

No. MMRDA/MTHL-PIU/JICA/QPR-11/ 1265 /2020

Date: 18th September 2020

To

Mr.Katsuo Matsumoto

Chief Representative

Japan International Cooperation Agency (JICA)

16th Floor, Hindustan Times House,

18-20, Kasturba Gandhi Marg, New Delhi - 110-001

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

- **Quarterly Progress Report-11** (October 2019–December 2019)

Sir,

1. The loan agreement for the Official Development Assistance (ODA) loan for the Mumbai Trans Harbour Link Project (I) is signed between Japan International Cooperation Agency (JICA) and Mumbai Metropolitan Region Development Authority (MMRDA) on 31st March 2017 with MMRDA as a direct borrower of the loan.
2. The Quarterly Progress Report-11 for the Mumbai Trans Harbour Link Project(I)for the period of October 2019 – December 2019is enclosed herewith for information.
3. Please note that the Quarterly Progress Report-11 could not be submitted earlier because of the unprecedented situation caused by COVID-19 pandemic.

Thanking you,

Yours faithfully

Encl: QPR-11(October 2019 – December 2019)


(Dr. D.T.Thube)
Chief Engineer, MTHL-PIU

Copy submitted to,

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

Encl: QPR-11 (October 2019 – December 2019)

Mumbai Metropolitan Region Development Authority

Bandra-Kurla Complex, Bandra East, Mumbai 400 051

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

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



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MMRDA

Mumbai Metropolitan Region Development Authority

Mumbai Trans Harbour Link Project

Quarterly Progress Report - No.11

(From 1st October 2019 to 31st December 2019)



**Mumbai Trans Harbour Link Project
Quarterly Progress Report No. 11
1st October 2019 to 31st December 2019
Loan Agreement No. ID-P255 (Tranche-I)**

ORGANIZATION INFORMATION

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

Details of JICA Loan

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

Contents

1.0 PROJECT DESCRIPTION	5
1.1 Project Objective.....	5
1.2 Necessity of the Project.....	5
1.3 Rationale of the Project Design	7
2.0 PROJECT IMPLEMENTATION	9
2.1 Project Scope.....	9
2.2 Implementation Schedule	11
2.3 Project Cost	12
2.3.1.a Comparison of Originally Planned and Actually Incurred Cost BY ITEM.....	12
2.3.1.b Comparison of Originally Planned and Actually Incurred Cost BY YEAR.....	14
2.4 Organization for Implementation.....	15
2.4.1 Executing Agency.....	15
2.4.2 Contractor(s)/ Supplier(s), and Consultant(s) and their Performance:.....	16
2.4.2.1 Procurement & Consultant	16
2.4.2.2 Performance	17
Consultant’s Progress:.....	17
Contractor’s Progress:.....	18
Package-1 Physical Progress till 31 st December 2019.....	18
Package-2 Physical Progress till 31 st December 2019.....	19
Package-3 Physical Progress till 31 st December 2019.....	20
Package-4 (ITS).....	20
Health & Safety and Environment (HSE).....	21
Package-1 Safety Report.....	21
Package-2 Safety Report.....	22
Package-3 Safety Report.....	23
3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)	24
3.1 Operational and Physical Condition.....	24
3.2 Precautions (Measures To Be Adopted/ Points Which Require Special Attention).....	24
3.3 Environmental and Social Impacts.....	26
3.4 Qualitative and Quantitative Data of Monitoring Indicators	29
3.5 Monitoring Plan for the indicators	30
3.6 Achievement of the Project Objective	30
4.0 OPERATION AND MAINTENANCE (O&M) (SUSTAINABILITY)	31
4.1 O&M and Management	31
4.2 O&M Cost and Budget	31
5.0 EVALUATION	32
5.1 JICA and Borrower / Executing Agency performance.....	32
5.2 Overall Evaluation	32
5.3 Lessons Learnt and Recommendations.....	32
Attachment 1- MMRDA & PIU Organization Chart.....	33
Attachment 2- Environmental & Social Impacts Attachments.....	36
Attachment 3- JICA’s Concurrence Status	37
Attachment 4- Project Procurement and Financial Status till 31 st December 2019	39
Attachment 5- S-Curve for Cumulative Planned Vs Actual Amount in JPY Million.....	41
Attachment 6- Package-1’s Construction Programme Updated as on 25 th December 2019	42
Attachment 7- Package-2’s Construction Programme Updated as on 25 th December 2019	43
Attachment 8- Package-3’s Construction Programme Updated as on 25 th December 2019	44
Attachment 9- Project Progress Photos.....	45

1.0 PROJECT DESCRIPTION

1.1 Project Objective

Original:

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

Actual (P/R, PCR)

There is no change in the Project Objective.

1.2 Necessity of the Project

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

Benefits from MTHL Project

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

Necessity of the Project

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

an urgent requirement for broad development in Mumbai Metropolitan Region.

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

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

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

Actual (P/R, PCR)

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

1.3 Rationale of the Project Design

- Timing, Scale, Technology of the Project:

Demand Analysis

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

Table 1.3.1 Demand Projections Over the Period

Vehicle Type	Between Sewri Interchange and Shivaji Nager 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

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

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

Design Parameters / Overall Design

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

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

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

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

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

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

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

Traffic management System

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

Actual (P/R, PCR)

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

2.0 PROJECT IMPLEMENTATION

2.1 Project Scope

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

Table 2.1.1 Comparison of Original and Actual location

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

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

2.2 Implementation Schedule

2.2.1 The Original Implementation Schedule

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

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

Attachment: Package wise updated construction schedules at the end of fourth quarter (October-December 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

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

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

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

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

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696.

The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.

Table 2.3.1.a(ii) Actually Incurred Cost BY ITEM (Need to be updated by MMRDA – Account Dept)

Cost Breakdown	Foreign Currency Portion			Local Currency Portion			Total		
	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mil)	Others (Rs. mil)	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)
Package-1	5,075	5,075	-	13,140	13,140		25,660	25,660	
Package-2	3,705	3,705	-	9,105	9,105		16,980	16,980	
Package-3	72	72	-	1,921	1,921		3,066	3,066	
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		299	299		870	870	
Land Acquisition*	-			5,268		5,268	8,271		8,271
Administration Cost	-			1,819		1,819	2,856		2,856
GST	-			3,392		3,392	5,325		5,325
Import Tax	-			-			-		-
Interest during construction	-			-			-		-
Front End Fee	-			-			-		-
Total	9,105	9,105	-	35,144	24,469	10,675	63,342	46,582	16,760

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

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

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

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696.

The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.

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

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

(All Figures are in JPY mil)

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

Table 2.3.1.b.(ii) Actually Incurred Cost BY YEAR (Need to be updated by MMRDA – Account Dept)

(All Figures are in JPY mil)

Cost Breakdown	Total	JICA Portion				Others (MMRDA Portion)
		Tranche I	Tranche II	Tranche III	Sub Total	
FY 2017	13,738	9,232	-	-	9,232	4,506
FY 2018	26,813	21,695	-	-	21,695	5,118
FY 2019	22,790	15,654			15,654	7,136
FY 2020						
FY 2021						
FY 2022						
FY 2023						
FY 2024						
Total	63,341	46,581	-	-	46,581	16,760

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

2. Fiscal Year starting from 1st April and ending on 31st March.

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

(P/R and PCR)

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

2.4 Organization for Implementation

2.4.1 Executing Agency

Original:

Executing Agency

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

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

Organization's Role

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

Project Implementation Unit (PIU)

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

Procurement

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

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

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

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

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

2.4.2.1 Procurement & Consultant

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

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

2.4.2.2 Performance

Consultant's Progress:

October 2019:

- 1 The JICA Safety Review Mission visited MTHL project from 14th October to 17th October 2019 to review the health & safety, environmental and social obligations of the Employer and the Contractors. The Contractors and GC made a series of presentations on the Environmental & Safety Monitoring at the project sites.
- 2 GC scrutinized & certified the following invoices:
 - i) Package-1: IPC-018 (80% ad-hoc) and IPC-017 (detailed verification)
 - ii) Package-2: IPC-015 (80% ad-hoc) and IPC-014 (detailed verification)
 - iii) Package-3: IPC-010 (80% ad-hoc) and IPC-009 (detailed verification)
- 3 GC has deployed adequate number of staff at MTHL Project sites for the construction supervision works. Also, they are rigorously monitoring the quality, health & safety and environmental aspects of the project.

November 2019:

- 1 GC conducted Monthly Progress Review Meeting with all the three Package Contractors on 13th November 2019 to review the status of Design and Physical progress of the project.
- 2 GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-019 (80% ad-hoc) and IPC-018 (detailed verification)
 - ii) Package-2: IPC-016 (80% ad-hoc) and IPC-015 (detailed verification)
 - iii) Package-3: IPC-011 (80% ad-hoc) and IPC-010 (detailed verification)
- 3 GC has deployed adequate number of staff at MTHL Project sites for supervision of the construction works. Also, they are rigorously monitoring the quality, health & safety and environmental aspects of the project.

December 2019:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-019 (80% ad-hoc) and IPC-018 (detailed verification)
 - ii) Package-2: IPC-017 (80% ad-hoc) and IPC-016 (detailed verification)
 - iii) Package-3: IPC-012 (80% ad-hoc) and IPC-011 (detailed verification)
- 2 GC has deployed adequate number of staff at MTHL Project sites for supervision of the construction works. Also, they are rigorously monitoring the quality, health & safety and environmental aspects of the project.
- 3 Approximately 80% of the foundation related designs have been reviewed and approved by GC. Approx. 65% of the substructure related designs have been reviewed and approved by GC. Approx. 25% of the superstructure related design have been reviewed and approved by GC.

Contractor's Progress:
Package-1 Physical Progress till 31st December 2019

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Temporary Access Bridge					
1.1	Bridge Deck	2953	Rmt	2422	82%	
2	Test Pile					
2.1	Test Piles	5	No.	4	80%	
3	Permanent Bridge Works - Land/ Interchange Zone					
3.1	Piles	517	No.	231	45%	
3.2	Pile Caps	165	No.	25	15%	
3.3	Piers	228	No.	44	19%	
3.4	Pier Caps	228	No.	0	0%	
4	Permanent Bridge Works - Intertidal Zone					
4.1	Piles	236	No.	170	72%	
4.2	Pile Caps	57	No.	26	46%	
4.3	Piers	113	No.	36	32%	
4.4	Pier Caps	113	No.	12	11%	
5	Permanent Bridge Works - Marine Zone					
5.1	Piles	484	No.	155	32%	
5.2	Pile Caps	100	No.	11	11%	
5.3	Piers	198	No.	2	1%	
5.4	Pier Caps	198	No.	0	0%	
6	Permanent Bridge Works - Total					
6.1	Piles	1237	No.	556	45%	
6.2	Pile Caps	322	No.	62	19%	
6.3	Piers	539	No.	82	15%	
6.4	Pier Caps	539	No.	12	2%	
7	Precast Segments					
7.1	Segment Casting	6709	No.	185	3%	
7.2	Segment Erection	6709	No.	0	0%	

Package-2 Physical Progress till 31st December 2019

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Temporary Access Bridge					
1.1	Bridge Deck	2682	Rmt	2312	86%	
2	Test Pile					
2.1	Test Piles	3	No.	2	67%	
3	Permanent Bridge Works - Land/ Interchange Zone					
3.1	Open Foundations	113	No.	27	24%	
3.3	Piers	113	No.	2	2%	
3.3	Pier Caps	113	No.	0	0%	
4	Permanent Bridge Works - Intertidal & CRZ Zone					
4.1	Piles	282	No.	134	48%	
4.2	Pile Caps	70	No.	7	10%	
4.3	Piers	72	No.	2	3%	
4.4	Pier Caps	72	No.	2	3%	
5	Permanent Bridge Works - Marine Zone					
5.1	Piles	522	No.	48	9%	
5.2	Pile Caps	122	No.	0	0%	
5.3	Piers	126	No.	0	0%	
5.4	Pier Caps	126	No.	0	0%	
6	Permanent Bridge Works - Total					
6.1	Open Foundations	113	No.	27	24%	
6.1	Piles	804	No.	182	23%	
6.2	Pile Caps	192	No.	7	4%	
6.3	Piers	198	No.	4	2%	
6.4	Pier Caps	198	No.	2	1%	
7	Precast Segments					
7.1	Segment Casting	3142	No.	16	1%	
7.2	Segment Erection	3142	No.	0	0%	

Package-3 Physical Progress till 31st December 2019

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Permanent Bridge Works					
1.1	Open Foundations	195	No.	98	50%	The total scope has been amended as per the field conditions
1.2	Piers	195	No.	18	9%	The total scope has been amended as per the field conditions
1.3	Pier Caps	195	No.	0	0%	
1.4	Segment Casting	854	No.	20	2%	The total scope has been amended as per the field conditions
1.5	Segment Erection	854	No.	0	0%	

Package-4 (ITS)

Pre-Qualification (PQ) is ongoing. Also, preparation of Bid Documents for ITS system is in progress.

Health & Safety and Environment (HSE)

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

Package-1 Safety Report

Sr. No	Description	From October to December 2019	Cumulative
1	Total Man Hours Since Inception	30,31,008	1,06,43,040
2	Number of Man-Hours (Accident Free Man-Hours)	22,22,304	22,22,304
3	Number of Man-Days	3,71,996	13,59,280
4	Number of Reportable Fatal Accidents	1	1
5	Number of Non-Fatal Accidents	0	1
6	Number of Near Miss Incidents	11	28
7	Number of First Aid Cases	22	82
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	48,000	48,448
11	Number of Man-Days Lost	6,000	6,058
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	1	2
13	Number of Inspections done for Offices & Sites	65	197
14	Number of Training/ Induction done for Offices & Sites	48	159
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	8,564	1394
16	Details of Safety Committee meetings	3	19
17	No. of toolbox talks	5,176	17,665
18	No. of critical excavations.	9	8
19	Pre-employment Medical check-up	3,348	12,065
20	No. of Safety Walk down	14	107
21	No. of Safety Inductions completed	3,238	12,065

Package-2 Safety Report

Sr. No	Description	From October to December 2019	Cumulative
1	Total Man Hours Since Inception	885819	4822134
2	Number of Man-Hours (Accident Free Man-Hours)	885819	2675706
3	Number of Man-Days	80529	439752
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	2
6	Number of Near Miss Incidents	7	25
7	Number of First Aid Cases	7	42
8	Number of Dangerous Occurrences	1	4
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	836
11	Number of Man-Days Lost	0	89
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	0
13	Number of Inspections done for Offices & Sites	78	490
14	Number of Training/ Induction done for Offices & Sites	46	400
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	4151	719
16	Details of Safety Committee meetings	3	20
17	No. of toolbox talks	654	2296
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	1264	4794
20	No. of Safety Walk down	10	59
21	No. of Safety Inductions completed	1293	4807

Package-3 Safety Report

Sr. No	Description	From October to December 2019	Cumulative
1	Total Man Hours Since Inception	231385	825856
2	Number of Man-Hours (Accident Free Man-Hours)	231385	825856
3	Number of Man-Days	28923	103232
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	0
6	Number of Near Miss Incidents	2	4
7	Number of First Aid Cases	10	33
8	Number of Dangerous Occurrences	0	0
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	0
11	Number of Man-Days Lost	0	0
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	0
13	Number of Inspections done for Offices & Sites	34	140
14	Number of Training/ Induction done for Offices & Sites	17	99
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	693	2583
16	Details of Safety Committee meetings	3	17
17	No. of toolbox talks	575	2138
18	No. of critical excavations.	3	3
19	Pre-employment Medical check-up	601	2129
20	No. of Safety Walk down	12	65
21	No. of Safety Inductions completed	602	2129

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)
<p>3.2.1 General Issues</p> <p>1. Toll Arrangement/ Toll Rate Fixed toll rate as per the type of vehicle will be levied for the road users after the completion of the Project. An appropriate tolling policy/ rates will be finalized in consultation with the state government prior to the completion of Civil works.</p> <p>2. Operation and Maintenance MMRDA proposes to appoint separate agencies for Operation & Maintenance of the bridge and for Toll Management System. Both the agencies for O & M and Toll Management System may be appointed through open tendering process. Overall monitoring of the two agencies would be done by MMRDA in house through a separate cell which could be constituted for the purpose. MMRDA has confirmed to allocate adequate budget for engaging the Contractors.</p>	<p>(P/R and PCR)</p> <p>Appropriate Tolling Policy/ Rates will be finalized by December 2020.</p> <p>Single Operation and Maintenance Contractor will be appointed by December 2020.</p>
<p>3.2.2 Environmental and Social Consideration</p> <p>a. CRZ Clearance</p> <p>i. Supplemental EIA has been approved by MMRDA and disclosed on the website of JICA. Supplemental EIA report has been disclosed also on the website of MMRDA.</p> <p>ii. Furthermore, renewed CRZ Clearance has been obtained in January 2016.</p> <p>iii. In accordance with the conditions for</p>	<p>(P/R and PCR)</p> <ul style="list-style-type: none"> • MMRDA has disclosed Supplemental EIA & SIA on MMRDA website. • The renewed CRZ clearance was granted on 25/1/2016 from MoEF&CC and the approval conditions have been imposed on the Contractors as the Employer’s requirements. MMRDA has actively monitored the compliances of the approval conditions and maintains throughout the construction phase. • MMRDA appointed Mangroves & Marine

<p>CRZ Clearance, appropriate measures shall be taken, and necessary budget shall be secured by MMRDA.</p>	<p>Biodiversity Foundation for bird monitoring and implementation of Flamingos and bird monitoring program for the MTHL project during the construction as well as the long-term monitoring after the construction.</p> <ul style="list-style-type: none"> • 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.
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b. Required Permits

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

Table 3.2.2 Present Status of some Important Permits

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

3.3 Environmental and Social Impacts

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

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p>1. Establishment of Effective Environmental and Social Cell in PIU</p> <p>MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.</p>	<p>Cell is established by MMRDA (Annexure III, Organization chart)</p>
<p>2. Rehabilitation and Land Acquisition Issues</p> <p>a. Affected Area and Population</p> <p>Due to the Project, 1282 non-titleholders will be involuntary resettled, and 108.09 ha of land will be handed over by CIDCO.</p>	<p>Sewri: Involuntary resettlement in Sewri section has been further validated by Social Development Cell of MMRDA. Out of 298 Project Affected Households (PAHs) have given consents as follows:</p> <ul style="list-style-type: none"> • 165 PAHs Kanjurmarg for residential • 25 PAHs Kanjurmarg for commercial • 7 PAHs (Satsangi Plot) Kanjurmarg for Commercial • 1 PAHs (commercial to residential) for Bhakti Park • 100 PAHs HDIL Kurla for residential <p>Navi Mumbai: CIDCO has been finalizing the land acquisition closely monitored by Land Cell of MMRDA. Except private land and forest, CIDCO has possessed all required land of 108.09 ha. Out of the 108.09 ha, 101.99 ha has been handed over by CIDCO to MMRDA. CIDCO is going to acquire the balance 6.10 Ha with the help of Collector, Raigad.</p>
<p>b. Entitlement Policy</p> <p>MMRDA prepared the entitlement matrix for resettlement of non-title holders in Sewri, which meets the Resettlement and Rehabilitation Policy for Mumbai Urban Transportation Project (1997, amended in 2000) and JICA guidelines for Environmental and social considerations (2010)</p>	<p>There have been no changes during the enforcement. As per the Attachment 2-5 of JICA MoD, MMRDA has committed to enforce the agreed/ approved policy.</p>

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

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

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

3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

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

*1 Section on Sewri – Chirle

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

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

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

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. 11 is submitted for a period of 1st October to 31st December 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)

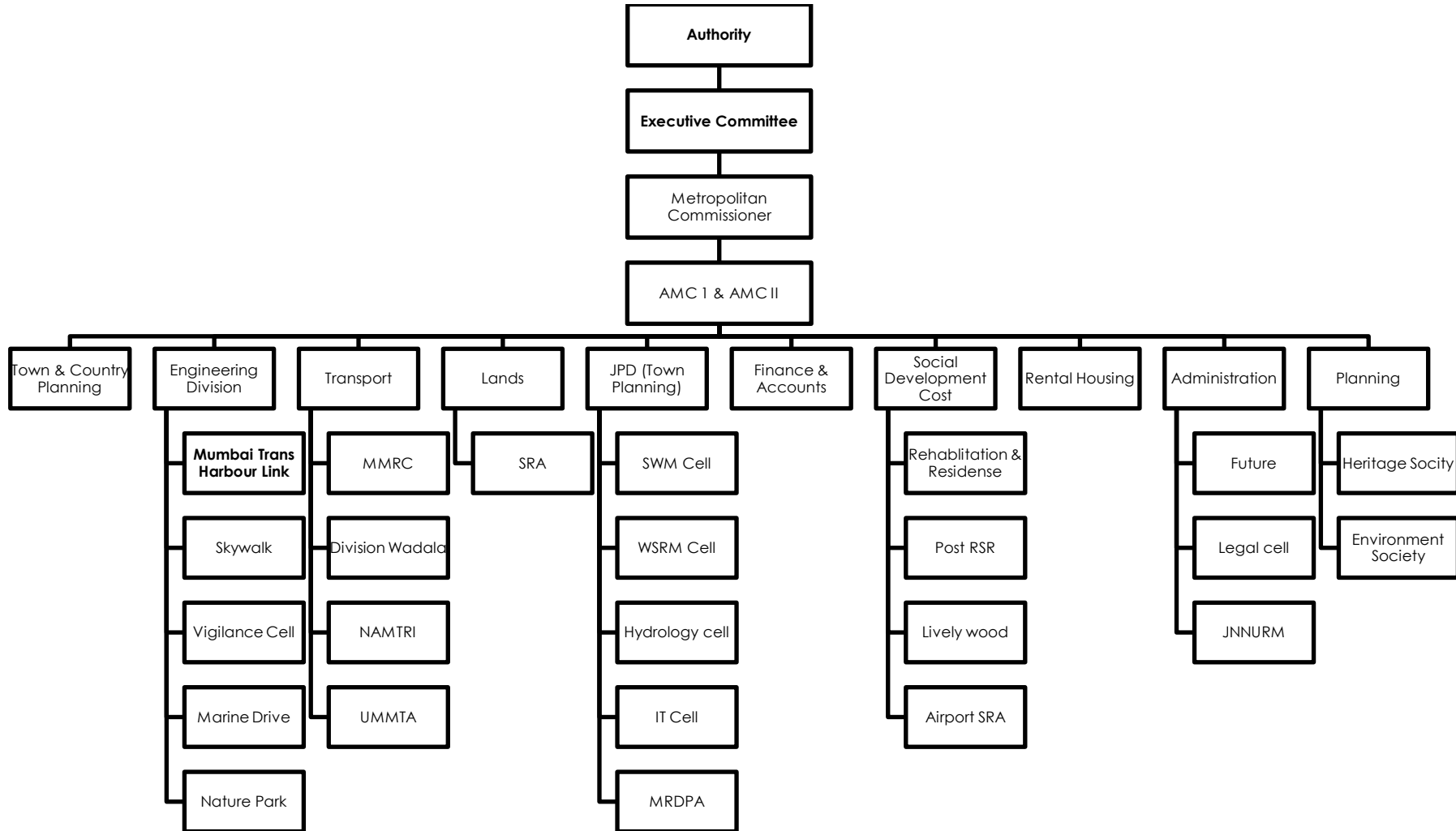
5.3 Lessons Learnt and Recommendations

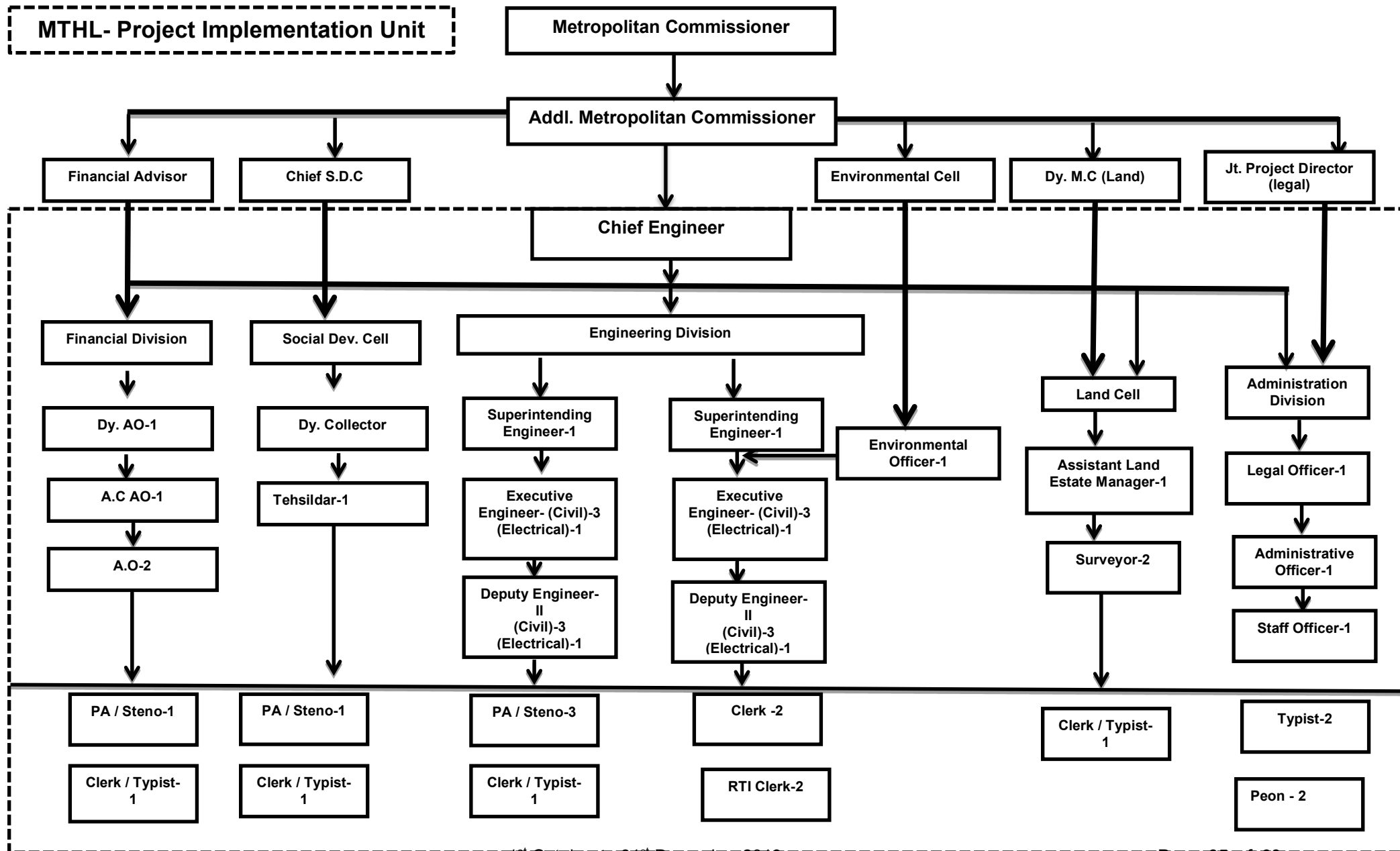
Please raise any lessons learned from the project experience, which might be valuable for the future JICA assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

(PCR)

Attachment 1- MMRDA & PIU Organization Chart

MMRDA Organization chart





Attachment 2- Environmental & Social Impacts Attachments

Attachment 2-3 - Environmental Monitoring Plan

Attachment 2-4 – Environmental Monitoring Result Reporting Form

Attachment 2-6 – MTHL Land Acquisition Status

Attachment 2-8 – RAP Internal Monitoring Form

Attachment 2-10 – Schedule of the RAP Implementation

Updated Environmental Monitoring Plan with Packagewise Estimated Cost

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

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

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

Monitoring Period - October to December 2019
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This form is prepared for reporting the monitoring results to JICA India Office. Only minimum required parameters are included in this form, and not all parameters in EMOp are covered.

1. Environmental Monitoring during Construction for 4.5 years

Area	No.	Item	Parameter	Location	Frequency a year	Item and Stanadard	Monitoring Result				Remark - reasons why the data is exceeding standard - counter measures when the data is exceeding				
							Location 1- Pkg 1	Location 2	Location 3- Pkg 3	Location 4					
Pollution	1	Air pollution	SO ₂ , NO ₂ , PM ₁₀ , PM _{2.5}	1. Sewri & Sewri bay area for package I	Quarterly monitoring is conducted at all locations.	National Ambient Air Quality Standards (NAAQS) (Standard for 24hrs: Industrial and Residential)	Sewri	Shivaji Nagar	Chirle						
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year										
				3. Gavhan & Chirle for package III	From march -2019 onwards monitoring is conducted quarterly as per MOEF and CPCB norms	1. SO ₂ : 80µg/m ³						BDL (DL =5)	BDL	17	BDL- Below Detectable Limit
						2. NO ₂ : 80µg/m ³						17	36	34	
						3. PM ₁₀ : 100µg/m ³						150	127	87	
						4. PM _{2.5} : 60µg/m ³						46	23	31	
				5.CO:02mg/m ³	1.2	1	0.38								
				6.VOCs	1.3	2	3.3	Benzene is analysed in ambient air							
	2	Water pollution	pH, BOD, DO, Turbidity and O&G	1. Sewri & Sewri bay area for package I	Quarterly	Marine water quality Standards – Class SW-IV Harbour Waters (MPCB)	Zone I	Zone II	Zone III						
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	1. pH : 6.5-9	7.4	8	Not applicable						
				3. Gavhan & Chirle for package III	Not applicable	2. DO: 3 mg/l	4.9	6	Not applicable						
						3. Turbidity: 30 NTU	11.7	18	Not applicable						
						4. BOD: 5 mg/l	3	BDL	Not applicable						
						5. O & G: 10 mg/l	BDL (DL =2)	BDL	Not applicable						
				6.COD	20	20	Not applicable								
	3	Waste	Volume of waste soil, cutting tree and domestic garbage	1. Sewri & Sewri bay area for package I	Daily	Municipal Soild Waste Management Rules, 2013	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle Camp Site						
				2. Nhava temporary bridge & casting yard in Gavhan for package II	4 Times / Year	Generated waste soil (t) total	27105.51 m3	Total 2000 CuM Collected in jumbo bags and Disposed off in EBB Location and Casting Yard	Nil						
				3. Gavhan & Chirle for package III	Once site clearing work/execution part of work start.	Generated cutting treel (ha) total	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting so far NIL	20 trees are cut	permission in process from both CIDCO and Forest dept. Tree cutting so far is nil.						
						Generated domestic waste (t/month) total	3.58 T for the quarter	3 T for the quarter	325 KG/quarter is disposed through Gram panchayat.						
				Confirmation of adequate disposal (visualt survey)											
4	Soil Contamination/sedimentation	Heavy Metals & Oil & Grease	1. Sewri & Sewri bay area for package I	1. Muck: 1 Time / Year 2. Sediments: 4 Times / Year	Soil Pollution Standard in India (MOEF)	Not applicable	Not applicable	Not applicable		Frequency is Once in a year.If any minor or major incident has not occure at storage area.					
			2. Nhava temporary bridge & casting yard in Gavhan		1. Cadmium: 0.01mg/l										
			3. Gavhan & Chirle for package III	*If any spillage/ leakage take place from chemical, fuel storage area. *One time grab sample to be collected during Bridge Construction *Pre & Post Monsoon at Storage area only	2. total cyanide : not detected										
					3. organic phosphorus: not detected										
					4. lead: 0.01mg/l										
					5. chromium (VI): 0.05mg/l										
					6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)										
					7. total mercury: 0.005mg/l										
					8. alkyl mercury: not detected										
					9. PCBs: not detected										
					10. copper: 125mg/kg (only paddy field soil)										
					11. dichloromethane: 0.02mg/l										
					12. carbon tetrachloride: 0.002mg/l										
					13. 1,2-dichloroethane: 0.004mg/l										
					14. 1,1-dichloroethylene: 0.02mg/l										
					15. cis-1,2-dichloroethylene: 0.04mg/l										
					16. 1,1,1-trichloroethane: 1mg/l										
					17. 1,1,2-trichloroethane: 0.006 mg/l										
					18. trichloroethylene: 0.03mg/l										
					19. tetrachloroethylene: 0.01mg/l										
		20. 1,3-dichloropropene: 0.002mg/l													

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

Monitoring Period - October to December 2019
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1. Environmental Monitoring during Construction for 4.5 years

5	Noise and vibration	Ambient and road side noise (dB(A) LAeq)	1. Sewri & Sewri bay area for package I	Fortnightly	21. thiuram: 0.006mg/l 22. simazine: 0.003mg/l 23. thiobencarb: 0.02mg/l 24. benzene: 0.01mg/l 25. selenium: 0.01mg/l							
			2. Nhava temporary bridge & casting yard in Gavhan for package II	2 Times / Year	Day time : 6-22 hr (continious) dB(A)	64.9	71.3	1.6				
			3. Gavhan & Chirle for package III	Fortnightly	Night time: 22-6 hr (continious) dB(A) (only sea section) Day time : 6-22 hr (10 min during 9-17 hrs) Night time: 22-6 hr (10 min 22-24 hr)	56.9	64.2	0.2				
			Note (standard values in Not construction area) 1. Industrial Area Day Time: 75 (6-22hr) Night Time: 70 (22-6hr) 2. Commercial Area: Day Time: 65 (6-22hr) Night Time: 55 (22-6hr)									
			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) Day time : 6-22 hr (continious) Night time: 22-6 hr (continious)	Not applicable	Not applicable	Not applicable				
			Note (standard values in Not construction area) 1. Commercial /Industrial Area Day Time: 70 (7-20hr) Night Time: 65 (20-7hr)									
			Regarding protected area (CRZ and Important Bird Area) and ecosystem, detailed long-term monitoring plan will be established during baseline survey of birds. This tentative monitoring form shall be updated based on the detailed long-term monitoring plan.									
					1. Monitoring of mudflat conditions including fauna-flora 2. Monitoring of Cutting Tree and replantation/transplation area 3. Monitoring of Mangrove	Along MTHL alignment and mangrove replant area for Package I	Quarterly during the construction Period	Standard is not existing, but quantity and quality should not be worsen	Sewri side (ST500-5500)	Sea Section (ST5500-16000)	Shivaji Nagar side (app. ST16000-19000)	Mangrove Replantation area appointed by State Government
		Along MTHL alignment and mangrove replant area for package II	4 Times / Year	1-1. Fauna-Flora (number of species and quantity)				N/A	N/A			
				(1) Number of species of bird								
				(2) Number of species of fish (3) Estimated number of Flamingo								
				1-2: Mangrove density and community survey			not required					

Monitoring Period - October to December 2019
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This form is prepared for reporting the monitoring results to JICA India Office. Only minimum required parameters are included in this form, and not all parameters in EMOp are covered.

1. Environmental Monitoring during Construction for 4.5 years

Category	Item No.	Parameter	Location	Frequency	Criteria for evaluation	Monitoring Results			Remarks	
						Actual	Target	Compliance		
Natural Environment	6	Protected Area 3. Monitoring of mangrove Plantation area appointed by MoEF 4. Monitoring of sedimentation soil and ecological parameter (25 items on EIA main text Table 6.1.15 for soil and 7 items such as 1)Net primary productivity, 2)Chlorophyll- a, 3)Phosphate, 4)Nitrate, 5)Nitrite, 6)Particulate Organic Carbon, 7) SiO2)	Ecosystem			(1) Number of species of mangrove		not required		
						(2) Density of mangrove (xx trees/10m x 10m)		not required		
						1-3: Benthos Survey		not required		
						(1) Number of species and quantity by species	470 Species and 232 No/m2	not required		
						2-1: Cutting tree confirmation	Tree cutting proposal has been submitted and approval from MCGM is awaited. Tree Cutting NIL	not required	Nil	
						(1) Number of cutting tree and species		not required		
						3-1: Mangrove survey in the replant area		not required	Nil	
						(1) Number of species of mangrove		not required		
						(2) Density of mangrove (xx trees/10m x 10m)		not required		
						4. Ecological Parameter				
						(1) Net primary Productivity : <1,500 mgC/m3/day at surface	300			
						(2) Chlorophyll-a: <4mg/m3	4.1			
						(3) Phosphate: 0.1-90µg/l	285			
						(4) Nitrate: 1.0-500µg/l	732			
						(5) Nitrite: <125µg/l				
					(6) Particulate Organic Carbon: 10-100mg/m ³					
					(7) SiO2: 10-5,000µg/l	5993				
	7	Hydrology	Flooding situation	2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II	4 Times / Year	Criteria for evaluation Project activities and structures does not cause flooding and impacts on tidal conditions	Sewri	Shivaji Nagar		
						Monitoring of flooding situation	No Flooding	No Flooding	No Flooding	
						Not applicable for Package III				
	8	Topography and Geology	Conditions in embankment area	2 Locations (1. Embankment of Inter Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle)	4 times / year x 4.5 years	Criteria for evaluation Embankment shall be stabilized without any landslide and cracks	Shivaji Nagar	Chirle	Chirle	
						Monitoring of embankment				
	9	Local conflict of interests	Construction worker's township	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	Criteria for evaluation Employment opportunity shall be provided fairly	Sewri Camp Site	Shivaji Nagar Camp Site	Chirle	
						Number of hired workers by community	30-40 unskilled labours	125-150	Skilled labours; 270 (from outside)	
	10	Infectious diseases such as HIV/AIDS	Number of infected patient	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	Criteria for evaluation Infection disease rate shall not be caused by the project	Sewri Camp Site	Shivaji Nagar Camp Site		
						Confirmation of health check record and inspect project site	Health Checkup conducted by Doctors at Site. HIV AIDS awareness and detection program conducted on 24th December 2019.195 no's of workmen were screened by Maharashtra State AIDS CONTROL SOCIETY (MSACS). Mumbai.	Health Checks carried out but HIV/AIDS parameter is not there.	Conforming with BOCW Act 1996. In the month of December Maleria antidot tablet (vaccination)is provided to all Labours	
	11	Labour Environment	Construction worker's condition	2 Locations (major camp site in Sewri and Shivaji Nagar)	2 times / year x 4.5 years	Criteria for evaluation "Building And Other Construction Workers (Regulation of Employment and Conditions of Service) Act,1996", "The building and other construction worker's welfare cess Act, 1996" and international standards such as "IFC Performance Standard 2 Labor and Working Conditions"	Sewri Camp Site	Shivaji Nagar Camp Site	Gavan Camp site	
						Site Visual Inspection	All provisions as per BOCW	Conforming with BOCW Act 1996	Conforming with BOCW Act 1996 as per IM -26A checklist	
Other	12	Accident	Number of accidents	2 Locations (major camp site in Sewri and Shivaji Nagar)	4 times / year x 4.5 years	Criteria for evaluation Any accidents are not caused by construction	Sewri Camp Site	Shivaji Nagar Camp Site	Other area	
						Number of recorded accident	1	Nil	Nil	

MTHL Land Acquisition Status (Attachment 2-6):

Total land required on Navi Mumbai side- 108.09 ha

Land in possession in MMRDA – 101.99 ha

Balance land acquisition- 6.10 ha

Note: The acquisition of 6.10 ha is in progress by CIDCO. The balance acquisition would be likely completed by the end of January 2020.

Land Required in ha		Land Acquired in ha		Balance Land to be acquired in ha	Anticipated date for Land Acquisition	Payment status (Payment made to Land Owners by CIDCO)	Remarks
Govt.	Private	Govt.	Private	Private*			
98.75	9.34	98.75	3.24	6.10	31/01/2020	--	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	3.24	6.10			
108.09							

***Portions of Private Land**

Sr. No.	Name of Village	Area (Hectare)	Acquired	Non-acquired
1	Gavhan	0.15	-	0.15
2	Jasai	8.72	3.24	5.48
3	Chirle	0.47	-	0.47
Total Area		9.34	3.24	6.10

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

1. General Information

a. RAP Implementation Monitoring Results:	Progress Status Report (PSR) of 4 th quarter of 2019
b. Date of Preparing This form	31.12.2019
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)	297 Hhs	Titleholders: 0 Hhs Non-titleholders: 297 Hhs
Total PAPs	1,282 persons*	Titleholders: 0 persons Non-titleholders: 1,282 persons*
PAHs who need relocation (as residents)	231 Hhs	Titleholders: 0 persons Non-titleholders: 231 (1,088 persons) *
PAPs who do not need relocation (as residents)	0 persons	Titleholders: 0 persons Non-titleholders: 0 persons
Commercial PAPs who need relocation	66 (194 persons) *	Titleholders: 0 persons Non-titleholders: 66 (194 persons) *
Commercial PAPs who do not need relocation	0 persons	Titleholders: 0 persons Non-titleholders: 0 persons

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

2.2 Structures

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

Categories of Fisher-folks	Identified Number		Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in RoW (250 m.)	199	52	251	1. Funds being transferred to Commissioner of Fisheries for payment to the beneficiaries. 2. Compensation to C2 Category is already disbursed through Fisheries Dept.

Attachment 2-8

				3. Out of 3831 Nos. of Beneficiaries, Compensation to 1695 Nos. of Beneficiaries has been already disbursed through Fisheries Dept. MMRDA is transferring the fund to Fisheries Dept. for Compensation to the balance 2136 Nos. of Beneficiaries.
C2: Fishing Stakes and Nets within 500 m. of RoW (Southern side)	749	126	875	
C3: Hand-pickers	507	3324	3831	
C4: Commercial and Artisanal Fisher-folks (Loss of Time and Increased Operating Costs)	Will be observed during construction period	Will be observed during construction period	---	Nil
C5: Fisher-folks with Loss due to Turbidity	Will be observed during construction period	Will be observed during construction period	----	Nil
C6: Fisher-folks with Damages due to Accidents	Will be observed during construction period	Will be observed during construction period	----	Nil

2.4 Land Acquisition / Transfer

Location	Land Required in Ha.		Land Acquired in Ha.		Balance Land to be acquired in Ha	Remarks
	Govt.	Private	Govt.	Private		
Sewri	10.089	0	10.089	0	0	
Navi Mumbai	98.75	9.34	98.75	3.24	6.10	
Total	118.179		108.839	3.24	6.10	

Attachment 2-8

3. Monitoring Results

3.1 Sewri Section

Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulative Achievement of Total Target (%)	Remarks, If Any
Resettlement	No. of Residential PAHs provided with Allotment Letters of Alternate Tenements	231	141	0	141	62%	
	No. of Residential PAHs given possession of Alternate Tenements	231	137	0	137	60%	
	No. of Commercial/R+C PAPs provided with Allotment Letters of Alternate Shops/Tenements	66	20	0	20	30%	
	No. of Commercial R+C PAPs given possession of Alternate Shops/Tenements	66	17	0	17	26%	
	No. of Occupants of MbPT Leased Plots provided Compensation	6	5	0	5	84%	
	No. of Religious properties Relocated / Removed	6	1	0	1	17%	Jivdani Mandir allotment letter given
	No. of Other Community properties Relocated / Removed	4	0	0	0	0%	
	No. of Structures in possession of MbPT Dismantled / Cleared	9	0	0	0	0%	
	No. of PAHs/PAPs provided Shifting Charges / Arrangement	297	0	0	0	0%	
Rehabilitation	No. of PAHs / PAPs identified for Livelihood Support in Post Resettlement Assessment						
	No. of PAHs / PAPs provided Livelihood Support under Program-I (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-II (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-III (to be identified)						
	No. of new enterprises started						

Attachment 2-8

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

3.2 Fishery Compensation

Categories of Fisher-folks	Identified Number		Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in RoW (250 m.)	199	52	251	<ol style="list-style-type: none"> 1. Funds being transferred to Commissioner of Fisheries for payment to the beneficiaries. 2. Compensation to C2 Category is already disbursed through Fisheries Dept. 3. Out of 3831 Nos. of Beneficiaries, Compensation to 1695 Nos. of Beneficiaries has been already

Attachment 2-8

				disbursed through Fisheries Dept. MMRDA is transferring the fund to Fisheries Dept. for Compensation to the balance 2136 Nos. of Beneficiaries.
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 compensation to 2564 Nos. of beneficiaries.
C3: Hand-pickers	507	3324	3831	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 Fisher-folks (Loss of Time and Increased Operating Costs)	Will be observed during construction period	Will be observed during construction period	---	Nil
C5: Fisher-folks with Loss due to Turbidity	Will be observed during construction period	Will be observed during construction period	----	Nil
C6: Fisher-folks with Damages due to Accidents	Will be observed during construction period	Will be observed during construction period	----	Nil

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
Navi Mumbai side			
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
Total Navi Mumbai side		3060	1399
Total (Mumbai side + Navi Mumbai side)		4225	2564

Note: MMRDA has received 16,281 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	Compensation Paid		
Nil	Nil	Nil	Nil	Nil

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

Sr. No.	Task Designation	Approving authority	Start Date	Completion Date
1	Approval of fisher-folks' compensation Policy	Fisher-folks Compensation Committee (FCC)	08-10-2015	23-12-2015
2	Approval by MMRDA	MMRDA	10-12-2015	23-12-2015
3	Submission to JICA	MMRDA	--	04-01-2016
4	Detailed list of PAP and compensation plan	Detailed list of Fisher-folk PAP & disbursement is finalized by the Fisheries Department.	23-12-2015	<ol style="list-style-type: none"> 1. Total up to date applications scrutinized = 5881 nos 2. Eligible = 2564 nos 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 Committee (FCC)	23-12-2015	<ol style="list-style-type: none"> 1. Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk from Sewri, Mahul & Trombay (Mumbai side) – 12th September 2017 and 20th November 2018 for C-2 & C3 Category only.
			23-12-2015	<ol style="list-style-type: none"> 2. Approval to the Fisher-folk PAP list obtained from Fisheries Department for Fisherfolk of Navi Mumbai of C2 & C3 on 25th April 2018. 3. Validation of compensation is in progress and would be completed in phases.
6	Approval of compensation plan	FCC	23-11-2015	28-12-2017
7	Approval by MMRDA	MMRDA	23-11-2015	09-03-2018

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

Land Required in Ha.		Land Acquired in Ha.		Balance Land to be acquired in Ha	Anticipated date for Land Acquisition	Payment status (Payment made to Landowners by CIDCO)	Remarks
Govt.	Private	Govt.	Private	Private			
98.75	9.34	98.75	3.24	6.10	31/01/2020	--	<p>1. CIDCO is the land acquisition authority for land acquisition for Navi Mumbai</p> <p>2. MMRDA has paid an amount of INR 59.16 Cr to CIDCO as per their demand.</p> <p>3. The payment status to the landowners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.</p>
Total	108.09	101.99		6.10			

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	September 2019
2.5	Preparation and issue of allotment letters to	June 2018	March 2020
2.6	Notice of PAPs for shifting (Sewri Section)	December 2018	March 2020
2.7	Allotment of dwelling units to PAP's	September 2016	March 2020
2.8	Shifting of PAPs to resettlement Colony	December 2018	March 2020
2.9	Transfer of compensation / allowance/ assistance to PAPs	December 2018	March 2020
2.10	Creation of Community Revolving fund (within 3 months post handing over)	April 2019	March 2020
2.11	Assessment of economic rehabilitation needs by individual household (within 6 months after handing over)	September 2019	June 2020
2.12	Registration of Co-operative housing societies, transfer of maintenance funds. (6 months period)	December 2019	September 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	Nov. 2019
	End Term	November 2019	January 2020

Attachment 3- JICA's Concurrence Status

Status of JICA'S Concurrence

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

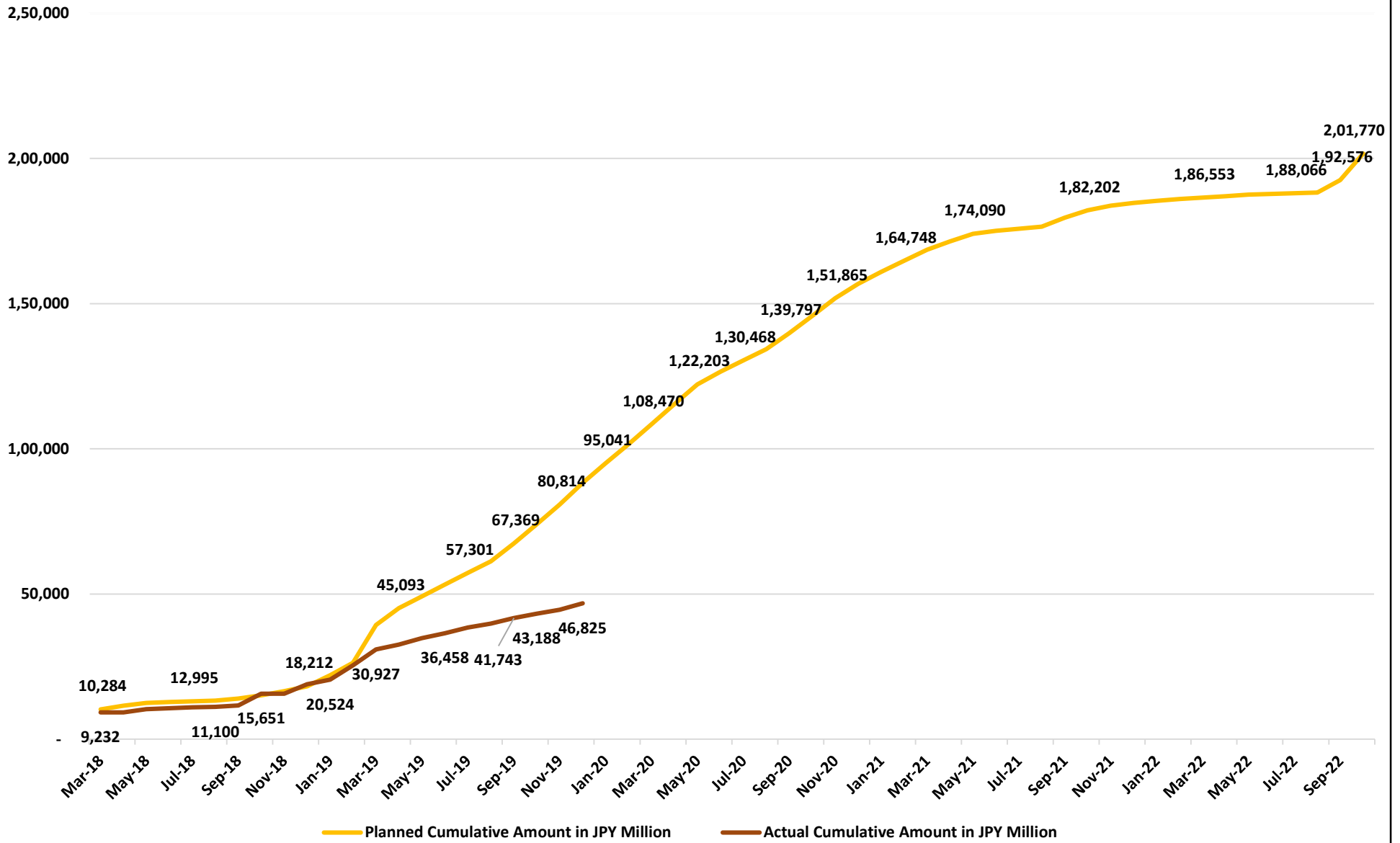
Attachment 4- Project Procurement and Financial Status till 31st December 2019

PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 31ST DECEMBER 2019

Type	Contract	Awarded or Estimated Value (in Rs. Crore)	Current Status	Contractors	Project Commencement Date	Stipulated Project Completion Date	% of Overall Project completion (Design/ Procurement/ Construction) up to 25 th December 2019	% of Overall Financial Progress (Including Mobilization Advance & Price Adjustment) till 31 st December 2019
CIVIL	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Awarded	L&T-IHI Consortium	March 2018	Sep 2022	19.19%	17.60%
	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Awarded	DAEWOO-TPL JV	March 2018	Sep 2022	15.57%	14.51%
	Package-3 (CH18+187 to CH21+800)	1013.79	Awarded	L&T	March 2018	Sep 2021	17.82%	17.07%
	Package-4 Intelligent Transport System	181.49 (Estimated)	Design Stage	--	Jul 2020 (Estimated)	Sep 2022	NA	NA

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

Attachement 6 - S - Curve for Planned Vs Actual Cumulative Amount till Dec 2019 in JPY Millions



**Attachment 6- Package-1's Construction Programme
Updated as on 25th December 2019**

**Attachment 7- Package-2's Construction Programme
Updated as on 25th December 2019**

**Attachment 8- Package-3's Construction Programme
Updated as on 25th December 2019**

MTHL Pkg 3_Construction Schedule Dec'19

Baseline Schedule (Updated as on 25 Dec 2019)

30-Dec-19 18:52

Activity ID	Activity Name	Original Duration	BL1 Start	BL1 Finish	Start	Finish	Activity % Complete	Schedule % Complete	Performance % Complete	Budgeted Total Cost	Actual Total Cost	Schedule Performance Index	Cost Performance Index	Planned Value Cost	Earned Value Cost
MTHL Pkg 3_Construction Schedule Dec'19															
		1326	23-Mar-18	21-Sep-21	23-Mar-18 A	13-Nov-22	65.2%	17.82%	17.82%	Rs10,137,901,022	Rs1,710,413,671	0.27	1.09	Rs6,805,519,618	Rs1,860,033,567
Procurement of Mumbai Trans Harbour Link Project (Package-3)-I															
		1326	23-Mar-18	21-Sep-21	23-Mar-18 A	13-Nov-22	65.2%	17.82%	17.82%	Rs10,137,901,022	Rs1,710,413,671	0.27	1.09	Rs6,805,519,618	Rs1,860,033,567
2	Commencement Date (CD)	0	23-Mar-18	21-Sep-21	23-Mar-18 A	13-Nov-22	100%	100%	100%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Physical Milestones															
		996	18-Sep-18	21-Sep-21	21-Feb-20	13-Nov-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1001	KD1 [Construction programme, completion of Soil Investigation, Submit final	0	18-Sep-18	18-Sep-18	21-Feb-20	21-Feb-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1002	KD 2 [NOC for technical design doc & drawing for foundation, Sub & Super	0	17-Dec-18	17-Dec-18	26-Apr-20	26-Apr-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1003	KD 3 [NOC for Good for construction drawing for foundation, Sub structure,	0	15-Jun-19	15-Jun-19	19-Sep-20	19-Sep-20	0%	100%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1004	KD 4 [Substantial completion of foundation, piles (if applicable), piers, abutms	0	21-Mar-20	21-Mar-20	14-Mar-21	14-Mar-21	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1005	KD 5 [Substantial completion of pile caps (if applicable), piers, abutments, p	0	19-Sep-20	19-Sep-20	26-Sep-21	26-Sep-21	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1006	KD 6 [Substantial completion superstructure (PC/CIS/SS) & asphalt paveme	0	20-Mar-21	20-Mar-21	28-Apr-22	28-Apr-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1007	KD 7 [Substantial completion of kerb/traffic signs, Marking & noise barrier, Re	0	24-Jul-21	24-Jul-21	06-Oct-22	06-Oct-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
KD1008	KD 8 [Final completion & handing over]	0	21-Sep-21	21-Sep-21	13-Nov-22	13-Nov-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Financial Milestone															
		758	18-Sep-18	21-Sep-21	23-Mar-18 A	21-Sep-21	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Interface Milestone															
		855	17-Dec-18	06-Mar-21	25-Dec-19	28-Apr-22	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Document Submittals															
		45	23-Mar-18	06-May-18	06-Apr-18 A	25-Dec-19	100%	80%	80%	Rs74,992,895	Rs59,994,316	0.80	1.00	Rs74,992,895	Rs59,994,316
Employer's Obligation / Land Handover															
		151	19-Apr-18	18-Sep-18	23-Mar-18 A	29-Dec-19	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
ROW 75 Ha [CD+180 days]															
		0	19-Apr-18	18-Sep-18	23-Mar-18 A	29-Dec-19	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
E Cb1000	ROW 24 Ha (from ch 18+187 to 18+930 and ch 20+170 to 21+232) Viadu	0	19-Apr-18	19-Apr-18	23-Mar-18 A	29-Dec-19	90%	100%	90%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
E Cb1001	ROW [51 Ha, unencumbered (Part 1) from ch 21+232 to 21+800] Viaduct	0	16-May-18	16-May-18	23-Mar-18 A	25-Dec-19	65%	100%	65%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
E Cb1002	ROW [51 Ha, unencumbered (Part 2) from ch 18+930 to 20+170] At-grade	0	18-Sep-18	18-Sep-18	23-Mar-18 A	29-Dec-19	97%	100%	97%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Casting Yard 9.16 Ha [CD+120 days]															
		0	20-Jul-18	20-Jul-18	20-Dec-18 A	21-Dec-18 A	0%	0%	0%	Rs0	Rs0	0.00	0.00	Rs0	Rs0
Employer Office (Sch 01- General Item)															
		801	20-Aug-18	16-Sep-21	25-Jan-19 A	21-Oct-21	86.61%	86.5%	86.5%	Rs142,351,965	Rs123,137,965	1.00	1.00	Rs123,288,811	Rs123,137,965
Construction of Employer Office															
		110	20-Aug-18	11-Dec-18	30-May-19 A	31-Oct-19 A	100%	100%	100%	Rs112,791,965	Rs112,791,965	1.00	1.00	Rs112,791,965	Rs112,791,965
Facility															
		980	12-Dec-18	16-Sep-21	25-Jan-19 A	21-Oct-21	35.51%	35%	35%	Rs29,560,000	Rs10,346,000	0.99	1.00	Rs10,496,848	Rs10,346,000
Survey & Geotechnical Investigation Works															
		346	19-Apr-18	22-Oct-18	19-Apr-18 A	21-Feb-20	100%	95.75%	95.75%	Rs242,300,773	Rs181,725,579	0.96	1.28	Rs242,300,945	Rs232,003,161
Topographical Survey															
		346	19-Apr-18	22-Oct-18	19-Apr-18 A	25-Dec-19	100%	99.85%	99.85%	Rs0	Rs0	1.00	0.00	Rs109	Rs109
Geotechnical Investigation work															
		93	17-May-18	10-Sep-18	10-Sep-18 A	21-Feb-20	100%	95.75%	95.75%	Rs242,300,773	Rs181,725,579	0.96	1.28	Rs242,300,836	Rs232,003,052
Design Works															
		462	07-May-18	14-Jun-19	25-Apr-18 A	19-Sep-20	100%	60.92%	60.92%	Rs159,122,509	Rs78,391,635	0.60	1.22	Rs159,123,270	Rs85,989,405
Design Basis Report															
		48	07-May-18	30-Jun-18	25-Apr-18 A	08-Dec-18 A	100%	100%	100%	Rs0	Rs0	1.00	0.00	Rs51	Rs51
Preliminary Design															
		47	02-Jul-18	25-Aug-18	25-Jul-18 A	25-Dec-19	100%	80%	80%	Rs286,875	Rs286,875	0.80	0.80	Rs286,875	Rs229,500
Geotechnical Interpretative Report Submission & GC Approval (NONO)															
		24	11-Sep-18	08-Oct-18	07-Dec-18 A	25-Feb-20	100%	91%	91%	Rs0	Rs0	0.91	0.00	Rs42	Rs38
Plan & Profile Alignment															
		77	06-Jun-18	14-Aug-18	25-Jun-18 A	03-Jan-20	100%	80%	80%	Rs0	Rs0	0.80	0.00	Rs102	Rs62
Superstructure Design															
		316	16-Aug-18	26-Feb-19	05-Mar-19 A	08-Jun-20	100%	44.66%	44.66%	Rs85,075,000	Rs37,992,885	0.45	1.00	Rs85,075,144	Rs37,992,168
Foundation & Pier															
		324	05-Oct-18	14-Jun-19	06-Nov-18 A	19-Sep-20	100%	67.2%	67.2%	Rs28,434,375	Rs12,791,250	0.67	1.49	Rs28,434,435	Rs19,106,851
Abutment & Foundation															
		255	15-Oct-18	16-Jan-19	31-Dec-18 A	31-Mar-20	100%	67.41%	67.41%	Rs0	Rs0	0.67	0.00	Rs81	Rs55
Pier Cap															
		374	24-Oct-18	10-May-19	11-Jan-19 A	16-Sep-20	100%	33.22%	33.22%	Rs0	Rs0	0.33	0.00	Rs290	Rs96
Bearings & Drainage															
		176	17-Nov-18	03-Apr-19	21-Jan-19 A	08-Aug-20	100%	62.98%	62.98%	Rs18,005,625	Rs0	0.63	0.00	Rs18,005,625	Rs11,340,000
Pavement Design															
		71	01-Jul-18	27-Aug-18	15-Oct-18 A	18-Feb-19 A	100%	100%	100%	Rs27,320,625	Rs27,320,625	1.00	1.00	Rs27,320,625	Rs27,320,625
Procurement Works															
		859	12-Sep-18	08-Jun-21	15-Feb-19 A	13-Sep-22	90.17%	1.51%	1.51%	Rs1,397,160,495	Rs5,089,147	0.02	5.00	Rs1,519,472,398	Rs25,445,877
For Main Bridge															
		950	12-Sep-18	08-Jun-21	15-Feb-19 A	10-Sep-22	61.13%	2.9%	2.9%	Rs877,933,210	Rs5,089,147	0.04	5.00	Rs712,281,063	Rs25,445,843
For Road Works															
		568	04-Apr-19	13-Jan-21	01-Mar-19 A	25-Jan-22	46.9%	8.29%	8.29%	Rs0	Rs0	0.18	0.00	Rs197	Rs35
Imported Procurement															
		170	22-Jan-19	10-Aug-19	04-May-20	20-Nov-20	100%	0%	0%	Rs509,227,248	Rs0	0.00	0.00	Rs807,190,928	Rs0
Co-ordinated Fabrication & Manufacturing Works															
		581	27-Sep-18	10-Feb-20	21-Feb-19 A	29-May-21	97.01%	0%	0%	Rs390,605,953	Rs0	0.00	0.00	Rs378,916,770	Rs322
Permanent Works fabrication															
		531	27-Sep-18	06-Jan-20	21-Feb-19 A	23-Apr-21	97.01%	0%	0%	Rs390,605,953	Rs0	0.00	0.00	Rs378,916,270	Rs157
Permanent Works Assembly															
		531	22-Oct-18	10-Feb-20	25-Feb-19 A	29-May-21	92.59%	30.56%	30.56%	Rs0	Rs0	0.33	0.00	Rs500	Rs165
Construction Works															
		1087	20-Jul-18	23-Jul-21	26-Sep-18 A	06-Oct-22	55.33%	18.44%	18.44%	Rs7,063,465,446	Rs1,242,075,029	0.33	1.05	Rs3,908,087,313	Rs1,302,709,724
Preconstruction Activity															
		465	20-Jul-18	01-Jul-19	26-Sep-18 A	28-Aug-20	100%	30.44%	30.44%	Rs0	Rs0	0.30	0.00	Rs565	Rs172
Sub Structures (Open Foundation, Pier, Pier Cap)															
		789	08-Dec-18	07-Nov-20	30-Sep-18 A	25-Nov-21	58.08%	31.57%	31.57%	Rs3,392,806,949	Rs1,065,510,244	0.54	1.01	Rs1,970,423,939	Rs1,071,248,946
Main Carriageway															
		638	08-Dec-18	24-Jan-20	05-Dec-18 A	27-Apr-21	98.95%	29.83%	29.83%	Rs1,821,401,625	Rs537,543,963	0.30	1.01	Rs1,802,300,511	Rs543,282,665
SH 54 Ramps															
		274	27-Feb-19	06-Mar-20	25-Apr-19 A	29-Apr-21	41.65%	54.39%	54.39%	Rs232,139,423	Rs126,257,103	1.31	1.00	Rs96,695,913	Rs126,257,103
Chirle NH 4B Ramps															
		325	20-May-19	05-Sep-20	30-Sep-18 A	21-Oct-21	4.08%	24.92%	24.92%	Rs874,897,055	Rs218,070,697	6.11	1.00	Rs35,713,757	Rs218,070,697
Chirle NH 4B Loops															
		286	09-Sep-19	07-Nov-20	21-Aug-19 A	25-Nov-21	7.69%	39.56%	39.56%	Rs464,278,846	Rs183,638,481	5.14	1.00	Rs35,713,757	Rs183,638,481
Super Structures															
		647	27-Feb-19	12-Apr-21	11-Sep-19 A	20-May-22	34.87%	0.84%	0.84%	Rs1,408,927,165	Rs11,877,439	0.02	1.00	Rs491,330,801	Rs11,877,477
Segments Precasting															
		443	30-Mar-19	09-Nov-20	11-Sep-19 A	23-Sep-21	40.31%	1.56%	1.56%	Rs760,156,099	Rs11,877,439	0.04	1.00	Rs306,438,812	Rs11,877,477
Segments Erection															
		405	26-Aug-19	20-Jan-21	02-Dec-20	28-Apr-22	29.37%	0%	0%	Rs70,699,410	Rs0	0.00	0.00	Rs20,767,952	Rs0
Cast In Situ															
		620	27-Feb-19	12-Apr-21	17-Mar-20	20-May-22	25.85%	0%	0%	Rs464,334,354	Rs0	0.00	0.00	Rs120,012,348	Rs0
Steel Structure															
		390	10-May-19	17-Nov-20	16-Sep-20	25-Jan-22	38.78%	0%	0%	Rs113,737,302	Rs0	0.00	0.00	Rs44,111,689	Rs0
Bearings & Expansion Joints															
		210	03-Aug-20	12-Apr-21	06-Dec-21	11-Aug-22	0%	0%	0%	Rs10,454,697	Rs0	0.00	0.00	Rs0	Rs0
Bridge Ancillaries & Miscellaneous Item															
		324	12-Aug-20	23-Jul-21	21-Sep-21	06-Oct-22	0%	0%	0%	Rs180,921,987	Rs0	0.00	0.00	Rs0	Rs0
RE Wall															
		504	27-Feb-19	18-Feb-21	11-May-20	01-Mar-22	54.08%	0%	0%	Rs461,897,248	Rs0	0.00	0.00	Rs249,695,916	Rs0
Road Work															
		803	20-Apr-19	18-May-21	16-Feb-19 A	25-Jul-22	74.39%</								

Attachment 9- Project Progress Photos

Package 1- Site Progress Photos



Photo No. 1: View along TAB at MP-23 seeing towards Mumbai

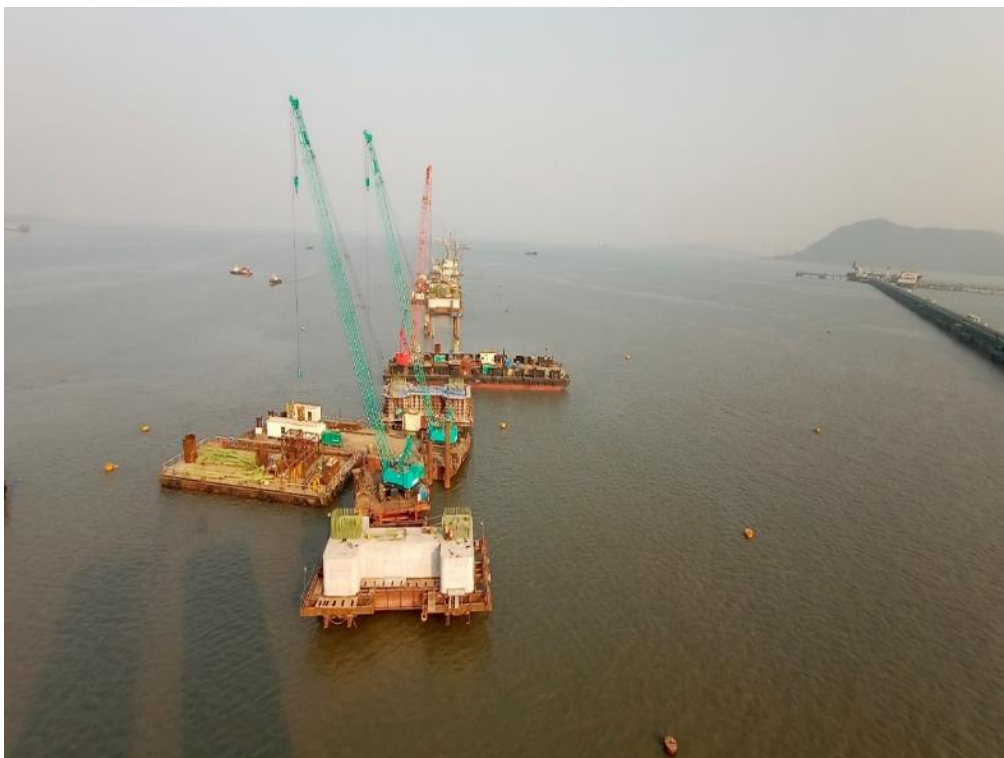


Photo No. 2: Work in Progress between MP83 & MP148



Photo No. 3: Work in Progress between MP81 & MP85



Photo No. 4: MP15 Pier cap works – Intertidal is in progress



Photo No. 5: 4. Launching Girder Erection works – Intertidal is in progress



Photo No. 6: Pile boring works at Interchange area



Photo No. 7: Precast Yard - Segment casting in BAY-2 is in progress



Photo No. 8: Pier Works at BP44 & BP45 – Interchange is in progress



Photo No. 9: Pier Works at BP41 & BP44 – Interchange is in progress



Photo No. 10: Site visit by MMRDA Officials and GC Team at the Structural Steel Manufacturing Plant Ms. Najing Iron & Steel Co. Ltd. China

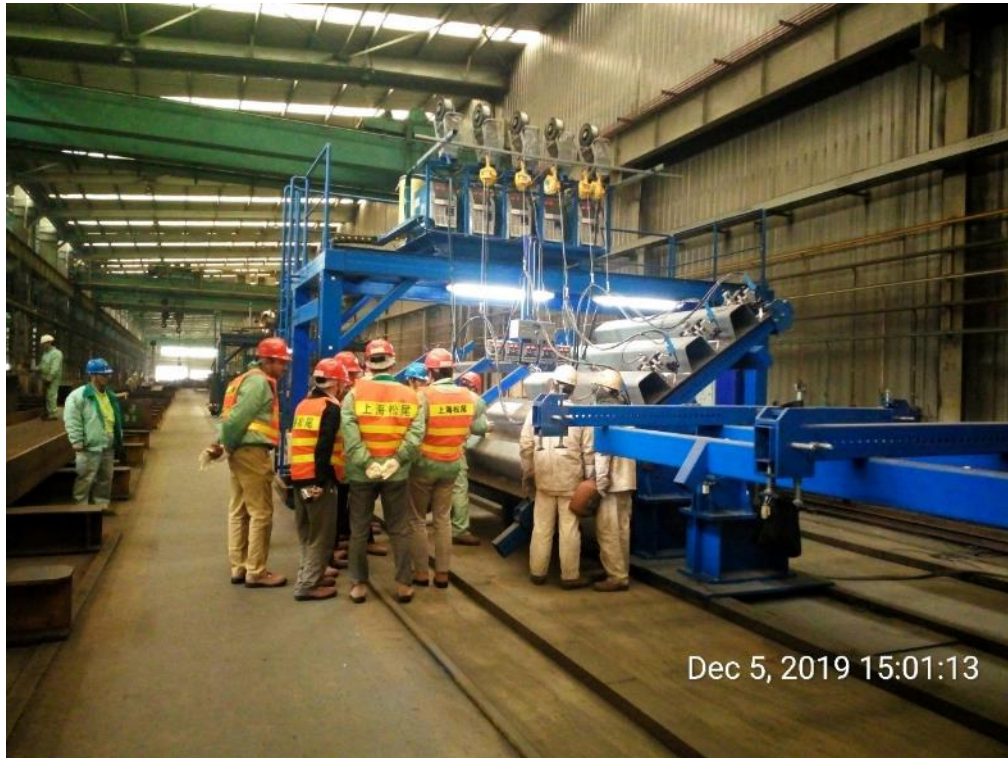


Photo No. 11: Site visit by MMRDA Officials and GC Team at the Structural Steel Manufacturing Plant Ms. Najing Iron & Steel Co. Ltd. China



Photo No. 12: Segment assembly for OSD Girder Fabrication OS01-NG (lot1) -IIA, Vietnam

Package 2 – Site Progress Photos



Photo No. 1: Precast Slab erection works at TAB in progress

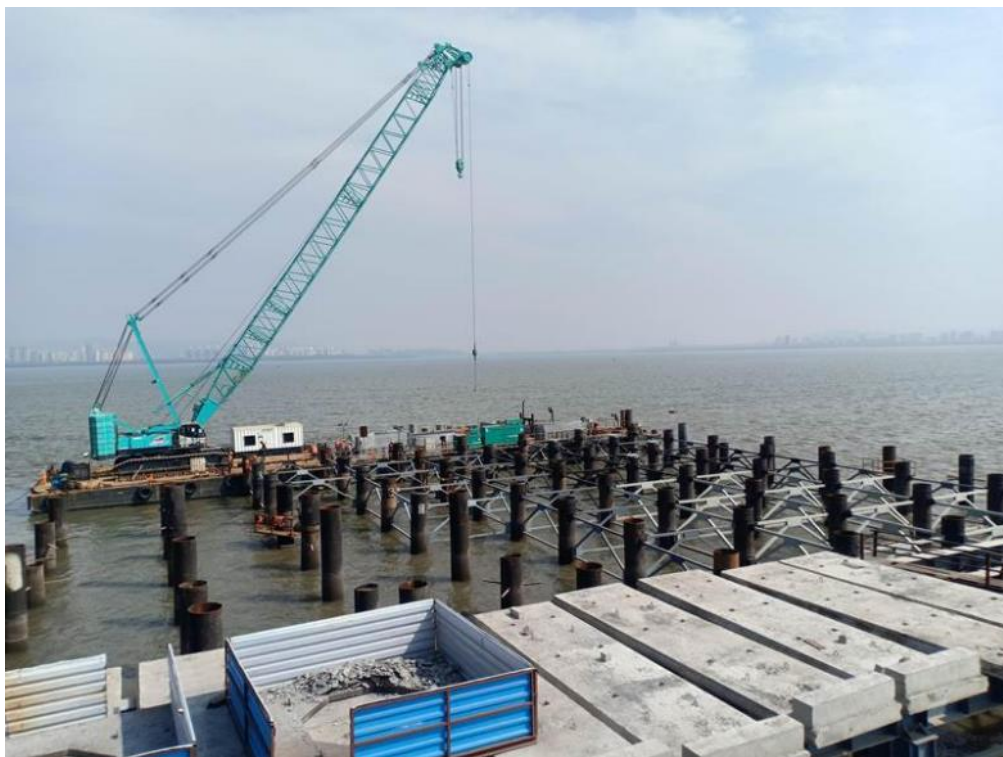


Photo No. 2: Material Platform bracing welding works in progress



Photo No. 3: Pile Cap bottom formwork and Pile head chipping in progress at MP 206 LHS and RHS in progress



Photo No. 4: Pile concreting at MP 232/02 LHS in progress



Photo No. 5: Preparatory works at MP 209 LHS location in progress



Photo No. 6: Segment lifting and stacking at Bay-3 in progress



Photo No. 7: Segment Concreting works at Bay-2 in progress



Photo No. 8: Pile reinforcement cage checking in progress



Photo No. 9: Open foundation concreting at MP 243 LHS in progress



Photo No. 10: Coal Tar epoxy application at Open foundation MP 245 LHS in progress



Photo No. 11: Open foundation concreting at ACP 03 in progress



Photo No. 12: Pier reinforcement tying at MP 245 LHS location in progress

Package 3 – Site Progress Photos



Photo No. 1: Foundation casting completed at LP 01 RHS Chirle location



Photo No. 2: Foundation casting completed at LP 31 Chirle location



Photo No. 3: Foundation Reinforcement Works at RMP 280 is in progress



Photo No. 4: Pier casting works at Pier location LMP 280 in progress



Photo No. 5: Pier casting completed at LMP 269 location

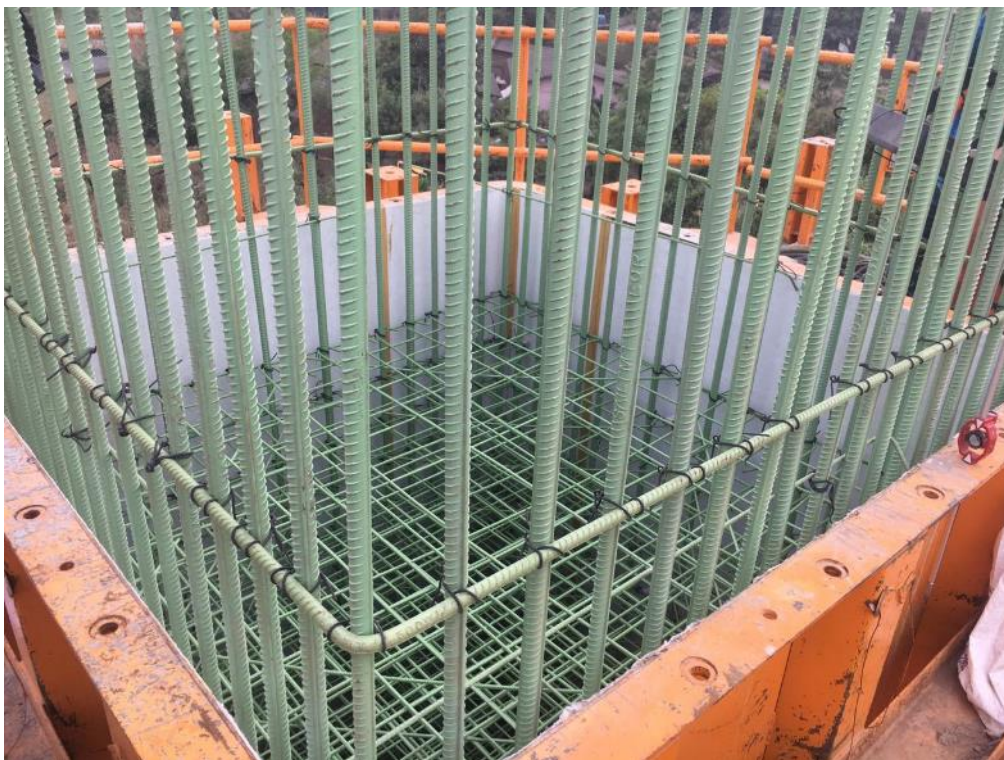


Photo No. 6: Pier reinforcement and shuttering at RMP 269 is in progress

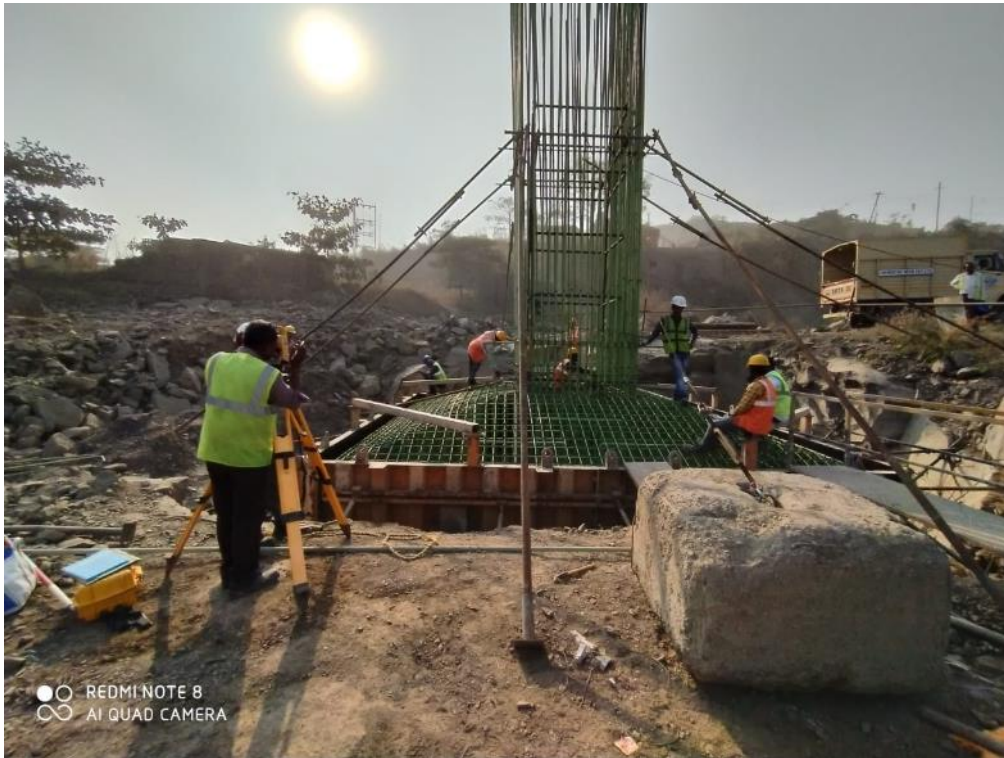


Photo No. 7: Foundation co-ordinates checking at Jasai area is in progress



Photo No. 8: PCC Pre-pour checking at LMP 279 P1



Photo No. 9: PCC Concrete pouring at LMP 279 LHS



Photo No. 10: Segment Casting is in progress



Photo No. 11: Segment Casting at PC yard is in progress



Photo No. 12: Excavated material shifting at At-grade area Ch @ 19+720