Ref No: MTHL/GC/MMRDA/LT/QPR-1954/2021 **1st March 2021**

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

Sub: General Consultancy services for Mumbai Trans Harbour Link (MTHL) project - **Submission of Quarterly Progress Report (QPR) No. 15 for October to December 2020**

Ref: MTHL/GC/MMRDA/LT/QPR – 1909/ 2021 dated 15th February 2021

Dear Sir,

With reference to the above subject, please find enclosed 1 hard copy of the corrected Quarterly Progress Report (QPR) No. 15 for the period of 1st October to 31st December 2020. In this report, we have incorporated all the corrections after your review of the draft report.

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

Thanking you,
Yours faithfully,

1 March 2021

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

Encl: 1 copy of Quarterly Progress Report No. 15 (October - December 2020)

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

एम एम आर डी ए
MMRDA

Mumbai Metropolitan Region Development Authority

Mumbai Trans Harbour Link Project

Quarterly Progress Report - No.15

(From 1st October 2020 to 31st December 2020)

Mumbai Trans Harbour Link Project
Quarterly Progress Report No. 15
1st October 2020 to 31st December 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)	Repayment Period:	30 years, including 10 years of grace period.

DOCUMENT VERIFICATION AND REVISION RECORD

PROJECT NAME	Mumbai Trans Harbour Link Project		
DOC NO.	15	DATE OF ISSUE	12/02/2021
DOC TITLE	Quarterly Progress Report No. 15		

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
R0	15/12/2020	Quarterly Progress Report No.13 (Apr-Jun 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
R0	06/01/2021	Quarterly Progress Report No.14 (Jul-Sept 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
R0	12/02/2021	Quarterly Progress Report No.15 (Oct-Dec 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 December 2020
1) Completion of Land Acquisition and Resettlement	March 2019	March 2021
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 – May 2020
b) Main Bidding	June 2019 – September 2020	June 2020 – May 2021
4) Civil Construction		
Package-1 and Package-2	March 2018 – September 2022	March 2018 – September 2022
Package-3	March 2018 – September 2021	March 2018 – September 2021
Package-4	October 2020 – September 2022	June 2021 – September 2022
5) Defect Liability Period		
Package-1, Package-2 and Package-4	October 2022 – September 2024	October 2022 – September 2024
Package-3	October 2021 – September 2023	October 2021 – September 2023
6) Commencement of Toll Collection	September -2022	September -2022
7) Selection of O&M Organization	October 2020 – September 2021	October 2021 – September 2022

Attachment 6, 7 & 8: Package wise construction schedules (progress) updated at the end of 3rd quarter (October - December 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	7,113	7,113	-	19,925	19,925		37,644	37,644	
Package-2	9,675	9,675	-	13,046	13,046		29,872	29,872	
Package-3	351	351	-	3,963	3,963		5,969	5,969	
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		1,000	1,000	
Land Acquisition*	-			6,022		6,022	9,455		9,455
Administration Cost	-			2,635		2,635	4,137		4,137
GST	-			6,242		6,242	9,800		9,800
Import Tax	-			-			-		-
Interest during construction	-			-			-		-
Front End Fee	-			-			-		-
Total	**17,392**	**17,393**	**-**	**52,396**	**37,299**	**15,096**	**98,191**	**74,491**	**23,700**

(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	40,410	31,014	-	-	31,014	9,396
FY 2020	17,230	12,550	-	-	12,550	4,680
FY 2021						
FY 2022						
FY 2023						
FY 2024						
Total	**98,191**	**74,491**	**-**	**-**	**74,491**	**23,700**

(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)	International Competitive Direct Bidding Process without Pre-Qualification
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:

October 2020:

1 GC scrutinized & certified the following invoices claimed by the Contractors:

i) Package-1: IPC-32 20% Detailed Verification and IPC-33 80% Ad-hoc.

ii) Package-2: IPC-25 & IPC-26 20% Detailed Verification and IPC-27 80% Ad-hoc.

iii) Package-3: IPC-021 20% Detailed Verification of and IPC-022 & IPC-023 80% Ad-hoc.

2 GC has prepared and submitted a total reimbursement claim of 2075.17 Million JPY to MMRDA / JICA in October 2020.

November 2020:

1 GC scrutinized & certified the following invoices claimed by the Contractors:

i) Package-1: IPC-33 20% Detailed Verification and IPC-34 80% Ad-hoc.

ii) Package-2: IPC-27 20% Detailed Verification and IPC-28 80% Ad-hoc

iii) Package-3: IPC-022 & IPC-023 20% Detailed Verification of and IPC-024 80% Ad-hoc.

2 GC has prepared and submitted a total reimbursement claim of 3830.20 Million JPY to MMRDA / JICA in November 2020.

December 2020:

1 GC scrutinized & certified the following invoices claimed by the Contractors:

i) Package-1: IPC-34 20% Detailed Verification and IPC-35 80% Ad-hoc

ii) Package-2: IPC-28 20% Detailed Verification and IPC-29 80% Ad-hoc.

iii) Package-3: IPC-025 80% Ad-hoc

2 2 GC has prepared and submitted a total reimbursement claim of 3661.21 Million JPY to MMRDA / JICA in December 2020.

3 100% of the Technical Design Modules have been submitted by the Contractors across all the 3 Packages; out of which 92% of the modules have been given "NONO" by the GC & the rest of the modules have been reviewed & commented by the GC. Now, those are pending with the Contractor for correction and re-submission to the GC.

Contractor's Progress:

Package-1 Physical Progress till 31st December 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.	5	100%	
3	**Permanent Bridge Works - Land/ Interchange Zone**					
3.1	Piles	524	No.	272	51.9%	
3.2	Pile Caps	158	No.	49	31.0%	
3.3	Piers	228	No.	90	39.5%	
3.4	Pier Caps	215	No.	50	23.3%	
4	**Permanent Bridge Works - Intertidal Zone**					
4.1	Piles	318	No.	240	75.5%	
4.2	Pile Caps	76	No.	53	69.7%	
4.3	Piers	148	No.	98	66.2%	
4.4	Pier Caps	148	No.	90	60.8%	
5	**Permanent Bridge Works - Marine Zone**					
5.1	Piles	399	No.	341	85.5%	
5.2	Pile Caps	79	No.	40	50.6%	
5.3	Piers	160	No.	25	15.6%	
5.4	Pier Caps	160	No.	20	12.5%	
6	**Permanent Bridge Works - Total**					
6.1	**Piles**	**1241**	**No.**	**853**	**68.7%**	
6.2	**Pile Caps**	**313**	**No.**	**142**	**45.4%**	
6.3	**Piers**	**536**	**No.**	**213**	**39.7%**	
6.4	**Pier Caps**	**523**	**No.**	**160**	**30.6%**	
7	**Precast Segments**					
7.1	**Segment Casting**	**6713**	**No.**	**1063**	**15.8%**	
7.2	**Segment Erection**	**446**	**Spans**	**18**	**4.0%**	
8	**OSD Structural Steel**					
8.1	**Fabrication**	**4666**	**Rmt**	**1681**	**36%**	
8.2	**Erection**	**4666**	**Rmt**	**0**	**0%**	

Package-2 Physical Progress till 31st December 2020

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	**Temporary Access Bridge**					
1.1	Bridge Deck	2682	Rmt	2682	100%	
2	**Test Pile**					
2.1	Test Piles	2	No.	2	100%	
3	**Permanent Bridge Works - Land/ Interchange Zone**					
3.1	Open Foundation	113	No.	91	80.5%	
3.3	Piers	119	No.	49	41.1%	
3.3	Pier Caps	104	No.	10	9.6%	
3.4	Portal Beams- Land	6	No.	3	50%	
3.5	Pier Head Segments -Land	42	No.	5	12%	
4	**Permanent Bridge Works - Intertidal & CRZ Zone**					
4.1	Piles	290	No.	288	99%	
4.2	Pile Caps	72	No.	72	100%	
4.3	Piers	72	No.	45	62%	
4.4	Pier Caps	18	No.	5	28%	
4.5	Pier Head Segments	54	No.	6	11%	
5	**Permanent Bridge Works - Marine Zone**					
5.1	Piles	514	No.	263	51%	
5.2	Pile Caps	120	No.	22	18%	
5.3	Piers	120	No.	0	0%	
5.4	Pier Caps	48	No.	0	0%	
5.5	Pier Head Segments	72	No.	0	0%	
6	**Permanent Bridge Works - Total**					
6.1	**Open Foundation**	**113**	**No.**	**91**	**80.5%**	
6.2	**Piles**	**804**	**No.**	**551**	**68.5%**	
6.3	**Pile Caps**	**192**	**No.**	**94**	**48.9%**	
6.4	**Piers**	**311**	**No.**	**94**	**30.1%**	
6.5	**Pier Caps**	**170**	**No.**	**15**	**8.8%**	
6.6	**Portal Beams**	**6**	**No.**	**3**	**50%**	
6.7	**Pier Head Segments**	**168**	**No.**	**11**	**6.5%**	
7	**Precast Segments**					
7.1	**Segment Casting**	**3142**	**No.**	**348**	**11.08%**	
7.2	**Segment Erection**	**271**	**Spans**	**0**	**0%**	
8	**OSD Structural Steel**					
8.1	**Fabrication**	**74726**	**MT**	**22491**	**30.0%**	
8.2	**Erection**	**74726**	**MT**	**0**	**0%**	

Package-3 Physical Progress till 31st December 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.	157	81%	
1.2	Piers	195	No.	121	62%	
1.3	Pier Caps	189	No.	79	42%	
1.4	Segment Casting	750	No.	265	35%	
1.5	Segment Erection	53	Span	2	4%	
1.6	Cast in-situ Slab	114	Span	2	2%	

Package-4 (ITS) Progress till 31st December 2020

1. Preparation of Bid Documents for the Package-4 - ITS (Intelligent Transport System) is in progress.
2. As recommended by the GC, JICA accorded concurrence for Single Stage Bidding (without Pre-Qualification) on 9th October 2020 and asked to submit draft Bid Document for review and approval.
3. The GC submitted first draft Bid Document to the Employer on 2nd November 2020 for review.
4. After reviewing the draft, MMRDA issued the observations on 29th December 2020 for further correction & amendments, etc. The GC is in the process of preparing the revised draft Bid Document.

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

Health & Safety and Environment (HSE)

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

Package-1 Safety Report

Sr. No	Description	From October to December 2020	Cumulative
1	Total Man Hours Since Inception	39,85,272	21108398
2	Number of Man-Hours (Accident-Free Man-Hours)	32,70,072	1988184
3	Number of Man-Days	4,98,159	2638548
4	Number of Reportable Fatal Accidents	0	2
5	Number of Non-Fatal Accidents	1	2
6	Number of Near Miss Incidents	4	74
7	Number of First Aid Cases	31	141
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	152	96600
11	Number of Man-Days Lost	19	12072
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	1	4
13	Number of Inspections done for Offices & Sites	502	1663
14	Number of Training/ Induction done for Offices & Sites	221	554
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	5,615	11819
16	Details of Safety Committee meetings	3	26
17	No. of toolbox talks	10,110	42078
18	No. of critical excavations.	6	24
19	Pre-employment Medical check-up	3,536	21175
20	No. of Safety Walk down	23	148
21	No. of Safety Inductions completed	3,536	21175

Package-2 Safety Report

Sr. No	Description	From October to December 2020	Cumulative
1	Total Man Hours Since Inception	19,56,988	9945791
2	Number of Man-Hours (Accident-Free Man-Hours)	19,56,988	3478356
3	Number of Man-Days	1,77,908	905500
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	3
6	Number of Near Miss Incidents	43	78
7	Number of First Aid Cases	24	89
8	Number of Dangerous Occurrences	4	9
9	Number of Reportable Sick Cases	0	1
10	Number of Man-Hours Lost	0	924
11	Number of Man-Days Lost	0	97
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	3
13	Number of Inspections done for Offices & Sites	76	772
14	Number of Training/ Induction done for Offices & Sites	42	500
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	6,526	941
16	Details of Safety Committee meetings	3	30
17	No. of toolbox talks	482	4442
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	1,659	9749
20	No. of Safety Walk down	13	92
21	No. of Safety Inductions completed	1,684	9749

Package-3 Safety Report

Sr. No	Description	From October to December 2020	Cumulative
1	Total Man Hours Since Inception	5,16,274	2093452
2	Number of Man-Hours (Accident-Free Man-Hours)	5,16,194	2093372
3	Number of Man-Days	64,524	261671
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	0
6	Number of Near Miss Incidents	6	12
7	Number of First Aid Cases	11	61
8	Number of Dangerous Occurrences	0	0
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	80	80
11	Number of Man-Days Lost	10	10
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	0
13	Number of Inspections done for Offices & Sites	40	270
14	Number of Training/ Induction done for Offices & Sites	16	155
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	1,548	6358
16	Details of Safety Committee meetings	3	26
17	No. of toolbox talks	425	4060
18	No. of critical excavations.	0	3
19	Pre-employment Medical check-up	795	4439
20	No. of Safety Walk down	9	97
21	No. of Safety Inductions completed	795	4439

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 from the Garden Dept., MCGM obtained on 24th December 2020. **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	Environmental Monitoring Plan with the package wise budgeted 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. 15 is submitted for the period of 1st October to 31st December 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)

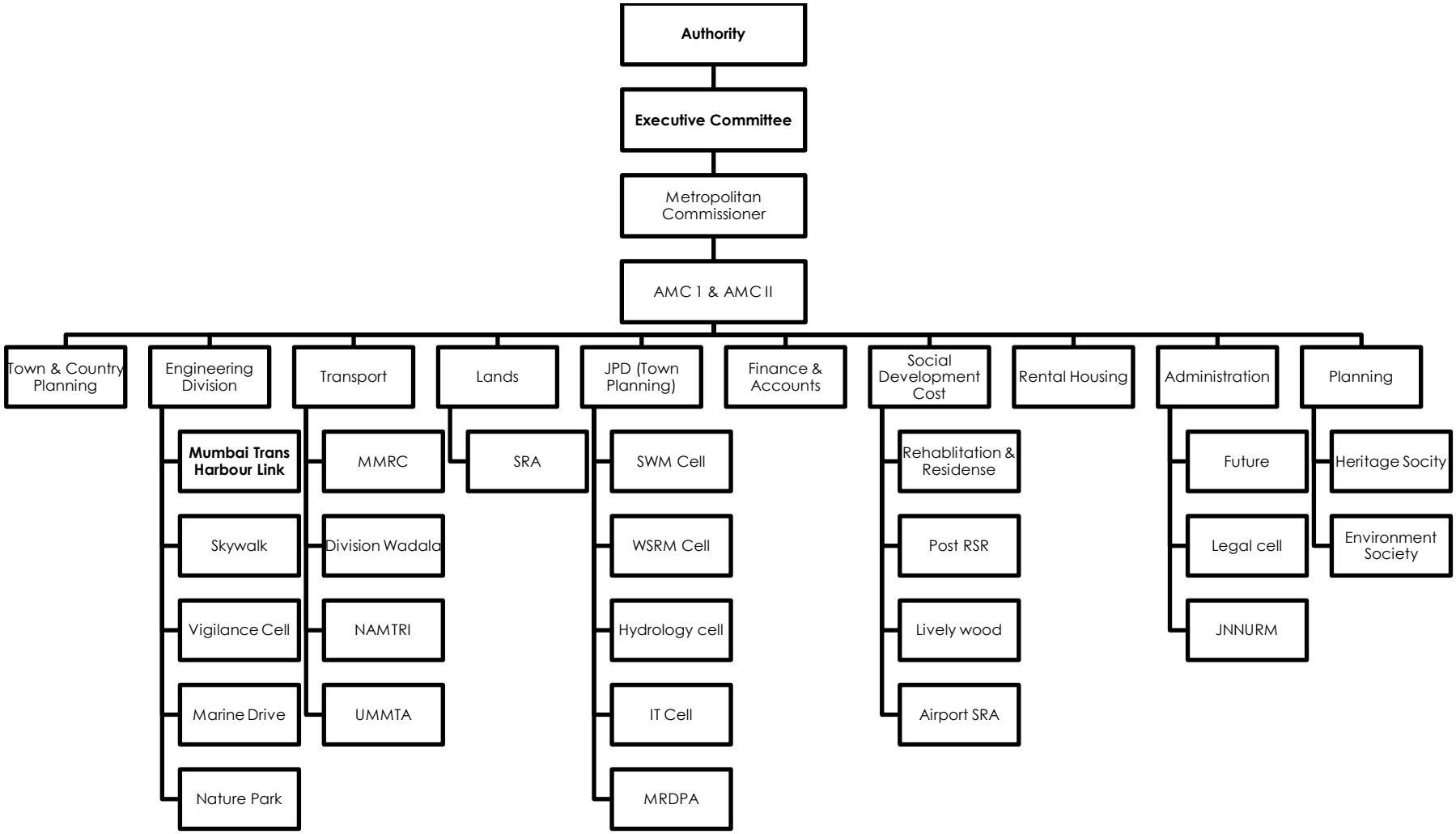
5.3 Lessons Learnt and Recommendations

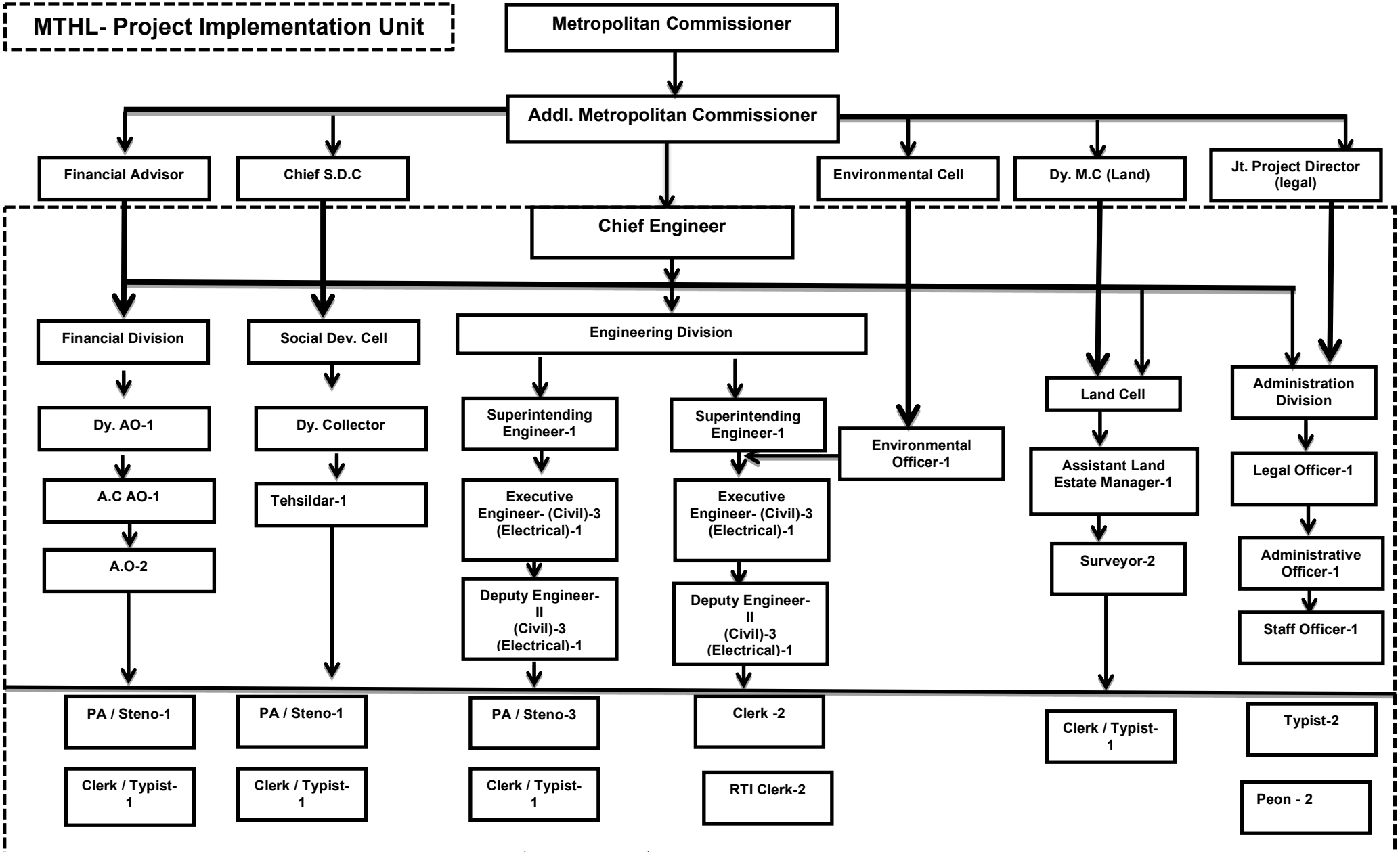
Please raise any lessons learned from the project experience, which might be valuable for the future JICA assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

(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 – Envi. Monitoring Plan with Package wise Estimated Cost
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

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 - October to December 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**	**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 Gavhan for package II	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	6	BDL	23		
						2. NO_2: 80µg/m^3	32	29	36		
						3. PM_{10}: 100µg/m^3	111	56	102.8 (Refer Remark)		Due to other construction activites (Highway road, airport etc.) work
						4. $PM_{2.5}$: 60µg/m^3	32	14	54		
						5.CO:02mg/m3	1.4	1.3	0.3		
						6.VOCs	1.30	2.8	2.4		
	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	7.4	7.5	Not applicable		
				3. Gavhan & Chirle for package III	Not applicable	2. DO: 3 mg/l	4.7	6	Not applicable		
						3. Turbidity: 30 NTU	13.6	24	Not applicable		
						4. BOD: 5 mg/l	3.1	BDL	Not applicable		
						5. O & G: 10 mg/l	BDL (DL=2)		Not applicable		
						6.COD	19	20	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, 2013**	**Sewri Camp Site**	**Shivaji Nagar Camp Site**	**Chirle Camp Site**		
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	Generated waste soil (t) total	5082 m3	App. 14000 CuM Collected in jumbo bags and Disposed off in EBB Location and Casting Yard	NA		
				3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.	Generated cutting treel (ha) total	Tree cutting proposal has been submitted and approval from MCGM is received in December 2020		306 Trees are cut (Refer Remark)		Both of forest and CIDCO area (231+75)
						Generated domestic waste (t/month) total	4.1 T for the quarter	3.5 T/quarter. It is disposed through CIDCO daily.	2T for the quarter		2.018 M3
						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)**	Sediment sample at Sewri	Muck Testing Done on september 2020 and Reports submitted to GC	Not applicable (refer remark)		Kindly check the letter No.Ref No. Mthl/ P3/L&T/GC/LT/HSE-2226/2020 dated on 12.12.2020
				2. Nhava temporary bridge & casting yard in		1. Cadmium: 0.01mg/l	BDL (DL=0.03)	BDL			
				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		BDL			
						3. organic phosphorus: not detected					
						4. lead: 0.01mg/l	0.12	0.12	Not applicable for package-3 (refer remark)		Hazardous Storeage is situated in low laying area at Gavan area. Due to this reason complete ground area is covered by boulders to avoid further water logging in rainy season. Therefore soil sample is impossible to taken out from in and around the Oil & chemical storage area. Same has been witnessed by GC during Febrary-2020 monitoring.
						5. chromium (VI): 0.05mg/l	<0.05	BDL			
						6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)	<0.01	BDL			
						7. total mercury: 0.005mg/l		BDL			
						8. alkyl mercury: not detected					
						9. PCBs: not detected		BDL			
						10. copper: 125mg/kg (only paddy field soil)	129	36.3			
						11. dichloromethane: 0.02mg/l		BDL			
						12. carbon tetrachloride: 0.002mg/l		BDL			
						13. 1,2-dichloroethane: 0.004mg/l		BDL			
						14. 1,1-dichloroethylene: 0.02mg/l		BDL			
						15. cis-1,2-dichloroethylene: 0.04mg/l		BDL			
						16. 1,1,1-trichloroethane: 1mg/l		BDL			
						17. 1,1,2-trichloroethane: 0.006 mg/l		BDL			

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

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 - October to December 2020

						18. trichloroethylene: 0.03mg/l		BDL			
						19. tetrachloroethylene: 0.01mg/l		BDL			
						20. 1,3-dichloropropene: 0.002mg/l		BDL			
						21. thiuram: 0.006mg/l		BDL			
						22. simazine: 0.003mg/l		BDL			
						23. thiobencarb: 0.02mg/l		BDL			
						24. benzene: 0.01mg/l		1.4			
						25. selenium: 0.01mg/l		BDL			
				1. Sewri & Sewri bay area for package I	Fortnightly	**Construction area Standard 85 dB(A) daytime (Japan standard)** **Not constuction area : Ambient Noise Standard in India (dB(A) Laeq)**	**Sewri (ST 200-500) (Industrial area)**	**Sea Section (ST5000-5500) Migratory Bird Area(no standard on sea section)**	**Shivaji Nagar (Commercial area)**	**Chirle (pacakge-III) Commercial area**	
				2. Nhava temporary bridge & casting yard in Gavhan for package II	2 Times / Year	Day time : 6-22 hr (continious) dB(A)	68	72.7	66.8	68.8	
				3. Gavhan & Chirle for package III	Fortnightly	Night time: 22-6 hr (continious) dB(A)	63	63.4	65.3	64.9	
						(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)					
						Night Time: 70 (22-6hr					
						2.Commercial Area:					
						Day Time: 65 (6-22hr)					
						Night Time: 55 (22-6hr)					
	5	Noise and vibration	Ambient and road side noise (dB(A)LAeq)								
				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**		
			Vibration (dB) shall be converted from mm/s to dB			Day time : 6-22 hr (continious)	refer remark		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.
						Night time: 22-6 hr (continious)					Kindly check the letter No.Ref No. Mthl/ P3/L&T/GC/LT/HSE-2226/2020 dated on 12.12.2020
						Note (standard values in Not construction area)			Refer remark		
						1. Commercial /Industrial Area					
						Day Time: 70 (7-20hr)					
						Night Time: 65 (20-7hr)					
				Along MTHL alignment and mangrove replant area for Package I	Quarterly during the construction Period	**Standard is not existing, but quantity and quality should not be worsen**	**Sewri side (ST500-5500)**	**Sea Section (ST5500-16000)**	**Shivaji Nagar side (app. ST16000-19000)**	**Mangorove Replantation area appointed by State Government**	
				Along MTHL alignment and mangrove replant area for package II	4 Times / Year	1-1. Fauna-Flora (number of species and quantity			N/A	N/A	
			1.Monitoring of mudflat conditions including fauna-flora 2. Monitoring of Cutting Tree and replantation/transplation area 3.Monitoring of Mangrove			(1) Number of species of bird					
						(2) Number of species of fish					
						(3) Estimated number of Flamingo					
						1-2: Mangrove density and community survey					

Regarding protected area (CRZ and Important Bird Area) and ecosystem, detailed long-term monitoring plan will be extablished 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
1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - October to December 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.

Natural Environment	6	Protected Area	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	528 Species and 322 No/m2				
						2-1: Cutting tree confirmation	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting NIL		Approved By Both CIDCO and Forest forest Dept (both Alibaug and Uran(regional office))		
						(1) Number of cutting tree and species					
						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	433				
						(2) Chlorophyll-a: <4mg/m3	4.6				
						(3) Phosphate: 0.1-90μg/l	330				
						(4) Nitrate: 1.0-500μg/l	637				
						(5) Nitrite: <125μg/l					
						(6) Particulate Organic Carbon: 10-100mg/m^3					
		Ecosystem				(7) SiO2: 10-5,000μg/l	4716				
	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**			
				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	done				
	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**		
						Number of hired workers by community	341 in October 2020, 383 in November 2020 and 378 in December in 2020	125-150			
	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**			
						Confirmation of health check record and inspect project site	During this quarter 36 no. , COVID 19 positive cases reported who have been treated and discharged.	Health Checks carried out but HIV/AIDS parameter is not there.	Regular Health check up is carried out by site Doctor		
	11	Labour Environment	Construction worker's cond	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 have been provided. *2275 nos. of Food meals (lunch & Dinner) provided to workmen from BOCW, * Face mask provided to workmen, * Calcium & Vitamins tablets provided to workmen to boost up the immunity of workmen, * Sanitizers & Liquids soaps also provides to different location for workmen. *Daily temperature Check of workmen at site and colony is conducted. Daily sanitisation at work site, of working equipment and the buses used for communiting is conducted.	Conforming with BOCW Act 1996	Conforming with BOCW Act 1996		
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	NIL	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 March 2021.

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	31-03-2021	--	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 4th quarter of 2020
b.	Date of Preparing This form	13-01-2021
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)	429	566	995	1. Funds for 496 nos C2 category fishermen are transferred to Commissioner of Fisheries in the 2017-18. 2. The list of balance 499 Nos. of C2 category fishermen are submitted to ACF Raigad, ACF Thane and ACF Mumbai suburban for their verifications.
C3: Hand Pickers	1453	3690	5143	Funds for 4206 nos of C3 category fishermen are already transferred to Commissioner of Fisheries and balance 937 Nos. of C3 category fishermen are in process of transfer to Commissioner of Fisheries.
C4: Commercial and Artisanal Fisher-folks (Loss of Time and Increased Operating Costs)	Will be observed during construction period	Will be observed during construction period	---	Nil
C5: Fisher-folks with Loss due to Turbidity	Will be observed during construction period	Will be observed during construction period	----	Nil
C6: Fisher-folks with Damages due to Accidents	Will be observed during construction period	Will be observed during construction period	----	Nil

2.4 Land Acquisition / Transfer

Location	Land 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 31-12-2020						
Sr. No.	**Village Name**	**Total number of forms Received**	**Total approved eligible family units**			
			C1	**C2**	**C3**	**Total**
1	Bamandongri	273	1	0	25	**26**
2	Belapur	110	0	5	14	**19**
3	Belpada	1185	0	7	473	**480**
4	Diwale	455	10	237	12	**259**
5	Ganeshpuri	276	0	33	32	**65**
6	Gavhan	2162	0	14	1304	**1318**
7	Jasai	926	0	0	18	**18**
8	Jawale	51	0	1	0	**1**
9	Kombadbhuja	413	1	24	126	**151**
10	Kopar	994	2	5	230	**237**
11	Mahul	1198	129	170	599	**898**
12	Moha	475	22	35	134	**191**
13	Mora	471	0	83	213	**296**
14	Morave	539	14	17	79	**110**
15	Nhava	1646	0	32	304	**336**
16	Sarsole	266	0	30	83	**113**
17	Sewri	305	0	1	70	**71**
18	Shelghar	241	0	0	15	**15**
19	Shivajinagar	202	1	4	61	**66**
20	Trombay	1253	49	258	784	**1091**
21	Ulwa	218	1	4	12	**17**
22	Uran & Hanuman Koliwada	683	0	33	554	**587**
23	Vahal	411	0	2	1	**3**
Total		**14753**	**230**	**995**	**5143**	**6368**

	Total applications		14753
	Duplicate/Repeated Application		1643
	Net Applications		13110
	Approved applications		6368

Grievance Redressal Committee (GRC) for Fisher-folk Compensation

No. of Cases referred to GRC	**No. of Cases**		**No. of Cases Rejected**	**No. of Cases under Consideration**
	Allowed	**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 31.12.2020** 1. Total up to date applications scrutinized = 13110 Nos. 2. Eligible = 6368 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	31-03-2021	--	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	Mar. 2021
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	Mar. 2021
2.6	Notice of PAPs for shifting (Sewri Section)	December 2018	Mar. 2021
2.7	Allotment of dwelling units to PAP's	September 2016	Mar. 2021
2.8	Shifting of PAPs to resettlement Colony	December 2018	Mar. 2021
2.9	Transfer of compensation / allowance/ assistance to PAPs	December 2018	Mar. 2021
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

*Expected to receive the Occupation Certificate of Kurla Bhandari R&R site from SRA Department by March 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	-	-	-	-	-

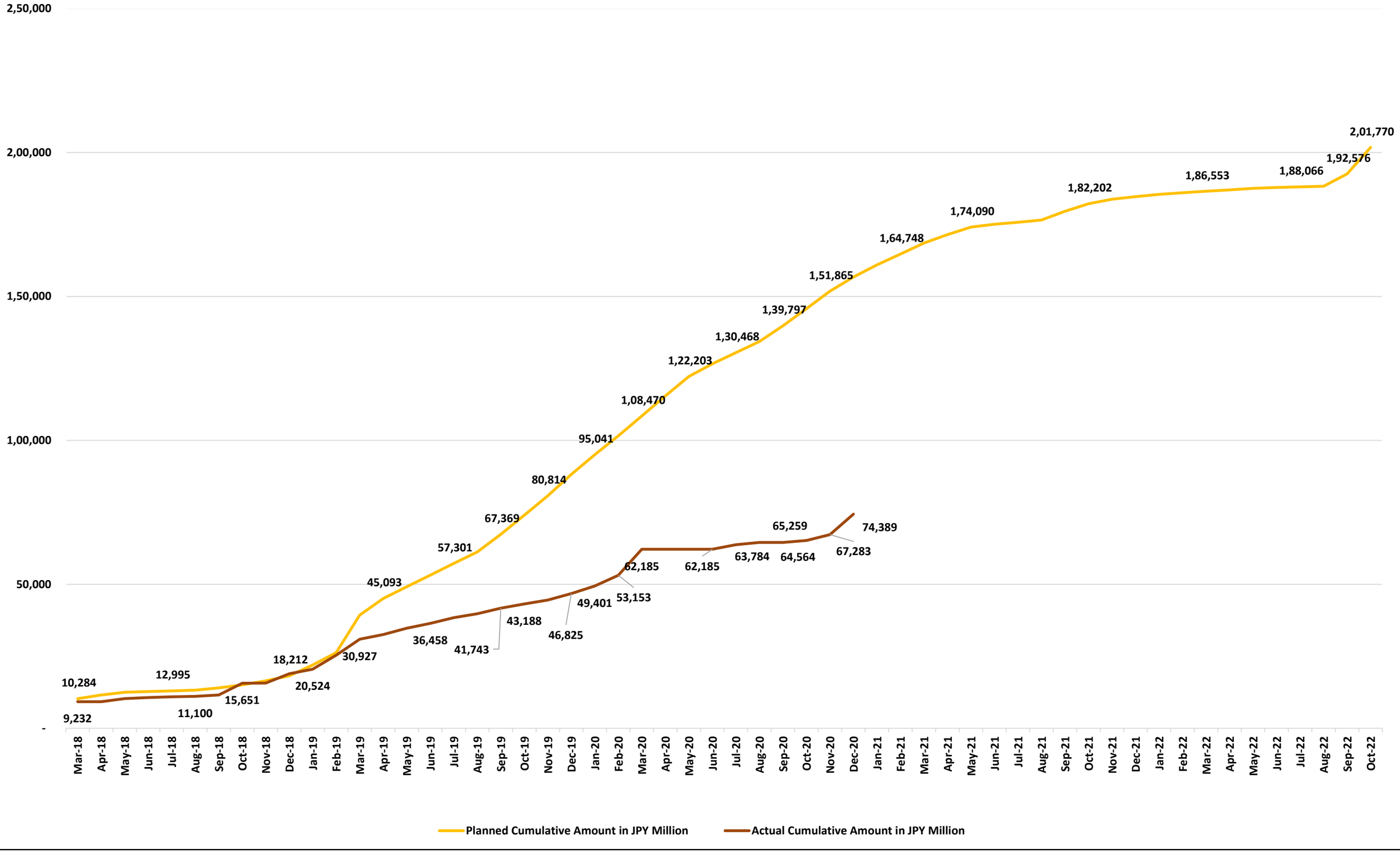
Attachment 4- Project Procurement and Financial Status till 31st December 2020

PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 31st DECEMBER 2020

Type	Contract	Awarded or Estimated Value (in Rs. Crore)	Current Status	Contractors	Project Commencement Date	Stipulated Project Completion Date	% of Overall Project completion (Design/ Procurement/ Construction) till 25th December 2020	% of Overall Financial Progress (Including Mobilization Advance) till 31st December 2020
CIVIL	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	March 2018	Sep 2022	35.61%	42.12%
	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO-TPL JV	March 2018	Sep 2022	31.62%	48.59%
	Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	March 2018	Sep 2021	45.66%	55.99%
ITS	Package-4 Intelligent Transport System (ITS)	181.49 (Estimated)	Design Stage	--	June 2021 (Estimated)	Sep 2022	NA	NA

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

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



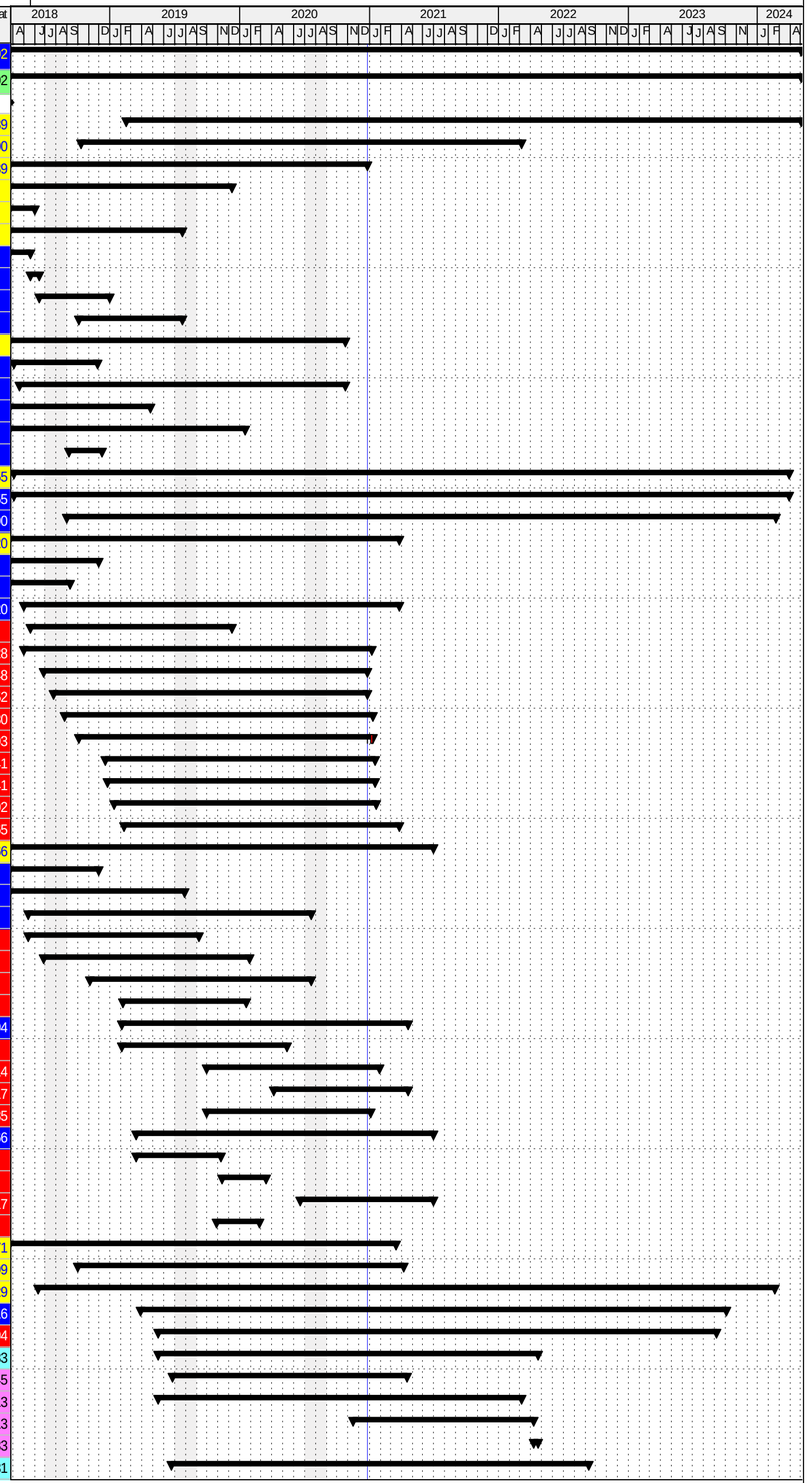
Attachment 6- Package-1's Construction Programme Updated as on 25th December 2020

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

L&T - IHI | 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
MPR33	MTHL P1 -Dec'20 Month Progress	1062	23-Mar-18	22-Sep-22	1553	23-Mar-18 A	02-May-24	67.95%	35.61%	0	-491	-492
MPR33.1	Mumbai Trans Harbour Link - Package 1	1062	23-Mar-18	22-Sep-22	1553	23-Mar-18 A	02-May-24	67.95%	35.61%	0	-491	-492
M10000	Commencement Date	0	23-Mar-18		0	23-Mar-18 A		100%	100%	0	0	
MPR33.1.1	Key Milestones	1464	19-Sep-18	22-Sep-22	1867	15-Feb-19 A	02-May-24	0%	0%	-148	-588	-589
MPR33.1.2	Contractual Interface	1243	09-Oct-18	05-Mar-22	1243	09-Oct-18 A	05-Mar-22	0%	0%	0	0	200
MPR33.1.3	Access to Site	165	23-Mar-18	03-Sep-18	165	23-Mar-18 A	26-Dec-20	0%	0%	0	-845	-439
MPR33.1.4	Document Submittals	180	23-Mar-18	18-Sep-18	180	23-Mar-18 A	09-Dec-19 A	0%	0%	0	-446	
MPR33.1.5	Survey	73	23-Mar-18	03-Jun-18	73	23-Mar-18 A	03-Jun-18 A	0%	0%	0	0	
MPR33.1.6	Geotechnical Investigation	165	23-Mar-18	03-Sep-18	165	23-Mar-18 A	23-Jul-19 A	0%	0%	0	-322	
MPR33.1.6.1	Phase 1	60	23-Mar-18	21-May-18	60	23-Mar-18 A	21-May-18 A	0%	0%	0	0	
MPR33.1.6.2	Phase 2	25	22-May-18	15-Jun-18	25	22-May-18 A	15-Jun-18 A	0%	0%	0	0	
MPR33.1.6.3	Phase 3	50	16-Jun-18	04-Aug-18	50	16-Jun-18 A	30-Dec-18 A	0%	0%	0	-147	
MPR33.1.6.4	Phase 4	45	21-Jul-18	03-Sep-18	45	05-Oct-18 A	23-Jul-19 A	0%	0%	-76	-322	
MPR33.1.7	Infrastucture Facilties	188	23-Mar-18	05-Feb-19	376	23-Mar-18 A	26-Oct-20 A	0%	0%	0	-369	
MPR33.1.7.1	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	
MPR33.1.7.2	Casting Yard	164	20-Apr-18	05-Feb-19	355	20-Apr-18 A	26-Oct-20 A	0%	0%	0	-369	
MPR33.1.7.3	Fabrication Yard	133	23-Mar-18	30-Nov-18	133	23-Mar-18 A	26-Apr-19 A	0%	0%	0	-122	
MPR33.1.7.4	Rebar Yard	133	23-Mar-18	30-Nov-18	376	23-Mar-18 A	16-Jan-20 A	0%	0%	0	-265	
MPR33.1.7.5	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	
MPR33.1.8	Procurement Plan	1618	04-Apr-18	07-Sep-22	2186	04-Apr-18 A	29-Mar-24	0%	0%	0	-569	-555
MPR33.1.8.1	Plant & Machinery Deployment Plan	1618	04-Apr-18	07-Sep-22	2186	04-Apr-18 A	29-Mar-24	0%	0%	0	-569	-555
MPR33.1.8.4	Bulk Material Procurement Plan	1412	01-Sep-18	13-Jul-22	1679	31-Aug-18 A	22-Feb-24	0%	0%	0	-589	-590
MPR33.1.9	Design & Engineering (Civil)	302	23-Mar-18	21-Sep-19	673	23-Mar-18 A	25-Mar-21	0%	0%	0	-381	-220
MPR33.1.9.1	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	
MPR33.1.9.2	Finalization of Alignment	88	23-Mar-18	18-Jun-18	88	23-Mar-18 A	10-Sep-18 A	0%	0%	0	-83	
MPR33.1.9.3	Detailed Design and Construction Design	269	01-May-18	21-Sep-19	673	01-May-18 A	25-Mar-21	0%	0%	0	-381	-220
MPR33.1.9.3.1	GIR	133	22-May-18	01-Oct-18	193	22-May-18 A	09-Dec-19 A	0%	0%	0	-433	
MPR33.1.9.3.2	Test Pile	113	01-May-18	15-Dec-18	568	01-May-18 A	08-Jan-21	0%	0%	0	-474	-328
MPR33.1.9.3.3	Design Phase -1 (Accelerated Design of Initial Items)	137	19-Jun-18	02-Nov-18	137	27-Jun-18 A	25-Dec-20	0%	0%	-8	-784	-648
MPR33.1.9.3.4	Design Phase -2 (Accelerated Design of Initial Items)	163	04-Jul-18	13-Dec-18	163	26-Jul-18 A	25-Dec-20	0%	0%	-22	-742	-452
MPR33.1.9.3.5	Design Phase -3	221	19-Jun-18	25-Jan-19	144	25-Aug-18 A	11-Jan-21	0%	0%	-67	-716	-580
MPR33.1.9.3.6	Design Phase -4	220	07-Jul-18	11-Feb-19	220	05-Oct-18 A	11-Jan-21	0%	0%	-90	-699	-593
MPR33.1.9.3.7	Design Phase -5	242	07-Jul-18	05-Mar-19	579	19-Dec-18 A	15-Jan-21	0%	0%	-165	-682	-441
MPR33.1.9.3.8	Design Phase -6	221	26-Aug-18	03-Apr-19	799	24-Dec-18 A	16-Jan-21	0%	0%	-120	-653	-641
MPR33.1.9.3.9	Design Phase -7	272	26-Aug-18	24-May-19	850	11-Jan-19 A	18-Jan-21	0%	0%	-138	-605	-292
MPR33.1.9.3.10	Design Phase -8	355	02-Oct-18	21-Sep-19	585	08-Feb-19 A	25-Mar-21	0%	0%	-129	-551	-465
MPR33.1.10	Design, Engineering & Material Procurement (OSD)	697	23-Mar-18	17-Feb-20	1211	23-Mar-18 A	30-Jun-21	0%	0%	0	-499	-166
MPR33.1.10.1	Initial Design	53	23-Mar-18	14-May-18	53	23-Mar-18 A	29-Nov-18 A	0%	0%	0	-198	
MPR33.1.10.3	Aerodynamic Analysis	145	23-Mar-18	14-Aug-18	145	23-Mar-18 A	30-Jul-19 A	0%	0%	0	-349	
MPR33.1.10.4	Technical Design	311	15-May-18	21-Mar-19	813	15-May-18 A	22-Jul-20 A	0%	0%	0	-488	
MPR33.1.10.4.1	OS01NS/SS	150	15-May-18	11-Oct-18	150	15-May-18 A	09-Sep-19 A	0%	0%	0	-332	
MPR33.1.10.4.2	OS02NS/SS	164	26-Jun-18	06-Dec-18	530	26-Jun-18 A	30-Jan-20 A	0%	0%	0	-419	
MPR33.1.10.4.3	OS03NS/SS	164	14-Aug-18	24-Jan-19	722	04-Nov-18 A	22-Jul-20 A	0%	0%	-82	-544	
MPR33.1.10.4.4	OS04NS/SS	164	09-Oct-18	21-Mar-19	425	06-Feb-19 A	20-Jan-20 A	0%	0%	-120	-304	
MPR33.1.10.5	Construction Design	344	12-Oct-18	20-Sep-19	1103	02-Feb-19 A	19-Apr-21	0%	0%	-113	-577	-394
MPR33.1.10.5.1	OS01NS/SS	201	12-Oct-18	30-Apr-19	731	02-Feb-19 A	14-May-20 A	0%	0%	-113	-379	
MPR33.1.10.5.2	OS02NS/SS	231	07-Dec-18	25-Jul-19	447	01-Oct-19 A	29-Jan-21	0%	0%	-298	-554	-314
MPR33.1.10.5.3	OS03NS/SS	183	25-Jan-19	26-Jul-19	339	06-Apr-20 A	19-Apr-21	0%	0%	-437	-633	-417
MPR33.1.10.5.4	OS04NS/SS	183	22-Mar-19	20-Sep-19	376	01-Oct-19 A	04-Jan-21	0%	0%	-193	-472	-385
MPR33.1.10.6	Material Procurement (1st Lot)	353	02-Mar-19	17-Feb-20	577	15-Mar-19 A	30-Jun-21	0%	0%	-13	-499	-166
MPR33.1.10.6.1	OS01NS/SS	210	02-Mar-19	27-Sep-19	287	15-Mar-19 A	08-Nov-19 A	0%	0%	-13	-41	
MPR33.1.10.6.2	OS02NS/SS	210	27-May-19	22-Dec-19	227	11-Nov-19 A	17-Mar-20 A	0%	0%	-168	-85	
MPR33.1.10.6.3	OS03NS/SS	210	28-May-19	23-Dec-19	242	19-Jun-20 A	30-Jun-21	0%	0%	-388	-555	-417
MPR33.1.10.6.4	OS04NS/SS	210	23-Jul-19	17-Feb-20	175	28-Oct-19 A	25-Feb-20 A	0%	0%	-97	-7	
MPR33.1.11	Tree Cutting and Transplantation	225	23-Mar-18	02-Nov-18	1090	23-Mar-18 A	17-Mar-21	0%	0%	0	-865	-671
MPR33.1.12	Utility Diversion	210	19-Jun-18	14-Jan-19	1113	01-Oct-18 A	08-Apr-21	0%	0%	-104	-815	-499
MPR33.1.13	Construction	919	11-Jun-18	22-Jun-22	1490	11-Jun-18 A	16-Feb-24	68.14%	31.5%	0	-504	-429
MPR33.1.13.1	Sewri Interchange Section	779	03-Nov-18	28-Feb-22	1306	29-Mar-19 A	04-Oct-23	67.68%	17.24%	-121	-488	-316
MPR33.1.13.1.1	Sewri Interchnage - Work Front - 1	779	03-Nov-18	28-Feb-22	1284	16-May-19 A	07-Sep-23	68.66%	15.75%	-161	-466	-294
MPR33.1.13.1.1.1	Sewri Interchange - Work Front - 1 - Piling	490	03-Nov-18	15-Dec-20	863	16-May-19 A	22-Apr-22	100%	46.22%	-161	-334	-183
MPR33.1.13.1.1.1.1	Piling - Land Viaduct	54	13-Apr-19	16-Sep-19	298	25-Jun-19 A	16-Apr-21	100%	90%	-53	-403	-345
MPR33.1.13.1.1.1.2	Piling - Ramp A	442	03-Nov-18	17-Oct-20	788	16-May-19 A	04-Mar-22	100%	43.2%	-161	-340	-213
MPR33.1.13.1.1.1.3	Piling - Ramp E	36	20-Oct-20	01-Dec-20	30	16-Nov-20 A	08-Apr-22	100%	16.67%	-22	-334	-213
MPR33.1.13.1.1.1.4	Piling - Ramp F	12	02-Dec-20	15-Dec-20	12	08-Apr-22	22-Apr-22	100%	0%	-334	-334	-183
MPR33.1.13.1.1.2	Sewri Interchange - Work Front - 1 -Pile Cap	560	19-Nov-18	24-Mar-21	914	21-Jun-19 A	10-Sep-22	89.86%	25.56%	-175	-371	-231



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.

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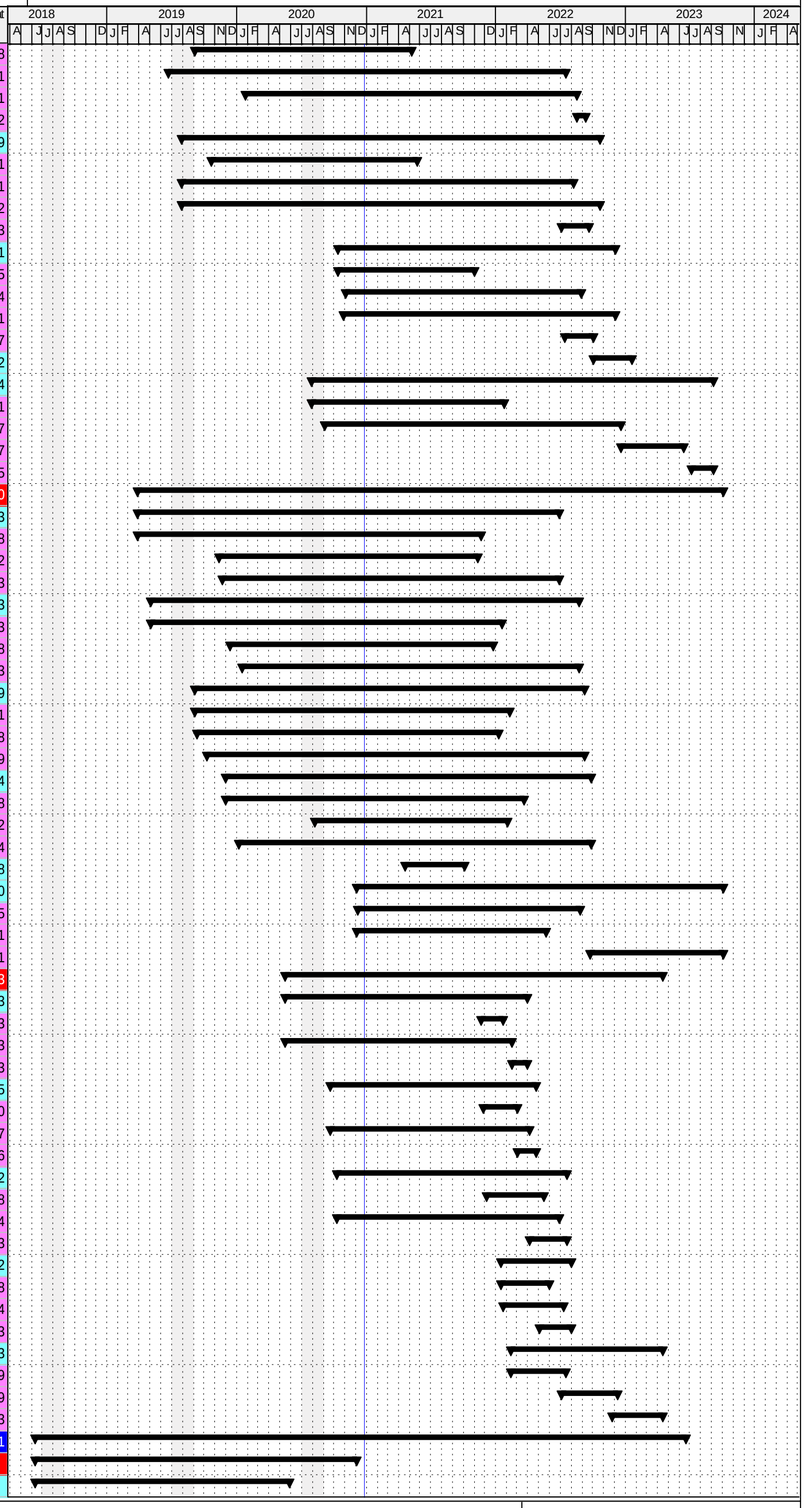
MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR DECEMBER 2020

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
MPR33.1.13.1.1.2.1	Pile Cap - Land Viaduct	68	25-Apr-19	15-Oct-19	130	06-Sep-19 A	10-May-21	100%	88.89%	-43	-398	-348
MPR33.1.13.1.1.2.2	Pile Cap - Ramp A	504	19-Nov-18	15-Jan-21	867	21-Jun-19 A	16-Jul-22	97.74%	17.42%	-175	-380	-311
MPR33.1.13.1.1.2.3	Pile Cap - Ramp E	44	07-Jan-21	27-Feb-21	123	26-Jan-20 A	18-Aug-22	0%	16.67%	211	-371	-211
MPR33.1.13.1.1.2.4	Pile Cap - Ramp F	20	01-Mar-21	24-Mar-21	20	18-Aug-22	10-Sep-22	0%	0%	-371	-371	-282
MPR33.1.13.1.1.3	Sewri Interchange - Work Front - 1 - Pier	588	12-Dec-18	20-May-21	593	30-Jul-19 A	22-Oct-22	62.99%	21.33%	-155	-356	-199
MPR33.1.13.1.1.3.1	Pier - Land Viaduct	52	29-May-19	30-Oct-19	97	21-Oct-19 A	24-May-21	100%	88.89%	-43	-398	-341
MPR33.1.13.1.1.3.2	Pier - Ramp A	504	12-Dec-18	09-Feb-21	533	30-Jul-19 A	09-Aug-22	92.42%	13.79%	-155	-380	-331
MPR33.1.13.1.1.3.3	Pier - Ramp E	96	27-Jan-21	20-May-21	192	31-Jul-19 A	22-Oct-22	0%	27.27%	337	-356	-252
MPR33.1.13.1.1.3.4	Pier - Ramp F	83	23-Dec-20	01-Apr-21	63	06-Jul-22	21-Sep-22	2.25%	0%	-391	-371	-173
MPR33.1.13.1.1.4	Sewri Interchange - Work Front - 1 - Pier Cap	587	05-Jan-19	11-Jun-21	455	12-Oct-20 A	05-Dec-22	60.33%	9.23%	-384	-373	-61
MPR33.1.13.1.1.4.1	Pier Cap - Land Viaduct	49	16-Sep-19	14-Nov-19	69	12-Oct-20 A	01-Nov-21	100%	30.56%	-249	-442	-385
MPR33.1.13.1.1.4.2	Pier Cap - Ramp A	499	05-Jan-19	26-Feb-21	377	04-Nov-20 A	31-Aug-22	88.28%	4.84%	-403	-383	-334
MPR33.1.13.1.1.4.3	Pier Cap - Ramp E	100	13-Feb-21	11-Jun-21	85	28-Oct-20 A	05-Dec-22	0%	18.18%	90	-373	-61
MPR33.1.13.1.1.4.4	Pier Cap - Ramp F	86	31-Dec-20	13-Apr-21	66	14-Jul-22	03-Oct-22	0%	0%	-391	-371	-157
MPR33.1.13.1.1.5	Sewri Interchange - Embankment Works - Ramp	90	14-Apr-21	01-Nov-21	90	03-Oct-22	18-Jan-23	0%	0%	-371	-371	-222
MPR33.1.13.1.1.6	Sewri Interchange - Work Front - 1 - Super Stru	628	04-May-19	28-Feb-22	628	29-Jul-20 A	07-Sep-23	54.81%	0%	-264	-466	-424
MPR33.1.13.1.1.6.1	Erection - Land Viaduct	96	19-Nov-19	11-Mar-20	82	29-Jul-20 A	25-Jan-22	100%	0%	-176	-415	-401
MPR33.1.13.1.1.6.2	Erection - Ramp A	486	04-May-19	09-Apr-21	436	05-Sep-20 A	21-Dec-22	81.36%	0%	-306	-467	-427
MPR33.1.13.1.1.6.3	Erection - Ramp E	146	10-Apr-21	02-Dec-21	146	21-Dec-22	13-Jun-23	0%	0%	-467	-467	-427
MPR33.1.13.1.1.6.4	Erection - Ramp F	52	28-Dec-21	28-Feb-22	52	07-Jul-23	07-Sep-23	0%	0%	-467	-467	-425
MPR33.1.13.1.2	Sewri Interchange - Work Front - 2	765	03-Nov-18	11-Feb-22	1306	29-Mar-19 A	04-Oct-23	65.82%	21.78%	-121	-502	-430
MPR33.1.13.1.2.1	Sewri Interchange - Work Front - 2 - Piling	553	03-Nov-18	01-Mar-21	921	29-Mar-19 A	29-Jun-22	77.02%	40.89%	-121	-329	-283
MPR33.1.13.1.2.1.1	Piling - Ramp C2	325	03-Nov-18	27-Feb-20	586	29-Mar-19 A	19-Nov-21	100%	95.92%	-121	-369	-288
MPR33.1.13.1.2.1.2	Piling - Ramp C1	140	03-Apr-19	18-Dec-19	295	12-Nov-19 A	11-Nov-21	100%	12.86%	-108	-422	-292
MPR33.1.13.1.2.1.3	Piling - Ramp B	84	21-Nov-20	01-Mar-21	218	22-Nov-19 A	29-Jun-22	34.52%	8.32%	227	-329	-283
MPR33.1.13.1.2.2	Sewri Interchange - Work Front - 2 - Pile Cap	591	19-Nov-18	29-Apr-21	965	05-May-19 A	23-Aug-22	68.97%	24.79%	-140	-325	-263
MPR33.1.13.1.2.2.1	Pile Cap - Ramp C2	361	19-Nov-18	24-Apr-20	785	05-May-19 A	19-Jan-22	100%	87.84%	-140	-372	-263
MPR33.1.13.1.2.2.2	Pile Cap - Ramp C1	172	12-Apr-19	04-Feb-20	325	14-Dec-19 A	25-Dec-21	100%	6.67%	-128	-420	-318
MPR33.1.13.1.2.2.3	Pile Cap - Ramp B	131	25-Nov-20	29-Apr-21	268	16-Jan-20 A	23-Aug-22	17.5%	7.14%	184	-325	-263
MPR33.1.13.1.2.3	Sewri Interchange - Work Front - 2 - Pier	589	12-Dec-18	21-May-21	613	04-Sep-19 A	09-Sep-22	73.73%	40.74%	-155	-322	-139
MPR33.1.13.1.2.3.1	Pier - Ramp C2	353	12-Dec-18	09-May-20	434	04-Sep-19 A	10-Feb-22	100%	88.03%	-155	-378	-281
MPR33.1.13.1.2.3.2	Pier - Ramp C1	194	01-Apr-19	18-Feb-20	369	10-Sep-19 A	10-Jan-22	100%	25.51%	-64	-420	-318
MPR33.1.13.1.2.3.3	Pier - Ramp B	248	25-Apr-20	21-May-21	332	08-Oct-19 A	09-Sep-22	40.34%	36.36%	168	-322	-139
MPR33.1.13.1.2.4	Sewri Interchange - Work Front - 2 - Pier Cap	583	26-Dec-18	28-May-21	545	02-Dec-19 A	27-Sep-22	72.21%	23.46%	-206	-328	-144
MPR33.1.13.1.2.4.1	Pier Cap - Ramp C2	356	26-Dec-18	27-May-20	385	02-Dec-19 A	21-Mar-22	100%	45.91%	-206	-395	-298
MPR33.1.13.1.2.4.2	Pier Cap - Ramp C1	198	18-Apr-19	12-Mar-20	218	07-Aug-20 A	02-Feb-22	100%	19.95%	-277	-420	-322
MPR33.1.13.1.2.4.3	Pier Cap - Ramp B	235	19-May-20	28-May-21	173	07-Jan-20 A	27-Sep-22	36.36%	18.18%	112	-328	-144
MPR33.1.13.1.2.5	Sewri Interchange - Embankment Works - Ramp	60	23-May-19	02-Nov-19	60	21-Apr-21	04-Oct-21	0%	0%	-428	-428	128
MPR33.1.13.1.2.6	Sewri Interchange - Work Front - 2 - Super Stru	654	18-Mar-19	11-Feb-22	702	05-Dec-20 A	04-Oct-23	53.29%	1.12%	-370	-502	-430
MPR33.1.13.1.2.6.1	Erection - Ramp C2	343	18-Mar-19	02-Nov-20	366	09-Dec-20 A	27-Aug-22	100%	0%	-373	-477	-405
MPR33.1.13.1.2.6.2	Erection - Ramp C1	194	08-Oct-19	26-May-20	187	05-Dec-20 A	23-May-22	100%	3.7%	-303	-503	-431
MPR33.1.13.1.2.6.3	Erection - Ramp B	316	28-Nov-20	11-Feb-22	316	23-Sep-22	04-Oct-23	7.62%	0%	-503	-503	-431
MPR33.1.13.1.3	Sewri Interchange - Work Front - 3 (Cast in situ Spa	431	28-Feb-20	01-Feb-22	521	16-May-20 A	18-Apr-23	70.49%	6.86%	-65	-369	-273
MPR33.1.13.1.3.1	Sewri Interchange - Work Front - 3 - Piling	144	28-Feb-20	20-Nov-20	201	16-May-20 A	31-Mar-22	100%	23.33%	-65	-336	-283
MPR33.1.13.1.3.1.1	Piling - Ramp B	54	28-Feb-20	02-May-20	54	19-Nov-21	22-Jan-22	100%	0%	-369	-369	-283
MPR33.1.13.1.3.1.2	Piling - Ramp E	54	04-May-20	07-Oct-20	177	16-May-20 A	16-Feb-22	100%	62.22%	-11	-336	-283
MPR33.1.13.1.3.1.3	Piling - Ramp C1	36	08-Oct-20	20-Nov-20	36	16-Feb-22	31-Mar-22	100%	0%	-336	-336	-283
MPR33.1.13.1.3.2	Sewri Interchange - Work Front - 3 - Pile Cap	159	07-Mar-20	15-Dec-20	131	21-Sep-20 A	25-Apr-22	100%	10.83%	-87	-336	-125
MPR33.1.13.1.3.2.1	Pile Cap - Ramp B	81	07-Mar-20	10-Jun-20	81	26-Nov-21	04-Mar-22	100%	0%	-369	-369	-200
MPR33.1.13.1.3.2.2	Pile Cap - Ramp E	81	11-May-20	17-Nov-20	114	21-Sep-20 A	05-Apr-22	100%	28.89%	-33	-342	-107
MPR33.1.13.1.3.2.3	Pile Cap - Ramp C1	45	23-Oct-20	15-Dec-20	45	03-Mar-22	25-Apr-22	100%	0%	-336	-336	-136
MPR33.1.13.1.3.3	Sewri Interchange - Work Front - 3 - Pier	216	18-Mar-20	05-Mar-21	189	10-Oct-20 A	19-Jul-22	75.28%	4.17%	-95	-342	-182
MPR33.1.13.1.3.3.1	Pier - Ramp B	135	18-Mar-20	27-Nov-20	135	07-Dec-21	17-May-22	100%	0%	-369	-369	-248
MPR33.1.13.1.3.3.2	Pier - Ramp E	135	21-May-20	01-Feb-21	160	10-Oct-20 A	27-Jun-22	77.04%	11.11%	-41	-351	-164
MPR33.1.13.1.3.3.3	Pier - Ramp C1	90	18-Nov-20	05-Mar-21	90	05-Apr-22	19-Jul-22	35.56%	0%	-342	-342	-193
MPR33.1.13.1.3.4	Sewri Interchange - Work Front - 3 - Pier Cap	196	24-Apr-20	19-Mar-21	169	14-Jan-22	02-Aug-22	64.93%	0%	-369	-342	-182
MPR33.1.13.1.3.4.1	Pier Cap - Ramp B	115	24-Apr-20	11-Dec-20	115	14-Jan-22	31-May-22	100%	0%	-369	-369	-248
MPR33.1.13.1.3.4.2	Pier Cap - Ramp E	132	08-Jun-20	15-Feb-21	143	22-Jan-22	11-Jul-22	66.67%	0%	-339	-351	-164
MPR33.1.13.1.3.4.3	Pier Cap - Ramp C1	77	17-Dec-20	19-Mar-21	77	04-May-22	02-Aug-22	9.72%	0%	-342	-342	-193
MPR33.1.13.1.3.5	Sewri Interchange - Work Front - 3 - Super Stru	360	23-May-20	01-Feb-22	360	12-Feb-22	18-Apr-23	27.83%	0%	-369	-369	-273
MPR33.1.13.1.3.5.1	Super Structure - Ramp B	132	23-May-20	30-Jan-21	132	12-Feb-22	18-Jul-22	80%	0%	-369	-369	-259
MPR33.1.13.1.3.5.2	Super Structure - Ramp E	132	16-Jan-21	24-Sep-21	132	04-Jul-22	10-Dec-22	0%	0%	-369	-369	-259
MPR33.1.13.1.3.5.3	Super Structure - Ramp C1	120	09-Jun-21	01-Feb-22	120	26-Nov-22	18-Apr-23	0%	0%	-369	-369	-273
MPR33.1.13.2	Intertidal Section	715	11-Jun-18	23-Oct-21	1290	11-Jun-18 A	21-Jun-23	81.36%	73.58%	0	-508	-481
MPR33.1.13.2.1	Intertidal - Temporary Access Bridge Work	467	11-Jun-18	26-Sep-20	620	11-Jun-18 A	04-Dec-20 A	0%	0%	0	-56	
MPR33.1.13.2.1.1	Access Bridge	457	11-Jun-18	12-Jun-20	528	11-Jun-18 A	27-May-20 A	0%	0%	0	14	



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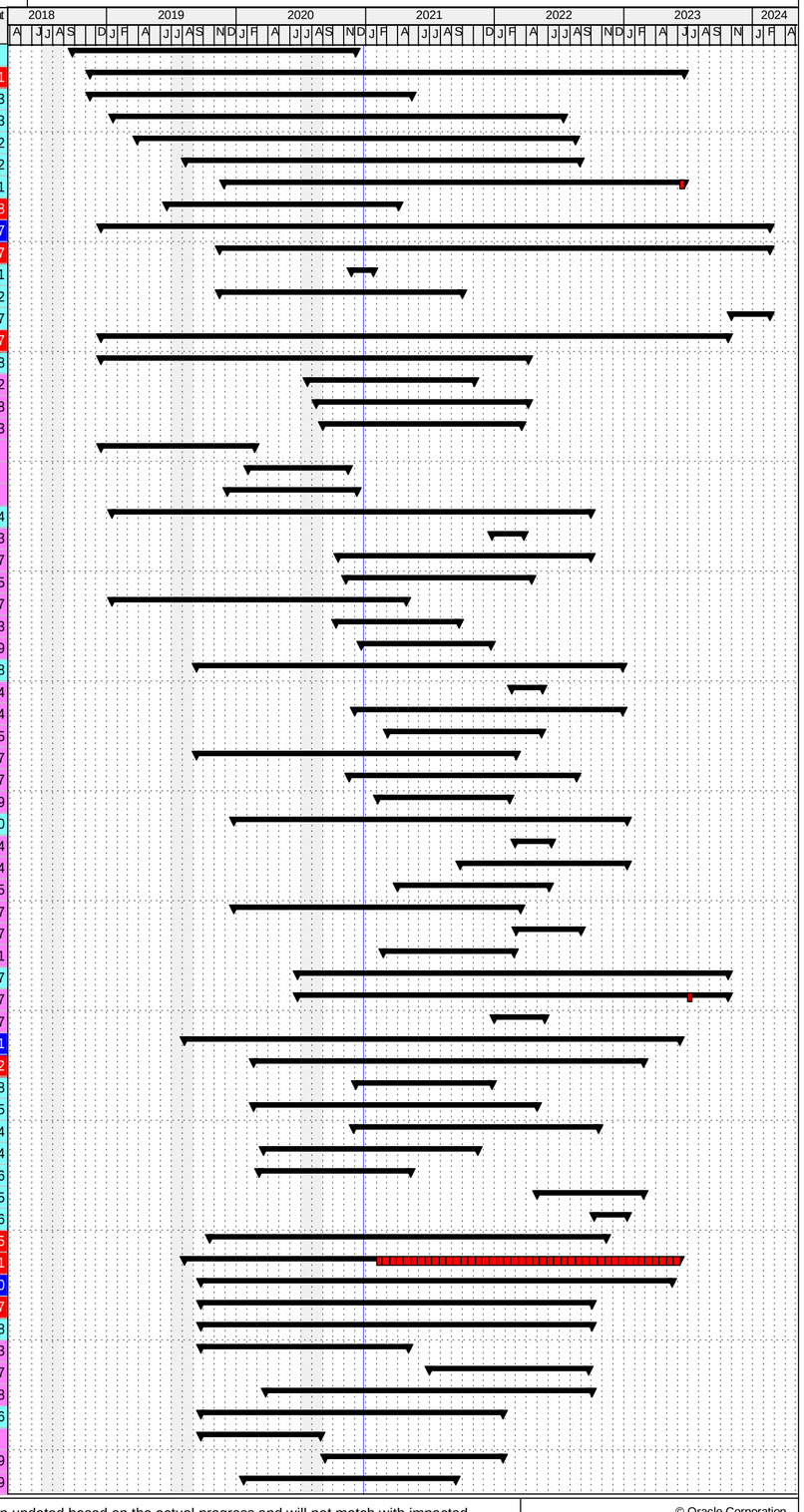
MUMBAI TRANS HARBOUR LINK PACKAGE 1,
UPDATED BASELINE PROGRAMME FOR DECEMBER 2020

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
	MPR33.1.13.2.1.2 Fingers	441	13-Oct-18	26-Sep-20	620	26-Sep-18 A	04-Dec-20 A	0%	0%	16	-56	
	MPR33.1.13.2.2 Intertidal - Main Bridge Work	638	14-Dec-18	23-Oct-21	1225	14-Nov-18 A	21-Jun-23	81.36%	73.58%	26	-508	-481
	MPR33.1.13.2.2.1 Intertidal - Main Bridge Work - Piling	531	14-Dec-18	16-Mar-21	686	14-Nov-18 A	12-May-21	89.69%	94.83%	26	-47	-13
	MPR33.1.13.2.2.2 Intertidal - Main Bridge Work - Pile Cap	536	29-Dec-18	06-Apr-21	940	17-Jan-19 A	14-Jul-22	87.99%	89.47%	-15	-312	-283
	MPR33.1.13.2.2.3 Intertidal - Main Bridge Work - Pier	562	17-Jan-19	25-May-21	968	29-Mar-19 A	17-Aug-22	83.1%	88.94%	-59	-299	-272
	MPR33.1.13.2.2.4 Intertidal - Main Bridge Work - Pier Cap	562	30-Jan-19	05-Jun-21	717	10-Aug-19 A	29-Aug-22	80.53%	82.21%	-115	-299	-272
	MPR33.1.13.2.2.5 Intertidal - Main Bridge Work - Super Structure	534	18-Apr-19	23-Oct-21	827	29-Nov-19 A	21-Jun-23	64.44%	15.56%	-110	-508	-481
	MPR33.1.13.2.3 Intertidal - Finger Removal & Reuse	400	07-Mar-19	29-Dec-20	325	20-Jun-19 A	03-Apr-21	0%	0%	-85	-79	18
	MPR33.1.13.3 Marine Section	911	18-Sep-18	17-Jun-22	1450	14-Dec-18 A	16-Feb-24	76.07%	34.46%	-73	-508	-487
	MPR33.1.13.3.1 Temporary Access Bridge Work -2 (MP70 to MP51-	911	18-Sep-18	17-Jun-22	1089	14-Nov-19 A	16-Feb-24	0%	0%	-274	-508	-487
	MPR33.1.13.3.1.1 Loadout Berth -30 M x 6 M at MP 70	30	18-Sep-18	23-Oct-18	24	22-Nov-20 A	22-Jan-21	0%	0%	-509	-531	-351
	MPR33.1.13.3.1.2 Temporary Access Bridge (MP70 to MP51)	181	24-Oct-18	28-May-19	380	14-Nov-19 A	01-Oct-21	0%	0%	-244	-482	-242
	MPR33.1.13.3.1.3 Removal of Temporary Access Bridge	90	05-Mar-22	17-Jun-22	90	31-Oct-23	16-Feb-24	0%	0%	-508	-508	-487
	MPR33.1.13.3.2 Marine - Main Bridge	775	03-Nov-18	23-Feb-22	1353	14-Dec-18 A	23-Oct-23	76.07%	34.46%	-34	-508	-487
	MPR33.1.13.3.2.1 Marine - Piling	564	03-Nov-18	15-Mar-21	962	14-Dec-18 A	06-Apr-22	89.49%	75.58%	-34	-246	-128
	MPR33.1.13.3.2.1.1 Piling - Stretch - 1 - OSD-1 MP51 to MP53 (3	104	20-Sep-19	22-Jan-20	77	21-Jul-20 A	04-Nov-21	100%	73.08%	-225	-388	-242
	MPR33.1.13.3.2.1.2 Piling - Stretch - 2 - Marine - MP54 to MP68 (	344	25-Feb-19	13-Oct-20	335	16-Aug-20 A	06-Apr-22	100%	6.67%	-321	-372	-178
	MPR33.1.13.3.2.1.3 Piling - Stretch - 3 - OSD-2&3 MP69 to MP80	521	10-Dec-18	26-Feb-21	313	01-Sep-20 A	16-Mar-22	88.39%	43.23%	-385	-241	-163
	MPR33.1.13.3.2.1.4 Piling - Stretch - 4 - Marine MP81 to MP123 (	370	03-Nov-18	21-Apr-20	489	14-Dec-18 A	22-Feb-20 A	100%	100%	-34	50	
	MPR33.1.13.3.2.1.5 Piling - Stretch - 5 - OSD-4 MP124 to MP128	147	22-Apr-20	16-Jan-21	112	04-Feb-20 A	13-Nov-20 A	87.07%	100%	66	55	
	MPR33.1.13.3.2.1.6 Piling - Stretch - 6 - Marine MP129 to MP148	395	25-May-19	15-Mar-21	148	06-Dec-19 A	09-Dec-20 A	57.5%	100%	-85	80	
	MPR33.1.13.3.2.3 Marine - Pile Cap	572	23-Nov-18	12-Apr-21	1030	14-Jan-19 A	29-Sep-22	82.82%	40.2%	-43	-370	-254
	MPR33.1.13.3.2.3.1 Pile Cap - Stretch - 1 - OSD-1 MP51 to MP53	75	25-Dec-19	23-Mar-20	75	23-Dec-21	23-Mar-22	100%	0%	-453	-453	-333
	MPR33.1.13.3.2.3.2 Pile Cap - Stretch - 2 - Marine - MP54 to MP6	400	28-Mar-19	20-Jan-21	413	16-Oct-20 A	29-Sep-22	90.22%	6.67%	-320	-438	-317
	MPR33.1.13.3.2.3.3 Pile Cap - Stretch - 3 - OSD-2&3 MP69 to MP	505	28-Jan-19	27-Mar-21	287	06-Nov-20 A	15-Apr-22	80.9%	8.33%	-387	-243	-165
	MPR33.1.13.3.2.3.4 Pile Cap - Stretch - 4 - Marine MP81 to MP12	444	23-Nov-18	10-Nov-20	656	14-Jan-19 A	26-Apr-21	100%	83.93%	-43	-139	-87
	MPR33.1.13.3.2.3.5 Pile Cap - Stretch - 5 - OSD-4 MP124 to MP1	125	11-Nov-20	08-Apr-21	75	10-Oct-20 A	23-Sep-21	30.4%	24%	25	-62	3
	MPR33.1.13.3.2.3.6 Pile Cap - Stretch - 6 - Marine MP 129 to MP	407	08-Jun-19	12-Apr-21	205	21-Dec-20 A	22-Dec-21	52%	0.5%	-313	-135	-19
	MPR33.1.13.3.2.4 Marine - Pier	590	22-Dec-18	02-Jun-21	820	12-Sep-19 A	30-Dec-22	75.69%	13.35%	-146	-404	-318
	MPR33.1.13.3.2.4.1 Pier - Stretch - 1 - OSD-1 MP51 to MP53 (32(	75	24-Jan-20	21-Apr-20	75	17-Feb-22	16-May-22	100%	0%	-474	-474	-344
	MPR33.1.13.3.2.4.2 Pier - Stretch - 2 - Marine - MP54 to MP68 (8	429	26-Apr-19	26-Mar-21	438	01-Dec-20 A	30-Dec-22	75.87%	3.33%	-332	-461	-344
	MPR33.1.13.3.2.4.3 Pier - Stretch - 3 - OSD-2&3 MP69 to MP80 (:	504	26-Feb-19	24-Apr-21	287	05-Mar-21	13-May-22	75%	0%	-460	-243	-165
	MPR33.1.13.3.2.4.4 Pier - Stretch - 4 - Marine MP81 to MP123 (2	472	22-Dec-18	12-Jan-21	540	12-Sep-19 A	04-Mar-22	97.36%	28.28%	-146	-268	-167
	MPR33.1.13.3.2.4.5 Pier - Stretch - 5 - OSD-4 MP124 to MP128 (6	118	13-Jan-21	02-Jun-21	149	15-Nov-20 A	19-Aug-22	0%	7.5%	49	-294	-257
	MPR33.1.13.3.2.4.6 Pier - Stretch - 6 - Marine MP129 to MP148 (	419	27-Sep-19	28-Apr-21	246	04-Feb-21	12-Feb-22	44.32%	0%	-348	-176	-49
	MPR33.1.13.3.2.2 Marine - Pier Cap	576	21-Jan-19	14-Jun-21	729	26-Dec-19 A	11-Jan-23	72.66%	9.19%	-206	-404	-280
	MPR33.1.13.3.2.2.1 Pier Cap - Stretch - 1 - OSD-1 MP51 to MP53	87	04-Feb-20	16-May-20	86	01-Mar-22	09-Jun-22	100%	0%	-475	-474	-254
	MPR33.1.13.3.2.2.2 Pier Cap - Stretch - 2 - Marine - MP54 to MP(	414	27-May-19	07-Apr-21	397	25-Sep-21	11-Jan-23	72%	0%	-478	-461	-344
	MPR33.1.13.3.2.2.3 Pier Cap - Stretch - 3 - OSD-2&3 MP69 to MP	497	28-Mar-19	17-May-21	281	02-Apr-21	03-Jun-22	68.25%	0%	-459	-243	-165
	MPR33.1.13.3.2.2.4 Pier Cap - Stretch - 4 - Marine MP81 to MP1	458	21-Jan-19	23-Jan-21	476	26-Dec-19 A	16-Mar-22	95.22%	21.07%	-206	-268	-167
	MPR33.1.13.3.2.2.5 Pier Cap - Stretch - 5 - OSD(4) MP124 to MP	103	12-Feb-21	14-Jun-21	154	03-Mar-22	31-Aug-22	0%	0%	-242	-294	-257
	MPR33.1.13.3.2.2.6 Pier Cap - Stretch - 6 - Marine MP129 to MP	403	12-Oct-19	11-May-21	231	19-Feb-21	24-Feb-22	42.92%	0%	-335	-164	-11
	MPR33.1.13.3.2.5 Marine - Super Structure Erection	636	19-Apr-19	23-Feb-22	819	23-Jun-20 A	23-Oct-23	49.59%	0%	-276	-508	-487
	MPR33.1.13.3.2.5.1 Erection - Main Concrete Viaduct	636	19-Apr-19	23-Feb-22	819	23-Jun-20 A	23-Oct-23	48.72%	0%	-276	-508	-487
	MPR33.1.13.3.2.5.2 Rescue Span (MP98 to MP99)	120	07-Mar-20	29-Oct-20	120	30-Dec-21	23-May-22	100%	0%	-398	-398	-77
	MPR33.1.13.4 Precast Segments	778	06-Feb-19	21-Aug-21	1067	07-Aug-19 A	09-Jun-23	73.15%	15.89%	-154	-551	-221
	MPR33.1.13.4.1 Precast Segement - Sewri Interchange	701	06-Feb-19	24-May-21	855	20-Feb-20 A	27-Feb-23	84.49%	8.37%	-317	-539	-132
	MPR33.1.13.4.1.1 Precast Segement - Land Viaduct	276	04-Apr-19	27-Feb-20	263	03-Dec-20 A	23-Dec-21	100%	2.49%	-509	-556	228
	MPR33.1.13.4.1.2 Precast Segement - Ramp A	396	30-Mar-19	14-Jul-20	528	20-Feb-20 A	30-Apr-22	100%	1.04%	-273	-547	-405
	MPR33.1.13.4.1.3 Precast Segement - Ramp B	297	17-Mar-20	06-Mar-21	287	27-Nov-20 A	22-Oct-22	84.25%	5.39%	-214	-498	-364
	MPR33.1.13.4.1.4 Precast Segement - Ramp C1	290	04-Apr-19	16-Mar-20	412	18-Mar-20 A	13-Nov-21	100%	22.4%	-291	-508	-364
	MPR33.1.13.4.1.5 Precast Segement - Ramp C2	143	06-Feb-19	24-Jul-19	303	06-Mar-20 A	10-May-21	100%	43.11%	-329	-545	-366
	MPR33.1.13.4.1.6 Precast Segement - Ramp E	253	15-Jul-20	14-May-21	253	30-Apr-22	27-Feb-23	53.86%	0%	-547	-547	-405
	MPR33.1.13.4.1.7 Precast Segement - Ramp F	107	16-Jan-21	24-May-21	77	10-Oct-22	10-Jan-23	0%	0%	-530	-500	-366
	MPR33.1.13.4.2 Precast Segement - Intertidal	753	28-Feb-19	14-Aug-21	729	18-Oct-19 A	12-Nov-22	78.91%	38.86%	-194	-378	-315
	MPR33.1.13.4.3 Precast Segement - Marine	759	28-Feb-19	21-Aug-21	1067	07-Aug-19 A	09-Jun-23	64.97%	2.91%	-135	-551	-221
	MPR33.1.13.5 Orthotropic Steel Deck (OSD) - Fabrication, Shipping, A	608	11-Jun-19	15-Mar-22	799	23-Sep-19 A	18-May-23	22.01%	10.95%	-9	-360	-200
	MPR33.1.13.5.1 OSD - Fabrication	746	28-Sep-19	12-Oct-21	915	23-Sep-19 A	02-Oct-22	0%	0%	5	-355	-297
	MPR33.1.13.5.1.1 Fabrication - Factory A	720	28-Sep-19	16-Sep-21	915	23-Sep-19 A	02-Oct-22	0%	0%	5	-381	-358
	MPR33.1.13.5.1.1.1 OSD 01 - RHS Fabrication - MP50 to MP53 (:	330	28-Sep-19	22-Aug-20	398	23-Sep-19 A	03-May-21	0%	0%	5	-254	-103
	MPR33.1.13.5.1.1.2 OSD 03 - RHS Fabrication - MP75 to MP81 (	450	26-Jan-20	19-Apr-21	450	30-Jun-21	23-Sep-22	0%	0%	-522	-522	-417
	MPR33.1.13.5.1.1.3 OSD 04 - RHS Fabrication - MP124 to MP12	360	22-Sep-20	16-Sep-21	297	25-Mar-20 A	02-Oct-22	0%	0%	181	-381	-358
	MPR33.1.13.5.1.2 Fabrication - Factory B	720	28-Sep-19	16-Sep-21	664	23-Sep-19 A	24-Jan-22	0%	0%	5	-130	-66
	MPR33.1.13.5.1.2.1 OSD 01 - LHS Fabrication - MP50 to MP53 (:	330	28-Sep-19	22-Aug-20	379	23-Sep-19 A	28-Aug-20 A	0%	0%	5	-5	
	MPR33.1.13.5.1.2.2 OSD 02 - LHS Fabrication - MP69 to MP75 (	450	26-Jan-20	19-Apr-21	418	07-Sep-20 A	24-Jan-22	0%	0%	-225	-280	-199
	MPR33.1.13.5.1.2.3 OSD 04 - LHS Fabrication - MP124 to MP12	360	22-Sep-20	16-Sep-21	174	24-Jan-20 A	12-Sep-21	0%	0%	242	5	69



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 DECEMBER 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
MPR33.1.13.5.1.3	Fabrication - Factory C	660	23-Dec-19	12-Oct-21	560	27-Jan-20 A	28-Apr-22	0%	0%	-35	-198	-140
MPR33.1.13.5.1.3.1	OSD 02 - LHS Fabrication - MP69 to MP75 (	420	23-Dec-19	14-Feb-21	298	27-Jan-20 A	10-Aug-21	0%	0%	-35	-176	-41
MPR33.1.13.5.1.3.2	OSD 03 - LHS Fabrication - MP75 to MP81 (	420	19-Aug-20	12-Oct-21	420	05-Mar-21	28-Apr-22	0%	0%	-198	-198	-140
MPR33.1.13.5.2	OSD - Shipping	536	24-Jun-20	11-Dec-21	762	09-Jul-20 A	01-Dec-22	27.11%	15.7%	-15	-355	-178
MPR33.1.13.5.2.1	Shipping - Factory A	510	24-Jun-20	15-Nov-21	639	04-Dec-20 A	01-Dec-22	32.4%	2.88%	-163	-381	-178
MPR33.1.13.5.2.1.1	OSD 01 - RHS Shipping - MP50 to MP53 (32	120	24-Jun-20	21-Oct-20	130	04-Dec-20 A	02-Jul-21	100%	14.87%	-163	-254	-103
MPR33.1.13.5.2.1.2	OSD 03 - RHS Shipping - MP75 to MP81 (77	240	22-Oct-20	18-Jun-21	240	27-Mar-22	22-Nov-22	27.88%	0%	-522	-522	-361
MPR33.1.13.5.2.1.3	OSD 04 - RHS Shipping - MP124 to MP128 (	180	20-May-21	15-Nov-21	151	03-Jul-22	01-Dec-22	0%	0%	-410	-381	-178
MPR33.1.13.5.2.2	Shipping - Factory B	510	24-Jun-20	15-Nov-21	511	09-Jul-20 A	25-Mar-22	27.91%	26.55%	-15	-130	-66
MPR33.1.13.5.2.2.1	OSD 01 - LHS Shipping - MP50 to MP53 (32	120	24-Jun-20	21-Oct-20	77	09-Jul-20 A	21-Oct-20 A	100%	100%	-15	1	
MPR33.1.13.5.2.2.2	OSD 02 - RHS Shipping - MP69 to MP75 (68	240	21-Nov-20	18-Jul-21	270	29-Jun-21	25-Mar-22	17.01%	0%	-220	-250	-199
MPR33.1.13.5.2.2.3	OSD 04 - LHS Shipping - MP124 to MP128 (	180	20-May-21	15-Nov-21	134	28-Nov-20 A	11-Nov-21	0%	16.96%	173	5	69
MPR33.1.13.5.2.3	Shipping - Factory C	450	18-Sep-20	11-Dec-21	544	25-Oct-20 A	27-Jun-22	20.23%	18.58%	-37	-198	-116
MPR33.1.13.5.2.3.1	OSD 02 - LHS Shipping - MP69 to MP75 (68	210	18-Sep-20	15-Apr-21	282	25-Oct-20 A	09-Oct-21	43.05%	39.53%	-37	-176	5
MPR33.1.13.5.2.3.2	OSD 03 - LHS Shipping - MP75 to MP81 (77	210	16-May-21	11-Dec-21	210	30-Nov-21	27-Jun-22	0%	0%	-198	-198	-116
MPR33.1.13.5.3	OSD - Custom Clearance and Inland Transport (Las	482	07-Sep-20	01-Jan-22	783	13-Aug-20 A	22-Dec-22	18.15%	10.75%	25	-355	-178
MPR33.1.13.5.3.1	OSD 1 - MP50 to MP53 (320m)	75	07-Sep-20	20-Nov-20	275	13-Aug-20 A	01-Aug-21	100%	50%	25	-254	64
MPR33.1.13.5.3.2	OSD 2 - MP69 to MP75 (683m)	274	17-Nov-20	17-Aug-21	480	07-Nov-20 A	24-Apr-22	13.18%	13.31%	10	-250	-180
MPR33.1.13.5.3.3	OSD 3 - MP75 to MP81 (770m)	377	21-Dec-20	01-Jan-22	328	29-Jan-22	22-Dec-22	1.73%	0%	-404	-355	-273
MPR33.1.13.5.3.4	OSD 4 - MP124 to MP128 (560m)	141	19-Jul-21	06-Dec-21	512	29-Jul-21	22-Dec-22	0%	0%	-10	-381	-178
MPR33.1.13.5.4	OSD - Assembly	337	07-Oct-20	16-Feb-22	556	25-Dec-20 A	20-Feb-23	12.79%	0%	-66	-309	-148
MPR33.1.13.5.4.1	OSD 1 - MP50 to MP53 (320m)	80	07-Oct-20	11-Jan-21	162	23-Jan-21	06-Nov-21	88.89%	0%	-90	-172	15
MPR33.1.13.5.4.2	OSD 2 - MP69 to MP75 (683m)	252	17-Dec-20	13-Oct-21	402	25-Dec-20 A	23-May-22	2.05%	0%	-7	-186	-116
MPR33.1.13.5.4.3	OSD 3 - MP75 to MP81 (770m)	329	20-Jan-21	16-Feb-22	295	28-Feb-22	14-Feb-23	0%	0%	-338	-304	-256
MPR33.1.13.5.4.4	OSD 4 - MP124 to MP128 (560m)	142	18-Aug-21	04-Feb-22	452	28-Aug-21	20-Feb-23	0%	0%	-9	-319	-148
MPR33.1.13.5.5	OSD - Erection	608	11-Jun-19	15-Mar-22	504	24-Sep-21	18-May-23	3.21%	0%	-464	-360	-200
MPR33.1.13.5.5.1	OSD 1 - MP50 to MP53 (320m)	157	21-May-20	26-Feb-21	95	14-Jun-22	05-Oct-22	23.4%	0%	-474	-412	-243
MPR33.1.13.5.5.2	OSD 2 - MP69 to MP75 (683m)	542	11-Jun-19	24-Dec-21	266	24-Sep-21	04-Aug-22	0%	0%	-464	-188	-138
MPR33.1.13.5.5.3	OSD 3 - MP75 to MP81 (770m)	279	07-Jan-21	10-Mar-22	312	15-Mar-22	22-Mar-23	0%	0%	-283	-316	-268
MPR33.1.13.5.5.4	OSD 4 - MP124 to MP128 (560m)	185	05-May-21	15-Mar-22	303	21-May-22	18-May-23	0%	0%	-242	-360	-200
MPR33.1.13.6	Post Erection Segmental Stitch Concrete (incl. Bearing	644	24-Apr-19	10-Mar-22	791	06-Feb-20 A	26-Oct-23	0%	0%	-163	-499	-335
MPR33.1.13.6.1	Stitch Concrete - Sewri Interchange	644	24-Apr-19	10-Mar-22	672	18-Dec-20 A	12-Oct-23	0%	0%	-349	-487	-323
MPR33.1.13.6.2	Stitch Concrete - Intertidal	475	29-Nov-19	22-Dec-21	715	06-Feb-20 A	26-Jul-23	0%	0%	-58	-487	-481
MPR33.1.13.6.3	Stitch Concrete - Marine	563	21-Oct-19	26-Feb-22	673	13-May-21	26-Oct-23	0%	0%	-398	-508	-335
MPR33.1.13.7	Crash Barrier Works	585	05-Oct-19	11-Mar-22	740	03-Mar-21	04-Nov-23	0%	0%	-350	-506	-343
MPR33.1.13.7.1	Crash Barrier - Sewri Interchange	585	05-Oct-19	11-Mar-22	620	12-Oct-21	23-Oct-23	0%	0%	-459	-494	-331
MPR33.1.13.7.2	Crash Barrier - Intertidal	470	17-Dec-19	04-Jan-22	666	03-Mar-21	07-Aug-23	0%	0%	-290	-487	-301
MPR33.1.13.7.3	Crash Barrier - Marine	541	26-Nov-19	09-Mar-22	651	20-Sep-21	04-Nov-23	0%	0%	-398	-508	-347
MPR33.1.13.7.4	Crash Barrier - Orthotropic Steel Deck	291	23-Dec-20	10-Mar-22	274	15-Jun-22	09-May-23	0%	0%	-373	-356	-197
MPR33.1.13.8	Bridge Deck (Superstructure) Water Proofing	581	15-Oct-19	16-Mar-22	734	15-Mar-21	10-Nov-23	0%	0%	-352	-506	-347
MPR33.1.13.8.1	Water Proofing - Sewri Interchange	579	15-Oct-19	14-Mar-22	617	22-Oct-21	28-Oct-23	0%	0%	-459	-497	-336
MPR33.1.13.8.2	Water Proofing - Intertidal	465	28-Dec-19	10-Jan-22	661	15-Mar-21	12-Aug-23	0%	0%	-290	-487	-274
MPR33.1.13.8.3	Water Proofing - Marine	526	18-Dec-19	14-Mar-22	636	12-Oct-21	10-Nov-23	0%	0%	-398	-508	-347
MPR33.1.13.8.4	Water Proofing - Orthotropic Steel Deck	281	11-Jan-21	16-Mar-22	273	22-Jun-22	15-May-23	0%	0%	-364	-356	-197
MPR33.1.13.9	Stone Mastic Asphalt Pavement	74	23-Dec-21	22-Mar-22	390	05-Aug-22	17-Nov-23	0%	0%	-190	-507	-409
MPR33.1.13.9.1	Sewri Interchange	70	27-Dec-21	21-Mar-22	140	22-May-23	04-Nov-23	0%	0%	-427	-497	-398
MPR33.1.13.9.2	Main Bridge	74	23-Dec-21	22-Mar-22	390	05-Aug-22	17-Nov-23	0%	0%	-190	-507	-467
MPR33.1.13.10	Bridge Anclilaries and Misc. Works	575	31-Jan-20	22-Jun-22	768	16-Apr-21	23-Jan-24	0%	0%	-290	-484	-409
MPR33.1.13.10.1	Bridge Ancillaries	575	31-Jan-20	22-Jun-22	768	16-Apr-21	23-Jan-24	0%	0%	-290	-484	-409
MPR33.1.13.10.1.1	Noise Barrier, View Barrier and Safety Fence	552	31-Jan-20	26-May-22	763	16-Apr-21	17-Jan-24	0%	0%	-290	-502	-404
MPR33.1.13.10.1.2	Traffic Signages and Marking	84	17-Mar-22	22-Jun-22	88	09-Oct-23	23-Jan-24	0%	0%	-480	-484	-409
MPR33.1.15	Handing Over	148	31-Mar-22	22-Sep-22	159	24-Oct-23	02-May-24	0%	0%	-480	-491	-492
MPR33.1.15.1	Testing and Handing Over	120	31-Mar-22	18-Aug-22	131	24-Oct-23	29-Mar-24	0%	0%	-480	-491	-492
MPR33.1.15.2	Final Handing Over	28	19-Aug-22	22-Sep-22	28	29-Mar-24	02-May-24	0%	0%	-491	-491	-492
MPR33.1.14	Invoice Schedule (Shows the Invoice items which are not c	1062	23-Mar-18	22-Sep-22	1553	23-Mar-18 A	02-May-24	67.81%	38.56%	0	-491	-492

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 December 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_25122020_APPROVED_MPR.33	3115.13	17-Nov-17	21-Sep-24	17-Nov-17		65.29%	31.62%
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	2438.38	23-Mar-18	21-Mar-23	23-Mar-18		0%	0%
5		PROJECT KEY MILESTONE	2259.38	23-Mar-18	22-Sep-22	23-Mar-18		0%	0%
6		INTERFACE MILESTONE_ERG19	2410.38	19-Apr-18	21-Mar-23	03-Apr-18		0%	0%
7		PHYSICAL PROGRESS AND INTERFACE DATE_ADD2-ATTACHMENT 25	2001.38	18-Sep-18	22-Jun-22	31-Aug-18		0%	0%
8		CONSTRUCTION KEY MILESTONES	959.88	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		COMMUNICATION / 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	1139.00	20-Jan-18	04-Sep-19	01-Jan-18		100%	100%
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	1037.17	22-Jan-18	01-Nov-18	20-Jan-18	20-Aug-20	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	365.17	20-Jul-18	01-Nov-18	11-Nov-19	20-Aug-20	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	1037.67	01-May-18	04-Sep-19	09-Apr-18		100%	100%
46		PROCUREMENT, MANUFACTURING AND LOGISTICS	1305.38	20-Jan-18	23-Aug-20	22-Dec-17		100%	100%
47		SURVEY & INVESTIGATION	72.33	20-Jan-18	02-Apr-18	22-Dec-17	04-Apr-18	0%	0%
48		TOPOGRAPHIC SURVEY AGENT	21.00	20-Jan-18	09-Feb-18	01-Jan-18	22-Jan-18	0%	0%
49		BATHYMETRIC SURVEY / UTILITY SURVEY AGENT	21.00	20-Jan-18	09-Feb-18	01-Jan-18	23-Jan-18	0%	0%
50		GEOTECHNICAL INVESTIGATION AGENCY	48.00	22-Jan-18	02-Apr-18	22-Dec-17	04-Apr-18	0%	0%
51		TEMPORARY WORK	964.33	20-Jan-18	20-Oct-18	20-Jan-18	11-May-20	0%	0%
52		MAIN WORK_SUBCONTRACT WORK	978.00	23-Mar-18	20-Jul-19	23-Mar-18		0%	0%
53		EQUIPMENTS	1097.00	23-Mar-18	12-Sep-19	23-Mar-18	05-Nov-20	100%	100%
54		BATCHING PLANT	437.00	23-Mar-18	31-Jul-18	23-Mar-18	23-Mar-19	0%	0%
55		RCD MACHINE	514.00	23-Mar-18	11-Nov-18	23-Mar-18	24-Aug-19	0%	0%
56		GANTRY CRANE	1097.00	23-Mar-18	08-Feb-19	23-Mar-18	05-Nov-20	100%	100%
57		SEGMENT LAUNCHER	770.41	24-Jul-18	12-Sep-19	24-Jul-18	09-Mar-20	0%	0%
58		PRECAST MOULD AND SYSTEM FORM	714.91	07-Aug-18	24-Mar-19	04-Sep-18	25-Sep-20	100%	100%

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-Dec-20	R0		

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
59		PRECAST MOULD_CASTING BED	332.00	20-Aug-18	24-Mar-19	03-Jun-19	25-Sep-20	100%	100%
60		SYSTEM FORM	446.91	07-Aug-18	04-Mar-19	04-Sep-18	31-Aug-20	0%	0%
61		MATERIAL SUPPLIERS	1119.38	02-Jun-18	15-Oct-19	20-Apr-18		0%	0%
62		MATERIAL PROCUREMENT	0.00			08-Aug-18		0%	0%
63		TEMPORARY BRIDGE	0.00			08-Aug-18	15-Feb-20	0%	0%
64		PERMANENT WORKS	0.00			25-Mar-19		0%	0%
65		PROCUREMENT OF STEEL GIRDER	673.00	07-May-19	23-Aug-20	01-Aug-19		0%	0%
66		STEEL PLATE FOR (RHS.STEEL MOUDLE-2_MP177 - MP182)	513.00	04-Jun-19	13-Jul-20	08-Aug-19	02-Jul-20	0%	0%
67		STEEL PLATE FOR (LHS.STEEL MOUDLE-2_MP177 - MP182)	438.00	07-May-19	16-Apr-20	01-Aug-19	12-May-20	0%	0%
68		STEEL PLATE FOR (RHS.STEEL MOUDLE-3_MP183 - MP186)	315.00	01-Jul-19	10-May-20	01-Nov-19	17-Aug-20	0%	0%
69		STEEL PLATE FOR (LHS.STEEL MOUDLE-3_MP183 - MP186)	315.00	04-Jun-19	14-Apr-20	01-Oct-19	05-Nov-20	0%	0%
70		STEEL PLATE FOR (RHS.STEEL MOUDLE-1_MP176 - MP171)	286.00	30-Jul-19	23-Aug-20	01-Apr-20		0%	0%
71		STEEL PLATE FOR (LHS.STEEL MOUDLE-1_MP176 - MP171)	327.00	02-Jul-19	26-Jul-20	29-Mar-20		0%	0%
72		IMPACT OF COVID-19	50.67			22-Mar-20	25-May-20	0%	0%
73		CONSTRUCTION	2171.13	02-Apr-18	21-Jun-22	02-Apr-18		64.23%	29.78%
74		TEMPORARY WORK	2143.21	02-Apr-18	21-Jun-22	02-Apr-18		97.95%	97.95%
75		PREPARATION WORK	368.33	02-Apr-18	16-Jan-19	02-Apr-18	25-Jul-19	0%	0%
76		ESTABLISHMENT OF EMPOLYER & CONTRACTOR OFFICE	194.04	20-Jun-18	27-Nov-18	27-Jun-18	18-Jan-19	100%	100%
77		ESTABLISHMENT OF LABOUR CAMP	463.92	20-Jun-18	05-Apr-19	03-Jul-18	04-Apr-19	0%	0%
78		ESTABLISHMENT OF CONCRETE CASTING YARD	1032.00	04-May-18	25-Apr-19	14-Jun-18		100%	100%
79		ESTABLISHMENT OF STEEL SPAN ASSEMBLY YARD	463.02	02-Nov-18	06-Mar-20	01-Nov-19		0%	0%
80		TEMPORARY BRIDGE	2090.88	20-May-18	21-Jun-22	27-Jul-18		96.49%	96.49%
81		PERMANENT WORK	1904.13	03-Sep-18	24-May-22	08-Dec-18		59.82%	20.86%
82		PRE-FABRICATION AND ASSEMBLY	1092.29	18-Apr-19	19-Feb-22	16-Oct-19		44.2%	20.73%
83		MAIN BRIDGE	1904.13	03-Sep-18	24-May-22	08-Dec-18		70.34%	22.27%
84		MAIN BRIDGE FOUNDATION	1315.29	03-Sep-18	23-Mar-21	08-Dec-18		96.08%	57.67%
85		MAIN BRIDGE PILE FOUNDATION	1177.06	03-Sep-18	23-Jan-21	08-Dec-18		99.09%	74.42%
86		PILE LOAD TEST	259.25	03-Sep-18	19-Nov-18	08-Dec-18	11-Nov-19	100%	100%
87		MAIN BRIDGE PILE FOUNDATION_LAND 17+414~18+187 FROM MP250 TO MP266	322.99	30-Nov-18	15-May-19	17-Jan-19	11-Jun-20	100%	100%
88		MODULE-21_MP261 - MP257	126.00	30-Nov-18	05-Mar-19	23-Aug-19	06-Mar-20	100%	100%
89		MODULE-22_MP266 - MP262	167.35	06-Mar-19	15-May-19	17-Jan-19	28-Jan-20	100%	100%
90		MODULE-20_MP256 - MP255	32.00	05-Dec-18	10-Jan-19	25-Sep-19	19-Mar-20	100%	100%
91		MODULE-19_MP254 - MP250	199.21	11-Jan-19	16-Apr-19	05-Oct-19	11-Jun-20	100%	100%
92		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%
93		MODULE-14_MP231 - MP227	48.40	17-Aug-19	27-Nov-19	08-Nov-19	21-Feb-20	100%	100%
94		MODULE-15_MP236 - MP232	77.00	08-Mar-19	26-Aug-19	08-Aug-19	25-Dec-19	100%	100%
95		MODULE-16_MP240 - MP237	113.00	20-Dec-18	08-Mar-19	12-Jun-19	11-Nov-19	100%	100%
96		MODULE-17_MP245 - MP241	94.00	20-Mar-19	17-Jun-19	09-Oct-19	04-Jan-20	100%	100%
97		MODULE-18_MP249 - MP246	74.00	21-Jan-19	26-Mar-19	15-Oct-19	09-Feb-20	100%	100%
98		MAIN BRIDGE PILE FOUNDATION_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	417.08	27-Feb-19	06-Jun-20	15-Oct-19	26-Aug-20	100%	100%
99		MODULE-10_MP211 - MP207	243.20	12-Mar-20	06-Jun-20	01-Nov-19	18-Feb-20	100%	100%
100		MODULE-11_MP216 - MP212	277.00	27-Feb-19	03-Apr-20	15-Oct-19	24-Feb-20	100%	100%
101		MODULE-12_MP221 - MP217	225.33	06-Apr-19	30-Oct-19	25-Feb-20	26-Aug-20	100%	100%
102		MODULE-13_MP226 - MP222	313.08	30-Oct-19	06-Feb-20	24-Jan-20	16-Jun-20	100%	100%
103		MAIN BRIDGE PILE FOUNDATION_MARINE 13+610~14+800 FROM MP187 TO MP205	530.98	12-Dec-19	28-Nov-20	01-Oct-19		100%	90.07%
104		MODULE-09_MP206 - MP202	340.06	12-Dec-19	06-Mar-20	01-Oct-19	13-Oct-20	100%	100%
105		MODULE-08_MP201 - MP197	262.04	22-Feb-20	19-May-20	19-Feb-20	25-Dec-20	100%	100%
106		MODULE-07_MP196 - MP192	67.00	02-May-20	08-Sep-20	12-Oct-20		100%	64.39%
107		MODULE-06_MP191 - MP187	81.55	21-Aug-20	28-Nov-20	31-Aug-20	10-Dec-20	100%	100%
108		MAIN BRIDGE PILE FOUNDATION_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	435.13	27-Nov-19	23-Jan-21	17-Mar-20		94.91%	40.59%
109		STEEL MODULE-03_MP186 - MP183	106.00	30-May-20	21-Nov-20	08-Oct-20		100%	44.09%
110		STEEL MODULE-02_MP182 - MP177	336.33	27-Nov-19	10-Sep-20	17-Mar-20		100%	78.84%
111		STEEL MODULE-01_MP176 - MP171	135.00	30-Jul-20	23-Jan-21			86.43%	0%
112		MAIN BRIDGE PILE FOUNDATION_MARINE 10+380~11+880 FROM MP146 TO MP170	646.88	24-Nov-18	28-Dec-19	19-Feb-19		100%	29.45%
113		MODULE-05_MP171 - MP167	92.00	19-Jun-19	16-Oct-19			100%	0%
114		MODULE-04_MP166 - MP162	454.88	24-Nov-18	18-Feb-19	19-Feb-19		100%	80.14%
115		MODULE-03_MP161 - MP157	341.75	22-Jan-19	18-Apr-19	03-Apr-19		100%	59.58%
116		MODULE-02_MP156 - MP152	92.00	16-Apr-19	27-Jul-19	21-Dec-20		100%	2.48%
117		MODULE-01_MP151 - MP146	84.00	04-Oct-19	28-Dec-19	23-Dec-20		100%	0%
118		MAIN BRIDGE PILE CAP INSTALLATION	1048.21	22-Dec-18	23-Mar-21	01-May-19		92.93%	40.18%
119		MAIN BRIDGE PILE CAP BOTTOM SLAB INSTALLATION	1007.21	22-Dec-18	17-Feb-21	19-Aug-19		0%	0%
120		MAIN BRIDGE PILE CAP BOTTOM SLAB_CRZ 15+890~17+414 FROM MP226 TO MP250	356.17	17-Jan-19	12-Dec-19	19-Aug-19	28-May-20	0%	0%

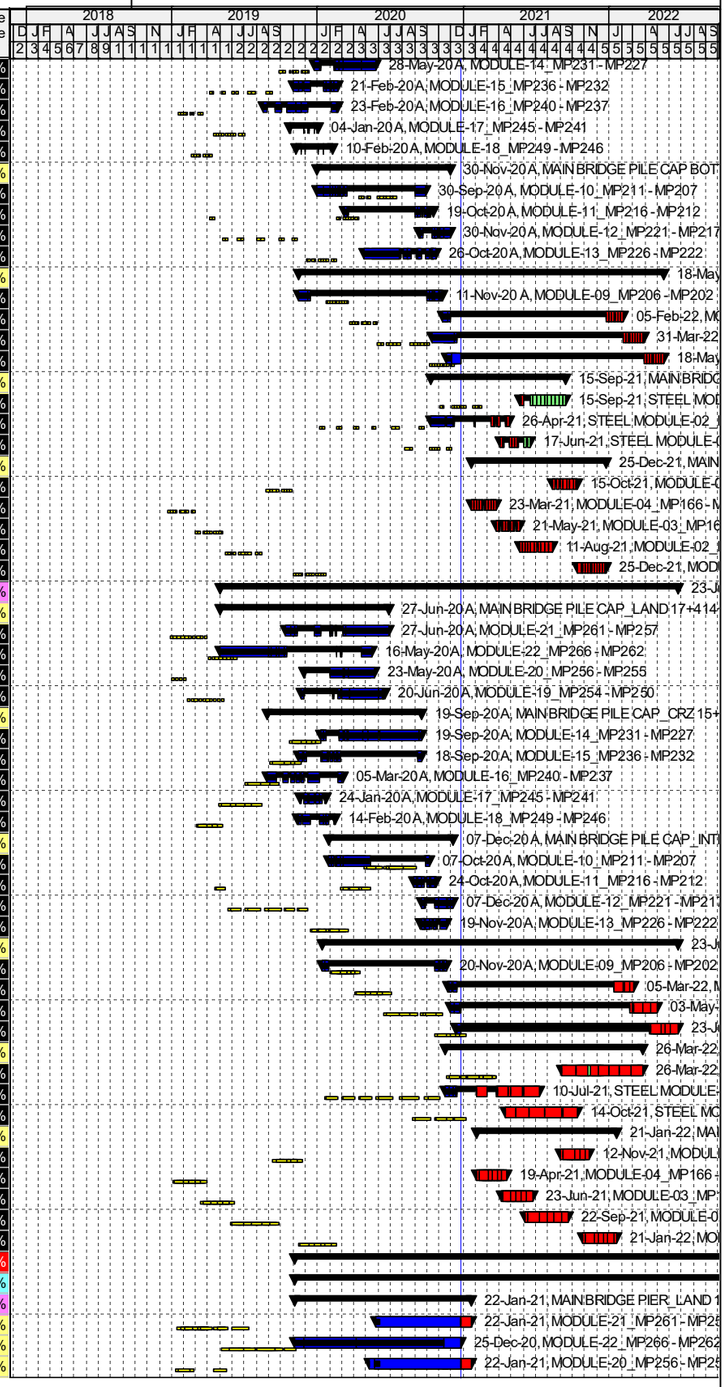
Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete
Summary

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Dec-20	R0		

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
121		MODULE-14_MP231 - MP227	168.25	28-Sep-19	12-Dec-19	24-Dec-19	28-May-20	0%	0%
122		MODULE-15_MP236 - MP232	71.00	05-Apr-19	11-Sep-19	02-Nov-19	21-Feb-20	0%	0%
123		MODULE-16_MP240 - MP237	142.25	17-Jan-19	20-Mar-19	19-Aug-19	23-Feb-20	0%	0%
124		MODULE-17_MP245 - MP241	44.00	17-Apr-19	03-Jul-19	22-Oct-19	04-Jan-20	0%	0%
125		MODULE-18_MP249 - MP246	63.00	19-Feb-19	12-Apr-19	08-Nov-19	10-Feb-20	0%	0%
126		MAIN BRIDGE PILE CAP BOTTOM SLAB_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	185.75	06-Apr-19	18-Jul-20	30-Dec-19	30-Nov-20	0%	0%
127		MODULE-10_MP211 - MP207	95.25	15-Apr-20	18-Jul-20	30-Dec-19	30-Sep-20	0%	0%
128		MODULE-11_MP216 - MP212	127.75	06-Apr-19	15-Apr-20	09-Mar-20	19-Oct-20	0%	0%
129		MODULE-12_MP221 - MP217	73.75	10-May-19	12-Nov-19	11-Sep-20	30-Nov-20	0%	0%
130		MODULE-13_MP226 - MP222	59.01	03-Dec-19	18-Feb-20	27-Apr-20	26-Oct-20	0%	0%
131		MAIN BRIDGE PILE CAP BOTTOM SLAB_MARINE 13+610~14+800 FROM MP187 TO MP205	419.75	21-Jan-20	10-Dec-20	16-Nov-19		0%	0%
132		MODULE-09_MP206 - MP202	288.75	21-Jan-20	20-Mar-20	16-Nov-19	11-Nov-20	0%	0%
133		MODULE-08_MP201 - MP197	64.00	23-Mar-20	30-May-20	11-Nov-20		0%	0%
134		MODULE-07_MP196 - MP192	45.00	30-May-20	08-Oct-20	15-Oct-20		0%	0%
135		MODULE-06_MP191 - MP187	65.00	08-Oct-20	10-Dec-20	20-Nov-20		0%	0%
136		MAIN BRIDGE PILE CAP PRECAST SHELL_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	195.00	08-Jan-20	17-Feb-21	11-Oct-20		0%	0%
137		STEEL MODULE-01_MP176 - MP171	70.00	02-Nov-20	17-Feb-21			0%	0%
138		STEEL MODULE-02_MP182 - MP177	105.00	08-Jan-20	26-Sep-20	11-Oct-20		0%	0%
139		STEEL MODULE-03_MP186 - MP183	60.00	07-Aug-20	03-Dec-20			0%	0%
140		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%
141		MODULE-05_MP171 - MP167	40.00	24-Aug-19	28-Oct-19			0%	0%
142		MODULE-04_MP166 - MP162	50.00	22-Dec-18	01-Mar-19			0%	0%
143		MODULE-03_MP161 - MP157	50.00	01-Mar-19	10-May-19			0%	0%
144		MODULE-02_MP156 - MP152	50.00	15-May-19	16-Aug-19			0%	0%
145		MODULE-01_MP151 - MP146	60.00	01-Nov-19	21-Jan-20			0%	0%
146		MAIN BRIDGE PILE CAP INSTALLATION	1032.21	27-Dec-18	23-Mar-21	01-May-19		92.93%	40.18%
147		MAIN BRIDGE PILE CAP_LAND 17+414~18+188 FROM MP251 TO MP266	376.96	27-Dec-18	13-Jun-19	01-May-19	27-Jun-20	100%	100%
148		MODULE-21_MP261 - MP257	248.02	27-Dec-18	30-Mar-19	15-Oct-19	27-Jun-20	100%	100%
149		MODULE-22_MP266 - MP262	206.75	02-Apr-19	13-Jun-19	01-May-19	16-May-20	100%	100%
150		MODULE-20_MP256 - MP255	54.00	01-Jan-19	06-Feb-19	29-Nov-19	23-May-20	100%	100%
151		MODULE-19_MP254 - MP250	218.04	08-Feb-19	13-May-19	23-Nov-19	20-Jun-20	100%	100%
152		MAIN BRIDGE PILE CAP_CRZ 15+890~17+414 FROM MP226 TO MP250	328.33	04-Mar-19	08-Jan-20	28-Aug-19	19-Sep-20	100%	100%
153		MODULE-14_MP231 - MP227	230.33	24-Oct-19	08-Jan-20	11-Jan-20	19-Sep-20	100%	100%
154		MODULE-15_MP236 - MP232	200.75	02-Sep-19	22-Nov-19	16-Nov-19	18-Sep-20	100%	100%
155		MODULE-16_MP240 - MP237	146.00	02-Jul-19	26-Sep-19	28-Aug-19	05-Mar-20	100%	100%
156		MODULE-17_MP245 - MP241	98.00	29-Apr-19	16-Aug-19	17-Nov-19	24-Jan-20	100%	100%
157		MODULE-18_MP249 - MP246	84.00	04-Mar-19	10-May-19	13-Nov-19	14-Feb-20	100%	100%
158		MAIN BRIDGE PILE CAP_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	199.00	18-Apr-19	05-Sep-20	29-Jan-20	07-Dec-20	100%	100%
159		MODULE-10_MP211 - MP207	96.05	27-Apr-20	05-Sep-20	29-Jan-20	07-Oct-20	100%	100%
160		MODULE-11_MP216 - MP212	156.91	18-Apr-19	13-May-20	31-Aug-20	24-Oct-20	100%	100%
161		MODULE-12_MP221 - MP217	110.75	22-May-19	09-Dec-19	17-Sep-20	07-Dec-20	100%	100%
162		MODULE-13_MP226 - MP222	93.75	14-Dec-19	17-Mar-20	16-Sep-20	19-Nov-20	100%	100%
163		MAIN BRIDGE PILE CAP_MARINE 13+610~14+800 FROM MP187 TO MP205	412.75	01-Feb-20	06-Jan-21	13-Jan-20		95.81%	42.74%
164		MODULE-09_MP206 - MP202	287.75	01-Feb-20	16-Apr-20	13-Jan-20	20-Nov-20	100%	100%
165		MODULE-08_MP201 - MP197	72.00	03-Apr-20	06-Jul-20	23-Nov-20		100%	30%
166		MODULE-07_MP196 - MP192	57.00	15-Jun-20	11-Nov-20	01-Dec-20		100%	25%
167		MODULE-06_MP191 - MP187	78.00	21-Oct-20	06-Jan-21	14-Dec-20		82.39%	19.5%
168		MAIN BRIDGE PILE CAP_MARINE (STEEL) 11+880~13+610 FROM MP171 TO MP186	338.00	20-Jan-20	23-Mar-21	18-Nov-20		83.86%	3.5%
169		STEEL MODULE-01_MP176 - MP171	163.00	21-Nov-20	23-Mar-21			16.89%	0%
170		STEEL MODULE-02_MP182 - MP177	145.00	20-Jan-20	02-Nov-20	18-Nov-20		100%	41.67%
171		STEEL MODULE-03_MP186 - MP183	120.00	27-Aug-20	07-Jan-21			88.99%	0%
172		MAIN BRIDGE PILE CAP_MARINE 10+380~11+880 FROM MP146 TO MP170	263.00	03-Jan-19	17-Feb-20			100%	0%
173		MODULE-05_MP171 - MP167	53.00	10-Sep-19	25-Nov-19			100%	0%
174		MODULE-04_MP166 - MP162	63.00	03-Jan-19	29-Mar-19			100%	0%
175		MODULE-03_MP161 - MP157	63.00	14-Mar-19	08-Jun-19			100%	0%
176		MODULE-02_MP156 - MP152	63.00	27-May-19	26-Sep-19			100%	0%
177		MODULE-01_MP151 - MP146	73.00	14-Nov-19	17-Feb-20			100%	0%
178		MAIN BRIDGE SUB-STRUCTURE	1128.13	09-Jan-19	24-Sep-21	04-Nov-19		88.48%	18.49%
179		MAIN BRIDGE PIER INSTALLATION	1109.13	09-Jan-19	28-Jul-21	04-Nov-19		89.59%	26.5%
180		MAIN BRIDGE PIER_LAND 17+414~18+188 FROM MB251 TO MB266	424.33	09-Jan-19	08-Nov-19	06-Nov-19		100%	25.79%
181		MODULE-21_MP261 - MP257	211.17	14-Jan-19	12-Jul-19	27-May-20		100%	0.5%
182		MODULE-22_MP266 - MP262	315.17	04-May-19	08-Nov-19	06-Nov-19		100%	73.6%
183		MODULE-20_MP256 - MP255	150.00	09-Jan-19	17-May-19	11-May-20		100%	26.25%



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

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

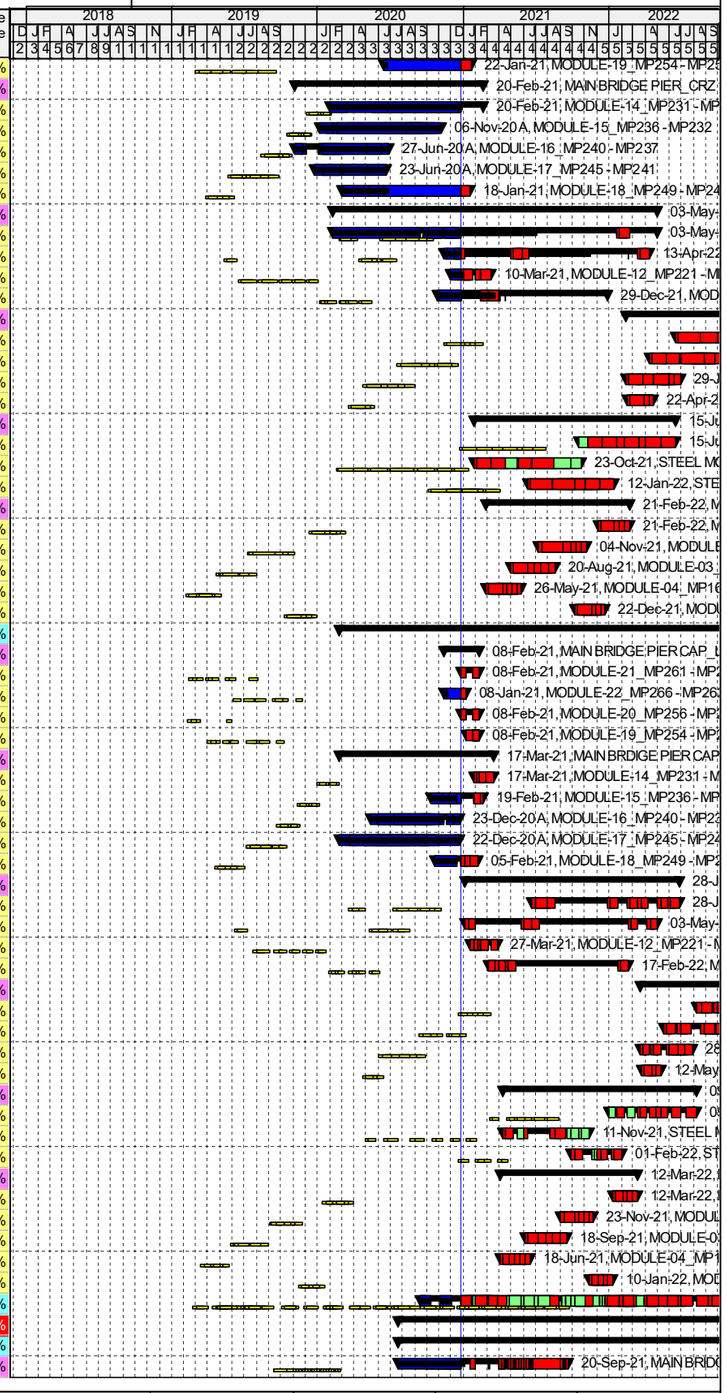
CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Dec-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
184		MODULE-19_MP254 - MP250	79.29	28-Feb-19	20-Sep-19	15-Jun-20		100%	0.56%
185		MAIN BRIDGE PIER_CRZ 15+890~17+414 FROM MB226 TO MB250	393.33	26-Mar-19	06-Feb-20	04-Nov-19		100%	85.87%
186		MODULE-14_MP231 - MP227	228.18	05-Dec-19	06-Feb-20	02-Feb-20		100%	87.8%
187		MODULE-15_MP236 - MP232	134.12	16-Oct-19	19-Dec-19	06-Jan-20	06-Nov-20	100%	100%
188		MODULE-16_MP240 - MP237	85.00	13-Aug-19	30-Oct-19	04-Nov-19	27-Jun-20	100%	100%
189		MODULE-17_MP245 - MP241	171.33	22-May-19	25-Sep-19	24-Dec-19	23-Jun-20	100%	100%
190		MODULE-18_MP249 - MP246	207.25	26-Mar-19	06-Jun-19	02-Mar-20		100%	35.78%
191		MAIN BRIDGE PIER_INTERTIDAL 14+800~15+890 FROM MB206 TO MB225	417.00	11-May-19	16-Oct-20	10-Feb-20		100%	37.55%
192		MODULE-10_MP211 - MP207	337.75	24-Feb-20	16-Oct-20	10-Feb-20		100%	77.29%
193		MODULE-11_MP216 - MP212	365.00	11-May-19	17-Jul-20	13-Nov-20		100%	26.5%
194		MODULE-12_MP221 - MP217	68.00	17-Jun-19	03-Jan-20	30-Nov-20		100%	8.1%
195		MODULE-13_MP226 - MP222	235.00	06-Jan-20	15-May-20	29-Oct-20		100%	22.4%
196		MAIN BRIDGE PIER_MARINE 13+610~14+800 FROM MB187 TO MB205	218.00	19-Mar-20	18-Feb-21			84.87%	0%
197		MODULE-06_MP191 - MP187	116.00	13-Nov-20	18-Feb-21			42.07%	0%
198		MODULE-07_MP196 - MP192	116.00	17-Jul-20	19-Dec-20			100%	0%
199		MODULE-08_MP201 - MP197	110.00	25-Apr-20	03-Sep-20			100%	0%
200		MODULE-09_MP206 - MP202	55.00	19-Mar-20	23-May-20			100%	0%
201		MAIN BRIDGE PIER_MARINE (STEEL) 11+880~13+610 FROM MB171 TO MB186	388.00	17-Feb-20	28-Jul-21			39.9%	0%
202		STEEL MODULE-01_MP176 - MP171	199.00	23-Dec-20	28-Jul-21			0%	0%
203		STEEL MODULE-02_MP182 - MP177	193.00	17-Feb-20	15-Jan-21			90.06%	0%
204		STEEL MODULE-03_MP186 - MP183	150.00	06-Oct-20	03-Apr-21			24.5%	0%
205		MAIN BRIDGE PIER_MARINE 10+380~11+880 FROM MB146 TO MB170	269.00	07-Feb-19	13-Mar-20			100%	0%
206		MODULE-01_MP151 - MP146	65.00	10-Dec-19	13-Mar-20			100%	0%
207		MODULE-02_MP156 - MP152	75.00	11-Jul-19	04-Nov-19			100%	0%
208		MODULE-03_MP161 - MP157	75.00	22-Apr-19	01-Aug-19			100%	0%
209		MODULE-04_MP166 - MP162	75.00	07-Feb-19	06-May-19			100%	0%
210		MODULE-05_MP171 - MP167	65.00	10-Oct-19	31-Dec-19			100%	0%
211		MAIN BRIDGE PIER CAP INSTALLATION	859.04	08-Feb-19	27-Aug-21	25-Feb-20		86.42%	9.82%
212		MAIN BRIDGE PIER CAP_LAND 17+414~18+188 FROM MB251 TO MB266	64.00	08-Feb-19	23-Nov-19	13-Nov-20		100%	6.06%
213		MODULE-21_MP261 - MP257	38.00	13-Feb-19	05-Aug-19			100%	0%
214		MODULE-22_MP266 - MP262	39.00	03-Jun-19	23-Nov-19	13-Nov-20		100%	20%
215		MODULE-20_MP256 - MP255	38.00	08-Feb-19	01-Jun-19			100%	0%
216		MODULE-19_MP254 - MP250	25.50	30-Mar-19	09-Oct-19			100%	0%
217		MAIN BRIDGE PIER CAP_CRZ 15+890~17+414 FROM MB226 TO MB250	218.08	19-Apr-19	25-Feb-20	25-Feb-20		100%	48%
218		MODULE-14_MP231 - MP227	42.00	30-Dec-19	25-Feb-20			100%	0%
219		MODULE-15_MP236 - MP232	49.50	11-Nov-19	07-Jan-20	12-Oct-20		100%	36%
220		MODULE-16_MP240 - MP237	132.17	21-Sep-19	19-Nov-19	14-May-20	23-Dec-20	100%	100%
221		MODULE-17_MP245 - MP241	163.25	05-Jul-19	16-Oct-19	25-Feb-20	22-Dec-20	100%	100%
222		MODULE-18_MP249 - MP246	36.00	19-Apr-19	02-Jul-19	22-Oct-20		100%	12.5%
223		MAIN BRIDGE PIER CAP_INTERTIDAL 14+800~15+890 FROM MB206 TO MB225	412.50	06-Jun-19	05-Nov-20			100%	0%
224		MODULE-10_MP211 - MP207	276.84	20-Mar-20	05-Nov-20			100%	0%
225		MODULE-11_MP216 - MP212	370.50	06-Jun-19	18-Aug-20			100%	0%
226		MODULE-12_MP221 - MP217	57.00	24-Jul-19	22-Jan-20			100%	0%
227		MODULE-13_MP226 - MP222	261.25	30-Jan-20	04-Jun-20			100%	0%
228		MAIN BRIDGE PIER CAP_MARINE 13+610~14+800 FROM MB187 TO MB205	204.00	23-Apr-20	10-Mar-21			71.39%	0%
229		MODULE-06_MP191 - MP187	102.00	18-Dec-20	10-Mar-21			3.42%	0%
230		MODULE-07_MP196 - MP192	102.00	10-Sep-20	07-Jan-21			89.48%	0%
231		MODULE-08_MP201 - MP197	96.00	01-Jun-20	29-Sep-20			100%	0%
232		MODULE-09_MP206 - MP202	41.00	23-Apr-20	15-Jun-20			100%	0%
233		MAIN BRIDGE PIER CAP_MARINE (STEEL) 11+880~13+610 FROM MB171 TO MB186	357.00	30-Apr-20	27-Aug-21			32.24%	0%
234		STEEL MODULE-01_MP176 - MP171	168.00	08-Mar-21	27-Aug-21			0%	0%
235		STEEL MODULE-02_MP182 - MP177	147.00	30-Apr-20	04-Feb-21			83.33%	0%
236		STEEL MODULE-03_MP186 - MP183	104.00	19-Dec-20	22-Apr-21			3.96%	0%
237		MAIN BRIDGE PIER CAP_MARINE 10+380~11+880 FROM MB146 TO MB170	255.00	15-Mar-19	01-Apr-20			100%	0%
238		MODULE-01_MP151 - MP146	51.00	14-Jan-20	01-Apr-20			100%	0%
239		MODULE-02_MP156 - MP152	61.00	05-Sep-19	23-Nov-19			100%	0%
240		MODULE-03_MP161 - MP157	61.00	28-May-19	31-Aug-19			100%	0%
241		MODULE-04_MP166 - MP162	61.00	15-Mar-19	24-May-19			100%	0%
242		MODULE-05_MP171 - MP167	51.00	15-Nov-19	18-Jan-20			100%	0%
243		MAIN BRIDGE BEARING PAD AND BEARING INSALLATION	699.38	22-Feb-19	24-Sep-21	14-Sep-20		92.66%	0.53%
244		MAIN BRIDGE SUPER STRUCTURE BOX GIRDER INSTALLATION	1155.83	12-Sep-19	01-Mar-22	20-Jul-20		47.54%	0%
245		MAIN BRIDGE CONCRETE GIRDER INSTALLATION	1127.83	12-Sep-19	02-Feb-22	20-Jul-20		53.97%	0%
246		MAIN BRIDGE PC GIRDER_LAND 15+890~17+414 FROM MP251 TO MP266	384.04	12-Sep-19	27-Feb-20	20-Jul-20		100%	0%



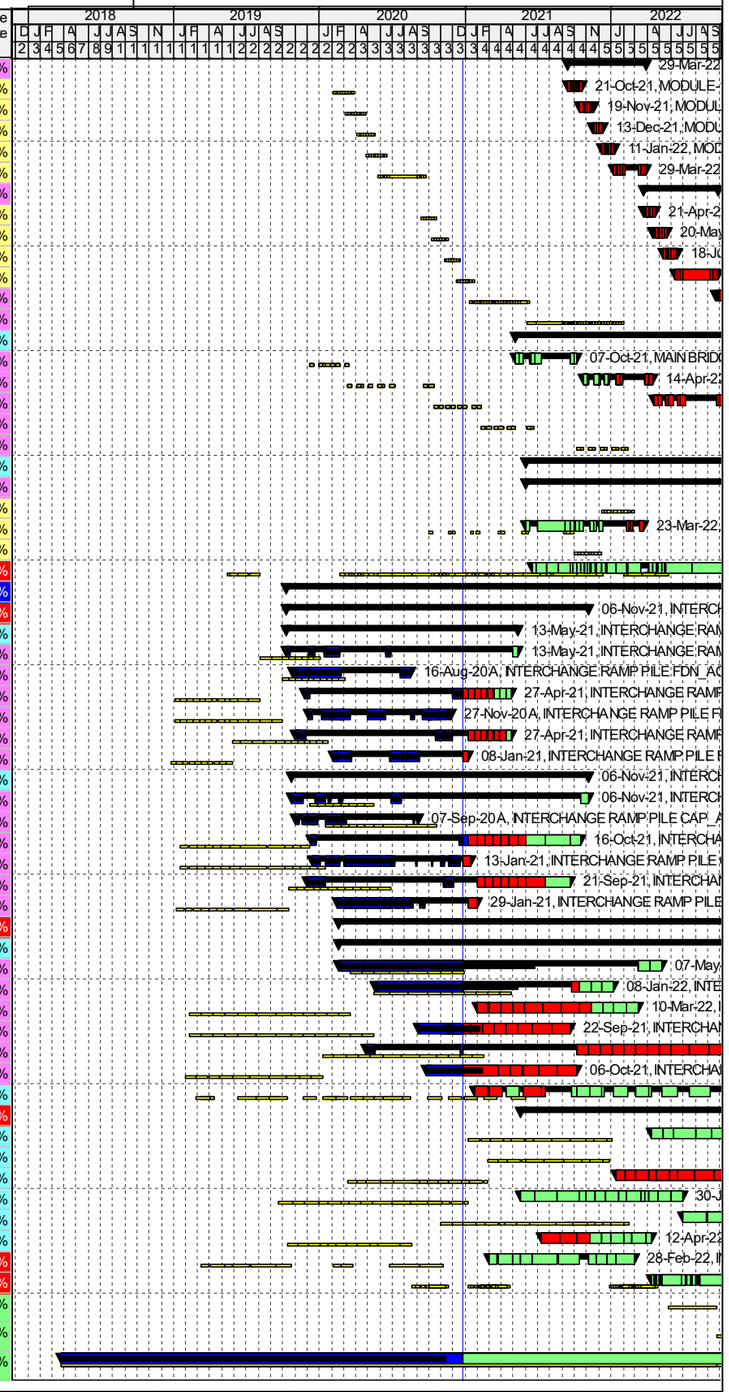
Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete
Summary

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Dec-20	R0		

#	Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Schedule % Complete	Performance % Complete
247		MAIN BRIDGE PRECAST GIRDER_CRZ 15+890~17+414 FROM MP226 TO MP250	162.75	04-Feb-20	25-Sep-20			100%	0%
248		MODULE-18_MP249 - MP246	29.38	04-Feb-20	28-Mar-20			100%	0%
249		MODULE-17_MP245 - MP241	29.38	05-Mar-20	27-Apr-20			100%	0%
250		MODULE-16_MP240 - MP237	24.38	03-Apr-20	21-May-20			100%	0%
251		MODULE-15_MP236 - MP232	29.38	27-Apr-20	19-Jun-20			100%	0%
252		MODULE-14_MP231 - MP227	67.75	27-May-20	25-Sep-20			100%	0%
253		MAIN BIDGE PRECAST GIRDER_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	106.00	12-Sep-20	23-Jan-21			79.52%	0%
254		MODULE-13_MP226 - MP222	26.00	12-Sep-20	21-Oct-20			100%	0%
255		MODULE-12_MP221 - MP217	31.00	08-Oct-20	20-Nov-20			100%	0%
256		MODULE-11_MP216 - MP212	31.00	09-Nov-20	19-Dec-20			100%	0%
257		MODULE-10_MP211 - MP207	36.00	08-Dec-20	23-Jan-21			31.72%	0%
258		MAIN BRIDGE PRECAST GIRDER_MARINE 13+610~14+800 FROM MP187 TO MP205	125.75	12-Jan-21	10-Jun-21			0%	0%
259		MAIN BRIDGE PRECAST GIRDER_MARINE 10+380~11+880 FROM MP146 TO MP170	155.75	04-Jun-21	02-Feb-22			0%	0%
260		STITCH JOINT CASTING	713.00	07-Dec-19	12-Feb-22			0%	0%
261		MAIN BRIDGE STITCH JOINT CASTING_LAND 15+890~17+414 FROM MP251 TO MP266	109.13	07-Dec-19	16-Mar-20			0%	0%
262		MAIN BRDIGE STITCH JOINT CASTING_CRZ 15+890~17+414 FROM MP226 TO MP250	146.75	11-Mar-20	13-Oct-20			0%	0%
263		MAIN BRIDGE STITCH JOINT CASTING_INTERTIDAL 14+800~15+890 FROM MP206 TO MP225	127.50	14-Oct-20	10-Feb-21			0%	0%
264		MAIN BRIDGE STITCH JOINT CASTING_MARINE 13+610~14+800 FROM MP187 TO MP205	109.75	11-Feb-21	21-Jun-21			0%	0%
265		MAIN BRIDGE STITCH JOINT CASTING_MARINE 10+380~11+880 FROM MP146 TO MP170	167.75	06-Oct-21	12-Feb-22			0%	0%
266		MAIN BRIDGE STEEL GIRDER INSTALLATION	587.38	03-Oct-20	01-Mar-22			10%	0%
267		MAN BRIDGE STEEL GIRDER INSTALLATION_MARINE 11+880~13+610 FROM MP171 TO MP186	587.38	03-Oct-20	01-Mar-22			10%	0%
268		STEEL MODULE-01_MP176 - MP171 (INSTALLATION)	133.00	07-Dec-21	01-Mar-22			0%	0%
269		STEEL MODULE-02_MP182 - MP177 (INSTALLATION)	194.00	03-Oct-20	30-Sep-21			25%	0%
270		STEEL MODULE-03_MP186 - MP183 (INSTALLATION)	66.75	30-Sep-21	07-Dec-21			0%	0%
271		MISCELLANEOUS & FINISHING WORKS	772.50	16-May-19	24-May-22			28.21%	0%
272		INTERCHANGE	1342.33	24-Dec-18	28-Apr-22	09-Oct-19		89.17%	17.25%
273		INTERCHANGE FOUNDATION	590.08	24-Dec-18	22-Oct-20	09-Oct-19		100%	71.73%
274		INTERCHANGE RAMP PILE FOUNDATION	383.33	24-Dec-18	05-Mar-20	09-Oct-19		100%	74.19%
275		INTERCHANGE RAMP PILE FDN_MA	150.29	05-Aug-19	03-Jan-20	09-Oct-19		100%	87.61%
276		INTERCHANGE RAMP PILE FDN_AC	106.92	01-Oct-19	05-Mar-20	25-Oct-19	16-Aug-20	100%	100%
277		INTERCHANGE RAMP PILE FDN_JM	114.88	03-Jan-19	05-Aug-19	26-Nov-19		100%	33.14%
278		INTERCHANGE RAMP PILE FDN_MJ	79.25	03-Jan-19	01-Oct-19	04-Dec-19	27-Nov-20	100%	100%
279		INTERCHANGE RAMP PILE FDN_CA	91.00	28-May-19	23-Jan-20	01-Nov-19		100%	41.43%
280		INTERCHANGE RAMP PILE FDN_AM	258.33	24-Dec-18	27-May-19	06-Feb-20		100%	90.07%
281		INTERCHANGE RAMP PILE CAP INSTALLATION	525.00	08-Jan-19	22-Oct-20	22-Oct-19		100%	68.18%
282		INTERCHANGE RAMP PILE CAP_MA	199.08	06-Dec-19	15-May-20	22-Oct-19		100%	87.5%
283		INTERCHANGE RAMP PILE CAP_AC	182.63	15-Jan-20	22-Oct-20	02-Nov-19	07-Sep-20	100%	100%
284		INTERCHANGE RAMP PILE CAP_JM	170.00	18-Jan-19	06-Dec-19	11-Dec-19		100%	16.67%
285		INTERCHANGE RAMP PILE CAP_MJ	107.08	18-Jan-19	15-Jan-20	16-Dec-19		100%	92.86%
286		INTERCHANGE RAMP PILE CAP_CA	179.50	15-Oct-19	27-Jun-20	02-Dec-19		100%	33.33%
287		INTERCHANGE RAMP PILE CAP_AM	241.00	08-Jan-19	15-Oct-19	15-Feb-20		100%	90%
288		INTERCHANGE SUBSTRUCTURE & BEARING	692.29	29-Jan-19	31-May-21	19-Feb-20		90.24%	17.47%
289		INTERCHANGE RAMP PIER INSTALLATION	657.29	29-Jan-19	27-Apr-21	19-Feb-20		90.24%	17.47%
290		INTERCHANGE RAMP PIER_MA	143.38	18-Mar-20	29-Dec-20	19-Feb-20		98.09%	36.39%
291		INTERCHANGE RAMP PIER_AC	305.08	16-May-20	27-Apr-21	19-May-20		55.71%	39.3%
292		INTERCHANGE RAMP PIER_JM	300.00	08-Feb-19	18-Mar-20			100%	0%
293		INTERCHANGE RAMP PIER_MJ	219.00	08-Feb-19	16-May-20	07-Sep-20		100%	22.48%
294		INTERCHANGE RAMP PIER_CA	275.00	08-Jan-20	16-Feb-21	27-Apr-20		84.31%	8.81%
295		INTERCHANGE RAMP PIER_AM	285.21	29-Jan-19	08-Jan-20	26-Sep-20		100%	5.35%
296		INTERCHANGE BEARING INSTALLATION	478.00	27-Feb-19	31-May-21			0%	0%
297		INTERCHANGE SUPERSTRUCTURE INSTALLATION	657.00	20-Sep-19	15-Feb-22			50.97%	0%
298		INTERCHANGE BOX GIRDER INSTALLATION_MA	255.00	09-Jan-21	03-Jan-22			0%	0%
299		INTERCHANGE BOX GIRDER INSTALLATION_AC	170.63	27-Feb-21	27-Dec-21			0%	0%
300		INTERCHANGE BOX GIRDER INSTALLATION_JM	250.00	11-Mar-20	26-Feb-21			73.48%	0%
301		INTERCHANGE BOX GIRDER INSTALLATION_MJ	290.00	20-Sep-19	08-Jan-21			96.92%	0%
302		INTERCHANGE BOX GIRDER INSTALLATION_CA	367.00	30-Oct-20	15-Feb-22			8.18%	0%
303		INTERCHANGE BOX GIRDER INSTALLATION_AM	199.38	14-Oct-19	19-Aug-20			100%	0%
304		INTERCHANGE RETAINING STRUCTURE	240.88	11-Mar-19	06-Nov-20			100%	0%
305		MISCELLANEOUS & FINISHING WORKS	493.13	19-Aug-20	28-Apr-22			16.67%	0%
306		PROJECT HANDINGOVER	65.00	24-May-22	22-Sep-22			0%	0%
307		DEFECT LIABILITY PERIOD (DLP)	731.00	22-Sep-22	21-Sep-24			0%	0%
308		PRICE SCHEDULE	2439.13	23-Mar-18	21-Mar-23	23-Mar-18		68.5%	33.69%



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

EMPLOYER:
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

CONTRACTOR:
DAEWOO - TPL JV

Date	Revision	Checked	Approved
25-Dec-20	R0		

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

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Start	Finish	Activity %	Schedule % Complete	Performance % Complete	Schedule Performance	Cost Performance	Budgeted Total Cost	Planned Value Cost	Earned Value Cost
MTHL Pkg 3_Construction Schedule Dec'20		969	23-Mar-18	21-Sep-21	23-Mar-18A	04-Jul-23		94.5%	45.66%	0.48	1.41	Rs10,135,349,233	Rs9,863,501,203	Rs4,766,085,242
Procurement of Mumbai Trans Harbour Link Project (Pa		969	23-Mar-18	21-Sep-2	23-Mar-18A	04-Jul-23		94.5%	45.66%	0.48	1.41	Rs10,135,349,233	Rs9,863,501,203	Rs4,766,085,242
t	Commencement Date (CD)	0			23-Mar-18A		100%	0%	100%	0.00	0.00	Rs0	Rs0	Rs0
Physical Milestones		1099	18-Sep-18	21-Sep-2	25-Dec-20	04-Jul-23		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Financial Milestone		1099	18-Sep-18	21-Sep-2	23-Mar-18A	04-Jul-23		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Interface Milestone		810	17-Dec-18	06-Mar-21	25-Dec-20	17-Dec-22		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Document Submittals		45	23-Mar-18	06-May-1	06-Apr-18A	30-Sep-19A		100%	100%	1.00	1.00	Rs74,992,895	Rs74,992,895	Rs74,992,895
Employer's Obligation / Land Handover		152	19-Apr-18	18-Sep-1	23-Mar-18A	25-Dec-20		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
ROW 75 Ha [CD +180 days]		152	19-Apr-18	18-Sep-1	23-Mar-18A	25-Dec-20		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Casting Yard 9.16 Ha [CD+120 days]		0	20-Jul-18	20-Jul-18	20-Dec-18A	21-Dec-18A		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Employer Office (Sch 01- General Item)		861	20-Aug-18	16-Sep-2	25-Jan-19A	15-Sep-21		94.36%	94.39%	1.00	1.00	Rs142,351,965	Rs134,328,566	Rs134,370,795
Survey & Geotechnical Investigation Works		130	19-Apr-18	22-Oct-18	19-Apr-18A	30-Sep-19A		100%	100%	1.00	1.00	Rs242,300,773	Rs242,300,945	Rs242,300,945
Design Works		313	07-May-18	14-Jun-19	25-Apr-18A	30-Jan-21		100%	98.65%	0.99	1.01	Rs159,122,500	Rs159,123,270	Rs156,968,295
Design Basis Report		48	07-May-18	30-Jun-18	25-Apr-18A	08-Dec-18A		100%	100%	1.00	0.00	Rs0	Rs51	Rs51
Preliminary Design		23	02-Jul-18	25-Aug-1	26-Jul-18A	25-Nov-20A		100%	100%	1.00	1.00	Rs286,875	Rs286,875	Rs286,875
Geotechnical Interpretative Report Submission & GC Approval (NONO)		28	11-Sep-18	08-Oct-18	07-Dec-18A	30-Sep-19A		100%	100%	1.00	0.00	Rs0	Rs42	Rs42
Plan & Profile Alignment		41	06-Jun-18	14-Aug-1	23-Feb-19A	25-Nov-20A		100%	100%	1.00	0.00	Rs0	Rs102	Rs102
Superstructure Design		155	16-Aug-18	26-Feb-19	20-Aug-18A	30-Jan-21		100%	98.17%	0.98	1.01	Rs85,075,000	Rs85,075,144	Rs83,522,044
Foundation & Pier		211	05-Oct-18	14-Jun-19	06-Nov-18A	11-Dec-20A		100%	100%	1.00	1.00	Rs28,434,375	Rs28,434,435	Rs28,434,435
Abutment & Foundation		78	15-Oct-18	16-Jan-19	31-Dec-18A	13-Aug-20A		100%	100%	1.00	0.00	Rs0	Rs81	Rs81
Pier Cap		166	24-Oct-18	10-May-1	11-Jan-19A	25-Nov-20A		100%	100%	1.00	0.00	Rs0	Rs290	Rs290
Bearings & Drainage		115	17-Nov-18	03-Apr-19	21-Jan-19A	30-Jan-21		100%	96.66%	0.97	1.00	Rs18,005,625	Rs18,005,625	Rs17,403,750
Pavement Design		24	01-Jul-18	27-Aug-1	15-Oct-18A	18-Feb-19A		100%	100%	1.00	1.00	Rs27,320,625	Rs27,320,625	Rs27,320,625
Procurement Works		788	12-Sep-18	08-Jun-21	15-Feb-19A	01-May-23		98.53%	58.59%	0.59	7.18	Rs1,387,160,466	Rs1,660,276,714	Rs987,327,436
For Main Bridge		788	12-Sep-18	08-Jun-21	15-Feb-19A	01-May-23		97.17%	27.87%	0.29	2.03	Rs877,933,218	Rs853,085,653	Rs244,711,914
For Road Works		497	04-Apr-19	13-Jan-21	01-Mar-19A	02-Dec-22		96.19%	27.86%	0.29	0.00	Rs0	Rs404	Rs117
Imported Procurement		170	22-Jan-19	10-Aug-1	04-Dec-19A	13-Jul-21		100%	92%	0.92	44.05	Rs509,227,248	Rs807,190,658	Rs742,615,405
Co-ordinated Fabrication & Manufracturing Works		394	27-Sep-18	10-Feb-20	21-Feb-19A	01-Apr-22		100%	0%	0.00	0.00	Rs390,605,953	Rs390,606,723	Rs470
Permanent Works fabrication		364	27-Sep-18	06-Jan-20	21-Feb-19A	25-Feb-22		100%	0%	0.00	0.00	Rs390,605,953	Rs390,606,183	Rs230
Permanent Works Assembly		374	22-Oct-18	10-Feb-20	25-Feb-19A	01-Apr-22		100%	44.44%	0.44	0.00	Rs0	Rs540	Rs240
Construction Works		844	20-Jul-18	23-Jul-21	26-Sep-18A	26-May-23		96.16%	44.59%	0.46	1.20	Rs7,060,913,657	Rs6,791,897,563	Rs3,149,371,669
Preconstruction Activity		271	20-Jul-18	01-Jul-19	26-Sep-18A	25-Aug-21		100%	59.12%	0.59	0.00	Rs0	Rs565	Rs334
Sub Structures (Open Foundation, Pier ,Pier Cap)		539	08-Dec-18	07-Nov-2I	30-Sep-18A	17-Feb-22		100%	65.47%	0.65	1.00	Rs3,390,255,160	Rs3,392,806,949	Rs2,221,163,077
Super Structures		601	27-Feb-19	12-Apr-21	11-Sep-19A	26-Dec-22		95.24%	9.42%	0.10	1.20	Rs1,408,927,165	Rs1,341,808,066	Rs132,778,459
Bearings & Expansion Joints		201	03-Aug-20	12-Apr-21	26-Nov-20A	23-Feb-23		52.35%	3.71%	0.07	12.60	Rs10,454,697	Rs5,473,341	Rs387,439
Bridge Ancillaries & Miscellaneous Item		274	12-Aug-20	23-Jul-21	22-Jan-22	26-May-23		20.74%	0%	0.00	0.00	Rs180,921,987	Rs37,517,177	Rs0
RE Wall		557	27-Feb-19	18-Feb-21	05-Feb-21	06-Jan-23		99.04%	0%	0.00	0.00	Rs461,687,248	Rs457,271,506	Rs0
Road Work		587	20-Apr-19	18-May-2	16-Feb-19A	07-Feb-23		96.79%	49.42%	0.51	2.75	Rs1,608,667,400	Rs1,557,019,958	Rs795,042,360
Completion of Interface Activity		141	19-Sep-20	06-Mar-21	25-Dec-20	17-Dec-22		0%	0%	0.00	0.00	Rs0	Rs0	Rs0
Provisional Sum		924	23-Apr-18	23-Aug-2	30-Nov-18A	02-Mar-23		60.33%	3.05%	0.05	1.04	Rs677,901,024	Rs409,974,527	Rs20,752,736
Testing & Commissioning Works		32	26-Jul-21	20-Sep-2	27-May-23	03-Jul-23		0%	0%	0.00	0.00	Rs0	Rs0	Rs0

TASK filter: All Activities

Attachment 9- Project Progress Photos

Package 1- Site Progress Photos

Photo No. 1: LG -1 & LG-2 - Segment Erections - Intertidal Section in progress

Photo No. 2: MP44S L2 (Final Lift) Pier Concrete Works – Intertidal Location in progress

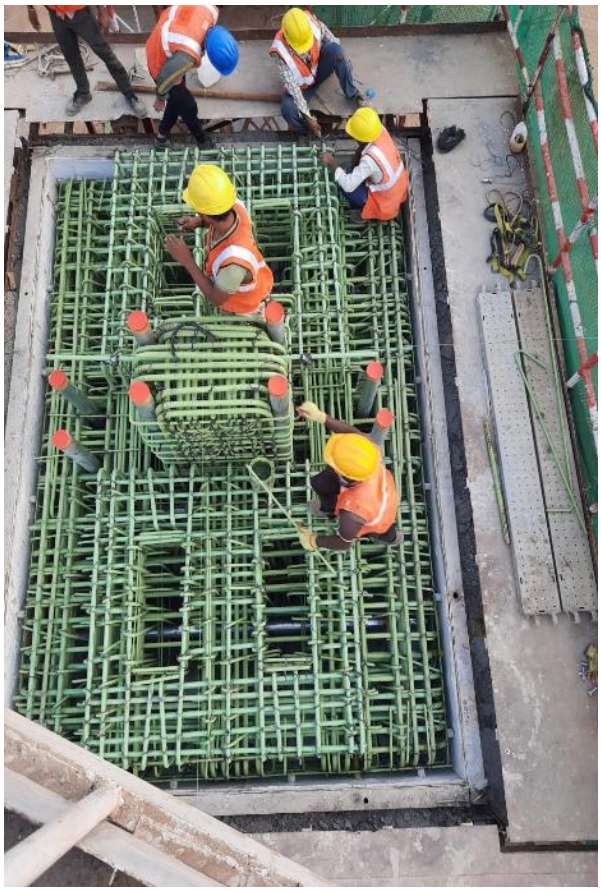


Photo No. 3: LP 6 N Pier Head Pre-Pour Checking - Interchange Location in progress

Photo No. 4: LG-3 Load Test at the Precast Yard Location in progress

Photo No. 5: MP100 S Pier Head Rebar Inspections at Marine Section in progress

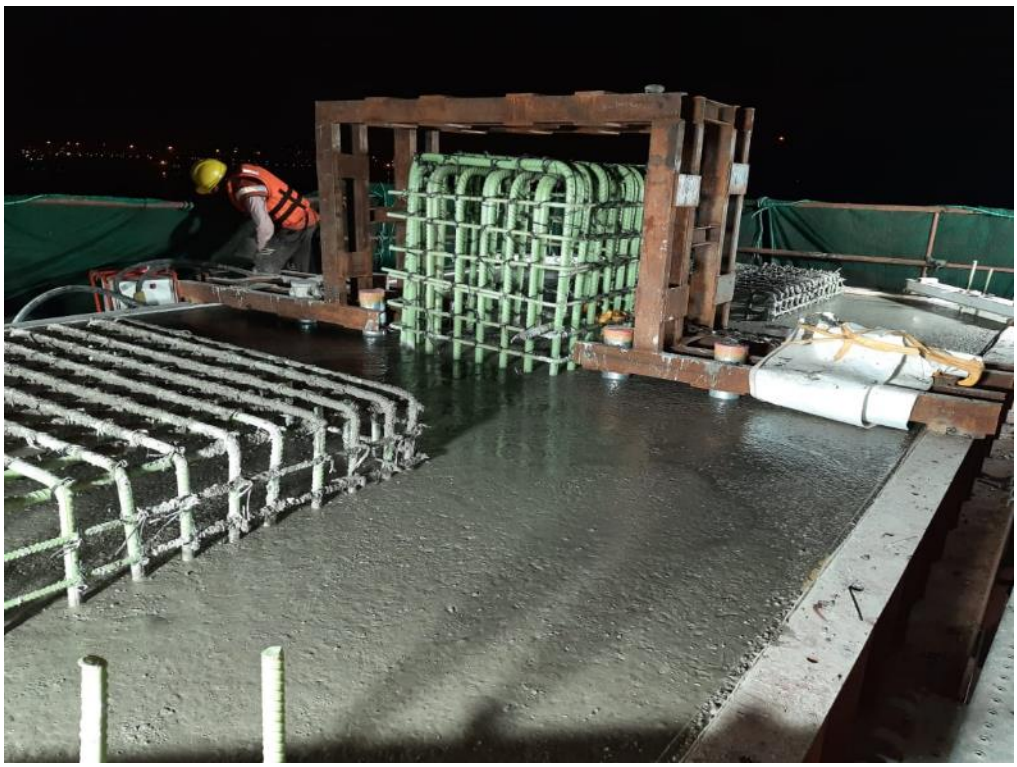


Photo No. 6: MP97 N Pier Cap Concreting Works at Marine Section in progress

Photo No. 7: MP27-28 SS01 Reinforcement Checking Completed

Photo No.8: MP 120 Pile Cap Pre-pour Checking at Marine Section in progress

Photo No. 9: MP 123 Pile Cap Pre-Pour Checking at Marine Section in progress

Photo No. 10: MP69 Pile Cap Pre-Pour Inspections at Marine Location in progress

Photo No. 11: MP 97 S Starter Co-Ordinates Checking at Marine Location in progress

Photo No. 12: Trial Assembly completion for OSD Girder Bridge P1-OS01-SG (Lot5) / Seg. 12~17
Steel Bridge Fabrication Progress: At Ta Chang Tsuo Industrial Co., Ltd. (TCT)-Taiwan

Package 2 – Site Progress Photos

Photo No. 1: Pile cap concreting at MP 189 LHS in progress

Photo No. 2: Pier final lift concreting at MP 263 RHS in progress

Photo No. 3: Segment concreting at Bay-1 in progress

Photo No. 4: OSD small block assembling and welding at Karanja Port in progress

Photo No. 5: Pier head segment reinforcement tying at MP 242 LHS in progress

Photo No. 6: Pier reinforcement tying at MP 212 LHS in progress

Photo No. 7: Electrification works of LG in progress

Photo No. 8: Pile cap reinforcement tying at MP 191 LHS in progress

Photo No. 9: Pier head segment concreting at MP 233 LHS in progress

Photo No. 10: Portal Beam reinforcement tying at MP 249 RHS in progress

Photo No. 11: Preparatory works for LG Load Testing in progress

Photo No. 12: Pier cap concreting at MP 242 LHS in progress

Package 3 – Site Progress Photos

Photo No. 1: LMP A2 Retaining wall concrete pouring in progress

Photo No. 2: Foundation RP-23 RHS (Jasai) concreting done

Photo No. 3: Pier No. RP33 RHS coordinates & formwork checking in progress

Photo No. 4: RP 37 LHS 1st lift (6m) concrete pouring in progress

Photo No. 5: MPP-11 (Chirle) Pier Cap pre-pour inspection in progress

Photo No. 6: LP01 portal cap concrete pouring work in progress

Photo No. 7: LMP 279 Portal Cap Formwork in progress

Photo No. 8: voided slab and cantilever portion reinforcement at Span MJP6 - MJP7 in progress

Photo No. 9: PCY Bay 1, Segment K-55 Span LMP 280-281 Concrete pouring in progress

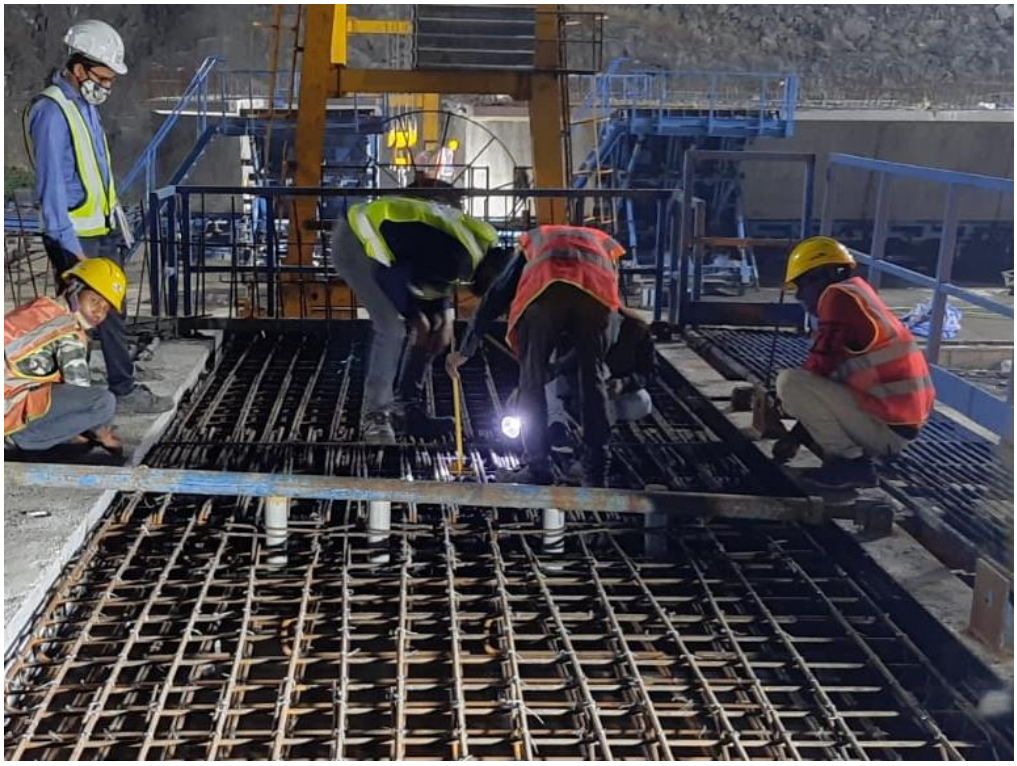


Photo No. 10: Bay 1, Segment L1-58, RMP 281-282, Pre-pour inspection in progress

Photo No. 11: Bay 2, Segment Y-53, Span RMP 280-281 concrete pouring in progress

Photo No. 12: Segment Span RMP 267- 268- 269 erection in progress