.13.5.4.4 OSD 4 - MP124 to MP128 (560m)	142	18-Aug-21	04-Feb-22	269	04-Jun-22	19-Apr-23	0%	0%	-243	-370	-199
	MPR24.1.13.5.5 OSD - Erection	608	11-Jun-19	15-Mar-22	602	09-Mar-21	27-May-23	0%	0%	-375	-369	-209
	MPR24.1.13.5.5.1 OSD 1 - MP50 to MP53 (320m)	157	21-May-20	26-Feb-21	95	25-Feb-22	16-Jun-22	0%	0%	-382	-320	-151
	MPR24.1.13.5.5.2 OSD 2 - MP69 to MP75 (683m)	542	11-Jun-19	24-Dec-21	370	09-Mar-21	23-Aug-22	0%	0%	-375	-203	-153
	MPR24.1.13.5.5.3 OSD 3 - MP75 to MP81 (770m)	279	07-Jan-21	10-Mar-22	288	22-Jan-22	30-Dec-22	0%	0%	-240	-249	-201
	MPR24.1.13.5.5.4 OSD 4 - MP124 to MP128 (560m)	185	05-May-21	15-Mar-22	373	11-Mar-22	27-May-23	0%	0%	-181	-369	-209
	MPR24.1.13.6 Post Erection Segmental Stitch Concrete (incl. Bearing In:	644	24-Apr-19	10-Mar-22	759	01-Feb-20 A	01-Jun-23	0%	0%	-159	-377	-213
	MPR24.1.13.6.1 Stitch Concrete - Sewri Interchange	644	24-Apr-19	10-Mar-22	676	12-Dec-20	01-Jun-23	0%	0%	-345	-377	-213
	MPR24.1.13.6.2 Stitch Concrete - Intertidal	475	29-Nov-19	22-Dec-21	624	01-Feb-20 A	22-Dec-22	0%	0%	-54	-306	-300
	MPR24.1.13.6.3 Stitch Concrete - Marine	563	21-Oct-19	26-Feb-22	624	04-Dec-20	23-Mar-23	0%	0%	-266	-327	-154
	MPR24.1.13.7 Crash Barrier Works	585	05-Oct-19	11-Mar-22	754	22-Sep-20	13-Jun-23	0%	0%	-216	-386	-223
	MPR24.1.13.7.1 Crash Barrier - Sewri Interchange	585	05-Oct-19	11-Mar-22	626	23-Feb-21	13-Jun-23	0%	0%	-345	-386	-223
	MPR24.1.13.7.2 Crash Barrier - Intertidal	470	17-Dec-19	04-Jan-22	619	22-Sep-20	03-Jan-23	0%	0%	-156	-306	-120
	MPR24.1.13.7.3 Crash Barrier - Marine	541	26-Nov-19	09-Mar-22	602	09-Jan-21	01-Apr-23	0%	0%	-266	-327	-166
	MPR24.1.13.7.4 Crash Barrier - Orthotropic Steel Deck	291	23-Dec-20	10-Mar-22	330	21-Apr-22	18-May-23	0%	0%	-326	-365	-206
	MPR24.1.13.8 Bridge Deck (Superstructure) Water Proofing	581	15-Oct-19	16-Mar-22	749	03-Oct-20	19-Jun-23	0%	0%	-218	-387	-228
	MPR24.1.13.8.1 Water Proofing - Sewri Interchange	579	15-Oct-19	14-Mar-22	623	05-Mar-21	19-Jun-23	0%	0%	-345	-389	-228
	MPR24.1.13.8.2 Water Proofing - Intertidal	465	28-Dec-19	10-Jan-22	614	03-Oct-20	09-Jan-23	0%	0%	-156	-306	-93
	MPR24.1.13.8.3 Water Proofing - Marine	526	18-Dec-19	14-Mar-22	587	02-Feb-21	06-Apr-23	0%	0%	-266	-327	-166
	MPR24.1.13.8.4 Water Proofing - Orthotropic Steel Deck	281	11-Jan-21	16-Mar-22	320	09-May-22	24-May-23	0%	0%	-326	-365	-206
	MPR24.1.13.9 Stone Mastic Asphalt Pavement	74	23-Dec-21	22-Mar-22	311	17-Jun-22	23-Jun-23	0%	0%	-149	-386	-288
	MPR24.1.13.9.1 Sewri Interchange	70	27-Dec-21	21-Mar-22	138	10-Jan-23	23-Jun-23	0%	0%	-318	-387	-288
	MPR24.1.13.9.2 Main Bridge	74	23-Dec-21	22-Mar-22	273	17-Jun-22	10-May-23	0%	0%	-149	-348	-308
	MPR24.1.13.10 Bridge Anclilaries and Misc. Works	575	31-Jan-20	22-Jun-22	781	06-Nov-20	29-Aug-23	0%	0%	-156	-363	-288
	MPR24.1.13.10.1 Bridge Ancillaries	575	31-Jan-20	22-Jun-22	781	06-Nov-20	29-Aug-23	0%	0%	-156	-363	-288
	MPR24.1.13.10.1.1 Noise Barrier, View Barrier and Safety Fence	552	31-Jan-20	26-May-22	716	06-Nov-20	13-Jun-23	0%	0%	-156	-321	-223
	MPR24.1.13.10.1.2 Traffic Signages and Marking	84	17-Mar-22	22-Jun-22	99	05-May-23	29-Aug-23	0%	0%	-348	-363	-288
	MPR24.1.15 Handing Over	148	31-Mar-22	22-Sep-22	148	19-May-23	10-Nov-23	0%	0%	-348	-348	-349
	MPR24.1.14 Invoice Schedule (Shows the Invoice items which are not cov	1062	23-Mar-18	22-Sep-22	1410	23-Mar-18 A	10-Nov-23	45.42%	29.19%	0	-348	-349



Actual Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | summary

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

Attachment 7- Package-2's Construction Programme Updated as on 25th March 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)

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
1	MTHL-PKG2-DETAILED WORK PROGRAMME_25032020_APPROVED_MPR.2		2946.04	17-Nov-17	21-Sep-24	17-Nov-17		38.06%	19.05%
2	PROJECT PRE-COMMENCEMENT ACTIVITY		126.00	17-Nov-17	22-Mar-18	17-Nov-17	16-Mar-18	0%	0%
3	PRE-COMMENCEMENT ACTIVITY		55.00	15-Dec-17	07-Feb-18	15-Dec-17	20-Mar-18	0%	0%
4	PROJECT EVENT MILESTONE		2270.13	23-Mar-18	21-Mar-23	23-Mar-18		0%	0%
5	PROJECT KEY MILESTONE		2090.13	23-Mar-18	22-Sep-22	23-Mar-18		0%	0%
6	INTERFACE MILESTONE_ERG19		2242.13	19-Apr-18	21-Mar-23	03-Apr-18		0%	0%
7	PHYSICAL PROGRESS AND INTERFACE DATE_ADD2-ATTACHMENT 25		1825.88	18-Sep-18	22-Jun-22	31-Aug-18		0%	0%
8	CONSTRUCTION KEY MILESTONES		947.25	03-Sep-18	06-Jul-21	25-Oct-18		0%	0%
9	MANAGEMENT		613.00	20-Jan-18	18-Aug-18	12-Jan-18	22-Aug-19	0%	0%
10	SITE ORGANISATION		35.00	20-Jan-18	23-Feb-18	07-Mar-18	07-Mar-18	0%	0%
11	DEVELOPMENT OF MANAGEMENT SYSTEM		613.00	20-Jan-18	27-May-18	20-Jan-18	22-Aug-19	0%	0%
12	COUMMUNICATION / DOCUMENT CONTROL SYSTEM		315.38	20-Jan-18	10-May-18	20-Jan-18	24-Oct-18	0%	0%
13	QUALITY ASSURANCE AND MANAGEMENT SYSTEM		254.00	23-Mar-18	10-May-18	23-Mar-18	24-Oct-18	0%	0%
14	HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM		551.00	23-Mar-18	10-May-18	23-Mar-18	22-Aug-19	0%	0%
15	INTERFACE MANAGEMENT SYSTEM		49.00	23-Mar-18	10-May-18	23-Mar-18	24-Oct-18	0%	0%
16	RISK MANAGEMENT PLAN		66.00	23-Mar-18	27-May-18	23-Mar-18	24-Oct-18	0%	0%
17	DEVELOPMENT OF WORK PROGRAMME		63.00	23-Mar-18	24-May-18	23-Mar-18	21-Sep-18	0%	0%
18	CONTRACTOR'S WORK PROGRAMME		63.00	23-Mar-18	24-May-18	23-Mar-18	21-Sep-18	0%	0%
19	OTHER CONTRACTUAL SUBMITTALS		28.00	24-Mar-18	20-Apr-18	24-Mar-18	23-Apr-18	0%	0%
20	PERMIT & APPROVAL		389.00	20-Jan-18	18-Aug-18	12-Jan-18	03-Aug-19	0%	0%
21	SURVEYING & GEOTECHNICAL INVESTIGATION		35.00	20-Jan-18	23-Feb-18	12-Jan-18	09-Feb-18	0%	0%
22	CUTTING OF MANGROVES		70.00	20-Jan-18	30-Mar-18	25-Jan-18	23-Apr-18	0%	0%
23	SETTING UP BATCHING PLANT		313.00	06-Apr-18	18-Aug-18	06-Apr-18	28-Nov-18	0%	0%
24	PC YARD & CAMP		28.00	04-May-18	01-Jun-18	21-Mar-18	01-Oct-18	0%	0%
25	CONNECTION FOR ELECTRICITY & WATER		63.00	18-May-18	20-Jul-18	06-Apr-18	03-Aug-19	0%	0%
26	CUTTING OF TREES		35.00	23-Mar-18	26-Apr-18	10-May-18	02-Aug-18	0%	0%
27	IMPORT PERMITS/LICENCES FOR EQUIPMENTS & GOODS		70.00	23-Mar-18	31-May-18	15-May-18	31-May-18	0%	0%
28	NOC FOR PLANT & FACILITIES TO BE USED AT SITE		51.00	23-Mar-18	31-May-18	16-Aug-18	28-Nov-18	0%	0%
29	TEMPORARY ACCESS ROAD FOR MAIN BRIDGE & INTERCHANGE		58.00	23-Mar-18	19-May-18	23-Mar-18	28-Jul-18	0%	0%
30	DESIGN		1087.38	20-Jan-18	04-Sep-19	01-Jan-18		100%	82.36%
31	EARLY STAGE DESIGN WORK / INFORMATION COLLECTION		678.38	20-Jan-18	17-Jul-18	01-Jan-18	12-Nov-19	100%	100%
32	INDEPENDENT DESIGN CHECKER APPROVAL		35.00	20-Jan-18	23-Feb-18	20-Jan-18	13-Apr-18	0%	0%
33	TOPOGRAPHIC SURVEY		116.33	20-Jan-18	16-May-18	01-Jan-18	20-Apr-18	0%	0%
34	BATHYMETRIC SURVEY		75.00	20-Jan-18	04-Apr-18	25-Jan-18	20-Mar-18	0%	0%
35	ADDITIONAL TIME FOR ONGC & BPCL PHYSCIAL VERIFICATION		309.00			21-Mar-18	05-Aug-19	0%	0%
36	GEOTECHNICAL INVESTIGATION		548.08	20-Jan-18	17-Jul-18	12-Jan-18	25-Jun-19	100%	100%
37	ADDITIONAL WORKS FOR DESIGN INITIATION OF STEEL MODULE 1		63.00			26-Jun-19	12-Nov-19	0%	0%
38	TEMPORARY WORK		884.17	22-Jan-18	01-Nov-18	20-Jan-18		100%	100%
39	PROJECT OFFICE LAYOUT		241.13	04-May-18	02-Jun-18	04-May-18	17-Jul-18	0%	0%
40	CASTING YARD LAYOUT		72.33	22-Jan-18	04-Apr-18	20-Jan-18	09-Oct-18	0%	0%
41	TEMPORARY BRIDGE		94.33	26-Feb-18	31-May-18	24-Feb-18	30-Aug-18	100%	100%
42	CASTING YARD STRUCTURE		199.38	10-May-18	10-Aug-18	20-Mar-18	20-Nov-18	0%	0%
43	STEEL BRIDGE FABRICATION YARD		212.17	20-Jul-18	01-Nov-18	11-Nov-19		0%	0%
44	CONCRETE MIX DESIGN		274.38	23-Mar-18	31-Aug-18	12-May-18	15-Nov-18	0%	0%
45	JFE DESIGN PROGRAMME		986.04	01-May-18	04-Sep-19	09-Apr-18		100%	50.5%
46	PROCUREMENT, MANUFACTURING AND LOGISTICS		1394.33	20-Jan-18	23-Aug-20	22-Dec-17		100%	91.67%
47	SURVEY & INVESTIGATION		72.33	20-Jan-18	02-Apr-18	22-Dec-17	04-Apr-18	0%	0%
48	TEMPORARY WORK		840.33	20-Jan-18	20-Oct-18	20-Jan-18		0%	0%
49	MAIN WORK_SUBCONTRACT WORK		742.00	23-Mar-18	20-Jul-19	23-Mar-18		0%	0%
50	EQUIPMENTS		893.50	23-Mar-18	12-Sep-19	23-Mar-18		100%	100%
51	BATCHING PLANT		437.00	23-Mar-18	31-Jul-18	23-Mar-18	23-Mar-19	0%	0%
52	RCD MACHINE		514.00	23-Mar-18	11-Nov-18	23-Mar-18	24-Aug-19	0%	0%
53	GANTRY CRANE		883.00	23-Mar-18	08-Feb-19	23-Mar-18		100%	100%
54	SEGMENT LAUNCHER		770.41	24-Jul-18	12-Sep-19	24-Jul-18	09-Mar-20	0%	0%
55	PRECAST MOULD AND SYSTEM FORM		714.91	07-Aug-18	24-Mar-19	04-Sep-18		100%	83.33%
56	PRECAST MOULD_CASTING BED		332.00	20-Aug-18	24-Mar-19	03-Jun-19		100%	83.33%
57	SYSTEM FORM		446.91	07-Aug-18	04-Mar-19	04-Sep-18		0%	0%
58	MATERIAL SUPPLIERS		851.38	02-Jun-18	15-Oct-19	20-Apr-18		0%	0%

Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete
Summary

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Mar-20	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)

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
59		MATERIAL PROCUREMENT	0.00			08-Aug-18		0%	0%
60		TEMPORARY BRIDGE	0.00			08-Aug-18		0%	0%
61		PERMANENT WORKS	0.00			25-Mar-19		0%	0%
62		PROCUREMENT OF STEEL GIRDER	762.00	07-May-19	23-Aug-20	01-Aug-19		0%	0%
63		STEEL PLATE FOR (RHS.STEEL MOUDLE-2_MP177 - MP182)	513.00	04-Jun-19	13-Jul-20	08-Aug-19		0%	0%
64		STEEL PLATE FOR (LHS.STEEL MOUDLE-2_MP177 - MP182)	438.00	07-May-19	16-Apr-20	01-Aug-19		0%	0%
65		STEEL PLATE FOR (RHS.STEEL MOUDLE-3_MP183 - MP186)	315.00	01-Jul-19	10-May-20	01-Nov-19		0%	0%
66		STEEL PLATE FOR (LHS.STEEL MOUDLE-3_MP183 - MP186)	315.00	04-Jun-19	14-Apr-20	01-Oct-19		0%	0%
67		STEEL PLATE FOR (RHS.STEEL MOUDLE-1_MP176 - MP171)	390.00	30-Jul-19	23-Aug-20			0%	0%
68		STEEL PLATE FOR (LHS.STEEL MOUDLE-1_MP176 - MP171)	390.00	02-Jul-19	26-Jul-20			0%	0%
69		CONSTRUCTION	1995.33	02-Apr-18	21-Jun-22	02-Apr-18		35.5%	16.39%
70		TEMPORARY WORK	1908.21	02-Apr-18	21-Jun-22	02-Apr-18		97.95%	97.67%
71		PREPARATION WORK	368.33	02-Apr-18	16-Jan-19	02-Apr-18	25-Jul-19	0%	0%
72		ESTABLISHMENT OF EMPOLYER & CONTRACTOR OFFICE	194.04	20-Jun-18	27-Nov-18	27-Jun-18	18-Jan-19	100%	100%
73		ESTABLISHMENT OF LABOUR CAMP	463.92	20-Jun-18	05-Apr-19	03-Jul-18	04-Apr-19	0%	0%
74		ESTABLISHMENT OF CONCRETE CASTING YARD	945.83	04-May-18	25-Apr-19	14-Jun-18		100%	99.33%
75		ESTABLISHMENT OF STEEL SPAN ASSEMBLY YARD	397.75	02-Nov-18	06-Mar-20	01-Nov-19		0%	0%
76		TEMPORARY BRIDGE	1855.88	20-May-18	21-Jun-22	27-Jul-18		96.49%	96.49%
77	A13700	Removal of Temporary Bridge & Casting Yard	365.00	21-Jun-21	21-Jun-22			0%	0%
78		TEMPORARY BRIDGE FACILITY-EQUIPMENT MOBILIZATION	372.33	20-May-18	19-Oct-18	27-Jul-18	25-Apr-19	0%	0%
79		TEMPORARY BRIDGE TYPE 1_FROM MP226(16+010) - MP249(17+320)	467.97	04-Jun-18	17-Aug-19	08-Aug-18	23-Dec-19	100%	100%
80		TEMPORARY BRIDGE TYPE 3_FROM MP207(14+870) - MP226(16+010)	566.29	24-Jul-18	12-Sep-19	16-Nov-18	15-Feb-20	100%	100%
81		MATERIAL LOADING JETTY	405.13	31-Aug-18	08-Aug-19	08-Mar-19		100%	100%
82		PERMANENT WORK	1728.33	03-Sep-18	24-May-22	08-Dec-18		27.34%	5.77%
83		PRE-FABRICATION AND ASSEMBLY	1170.33	18-Apr-19	19-Feb-22	16-Oct-19		8.41%	0.72%
84		CONCRETE PRE-FABRICATION AT THE CASTING YARD	612.13	18-Apr-19	15-Sep-21	06-Nov-19		40.21%	4.25%
85		STEEL SPAN FABRICATION AT THE SUPPLIER'S WORK SHOP INCLUDING LOGISTIC	1135.38	02-Jun-19	24-Jan-22	16-Oct-19		1.99%	0%
86		STEEL GIRDER ASSEMBLY AT THE CONTRACTOR'S ASSEMBLY YARD	622.63	05-Sep-20	17-Feb-22			0%	0%
87		STEEL SPAN LOADING AND TRANSPORTING TO THE ERECTION AREA	539.00	30-Sep-20	19-Feb-22			0%	0%
88		MAIN BRIDGE	1728.33	03-Sep-18	24-May-22	08-Dec-18		38.41%	12.01%
89		MAIN BRIDGE FOUNDATION	1138.04	03-Sep-18	23-Mar-21	08-Dec-18		57.93%	35.16%
90		MAIN BRIDGE PILE FOUNDATION	1044.27	03-Sep-18	23-Jan-21	08-Dec-18		70.3%	49.44%
91		PILE LOAD TEST	259.25	03-Sep-18	19-Nov-18	08-Dec-18	11-Nov-19	100%	100%
92		MAIN BRIDGE PILE FOUNDATION_LAND 17+414~18+187 FROM MP250 TO MP266	231.35	30-Nov-18	15-May-19	17-Jan-19		100%	86.41%
93		MAIN BRIDGE PILE FOUNDATION_CRZ 15+890~17+414 FROM MP226 TO MP250	268.00	20-Dec-18	27-Nov-19	12-Jun-19	21-Feb-20	100%	100%
94		MAIN BRIDGE PILE FOUNDATION_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	317.00	27-Feb-19	06-Jun-20	15-Oct-19		75.42%	76.49%
95		MAIN BRIDGE PILE FOUNDATION_MARINE 13+610~14+800 FROM MP187 TO MP205	299.20	12-Dec-19	28-Nov-20	01-Oct-19		32.14%	19.5%
96		MAIN BRIDGE PILE FOUNDATION_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	319.50	27-Nov-19	23-Jan-21	17-Mar-20		17.23%	0.78%
97		MAIN BRIDGE PILE FOUNDATION_MARINE 10+380~11+880 FROM MP146 TO MP170	461.13	24-Nov-18	28-Dec-19	19-Feb-19		100%	24.82%
98		MAIN BRIDGE PILE CAP INSTALLATION	662.75	22-Dec-18	23-Mar-21	01-May-19		45.01%	20.24%
99		MAIN BRIDGE PILE CAP BOTTOM SLAB INSTALLATION	630.25	22-Dec-18	17-Feb-21	19-Aug-19		0%	0%
100		MAIN BRIDGE PILE CAP BOTTOM SLAB_CRZ 15+890~17+414 FROM MP226 TO MP250	204.75	17-Jan-19	12-Dec-19	19-Aug-19		0%	0%
101		MAIN BRIDGE PILE CAP BOTTOM SLAB_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	309.75	06-Apr-19	18-Jul-20	30-Dec-19		0%	0%
102		MAIN BRIDGE PILE CAP BOTTOM SLAB_MARINE 13+610~14+800 FROM MP187 TO MP205	277.00	21-Jan-20	10-Dec-20	16-Nov-19		0%	0%
103		MAIN BRIDGE PILE CAP PRECAST SHELL_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	308.00	08-Jan-20	17-Feb-21			0%	0%
104		MAIN BRIDGE PILE CAP BOTTOM SLAB_MARINE 10+380~11+880 FROM MP146 TO MP170	250.00	22-Dec-18	21-Jan-20			0%	0%
105		MAIN BRIDGE PILE CAP INSTALLATION	652.25	27-Dec-18	23-Mar-21	01-May-19		45.01%	20.24%
106		MAIN BRIDGE PILE CAP_LAND 17+414~18+188 FROM MP251 TO MP266	267.50	27-Dec-18	13-Jun-19	01-May-19		100%	72.73%
107		MAIN BRIDGE PILE CAP_CRZ 15+890~17+414 FROM MP226 TO MP250	147.50	04-Mar-19	08-Jan-20	28-Aug-19		100%	84.44%
108		MAIN BRIDGE PILE CAP_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	318.00	18-Apr-19	05-Sep-20	29-Jan-20		58.19%	17.5%
109		MAIN BRIDGE PILE CAP_MARINE 13+610~14+800 FROM MP187 TO MP205	270.00	01-Feb-20	06-Jan-21	13-Jan-20		15.02%	4.76%
110		MAIN BRIDGE PILE CAP_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	411.00	20-Jan-20	23-Mar-21			1.62%	0%
111		MAIN BRIDGE PILE CAP_MARINE 10+380~11+880 FROM MP146 TO MP170	263.00	03-Jan-19	17-Feb-20			100%	0%
112		MAIN BRIDGE SUB-STRUCTURE	946.04	09-Jan-19	24-Sep-21	04-Nov-19		57.51%	4.01%
113		MAIN BRIDGE PIER INSTALLATION	674.50	09-Jan-19	28-Jul-21	04-Nov-19		61.04%	7.32%
114		MAIN BRIDGE PIER_LAND 17+414~18+188 FROM MB251 TO MB266	279.75	09-Jan-19	08-Nov-19	06-Nov-19		100%	6.45%
115		MAIN BRIDGE PIER_CRZ 15+890~17+414 FROM MB226 TO MB250	216.80	26-Mar-19	06-Feb-20	04-Nov-19		100%	33.22%
116		MAIN BRDIGE PIER_INTERTIDAL 14+800~15+890 FROM MB206 TO MB225	439.00	11-May-19	16-Oct-20	10-Feb-20		46.82%	1.14%
117		MAIN BRIDGE PIER_MARINE 13+610~14+800 FROM MB187 TO MB205	217.00	19-Mar-20	18-Feb-21			0.22%	0%
118		MAIN BRIDGE PIER_MARINE (STEEL) 11+880~13+610 FROM MB171 TO MB186	452.00	17-Feb-20	28-Jul-21			0%	0%
119		MAIN BRIDGE PIER_MARINE 10+380~11+880 FROM MB146 TO MB170	269.00	07-Feb-19	13-Mar-20			100%	0%
120		MAIN BRIDGE PIER CAP INSTALLATION	596.25	08-Feb-19	27-Aug-21			59.1%	0%

Project Baseline Bar | Actual Work | Remaining Work | Critical Remaining Work | Milestone | % Complete | Summary

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

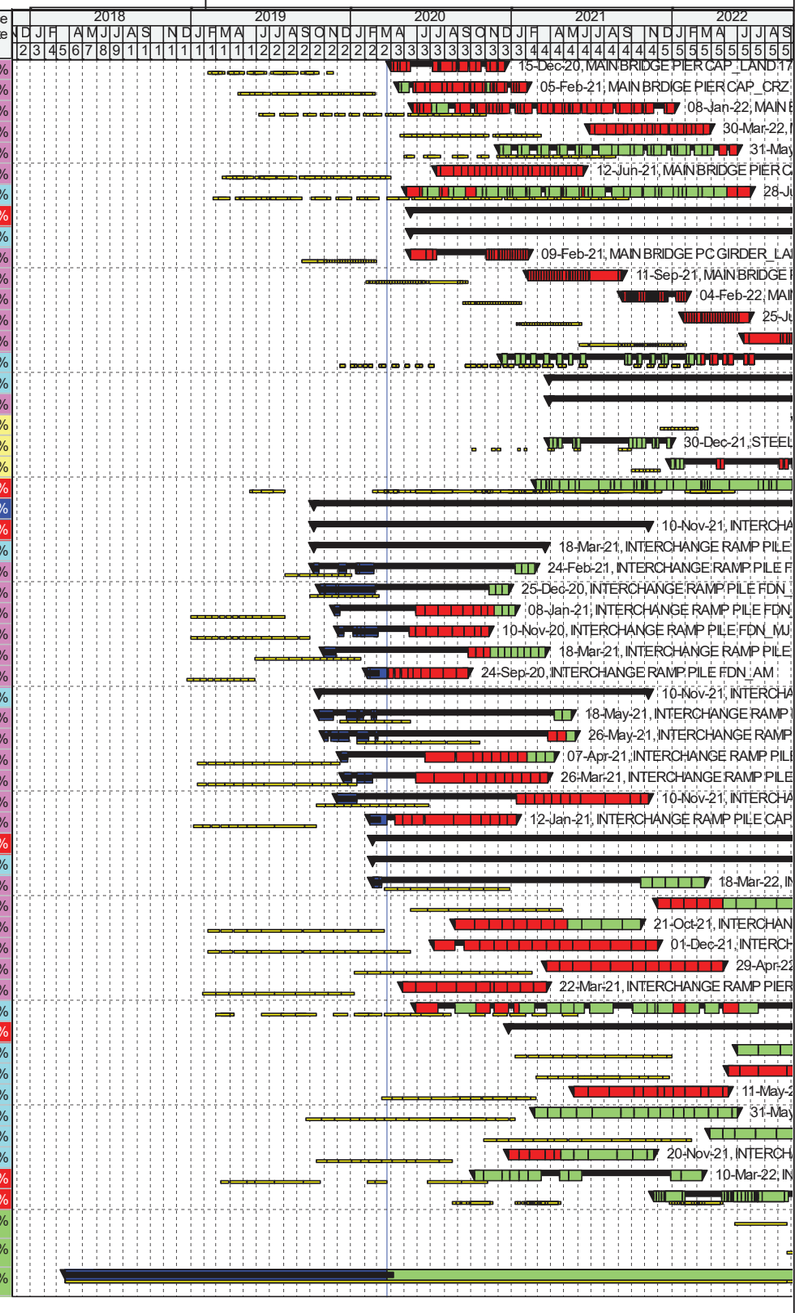
CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Mar-20	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)

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
121		MAIN BRIDGE PIER CAP_LAND 17+414~18+188 FROM MB251 TO MB266	183.50	08-Feb-19	23-Nov-19			100%	0%
122		MAIN BRIDGE PIER CAP_CRZ 15+890~17+414 FROM MB226 TO MB250	211.80	19-Apr-19	25-Feb-20			100%	0%
123		MAIN BRIDGE PIER CAP_INTERTIDAL 14+800~15+890 FROM MB206 TO MB225	434.00	06-Jun-19	05-Nov-20			37.44%	0%
124		MAIN BRIDGE PIER CAP_MARINE 13+610~14+800 FROM MB187 TO MB205	203.00	23-Apr-20	10-Mar-21			0%	0%
125		MAIN BRIDGE PIER CAP_MARINE (STEEL) 11+880~13+610 FROM MB171 TO MB186	421.00	30-Apr-20	27-Aug-21			0%	0%
126		MAIN BRIDGE PIER CAP_MARINE 10+380~11+880 FROM MB146 TO MB170	255.00	15-Mar-19	01-Apr-20			98.99%	0%
127		MAIN BRIDGE BEARING PAD AND BEARING INSALLATION	780.25	22-Feb-19	24-Sep-21			8.01%	0%
128		MAIN BRIDGE SUPER STRUCTURE BOX GIRDER INSTALLATION	1088.00	12-Sep-19	01-Mar-22			18.05%	0%
129		MAIN BRIDGE CONCRETE GIRDER INSTALLATION	1005.88	12-Sep-19	02-Feb-22			21.15%	0%
130		MAIN BRIDGE PC GIRDER_LAND 15+890~17+414 FROM MP251 TO MP266	268.75	12-Sep-19	27-Feb-20			100%	0%
131		MAIN BRIDGE PRECAST GIRDER_CRZ 15+890~17+414 FROM MP226 TO MP250	129.75	04-Feb-20	25-Sep-20			25.18%	0%
132		MAIN BIDGE PRECAST GIRDER_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	122.63	12-Sep-20	23-Jan-21			0%	0%
133		MAIN BRIDGE PRECAST GIRDER_MARINE 13+610~14+800 FROM MP187 TO MP205	126.00	12-Jan-21	10-Jun-21			0%	0%
134		MAIN BRIDGE PRECAST GIRDER_MARINE 10+380~11+880 FROM MP146 TO MP170	156.00	04-Jun-21	02-Feb-22			0%	0%
135		STITCH JOINT CASTING	639.00	07-Dec-19	12-Feb-22			0%	0%
136		MAIN BRIDGE STEEL GIRDER INSTALLATION	545.00	03-Oct-20	01-Mar-22			0%	0%
137		MAN BRIDGE STEEL GIRDER INSTALLATION_MARINE 11+880~13+610 FROM MP171 TO MP186	545.00	03-Oct-20	01-Mar-22			0%	0%
138		STEEL MODULE-01_MP176 - MP171 (INSTALLATION)	178.13	07-Dec-21	01-Mar-22			0%	0%
139		STEEL MODULE-02_MP182 - MP177 (INSTALLATION)	180.00	03-Oct-20	30-Sep-21			0%	0%
140		STEEL MODULE-03_MP186 - MP183 (INSTALLATION)	186.88	30-Sep-21	07-Dec-21			0%	0%
141		MISCELLANEOUS & FINISHING WORKS	711.88	16-May-19	24-May-22			7.05%	0%
142		INTERCHANGE	1224.08	24-Dec-18	28-Apr-22	09-Oct-19		67.8%	6.98%
143		INTERCHANGE FOUNDATION	621.08	24-Dec-18	22-Oct-20	09-Oct-19		91.8%	30.48%
144		INTERCHANGE RAMP PILE FOUNDATION	274.00	24-Dec-18	05-Mar-20	09-Oct-19		100%	32.61%
145		INTERCHANGE RAMP PILE FDN_MA	83.50	05-Aug-19	03-Jan-20	09-Oct-19		100%	62.82%
146		INTERCHANGE RAMP PILE FDN_AC	117.00	01-Oct-19	05-Mar-20	25-Oct-19		100%	69.51%
147		INTERCHANGE RAMP PILE FDN_JM	143.00	03-Jan-19	05-Aug-19	26-Nov-19		100%	8.29%
148		INTERCHANGE RAMP PILE FDN_MJ	132.00	03-Jan-19	01-Oct-19	04-Dec-19		100%	43.14%
149		INTERCHANGE RAMP PILE FDN_CA	162.85	28-May-19	23-Jan-20	01-Nov-19		100%	8.29%
150		INTERCHANGE RAMP PILE FDN_AM	111.15	24-Dec-18	27-May-19	07-Feb-20		100%	15.09%
151		INTERCHANGE RAMP PILE CAP INSTALLATION	377.00	08-Jan-19	22-Oct-20	22-Oct-19		80.01%	27.42%
152		INTERCHANGE RAMP PILE CAP_MA	98.00	06-Dec-19	15-May-20	22-Oct-19		67.83%	75%
153		INTERCHANGE RAMP PILE CAP_AC	148.00	15-Jan-20	22-Oct-20	02-Nov-19		34.26%	70%
154		INTERCHANGE RAMP PILE CAP_JM	187.00	18-Jan-19	06-Dec-19	11-Dec-19		100%	8.33%
155		INTERCHANGE RAMP PILE CAP_MJ	193.00	18-Jan-19	15-Jan-20	16-Dec-19		100%	21.43%
156		INTERCHANGE RAMP PILE CAP_CA	193.70	15-Oct-19	27-Jun-20	02-Dec-19		66.3%	8.33%
157		INTERCHANGE RAMP PILE CAP_AM	168.30	08-Jan-19	15-Oct-19	15-Feb-20		100%	1%
158		INTERCHANGE SUBSTRUCTURE & BEARING	686.25	29-Jan-19	31-May-21	19-Feb-20		55.14%	4.83%
159		INTERCHANGE RAMP PIER INSTALLATION	658.25	29-Jan-19	27-Apr-21	19-Feb-20		55.14%	4.83%
160		INTERCHANGE RAMP PIER_MA	125.00	18-Mar-20	29-Dec-20	19-Feb-20		0.97%	40.83%
161		INTERCHANGE RAMP PIER_AC	250.00	16-May-20	27-Apr-21			0%	0%
162		INTERCHANGE RAMP PIER_JM	300.00	08-Feb-19	18-Mar-20			100%	0%
163		INTERCHANGE RAMP PIER_MJ	360.25	08-Feb-19	16-May-20			86.55%	0%
164		INTERCHANGE RAMP PIER_CA	300.00	08-Jan-20	16-Feb-21			16.85%	0%
165		INTERCHANGE RAMP PIER_AM	234.18	29-Jan-19	08-Jan-20			100%	0%
166		INTERCHANGE BEARING INSTALLATION	661.25	27-Feb-19	31-May-21			0%	0%
167		INTERCHANGE SUPERSTRUCTURE INSTALLATION	647.45	20-Sep-19	15-Feb-22			16.15%	0%
168		INTERCHANGE BOX GIRDER INSTALLATION_MA	255.00	09-Jan-21	03-Jan-22			0%	0%
169		INTERCHANGE BOX GIRDER INSTALLATION_AC	266.23	27-Feb-21	27-Dec-21			0%	0%
170		INTERCHANGE BOX GIRDER INSTALLATION_JM	250.00	11-Mar-20	26-Feb-21			0%	0%
171		INTERCHANGE BOX GIRDER INSTALLATION_MJ	343.38	20-Sep-19	08-Jan-21			30.77%	0%
172		INTERCHANGE BOX GIRDER INSTALLATION_CA	285.93	30-Oct-20	15-Feb-22			0%	0%
173		INTERCHANGE BOX GIRDER INSTALLATION_AM	230.00	14-Oct-19	19-Aug-20			63.25%	0%
174		INTERCHANGE RETAINING STRUCTURE	367.13	11-Mar-19	06-Nov-20			80%	0%
175		MISCELLANEOUS & FINISHING WORKS	484.95	19-Aug-20	28-Apr-22			0%	0%
176		PROJECT HANDINGOVER	65.00	24-May-22	22-Sep-22			0%	0%
177		DEFECT LIABILITY PERIOD (DLP)	730.00	22-Sep-22	21-Sep-24			0%	0%
178		PRICE SCHEDULE	2270.04	23-Mar-18	21-Mar-23	23-Mar-18		55.47%	35%



Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete
Summary

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Mar-20	R0		

Attachment 8- Package-3's Construction Programme Updated as on 25th March 2020

Activity ID	Activity Name	Original Duration	BL1 Start	BL1 Finish	Start	Finish	Activity % Complete	Schedule % Complete	Performance % Complete	Budgeted Total Cost	Actual Total Cost	Schedule Performance Index	Cost Performance Index	Planned Value Cost	Earned Value Cost
MTHL Pkg 3_Construction Schedule Mar'20		1403	23-Mar-18	21-Sep-21	23-Mar-18 A	11-Feb-23		76.8%	27.38%	Rs10,137,901,022	Rs2,519,869,701	0.36	1.13	Rs8,015,960,737	Rs2,857,959,025
Procurement of Mumbai Trans Harbour Link Project (Pacl		1403	23-Mar-18	21-Sep-21	23-Mar-18 A	11-Feb-23		76.8%	27.38%	Rs10,137,901,022	Rs2,519,869,701	0.36	1.13	Rs8,015,960,737	Rs2,857,959,025
2	Commencement Date (CD)	0	23-Mar-18		23-Mar-18 A		100%	100%	100%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Physical Milestones		995	18-Sep-18	21-Sep-21	22-May-20	11-Feb-23		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1001	KD1 [Construction programme, completion of Soil Investi	0	18-Sep-18	18-Sep-18	22-May-20	22-May-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1002	KD 2 [NOC for technical design doc & drawing for foundi	0	17-Dec-18	17-Dec-18	24-Jul-20	24-Jul-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1003	KD 3 [NOC for Good for construction drawing for foundat	0	15-Jun-19	15-Jun-19	18-Dec-20	18-Dec-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1004	KD 4 [Substantial completion of foundation, piles (if appli	0	21-Mar-20	21-Mar-20	07-May-21	07-May-21	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1005	KD 5 [Substantial completion of pile caps (if applicable),	0	19-Sep-20	19-Sep-20	18-Sep-21	18-Sep-21	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1006	KD 6 [Substantial completion superstructure (PC/CIS/SS	0	20-Mar-21	20-Mar-21	27-Jul-22	27-Jul-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1007	KD 7 [Substantial completion of kerb/traffic signs, Markin	0	24-Jul-21	24-Jul-21	04-Jan-23	04-Jan-23	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1008	KD 8 [Final completion & handing over]	0	21-Sep-21	21-Sep-21	11-Feb-23	11-Feb-23	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Financial Milestone		758	18-Sep-18	21-Sep-21	23-Mar-18 A	21-Sep-21		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Interface Milestone		854	17-Dec-18	06-Mar-21	25-Mar-20	27-Jul-22		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Document Submittals		45	23-Mar-18	06-May-18	06-Apr-18 A	25-Mar-20		100%	80%	Rs74,992,895	Rs59,994,316	0.80	1.00	Rs74,992,895	Rs59,994,316
Employer's Obligation / Land Handover		151	19-Apr-18	18-Sep-18	23-Mar-18 A	29-Mar-20		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
ROW 75 Ha [CD +180 days]		0	19-Apr-18	18-Sep-18	23-Mar-18 A	29-Mar-20		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Casting Yard 9.16 Ha [CD+120 days]		0	20-Jul-18	20-Jul-18	20-Dec-18 A	21-Dec-18.		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Employer Office (Sch 01- General Item)		801	20-Aug-18	16-Sep-21	25-Jan-19 A	21-Dec-21		88.54%	86.5%	Rs142,351,965	Rs123,137,965	0.98	1.00	Rs126,033,668	Rs123,137,995
Construction of Employer office		110	20-Aug-18	11-Dec-18	30-May-19 A	31-Oct-19 A		100%	100%	Rs112,791,965	Rs112,791,965	1.00	1.00	Rs112,791,965	Rs112,791,965
Facility		980	12-Dec-18	16-Sep-21	25-Jan-19 A	21-Dec-21		44.8%	35%	Rs29,560,000	Rs10,346,000	0.78	1.00	Rs13,241,703	Rs10,346,030
Survey & Geotechnical Investigation Works		346	19-Apr-18	22-Oct-18	19-Apr-18 A	22-May-20		100%	95.75%	Rs242,300,773	Rs181,725,579	0.96	1.28	Rs242,300,945	Rs232,003,161
Topographical Survey		346	19-Apr-18	22-Oct-18	19-Apr-18 A	25-Mar-20		100%	99.85%	Rs0	Rs0	1.00	0.00	Rs109	Rs109
Geotechnical Investigation work		93	17-May-18	17-Sep-18	10-Sep-18 A	22-May-20		100%	95.75%	Rs242,300,773	Rs181,725,579	0.96	1.28	Rs242,300,836	Rs232,003,052
Design Works		480	07-May-18	14-Jun-19	25-Apr-18 A	18-Dec-20		100%	67.18%	Rs159,122,500	Rs91,017,152	0.67	1.17	Rs159,123,270	Rs106,905,207
Design Basis Report		48	07-May-18	30-Jun-18	25-Apr-18 A	08-Dec-18.		100%	100%	Rs0	Rs0	1.00	0.00	Rs51	Rs51
Preliminary Design		47	02-Jul-18	25-Aug-18	26-Jul-18 A	25-Mar-20		100%	80%	Rs286,875	Rs286,875	0.80	0.80	Rs286,875	Rs229,500
Geotechnical Interpretative Report Submission & GC Approval (NONO)		24	11-Sep-18	08-Oct-18	07-Dec-18 A	26-May-20		100%	91%	Rs0	Rs0	0.91	0.00	Rs42	Rs38
Plan & Profile Alignment		77	06-Jun-18	14-Aug-18	25-Jun-18 A	02-Apr-20		100%	80%	Rs0	Rs0	0.80	0.00	Rs102	Rs82
Superstructure Design		368	16-Aug-18	26-Feb-19	05-Mar-19 A	07-Sep-20		100%	46.27%	Rs85,075,000	Rs34,061,917	0.46	1.16	Rs85,075,144	Rs39,367,734
Foundation & Pier		324	05-Oct-18	14-Jun-19	06-Nov-18 A	18-Dec-20		100%	83.66%	Rs28,434,375	Rs13,147,734	0.84	1.81	Rs28,434,435	Rs23,786,988
Abutment & Foundation		255	15-Oct-18	16-Jan-19	31-Dec-18 A	13-Jun-20		100%	81.48%	Rs0	Rs0	0.81	0.00	Rs81	Rs66
Pier Cap		374	24-Oct-18	10-May-19	11-Jan-19 A	15-Dec-20		100%	42.52%	Rs0	Rs0	0.43	0.00	Rs290	Rs123
Bearings & Drainage		218	17-Nov-18	03-Apr-19	21-Jan-19 A	07-Oct-20		100%	89.97%	Rs18,005,625	Rs16,200,000	0.90	1.00	Rs18,005,625	Rs16,200,000
Pavement Design		71	01-Jul-18	27-Aug-18	15-Oct-18 A	18-Feb-19,		100%	100%	Rs27,320,625	Rs27,320,625	1.00	1.00	Rs27,320,625	Rs27,320,625
Procurement Works		1036	12-Sep-18	08-Jun-21	15-Feb-19 A	09-Dec-22		90.17%	9.31%	Rs1,387,160,466	Rs44,849,209	0.10	3.50	Rs1,519,472,262	Rs156,879,749
For Main Bridge		1036	12-Sep-18	08-Jun-21	15-Feb-19 A	09-Dec-22		81.13%	6.38%	Rs877,933,218	Rs27,990,308	0.08	2.00	Rs712,281,063	Rs55,980,814
Launching Girder with factory testing.....(Using Underslung)		180	22-Jan-19	23-Aug-19	26-Nov-19 A	04-Mar-21		100%	50%	Rs0	Rs0	0.50	0.00	Rs180	Rs90
Segments Moulds		60	12-Dec-18	21-Feb-19	26-Apr-19 A	02-Jul-19 A		100%	100%	Rs0	Rs0	1.00	0.00	Rs60	Rs60
Steel Structure		300	08-Dec-18	30-Nov-19	26-Jun-20	17-Jun-21		100%	0%	Rs203,366,072	Rs0	0.00	0.00	Rs203,366,072	Rs0
Steel for superstructure		68	16-Oct-18	26-Dec-18	22-Aug-19 A	22-Jul-20		100%	11%	Rs508,914,691	Rs27,990,308	0.11	2.00	Rs508,914,691	Rs55,980,616
Formwork & stagging requirement		104	12-Sep-18	23-Nov-18	15-Feb-19 A	04-Jun-20		100%	80%	Rs0	Rs0	0.80	0.00	Rs60	Rs48
Bearings, Expansion joint, Water proofing with factory test		180	27-Jun-20	27-Jan-21	02-Feb-22	31-Aug-22		0%	0%	Rs165,652,455	Rs0	0.00	0.00	Rs0	Rs0
Painting with testing		141	22-Dec-20	08-Jun-21	28-Jun-22	09-Dec-22		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
For Road Works		631	04-Apr-19	13-Jan-21	01-Mar-19 A	08-Apr-22		65%	16.57%	Rs0	Rs0	0.25	0.00	Rs273	Rs70
Imported Procurement		350	22-Jan-19	10-Aug-19	04-Dec-19 A	17-Feb-21		100%	12.5%	Rs509,227,248	Rs16,858,901	0.13	5.98	Rs807,190,926	Rs100,898,866
Co-ordinated Fabrication & Manufracturing Works		637	27-Sep-18	10-Feb-20	21-Feb-19 A	28-Sep-21		100%	0%	Rs390,605,953	Rs0	0.00	0.00	Rs390,606,723	Rs470
Permanent Works fabrication		607	27-Sep-18	06-Jan-20	21-Feb-19 A	13-Aug-21		100%	0%	Rs390,605,953	Rs0	0.00	0.00	Rs390,606,183	Rs230
Permanent Works Assembly		607	22-Oct-18	10-Feb-20	25-Feb-19 A	28-Sep-21		100%	44.44%	Rs0	Rs0	0.44	0.00	Rs540	Rs240
Construction Works		1164	20-Jul-18	23-Jul-21	26-Sep-18 A	04-Jan-23		72.24%	30.56%	Rs7,063,465,446	Rs1,999,145,479	0.42	1.08	Rs5,102,495,823	Rs2,158,285,390
Preconstruction Activity		541	20-Jul-18	01-Jul-19	26-Sep-18 A	27-Nov-20		100%	45.31%	Rs0	Rs0	0.45	0.00	Rs565	Rs256
Sub Structures (Open Foundation, Pier ,Pier Cap)		823	08-Dec-18	07-Nov-20	30-Sep-18 A	17-Dec-21		73.27%	48.81%	Rs3,392,806,949	Rs1,656,074,430	0.67	1.00	Rs2,486,041,696	Rs1,656,074,430
Main Carriageway		676	08-Dec-18	24-Jan-20	05-Dec-18 A	11-Jun-21		100%	41.84%	Rs1,821,401,625	Rs762,039,312	0.42	1.00	Rs1,821,401,625	Rs762,039,312
SH 54 Ramps		245	27-Feb-19	06-Mar-20	18-Dec-18 A	06-May-21		100%	82.41%	Rs232,139,423	Rs191,316,439	0.82	1.00	Rs232,139,423	Rs191,316,439
Chirle NH 4B Ramps		336	20-May-19	05-Sep-20	30-Sep-18 A	17-Dec-21		45.35%	45.33%	Rs874,987,055	Rs396,616,894	1.00	1.00	Rs396,786,890	Rs396,616,894
Chirle NH 4B Loops		319	09-Sep-19	07-Nov-20	21-Aug-19 A	16-Nov-21		7.69%	65.93%	Rs464,278,846	Rs306,101,785	8.57	1.00	Rs35,713,757	Rs306,101,785
Super Structures		677	27-Feb-19	12-Apr-21	11-Sep-19 A	27-Jul-22		55.38%	4.47%	Rs1,408,927,165	Rs53,448,476	0.08	1.18	Rs780,323,989	Rs63,044,448
Segments Precasting		444	30-Mar-19	09-Nov-20	11-Sep-19 A	27-Oct-21		60%	8.25%	Rs760,156,099	Rs53,448,476	0.14	1.17	Rs456,094,925	Rs62,713,045
Segments Erection		405	26-Aug-19	20-Jan-21	06-Mar-20 A	27-Jul-22		45.31%	0.47%	Rs70,699,410	Rs0	0.01	0.00	Rs32,035,720	Rs331,403
Cast In Situ		593	27-Feb-19	12-Apr-21	22-May-20	23-Jun-22		44.61%	0%	Rs464,334,354	Rs0	0.00	0.00	Rs207,160,477	Rs0
Steel Structure		390	10-May-19	17-Nov-20	17-Nov-20	26-Mar-22		74.76%	0%	Rs113,737,302	Rs0	0.00	0.00	Rs85,032,867	Rs0
Bearings & Expansion Joints		210	03-Aug-20	12-Apr-21	09-Mar-22	09-Nov-22		0%	0%	Rs10,454,697	Rs0	0.00	0.00	Rs0	Rs0
Bridge Ancillaries & Miscellaneous Item		400	12-Aug-20	23-Jul-21	22-Sep-21	04-Jan-23		0%	0%	Rs180,921,987	Rs0	0.00	0.00	Rs0	Rs0
RE Wall		503	27-Feb-19	18-Feb-21	17-Aug-20	13-May-22		60.6%	0%	Rs461,687,248	Rs0	0.00	0.00	Rs279,801,250	Rs0
Road Work		880	20-Apr-19	18-May-21	16-Feb-19 A	22-Oct-22		96.75%	27.3%	Rs1,608,667,400	Rs289,622,574	0.28	1.52	Rs1,556,328,324	Rs439,166,256
Completion of Interface Activity		544	19-Sep-20	06-Mar-21	19-Sep-20	27-Jul-22		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Provisional Sum		876	23-Apr-18	23-Aug-21	30-Nov-18 A	24-Dec-22		59%	3.05%	Rs677,901,024	Rs20,000,000	0.05	1.04	Rs400,935,150	Rs20,752,736
Testing & Commissioning Works		33	26-Jul-21	20-Sep-21	04-Jan-23	11-Feb-23		0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0

TASK filter: All Activities

Attachment 9- Project Progress Photos

Package 1- Site Progress Photos

Photo No. 1: MP 84 N Pier Concrete – Marine Area

Photo No. 2: MP 104 Pile Cap Concreting- Marine Area

Photo No. 3: MP 104 Pile Concreting- Marine Area

Photo No. 4: Segments Shifting For Erection- Intertidal Area

Photo No. 5: MP 02 Pier Reinforcement Inspection

Photo No. 6: MP 93 Pile Cap Pre-pour Inspection- Marine Area

Photo No. 7: Intertidal pier concreting in progress

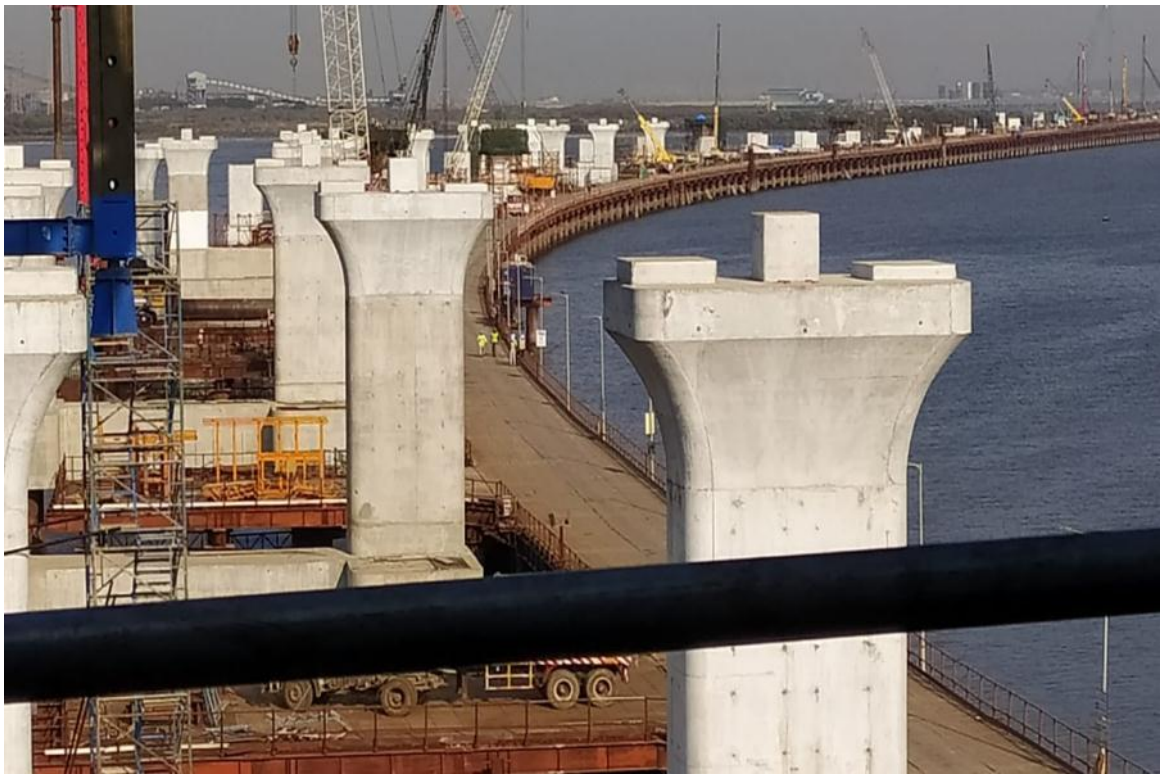


Photo No. 8: A View of Intertidal Area Taken From MP 13 Towards the Sea

Photo No. 9: A View of Pier and Pier Caps at the Interchange Area

Photo No. 10: Segment Erection by LG at MP 14-15 N11- Intertidal Area is in progress

Photo No. 11: MP 14-15 Erection is in progress

Photo No. 12: AP 46 Pier Concreting is in progress

Package 2 – Site Progress Photos

Photo No. 1: Precast Slab erection at TAB/Loading Jetty platform in progress

Photo No. 2: Pile reinforcement cage lowering at MP 223/02 RHS in progress

Photo No. 3: Pile Cap Reinforcement and Pile Head Chipping at MP 207 LHS & RHS in progress

Photo No. 4: High Strain Dynamic Pile Load Test at MP 209/02 LHS in progress

Photo No. 5: Pier 1st and 2nd lift reinforcement tying in progress at MP 206 LHS and RHS

Photo No. 6: Pile cap concreting at MP 228 RHS in progress

Photo No. 7: Pier 2nd lift formwork and 2nd lift reinforcement at MP 231 RHS and LHS in progress

Photo No. 8: Placing of sacrificial slab at MP 238 RHS in progress

Photo No. 9: Scaffolding and Bottom formwork for Portal Beam at MP 245 LHS in progress

Photo No. 10: Bracket fixing for Pier Cap at MP 243 RHS in progress

Photo No. 11: Open foundation concreting at MP 261 RHS in progress

Photo No. 12: Pier final lift formwork inspection at MP 243 LHS in progress

Package 3 – Site Progress Photos

Photo No. 1: Casting of Foundation done at Location JMA1

Photo No. 2: PCC concrete pouring at location JMP09

Photo No. 3: RMP 277 foundation annular filling in progress

Photo No. 4: Pier Reinforcement at location LP31, RP31

Photo No. 5: Pier concrete at location MPP14 in progress

Photo No. 6: Pier Concrete at location JMP20 in progress

Photo No. 7: 1st Segment Erection at RMP267-268 in progress

Photo No. 8: Pier Shuttering at location JMP20 in progress

Photo No. 9: Pier Cap casting at location LMP283 in progress

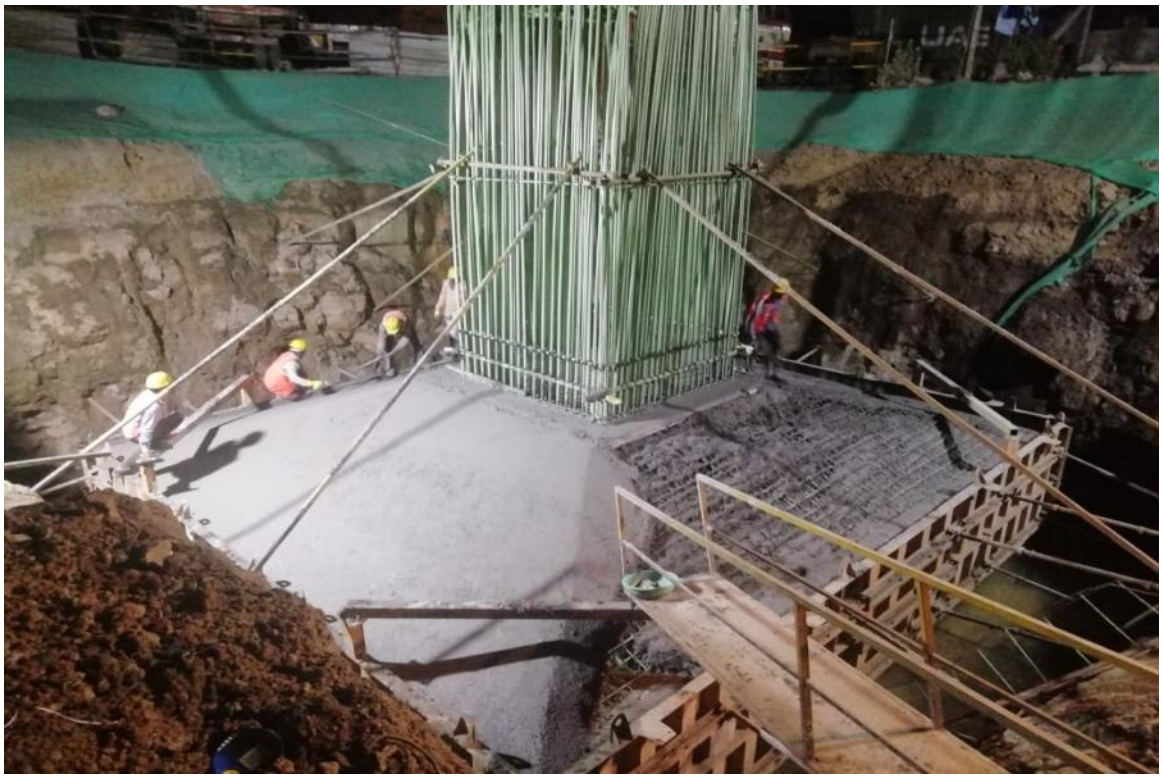


Photo No. 10: Foundation casting at LP21 in progress

Photo No. 11: Segment erection at span RMP 268-269 in progress

Photo No. 12: Span MJP-07 to 08 (Chirle Ramp) Staging for cast in-situ voided slab in progress