

General Consultant for Mumbai Trans Harbour Link Project

ADECO

dar al-handasah

# Ref No: MTHL/GC/MMRDA/LT/QPR-0000 738/2019

AECOM

2<sup>nd</sup> May 2019

QC

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

# Sub: General Consultancy services for Mumbai Trans Harbour Link (MTHL) project -Submission of Quarterly Progress Report (QPR) No. 8 for January-March 2019

Dear Sir,

With reference to the above subject, please find enclosed 1 hard copy of Quarterly Progress Report (QPR) No. 8 for the period of January-March 2019. You may forward the same to JICA at your earliest convenience.

Thanking you,

Yours faithfully,

me Them



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. 8 (January-March 2019)

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



Project Office, 6th Floor, Slock-L MMRCA Old Suilding, Bandra-Kurta Complex, Bandra (E), Mutthai 400.051



# Mumbai Trans Harbour Link Project Quarterly Progress Report No. 8 1<sup>st</sup> January 2019 to 31<sup>st</sup> March 2019 Loan Agreement No. ID-P255 (Tranche–I)

# **ORGANIZATION INFORMATION**

	Mumbai Met	ropolitan Region Development Authority			
_	Person in Charge	Metropolitan Commissioner, MMRDA			
Borrower	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			
	Mumbai Trans Harbour Link Project Implementation Unit				
Executing	Headed by:	Chief Engineer Mumbai Trans Harbour Link Project Implementation Unit			
Agency	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**

	JICA ODA Loan	238,572 million Japanese YEN (JPY)
Source of	Portion:	144,795 million Japanese YEN (JPY)
Finance	Tranche-I:	(Loan Agreement signed on 31 <sup>st</sup> March 2017)
	Tranche-II:	66,909 Million Japanese YEN (JPY)
	Tranche-II.	(Loan Agreement to be signed)
Terms and	Interest	0.10533% (LIBOR-0.00533% + SPREAD RATE -0.1000%)
Conditions	Rate:	from 20 <sup>th</sup> March 2019 to 19 <sup>th</sup> September 2019.
of JICA ODA Loan (Tranche-1)	Repayment Period:	30 years, including 10 years of grace period.

PROJ	ECT NAME	Mumbai Trans Harbour Link Project													
DOC	NO.	8		DATE O	F ISSUE	05/	04/2019								
DOC	FITLE	Quarterly Progress Report No. 8													
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 J Senthil		J Senthil		J Senthil		J Senthil		Dr T Sundai	ram	Dr Robin Sham		
R0	05/10/2017	Quarterly Progress Report No. 2 (Jul-Sep 17)	J Senthil		Dr T K Sunda	aram	Dr Robin Sham								
R0	05/01/2018	Quarterly Progress Report No. 3 (Oct-Dec 17)	JS	Senthil	Dr T K Sunda	aram	Dr Robin Sham								
R0	05/04/2018	Quarterly Progress Report No. 4 (Jan-Mar 18)	JS	Senthil	Dr T K Sunda	aram	Dr Robin Sham								
R0	24/07/2018	Quarterly Progress Report No. 5 (Apr-Jun 18)	Pra	ishant B	Dr T K Sunda	aram	Dr Robin Sham								
R0	10/10/2018	Quarterly Progress Report No. 6 (Jul-Sep 18)	Pra	ishant B	Dr T K Sundaram		Dr Robin Sham								
R1	08/02/2019	Quarterly Progress Report No. 7 (Oct-Dec 18)	Pra	ashant B	J Senthil/ Dr T K Sundaram		Dr Robin Sham								
R0	05/04/2019	Quarterly Progress Report No. 8 (Jan-Mar 19)	Pra	ashant B	J Senthil		V. D. Sharma/ Dr Robin Sham								

# DOCUMENT VERIFICATION AND REVISION RECORD

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# 1.0 PROJECT DESCRIPTION

#### 1.1 Project Objective

#### **Original:**

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

Actual (P/R, PCR)

There is no change in the Project Objective.

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

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

#### Benefits from MTHL Project

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

#### Necessity of the Project

- Although the urbanization in India has been rapidly progressing, infrastructure development in the urban areas has not caught up its progress. Particularly, the traffic congestion in the urban areas due to a lack of road network hinders the economic development. Thus, Government of India (GOI) places transport and connectivity as one of the "Growth Enablers" and plans to enhance road network in the "Three Year Acton Agenda 2017-2018 to 2019-20 (NITI Aayog)".
- 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 threelane main carriageway bridge connecting Sewri in Mumbai to Chirle in Navi Mumbai. When completed, MTHL will reduce the distance between Mumbai and Navi Mumbai and will help save approximately an hour in travel time. Also, development of Navi Mumbai along with the imminent construction of the Navi Mumbai airport will lead to increased traffic between Mumbai and Navi Mumbai. Consequently, the project is envisaged to; improving accessibility between Mumbai and Navi Mumbai, accelerating growth of Navi Mumbai, smooth traffic flow from Navi Mumbai airport to Mumbai, accelerating economic development of Navi Mumbai and surrounding regions, greater economic integration of Mumbai with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug, and decongestion of Mumbai and dispersal of population to Navi Mumbai region and beyond.

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

Actual (P/R, PCR)

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

#### 1.3 Rationale of the Project Design

- Timing, Scale, Technology of the Project:

#### **Demand Analysis**

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

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

Table 1.3.1 Demand Projections Over the Period

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

- 2. At the opening year in 2022, the traffic flow on MTHL represents a diversion of 10% on the traffic across Thane creek which will increase up to 16% in 2032. If only Thane Creek Bridge is considered, then the diverted traffic from the bridge will be 21% in 2022 which will rise up to 35% in 2032.
- 3. 6-lane of main carriageway was decided by GoM. It was reviewed based on the forecasted result of future traffic volume by Manual of Specification and Standards for Expressways (IRC: SP:99-2013). The result of the review shows that 6-lane will be required in 2032 (10 years later after traffic open). Although, 8-lane will be required in 2042, it is assumed that the level of service of MTHL would be maintained as additionally metro might be constructed in parallel with MTHL.

# Design Parameters / Overall Design

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

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

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

#### 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 Traffic Control Centre through the medium of an Optical Fiber Cable laid in MTHL.

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

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

# 2.0 PROJECT IMPLEMENTATION

#### 2.1 Project Scope

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

# Table 2.1.1 Comparison of Original and Actual location

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

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Items	Original	Actual
Package-4 ITS (Intelligent Transport System)	<ul> <li>Administrative Buildings</li> <li>Toll Booths (1 for main alignment and each on and off rumps for 3 interchanges)</li> <li>Traffic Management System (Traffic Control Centre, Closed Circuit Television (CCTV), Meteorological Observation System (MET), Emergency Call Box (ECB), Automatic traffic Counter-cum-Classifier (ATCC), Variable Message Sign (VMS))</li> <li>Highway Lighting (Whole sections Low-positioned lighting for some sections)</li> <li>Electrical Powering System including HV/ LV Ring Network across the Bridge.</li> </ul>	(P/R and PCR)
Consulting Services	<ul> <li>Tender Assistance</li> <li>Construction Supervision</li> <li>Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP).</li> </ul>	(P/R and PCR)

#### 2.2 Implementation Schedule

#### 2.2.1 The Original Implementation Schedule

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

	Items	Original	Status <i>(P/R and PCR)</i> as on 31 <sup>st</sup> March 2019
	ompletion of Land equisition and Resettlement	March 2019	May 2019
2) Co	onsulting Services		
a)	Selection of Consultant	May – December 2016	May – December 2016
b)	Consultancy Works	December 2016 – September 2024	December 2016 – September 2024
3) Se	election of Contractor		
Packa	ige 1-3 (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
Packa	ige 4 (ITS)		
a)	Pre-Qualification Process	January 2019 – May 2019	March 2019 – August 2019
b)	Main Bidding	June 2019 – September 2020	September 2019 – December 2019
Packa	ge 5 (Geotechnical Investigation	on)	
a) N	lain Bidding	March-2016	March-2016
4) Civ	vil Construction		
Packa	ige 1 and 2	March 2018 – September 2022	March 2018 – September 2022
Packa	ige 3	March 2018 – September 2021	March 2018 – September 2021
Packa	ige 4	October 2020 – September 2022	January 2020 – June 2022
	ge 5 (Geotechnical igation)	March 2016– June 2016	March 2016– June 2016
5) De	efect Liability Period		
Packa	ge 1, 2 and 4	October 2022 – September 2024	October 2022 – September 2024
Packa	ge 3	October 2021 – September 2023	October 2021 – September 2023
	ommencement of Toll ollection	September -2022	September -2022
,	election of O&M ganization	October 2020 – September 2021	October 2021 – September 2022

**Attachment:** Project Implementation Programme updated till the quarter (Jan-Mar 2019) end, 31<sup>st</sup> March 2019.

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

#### (P/R and PCR)

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

#### 2.3 Project Cost

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

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

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

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

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

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

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

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

	Foreign	Currency	Portion	Local C	Currency P	ortion	Total			
Cost Breakdown	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mil)	Others (Rs. mil)	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	
Package-1	4,085	4,085	-	8,636	8,636		17,718	17,718		
Package-2	3,705	3,705	-	5,699	5,699		11,665	11,665		
Package-3	35	35	-	471	471		801	801		
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		256	256		736	736		
Land Acquisition*	-			3332		3332	5231		5231	
Administration Cost	-			734		734	1152		1152	
GST	-			1868		1868	2933		2933	
Import Tax	-			-			-		-	
Interest during construction	-			-			-		-	
Front End Fee	-			-			-		-	
Total	8,078	8,078	-	21,196	15,065	6,130	40,550	30,927	9,624	

Table 2.3.1.a.(ii) Actually	Incurred Cost BY ITEM
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(Note) 1. Exchange Rate: Rs.1 = JPY 1.57 for MMRDA Portion only

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

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

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

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

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

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

(All Figures are in JPY mil)

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

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

(All Figures are in JPY mil)

Cost	Total	JICA Portion				
Breakdown	Total	Tranche I	Tranche II	Tranche III	Sub Total	(MMRDA Portion)
FY 2017	13,738	9,232	-	-	9,232	4,506
FY 2018	26,813	21,695	-	-	21,695	5,118
FY 2019						
FY 2020						
FY 2021						
FY 2022						
FY 2023						
FY 2024						
Total	40,551	30,927	-	-	30,927	9,624

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

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

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

# (P/R and PCR)

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

#### 2.4 Organization for Implementation

#### 2.4.1 Executing Agency

#### **Original:**

#### Executing Agency

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

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

#### Organization's Role

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

#### Project Implementation Unit (PIU)

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

#### Procurement

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

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

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

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

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

# 2.4.2.1 Procurement & Consultant

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

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

#### 2.4.2.2 Performance

**Consultant's Progress:** 

#### January 2019:

- 1 GC scrutinized & certified following invoices:
  - i) Package-1: IPC-007 (80% ad-hoc), IPC-006 (detailed verification), MAPC-004
  - ii) Package-2: IPC-004 (80% ad-hoc), IPC-005 (80% ad-hoc), IPC-003 (detailed verification), MAPC-003
  - iii) Package-3: IPC-003 (80% ad-hoc), IPC-003 (detailed verification)
- 2 GC scrutinized & certified second part of the Mobilization Advance for the Package-1 & Package-2.
- 3 Monthly Progress Review Meetings with the Package-1 & 2 Contractors were conducted at the GC Office, on 2nd January 2019 and, for Package-3, on 3rd January 2019. GC prepared the MOM and forwarded to the concerned stakeholders for further action.
- 4 GC submitted a revised draft of Pre-Qualification Document of the Package-4 (ITS) to MMRDA for their review and to seek further approval from JICA.

#### February 2019:

- 1 Monthly Progress Review Meetings with the Package-1 & Package-2 Contractors were conducted on 12th February 2019 at the GC Office. GC prepared the MOM and forwarded to the concerned stakeholders for further action.
- 2 GC scrutinized & certified following invoices:
  - i) Package-1: IPC-007 (detailed verification), IPC-008 (80% ad-hoc)
  - ii) Package-2: IPC-004 (detailed verification), IPC-006 (80% ad-hoc), IPC-007 (80% ad-hoc)

#### March 2019:

- 1 Monthly Progress Review Meetings with the Package-2 & Package-3 Contractors were conducted on 6th March 2019 and with the Package-1 Contractor on 7th March 2019 at the Site Office. GC prepared the MOM and forwarded to the concerned stakeholders for further action.
- 2 GC scrutinized & certified following invoices:
  - i) Package-1: IPC-010 (80% ad-hoc), IPC-010 (detailed verification)
  - ii) Package-2: IPC-008 (80% ad-hoc)
  - iii) Package-3: IPC-004 (80% ad-hoc)
- 3 Dispute Board (DB) Meeting regarding Dispute Notified by the Package-2 Contractor conducted on 27th March 2019.

# **Contractor's Progress:**

# Package-1 Physical Progress

S. No	Activity	Total Scope	Unit	Cumulative Work done Achieved	% of Work done Progress	Remarks
1	Geotechnical investigation	(Field Wor	ks)			
1.1	Marine	202	No.	202	100%	
1.2	Intertidal	117	No.	117	100%	
1.3	Interchange (Land Section)	228	No.	216	95%	
	Total	547	No.	535	98%	
2	Gantry Track Foundation fo	or PC Yard			•	
2.1	Gantry Track Foundation	1814	Rmt	1814	100%	
3	Temporary Access Bridge					
3.1	Piles	626	No.	298	48%	
3.2	Bridge Deck	2953	Rmt	1030	35%	
3	Test Pile					
3.1	Test Piles	5	No.	4	80%	
4	Permanent Bridge Works (I	ntertidal Z	one)			
4.1	Piles	236	No.	24	10.20%	
4.2	Pile Cap	57	No.	1	1.80%	
5	Permanent Bridge Works (M	Marine Zon	e)			
5.1	Piles	478	No.	16	3.30%	
5.2	Pile Cap	100	No.	1	1%	
6	Permanent Bridge Works (L	and/ Inter	change	Zone)		
6.1	Piles	509	No.	0	0%	
6.2	Pile Cap	157	No.	0	0%	
7	Permanent Bridge Works (1	Total)				
7.1	Piles	1223	No.	40	3.20%	
7.2	Pile Cap	314	No.	2	0.63%	

# Package-2 Physical Progress

S. No	Activity	Total Scope	Unit	Cumulative Work done Achieved	% of Work done Progress	Remarks
1	Geotechnical investigation (Field Works)					
1.1	Marine	160	No.	158	99%	
1.2	Intertidal	84	No.	84	100%	
1.3	Interchange	66	No.	66	100%	
	Total	310	No.	308	99%	
2	Gantry Track Foundation for	PC Yard				
2.1	Gantry Track Foundation	1480	Rmt	1465	98%	
3	Temporary Access Bridge					
3.1	Piles	805	No.	310	39%	
3.2	Bridge Deck	2060	Rmt	480	23%	
4	Test Pile					
4.1	Test Piles	4	No.	2	50%	
5	Permanent Bridge Works (In	tertidal Zo	one)			
5.1	Piles	274	No.	0	0%	
5.2	Pile Cap	68	No.	0	0%	
6	Permanent Bridge Works (M	arine Zon	e)			
6.1	Piles	552	No.	8	1.40%	
6.2	Pile Cap	122	No.	0	0%	
7	Permanent Bridge Works (La	nd/ Interc	hange	Zone)		
7.1	Piles	466	No.	0	0%	
7.2	Pile Cap	116	No.	0	0%	
8	Permanent Bridge Works (To	otal)				
8.1	Piles	1292	No.	8	0.60%	
8.2	Pile Cap	306	No.	0	0%	

#### **Package-3 Physical Progress**

S. No	Activity	Unit	Total Scope	Cumulative Work done Achieved	% of Work done Progress	Remarks
1	Survey Works					
1.1	Topography Survey	3.61	skm	3.26	90%	
1.2	Tree Survey	3.61	skm	3.61	100%	
2	Geotechnical Investigation Work	S				
2.1	Geotechnical Investigation Works (Field)	208	No.	200	96%	
3	Casting Yard Development					
3.1	Boundary Demarcation & Fencing for the Casting Yard	1100	Rmt	330	30%	
3.2	Gantry Track Foundation	1120	Rmt	285	25%	
4	Permanent Foundation Works					
4.1	No. of Foundations	204	No.	4	2%	

Pre-Qualification documents have been submitted to MMRDA on 28<sup>th</sup> Jan 2019.

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

The HSE Plan has been submitted by the respective construction agency for the Packages which is being monitored by the GC on a regular basis.

#### Package-1 Safety Report

Sr. No	Description	For Jan- Mar 2019	Cumulative till 31 <sup>st</sup> Mar 2019
1	Number of Man-Hours (Accident Free Man-Hours)	1428360	1971612
2	Number of Man-Days	178545	217014
3	Number of Reportable Fatal Accidents	0	0
4	Number of Non-Fatal Accidents	0	0
5	Number of Near Miss Incidents	6	3
6	Number of First Aid Cases	13	12
7	Number of Dangerous Occurrences	0	0
8	Number of Reportable Sick Cases	0	0
9	Number of Man-Hours Lost	0	0
10	Number of Man-Days Lost	0	0
11	Number of Reportable Accidents per 100,000 Man- Hours Worked	0	0
12	Number of Inspections done for Offices & Site	60	32
13	Number of Training/ Induction done for Office & Site	25	44
14	Daily Average Manpower (Including all Workmen & Staff) for the Month	4298	655

#### Package-2 Safety Report

Sr. No	Description	For Jan- Mar 2019	Cumulative till 31 <sup>st</sup> Mar 2019
1	Number of Man-Hours (Accident Free Man-Hours)	721900	1543452
2	Number of Man-Days	65258	143134
3	Number of Reportable Fatal Accidents	0	0
4	Number of Non-Fatal Accidents	0	0
5	Number of Near Miss Incidents	1	11
6	Number of First Aid Cases	10	22
7	Number of Dangerous Occurrences	0	01
8	Number of Reportable Sick Cases	0	0
9	Number of Man-Hours Lost	0	00
10	Number of Man-Days Lost	0	0
11	Number of Reportable Accidents per 100,000 Man- Hours Worked	0	00
12	Number of Inspections done for Offices & Site	90	257
13	Number of Training/ Induction done for Office & Site	846	2143
14	Daily Average Manpower (Including all Workmen & Staff) for the Month	2230	419

# Package-3 Safety Report

Sr. No	Description	For Jan- Mar 2019	Cumulative till 31 <sup>st</sup> Mar 2019
1	Number of Man-Hours (Accident Free Man-Hours)	110781	191784
2	Number of Man-Days	13847	23973
3	Number of Reportable Fatal Accidents	0	0
4	Number of Non-Fatal Accidents	0	0
5	Number of Near Miss Incidents	1	01
6	Number of First Aid Cases	4	04
7	Number of Dangerous Occurrences	0	0
8	Number of Reportable Sick Cases	0	0
9	Number of Man-Hours Lost	0	0
10	Number of Man-Days Lost	0	0
11	Number of Reportable Accidents per 100,000 Man- Hours Worked	0	0
12	Number of Inspections done for Offices & Site	24	60
13	Number of Training/ Induction done for Office & Site	13	33
14	Daily Average Manpower (Including all Workmen & Staff) for the Month	414	693

Please refer Attachment 5 - Site Progress Photos for the development of the project.

# 3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)

#### 3.1 Operational and Physical Condition

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

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

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

Original Issues and Countermeasure(s)	Actual Issues and Countermeasure(s)
3.2.1 General Issues	(P/R and PCR)
1. Toll Arrangement/ Toll Rate	
Fixed toll rate as per the type of vehicle	Appropriate Tolling Policy/ Rates will be finalized
will be levied for the road users after the	by December 2020.
completion of the Project. An appropriate	
tolling policy/ rates will be finalized in	
consultation with the state government	
prior to the completion of Civil works.	
2. Operation and Maintenance	
MMRDA proposes to appoint separate	
agencies for Operation & Maintenance of	Single Operation and Maintenance Contractor
the bridge and for Toll Management	will be appointed by December 2020.
System. Both the agencies for O & M and	
Toll Management System may be	
appointed through open tendering	
process. Overall monitoring of the two	
agencies would be done by MMRDA in	
house through a separate cell which	
could be constituted for the purpose.	
MMRDA has confirmed to allocate	
adequate budget for engaging the	
Contractors.	
3.2.2 Environmental and Social	(P/R and PCR)
Consideration	• MMRDA has disclosed Supplemental EIA &
a. CRZ Clearance	SIA on MMRDA website.
i. Supplemental EIA has been approved	
by MMRDA and disclosed on the	25/1/2016 from MoEF&CC and the approval
website of JICA. Supplemental EIA	conditions have been imposed on the
report has been disclosed also on the	Contractors as the Employer's requirements.
website of MMRDA.	MMRDA has actively monitored the
ii. Furthermore, renewed CRZ Clearance	compliances of the approval conditions and
has been obtained in January 2016.	maintains throughout the construction phase.
iii. In accordance with the conditions for	• MMRDA appointed Mangroves & Marine

CD7 Classence, enprensiste messeures	Diadiversity Foundation for hird menitoring
CRZ Clearance, appropriate measures	Biodiversity Foundation for bird monitoring
shall be taken, and necessary budget	and implementation of Flamingos and bird
shall be secured by MMRDA.	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. Draft DPR was
	submitted by IIT and has been under review
	by the "Environmental committee (EC)" of the
	MTHL CRZ clearance.

#### b. Required Permits

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

Clearance Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status	
Mangrove Cutting	Hon. Bombay High Court	MMRDA/ Contractor	Approval received from Hon. Bombay High Court on 28 <sup>th</sup> November 2016	Mangrove cutting operation was completed with full compliance and as of now, no further follow up work is required.	
Tree Cutting /Transplantati on	Respective Tree Authorities	Contractor for respective Packages	-	Pkg-1Treecutting/Transplantation permission is awaited from Tree Authority.Pkg-2TreeCutting/Transplantationpermission obtained & completed.Pkg-3Tree Survey completed, and the report submitted to the forest departmentforestdepartment for approval.	
Consent to Establish	Maharashtra Pollution Control Board Packages		Pkg-1-18.07.2018 Pkg-2-16.08.2018	Pkg-3 has applied for obtaining the Consent to Establish to MPCB.	

# 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	Cell is established by MMRDA (Annexure III, Organization chart)				
	MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.					
2.	Rehabilitation and Land Acquisition	Sewri: Involuntary resettlement in Sewri section				
	Issues	has been further validated by Social Development				
a.	Affected Area and Population Due to the Project, 1282 non-	Cell of MMRDA. Out of 298 Project Affected Households (PAHs) have given consents as follows:				
	titleholders will be involuntary resettled, and 108.09 ha of land will be handed	165 PAHs Kanjurmarg for residential				
	over by CIDCO.	25 PAHs Kanjurmarg for commercial				
		<ul> <li>7 PAHs (Satsangi Plot) Kanjurmarg for Commercial</li> </ul>				
		<ul> <li>1 PAHs (commercial to residential) for Bhakti Park</li> </ul>				
		100 PAHs HDIL Kurla for residential				
		<b>Navi Mumbai:</b> CIDCO has been finalizing the land acquisition closely monitored by Land Cell of MMRDA. Except private land and forest, CIDCO has possessed all required land of 108.09 ha. Out of the 108.09 ha, 101.95 ha has been handed over by CIDCO to MMRDA. CIDCO has yet to acquire 6.14 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) ("Guidelines") (Attachment 2-5).	There have been no changes during the enforcement. As per the <b>Attachment 2-5</b> of JICA MoD, MMRDA has committed to enforce the agreed/ approved policy.				

Issue(s)	Action or countermeasure(s) taken and				
	remaining problem(s)				
c. Compensation to Project affected					
<b>Fishermen</b> 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 <b>Attachments 2-8 and 2-10</b> are enclosed in the report.				
<ul> <li>d. Implementation Schedule</li> <li>The Implementation schedule for land acquisition, resettlement and rehabilitation is attached as per Attachment 2-10.</li> </ul>	Updated <b>Attachment 2-10</b> 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.				
<ul> <li>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.     </li> <li>g. Qualitative Independent Evaluation</li> </ul>	Internal Monitoring updates are mentioned in Attachment 2-8.				

Issue(s)	Action or countermeasure(s) taken and					
	remaining problem(s)					
An Independent Evaluation Agency will be hired by MMRDA for evaluation of RAP implementation. An external evaluation report will be submitted to MMRDA at mid-term and end-term. MMRDA would submit the evaluation report to JICA in a timely manner.	Updated <b>Attachment 2-10</b> is enclosed in the report.					
<ul> <li>h. RAP Implementation Budget</li> <li>The amount of estimated resettlement and compensation budget is Rs.906.26</li> <li>Cr MMRDA informed to the JICA</li> <li>Mission that RAP implementation cost would be borne by MMRDA and ensured sufficient and timely allocation of funds for smooth implementation.</li> </ul>	As updated in Aid Memoire dated 14/12/18, the base cost Budget towards RAP Implementation is updated as Rs 1129.3 Cr.					
<ul> <li>Environmental Management Plan ("EMP")</li> <li>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.</li> </ul>	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 as a part of Progress Status Report (PSR) by filling in the Reporting Form of Environmental	Updated Environmental Monitoring Plan with package wise updated cost is reported in <b>Attachment 2-3.</b> Environmental Monitoring Results during the construction phase are reported in <b>Attachment 2-</b> <b>4</b> .					

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<ul> <li>Monitoring Result. (Attachment 2-4).</li> <li>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.</li> <li>k. Long Term Bird Monitoring</li> </ul>	<ul> <li>MMRDA has entrusted the work of bird</li> </ul>
MMRDA committed to conduct the long-term monitoring of birds and its habitat in Sewri mud-flats with the assistance of hired bird expert. During the long-term monitoring, MMRDA will share information and receive advices from external experts including the one from NGOs and civil society.	<ul> <li>monitoring and implementation of Flamingos and birds related mitigation measures &amp; bird monitoring program to Mangrove and Marine Biodiversity Foundation.</li> <li>Rs. 31.92 Crore deposited to Mangrove foundation, Mumbai for periodical disbursement to BNHS.</li> </ul>

# 3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

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

\*1 Section on Sewri – Chirle

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

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	Actual: (PCR) % Cost: Benefit: Project Life: Attachment(s):
	Project Life: 32 Years	Supporting data for computing EIRR
FIRR	<b>Original:</b> 1.6% 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. 8 is submitted for a period of 1<sup>st</sup> January to 31<sup>st</sup> March 2019.

#### 3.6 Achievement of the Project Objective

#### (PCR)

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

#### 4.1 O&M and Management

- Organization Chart of O&M

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

#### Original: (P/M)

Operation & Maintenance, Toll Management and ITS

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

Actual: (PCR)

#### 4.2 O&M Cost and Budget

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

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

# 5.0 EVALUATION

#### 5.1 JICA and Borrower / Executing Agency performance

# JICA:

(PCR)

#### **Borrower/ Executing Agency:**

(PCR)

#### 5.2 Overall Evaluation

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

(PCR)

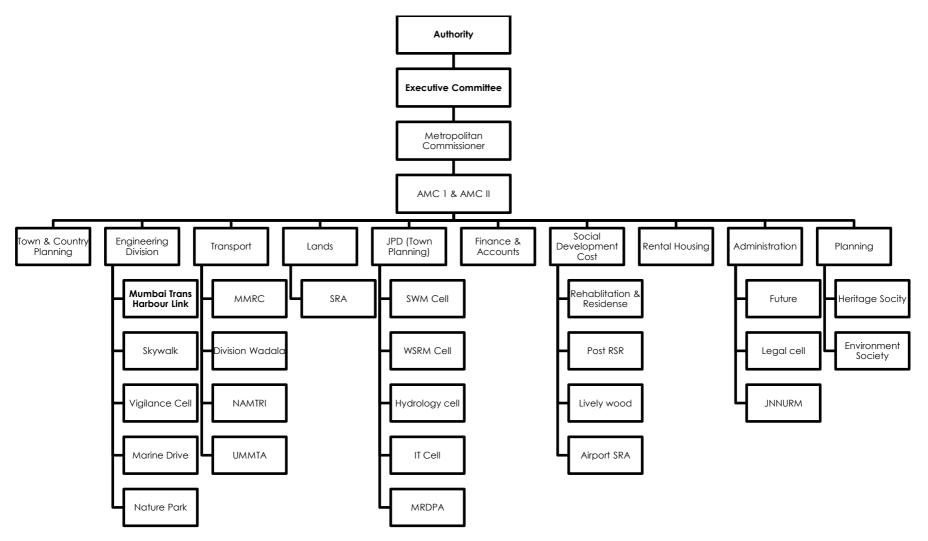
# 5.3 Lessons Learnt and Recommendations

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

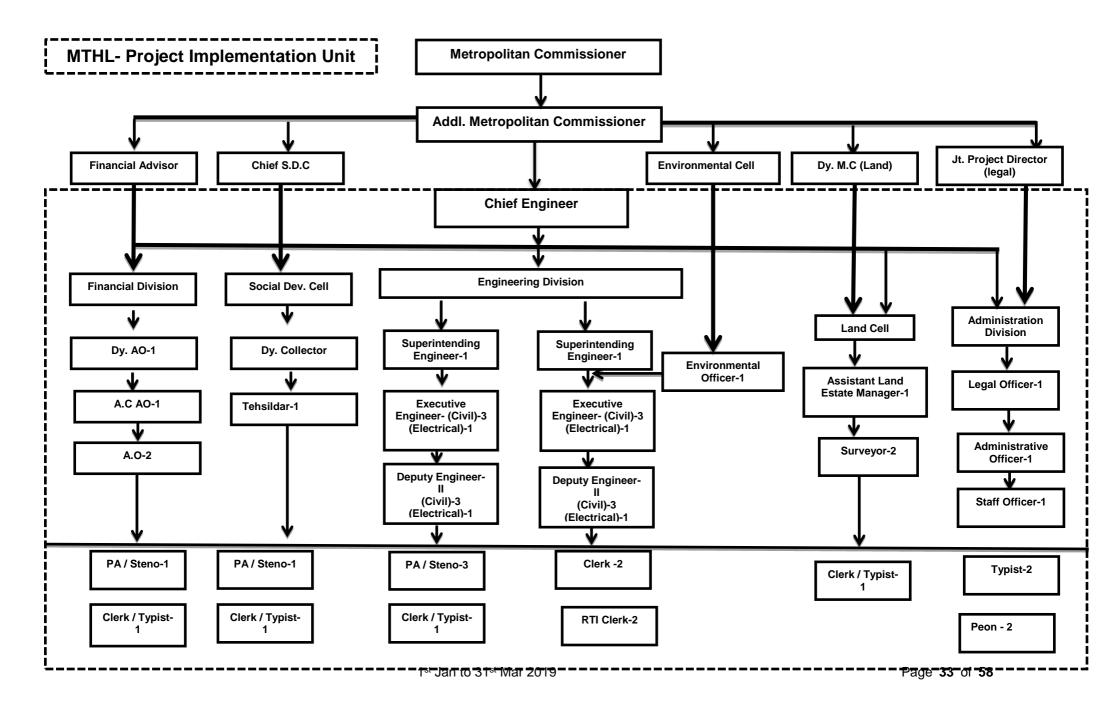
(PCR)

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

# MMRDA Organization chart



#### Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 8 (Jan - Mar 2019)



# Attachment 2- Environmental & Social Impacts Attachments

Attachment 2-3 - Environmental Monitoring Plan Attachment 2-4 – Environmental Monitoring Result Reporting Form Attachment 2-6 – MTHL Land Acquisition Status Attachment 2-8 – RAP Internal Monitoring Form Attachment 2-10 – Schedule of the RAP Implementation

#### Updated Environmental Monitoring Plan with Packagewise Estimated Cost

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) - Ministry of Environment & Forest (MoEF)	Remarks	
	1	Air pollution	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>25</sub> , O <sub>3</sub> , CO, (6 ltems)	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	17,542,500	National Ambient Air Quality Standards (NAAQS) by Central Pollution Control Board (CPCB)	P1 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.
					2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year						(Standard for 24hrs: Industrial and Residential/ Ecological Sensitive area)	P 2 contractor Monitoring plan has been designed as per EIA of 2015	
					3. Gavhan & Chirle for package III	Fortnightly only for 3 months (jan-2019 to Mar-2019). Then quarterly monitoring as per MOEF and CPCB norms						<ul> <li>SO<sub>2</sub>: 80 / 80µg/m<sup>3</sup></li> </ul>	P3 contractor team is conducting Ambient air quality monitoring with reference to National Standards and clause 1.2 of Employer's requirement.	
												<ul> <li>NO<sub>2</sub>: 80 / 80µg/m<sup>3</sup></li> <li>РМ<sub>10</sub>: 100 / 100µg/m<sup>3</sup></li> <li>РМ<sub>25</sub>: 60 / 60µg/m<sup>3</sup></li> </ul>	P 1 received Consents CTE & CTO from MPCB and they are following MPCB frequency in addition to frequency set by Environment Expert from GC. The NAAQ standards are showing High rate as that is the usual procedure. The frequency of monitoring is set by us which varies for different parameters as either Statutory requirements or as required by us to ensure we have sufficient data in hands if there are additional claims for Compensation in C5 category. Summary : Although the contract conditions for all packages were same at the time of biding. Later modifications suggested by GC were not accepted the modifications and hence the difference. Second point is P 1 carrying out monitoring as per the obatiend CTE and CTO. Both other packages have applied for CTE but haven't obtained it yet. So we expect the monitoring frequecy would change after obtaining CTE.	
	2	Water pollution	pH, BOD, DO,	IS / AWWA	1. Sewri & Sewri bay area	Quarterly	810,000	2,400,000	810,000	0	3,210,000	<ul> <li>O<sub>3</sub>: 180 / 180µg/m<sup>3</sup></li> <li>CO: 0.4 / 0.4mg/m<sup>3</sup></li> <li>Marine water quality Standards – Class SW-IV Harbour</li> </ul>	Water Pollution not	
			Turbidity and O&G	idity and O&G	for package I 2. Nhava temporary bridge & casting yard in Gavhan for	4 Times / Year	-					Waters (MPCB) - pH : 6.5-9	applicable for Pkg. 3	
u.					package II 3. Gavhan & Chirle for package III	Not applicable						<ul> <li>D0: 3 mg/l</li> <li>Turbidity: 30 NTU</li> <li>BOD: 5 mg/l</li> <li>0 &amp; G: 10 mg/l</li> </ul>	-	
Pollution	3	Waste	Volume of waste soil, cutting tree and domestic garbage	Volumetric	1. Sewri & Sewri bay area for package I	Daily	500,000	299,200,000	500,000	600,000	300,300,000		The cost of waste disposal for P1 includes C&D waste, Pile muck etc. from all areas like, interchange, intertidal and marine. The disposal location is at MCGM approved location Bhayandarpada, Thane.	

#### Attachmemt 2-3

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

Category	No.	Impacted Item on JICA Guidelines	Parameter	Method	Location	Frequency a year	Cost (INR)	Cost Pkg.1 (INR)	Cost Pkg.2 (INR)	Cost Pkg.3 (INR)	Total Cost (INR)	Standard Central Pollution Control Board (CPCB) – Ministry of Environment & Forest (MoEF)	Remarks
Natural environment (			4. Monitoring of sedimentation soil and ecological parameter (18items on Supplemental EIA Table 6.1.15 for soil and 7 items such as 1)Netprimary productivitye, 2)Chlorophyll-a, 3)Phosphate, 4)Nitrate, 5)Nitrite, 6)Particulate Organic Carbon, 7) SiO <sub>2</sub> )	1-2: Mangrove density and community survey								Detailed monitoring plan will be setup during basic design stage	
ž				1-3: Benthos Survey			-						
				2-1: Cutting trees			-					Standard for Soil; Supplemental EIA Table 6.1.15	
				confirmation 3-1: Mangrove								Standard for Ecological Parameter:	
				survey in the replanted area			-					Netprimary Productivity	
												<1,500 mgC/m3/day at surface	
							-					· Chlorophyll-a <4mg/m3	
												• Phosphate: 0.1-90µg/l	
							-					<ul> <li>Nitrate: 1.0-500µg/l</li> <li>Nitrite: &lt;125µg/l</li> </ul>	
												Particulate Organic Carbon: 10-100mg/m <sup>3</sup>	
	11	Hydrology	Flooding situation	Flood level	Not applicable for Package I		350,000	0	350,000	0	350,000	<ul> <li>SiO2: 10-5,000μg/l</li> <li>Project activities and structures does not cause flooding</li> </ul>	Not applicable for Pkg 1 & 3
	11	nyurology	Flooting situation	measurement during high precipitation periods			330,000	U	330,000	U	330,000	and impacts on tidal conditions	Not applicable for Fig. 1 & 5
					2 Locations (CRZ at Sewri and Shivaji Nagar) for	4 Times / Year							
					Package II Not applicable for Package						<u> </u>		
	12	Topography and	Conditions in embankment area		III Not applicable for Package I		115,000	0	115,000	0	115,000	Embankment shall be stabilized without any landslide and cracks	Not applicable for Pkg. 1 & 3
		Geology	embankment area	Stability of embankment	Interchange in Shivaji Nagar for Package II	4 Times / Year						anu tidiks	
$\vdash$	13	Local economy			Not applicable for Package Affected area		As per Actuals						
	15	such as employment and livelihood			initia alta								
ment	14	Local conflict of interests	Construction worker's township	Confirmation of workers list from	Sewri and Shivaji Nagar) for	2 Times / Year	125,000	0	125,000	0	125,000	Employment opportunity shall be provided fairly	
viron	15	Infectious	Number of infected	contractor Confirmation of		4 times / year x 4.5	525,000	0	525,000	0	525,000	Infection disease rate shall not be caused by the project	
Social environment		diseases such as HIV/AIDS	patient	health check list from contractor		years							
Soc	16	Labour Environment	Construction worker's condition	Confirmation of safety devices and conditions via interviews	2 Location (camp site in Sewri and Shivaji Nagar) for Package II	2 times / year	500,000	0	500,000	0	500,000	"Building And Other Construction Workers (Regulation of Emloyment and Conditions of Service) Act,1996", "The building and other construction worker's welfare cess Act, 1996" and international standards such as "IFC Performance Standard 2 Labor and Working Conditions"	
Other	17	Accidents	Number of accidents	Confirmation of accidents list from local government and State Traffic Police Department	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	4 Times / Year	400,000	0	400,000	0	400,000	Any accidents are not caused by construction	
				Total			8140500	325,354,000	12,000,000	2,211,500	339,565,500		

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

Monitoring Period - January to March 2019

1. Enviro	vironmental Monitoring during Construction for 4.5 years			Are covered.  Monitoring Result  Pamark							
23				<u>.</u> .				Monitor	ing Result		Remark
Area	No.	Item	Parameter	Location	Frequency a year	Item and Stanadard	Location 1- Pkg 1	Location 2- Pkg 2	Location 3- Pkg 3	Location 4	<ul> <li>reasons why the data is exceeding standard</li> <li>counter measures when the data is exceeding</li> </ul>
				1. Sewri & Sewri bay area for package I	Fortnightly at all locations except 2 locations each near Batching plants	National Ambient Air Quality Standards (NAAQS)					
	1	Air pollution	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	(Standard for 24hrs: Industrial and Residential)	Sewri	Shivaji Nagar	Chirle		
	1	All pollution	$50_2, 100_2, 1101_{10}, 1101_{2.5}$	3. Gavhan & Chirle for	Fortnightly only for 3	1. SO <sub>2</sub> : 80μg/m <sup>3</sup>	BDL [DL=10]	BDL	16		BDL- Below Detectable Limit
				package III	months (jan-2019 to Mar- 2019). Then quarterly	2. NO <sub>2</sub> : 80μg/m <sup>3</sup>	16	40	28		
					monitoring as per MOEF and CPCB norms	3. PM <sub>10</sub> : 100µg/m <sup>3</sup>	68	304	102		PM10 is high due to the ancillary development taking place around the area around Pkg II (casting yard) & III
						4. PM <sub>2.5</sub> : 60µg/m <sup>3</sup>	39	43	57		
				1. Sewri & Sewri bay area for package I	Quarterly	Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)	Zone I	Zone II	Zone III		
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	1. pH : 6.5-9		7.5			
				3. Gavhan & Chirle for	Not applicable	2. DO: 3 mg/l		5.1			
				package III		3. Turbidity: 30 NTU		3			NOT applicable For MTHL Package-03
						4. BOD: 5 mg/l		BDL[DL=2]			
						5. O & G: 10 mg/l		BDL[DL=10]			
				area for package I		Municipal Soild Waste Management Rules, 2013	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle Camp Site		
		Waste	Volume of waste soil, cutting tree and domestic garbage	2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	Generated waste soil (t) total	In Q4 excavated soil disposed is 1455.86 cum. It is disposed to a MCGM approved location in Bhayanderpada	Total 650 CuM of muck collected and disposed at the location allocated by MbPT	Exacavated soil shall be reused either for construction or else covering undulated area with in ROW of MTHL package -03		Q4
	3			·	work/execution part of work start.	Generated cutting treel (ha) total	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting so far NIL	- <u>NIL</u>	Tree cutting proposal has been submitted and approval from competent authority is awaited. Tree Cutting so far NIL		
						Generated domestic waste (t/month) total	0.35 T/quarter. It is disposed through MCGM daily.	Labor camp established , site municipal waste is collected and disposed by CIDCO.	Labor Camp not established yet, site municipal waste is collected and disposed through CIDCO at Gavan area.		
						Confirmation of adequate disposal (visualt survey)	Yes	Yes	Yes		
				1. Sewri & Sewri bay area for package I	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	Soil Pollution Standard in India (MOEF)	AB-12 TAB Sewri, dated 21/07.2018				
				2. Nhava temporary bridge & casting yard in Gavhan for package II		1. Cadmium: 0.01mg/l	0.5	<u>BDL</u>			
				3. Gavhan & Chirle for	*If any spillage/ leakage	2. total cyanide : not detected					
Pollution				package III	take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only		0.48	<u>BDL</u>	51.50 mg/l		For package-03, Muck is not stalking yet at site, At diesel and other chemical storage area contain only soil. There is no availability of leachate at this stage Therefore result will be as per CBCPit is complied in mg/Kg.
						5. chromium (VI): 0.05mg/l	BDL	BDL			
		Soil				6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)	BDL	BDL			
	4	Contamination/s	Heavy Metals & Oil &			7. total mercury: 0.005mg/l	BDL	BDL			

#### 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.

# 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

	1. Envir	onmental	Monitoring du	ring Construction for 4	1.5 years			
5         Noise and whenter         1. Source & Source by Part Source (Right Name)         0. Source (Source)         0. Source)         <			dimentation	Grease			8. alkyl mercury: not detected	
1         Vale not where         1 server lay and the lay of the lay			amontation				9. PCBs: not detected	
5         Vote and vboard         1. Servit & Servit bar and rout Job or package II         2. These standards (2007) and I.1. 1.1. achieventure (1007) and I.1. I.1. achieventure (1007) and I.1.							10. copper: 125mg/kg (only paddy field soil )	0.96
5         Noise and where's <ul> <li>A stabulation of the second state of the second sta</li></ul>							11. dichloromethane: 0.02mg/l	3.84
5         Note and shruting         1. Lastabion Signer (2002)         1. Lastabion Signer (2002)         1. Lastabion Signer (2002)         1. Solution Signer (2002)							12. carbon tetrachloride: 0.002mg/l	
3         Noise and victure         Aubicant and road aloc and colls/ALAaq         1. Sourch & Sourch Bay Reserved Processing Procesing Processing Processing Processing P							13. 1,2-dichloroethane: 0.004mg/l	
5         Note and velocite         1. Sever & Sever by more factors in the second seco							14. 1,1-dichloroethylene: 0.02mg/l	
5         None and shrata         1							15. cis-1,2-dichloroethylene: 0.04mg/l	
5         None and shrata         1								
5         Noise and vibrate         1         Learning 1         1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
5         Noise and vietnice <ul> <li>I. Severi &amp; Severi Bay area for package II</li> <li>Severi &amp; Severi Bay area for package III</li> <li>Severi &amp; Severi Bay area for fackage III</li> <li>Severi Bay area for fackage III</li></ul>							· · · · · · · · · · · · · · · · · · ·	
5         Noise and vibraic         1. Location flav an acta vibraic of dial memory and many actions of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) standard in training of the construction area standard S dB(A) day time (Japaa standard) training of the construction area standard S dB(A) day time (Japaa standard) training of the construction area training of the construction area training of the construction area training of the construction area (Japa standard) area training of the construction area training of the construction area (Japa standard) area (Japa standard) area training of the construction area (Japa standard) area (Japa standard) area (Japa standard) area (Japa standard) area (Japa standard) (Japa standard) area (Japa standard) area (Japa standard) (Japa standard) area (Japa standard) (Japa standard) area (Japa standard) (Japa stand) (Japa standard) (Japa standard) (Japa standard) (J								
5         Noise and vibratic         1								
5         Noise and vibratic								
5         Noise and vibration         1. Sever A Sever Hay area for package 1         For thighly increased for package 1         Construction area Standard St dB(A) daytime (dapan standard) Not construction area 1: statisent Noise Standard in (infinite strain infinite (dB(A) Lacq))         Sever 1 ST 20 (infinite strain infinite strain infini strain infini strain infini strain infinite strain infinite stra								
5         Noise and vibrain         1. Severi & Severi bay area for package 1         Fortnightly         Construction area Standard St (BLA) duytine (dapan standard) Noice Standard in Mole Standard in								
5         Noise and vibrate         1. Sever A Sever I hay area for package I         Portnightly         Construction area Standard StatkA daytine (Japan Standard I) India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : Unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : Unblext Noise Standard In India (BKA) Lacy)         Sever I (ST 20 (Japan Standard) Not construction area : Unblext Noise Standard In India (Japan Standard) Not construction area : Unblext Noise Standard Not construction area : Unblext Noise								<u> </u>
5         Noise and vitrante         1. Sewri & Sewri Bay area for package i         Fortnightly area for package i         Construction area Standard 58 dB(A) daytine (Gaps randomb) Not construction area builds (dB(A) Lacq)         Sewri (ST 20 (Industrial daytan for package i)           5         Noise and vitrante         2. Maya temporary package ii         2. Times / Year         Day time : 6-22 hr (continious) dB(A)         64.7           5         Noise and vitrante         3. Gavhan & Chirle for package II         Fortnightly         Night time: 22-6 fr (continious) dB(A)         64.7           6         Day time : 6-22 hr (10 min daring 9-17 hrs) package III         Day time : 6-22 hr (10 min daring 9-17 hrs)         Day ime : 6-22 hr (10 min daring 9-17 hrs)         Day time : 70 (22-0h)           7         Noise and vitrante         1. Location Gavan area for package III         Half yearly         Construction area Day time : 50 (22-0h)         Day ime : 50 (22-0h)           1. Location Gavan area for package III         1. Location Gavan area for package III         Half yearly Standard Area Day time : 50 (22-0h)         Sewri (ST 20 (Industrial Day time : 50 (22-0h)         Sewri (ST 20 (Day time : 50 (22-0h)           1. Location Gavan area for package III         1. Location Gavan area for package III         Half yearly Standard Area Day time : 50 (22-0h)         Sewri (ST 20-0h)           2. Monitoring of capacita Day time : 10 (2-0h)         1. Location Gavan area for package III         Half yearly								
5         Noise and vibratic         Ambient and road side noise (dBA)LAcq)         2 Times / Year bridge & custory april in Graham for package II         2 Times / Year bridge & custory april in Graham for package II         2 Times / Year bridge & custory april in Graham for package II         2 Times / Year bridge & custory april in Graham for package II         2 Times / Year bridge & custory april in Graham for package II         Portrightly         Night time: 6-22 for (continious) dB(A)         71.8           5         Noise and vibratic         3. Graham & Chrief for package III         Portrightly         Night time: 22-61 (continious) dB(A)         61.7           7         1. Indication of package II         Portrightly         Night time: 22-61 (continious) dB(A)         61.7           8         Noise and vibratic         3. Graham & Chrief for package III         Portrightly         Night time: 22-61 (continious) dB(A)         61.7           9         Time: 0.22 min: 10 (continious) dB(A)         61.7         61.7         61.7           9         Time: 0.22 min: 10 (continious) dB(A)         61.7         61.7           1. Indication Gravem area for package III         For the package III         Ning time: 22.2 min (continious)         5           Ning time: 0.22.2 min         Standard door for the road. Tay time: 50 (2-2min)         5         5           1. Location Gravem area for package III         I.Landarian done for the road. Tay					1 Courri & Courri hou	Fortnightly	25. selemum: 0.01mg/l	
5         Noise and vibration         Ambient and road side noise (dB(A)LAcq)         2. Times / Year         Day time: 16-22 hr (continions) dB(A)         71.8           5         Noise and vibration         3. Gavhan & Chirle for package 11         Portnightly         Night time: 22-6 hr (continions) dB(A)         64-7           5         Noise and vibration         3. Gavhan & Chirle for package 11         Portnightly         Night time: 22-6 hr (continions) dB(A)         64-7           5         Noise and vibration         3. Gavhan & Chirle for package 11         Portnightly         Night time: 22-6 hr (continions) dB(A)         64-7           7         Noise and vibration         3. Gavhan & Chirle for package 11         Portnightly         Night time: 22-6 hr (continions) dB(A)         64-7           1.Individual charter         1.Individual					-	rorungiluy		
5         Noise and vibratif         2. Mnava temporary bridge & casting yard in Garban for package II         2. Times / Year         Day time : 6.22 hr (continions) dB(A)         71.8           5         Noise and vibratif         3. Garban & Chife for package II         Portnight         Day time : 6.22 hr (continions) dB(A)         64.7           5         Noise and vibratif         3. Garban & Chife for package III         Portnight         Night time: 2.6 hr (continions) dB(A)         64.7           7         Noise and vibratif         3. Garban & Chife for package III         Portnight         Night time: 2.2 hr (continions) dB(A)         64.7           7         Noise and vibratif         3. Garban & Chife for package III         Portnight         Noise contraction area 1. Inductional values in Not construction area 1. Inductional values					area for package i			G : (GT 200 5)
5         Noise and vibratic         Ambient and road side moise (dR(A)Leq)         2.Thmes / Year         Day time : 6-22 hr (continious) dB(A)         64.7           5         Noise and vibratic         3. Gavhan & Chirle for package II         Formightly         Kight time: 22-chr (continious) dB(A)         64.7           5         Noise and vibratic         3. Gavhan & Chirle for package II         Formightly         Kight time: 22-chr (continious) dB(A)         64.7           5         Noise and vibratic         3. Gavhan & Chirle for package III         Formightly         Kight time: 22-chr (continious) dB(A)         64.7           1         Indicate (BA) Lacq)         1         1         1         1         1           1         Indicate (BA) Lacq)         1         1         1         1         1           1         Indicate (BA) Lacq)         1								
5         Noise and vibratic         2. Mara temporary bridge & castage yard in Gavhan for package II         2. Times / Year         Day time : 6-22 hr (continions) dB(A)         64.7           5         Noise and vibratic         3. Gavhan & Chrief for package III         Fortnightly         Night min: 22-6 hr (continions) dB(A)         64.7           5         Noise and vibratic         3. Gavhan & Chrief for package III         Fortnightly         Night min: 22-6 hr (continions) dB(A)         64.7           6         3. Gavhan & Chrief for package III         Fortnightly         Night min: 22-6 hr (continions) dB(A)         64.7           1. Industrial Area								(Industrial area
5     Noise and vibratic     Anbient and road side noise (dB(A)LAcq)     Serving yard in Gavhan 6 Dhirle for package II     Fortnightly     Night time: 22-6 hr (continious) dB(A)     61.7       5     Noise and vibratic     3. Gavhan & Chirle for package II     Fortnightly     Night time: 22-6 hr (continious) dB(A)     61.7       6     Noise and vibratic							India (dB(A) Laeq)	
5         Noise and vibratic         Solution for package II         Fortnightly         Number 22-6 hr (continious) dB(A)         61.7           5         Noise and vibratic         3. Gavhan & Chirle for package II         Fortnightly         Number 22-6 hr (continious) dB(A)         61.7           5         Noise and vibratic         3. Gavhan & Chirle for package II         Fortnightly         Number 22-6 hr (continious) dB(A)         61.7           6         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7           7         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7           7         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7           7         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7           7         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7           7         Noise and vibratic         Anabient and road side online (dB(A))         61.7         61.7         61.7           7         Noise and vibratic         Industrial Area         Dog Time: 75 (6.22m)         20.7         20.7         20.7         20.7         20.7         20.7         20.7         20.7					2 Nhava tama ayamı	2 Timor / Voor		
5     Nnise and vibratic     3. Gayhan & Child for package II     Fortinghtly     Night time: 22.6 hr (continious) dB(A)     64.7       5     Nnise and vibratic     3. Gayhan & Child for package III     Fortinghtly     Night time: 22.6 hr (continious) dB(A)     64.7       5     Nnise and vibratic     1. Location Gayan area (dB)     Fortinghtly     Night time: 22.6 hr (continious) dB(A)     64.7       1     Location Gayan area (dB)     1. Location Gayan area for package III     Fortinghtly     Night time: 70 (22.4 hr)     1.       2     Output time: 76 (22.0 hr)     1.     1.     Night time: 70 (22.4 hr)     1.       2     Output time: 76 (22.0 hr)     1.     1.     Night time: 70 (22.4 hr)     1.       2     Output time: 76 (22.0 hr)     1.     1.     Night time: 70 (22.4 hr)     1.       2     Output time: 76 (22.0 hr)     1.     1.     Night time: 70 (22.4 hr)     1.       2     Output time: 76 (22.0 hr)     1.     1.     Night time: 22.6 hr (continious)     2.       Night time: 22.6 hr (continious)     1.     1.     Night time: 22.6 hr (continious)     2.     Night time: 22.6 hr (continious)     1.       Nubration (dB)     shall be converted from mm/s to dB     Along MTHL alignment area for backage I     Night time: 22.6 hr (continious)     1.     Night time: 22.6 hr (continious) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>2 Times / Year</td> <td></td> <td></td>						2 Times / Year		
5     Noise and vibrarie     3. Gavhan & Chirfe for package III     Fortnightly     Fortnightly     Night time: 22-6 hr (continious) dB(A)     64.7       5     Noise and vibrarie     3. Gavhan & Chirfe for package III     Fortnightly     Fortnightly     Night time: 22-6 hr (continious) dB(A)     64.7       5     Noise and vibrarie							Day time : $6-22$ hr (continious) dB(A)	71.8
5     Noise and vibratic     package III     (only sea section)     pay fine: 6 - 22 hr (10 min during 9-17 hrs)       5     Noise and vibratic     Noise and vibratic     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       5     Noise and vibratic     Noise and vibratic     Noise (dB(A)LAeq.)       6     Noise and vibratic     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       7     Noise and vibratic     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       8     Noise and vibratic     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       9     Noise and vibratic     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Standard along the reod.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Standard along the reod.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Standard along the rood.)       1     Location Cavan area for package III     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       1     Along MTIIL alignment and mangrove replant area for package III     Noise (dB(A)LAeq.)     Noise (dB(A)LAeq.)       1 <td< td=""><td></td><td></td><td></td><td></td><td>Gavilali ioi package ii</td><td></td><td></td><td>/1.0</td></td<>					Gavilali ioi package ii			/1.0
5     Noise and vibratic     package III     (only sea section)     package III       5     Noise and vibratic     image: construction area in the image of the								
5       Noise and vibratic       Day time: 6-22 hr (10 min during 9-17 hs)       Image: 10 min 22-24 hr (10 min 22-24 hr)         5       Noise and vibratic       Image: 10 min 22-24 hr (10 min 22-24 hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 75 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 75 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 75 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 55 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 55 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 55 (6-22hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day Time: 50 (0-71hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day time: 6-22 hr (continious)       25         1       Nois to dB       Image: 10 min 22-24 hr (10 min 22-24 hr)       Image: 10 min 22-24 hr (10 min 22-24 hr)         1       Industrial Area       Day time: 10 min 22-24 hr)       Image: 10 min 22-24 hr)         1       Industin Area       Day Time: 10 min 22-24 hr)				Ambient and road side	3. Gavhan & Chirle for	Fortnightly	Night time: 22-6 hr (continious) dB(A)	64.7
5     Noise and vibratic     Night time: 22.6 hr (10 min 22.24 hr)				noise (dB(A)LAeq)	package III		(only sea section)	
5     Noise and vibratic     Night time: 22.6 hr (10 min 22.24 hr)							Day time : 6-22 hr (10 min during 9-17 hrs)	
5     Noise and vibratic								
5       Noise and vibratic       Industrial Area       Day Time: 75 (62-2hr)         Night Time: 70 (22-0hr)       2.Commercial Area:       Day Time: 75 (62-2hr)         Night Time: 55 (22-0hr)       Night Time: 55 (22-0hr)       Sewri (ST 20 (Industrial Area))         Vibration (dB)       shall be converted from mm's to dB       Half yearly       Construction area Standard 75 dB daytime (Japan standard))         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 52-2 hr (continious)         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 62-2 hr (continious)         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 62-2 hr (continious)         Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)         Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)         Nong MTHL alignment and mangrove replant area for Package I       Quarterly during the construction area       I.I.Commorcial /Industrial Area         Nong MTHL alignment and mangrove replant area for package II       4 Times / Year       I-I.Fauna-Flora (number of species and quantity area for package II       III. Funas Flora (number of species of bind       Refer remark         (1) Number of species of bind       Refer remark       (2) Number of species of finh       CD <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
5       Noise and vibratic       Industrial Area       Day Time: 75 (62-2hr)         Night Time: 70 (22-0hr)       2.Commercial Area:       Day Time: 75 (62-2hr)         Night Time: 55 (22-0hr)       Night Time: 55 (22-0hr)       Sewri (ST 20 (Industrial Area))         Vibration (dB)       shall be converted from mm's to dB       Half yearly       Construction area Standard 75 dB daytime (Japan standard))         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 52-2 hr (continious)         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 62-2 hr (continious)         Note (standard values in Not construction area)       I.Commorcial /Industrial Area       Day time: 62-2 hr (continious)         Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)         Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)       Night Time: 65 (20-7hr)         Nong MTHL alignment and mangrove replant area for Package I       Quarterly during the construction area       I.I.Commorcial /Industrial Area         Nong MTHL alignment and mangrove replant area for package II       4 Times / Year       I-I.Fauna-Flora (number of species and quantity area for package II       III. Funas Flora (number of species of bind       Refer remark         (1) Number of species of bind       Refer remark       (2) Number of species of finh       CD <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Note (standard values in Not construction area)</td> <td></td>							Note (standard values in Not construction area)	
Vibration (dB) shall be converted from mm/s to dB     1 Location Gavan area for package III     IIalf yearly     Construction area Standard along the read)     Server (ST 20 (Industrial Standard along the read)       Vibration (dB) shall be converted from mm/s to dB     Along MTHL alignment area for Package II     IIalf yearly     Construction area Standard along the read)     Server (ST 20 (Industrial Standard along the read)       Vibration (dB) shall be converted from mm/s to dB     Along MTHL alignment area for Package I     Quarterly during the construction     Not construction area I Location sincluding fama- torea     Incommercial Area (ST300-S5       Along mTHL alignment area for package II     Quarterly during the construction     Standard is not existing, but quantity and quality should not be worsen     Standard is not existing, but quantity and quality should not be worsen       I. Monitoring of mudflat conditions including fama- flora 2. Monitoring of Cutting     I Times / Year     I-1. Fauna-Flora (number of species and quantity area for package II		5	Noise and vibration					
Night Time: 70 (22-6hr)								
Nibration     1 Location Gavan area for package III     Half yearly     Construction area Standard 75 dB daytime (Japan standard)     Sewri (ST 20 (Industrial)       Nibration     1 Location Gavan area for package III     Half yearly     Construction area Standard 75 dB daytime (Japan standard)     Sewri (ST 20 (Industrial)       Not construction area Standard)     Sewri (ST 20 (Industrial)     Sewri (ST 20 (Industrial)     Sewri (ST 20 (Industrial)       Not construction area Standard)     Not construction area Standard (Japan Standard)     Sewri (ST 20 (Industrial)       Not construction area (Industrial)     Not construction area (Industrial)     25       Night time: 22-6 hr (continious)     25       Night time: 22-6 hr (continious)     25       Note (standard values in Not construction area)     1. Commercial Industrial Area Day Time: 70 (7-20hr)       I. commercial Industrial Area and mangrove replant area for Package I     Quarterly construction     Standard is not existing, but quantify and quality should not be worsen       I. Monitoring of mudflat conditions including fama- flora     I. Monitoring of mudflat conditions including fama- flora     4 Times / Year     1-1. Faua-Flora (number of species of fish (1) Number of species of fish							• • •	
Night Time: 55 (6-22hr)     Image: 55 (6-22hr)       Night Time: 55 (6-22hr)     Night Time: 55 (22-6hr)       Night Time: 55 (2-2hr)     Image: 56 (6-22hr)       Night Time: 55 (2-2hr)     Image: 56 (6-22hr)       Not construction area Standard 75 dB daytime (Japan Standard)     Sewri (ST 20)       Not construction area : Vibration Standard (Japan Standard)     Sewri (ST 20)       Not construction area : Vibration Standard (Japan Standard)     Sewri (ST 20)       Not construction area : Vibration Standard (Japan Standard)     Not construction area : Vibration Standard (Japan Standard)       Night time: 22-6 hr (continious)     25       Night time: 22-6 hr (continious)     25       Night time: 22-6 hr (continious)     25       Note (standard values in Not construction area)     1. Commercial /Industrial Area       Day Time: 70 (7-20hr)     Day Time: 70 (7-20hr)       Night Time: 65 (20-7hr)     Day Time: 70 (7-20hr)       Night Time: 76 (20-7hr)     Day Time: 70 (7-20hr)       Night Time: 76 (20-7hr)     Night Time: 76 (20-7hr)       Nonitoring of mudflat     Alo								<u> </u>
Night Time: 55 (22-6hr)       Image: Severi (ST 20)         Vibration       1 Location Gavan area for package III       Half yearly       Construction area Standard 75 dB daytime (Japan Standard (Japan Standard along the road)       Severi (ST 20)         Vibration       (dB)       shall be converted from mm/s to dB       Not construction area Standard values in Not construction area)       25         Note (standard values in Not construction area)       1. Commercial /Industrial Area       20         Day Time: 70 (7-20hr)       Night Time: 65 (20-7hr)       20         Along MTHL alignment and mangrove replant area for Package II       Quarterly during the converse       Standard is not existing, but quantity and quality Sewri sit (ST500-55         Along MTHL alignment and mangrove replant area for Package II       Along MTHL alignment area for Package II       Standard is not existing, but quantity and quality Sewri sit (ST500-55         Notioring of mudflat conditions including fauna-flora       Along MTHL alignment area for package II       4 Times / Year       1-1. Fauna-Flora (number of species and quantity         1. Monitoring of mudflat conditions including fauna-flora       2. Nomitoring of Tuting       Along Arterly during the conditions including fauna-flora       (1) Number of species of fish       (2) Number of species of fish								
Vibration (dB) shall be converted from mm/s to dB     1 Location Gavan area for package III     Half yearly     Construction area Standard 75 dB daytime (Japan standard) Not construction area : Vibration Standard (Japan) Standard along the road)     Sewri (ST 20 (Industrial)       Vibration (dB) shall be converted from mm/s to dB     Along MTHL alignment area for Package I     Half yearly     Construction area Standard 75 dB daytime (Japan standard)     Sewri (ST 20 (Industrial)       Along MTHL alignment area for Package I     Quarterly during the construction     Not construction area)     1.       Along MTHL alignment area for package II     Quarterly during the construction     Quarterly should not be worsen     Standard is not existing, but quantity and quality should not be worsen     Sewri sis (ST500-55       Period     Period     1-1. Fauna-Flora (number of species and quantity area for package II     4 Times / Year     1-1. Fauna-Flora (number of species of fish (1) Number of species of fish     Refer remark							• • •	
Vibration (dB) (dB) shall be converted from mm/s to dB     for package III     standard) (adard) (adard) (be construction area : Vibration Standard (Japan Standard along the road) Day time : 6-22 hr (continious)     Sewri (ST 20 (Industrial is Day time : 6-22 hr (continious))       Note (standard values in Not construction area) 1. Commercial /Industrial Area     Image: Construction area)     Image: Construction area)       Night Time: 22-6 hr (continious)     Image: Construction area)     Image: Construction area)     Image: Construction area)       Note (standard values in Not construction area)     Image: Construction area)     Image: Construction area)     Image: Construction area)       Note (standard values in Not construction area)     Image: Construction area)     Image: Construction area)     Image: Construction area)       Night Time: 50 (7-20hr)     Image: Construction area     Image: Construction area     Image: Construction area     Image: Construction area       Along MTHL alignment area for Package I     Along MTHL alignment area for package II     Standard is not existing, but quantity and quality should not be worsen     Sewri sit (ST50-55       I.Monitoring of mudflat conditions including fauna- flora     Image: Near     I-1. Fauna-Flora (number of species and quantity     Refer remark       (1) Number of species of bird     Refer remark     Image: Construction area     Image: Construction area     Image: Construction area								
Not construction area : Vibration Standard (Japan Standard along the road)     (Industrial is Standard along the road)       Vibration (dB) shall be converted from mm/s to dB     Along MTHL alignment and mangrove replant area for Package I     Quarterly during the construction Period     Not construction area : Vibration Standard (Japan Standard along the road)     (Industrial is Standard along the road)       I. Monitoring of mudflat conditions including fauna- flora     Along MTHL alignment area for package II     Quarterly during the construction period     Standard is not existing, but quantity and quality should not be worsen     Sewri sis (ST500-55       I. Monitoring of mudflat conditions including fauna- flora     I. Monitoring of mudflat conditions including fauna- flora     4 Times / Year     1-1. Fauna-Flora (number of species of bird     Refer remark						Half yearly		Sowri (ST 200-56
Vibration (dB) shall be converted from mm/s to dB       Along MTHL alignment and mangrove replant area for Package I       Quarterly during the construction Night time: 65 (20-7hr)       Note (standard values in Not construction area)       1. .Commercial /Industrial Area         Along MTHL alignment and mangrove replant area for Package I       Quarterly during the construction       Quarterly should not be worsen       Standard is not existing, but quantity and quality should not be worsen       Sewri sis (ST500-55         I. Monitoring of mudflat conditions including fauna- flora       Along for mudflat conditions including fauna- flora       At times / Year       1-1. Fauna-Flora (number of species of bird       Refer remark         (1) Number of species of bird       Refer remark       (1) Number of species of fish					тог раскаде пт			
Vibration (dB) shall be converted from mm/s to dB     Day time : 6-22 hr (continious)     25       Night time: 22-6 hr (continious)     Note (standard values in Not construction area)     1       1. Commercial /Industrial Area     Day Time: 70 (7-20hr)     1       Day Time: 70 (7-20hr)     Night Time: 65 (20-7hr)     1       Night Time: 65 (20-7hr)     Night Time: 65 (20-7hr)     1       Along MTHL alignment and mangrove replant area for Package I     Quarterly during the construction mangrove replant area for package II     Standard is not existing, but quantity and quality should not be worsen     Sewri sic (ST500-55       1. Monitoring of mudflat conditions including fauna- flora     Along MTHL alignment area for package II     4 Times / Year     1-1. Fauna-Flora (number of species and quantity     Refer remark       (1) Number of species of bird     Refer remark     (2) Number of species of fish     25							-	(Industrial area
(dB)     shall be converted from mm/s to dB     Night lime: 22-6 hr (continious)     Night time: 22-6 hr (continious)       Not Commercial /Industrial Area     I. Commercial /Industrial Area     I. Commercial /Industrial Area       Day Time: 70 (7-20hr)     Night Time: 65 (20-7hr)     I. Commercial /Industrial Area       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       Along MTHL alignment and mangrove replant form     Along MTHL alignment area for package II     4 Times / Year     1-1. Fauna-Flora (number of species and quantity       I. Monitoring of mudflat conditions including fauna-flora     0. Number of species of fish     (1) Number of species of fish       2. Monitoring of Cutting     0. Nonitoring of Cutting     0. Nonitoring of fish     I. Commercial fish				Vibration				25
Image: construction mm/s to dB         Image: construction mm/s to dB       Image: construction mm/s to dB       Image: construction mm/s to dB       Image: construction mm/s to dB       Image: construction mm/s to dB         Image: construction mm/s to dB <td< td=""><td></td><td></td><td></td><td>(dB)</td><td></td><td></td><td></td><td></td></td<>				(dB)				
Note (standard values in Not construction area)				shall be converted from			Night time: 22-6 hr (continious)	
Image:				mm/s to dB			Note (standard values in Not construction area)	
Day Time: 70 (7-20hr)     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       Along MTHL alignment and mangrove replant area for package I     Along MTHL alignment and mangrove replant area for package II     Standard is not existing, but quantity and quality should not be worsen       I.Monitoring of mudflat conditions including faunaflora     1.Monitoring of Cutting     4 Times / Year     1-1. Fauna-Flora (number of species and quantity       I.Monitoring of Cutting     2. Monitoring of Cutting     6 Cutting     Cutting     Cutting								
Image: Severity of the second seco								
Along MTHL alignment and mangrove replant area for Package I     Quarterly during the construction     Standard is not existing, but quantity and quality should not be worsen     Sewri sic (ST500-55       Along     MTHL alignment mangrove     Along     MTHL alignment area for package II     4 Times / Year     1-1. Fauna-Flora (number of species and quantity     Sewri sic (ST500-55       1. Monitoring of mudflat conditions including fauna- flora     1. Monitoring of Cutting     Refer remark								
1.Monitoring of mudflat conditions including fauna-flora       1.Monitoring of Cutting			+		Along MTHI alignment	Quarterly	14giit 11iiic. 03 (20-/11)	+
area for Package I       construction       should not be worsen       (ST500-55         Along       MTHL       alignment       and         area for Package I       4 Times / Year       1-1. Fauna-Flora (number of species and quantity         1.Monitoring of mudflat       area for package II       (1) Number of species of bird         2. Monitoring of Cutting       2. Monitoring of Cutting       (2) Number of species of fish	1						Standard is not existing but quantity and quality	Sewri side
Period     Period       Along     MTHL       alignment     and       mangrove     replant       area for package II     1-1. Fauna-Flora (number of species and quantity       1.Monitoring of mudflat     (1) Number of species of bird       conditions including fauna-flora     2. Monitoring of Cutting	1					-		(ST500-5500)
Along       MTHL         alignment       and         mangrove       replant         area for package II       1-1. Fauna-Flora (number of species and quantity         1.Monitoring of mudflat       (1) Number of species of bird         conditions including fauna-flora       (2) Number of species of fish         (2) Number of species of fish       (1) Full out the species of fish	1				_			
1.Monitoring of mudflat conditions including fauna-flora     1.Monitoring of Cutting     1.Monitoring of Cutting     1.Monitoring of Cutting     1.Monitoring of Limited and the second species of bird     1.Monitoring of Species of Limited and the second species of Limited sp	1				Along MTHL			
1.Monitoring of mudflat conditions including fauna- flora     (1) Number of species of bird     Refer remark       2. Monitoring of Cutting     (2) Number of species of fish     (3) Exting the mark of Eleminary	1				-	1/1 Timog / Yoor	1-1 Fauna-Flora (number of spacios and quantity	
1.Monitoring of mudflat conditions including fauna-flora       (1) Number of species of bird       Refer remark         (2) Number of species of fish       (2) Number of species of fish       (2) Number of species of fish	1					+ mes/ rear	1-1. Fauna-Fiora (number of species and quantity	
1. Monitoring of mudflat       conditions including fauna-       flora       2. Monitoring of Cutting					area for package II			<u> </u>
1. Monitoring of mudflat       conditions including fauna-       flora       2. Monitoring of Cutting	1							
1. Monitoring of mudflat       conditions including fauna-       flora       2. Monitoring of Cutting							(1) Number of species of hird	Refer remark
flora (2) Number of species of fish (2) Federate Lawrence of Floreiron	1			-			(1) Number of species of ond	Kelei leinark
2. Monitoring of Cutting	1			conditions including fauna-				
2. Monitoring of Cutting	1						(2) Number of species of fish	1
Tree and	1							1
	I	I	1	ITree and	I	I	(c) Estimated number of Flammigo	1

					Attachment 2-4
Monitoring Period -	January to March 2019				itoring results to JICA India Office. Only in this form, and not all perameters in EMoP
	1				tation, some items shall be selected from the total Design. Only the selected items shall be reported to
ddy field soil )	0.96 3.84	0.3		the rest of items shall be dele	
mg/l					
ng/l					
ng/l 04mg/l					<u> </u>
0+111g/1 []					
5 mg/l					
g/l					
mg/l					
		<u>0.7</u>			
85 dB(A) daytime ent Noise Standard in	Sewri (ST 200-500) (Industrial area)	Sea Section (ST5000-5500) Migratory Bird Area (no standard on sea section)	shivaji Nagar mmercial area)		
		Section,			
dB(A)	71.8	74.3	65.9		
b) dB(A)	64.7	71	60.85		
ing 9-17 hrs)					
-24 hr)					
onstruction area)					
<u>sistuction area</u>					
75 dB daytime (Japan					
ion Standard (Japan	Sewri (ST 200-500) (Industrial area)	Shivaji Nagar (Commercial area)	Chirle		
1	25	0.06	Not started		
r (continious)			Not started		
onstruction area)					Bird Area) and ecosystem, detailed long-
L			 term monitoring	plan will be extablished durin	ng baseline survay of birds. This tentative e detailed long-term monitoring plan.
quantity and quality	Sewri side (ST500-5500)	Sea Section (ST5500-16000)	vaji Nagar side ST16000-19000)	Mangorove Replantation area appointed by State Government	
becies and quantity					
	Refer remark	Refer remark			BNHS has submitted two quarterly reports uptil now. A total of 80 species of avifauna has been recorded in all of Thane creek. Of these 80 species, 70 species are water fowls and 10 species are prey birds.
					4
ngo		1		1	

•		n of Mumbai Trans		n n				This form is pre	pared for reporting the mor	Attachment 2-4 itoring results to JICA India Office. Only	
nent 2-4	TH OF ENVIRON	mental Monitoring	uuring Constructio	)11	Monitoring Period -	January to March 2019				in this form, and not all perameters in EMol	
ironmenta	al Monitoring du	ring Construction for	4.5 years					are covered.			
		replantation/transplation area 3.Monitoring of Mangrove Plantation area appointed			1-2: Mangrove density and community survey					Compensatory mangrove plantation has be completed in 105 ha area in Dhanu, Palghar Mumbai region. Balance plantation in 125 ha suitable sites have been identified in Palghar d	
	Protected Area	by MoEF			(1) Number of species of mangorve						
6		4. Monitoring of sedimentation soil and	1		(2) Density of mangrove (xx trees/10m x 10m)					1	
		ecological parameter (25			1-3: Benthos Survey						
		items on EIA main text			(1) Number of species and quantity by species	152 Species and 95No/m2					
		Table 6.1.15 for soil and 7			2-1: Cutting tree confirmation						
		items such as 1)Net primary productivity, 2)Chlorophyll-a,			(1) Number of cutting tree and species					920 numbers of trees surveyed and the propose been submitted to Forest Department - Pkg III	
		3)Phosphate, 4)Nitrate,			3-1: Mangrove survey in the replant area						
		5)Nitrite, 6)Particulate			(1) Number of species of mangorve						
		Organic Carbon, 7) SiO2)			(2) Density of mangrove (xx trees/10m x 10m)						
					4. Ecologial Parameter						
					(1) Net primary Productivity : <1,500 mgC/m3/day at surface	460					
					(2) Chlorophyll-a: <4mg/m3	1.9				l	
					(3) Phosphate: 0.1-90µg/l (4) Nitrate: 1.0-500µg/l	119 4402					
							(4) Nitrate: 1.0-500µg/1 (5) Nitrite: <125µg/1	4402			
					(6) Particulate Organic Carbon: 10-100mg/m <sup>3</sup>						
	Fcosystem	-			(6) Particulate Organic Carbon: 10-100mg/m (7) SiO2: 10-5,000µg/l	2019					
	Ecosystem		Not applicable for		Criteria for evaluation	2019					
7	Hudenlager	The diag side of an	Package I		Project activities and structures does not cause flooding and impacts on tidal conditions	Sewri	Shivaji Nagar				
	Hydrology	Flooding situation	2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year	Monitoring of flooding situation						
			Not applicable for Package III								
	Topography and	Conditions in embankment	2 Locations (1. Embankment of Inter		Criteria for evaluation Embankment shall be stabilized without any landslide and cracks	Shivaji Nagar	Chirle	Chirle			
8	Geology	area	Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle)		Monitoring of embankment					Yet to be observed.	
9		Construction worker's	2 Locations (major camp site in Sewri and Shivaji	4 times / year x 4.5 years	Criteria for evaluation Employment opportunity shall be provided fairly	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle			
	interests	township	Nagar)		Number of hired workers by community		100-125				
					Criteria for evaluation Infection disease rate shall not be caused by the project	Sewri Camp Site	Shivaji Nagar Camp Site				
10	Infectious diseases such as HIV/AIDS	Number of infected patient	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	Confirmation of health check record and inspect project site		Health Checks carried out but HIV/AIDS parameter is not there.	Health checks charried out near by tie up hospital @ ulwe. Form 28 and 29 is recorded by site doctor at present.			
11	Labour Environm	Construction worker's con	2 Locations (major camp d 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		Conforming with BOCW Act 1996	Conforming with BOCW Act 1996			
12	Accident	Number of accidents	2 Locations (major camp site in Sewri and Shivaji	A times / year + A 5	Criteria for evaluation Any accidents are not caused by construction	Sewri Camp Site	Shivaji Nagar Camp Site	Other area			

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

Total land required on Navi Mumbai side- 108.09 ha Land in possession in MMRDA – 101.95 ha Balance land acquisition- 6.14 ha

Note: The acquisition of 6.14 ha is in progress by CIDCO. The balance acquisition will be likely completed by end of June 2019.

	Land Required in ha		Land 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	3.20	6.14	30/06/2019		1. The payment status to the land owners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.
Total		98.75	3.20	6.14			
10	8.09			_			

#### \*Portions of Private Land

1

Sr. No.	Name of Village	Area (Hectare)	Acquired	Non-acquired	
1	Gavhan	0.15	-	0.15	
2	Jasai	8.72	3.20	5.52	
3	Chirle	0.47	-	0.47	
	Total Area	9.34	3.20	6.14	

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

#### 1. General Information

a.	RAP Implementation Monitoring Results:	Progress Status Report (PSR) of 1st quarter of 2019				
b.	Date of Preparing This form	31.03.2019				
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)	298 Hhs	Titleholders: 0 Hhs
		Non-titleholders: 298 Hhs
Total PAPs	1,282 persons*	Titleholders: 0 persons
		Non-titleholders: 1,282 persons*
PAHs who need relocation (as residents)	232 Hhs	Titleholders: 0 persons
		Non-titleholders:232 (1,088 persons) *
PAPs who do not need relocation (as residents)	0 persons	Titleholders: 0 persons
		Non-titleholders: 0 persons
Commercial PAPs who need relocation	66	Titleholders: 0 persons
	(194 persons) *	Non-titleholders:53 (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: 66
	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: 323

#### 2.3 Fishery

Categories of Fisher-folks	Identifi	ed Number	Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in	217	Survey in progress	217	Nil
RoW (250 m.)	For Trombay,			
	Sewri & Mahul in			
	process of			
	approval			
C2: Fishing Stakes and Nets	749	126	875	Scrutiny of the
within 500 m. of RoW (Southern				balance
side)				applications is
C3: Hand-pickers	416	1273	1689	in progress.

C4: Commercial and Artisanal	Will be observed	Will be observed	 Nil
Fisher-folks	during	during construction	
(Loss of Time and Increased	construction	period	
Operating Costs)	period		
C5: Fisher-folks with Loss due to	Will be observed	Will be observed	 Nil
Turbidity	during	during construction	
	construction	period	
	period		
C6: Fisher-folks with Damages	Will be observed	Will be observed	 Nil
due to Accidents	during	during construction	
	construction	period	
	period		

### 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	3.20	6.14	
Total	118.179		108.839	3.20	6.14	

### 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	232	75	0	75	32%	
	No. of Residential PAHs given possession of Alternate Tenements	232	0	0	0	0%	
	No. of Commercial/R+C PAPs provided with Allotment Letters of Alternate Shops/Tenements	66	0	0	0	0%	
	No. of Commercial R+C PAPs given possession of Alternate Shops/Tenements	66	0	0	0	0%	

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
	No. of Occupants of MbPT Leased Plots provided Compensation	6	0	0	0	0%	
	No. of Religious properties Relocated / Removed	6	0	0	0	0%	
	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	298	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						
Grievance Redress	No. of Grievances Received by FLGRC	4					
Redicas	No. of Grievances Disposed by FLGRC	0					
	No. of Grievances Received by SLGRC	0					
	No. of Grievances Disposed by SLGRC	0					
Post Resettlement	No. of CHSs Registration helped						
Assistance	No. of CHSs provided Tenements for Social Amenities						
	No. of CHSs' Maintenance Fund Invested						
	No. of CHSs' Office Bearers provided training						

#### 3.2 Fishery Compensation

<b>Categories of Fisher-folks</b>	Identifi	ed Number	Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in	217	Survey in progress	217	Nil
RoW (250 m.)	For Trombay,			
	Sewri & Mahul in			
	process of			
	approval			
C2: Fishing Stakes and Nets within 500 m. of RoW (Southern side)	749	126	875	An amount of about 49 crores has been deposited with the Fisheries Department towards disbursement of
C3: Hand-pickers	416	1273	1689	compensation to 2564 Nos. of beneficiaries.
				Further, the Fisheries Department has started disbursing the amount to the individual PAPs on following due procedure.
				The scrutiny of the balance Nos. of applications of fisherfolk is in the process of scrutiny for deciding their eligibility for the compensation.
C4: Commercial and Artisanal	Will be observed	Will be observed		Nil
Fisher-folks	during	during construction		
(Loss of Time and Increased	construction	period		
Operating Costs)	period			
C5: Fisher-folks with Loss due to	Will be observed	Will be observed		Nil
Turbidity	during	during construction		
	construction	period		
	period			
C6: Fisher-folks with Damages	Will be observed	Will be observed		Nil
due to Accidents	during	during construction		
	construction	period		
	period			

# List as per C2 & C3 category

Sr. No	Village name	Total No of family units surveyed	No of eligible family units				
	Mumbai side						
1.	Mahul & Sewri	336	336				
2.	Trombay	829	829				
	Total Mumbai side	1165	1165				

Sr. No	Village name	No of eligible family units				
No     surveyed     family units       Navi Mumbai side     Image: Surveyed state st						
3.	Bamandongri	235	25			
4.	Belpada	484	329			
5.	Ganeshpuri	25	50			
6.	Jasai	26	18			
7.	Gavhan	5	4			
8.	Morave	190	83			
9.	Kopar	548	228			
10.	Mora	70	1			
11.	Uran	65	0			
12.	Jawale	232	1			
13.	Shelghar	1	15			
14.	Shivaji Nagar	2	64			
15.	Ulwe	29	14			
16.	Vahal	119	3			
17.	Navakhadi	673	326			
18.	Moha	222	146			
19.	Kombadbhuja	134	92			
Т	otal Navi Mumbai side	3060	1399			
	Total					
(Mu	mbai side + Navi Mumbai side)	4225	2564			

Note: MMRDA has received 13,112 new applications from Fishing families which are yet to be scrutinized.

Note: The category of fishermen is as per the Fishermen Compensation Policy

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

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

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

### A. Implementation Schedule for Fisher-folks Compensation:-

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
1	Approval of fisher-folks'	Fisher-folks Compensation	08-10-2015	23-12-2015
	compensation Policy	Committee (FCC)		
2	Approval by MMRDA	MMRDA	10-12-2015	23-12-2015
3	Submission to JICA	MMRDA		04-01-2016
4	Detailed list of PAP and	Detailed list of Fisher-folk	23-12-2015	1. Total up to date applications scrutinized = 5881
	compensation plan	PAP & disbursement is		nos
		finalized by the Fisheries		2. $Eligible = 2564 nos$
		Department.		3. In-eligible = 06 nos
				4. In process of approval $= 2043$ nos
				5. Documents awaited = 1268 nos
5	Validation of compensation plan	Fisher-folks Compensation	23-12-2015	1. Approval to the Fisher-folk PAP list
		Committee (FCC)		obtained from Fisheries Department for
				Fisherfolk from Sewri, Mahul & Trombay
				(Mumbai side) $-12^{th}$ September 2017 and
				20 <sup>th</sup> 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
				25 <sup>th</sup> 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	09-03-2018

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

	kequired Ha.		equired in Ia.	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	3.20	6.14	31/06/2019		<ol> <li>CIDCO is the land acquisition authority for land acquisition for Navi Mumbai</li> <li>MMRDA has paid an amount of INR 59.16 Cr to CIDCO as per their demand.</li> <li>The payment status to the land owners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.</li> </ol>
Total	108.09	10	1.95	6.14			

Implementation Schedule for SIA (Sewri Section)							
	·						

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	March 2020					
2.3	Staff Deployment Public Relation	June 2016	June 2016					
2.4	Hiring of Independent Evaluation Agency	November 2018	June 2019					
2.5	Preparation and issue of allotment letters to	June 2018	June 2019					
2.6	Notice of PAPs for shifting (Sewri Section)	December 2018	June 2019					
2.7	Allotment of dwelling units to PAP's	September 2016	June 2019					
2.8	Shifting of PAPs to resettlement Colony	December 2018	July 2019					
2.9	Transfer of compensation / allowance/ assistance to PAPs	December 2018	July 2019					
2.10	Creation of Community Revolving fund (within 3 months post handing over)	April 2019	July 2019					
2.11	Assessment of economic rehabilitation needs by individual household (within 6 months after handing over	September 2019	December 2019					
2.12	Registration of Co-operative housing societies, transfer of maintenance funds. (6 months period)	December 2019	June 2020					
2.13	Signing of Civil Contract		January 2017					
2.14	Notice of Civil works to proceed		March 2017					
3	Monitoring & Evaluation							
3.1	Internal Monitoring- Monthly/ Quarterly	June 2016	January 2020					
3.2	Independent Evaluation Mid-term and End term evaluation							
	Mid Term	May 2019	July 2019					
	End Term	November 2019	January 2020					

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

### Status of JICA'S Concurrence

		Procurement procedure	Bid Cost		JICA's Concurrence on						
SI No			Local Currency (Cr Rs.)	Total (Cr Rs)	PQ Documents	PQ Evaluation	Bid Documents	Technical Evaluation	Financial Evaluation	Contract	
1	Package-1 (CH 0+000 km to CH10+380 km)	ICB with PQ (2P)	7637.30	7637.30	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22 <sup>nd</sup> Dec 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 12 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018	
2	Package-2 (CH 10+380 km to CH18+187 km)	ICB with PQ (2P)	5612.61	5612.61	JICA's Concurrence - 9 <sup>th</sup> May 2016	JICA's Concurrence - 22 <sup>nd</sup> Dec 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 12 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018	
3	Package-3 (CH18+187 to CH21+800)	ICB with PQ (2P)	1013.79	1013.79	JICA's Concurrence - 9 <sup>th</sup> May 2016	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 4 <sup>th</sup> Jan 2017	JICA's Concurrence - 15 <sup>th</sup> Sep 2017	JICA's Concurrence - 12 <sup>th</sup> Oct 2017	JICA's Concurrence – 15 <sup>th</sup> Feb 2018	
4	Package-4 Intelligent Transport System	ICB with PQ (2P)	144.26	144.26	-	-	-	-	-	-	

# Attachment 4- Project Procurement and Financial Status till 31<sup>st</sup> March 2019

	Туре	Contract	Awarded or Estimated Value (in Rs. Crore)	Current Status	Contractors	Award Date/ As per PIP Mar- 2018	Actual/ Projected Completion as per PIP Mar-2019	Physical % completion up to March 2019	% of Project Amount Disbursement till March 2019
		Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	Nov 2017	Sep 2022	9.99%	8.78%
	CIVIL	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO- TPL JV	Nov 2017	Sep 2022	7.77%	6.66%
		Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	Nov 2017	Sep 2021	3.37%	0.91%
	ITS	Package-4 Intelligent Transport System	144.26 (Estimated)	Design Stage		Jul 2020 (Estimated)	Sep 2022	Nil	Nil

### PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 31<sup>st</sup> MARCH 2019

# **Attachment 5- Project Progress Photos**



Package 1- Site Progress Photos

Photo No. 1: Pile Cap Concrete at MP7 location in progress



Photo No. 2: Pile Cap at MP7 after De-shuttering

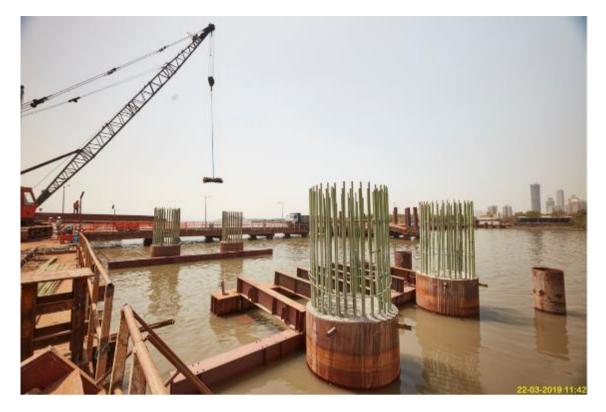


Photo No. 3: Pile Cap works at MP6 location in progress



Photo No. 4: TAB Progress from MP43 location in progress



Photo No. 5: TAB Concreting from PG-3 in progress



Photo No. 6: TAB Deck Erection at MP43 location in progress



Photo No. 7: Pile Cap works at MP95 location in progress



Photo No. 8: Pile Cap works at MP94 location in progress

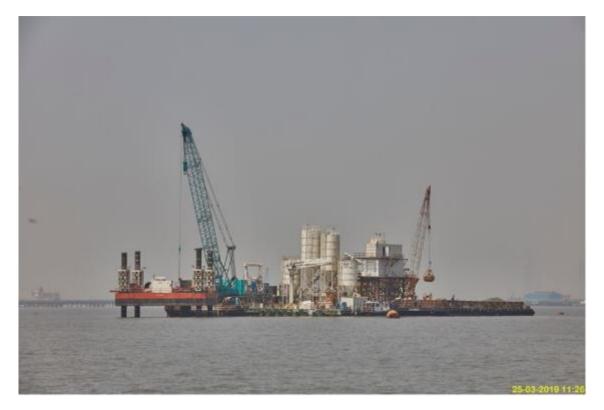


Photo No. 9: Test Pile Works at MP125 location in progress



Photo No. 10: Piling Works at MP89 location in progress



Photo No. 11: Piling at MP89 location in progress



Photo No. 12: Piling Works at MP 91 93 94 & 95 location in progress

Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 8 (Jan - Mar 2019)



Photo No. 13: 175 T Gantry Crane Erection & Commissioning Completed



Photo No. 14: Casting Yard Development



Package 2 – Site Progress Photos

Photo No. 15: Pile Boring works at MP 165/03 RHS location in progress



Photo No. 16: Reinforcement Cage installation at MP 162/04 location RHS in progress



Photo No. 17: Pile Concreting at MP 162/02 RHS location in progress

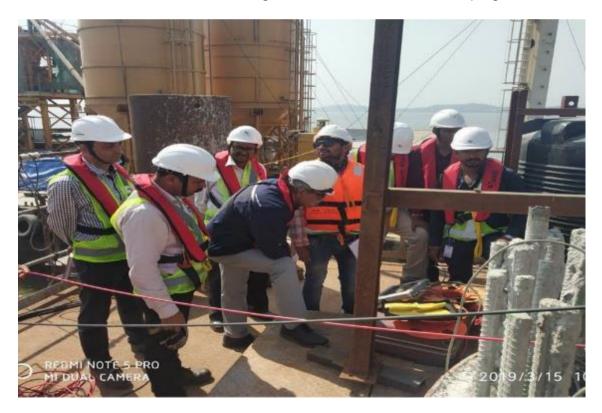


Photo No. 18: Cross Hole Sonic Logging Test at MP 162/02 RHS location in progress

Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 8 (Jan - Mar 2019)



Photo No. 19: Fixing of bracing works at Temporary Bridge Front-2 at MP 214 in progress



Photo No. 20: Pile Reinforcement works at Belapur Jetty location in progress



Photo No. 21: Mould Foundation-wall formwork at Casting Yard Bay-1 in progress



Photo No. 22: Mould Foundation Curing Works at Casting Yard Bay-2 in progress



Photo No. 23: Internal Road works at Casting Yard in progress



Photo No. 24: A group Photo Taken after first Permanent Pile Concreting done at the Marine Location



Package 3 – Site Progress Photos

Photo No. 25: Reinforcement Works at LMP 267 Foundation in progress



Photo No. 26: Curing Works for RMP 268 Foundation in progress



Photo No. 27: PCC Works at LMP 268 in progress



Photo No. 28: NDT Test at Foundation RMP 268 in progress



Photo No. 29: Track beam work at Casting Yard in progress



Photo No. 30: OGL survey at CH 19+980 location in progress



Photo No. 31: Embankment work at CH 18+990 to CH 19+050 in progress



Photo No. 32: Blasting (at Grade) at CH 19+720 to CH 19+920 in progress

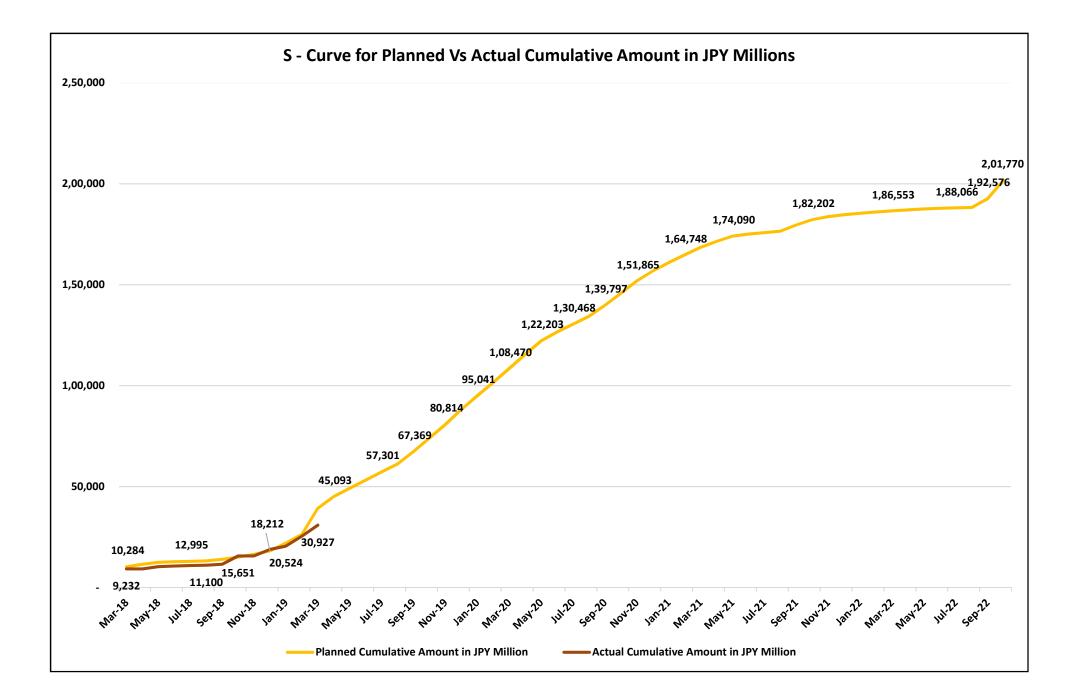


Photo No. 33: Tool box talk at the site



Photo No. 34: Training programme on welding and gas cutting activities at Casting yard

# Attachment 6- S-Curve for Cumulative Planned Vs Actual Amount in JPY Million



# Attachment 7- Project Implementation Programme Updated Till 31<sup>st</sup> March 2019

# Project Implementation Programme

ctivi	ity ID	Activity Name	Duration	in Start	Finish	Activity %	2017		2018	2019		2020		
	Mumboi T	Franc Harbour Link (MTHL) DID	Days	14-Dec-164	A 31-Jan-25		Q1 Q2 Q3 Q4		2 Q3 Q4 Q1	J2 Q3 C	4 Q1	Q2 Q3	Q4 C	11 Q2
_		Trans Harbour Link (MTHL) PIP												
	Milestone		2370		A 31-Jan-25	·								
	MTHL-GC		2772		A 31-Jan-25									
	A1000	Commencement of GC Services	0	14-Dec-16 A	4	100% •								
	4.4000													
	A1020	Completion of GC Services	0	) 22 Mar 19 A	31-Jan-25	0%		·					<u></u>	
	A2750	of Civil & ITS Package-3 Completion & Handover to MMRDA	0	2 23-IVIAI - 10 P	11-Apr-22	0%								
	A2750 A2740	Package-2 Completion & Handover to MMRDA	0		29-Dec-22	0%								
	A2730	Package-1 Completion & Handover to MMRDA	0		31-Jan-23	0%								
	A2760	Package-4 Completion & Handover to MMRDA	0		01-Feb-23	0%								
	A2770	Commercial Operation Date	0		01-Feb-23	0%								
		e - 1 Millstones	173	7 23-Mar-18 A	A 31-Jan-23									
	P1-1170	Project Commencement Date	0	23-Mar-18 A	A	100%		•						
	P1-1180	KD-1 Construction Programme, completion of Soil Investigation, Submit Final plan	ns O		22-Oct-18 A	100%			•					
	D4 4400	KD 0 Task sigel Dasien dasumaanta 8 Dasumaan far Eaur datien (aukatustus Oura			04 Mar 40	00/								
	P1-1190	KD-2 Technical Design documents & Drawings for Foundation /substructure Super (concrete and Steel)	rstructure 0		31-Mar-19	0%								
	D1 2170	KD-3 GFC for Foundation /Substructure, Superstructure (concrete & Steel)	0		27-Feb-20	0%		-+			•		+	
		KD-4 Substantial completion of Foundation, Piles, Piers, Abutments, Earthworks and			14-Sep-21	0%								
	112100	dolphins.	ind o		11 000 21	0,0								
	P1-2190	KD-5 Substantial completion of Pile Caps, Piers and Abutments and Pre-Casting S	Segment 0		01-Feb-22	0%								
		Completion.	0											
	P1-2200	KD-6 Substantial completion of Concrete Superstructure /cast-in-situ concrete stru	ictures, & 0		24-Aug-22	0%								
		Steel structures												
	P1-2210	KD-7 Substantial completion of Kerbs /Traffic Signs, Marking & Noise barriers, Re	moval of 0		02-Nov-22	0%								
		jetties, Restoration											<u>.</u>	
	P1-2220	KD-8 Substantial completion of all works in all respects and Starting the Trail Run	0		31-Jan-23	0%								
		operation.	474		29-Dec-22									
		e - 2 Millstones	1742			400%								
	P2-2110	Project Commencement Date	0	23-Mar-18 A	1	100%								
	P2-2120	KD-1 Construction Programme, completion of Soil Investigation, Submit Final plan	ns O		22-Oct-18 A	100%			•					
	12-2120		13 0		22-000-1074	100 /0								
	P2-2130	KD-2 Technical Design documents & Drawings for Foundation /substructure Super	rstructure 0		31-Mar-19	0%								
		(concrete and Steel)												
		KD-3 GFC for Foundation /Substructure, Superstructure (concrete & Steel)	0		09-Feb-20	0%					•			
	P2-2150	KD-4 Substantial completion of Foundation, Piles, Piers, Abutments, Earthworks and	nd 0		23-Sep-21	0%								
		dolphins.												
	P2-2160	KD-5 Substantial completion of Pile Caps, Piers and Abutments and Pre-Casting S	Segment 0		04-Mar-22	0%								
	D2 2170	Completion. KD-6 Substantial completion of Concrete Superstructure /cast-in-situ concrete stru	ictures. & 0		01 Son 22	0%								
	P2-2170	Steel structures	ictures, $\alpha = 0$		01-Sep-22	0%								
	P2-2180	KD-7 Substantial completion of Kerbs /Traffic Signs, Marking & Noise barriers, Re	moval of 0		30-Sep-22	0%								
	122100	jetties, Restoration			00 000 22	0,0								
	P2-2190	KD-8 Substantial completion of all works in all respects and Starting the Trail Run	0		29-Dec-22	0%		-						
		operation.												
	Package	e - 3 Millstones	1480	) 23-Mar-18 A	11-Apr-22									
	P3-1860	Project Commencement Date	0	23-Mar-18 A	4	100%		•						
	P3-1870	KD-1 Construction Programme, completion of Soil Investigation, Submit Final plan	ns O		31-Jan-19 A	100%			•					
	50 1000				40.0 40					•				
	P3-1880	KD-2 Technical Design documents & Drawings for Foundation /substructure Super (concrete and Steel)	rstructure 0		12-Sep-19	0%				•				
	D2 1900	KD-3 GFC for Foundation /Substructure, Superstructure (concrete & Steel)	0		10-Jan-20	0%		-+			•••••		+	
		KD-3 GFC for Foundation/Substructure, Superstructure (concrete & Steer)			01-Jan-21	0%							•	
	101000	dolphins.			51 Juli 21									
	P3-1910	KD-5 Substantial completion of Pile Caps, Piers and Abutments and Pre-Casting S	Segment 0		02-Jul-21	0%								
		Completion.	-											
_							· · · ·	-		Date	<u></u>		Revision	
	Actual Wo								40			gress Up		o to 31
	Remaining		Proje	ect Implementation	on Programme P	rogress Upda	tea up to 31st	Mar 20	19					
<b>–</b>		maining Work							Page no 1/16					
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20	21			20	22			20	23			20	24			2025	
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		Q3	Q4	Q1	Q2	Q3	Q4	Q1	2025 Q2	Q3
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# Project Implementation Programme

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Activity ID	Activity Name	Duration in Days	Start	Finish		2 Q1 Q2	017 Q3 Q4	2018 Q1 Q2 Q3 Q4 Q1	2019 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3	2022 Q4 Q1 Q2 Q3	2023 Q4 Q1 Q2 Q3 Q4 Q1	2024 2025 Q2 Q3 Q4 Q1 Q2 Q3
P3-1920	KD-6 Substantial completion of Concrete Superstructure /cast-in-situ concrete structures, & Steel structures	§ 0		16-Oct-21	0%							•		
P3-1930	KD-7 Substantial completion of Kerbs /Traffic Signs, Marking	0		10-Feb-22	0%							•	·····	
P3-1940	KD-8 Substantial completion of all works in all respects and Starting the Trail Run operation.	0		11-Apr-22	0%							•		
GC's Reo	ular Progress Report & Status Reports	1729	25-Jul-17 A	01-Feb-23										
A2790	Monthly Reports	1630	25-Jul-17 A	08-Oct-22	32.33%								<u> </u>	
A2800	Quarterly Reports	1545	25-Jul-17 A	01-Jul-22	34.11%									
A2870	Special occurrence report Monthly, Quarterly & Annual Reports	1545	25-Jul-17 A	01-Jul-22	34.11%									
A2810	Annual Reports	1400	01-Jan-18 A	22-Jun-22	27.86%									
A2820	Supervision Reports	1407	01-Jan-18 A	30-Jun-22	27.72%									
A2830	Engineering Reports	1407	01-Jan-18 A	30-Jun-22	27.72%									
A2840	Draft Final Reports	365	11-Jun-21	11-Aug-22	0%									
A2850	Final Reports	365	26-Nov-21	26-Jan-23	0%									
A2860	Completion reports	180	06-Jul-22	01-Feb-23	0%									
	on/ Finalization of O&M Manuals by GC	180	06-Jul-22	01-Feb-23										
A2780	Civil Works Manual including offshore and On shore	180	06-Jul-22	01-Feb-23	0%									
A2880	Signalling / Traffic Control Manual	180	06-Jul-22	01-Feb-23	0%									
A2890 A2900	Intelligent Transport Systems (ITS) Manual Commercial Manual	180 180	06-Jul-22 06-Jul-22	01-Feb-23 01-Feb-23	0% 0%					······				
A2900 A2910	Operating Manual	180	06-Jul-22 06-Jul-22	01-Feb-23	0%									
A2920	Accident and Safety Manual	180	06-Jul-22	01-Feb-23	0%									
A2930	Disaster Management Manual	180	06-Jul-22	01-Feb-23	0%									
A2940	General Electrical Services and Equipment Manual	180	06-Jul-22	01-Feb-23	0%									
A2950	Safety, Health and Environmental Manual	180	06-Jul-22	01-Feb-23	0%									
A2960	Quality Assurance Manual	180	06-Jul-22	01-Feb-23	0%									
	ssistance stage	1231	14-Dec-16 A		•									
A1040	1 Tender Assistant Leading Team	<b>378</b> 378		23-Mar-18 A 23-Mar-18 A	100%									
		14										÷····	·····	·····
A1030	As si stant Tender Document Review	41 40		31-Jan-17 A 29-Jan-17 A	100%									
A1030		40	14-Dec-16 A	29-Jan-17 A	100 %									
A1050	Pre bid Meeting	1	30-Jan-17 A	31-Jan-17 A	100%	1								
Addend	um _1	78	31-Jan-17 A	24-May-17 A										
A1060	Preparing the Tender Pre Bid Quarry 1st Set replay	30		05-Apr-17 A	100%	-								
	······································													
A1080	Preparing the Tender Addenda -1 Contractual Part	30	31-Jan-17 A	07-Mar-17 A	100%									
A1070	Preparing the Tender Addenda -1 Technical Part	30	08-Feb-17 A	07-Mar-17 A	100%									
A1090	Tender Addenda -1 Submitting to MTHL-PIU/JICA	24	07-Mar-17 A	29-Apr-17 A	100%									
A1100	Reviewing Tender Addenda -1 byMTHL-PIU/JICA	24	29-Apr-17 A	24-May-17 A	100%									
Addend	um -2	52	07-Apr-17 <u>A</u>	01-Jun-17 A										
A1110	Preparing the Tender Pre Bid Quarry 2nd Set replay	21	07-Apr-17 A	25-May-17 A	100%									
A1120	Preparing the Tender Addenda -2 Technical Part	21	15-Apr-17 A	10-May-17 A	100%									
A1130	Preparing the Tender Addenda -2 Contractual Part	21	15-Apr-17 A	10-May-17 A	100%									
					,				• · · ·		· · ·	· · · ·	· · · · · ·	<u></u>
Actual Wo	rk Summary								Date	Revisi		Checked		roved
Remaining	Work	Project	Implementatio	on Programme F	Progress Upd	ated up	to 31st	Mar 2019	30-Sep-1	8 Progress Updated	1 up to 31 M J	15	TL	
Critical Re	maining Work	-		-	-								1	
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Critical Remaining Work ♦ ♦ Milestone Page no 2/16	I
Actual Work Summary	Sep-18 Progress Updated up to 3
	Date Revision

# Project Implementation Programme

		A strike Manage	Duration in		A _1::t. 0/	2017	1 2019 1	2010	2020		2021	2022	20	100	2024	2025
ctivity ID		Activity Name	Duration in Days	Start Finish			Q1 Q2 Q3 Q4 Q1	Q2 Q3 C	2020 4 Q1 Q2 Q3	Q4 Q1	2021 Q2 Q3 Q4	Q1 Q2 Q	3 Q4 Q1 Q2	Q3 Q4 Q1	Q2 Q3 Q4	2025 Q1 Q2 Q3
		Tender Addenda -2 Submitting to MTHL-PIU/JICA	12	10-May-17 A 01-Jun-17 A	100%											
	A1150	Reviewing Tender Addenda -2 by MTHL-PIU/JICA		24-May-17 A 01-Jun-17 A	100%											
	Addendı	m -3,4&5	40	22-May-17 A 05-Jul-17 A												
	A1160	Preparing the Tender Pre Bid Quarry 3rd Set replay	14	22-May-17 A 22-Jun-17 A	100%											
	A1170	Preparing the Tender Addenda -3 Technical Part	14	30-May-17 A 15-Jun-17 A	100%											
	A1180	Preparing the Tender Addenda -3 Contractual Part	14	30-May-17 A 15-Jun-17 A	100%											
	A1190	Tender Addenda -3,4&5 Submitting to MTHL-PIU/JICA	6	15-Jun-17 A 22-Jun-17 A	100%	0										
	A1200	Reviewing Tender Addenda -3,4&5 by MTHL-PIU/JICA	12	22-Jun-17 A 28-Jun-17 A	100%											
	A1210	Addendum-3,4&5 Issued to Bidders (including Addendum & Extension)	1	28-Jun-17 A 05-Jul-17 A	100%											
	Pid oubr	nission to MTHL & Technical Bid Opening	14	30-Jun-17 A 17-Jul-17 A												
		Bid submission to MTHL & Technical Bid Opening		30-Jun-17 A 17-Jul-17 A	100%											
			42	19-Jul-17 A 12-Sep-17 A												
		I Evaluation Envelop A for Tender Fee & EMD is opened	2	19-Jul-17 A 21-Jul-17 A	100%	1										
	A2990	Stage-1,2 & 3 Evaluation	14	21-Jul-17 A 04-Aug-17 A	100%	•										
-	A2970	Envelop B Technical Bid are opened	0	25-Jul-17 A 25-Jul-17 A	100%	1										
	A2980	Stage-4 Evaluation (Technical)	26	25-Jul-17 A 22-Aug-17 A	100%	-										
-	A3160	Evaluation Report for Stage-1,2,3 Submitting to MTHL-PIU	7	31-Jul-17 A 19-Aug-17 A	100%											
	A3000	Evaluation Final Report (Technical) Submitting to MTHL-PIU/JICA	6	18-Aug-17 A 22-Aug-17 A	100%	•										
-	A1270	Evaluation Reports (Technical) Approved by MTHL-PIU/JICA	10	31-Aug-17 A 12-Sep-17 A	100%											
_		Evaluation	36	12-Sep-17 A 09-Nov-17 A	400%											
		Envelop C Financial Bid Opening Stage-5	0	12-Sep-17 A 12-Sep-17 A	100%											
		Bid Evaluation Report ( Financial)	12	12-Sep-17 A 26-Sep-17 A	100%											
		Tender Committee approval by MTHL-PIU/JICA		26-Sep-17 A 27-Sep-17 A	100%											
		Evaluation Reports (Financial) approved by JICA		28-Sep-17 A 12-Oct-17 A	100%											
		Management Committee approval by MTHL-PIU/JICA		30-Sep-17 A 09-Nov-17 A	100%											
	Tender A	ward		25-Oct-17 A 23-Mar-18 A												
	A1260	GC Preparing LOA for Successful Bidder	6	25-Oct-17 A 01-Nov-17 A	100%											
		Finalization and Award of Contract by MMRDA	21	01-Nov-17 A 16-Nov-17 A	100%											
	A1320	MMRDA Issue LOA to Successful Bidder	0	17-Nov-17 A 17-Nov-17 A	100%											
	A1530	Contract Agreement	24	17-Nov-17 A 26-Dec-17 A	100%											
	A1560	Notice to Commencement of Work	0	28-Feb-18 A 23-Mar-18 A	100%											
	ackage-2 Tender A	ssistant	378 41	14-Dec-16 A 23-Mar-18 A 14-Dec-16 A 31-Jan-17 A		<b>*</b>										
_	render P															
	Actual Wor	Summary						Date		evision		Checked		Appr	oved	
	Remaining	-	Project I	mplementation Programme Pr	rogress Up	dated up to 31st	Mar 2019	30-Sep-	18 Progress Upd	lated up to 3	31 M JS		TL			
	-	naining Work							I				1			
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	Actual Work Summary		Date	Revision
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		Project Implementation Programme Progress Updated up to 31st Mar 2019	i	
	Critical Remaining Work		i	
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# Project Implementation Programme

Activity ID	Activity Name	Duration in	Start Finish	Activity %	2017		2018	2019		2020	20	21 20: Q3 Q4 Q1 Q2	22	2023	2024		2025
A1330	Tender Document Review	Days 40	14-Dec-16A 29-Jan-17A	100%		Q4 Q1 Q2	Q3 Q4 (	21 Q2 Q	13 Q4 Q	1 Q2 Q3	Q4 Q1 Q2	Q3 Q4 Q1 Q2	Q3 Q4 Q1	Q2 Q3 C	4 Q1 Q2	23 Q4 (	1 Q2 Q3
A1340	Tender Assistant Leading Team	41	14-Dec-16 A 31-Jan-17 A	100%	<b>-</b>												
A1350	Pre bid Meeting	1	30-Jan-17 A 31-Jan-17 A	100%	1												
Addend	um -1	78	31-Jan-17 A 24-May-17 A														
	Preparing the Tender Pre Bid Quarry 1st Set replay	30	31-Jan-17 A 05-Apr-17 A	100%													
A1370	Preparing the Tender Addenda -1 Technical Part	30	31-Jan-17 A 07-Mar-17 A	100%													
A1380	Preparing the Tender Addenda -1 Contractual Part	30	31-Jan-17 A 07-Mar-17 A	100%													
A1390	Tender Addenda -1 Submitting to MTHL-PIU/JICA	24	07-Mar-17 A 29-Apr-17 A	100%	-												
A1400	Reviewing Tender Addenda -1 by MTHL-PIU/JICA	24	29-Apr-17 A 24-May-17 A	100%													
Addend		52	07-Apr-17 A 01-Jun-17 A														
A1410	Preparing the Tender Pre Bid Quarry 2nd Set replay	21	07-Apr-17 A 25-May-17 A	100%													
A1420	Preparing the Tender Addenda -2 Technical Part	21	15-Apr-17 A 10-May-17 A	100%													
A1430	Preparing the Tender Addenda -2 Contractual Part	21	15-Apr-17 A 10-May-17 A	100%													
A1440	Tender Addenda -2 Submitting to MTHL-PIU/JICA	12	10-May-17 A 01-Jun-17 A	100%	•												
A1450	Reviewing Tender Addenda -2 by MTHL-PIU/JICA	12	24-May-17 A 01-Jun-17 A	100%	0												
Addend	um -3,4&5	40	22-May-17 A 05-Jul-17 A		-												
	Preparing the Tender Pre Bid Quarry 3rd Set replay	14	22-May-17 A 22-Jun-17 A	100%													
A1470	Preparing the Tender Addenda -3,4&5 Technical Part	14	30-May-17 A 15-Jun-17 A	100%													
A1480	Preparing the Tender Addenda -3,4&5 Contractual Part	14	30-May-17 A 15-Jun-17 A	100%													
A1490	Tender Addenda -3,4&5 Submitting to MTHL-PIU/JICA	6	15-Jun-17 A 22-Jun-17 A	100%	0												
A1500	Reviewing Tender Addenda -3,4&5 by MTHL-PIU/JICA	12	22-Jun-17 A 28-Jun-17 A	100%	, e												
A1510	Addendum-3,4&5 Issued to Bidders (including Addendum & Extension)	1	28-Jun-17 A 05-Jul-17 A	100%													
Bid sub	mission to MTHL & Technical Bid Opening	14	30-Jun-17 A 17-Jul-17 A		-												
A1520	Bid submission to MTHL & Technical Bid Opening	14	30-Jun-17 A 17-Jul-17 A	100%													
Technic	al Evaluation	41	19-Jul-17 A 10-Sep-17 A			···· +··· ·	+										
	Envelop A for Tender Fee & EMD is opened	2	19-Jul-17 A 21-Jul-17 A	100%													
A3180	Stage-1,2 & 3 Evaluation	14	21-Jul-17 A 04-Aug-17 A	100%	•												
A3190	Envelop B Technical Bid are opened	0	25-Jul-17 A 25-Jul-17 A	100%													
A3200	Stage-4 Evaluation (Technical)	26	28-Jul-17 A 21-Aug-17 A	100%	•												
A3210	Evaluation Report for Stage-1,2,3 Submitting to MTHL-PIU	7	08-Aug-17 A 19-Aug-17 A	100%	•												
A3220	Evaluation Final Report (Technical) Submitting to MTHL-PIU/JICA	6	18-Aug-17 A 22-Aug-17 A	100%	•												
A3230	Evaluation Reports (Technical ) Approved by MTHL-PIU/JICA	9	31-Aug-17 A 10-Sep-17 A	100%													
Financia	al Evaluation	37	11-Sep-17 A 09-Nov-17 A			-											
								<u> </u>	Date	Re	vision	Checked			Approved		
Actual Wo	,	Project	Implementation Programme P	rogress Un	dated up to :	1st Mar 201	9				ated up to 31 M		TL				
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# Project Implementation Programme

A otivity ID			Duration	Start	Finish	A other the O/		2017	0	018		2019		120	2021			0023	2004	20.25
Activity ID		Activity Name	Duration in Days	Start	rinish		Q1 Q2	2 Q3 Q4	Q1 Q2	Q3 Q4		2019 2 Q3 Q4		Q3 Q4 Q1	2021 Q2 Q3 Q4	2022 Q1 Q2 Q3	Q4 Q1 Q2	Q3 Q4	Q1 Q2 Q3	2025 Q4 Q1 Q2 Q3
		Envelop C Financial Bid Opening Stage-5	0		11-Sep-17 A	100%														
	A1570	Bid Evaluation Report ( Financial)	12	11-Sep-17A	24-Sep-17 A	100%														
	A1580	Tender Committee approval by MTHL-PIU/JICA	7	25-Sep-17 A	28-Sep-17 A	100%														
	A1590	Evaluation Reports (Financial) approved by JICA	10	28-Sep-17 A	12-Oct-17 A	100%		•												
	A3080	Management Committee approval by MTHL-PIU/JICA	10	30-Sep-17 A	09-Nov-17 A	100%		-												
	Tender A		108	25-Oct-17 A	23-Mar-18 A			-												
	A1550	GC Preparing LOA for Successful Bidder	6	25-Oct-17 A	01-Nov-17 A	100%		1												
	A1600	Finalization and Award of Contract by MMRDA	21	01-Nov-17 A	16-Nov-17 A	100%		•												
	A1610	MMRDA Issue LOA to Successful Bidder	0	17-Nov-17 A	17-Nov-17 A	100%		1												
	A1820	Contract Agreement	24	30-Nov-17 A	19-Jan-18 A	100%		•												
	A1850	Notice to Commencement of Work	0		23-Mar-18 A	100%														
	Package-3		378		23-Mar-18 A	•														
	Tender A		41		31-Jan-17 A															
		Tender Document Review	40	14-Dec-16 A		100%														
	A1630	Tender Assistant Leading Team	41	14-Dec-16 A	31-Jan-17 A	100%														
	A1640	Pre bid Meeting	1	30-Jan-17 A	31-Jan-17 A	100%	1													
	Addendu		78		24-May-17 A			·												
	A1650	Preparing the Tender Pre Bid Quarry 1st Set replay	30	31-Jan-17 A	05-Apr-17 A	100%														
	A1660	Preparing the Tender Addenda -1 Technical Part	30	31-Jan-17 A	07-Mar-17 A	100%														
	A1670	Preparing the Tender Addenda -1 Contractual Part	30	31-Jan-17 A	07-Mar-17 A	100%														
	A1680	Tender Addenda -1 Submitting to MTHL-PIU/JICA	24	07-Mar-17 A	29-Apr-17 A	100%														
	A1690	Reviewing Tender Addenda -1 by MTHL-PIU/JICA	24	04-Apr-17 A	24-May-17 A	100%														
	Addendu		52	07-Apr-17 A				7												
	A1700	Preparing the Tender Pre Bid Quarry 2nd Set replay	21	07-Apr-17 A	25-May-17 A	100%														
	A1710	Preparing the Tender Addenda -2 Technical Part	21	15-Apr-17 A	10-May-17 A	100%														
		Preparing the Tender Addenda -2 Contractual Part	21	15-Apr-17 A	10-May-17 A	100%														
		Tender Addenda -2 Submitting to MTHL-PIU/JICA	12	10-May-17 A	01-Jun-17 A	100%														
	A1740	Reviewing Tender Addenda -2 by MTHL-PIU/JICA	12	24-May-17 A		100%														
		ım -3,4 &5	40	22-May-17 A			▼													
	A1750	Preparing the Tender Pre Bid Quarry 3rd Set replay	14	22-May-17 A	22-Jun-17 A	100%		-												
		Preparing the Tender Addenda -3,4&5 Technical Part	14	30-May-17 A		100%														
		Preparing the Tender Addenda -3,4&5 Contractual Part	14	30-May-17 A		100%														
	A1780	Tender Addenda -3,4&5 Submitting to MTHL-PIU/JICA	6	15-Jun-17 A	22-Jun-17 A	100%		1												
												Date		Revision		Checked		Δ	pproved	
	Actual Wor		<b>-</b> • •	Invalid and the first			- 4 - 7	. 4. 0.1 .	Main 66 f	•			18 Progres	s Updated up to 3			TL			
	Remaining		Project	Implementatio	n Programme Pro	ogress Upd	ated up	p to 31st	Mar 201	Э										
		maining Work								Dago n	0 5/16									
•	<ul> <li>Milestone</li> </ul>									Page n	0 5/10									
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Critical Remaining Work  Milestone	Page no 5/16		
Remaining Work	Project Implementation Programme Progress Updated up to 31st Mar 2019	[]	
	Duriest Implementation Durgrowmen Durgroon Undeted up to 24st May 2040	30-Sep-18	Progress Updated u
Actual Work Summary		Date	Revision

Activity Name ACTIVITY Name A1790 Reviewing Tender Addenda -3,4&5 by MTHL-PIU/JICA		2019 2020 2021 2022 2023 2024 2025
	12 22-Jun-17 A 28-Jun-17 A 100%	Q2         Q3         Q4         Q1         Q2         Q3<
A1800 Addendum-3,4&5 Issued to Bidders (including Addendum & Extension)	1 28-Jun-17 A 05-Jul-17 A 100%	
Bid submission to MTHL & Technical Bid Opening	14 01-Jul-17 A 17-Jul-17 A	
A1810 Bid submission to MTHL & Technical Bid Opening	14 01-Jul-17 A 17-Jul-17 A 100%	
Technical Evaluation	40 19-Jul-17 A 09-Sep-17 A	
A3240 Envelop A for Tender Fee & EMD is opened	2 19-Jul-17 A 21-Jul-17 A 100%	
A3250 Stage-1,2 & 3 Evaluation	14 21-Jul-17 A 09-Aug-17 A 100%	
A3260 Envelop B Technical Bid are opened	0 25-Jul-17 A 25-Jul-17 A 100%	
A3270 Stage-4 Evaluation (Technical)	24 01-Aug-17 A 18-Aug-17 A 100%	
A3280 Evaluation Report for Stage-1,2,3 Submitting to MTHL-PIU	7 10-Aug-17 A 19-Aug-17 A 100%	
A3290 Evaluation Final Report (Technical ) Submitting to MTHL-PIU/JICA	7 17-Aug-17 A 22-Aug-17 A 100%	
A3300 Evaluation Reports (Technical ) Approved by MTHL-PIU/JICA	8 31-Aug-17 A 09-Sep-17 A 100%	
Financial Evaluation	37 11-Sep-17A 09-Nov-17A	
A1830 Envelop C Financial Bid Opening Stage-5	0 11-Sep-17A 11-Sep-17A 100%	
A1860 Bid Evaluation Report ( Financial)	12 11-Sep-17A 24-Sep-17A 100%	
A1870 Tender Committee approval by MTHL-PIU/JICA	7 25-Sep-17 A 28-Sep-17 A 100%	
A1880 Evaluation Reports ( Financial) approved by JICA	10 28-Sep-17 A 12-Oct-17 A 100%	
A3090 Management Committee approval by MTHL-PIU/JICA	10 30-Sep-17 A 09-Nov-17 A 100%	
Tender Award           A1840         GC Preparing LOA for Successful Bidder	108         25-Oct-17 A         23-Mar-18 A         Image: Content of the second seco	
A1890 Finalization and Award of Contract by MMRDA	21 01-Nov-17 A 16-Nov-17 A 100%	
A1900 MMRDA Issue LOA to Successful Bidder	0 17-Nov-17 A 100%	
A3020 Contract Agreement	24 17-Nov-17 A 26-Dec-17 A 100%	
A3030 Notice to Commencement of Work	0 28-Feb-18 A 23-Mar-18 A 100%	
Package-4	961 25-Oct-17 A 19-Nov-20	
GC Tender Assistance Activities - Prequalification           A2580         GC to Prepare PQ Applications Including MMRDA/JICA Approval	611         25-Oct-17 A         08-Oct-19           90         25-Oct-17 A         11-Apr-19         90%	
A2550 MMRDA to Invite PQ Applications (including Addendum & Extension)	60 11-Apr-19 10-Jun-19 0%	
A2560 GC to Evaluate PQ Applications and Prepare PQ Evaluation Report A2570 MMRDA & JICA Approve PQ Evaluation Report	60         10-Jun-19         09-Aug-19         0%           60         09-Aug-19         08-Oct-19         0%	
GC Tender Assistance Activities - Bidding	528 10-Jun-19 19-Nov-20	
P4-010 GC to Prepare Bidding Documents Including MMRDA/JICA Approval P4-1000 MMRDA to Invite Bids	180         10-Jun-19         07-Dec-19         0%           0         07-Dec-19         0%         0	
P4-1010 Pre Bid Meeting P4-1020 Pre Bid Queries submissions final	0 03-Jan-20 0% 75 03-Jan-20 18-Mar-20 0%	
P4-1030 Addendum Preparation	60 26-Jan-20 26-Mar-20 0%	
P4-1040 Addendum Submission to MTHL-PIU/JICA	60 09-Feb-20 09-Apr-20 0%	
P4-1050 Addendum Approved by MTHL-PIU/JICA P4-1060 Addendum Issued to Bidders (including Addendum & Extension)	60         16-Feb-20         16-Apr-20         0%           60         23-Feb-20         23-Apr-20         0%         1	
P4-1000 Addendam issued to Bidders (including Addendam & Extension) P4-1070 Bid submission to MTHL & Technical Bid Opening	0 07-May-20 0%	
Actual Work		Date         Revision         Checked         Approved
Remaining Work	Project Implementation Programme Progress Updated up to 31st Mar 2019	30-Sep-18 Progress Updated up to 31 M JS TL
Critical Remaining Work		
♦ Milestone	Page no 6/1	6

# Project Implementation Programme

Activity ID	Activity Name	Duration in	Start	Finish	Activity %	2017 2018	2019 2020 2	021 2022	2023 2024 2025
		Days	00.1:	00.1.07				Q3 Q4 Q1 Q2 Q3 Q4	4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
	Evaluate Bids, Prepare Bid Evaluation Report (Technical)	45		22-Jun-20	0%				
	Evaluation Reports (Technical ) Approved by MTHL-PIU/JICA	45	07-Jun-20	22-Jul-20	0%				
	Financial Bid Opening	0		22-Jul-20	0%			·····	
	Evaluate Bids, Prepare Bid Evaluation Report (Financial)	30	23-Jul-20	22-Aug-20	0%				
	Tender Committee approval by MTHL-PIU/JICA	30		21-Sep-20	0%				
	Evaluation Reports (Financial) approved by JICA	30		21-Oct-20	0%				
	MMRDA Issue LOA to Successful Bidder	1	21-Oct-20	22-Oct-20	0%				
	Works Commencement	14	22-Oct-20	05-Nov-20	0%				
P4-1160	Prepare Contract Agreement & MMRDA/Contractor to Sign CA	28		19-Nov-20	0%		•		
Construc	tion Stage	1776	23-Mar-18 A	01-Feb-23					━━━━ =
	1 Sewri Interchange and adjoining 10.38 km bridge (0+000 to 10+380)	1775	23-Mar-18 A	31_ lan_23					<b>→</b> ▼
Mobilisa		180		19-Sep-18 A					
P1-2250	Mobilisation	30	23-Mar-18 A	22-Apr-18 A	100%				
P1-2260	Construction Programme, completion of Soil Investigation, Submit Final plans	150	22-Apr-18 A	19-Sep-18 A	100%				
Schedu	e No. 1: General Items	1643	30-Apr-18 A	29-Oct-22				7	
	Allow for DNP Services (Section VII GC Clause 11)	2	30-Apr-18 A	01-May-18 A	100%				
		-		or may rorr	100 /0				
D1 1000	Provision and maintenance of health and safety measures during the Time for Completion	1643	30-Apr-18 A	20 Oct 22	20.39%				
P1-1080	(Section VII GC Sub-Clause 6.7)	1043	30-Apr-18 A	29-001-22	20.39%				
D4 4000		4040	20 Arr 10 A	20.0-1.02	00.000/	││ │ │ │ │ │ │ <mark>_ └ ─ └ ─ │</mark>			
P1-1090	Provision (construction) of office facilities with furniture and office equipment	1643	30-Apr-18 A	29-UCI-22	20.39%				
		. ·					<u></u>		
P1-1100	Maintenance of above office facilities for the Employer during the Time for Completion	1643	30-Apr-18 A	29-Oct-22	20.39%				
	(Section VII GC Sub-Clause 6.6)								
P1-1130	Operation and maintenance of diversion roads during the Time for Completion (Section VII	2	30-Apr-18 A	01-May-18 A	100%				
	GC Sub-Clause 4.15)								
P1-1140	Clearing from Site and Works after Taking-Over (Section VII GC SubClause 4.23)	2	30-Apr-18 A	01-May-18 A	100%				
		_		,					
P1-1150	Supply of vehicles, boats, etc. for the Employer (Section VII GC Sub-Clause 6.6)	1643	30-Apr-18 A	29-Oct-22	20.39%				
11-1100		1040	00-Api - 10 A	20-001-22	20.0070				
D1 1100	Operation and maintenance of above vahiology heats at far the Employer during the Time	4640	20 Amr 10 A	20. Oct 22	20.20%				
P1-1160	Operation and maintenance of above vehicles, boats, etc. for the Employer during the Time for Completion	1643	30-Apr-18 A	29-001-22	20.39%				
<b>D</b> 4 4000				04 NA 40 A	4000/				
P1-1000	Performance Security (Section VII. GC Sub-Clause 4.2)	1	30-May-18 A	31-May-18 A	100%				
P1-1010	Insurance for Works (Section VII GC Sub-Clause 18.2)	1	30-May-18 A	31-May-18 A	100%				
P1-1020	Insurance for Contractor's Equipment (Section VII GC Sub-Clause 18.2)	1	31-May-18 A	01-Jun-18 A	100%				
P1-1030	Insurance against Injury to Persons and Damage to Property (Section VII GC Sub-Clause	2	31-May-18 A	01-Jun-18 A	100%				
	18.3)	-	••••••••••••••••••••••••••••••••••••••						
D1 1040	Insurance for Contractor's Personnel (Section VII GC Sub-Clause 18.4)	2	31-May-18 A	01 Jun 18 A	100%				
F 1-1040	insurance for Contractor's Personner (Section VII GC Sub-Chause 10.4)	2	JI-Way-TOA	01-Juli-10A	100 /6				
	Insurance for Design Liphility (Rection )/III, DC Cub (Clause 40.5)	<u>^</u>	21 May 40 4	01 1/ 10 4	4000/	······································		++++++++++	
P1-1050	Insurance for Design Liability (Section VIII, PC Sub-Clause 18.5)	2	31-1Vlay-18 A	01-Jun-18 A	100%				
P1-1060	Automobile Liability Insurance (Section VIII, PC Sub-Clause 18.6)	2	31-May-18 A	01-Jun-18 A	100%				
P1-1110	Removal/clearing of above office facilities for the Employer and for the Engineer (Section	2	31-Jan-19 A	01-Feb-19 A	100%				
	VII GC Sub-Clause 6.6)								
P1-1120	Provision and removal of diversion roads (Section VII GC Sub-Clause 4.15)	2	31-Jan-19 A	01-Feb-19A	100%				
				-					
Schedu	e No. 2: Contractor's Documents	1591	21-Jun-18 A	29-Oct-22					
	Technical Design documents of highway and interchange alignments	90		19-Sep-18 A	100%	┝╍╞╍╍╍┊╍╍╍┊╍╍╍╞╍╍╍╞╍╍╍╞╍╍╍╞		++	{
F 1- 1200	rechnical Design documents of highway and interchange alighthetits	90	ZI-JUII-TOA	19-96h-10 H	100%				
D4 4000	Taskaial Darian decompate of easthe and	00	04 1 40 1	40.0	1000/				
P1-1220	Technical Design documents of earthwork	90	21-Jun-18 A	19-Sep-18 A	100%				
				· · · · · ·					
P1-1230	Technical Design documents of foundation	180	21-Jul-18 A	17-Jan-19 A	100%	││ │ │ │ │ │ │ │ │ <mark>──┬──┦</mark> │			
P1-1260	Technical Design documents of superstructure (steel)	365	21-Jul-18 A	29-Dec-19	25%	││ ┊ ┊ ┆ │ ┊ ┆ <mark>╾┿╼┿╼╡</mark>			
				1				<u></u>	
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Actual Wo	rk Summary						Date         Revision           30-Sep-18         Progress Updated up to 31		Approved
Remaining	Work	Project	Implementatio	n Programme P	rogress Up	odated up to 31st Mar 2019			-
Critical Re	maining Work	-		-					
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		Date	Revision
Actual Work Summary			
Remaining Work	Project Implementation Programme Progress Updated up to 31st Mar 2019	30-Sep-18	Progress Updated up to
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Critical Remaining Work		'	1
♦ ♦ Milestone	Page no 7/16		
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# Project Implementation Programme

ty ID	Activity Name	Duration in	Start	Activity %	2017	2018	2019		2020		2021	2022		2023		2024	
	1240 Technical Design documents of substructure	Days	10 Son 19 A 04 Avr 10	Complete 4	21 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 C	Q3 Q4 Q	21 Q2 Q3	Q4 Q1 Q2	2 Q3 Q4 Q	1 Q2 Q3	Q4 Q1	Q2 Q3	Q4 Q1	Q2 Q3 Q4	4 Q1
P1-		210	19-Sep-18 A 04-Aug-19	40%													
P1-	1270 Technical Design documents of dolphins	150	19-Sep-18 A 16-Feb-19 A	100%			-						·				
P1-	1400 Submission of samples (GC Sub-Clause7.2)	150	19-Sep-18 A 16-Feb-19 A	100%													
			· .														
P1-	1310 Construction Design documents of foundation	180	31-Oct-18 A 17-Jul-19	40%													
P1-	1320 Construction Design documents of substructure	210	18-Nov-18 A 03-Oct-19	40%		-											
P1-	1250 Technical Design documents of superstructure (concrete)	240	31-Dec-18 A 28-Aug-19	37.5%													
		150		20.220/			-										
P1-	1300 Construction Design documents of earthwork	150	31-Jan-19 A 30-Jun-19	39.33%													
P1-	1340 Construction Design documents of superstructure (steel)	240	28-Feb-19 A 27-Feb-20	12.92%													
P1-	1350 Construction Design documents of dolphins	90	28-Feb-19 A 29-May-19	34.44%			-										
D1	1330 Construction Design documents of superstructure (concrete)	240	01-Mar-19 A 27-Oct-19	12.5%													
		240	01-Mai-19A 27-Oct-19	12.5%													
P1-	1210 Aesthetic Strategy Report and Desktop study for Wind Tunnel Test	1	22-Mar-19 A 23-Mar-19 A	100%													
P1-	1280 Technical Design documents of pavement	120	30-Apr-19 28-Aug-19	0%				•			++						
P1-	1360 Construction Design documents of pavement	90	28-Aug-19 26-Nov-19	0%				<b>—</b>									
	1290 Technical Design documents of bridge ancillaries	120	31-Aug-19 29-Dec-19	0%													
	1370 Construction Design documents of bridge ancillaries	90	29-Dec-19 28-Mar-20	0%				-	-								
	1380 Preparation and supply of as-built documents (GC Sub-Clause 5.6)	120	01-Jul-22 29-Oct-22	0%									<b>—</b>				
P1-	1390 Preparation and supply of Maintenance Manual (Section VII GC Sub-Clause 5.7)	120	01-Jul-22 29-Oct-22	0%													
P1-	1410 Tests	30	29-Sep-22 29-Oct-22	0%													
Sch	edule No. 3: Temporary Works	1589	30-Apr-18 A 05-Sep-22														
P1-	1420 Construction of temporary jetties including materials	180	30-Apr-18 A 27-Oct-18 A	100%													
P1-	1430 Casting yards preparation (50%)	210	30-Apr-18 A 26-Nov-18 A	100%													
P1-	1450 Salvage value to Contractor (negative cost)	1313	31-Jan-19A 05-Sep-22	4.49%													
			•														
P1-	1490 Casting yards maintenance and clearing after Contract completion (50%)	1313	31-Jan-19 A 09-Dec-21	25%													
P1-	1440 Removal of temporary jetties	90	09-Dec-21 09-Mar-22	0%													
	1460 Removal of casting yards	45	09-Dec-21 23-Jan-22	0%													
	1470 Clearing of casting yards	45	23-Jan-22 09-Mar-22	0%													
	edule No. 4: Construction of Foundation Piles and Pile Caps for Piers an		21-Jun-18 A 14-Sep-21	070										††			
	1500 "Materials on the Site (refer to GC Sub-	900	21-Jun-18 A 08-Dec-20	31.44%													
F 1-	Clause 14.5 (c) (i)): steel reinforcing bars	900	21-Juli-18A 08-Dec-20	51.44 %													
P1-	1510 Ditto: steel liner pipes	900	21-Jun-18 A 08-Dec-20	31.44%						-							
P1-	1530 Loading tests and test reports on bridge pier foundation piles	60	21-Jun-18 A 20-Aug-18 A	100%													
P1-	1550 Loading tests and test reports on abutment foundation piles	60	30-Sep-18 A 29-Nov-18 A	100%		-											
P1-	1520 Construction of Open foundation/Spread foundation/Raft foundation, piles and pile ca	ap 945	29-Nov-18A 14-Sep-21	5%						·····			+				
P1-	1540 Construction of abutment foundation piles and pile caps including geotechnical	180	29-Dec-18 A 19-Oct-19	5%													
	investigation																
P1-	1570 Loading tests and test reports on electrical platform pier foundation piles	60	30-Dec-18 A 28-Feb-19 A	100%													
P1-	1590 Loading tests and test reports on emergency rescue station platform pier foundation p	iles 60	31-Mar-19 30-May-19	0%			-										
P1-	1560 Construction of electrical platform pier foundation piles and pile caps including	180	19-Oct-19 16-Apr-20	0%					-								
P1-	geotechnical investigation 1580 Construction of emergency rescue station platform pier foundation piles and pile cap	180	16-Apr-20 13-Oct-20	0%						,							
		,					'	Det-		, , , , , , , , , , , , , , , , , , ,			· · · · · ·		A		
Actu	al Work Summary						-	Date		evision		necked	+		Approv	/ed	
	naining Work	Project	Implementation Programme P	Progress Upda	ed up to 31st N	lar 2019	30	-Sep-18  P	Progress Upd	ateu up to 31	IVI JS		TL				
Ren																	
	cal Remaining Work	-		•	•												
	cal Remaining Work	-		•	·	Page no	8/16						1				

# Project Implementation Programme

Activity ID Activity Name	Duration in Days	Start	Finish	Activity % Complete 4	2017 2018 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 C	2019 22 Q3 Q4	2020 2021 Q1 Q2 Q3 Q4 Q1 Q2 0	2022 Q3 Q4 Q1 Q2 Q3 Q4	2023         2024         2025           Q1         Q2         Q3         Q4         Q1         Q2         Q3         Q4         Q1         Q2         Q3
Schedule No. 5: Construction of Piers and Abutments including Pier Caps		28-Feb-19 A	04-Mar-22			~ ~ ~ ~			
P1-1670 Construction of cast-in-situ concrete bridge piers and pier caps	1009	28-Feb-19 A		3.07%					
	1000		31100 22	5.07 /0					
P1-1600 "Materials on the Site (refer to GC Sub-	900	01-Mar-19 A	17-Aug-21	3.33%					
Clause 14.5 (c) (i)): steel reinforcing bars	500	0 Final FIGA	Tr Hug-21	0.0070					
P1-1610 Ditto: structural steel shapes	900	01-Mar-19 A	17_Aug_21	3.33%					
The fore Ditto. Structural steel shapes	300	01-10101-137	17-Aug-21	5.5570					
P1-1620 Ditto: pre-stressing cables	900	01-Mar-19 A	17 Aug 21	3.33%				•••••	
r i- 1020 Ditto, pre-stressing cables	900	01-IVIAI-19A	17-Aug-21	5.55 %					
P1-1630 Construction of cast-in-situ concrete bridge pier caps	1009	30-May-19	04-Mar-22	0%					
P1-1640 Construction of cast-in-situ concrete abutment caps	450	19-Oct-19	11-Jan-21	0%					
P1-1640 Construction of cast-in-situ concrete abutment structures	450	19-Oct-19	11-Jan-21	0%					
P1-1650 Construction of cast-in-situ concrete electrical platform pier caps	180	16-Apr-20	13-Oct-20	0%					
P1-1660 Construction of cast-in-situ concrete emergency rescue station platform pier caps	180	13-Oct-20	11-Apr-21	0%					
P1-1690 Construction of cast-in-situ concrete electrical platform pier caps	180	13-Oct-20	11-Apr-21	0%					
P1-1700 Construction of cast-in-situ concrete emergency rescue station platform piers and		13-Oct-20	11-Apr-21	0%					
caps		10-001-20	11-7401-21	070					
P1-1710 Construction of earthwork (backfill, compaction, etc.) and other works for abutment	s 180	11-Jan-21	10-Jul-21	0%					
	1273	28-Feb-19 A		078					
Schedule No. 6: Construction of Concrete Superstructure				0.000/		<u>i</u>			
P1-1740 Fabrication of precast concrete structural elements for bridges	1040	28-Feb-19 A	03-Jan-22	2.98%					
D1 1720 Materials on the Site (refer to CC Sub Claure 14.5 (a) (i)) at a state visual to the	000	20 Mar 40 4	15 8 04	0.440/					
P1-1720 Materials on the Site (refer to GC Sub-Clause 14.5 (c) (i)): steel reinforcing bars	900	30-Mar-19 A	15-Sep-21	0.11%					
P1-1730 Ditto: pre-stressing cables	900	12-Aug-19		0%					
P1-1750 Transportation and erection of precast concrete structural elements for bridges	990	27-Aug-19	13-May-22	0%					
P1-1760 Construction of cast-in-situ concrete bridge structures	1025	11-Oct-19	01-Aug-22	0%					
P1-1780 Construction of cast-in-situ /Pre Cast concrete emergency rescue station structures			20-Feb-22	0%					
P1-1770 Construction of cast-in-situ concrete electrical platform structures	500	11-Apr-21	24-Aug-22	0%					
Schedule No. 7: Fabrication and Erection of Steel Superstructure	1123	03-Jul-19	31-Jul-22						
P1-1790 Materials on the Site (refer to GC SubClause 14.5 (c) (i)): structural steel materials		03-Jul-19	19-Mar-22	0%					
P1-1800 Fabrication of steel structural elements for bridges	900	02-Aug-19	18-Jan-22	0%					
P1-1810 Fabrication of steel structural elements for others	900	30-Nov-19	18-May-22	0%					
P1-1820 Transportation to and erection at the Site of fabricated steel structural elements for	bridges 900	30-Nov-19	18-May-22	0%					
P1-1830 Transportation to and erection at the Site of fabricated steel structural elements for	others 820	29-Mar-20	27-Jun-22	0%					
P1-1840 Surface anti-corrosion coating of erected steel structure for bridges	730	01-Jul-20	01-Jul-22	0%					
P1-1850 Surface anti-corrosion coating of erected steel structure for others	450	07-May-21	31-Jul-22	0%					
Schedule No. 8: Construction of Earthworks	660	19-Sep-19	10-Jul-21						
P1-1860 Materials on the Site (refer to GC SubClause 14.5 (c) (i)): steel reinforcing bars for	450	19-Sep-19	12-Dec-20	0%					
retaining walls, etc.									
P1-1870 Construction of reinforced concrete retaining walls	600	18-Nov-19	10-Jul-21	0%					
P1-1880 Construction of earthwork (fill, compaction, etc.)	600		10-Jul-21	0%					
Schedule No. 9: Construction of Dolphins and Fenders	780		19-May-21		-               <del> </del>				
P1-1890 "Materials on the Site (refer to GC Sub-	180	31-Mar-19		0%		<u> </u>			
Clause 14.5 (c) (i)): steel reinforcing bars	100		500 10	570					
P1-1900 Ditto: steel liner pipes	180	31-Mar-19	27-Sep-19	0%					
P1-1900 Construction of dolphin foundation piles including geotechnical investigation	210		27-Oct-19	0%		╺┿╾┿╸│			
P1-1920 Loading tests and test reports on dolphin foundation piles	60	31-Mar-19	30-May-19	0%					
P1-1930 Construction of concrete structure	300	27-Oct-19	22-Aug-20	0%					
P1-1940 Fenders including Materials	270		19-May-21	0%					
Schedule No. 10: Fabrication and Installation of Bridge Ancillaries	660		11-Aug-22	570				<b></b>	
P1-1950 Materials on the Site (refer to GC SubClause 14.5 (c) (i)): bridge bearings (shoes)	600	20-Oct-20	12-Jun-22	0%					
P1-1950 Materials on the site (refer to GC Subclause 14.5 (c) (r)). Druge bearings (shoes) P1-1960 Ditto: expansion joints	600	20-Oct-20 20-Oct-20	12-Jun-22	0%					
P1-1990 Crash barriers including Materials	600	19-Nov-20	12-Jul-22	0%					
P1-2000 Deck waterproofing including Materials	600	19-Nov-20	12-Jul-22	0%					
P1-2000 Deck waterprooning including materials P1-1970 Installation of bridge bearings (shoes)	450		12-Jui-22 11-Aug-22	0%					
P1-1970 Installation of expansion joints	450	18-May-21		0%					
Schedule No. 11: Construction of Asphalt Pavement	270	01-Feb-22		070					
P1-2010 Asphalt pavement including Materials		01-Feb-22		09/					
	270 600	10-Jun-21		0%	·····				╈╤╍┊╍╍┊╍╍┊╍╍┊╍╍┊╍╍┊╍╍┊╍╸┊╍╸
Schedule No. 12: Fabrication and Installation of Miscellaneous Items	000	10-Jun-21	51-5an-25						
						Date	Revision	Checked	Approved
Actual Work Summary							Progress Updated up to 31 M.		Αμριστου
Remaining Work	Project	Implementatio	on Programme F	Progress Upd	ated up to 31st Mar 2019				
Critical Remaining Work							1	1	
♦ Milestone					Page no 9/16				

Mumbai Trans Harbour Link (MTHL) PIP		Project In	mplemen	ntation	n Prograi	mme			Attachment -VI
Activity ID Activity Name P1-2020 Materials on the Site (refer to GC SubClause 14.5 (c) (i)): noise barriers P1-2030 Ditto: view barriers	Duration Days 365 365	10-Jun-21	Finish 10-Jun-22 10-Jun-22	Activity % Complete 0% 0%	2017 4 Q1 Q2 Q3 Q4	2018           Q1         Q2         Q3         Q4         Q1         0	2019 2020 2 22 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2	021 2022 Q3 Q4 Q1 Q2 Q3 Q4 	2023         2024         2025           Q1         Q2         Q3         Q4         Q1 <t< th=""></t<>
P1-2070 Drainage facility including Materials	450	05-Aug-21	29-Oct-22	0%					
P1-2040 Installation of noise barriers P1-2050 Installation of view barriers	450		02-Nov-22 02-Nov-22	0% 0%					
P1-2060 Safety fences including Materials	365	29-Oct-21	29-Oct-22	0%					
P1-2080 Kerbs including Materials P1-2090 Road furniture including Materials	365		29-Oct-22 29-Oct-22	0% 0%					
P1-2100 Pavement marking including Materials	180		29-Oct-22	0%					
P1-2120 Gantry/overhang (cantilever)-type signage support structures including Materials P1-2110 Road signage including Materials	180	2	29-Oct-22 29-Oct-22	0% 0%					
P1-2110 Road signage including Materials	120		29-Oct-22	0%					
P1-2140 Traffic signals including Materials and testing	90			0%					
P1-2150 Restoration of removed items P1-2160 Other miscellaneous items including Materials and testing as required	90 90			0% 0%					
Schedule No. 13: Provisional Sums	2	31-Jan-19 A	01-Feb-19 A			▼			
P1-2240 Schedule No. 13: Provisional Sums	2	31-Jan-19A	01-Feb-19 A	100%					
Remaining Works & Taking Over Certificate	0	31-Jan-23	31-Jan-23						
A2130 Contractor to Achieve Issuance of Taking Over Certificate	0		31-Jan-23	0%					•
Package 2: 7.8 km long bridge (10+380 to 18+187) + interchanges	174								┦
P2-2200 Mobilisation	180 30		19-Sep-18 A 22-Apr-18 A	100%					
P2-2210 Construction Programme, completion of Soil Investigation, Submit Final plans	150	22-Apr-18 A	19-Sep-18 A	100%					
Schedule No. 1: General Items	164	3 23-Mar-18 A	29-Nov-22						,
P2-1000 Performance Security (Section VII. GC Sub-Clause 4.2)	1		26-Mar-18 A	100%					
P2-1010 Insurance for Works (Section VII GC Sub-Clause 18.2)	1	22 Mar 19 A	17 Apr 19 A	100%					
P2-1010 Insurance for Works (Section VII GC Sub-Clause 18.2)	I	23-1VIAI - 18 A	17-Apr-18 A	100%					
P2-1020 Insurance for Contractor's Equipment (Section VII GC Sub-Clause 18.2)	1	23-Mar-18 A	10-Apr-18 A	100%		•			
P2-1030 Insurance against Injury to Persons and Damage to Property (Section VII GC Sub-	-Clause 2	23-Mar-18 A	17-Apr-18 A	100%					
		20 10 10 10 10		100 /0					
P2-1040 Insurance for Contractor's Personnel (Section VII GC Sub-Clause 18.4)	2	23-Mar-18 A	16-Apr-18 A	100%					
P2-1050 Insurance for Design Liability (Section VIII, PC Sub-Clause 18.5)	2	23-Mar-18 A	16-Apr-18 A	100%		•			
P2-1060 Automobile Liability Insurance (Section VIII, PC Sub-Clause 18.6)	2	23-Mar-18 A	19-Apr-18 A	100%					
P2-1080 Provision and maintenance of health and safety measures during the Time for Cor				18.5%					
(Section VII GC Sub-Clause 6.7)									
P2-1090 Provision (construction) of office facilities with furniture and office equipment	1643	3 31-May-18 A	29-Nov-22	18.5%					
P2-1100 Maintenance of above office facilities for the Employer during the Time for Comple (Section VII GC Sub-Clause 6.6)	etion 164	3 31-May-18 A	29-Nov-22	18.5%					
P2-1150 Supply of vehicles, boats, etc. for the Employer (Section VII GC Sub-Clause 6.6)	164	3 31-May-18 A	29-Nov-22	18.5%					
P2-1160 Operation and maintenance of above vehicles, boats, etc. for the Employer during	the Time 164	3 31-May-18 A	29-Nov-22	18.5%					
for Completion									
P2-1070 Allow for DNP Services (Section VII GC Clause 11) P2-1110 Removal/clearing of above office facilities for the Employer and for the Engineer (	Section 2	27-Nov-22 27-Nov-22	29-Nov-22 29-Nov-22	0% 0%					
VII GC Sub-Clause 6.6)	-								
P2-1120 Provision and removal of diversion roads (Section VII GC Sub-Clause 4.15) P2-1130 Operation and maintenance of diversion roads during the Time for Completion (Se	ection VII 2	27-Nov-22 27-Nov-22	29-Nov-22 29-Nov-22	0% 0%					
GC Sub-Clause 4.15) P2-1140 Clearing from Site and Works after Taking-Over (Section VII GC SubClause 4.23)	2	27-Nov-22	29-Nov-22	0%					
Schedule No. 2: Contractor's Documents	162	2 21-Jun-18 A	29-Nov-22						/
P2-1170 Technical Design documents of highway and interchange alignments	90	21-Jun-18 A	19-Sep-18 A	100%					
	I		1		<u> </u>		Date Revision	Checked	Approved
Actual Work Summary Remaining Work	Proi	ect Implementatio	on Programme Pr	rogress Un	dated up to 31st	Mar 2019	30-Sep-18 Progress Updated up to 31		••
Critical Remaining Work				- <u></u>					
♦ ♦ Milestone						Page no 10/16			
							1		

# Project Implementation Programme

					4 6005
/ity ID Activity Name	Duration in Days	Start Finish		2018     2019     2020     2021     2022     2023     2022       2     Q3     Q4     Q1     Q2     Q3     Q	4 2025 Q3 Q4 Q1 Q2 Q3
P2-1190 Technical Design documents of earthwork	90	21-Jun-18 A 19-Sep-18 A	100%		
P2-1200 Technical Design documents of foundation	180	21-Jul-18 A 04-Aug-19	30%		
P2-1230 Technical Design documents of superstructure (steel)	365	21-Jul-18 A 11-Dec-19	30%		
P2-1210 Technical Design documents of substructure	210	19-Sep-18 A 25-Aug-19	30%		
P2-1240 Technical Design documents of dolphins	150	19-Sep-18 A 14-Jul-19	30%		
	450		000/		
P2-1370 Submission of samples (GC Sub-Clause7.2)	150	19-Sep-18 A 14-Jul-19	30%		
P2-1270 Construction Design documents of earthwork	150	30-Sep-18 A 14-Jul-19	30%		
P2-1220 Technical Design documents of superstructure (concrete)	240	19-Oct-18 A 21-Oct-19	15%		
P2-1280 Construction Design documents of foundation	180	31-Oct-18 A 02-Nov-19	30%		
P2-1290 Construction Design documents of substructure	210	18-Nov-18 A 24-Oct-19	30%		
P2-1300 Construction Design documents of superstructure (concrete)	240	12-Mar-19 A 20-Dec-19	7.92%		
	240				
P2-1180 Aesthetic Strategy Report and Desktop study for Wind Tunnel Test	1	22-Mar-19 A 23-Mar-19 A	100%		
P2-1310 Construction Design documents of superstructure (steel)	240	14-Jun-19 09-Feb-20	0%		
P2-1250 Technical Design documents of pavement	120	23-Jun-19 21-Oct-19	0%		
P2-1320 Construction Design documents of dolphins	90	14-Jul-19 12-Oct-19	0%		
P2-1260 Technical Design documents of bridge ancillaries	120	13-Aug-19 11-Dec-19	0%		
P2-1330 Construction Design documents of pavement	90	21-Oct-19 19-Jan-20	0%		
P2-1340 Construction Design documents of bridge ancillaries	90	11-Dec-19 10-Mar-20	0%		
P2-1350 Preparation and supply of as-built documents (GC Sub-Clause 5.6)	120	01-Aug-22 29-Nov-22	0%		
P2-1360 Preparation and supply of Maintenance Manual (Section VII GC Sub-Cl		01-Aug-22 29-Nov-22	0%		
P2-1380 Tests	30	30-Oct-22 29-Nov-22	0%		
Schedule No. 3: Temporary Works	1617	31-May-18 A 03-Nov-22			
P2-1390 Construction of temporary jetties including materials	180	31-May-18 A 27-Nov-18 A	100%		
P2-1400 Casting yards preparation (50%)	210	31-May-18 A 27-Dec-18 A	100%		
	210		100 /0		
P2-1450 Casting yards maintenance and clearing after Contract completion (50%	%) 1313	21-Feb-19 A 15-Jan-21	50%		
P2-1420 Salvage value to Contractor (negative cost)	1313	31-Mar-19 03-Nov-22	0%		
P2-1420 Salvage value to Contractor (negative cost) P2-1410 Removal of temporary jetties	90	15-Jan-21 15-Apr-21	0%		
P2-1410 Removal of casting yards	45	15-Jan-21 01-Mar-21	0%		
P2-1440 Clearing of casting yards	45	01-Mar-21 15-Apr-21	0%		
		21-Jun-18A 23-Sep-21			
Schedule No. 4: Construction of Foundation Piles and Pile Caps			21 449/		
P2-1460 "Materials on the Site (refer to GC Sub- Clause 14.5 (c) (i)): steel reinforcing bars	900	21-Jun-18 A 07-Dec-20	31.44%		
P2-1470 Ditto: steel liner pipes	900	21-Jun-18A 07-Dec-20	31.44%		
P2-1490 Loading tests and test reports on bridge pier foundation piles	60	31-Oct-18 A 30-Dec-18 A	100%		
P2-1510 Loading tests and test reports on abutment foundation piles	60	31-Oct-18 A 30-Dec-18 A	100%		
P2-1480 Construction of Open foundation/Spread foundation/Raft foundation, pi	iles and pile cap 945	31-Jan-19 A 23-Sep-21	4%		
P2-1530 Loading tests and test reports on electrical platform pier foundation pile	es 60	15-Feb-19 A 16-Apr-19	73.33%		
P2-1500 Construction of abutment foundation piles and pile caps including geote investigation	echnical 180	31-Mar-19 27-Sep-19	0%		
P2-1550 Loading tests and test reports on emergency rescue station platform pie	er foundation piles 60	16-Apr-19 15-Jun-19	0%		
Actual Work Summary				Date Revision Checked Approved	
		-		30-Sen-18 Progress Undated up to 31 M US	
Remaining Work	Project	Implementation Programme P	rogress Updated up to 31st Mar 20	19	
Critical Remaining Work					
Milestone				Page no 11/16	

Actual Wor	rk 🗸	Summary
Remaining	Work	
Critical Rei	maining Work	

# Project Implementation Programme

	Activity Name	Duration in Days	Start	Finish	Activity % Complete 4		2	03 01 0	2019	2020 Q1 Q2 Q3	01 01 01
P2-1520	Construction of electrical platform pier foundation piles and pile caps including	180	27-Sep-19	25-Mar-20	0%	<u>21 Q2 Q3 Q4</u>		Q3 Q4 Q			Q4 Q1 Q2
	geotechnical investigation										
	Construction of emergency rescue station platform pier foundation piles and pile cap	180	25-Mar-20	21-Sep-20	0%						
	e No. 5: Construction of Piers and Abutments including Pier Caps	1069	01-Apr-19	05-Mar-22							
P2-1560	"Materials on the Site (refer to GC Sub-	900	01-Apr-19	17-Sep-21	0%						
D0 4570	Clause 14.5 (c) (i)): steel reinforcing bars	000	04.4	47.0	00/						
	Ditto: structural steel shapes	900 900	01-Apr-19	17-Sep-21 17-Sep-21	0% 0%				i i		
	Ditto: pre-stressing cables Construction of cast-in-situ concrete bridge piers and pier caps	1009	01-Apr-19 30-May-19	04-Mar-22	0%						
	Construction of cast-in-situ concrete bridge pier caps	1009	31-May-19	05-Mar-22	0%					<u></u>	
	Construction of cast-in-situ concrete abutment caps	450	27-Sep-19	20-Dec-20	0%						
	Construction of cast-in-situ concrete abutment structures	450	27-Sep-19	20-Dec-20	0%						
P2-1610	Construction of cast-in-situ concrete electrical platform pier caps	180	25-Mar-20	21-Sep-20	0%						
	Construction of cast-in-situ concrete emergency rescue station platform pier caps	180	21-Sep-20	20-Mar-21	0%					-	
	Construction of cast-in-situ concrete electrical platform piers and pier caps	180	21-Sep-20	20-Mar-21	0%					<b>—</b>	
	Construction of earthwork (backfill, compaction, etc.) and other works for abutments	180	20-Dec-20	18-Jun-21	0%						
P2-1660	Construction of cast-in-situ concrete emergency rescue station platform piers and pier	180	20-Mar-21	16-Sep-21	0%						
	caps	100.1									
	e No. 6: Construction of Concrete Superstructure	1281	28-Feb-19 A								
P2-1700	Fabrication of precast concrete structural elements for bridges	1040	28-Feb-19 A	03-Jan-22	2.98%						
D2 4000	Materials on the Site (refer to CC Sub Clause $44 = (a) (i)$ ), start starting there	000	20 Mar 40 4	15 San 04	0.440/						
rz-1080	Materials on the Site (refer to GC Sub-Clause 14.5 (c) (i)): steel reinforcing bars	900	30-Mar-19 A	15-Sep-21	0.11%						
D2 1600	Ditto: pre-stressing cables	900	12-Sep-19	28-Feb-22	0%			<u> </u>		<u></u>	····
	Transportation and erection of precast concrete structural elements for bridges	900	27-Sep-19	13-Jun-22	0%						
	Construction of cast-in-situ concrete bridge structures	1025	11-Nov-19	01-Sep-22	0%						
	Construction of cast-in-situ concrete electrical platform structures	500	19-Apr-21	01-Sep-22	0%						
	Construction of cast-in-situ /Pre Cast concrete emergency rescue station structures	450	04-May-21	28-Jul-22	0%						
	e No. 7: Fabrication and Erection of Steel Superstructure	1114		02-Jun-22							
	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): structural steel materials	990	15-May-19	29-Jan-22	0%					+	
	Fabrication of steel structural elements for bridges	900	14-Jun-19	30-Nov-21	0%						
	Fabrication of steel structural elements for others	900	12-Oct-19	30-Mar-22	0%						
P2-1780	Transportation to and erection at the Site of fabricated steel structural elements for bridges	900	12-Oct-19	30-Mar-22	0%						
P2-1790	Transportation to and erection at the Site of fabricated steel structural elements for others	820	09-Feb-20	09-May-22	0%						
	Surface anti-corrosion coating of erected steel structure for bridges	730	03-May-20	03-May-22	0%						
	Surface anti-corrosion coating of erected steel structure for others	450 660	09-Mar-21	02-Jun-22 18-Jun-21	0%						_
	e No. 8: Construction of Earthworks		28-Aug-19		00/						
P2-1820	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): steel reinforcing bars for retaining walls, etc.	450	28-Aug-19	20-Nov-20	0%						_
D2 1020	5	600	27 Oct 10	10 Jun 01	0%					<u></u>	
	Construction of reinforced concrete retaining walls Construction of earthwork (fill, compaction, etc.)	600	27-Oct-19 27-Oct-19	18-Jun-21 18-Jun-21	0%						
	e No. 9: Construction of Dolphins and Fenders	780	31-Mar-19	19-May-21	078					+	
	"Materials on the Site (refer to GC Sub-	180	31-Mar-19	27-Sep-19	0%						
. 2 1000	Clause 14.5 (c) (i)): steel reinforcing bars	100			0.10						
P2-1860	Ditto: steel liner pipes	180	31-Mar-19	27-Sep-19	0%						
P2-1870	Construction of dolphin foundation piles including geotechnical investigation	210	31-Mar-19	27-Oct-19	0%		+	† <b>††</b>		+	
	Loading tests and test reports on dolphin foundation piles	60	31-Mar-19	30-May-19	0%						
	Construction of concrete structure	300	27-Oct-19	22-Aug-20	0%				-	+	
P2-1900	Fenders including Materials	270		19-May-21	0%						
	e No. 10: Fabrication and Installation of Bridge Ancillaries	675	20-Nov-20	26-Sep-22							
P2-1910	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): bridge bearings (shoes)	600	20-Nov-20	13-Jul-22	0%						
	Ditto: expansion joints	600	20-Nov-20	13-Jul-22	0%						
	Crash barriers including Materials	600	20-Dec-20	12-Aug-22	0%						
	Deck waterproofing including Materials	600	03-Feb-21	26-Sep-22	0%						
	Installation of bridge bearings (shoes)	450	18-Jun-21	11-Sep-22	0%			<u> </u>		+	
	Installation of expansion joints	450		11-Sep-22	0%						
	e No. 11: Construction of Asphalt Pavement	270		26-Sep-22	00/						
	Asphalt pavement including Materials	270	30-Dec-21	26-Sep-22	0%						-
	e No. 12: Fabrication and Installation of Miscellaneous Items	600		29-Dec-22	00/						
	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): noise barriers	365	08-May-21	08-May-22	0%				Detr		i
Actual Wor									Date 30-Sep-18	8 Progress Upda	vision ated up to 31
Remaining	Work	Project	Implementatio	n Programme F	Progress Upda	ted up to 31st	Mar 201	9			
	maining Work										
<ul> <li>Critical Rer</li> <li>Milestone</li> </ul>								Page no 12			

# Attachment -VII 2021 2022 2023 2024 2025 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 -Checked Approved 31 M... JS TL

Mumbai Trans Harbour Link (MTHL) PIP	e	Attachment -VI												
Activity ID Activity Name	Duration in Days	Start Finish	Activity %		01 01 0	2018	201	19	2020		2021		2023	2024 2025 Q1 Q2 Q3 Q4 Q1 Q2 Q3
P2-2010 Drainage facility including Materials	450	03-Jul-21 26-Sep-22	0%											
P2-1990 Installation of noise barriers	450	07-Jul-21 30-Sep-22	0%											
P2-2000 Safety fences including Materials	365	26-Sep-21 26-Sep-22	0%											
P2-2020 Kerbs including Materials P2-2030 Road furniture including Materials	365 270	26-Sep-21 26-Sep-22 30-Dec-21 26-Sep-22	0% 0%											
P2-2040 Pavement marking including Materials	180	30-Mar-22 26-Sep-22	0%							+				
P2-2060 Gantry/overhang (cantilever)-type signage support structures including Materials	180	30-Mar-22 26-Sep-22	0%											
P2-2050 Road signage including Materials	120	29-May-22 26-Sep-22	0%											
P2-2070 Median openings including Materials P2-2080 Traffic signals including Materials and testing	120 90	29-May-22 26-Sep-22 30-Sep-22 29-Dec-22	0% 0%											
P2-2090 Restoration of removed items	90	30-Sep-22 29-Dec-22 30-Sep-22 29-Dec-22	0%							+				
P2-2100 Other miscellaneous items including Materials and testing as required	90	30-Sep-22 29-Dec-22	0%											
Schedule No. 13: Provisional Sums	2	31-Jan-19A 01-Feb-19A					•							
P2-2220 Schedule No. 13: Provisional Sums	2	31-Jan-19 A 01-Feb-19 A	100%				1							
Demoining Works & Taking Over Contificate	0	29-Dec-22 29-Dec-22											•	
Remaining Works & Taking Over Certificate           A2360         Achieve Issuance of Taking Over Certificate	0	29-Dec-22 29-Dec-22 29-Dec-22	0%							+				
Package 3: 3.6 km long road & bridge(10+187 to 21+800) + interchanges	1480	23-Mar-18 A 11-Apr-22	070		-							<b></b>		
Mobilisation	180	23-Mar-18 A 19-Sep-18 A												
P3-1950 Mobilisation	30	23-Mar-18 A 22-Apr-18 A	100%		🛉									
P3-1960 Construction Programme, completion of Soil Investigation, Submit Final plans	150	22-Apr-18 A 19-Sep-18 A	100%											
Schedule No. 1: General Items	1278	23-Mar-18 A 21-Sep-21	· · · ·											
P3-1080 Provision and maintenance of health and safety measures during the Time for Completion	1278	23-Mar-18 A 21-Sep-21	29.19%											
(Section VII GC Sub-Clause 6.7)	1270	23-Wai-10 A 21-36p-21	29.1970											
P3-1090 Provision (construction) of office facilities with furniture and office equipment	1278	23-Mar-18 A 21-Sep-21	29.19%		-				<u> </u>					
P3-1100 Maintenance of above office facilities for the Employer during the Time for Completion	1278	23-Mar-18 A 21-Sep-21	29.19%											
(Section VII GC Sub-Clause 6.6)	4070	00 Mar 40 A 04 Oan 04	00.400/											
P3-1150 Supply of vehicles, boats, etc. for the Employer (Section VII GC Sub-Clause 6.6)	1278	23-Mar-18 A 21-Sep-21	29.19%											
P3-1160 Operation and maintenance of above vehicles, boats, etc. for the Employer during the Time	1278	23-Mar-18 A 21-Sep-21	29.19%							<u></u>				
for Completion														
P3-1000 Performance Security (Section VII. GC Sub-Clause 4.2)	1	22-Apr-18 A 23-Apr-18 A	100%		'									
			4000/											
P3-1010 Insurance for Works (Section VII GC Sub-Clause 18.2)	1	22-Apr-18 A 23-Apr-18 A	100%											
P3-1020 Insurance for Contractor's Equipment (Section VII GC Sub-Clause 18.2)	1	07-May-18 A 08-May-18 A	100%											
	•	or may for to may for	100 /0											
P3-1030 Insurance against Injury to Persons and Damage to Property (Section VII GC Sub-Clause	2	07-May-18 A 08-May-18 A	100%											
18.3)														
P3-1040 Insurance for Contractor's Personnel (Section VII GC Sub-Clause 18.4)	2	07-May-18 A 08-May-18 A	100%											
P3-1050 Insurance for Design Liability (Section VIII, PC Sub-Clause 18.5)	2	22-May-18 A 23-May-18 A	100%			1								
	-													
P3-1060 Automobile Liability Insurance	2	22-May-18 A 23-May-18 A	100%			1								
P3-1070 Allow for DNP Services (Section VII GC Clause 11)	2	19-Sep-21 21-Sep-21	0% 0%											
P3-1110 Removal/clearing of above office facilities for the Employer and for the Engineer (Section VII GC Sub-Clause 6.6)	2	19-Sep-21 21-Sep-21	0%											
P3-1120 Provision and removal of diversion roads (Section VII GC Sub-Clause 4.15)	2	19-Sep-21 21-Sep-21	0%							†				
P3-1130 Operation and maintenance of diversion roads during the Time for Completion (Section VII	2	19-Sep-21 21-Sep-21	0%								I I			
GC Sub-Clause 4.15)														
P3-1140 Clearing from Site and Works after Taking-Over (Section VII GC SubClause 4.23) Schedule No. 2: Contractor's Documents	2 589	19-Sep-21 21-Sep-21 31-May-18 A 10-Jan-20	0%						,					
P3-1170 Technical Design documents of highway and interchange alignments	90	31-May-18 A 29-Aug-18 A	100%			<b></b>								
			10070											
P3-1200 Technical Design documents of foundation	210	30-Jun-18 A 25-Aug-19	30%					-						
Actual Work Summary								Date		evision		Checked		Approved
Remaining Work	Project	Implementation Programme P	rogress Upda	ted up to 31	1st Mar 20	019		su-Sep-18	Progress Up	dated up to 31	M JS		L	
Critical Remaining Work						_			1		I	I		
♦ ♦ Milestone						Page no	13/16							

	Actual Work Summary		Date 30-Sep-18	Revision Progress Updated up to
	Remaining Work  Critical Remaining Work	Project Implementation Programme Progress Updated up to 31st Mar 2019		
•	♦ Milestone	Page no 13/16		

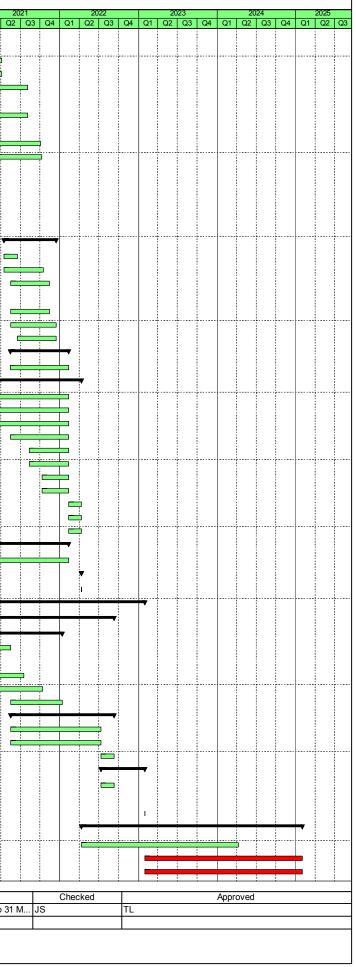
# Project Implementation Programme

Activity	ID	Activity Name	Duration in	Start	Finish	Activity %	2017	2018	2019	2020
_	D0 4000		Days	00.1	05.4		Q1 Q2 Q3 Q4 Q1	Q2 Q3 Q4 Q1 (	22 Q3 Q4	Q1 Q2 Q3 Q4 Q1 (
	P3-1230	Technical Design documents of superstructure (steel)	210	30-Jun-18 A	25-Aug-19	30%				
	P3-1350	Submission of samples (GC Sub-Clause7.2)	90	30-Jun-18 A	28-Sep-18 A	100%				
	P3-1210	Technical Design documents of substructure	150	30-Jul-18 A	14-Jul-19	30%			-	
	P3-1360	Tests	60	31-Aug-18 A	30-Oct-18 A	100%				
	P3-1220	Technical Design documents of superstructure (concrete)	150	30-Sep-18 A	14-Jul-19	30%			-	
		- · · · · · · · · · · · · · · · · · · ·								
	P3-1270	Construction Design documents of foundation	180	31-Oct-18 A	23-Nov-19	25%				
	P3-1280	Construction Design documents of substructure	240	31-Oct-18 A	10-Jan-20	20%				
	P3-1180	Aesthetic Strategy Report	1	31-Dec-18 A	01-Jan-19A	100%				
	1.0-1100	Acouncie Oracegy Report		ST-BCC-TOX	01-001-1074	100 /0				
	P3-1190	Technical Design documents of earthwork	90	31-Dec-18 A	15-May-19	50%				
	13-1130	recifical Design documents of earthwork	50	01-Dec-10A	10-1viay-13	5070				
	D2 4000	Construction Design desuments of superstructure (stacl)	040	10 lon 10 A	22 Nov 10	5%				++++++++
	F3-1300	Construction Design documents of superstructure (steel)	240	18-Jan-19 A	23-1104-18	5%				
	D2 4052	Technical Decise decuments of bridge as -illevice	400	15 5ab 40 4	00 1.1.40	<b>F</b> 0/				
	P3-1250	Technical Design documents of bridge ancillaries	120	15-Feb-19 A	∠3-Jul-19	5%			<b>—</b>	
		Technical Design documents of pavement	120	15-May-19	12-Sep-19	0%				
		Construction Design documents of earthwork	150	15-May-19	12-Oct-19	0%				
		Construction Design documents of superstructure (concrete)	240	15-May-19	10-Jan-20	0%				
		Construction Design documents of pavement	180	15-May-19	11-Nov-19	0%				
		Construction Design documents of bridge ancillaries	120	23-Jul-19	20-Nov-19	0%				
		Preparation and supply of as-built documents (GC Sub-Clause 5.6)	120	23-Jul-19	20-Nov-19	0%				
		Preparation and supply of Maintenance Manual (Section VII GC Sub-Clause 5.7)	90	12-Oct-19	10-Jan-20	0%				┦ ! ! ! ! !
	Schedule	e No. 3: Construction of Foundation for Piers and Abutments	793	31-Oct-18 A	01-Jan-21					
		Loading tests and test reports on bridge pier foundation piles	90	31-Oct-18 A	29-Jan-19 A	100%				
	P3-1420	Loading tests and test reports on abutment foundation piles	90	31-Oct-18 A	29-Jan-19 A	100%				
	P3-1370	"Materials on the Site (refer to GC Sub-	540	12-May-19	02-Nov-20	0%				
		Clause 14.5 (c) (i)): steel reinforcing bars	0.10		02.1101.20	• • •				
		Ditto: steel liner pipes	540	12-May-19	02-Nov-20	0%				
		Construction of pier foundation piles Spread foundation including geotechnical	540	11-Jul-19	01-Jan-21	0%				
		investigation	040	11-001-10	01-0011-21	070				
		Construction of abutment foundation piles/Spread foundation including geotechnic	al 540	11-Jul-19	01-Jan-21	0%				
		investigation	ai 5 <del>1</del> 0	11-501-15	01-5411-21	070				
		-	740	14-Jun-19	02-Jul-21				+++	
		No. 4: Construction of Piers, Pier caps and Abutments,	749			00/				
		Construction of cast-in-situ concrete pier and pier caps	180	14-Jun-19	11-Dec-19	0%				
		Construction of cast-in-situ concrete abutment structure including caps	180	14-Jun-19	11-Dec-19	0%				
		Construction of earthwork (backfill, compaction, etc.) and other works for abutment		14-Jun-19	06-Sep-20	0%				<u></u>
		"Materials on the Site (refer to GC Sub-	600	11-Sep-19	02-May-21	0%				
		Clause 14.5 (c) (i)): steel reinforcing bars		44.0 15	00.14					
		Ditto: structural steel shapes	600	11-Sep-19	02-May-21	0%				
		Ditto: pre-stressing cables	600	11-Sep-19	02-May-21	0%				
		Construction of cast-in-situ concrete pile caps for abutment	450	09-Oct-19	01-Jan-21	0%				
		Construction of cast-in-situ concrete pile caps for pier	600	10-Nov-19	02-Jul-21	0%				· · · · · · · · · · · · · · · · · · ·
		e No. 5: Construction of Concrete Superstructure	915	15-Apr-19	16-Oct-21					
		Materials on the Site (refer to GC Sub-Clause 14.5 (c) (i)): steel reinforcing bars	600	15-Apr-19	05-Dec-20	0%				
	P3-1540	Fabrication of precast concrete structural elements for electrical platforms	600	27-May-19	16-Jan-21	0%				
		Ditto: pre-stressing cables	600	14-Jun-19	03-Feb-21	0%				
		Fabrication of precast concrete structural elements for bridges	600	14-Jun-19	03-Feb-21	0%				······
		Transportation and erection of precast concrete structural elements for bridges	730	13-Aug-19	12-Aug-21	0%				
	P3-1560	Transportation and erection of precast concrete structural elements for electrical pl	latforms 600	24-Feb-20	16-Oct-21	0%				
	P3-1570	Construction of cast-in-situ concrete	450	23-Jul-20	16-Oct-21	0%				
		e No. 6: Fabrication and Erection of Steel Superstructure	954	01-Mar-19 A						
										<u></u>
	Actual Worl	k Summary							Date	Revision
			Busta (	mmm  a	- Drogeneration		had up to 04-4 12	~ 2040	30-Sep-18	8 Progress Updated up to 3
	Remaining		Project	implementatio	n Programme P	rogress Updat	ted up to 31st Ma	2019		
		naining Work						_		
•	<ul> <li>Milestone</li> </ul>							Page no 14/16		

	202	21 Q3			20 Q2	22			20	23 Q3			20	24 Q3			2025 Q2	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
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# Project Implementation Programme

)	Activity Name	Duration in Days	Start	Finish	Activity % Complete 4	2017 01 02 03 04	Q1 Q2	8 Q3 Q4 Q1	2019	2020 Q1 Q2 Q3 0	Q4 Q
P3-1580	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): structural steel materials	600	01-Mar-19 A	21-Oct-20	5%						
D2 4500	Cohrigotian of staal structural elements for bridges superstructure	720	00 Apr 10	00 4 7 7 21	00/						
	Fabrication of steel structural elements for bridges superstructure           Fabrication of steel structural elements for other components	730 730	09-Apr-19 09-Apr-19	08-Apr-21 08-Apr-21	0% 0%						
	Transportation to and erection at the Site of fabricated steel structural elements for bridges	540	13-Feb-20	06-Aug-21	0%						<b>—</b>
P3-1620	Transportation to and erection at the Site of fabricated steel structural elements for other components	540	13-Feb-20	06-Aug-21	0%						$\top$
P3-1630	Surface anti-corrosion coating of erected steel structure for bridges	210	09-Mar-21	05-Oct-21	0%						
P3-1640	Surface anti-corrosion coating of erected steel structure for other components	210	14-Mar-21	10-Oct-21	0%						
	le No. 7: Construction of Earthworks	660	15-Apr-19	03-Feb-21							
P3-1650	Materials on the Site (refer to GC SubClause 14.5 (c) (i)): steel reinforcing bars for retaining walls, etc.	300	15-Apr-19	09-Feb-20	0%						
P3-1660	Construction of reinforced concrete retaining/compound walls	600	14-Jun-19	03-Feb-21	0%						-
	Construction of earthwork (fill, compaction, etc.)	600	14-Jun-19	03-Feb-21	0%						
Schedul	le No. 8: Fabrication and Installation of Bridge Ancillaries	240	19-Apr-21	15-Dec-21							
	Installation of expansion joints	60	19-Apr-21	18-Jun-21	0%						
	Deck waterproofing including Materials	180	19-Apr-21	16-Oct-21	0%						
P3-1680	Materials on the Site (refer to GC Sub-	180	19-May-21	15-Nov-21	0%						
	Clause 14.5 (c) (i)): Bridge bearings (shoes)										
	Ditto: expansion joints	180	19-May-21	15-Nov-21	0%						
	Crash barriers including Materials	210	19-May-21	15-Dec-21	0%						
	Installation of bridge bearings (shoes)	180	18-Jun-21	15-Dec-21	0%						
	le No. 9: Construction of Asphalt Pavement	270	16-May-21	10-Feb-22							
	Asphalt pavement including Materials	270	16-May-21	10-Feb-22	0%						
	le No. 10: Fabrication and Installation of Miscellaneous Items	510	17-Nov-20								
	Drainage facility including Materials	450	17-Nov-20	10-Feb-22	0%						
	Safety fences including Materials	365	10-Feb-21	10-Feb-22	0%						
	Kerbs including Materials	365	10-Feb-21	10-Feb-22	0%						
	Road furniture including Materials	270	16-May-21	10-Feb-22	0%						
	Pavement marking including Materials	180	14-Aug-21	10-Feb-22	0%						
	Gantry/overhang (cantilever)-type signage support structures including Materials Road signage including Materials	180 120	14-Aug-21 13-Oct-21	10-Feb-22 10-Feb-22	0% 0%						
	Median openings including Materials for movable barrier	120	13-Oct-21	10-Feb-22 10-Feb-22	0%						
P3-1820	Traffic signals including Materials and testing	60	10-Feb-22	11-Apr-22	0%						
	Restoration of removed items	60	10-Feb-22	11-Apr-22	0%						
	Other miscellaneous items including Materials and testing as required	60	10-Feb-22	11-Apr-22	0%		+			+	
	le No. 11: Provisional Sums	600	20-Jun-20	10-Feb-22	070					↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	_
	Schedule No. 11: Provisional Sums	600	20-Jun-20	10-Feb-22	0%					! <b>+</b>	_
	ing Works & Taking Over Certificate	0	11-Apr-22	11-Apr-22	0,0						
	Achieve Issuance of Taking Over Certificate	0	11-Apr-22		0%						
	4: Intelligent Transport System	804	19-Nov-20		0 / 0		+				
	tor's Construction and GC Construction Supervision Activities	660	19-Nov-20	10-Sep-22							-
	ctor's Design, Manufacturing and Delivery of Equipment to Site	420	19-Nov-20	13-Jan-22							-
	Contractor to Complete Preliminary Design & Detailed Design (As Per Design Submission		19-Nov-20	18-May-21	0%						+
	Programme)										
	GC to Review / Proof Check / Approve Contractor's Detailed Design	180	18-Jan-21	17-Jul-21	0%						
	Manufacturing, Testing and Delivery of ITS Equipment to Site	240	17-Feb-21	15-Oct-21	0%						
	Manufacturing, Testing and Delivery of O&M Facility & Equipment to Site	240	18-May-21	13-Jan-22	0%						
	tion, Testing and Pre-Commissioning of ITS Equipment	480	18-May-21	10-Sep-22							
	Installation, Testing and Pre-commissioning of Traffic Management System	420	18-May-21	12-Jul-22	0%						
	Installation, Testing and Pre-commissioning of Toll Management System	420	18-May-21	12-Jul-22	0%					++	
	Contractor to Achieve Issuance of Completion Certificate	60 204	12-Jul-22	10-Sep-22	0%						
	ed Testing and Commissioning		12-Jul-22	01-Feb-23	00/						
A2670	Integrated Testing with all External Interfaces and Authority Control Centres and Trial Operation	60	12-Jul-22	10-Sep-22	0%						
A2680	Commercial Operation Date	1	31-Jan-23	01-Feb-23	0%						
LP Stag		1026	11-Apr-22	31-Jan-25							
2710	Package 3: 3.6 km long road & bridge(10+187 to 21+800) + interchanges	730	11-Apr-22	10-Apr-24	0%						
2690	Package 1 Sewri Interchange and adjoining 10.38 km bridge (0+000 to 10+380)	730	01-Feb-23	31-Jan-25	0%						
2700	Package 2: 7.8 km long bridge (10+380 to 18+187) + interchanges	730	01-Feb-23	31-Jan-25	0%						
	· · · · · · · · · · · · · · · · · · ·								Date	- Por	vision
	ork Summary									B Progress Updat	
Actual Wo											
Remaining		Project	Implementati	on Programme I	Progress Upda	ted up to 31st	Mar 2019				
Remaining	emaining Work	Project	Implementati	on Programme I	Progress Upda	ted up to 31st		age no 15/1			



Mumb	ai Trans Harbour Link (MTHL) PIP	Р	roject I	mpleme	ntation	n Pro	gra	mr	ne								
Activity ID	Activity Name	Duration in Days	Start	Finish	Activity %	2	)17	4 01	2018		201	9	24 01	2020 Q2 (		Q1	202
A2720	Package 4: Intelligent Transport System	730	01-Feb-23	31-Jan-25	0%					<u>یں دی</u>	QZ		<u>14</u> Q1		23 Q4		QZ

Actual Work	
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Summary

Remaining Work
Critical Remaining Work

Milestone

Project Implementation Programme Progress Updated up to 31st Mar 2019

 Date
 Revision

 30-Sep-18
 Progress Updated up to 31

Page no 16/16

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20 Q2	21 Q3	Q4	Q1	22 Q3	Q4	Q1	20 Q2	23 Q3	Q4	Q1	20 Q2	24 Q3	Q4	Q1	2025 Q2	Q3
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