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for architecture

TY-LIN  
INTERNATIONAL

General Consultant for Mumbai Trans Harbour Link Project

Ref No.: MTHL/GC/MMRDA/QPR/2018/215

09<sup>th</sup> April 2018

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

**Subject :. Quarterly Performance Report (QPR) No.4**

Dear Sir,

With reference to above subject, we submit the MTHL-GC Quarterly Progress Report No-4 copy for the Month of Jan-18 to March-18.

Thanking you

*M Sham*

**Dr. S H Robin Sham, CBE**  
**(BSc, PhD, DIC, FCGI, FRSA, CEng, FICE, FStructE, FHKIE)**  
**The Engineer**  
**MTHL Project**

Encl: Quarterly Progress Report No-4- (Two Hard Copies)





# MMRDA

Mumbai Metropolitan Region Development Authority

## Mumbai Trans Harbour Link Project

### Quarterly Progress Report-No.4 From 1<sup>st</sup> January 2018 to 31<sup>st</sup> March 2018



**Mumbai Trans Harbour Link Project  
Quarterly Progress Report No. 4  
1<sup>st</sup> January 2018 to 31<sup>st</sup> March 2017  
Loan Agreement No. ID-P255**

**ORGANIZATION INFORMATION**

<b>Borrower</b>	<b>Mumbai Metropolitan Region Development Authority</b>	
	Person in Charge	<b>Metropolitan Commissioner, MMRDA</b>
	Contact Address	M.M.R.D.A. New OFFICE BUILDING, BANDRA-KURLA COMPLEX, Plot no. R5,6&12, E BLOCK BANDRA (EAST), MUMBAI - 400 051 Phone : +91-22-2659 0001 / 4000 Fax No. : +91-22-2659 1264
<b>Executing Agency</b>	<b>Mumbai Trans Harbour Link Project Implementation Unit</b>	
	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. R5,6&12, E BLOCK BANDRA (EAST), MUMBAI - 400 051 Phone : +91-22-2659 0001 / 4000 Fax No. : +91-22-2659 1264

**OUTLINE OF LOAN AGREEMENT**

<b>Source of Finance</b>	JICA ODA Loan : ¥ 276,333Million Tranche -1 : ¥ 144,795Million Tranche -2 : ¥ 131,538 Million
<b>Terms and Conditions</b>	For JICA - Interest Rate: 0.10150% (LIBOR- 0.00150%+ SPREAD RATE – 0.1000%) from 20 <sup>th</sup> September 2017 to 19 <sup>th</sup> March 2018. - Repayment Period: 30 years, including 10 years of grace period.



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## 1.0 PROJECT DESCRIPTION

### 1.1 Project Objective

#### **Original:**

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

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

There is no change in the Project Objective

### 1.2 Necessity of the Project

**The Project is consistent with the development policy, sector plan, national/regional development plans and demand of target group of the recipient country. It also conforms to the national and state laws.**

#### **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. The traffic congestion in the urban areas due to a lack of road network hinders the economic development. Given this situation, the necessity of comprehensive infrastructure development plan was given the importance for the growing economic developments in the 12<sup>th</sup> Five –Year Plan (April 2012 to Mar 2017).
2. Mumbai Metropolitan Region which includes Mumbai and Navi Mumbai, has about 13.59 million population as of 2011(census 2011) and population density has reached 17,400 People per Square km in the center of Mumbai, it is one of the over populated City, having highest population density in the world.
3. Mumbai the narrow stretch of land, 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), has been facilitating various development plans particularly in Navi Mumbai area. The Navi Mumbai stands at the opposite

side of Mumbai across the Mumbai bay and still has spacious area for development such as 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 faster communication and transport infrastructures with in Mumbai has stunned its growth. The GoM has given importance to construct the faster connection of Mumbai with Navi Mumbai International Airport, Jawaharlal Nehru Port, Mumbai- Pune express way and Mainland.
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.
7. The Comprehensive Transportation Study (CTS) for Mumbai Metropolitan Region (MMR), which was conducted by MMRDA and supported by World Bank, was completed in July 2008 over 25 years after the issuance of the last comprehensive transport study. The report provided a vision for Mumbai's future transportation as seamless, 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 in MMR to take care of the varied travel demands of the region for the horizon period up to 2031.
8. Accordingly, whereas the CTS recommended developing the metro and suburban railway network in the Mumbai it also proposed to develop the highway network in the region.
9. The MTHL has been regarded as the priority road for MMR for a long time, considering its function and importance of connecting Greater Mumbai and Navi Mumbai
10. 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.
11. When completed, MTHL will reduce the travel distance between Mumbai and Navi Mumbai and will help save approximately an hour in travel time.
12. 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.
13. Consequently, the Project is envisaged to:
  - improving accessibility between Mumbai and Navi Mumbai,
  - accelerate the growth of Navi Mumbai,
  - improving smooth traffic flow from Navi Mumbai airport to Mumbai,
  - accelerate the economic development of Navi Mumbai and surrounding regions.
  - greater economic integration of Mumbai with Navi Mumbai extended regions of Pune, Goa, Panvel and Alibaug and decongestion of Mumbai, and
  - dispersal of Population to Navi Mumbai region and Beyond.
14. Thus, 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

#### Demand Analysis

- At the opening year 2022, the daily traffic on the main bridges 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 on the main bridge link, by vehicle class, is presented in the **Table 1.3** below:

**Table 1.3, Demand Projections Over The Period**

Vehicle Type	Between Sewri IC-Shivaji Nagar			Between Shivaji Nagar IC -Chirle IC		
	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
<b>Total</b>	<b>39,300</b>	<b>103,900</b>	<b>145,500</b>	<b>9,800</b>	<b>29,600</b>	<b>55,000</b>

LCV: Light Commercial Vehicle; HCV: Heavy Commercial Vehicle; MAV: Multi Axle Vehicle (Four axis or more)

- 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.
- The lane requirement was reviewed based on the forecasted result of future traffic volume by manual of specification and standards for Expressways (IRC: SP99-2013). The result of the review shows that 6-lane will be required in 2032 (10 years later after traffic open to Public in 2022). Although 8-lane will be required in 2042, it is assumed that the level of service of MTHL would be maintained as an additional Metro might be constructed parallel with MTHL in future

#### Design Parameters

- The MTHL which is about 21.8 Km long road on the Sea across the Mumbai Bay between Sewri in Mumbai and Chirle in Navi Mumbai, is to be constructed with the approach sections, interchanges, ITS (Intelligence Transport System) and the other necessary facilities for full access-controlled motorway marine bridges.
- Under 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 100Km/h according to the traffic demand forecast the large vehicle, ratio will be as low as 9.4%(2022).
- The lane width at 3.5 meters will ensure adequate safety and road functions.
- The shoulder width of bridge towards outside of main carriageway is 2.5 meters and towards median is 0.75 meters as per design requirements for the design speed of 100 Km/h.
- 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.

10. On the land portion, the PC box girder with 30m span is commonly used.
11. As for 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 construction period.
12. 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 2015 monetary value.

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

Vehicle Type	Sewri-Shivaji Nagar	Shivaji Nagar-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)

#### Toll Management System(TMS)

13. The toll management system introduced in MTHL, shall collect tolls from all road users of MTHL. Two types of toll collection method will be adopted; Electronic Toll Collection (ETC) and Manual (paying in cash).
14. 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.

#### Traffic management System

15. 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)
16. 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.
17. The Information collected by these devices shall be transmitted to the Traffic Control Centre through the medium of an Optical Fiber Cable laid in MTHL.

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

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

**1.4 Contract Packages**

1. **Package-1** includes the Sewri Interchange on land, Mumbai side and the adjoining 10.380 km (CH 0+000 km to CH 10+380 km) bridge above sea/creek. The typical width of carriageway will be approximately 14 M for each way.
2. **Package-2** includes about 7.8 km long bridge (CH 10+380 km to CH18+187 km) above sea/creek and Shivaji Nagar Interchange on land, Navi Mumbai side. The typical width of carriageway will be approximately 14 M for each way.
3. **Package-3** includes about 3.6 km long bridge and road (CH18+187 – CH21+800) having interchanges at State Highway-54, National Highway-4B near Chirle and Rail-over-Bridges (ROB) at two locations in Navi Mumbai side. The typical width of the carriageway will be approximately 14 M for each way.
4. **Package-4** consisting of Intelligent Transport Systems (ITS) including Operation & Maintenance Facility and Equipment Installation for the Project. Bid for the Package-4 will be issued at a later stage.

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

There is no change in the Contract Package

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

**Table 2.1.2 Comparison of Original and Actual Scope**

Items	Original	Actual
<b>Construction work: 6-lane Marine Bridge Road (21.8 km)</b>		
Package 1 Ch 0+000-10+380 (10.380 Km)	<ul style="list-style-type: none"> <li>➤ 1 interchange (Sewri)</li> <li>➤ Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder)</li> <li>➤ Viaduct Substructure (RC Concrete Structure)</li> <li>➤ Viaduct Foundation (Bored piles)</li> <li>➤ High way Lighting (Whole Sections. Low-positioned lighting for some sections)</li> <li>➤ Road Furniture and road side facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers)</li> </ul>	(P/R and PCR)
Package 2 Ch 10+380-18+190 (7.81 km)	<ul style="list-style-type: none"> <li>➤ 1 interchange (Shivaji Nagar)</li> <li>➤ Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder)</li> <li>➤ Viaduct Substructure (RC Concrete Structure)</li> <li>➤ Viaduct Foundation (Bored piles)</li> <li>➤ High way Lighting (Whole Sections. Low-positioned lighting for some sections)</li> <li>➤ Road Furniture and road side facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers)</li> </ul>	(P/R and PCR)
Package3 Ch 18+190-21+830 (3.64 Km)	<ul style="list-style-type: none"> <li>➤ 2 interchanges (State Highway-54, National Highway-4B)</li> <li>➤ Viaduct superstructure (Marine Portion: PC Box Girder &amp; Steel Box Girder with Steel Slab Land Portion: PC Box Girder &amp; PC-I Girder &amp; Steel Truss Girder for Rail-over-Bridges (ROB)</li> <li>➤ Viaduct Substructure (RC Concrete Structure)</li> <li>➤ Viaduct Foundation (Bored piles)</li> <li>➤ Highway Lighting Whole Sections</li> <li>➤ Road Furniture and road side facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures )</li> </ul>	(P/R and PCR) Actual: No Marine Portion in Package-3

Items	Original	Actual
Package 4 ITS (Intelligent Transport System)	<ul style="list-style-type: none"> <li>➤ Toll Booths (1 for Main Alignment and one each “on and off” ramps for 3 Interchanges)</li> <li>➤ Traffic Management System (Traffic Control Centre, Closed Circuit Television (CCTV), Meteorological Data System (MDS), Emergency Call Box (ECB), Automatic traffic Counter-Cum-Classifier (ATCC), Variable Message Sign (VMS))</li> </ul>	(P/R and PCR)
Consulting Service	<ul style="list-style-type: none"> <li>➤ Tender Assistance</li> <li>➤ Construction Supervision</li> <li>➤ Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP) and Resettlement Action Plan (RAP)</li> </ul>	(P/R and PCR)

## 2.2 Implementation Schedule

### 2.2.1 The Original Implementation Schedule

The original project implementation schedule for commissioning the project from Sewri Interchange to Chirle Interchange at State Highway-54 by June 2021 and the updated project implementation schedule as on September 2017, is provided in the following Table 2.2.1

**Table 2-2-1 Comparison of Original and Updated Schedule**

Items	Original	Updated (Mar-18)
Employment of General Consultant	June 2016	December 2016
Completion of land acquisition and Resettlement	November 2016	June 2018
Stage-2 Main Tender for construction of Package-1,2 &3	June 2016	January-17
Award and Commencement of construction of Package-1,2&3	January 2016	March -2018
Completion of construction of Package-3	June 2020	September 2021
Completion of construction of Package-1&2	June 2021	September 2022
Stage-2 Main Tender for construction of Package-4	September 2018	September 2019
Award and Commencement of ITS Package-4	July2019	September 2020
Completion of ITS Package-4	June 2021	September 2022
Commercial Operation Date	June 2021	September 2022

**Attachment:**

Project Implementation Program (March-18)

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

**Actual (P/R and PCR)**

Tender Invitation and the date of Bid Submissions were delayed, because of the following reason:

- Enormous number of queries (3224) had to be answered and 15 addenda for all the 3 packages were to be issued.
- A large number of Technical issues had to be discussed with Technical Advisory Committee and incorporated in the addenda.
- A large number of coordination issues especially with environment agency have to addressed and incorporated in the bid documents.

### 2.3 Project Cost

2.3.1: Comparison of Originally planned and actually incurred Cost by year is given **Table 2.3.1**

**Table 2.3.1, Comparison of Originally Planned and Actually Incurred Cost by year**

Breakdown of Cost	Originally Planned			Actually Incurred		
	JICA Portion	MMRDA	Total	JICA Portion	MMRDA	Total
Year	In Rs Cr	In Rs Cr	In Rs Cr	In Rs Cr	In Rs Cr	In Rs Cr
Budget	15,100.16	2743.06	17,843.22			
FY2016-2017					176.39	176.39
FY2017-2018				656.20	110.62	766.82
<b>Total</b>			17,843.22	<b>579.67</b>	<b>363.93</b>	<b>943.21</b>

\* Fiscal Year starting in April and ending in March Unit: (All Figures: in Crores INR)

**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.**

Actual (P/R, PCR)
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## 2.4 Organization for Implementation

### 2.4.1 Executing Agency:

#### Executing Agency:

1. Mumbai Metropolitan Region Development Authority (MMRDA)  
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.
2. The GoM appointed the 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 vid Government Resolution dated 8th June 2011.

#### Organization's Role:

3. The broad responsibilities of the Mumbai Metropolitan Region Development Authority includes:
  - Preparation of Regional Development Plans
  - Providing financial assistance for significant regional projects
  - Providing help to local authorities and their infrastructure projects
  - Coordinating execution of projects and/or schemes in MMR
  - Restricting any activity that could adversely affect appropriate development of MMR, etc.
4. In particular, it conceives, promotes and monitors the key projects for developing new growth centers and brings about improvement in sectors like transport, housing, water supply and environment in the Region.

#### Project Implementation Unit (PIU)

5. The PIU will be in charge of the Projects. The PIU will be headed and Coordinated by Chief Engineer. PIU comprising of 6 Division/cells (Engineering Division, Finance Division, Land Cell, Social Development Cell, Administrative Division and Environmental Cell), Supervision/ITS Consultant and support staff.

#### Procurement

6. 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.
7. 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

Annexure III Organizational Chart

## 2.4.2 Performance of Consultants / Contractor(s):

### Consultants Progress

#### January 2018:

- 1 In the month of January, the major achievements are the signing of Contract Agreement for Package 2 and starting of Mobilization activity by Contractors
- 2 The Contract Agreement for Package 2 was signed by AMC, MMRDA and the representative of Daewoo and TATA Project on 19<sup>th</sup> January 2018.
- 3 The stakeholders meetings were conducted on 31<sup>st</sup> Jan 2018 along with MMRDA, MTHL-GC, Utility stakeholders and Contractors of Package 1, 2&3.
- 4 MMRDA officials was convened under the chairmanship of the Chief Engineer on 31.1.2018 at MMRDA office for Mumbai Trans Harbour Link project General consultant take lead along with Stakeholders and representative of the contractors of all 3 packages to Coordinate to resolve the Issues of Utilities
- 5 The page numbering and scanning of all the 3 signed Contract Agreement documents involving more than 17000 pages were carried out. Copies were sent to JICA subsequently.

#### February 2018:

- 6 In the month of February MMRDA received the JICA concurrence on 15/02/2018 for the Contract Agreement.
- 7 The preparation of the Contract Agreement document has been completed, signed, numbered and scanned. Ten copies of Package 1, Package 2, Package 3 have been made. The Scanned Copy along with 4 set's (original + 3 Copies) of Hard Copies of each package have been submitted to MMRDA. 2 copies of each package have been forwarded to the Contractors.
- 8 The Package 1 Contractor has started the pre activities of the Geotechnical Investigation and 50 boreholes have been completed out of about 530 bore holes in this month.
- 9 The Coordination meeting for Package 2 was held on 8/02/2018 and for Package 1 & Package 3 on 14/02/2018 with MMRDA and GC Team in the chairmanship of AMC.
- 10 The Design workshop was organized by the Contractors for Package 2 on 15/02/2018 and GC and MMRDA contributed to the same.

#### March 2018:

- 11 One of the major achievements in the month of March is, we issued the Letter on Commencement Date to all the three Packages on 23/03/2018.
- 12 GC also processed and certified the Interim Payment Certificates for Mobilization Advance Payments for all the Packages between 14/03/2018 to 16/03/2018. The Advance Bank Guarantees were also scrutinized and commented upon.
- 13 GC also processed the Reimbursement Claims to JICA,
- 14 In total 13 Reimbursement Claims have been processed involving 4 different currencies.
- 15 Progress review meeting held at MMRDA on 21<sup>st</sup> March 2018 MMRDA, and MMRDA land cell and GC attend the meeting, GC presented the Progress of work and status of Land availability to issue Commencement letter to Contractors.
- 16 The Design Workshop for Package 3 was held on 27/03/2018 and was participated by GC and MMRDA officials. Considerable participation and guidance were provided by the officials of GC in the Workshop.
- 17 Package 1 and 3- Survey work is progressing, and Package 2 survey work has been started.
- 18 The Tree Survey and Land Survey are in Progress.
- 19 We are reviewing the final Geophysical Report prepared by National Institute of Oceanography, Mumbai.
- 20 Stakeholders meeting by MMRDA with MbPT was carried out this month also and GC and Contractor's Representatives attended the meeting.
- 21 Package-2 Mangrove cutting plan submitted by contractor has been vetted and recommendation made by MMRDA for issuing of required concurrence by respective Government department.



## Construction Progress

### Package-1

#### Mobilisation

Staff Mobilisation is in Progress, Total 27 nos. of Geotechnical Rigs have been mobilised; Land Side is 10 nos, Intertidal Zone 11 no's; and in Marian area 6 nos.

#### Tree Survey

Tree survey for Sewri interchange section has been completed the identification, marking, painting & numbering of the all the relevant trees within the demarcated ROW area of interchange & Casting area have been completed. Detailed tree survey report will be prepared for the submission and approval for Authorities.

#### Physical Progress

S.No	Activity	Total Scope	Unit	Cumulative	Remarks
1	Geotechnical investigation				
1.1	Marine	194	Nos	83	
1.2	Intertidal	117	Nos	53	
1.3	Interchange	216	Nos	38	
2	Survey				
2.1	Geo Physical	10	KM	10	
2.2	Bathymetry	10.78	KM		
2.3	Topography	10.78	KM		
3	Tree Survey				
3.1	Tree numbering- Casting yard	15	Ha	15	Report work in Progress
3.2	Tree numbering - ROW	10	Ha	10	Report work in Progress

### Package-2

#### Mobilisation

Staff Mobilisation is in Progress, Total 6 nos. of Geotechnical Rigs have been mobilised; Land Side is 1 nos, Intertidal Zone 2 no's; and in Marian area 3 nos.

#### Physical Progress

S.No	Activity	Total Scope	Unit	Cumulative	Remarks
1	Geotechnical investigation				
1.1	Marine	154	Nos	27	
1.2	Intertidal	80	Nos	10	
1.3	Interchange	71	Nos	2	

### Package-3

Staff Mobilization is in Progress

### Package-4

**Design Stage-Tender Documents are under preparation.**

## 2.4.3 Health Safety and Environment (HSE)

The HSE Plan will be prepared by the respective construction agency for the Packages. This will be monitored and implemented by GC.

#### 2.4.4 Procurement Status

Financial Evaluation Reports have been submitted to JICA and bids are likely to be allotted soon.

**Table 2.4.4 Present Status of Procurement**

Type	Contract	Estimated Value (in Rs. Cr.)	Award Value (in Rs. Cr.)	Current Status	Bidders	Award Date as per PIP Sep 2017	Status / Remarks
CIVIL	Package-1(CH 0+000 km to CH 10+380 km)	6,599.56	<b>7637.30</b>	Award	<b>L&amp;T-IHI (Consortium)</b>	Nov 2017	Date of Commencement 23 <sup>rd</sup> March 2018
	Package-2 (CH 10+380 km to CH18+187 km)	4,902.90	<b>5612.61</b>	Award	<b>DAEWOO-TPL (JV)</b>	Nov 2017	Date of Commencement 23 <sup>rd</sup> March 2018
	Package-3 (CH18+187 – CH21+800)	1,306.61	<b>1013.79</b>	Award	<b>L&amp;T</b>	Nov 2017	Date of Commencement 23 <sup>rd</sup> March 2018
ITS	Package-4 Intelligent Transport System	144.26	--	Design Stage	--	Jul 2020	

#### Financial Report

The following is a breakdown of JICA and MMRDA share of project Cost:

- i. Package-1 – 100% JICA Contribution – Budget INR 6,599.56 Cr
- ii. Package-2 – 100% JICA Contribution – Budget INR 4,902.90 Cr
- iii. Package-3 – 100% JICA Contribution – Budget INR1, 306.61Cr.
- iv. Package-4 – 100% JICA Contribution – Budget INR144.26Cr

### 3.0 BENEFITS DERIVED FROM THE PROJECT

#### 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

Original Issues and Countermeasure(s)	Actual Issues and Countermeasure(s)
<p><b>3.2.1 General Issues</b></p> <p><b>1. Toll Arrangement/ Toll Rate</b> Fixed toll rate by 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><b>2. Operation and Maintenance</b> MMRDA will appoint a toll collection agency during project implementation period. Thereafter, a single operation and maintenance contractor shall be appointed through open tendering process. MMRDA has confirmed to allocate adequate budget for engaging the contractors.</p>	<p>(P/R and PCR)</p> <p>No significant event.</p> <p>No significant event.</p>
<p><b>3.2.2 Environmental and Social Consideration</b></p> <p><b>a. CRZ Clearance</b></p> <ul style="list-style-type: none"> <li>Supplemental EIA has been approved by MMRDA, and disclosed on the website of JICA. Supplemental EIA report will be disclosed also on the website of MMRDA.</li> <li>Renewed CRZ Clearance will be obtained in a timely manner.</li> <li>In accordance with the conditions for CRZ Clearance, appropriate measures shall be taken, and necessary budget shall be</li> </ul>	<p>(P/R and PCR)</p> <ul style="list-style-type: none"> <li>MMRDA has Uploaded Supplemental EIA &amp; SIA on MMRDA website.</li> <li>The CRZ clearance for MTHL was acquired on 25/1/2016 from MoEFCC and enclosed in the contractor's bid documents. MMRDA has been actively committing the conditions of the MOEFCC approval condition and will continue during the construction phase.</li> <li>MMRDA appointed (BNHS) Bombay Natural History Society 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.</li> </ul>

<p>secured by MMRDA.</p>	<ul style="list-style-type: none"> <li>Rs91.36 Cr has been deposited to Mangroves &amp; Marine Biodiversity Foundation of State government for the development of a new mangrove area and its afforestation as well as the Birds' monitoring by MNHS. Such funds will be managed by the mangrove foundation of MH state and disbursed periodically to BNHS.</li> <li>As per the new CRZ clearance condition, 4.98Cr has been allocated for the consulting services to develop a Mahul creek Effluent Treatment Plant (ETP). IIT Mumbai is appointed for the DPR study and completed for the pre-monsoon season study and will complete post-monsoon study with the draft policy and implementation plan for the ETP.</li> <li>Pre-construction activities like soil testing have begun.</li> </ul>
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### 3.2.3 Permits

The Permits to be obtained by MMRDA and the Present Status are given in **Table 3.2.2**

**Table 3.2.2 Present Status of the Permits**

Clearance Required	Approved authority	Responsible Organization	Obtained by When	Status
Mangrove cutting	Bombay High Court	MMRDA	Before start of Construction	<b>Approval received from Bombay High Court on 28<sup>th</sup> Nov 2016</b>
Tree cutting	Respective tree authorities	Contractor for respective Packages	To be obtained before start of Construction	Contractors to submit the proposals to the Tree authorities

### 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><b>1. Establishment of Effective Environmental and Social Cell in PIU</b> MMRDA confirmed that Social Development Cell, Land Cell, and Environmental Cell had been set up, which consists of two officers at each cell.</p>	<p>Cell is established by MMRDA (Annexure III, Organization chart)</p>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p><b>2. Rehabilitation and Land Acquisition Issues</b></p> <p><b>a. Affected Area and Population</b> Due to the Project, 1,272 non-titleholders will be involuntary resettled, and 108.88 ha of land will be handed over by CIDCO.</p>	<p>a. SEWRI: Involuntary resettlement in Sewri section has been further validated by R&amp;R cell of MMRDA. Out of 229 project affected households (PAHs), MMRDA confirmed the consent of the 150PAHs for the resettlement site in HDIL buildings at Kurla (E). MMRDA confirmed the consent of the of 63 PAHs of Kanjurmarg resettlement site and rest of 16 PAH s yet to give their consent.</p> <p>Navi Mumbai: CIDCO is finalizing the land acquisition in Navi Mumbai side and monitored by Land Cell of MMRDA. Out of 108.88Ha ROW 90.29Ha has been handed over by CIDCO to MMRDA and remaining18.58Ha will be shortly handed over to MMRDA.</p>
<p><b>b. Entitlement Policy</b> MMRDA prepared the entitlement matrix for resettlement of non-titleholders in Sewri, which meets the Resettlement and Rehabilitation Policy for Mumbai Urban Transportation Project (1997, amended in 2000) and JICA guidelines for Environmental and social considerations (2010) (“Guidelines”) (Attachment 2-5).</p>	<p>There are no changes to enforce the entitlement policy. As per the Attachment 2-5, MMRDA has committed to enforce the agreed/approved policy.</p>
<p><b>c. Compensation to Project affected Fishermen</b> Detailed baseline survey will be undertaken by MMRDA in order to identify fishermen who are affected by the Project. Based on the result of the baseline survey, MMRDA will compensate them in accordance with compensation policy prior to the construction. Monitoring will be conducted by MMRDA with assistance of the Consultant to gasp the exact impact during construction and operation phase.</p>	<p>As per the instructions of the AMC II &amp; Fisheries Commissioner, a re-survey was conducted for 3060 PAPs of Navi Mumbai from December till January. Of these, 1584 PAPs submitted their documents and 1476 PAPs are yet to submit their documents. Status for the same is shared in Annexure IV.</p> <p>In February 2018 a joint survey was carried out along with Fisheries Department for C1 category fishermen of Mahul &amp; Trombay. All the fishermen who had their sus and dol in the alignment were surveyed and the positions on the nets were marked using GPS. The draft list for the village of Trombay was shared with the fisheries society of Trombay. The confirmed list from the fisheries society is awaited. Mahul fisheries society has requested that the C1 fishermen category survey should be carried out again in the presence of the fishermen who own the nets. A resurvey will be carried out for them in accordance to the next highest high tide levels.</p>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
	<p>The list of eligible PAPs from Trombay and Mahul are yet to be confirmed by the fisheries society of the respective villages. The fisheries societies are verifying the list of eligible PAPs and collecting the bank account details and other necessary identity proofs of fishermen.</p>
<p><b>d. Implementation Schedule</b> The Implementation schedule for land acquisition, resettlement and rehabilitation.</p>	<p>Land cell of MMRDA are managing the land acquisition related to the MTHL. Expected schedule as of 21/03/2018</p> <ul style="list-style-type: none"> <li>a) Sewri: April 2018</li> <li>b) Sealink (MbPT): April 2018</li> <li>c) Sealink (JNPT): April 2018</li> <li>d) Navi Mumbai: April 2018</li> </ul> <p>R&amp;R cell of MMRDA has managed resettlement and rehabilitation in parallel.</p> <ul style="list-style-type: none"> <li>a) Sewri: November 2018</li> </ul>
<p><b>e. Grievance Redressal Mechanism</b> 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><u>SEWRI</u>: The Chief Social Development Cell, dealing with the grievances raised by PAP's in Sewri as per the approved RAP, will appoint the single committee officer by 08<sup>th</sup> September 2017</p> <p>A part from the GRC, a compensation committee, chaired by a former judge, has been formulated to address the issues/grievances of the plot lessees at MbPT area, Sewri,</p> <p><u>Marine</u> : GRC to be set up as per fisher folk compensation policy dated 23<sup>rd</sup> December 2015</p> <p><u>NAVI MUMBAI</u>: CIDCO is the Land Acquiring body for Land on Navi Mumbai side. GRC has already set up by CIDCO and has been functioning.</p>
<p><b>f. Internal Monitoring</b> 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><b>Sewri Area:</b></p> <ul style="list-style-type: none"> <li>• All the 318 Structures (229 Residential + 60 Commercial+ 29 others) are required to be removed to clear the Land portion &amp; thereafter, this land portion can be handed over to Contractor.</li> <li>• 150 PAHs out of 229 PAHs had given their consent to shift to HDIL buildings in Kurla,63PAHs have given consent to shift at Kanjurmarg ( E ) &amp; balance 16 PAHs yet to give consent document preparation work is in progress for PAP</li> <li>• 60 commercial structures are proposed to</li> </ul>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
	<p>shift to Kanjurmarg East, another resettlement complex based on the demand by the affected businesses.</p> <ul style="list-style-type: none"> <li>• As reported above, the compensation committee is formed for finalisation for total 13 Lessees (claims), 6 out of 13 are presently vacant and 7 plots are with structures. The compensation committee for the lessees shall finalize compensation of 7 plot lessee's structures.</li> <li>• MMRDA has done the valuation of the 7 lessee's structures through the Gov. Approved valuer vetted by PWD department.</li> <li>• The meetings of Compensation committee members with lessees held on 4 &amp; 5 th January 2018 . 1,5 &amp;15 th March 2018.</li> </ul>
<p><b>g. Qualitative Independent Evaluation</b> 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>MMRDA will form the independent evaluation before the mid-term and end-term in a timely manner.</p>
<p><b>h. RAP Implementation Budget</b> The amount of estimated resettlement and compensation budget is Rs. XX. 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>For the Year Financial year for 2017-2018 Estimated tentative Budget for</p> <ul style="list-style-type: none"> <li>• Sewri Side for MbPT Lessees: 30Cr.</li> <li>• Fishermen Compensation: 70Cr</li> <li>• Navi Mumbai Side CIDCO Land: 21Cr</li> </ul>
<p><b>i. Environmental Management Plan ("EMP")</b> 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>The EMP followed by MMRDA has to coincide with the compliance points set by MOEF and MCZMA during the CRZ clearance of MTHL. This also includes adhering to the implementation of construction schedule as decided by MMRDA.</p> <p>Due to the concerns of the very limited workable time with the CRZ clearance by MoEFCC in January 2016, MMRDA requested relaxation of two conditions set by MOEF &amp; MCZMA namely;</p> <ul style="list-style-type: none"> <li>• "MMRDA to ensure that Construction activities near Flamingo habitat area may be restricted to the season when Flamingos are not on the site or not in larger flocks."</li> <li>• "The project proponent shall not undertake any blasting/construction activities during night hours."</li> </ul>

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
	<p>Technical assistance was provided by GC to MMRDA for correspondence to MOEF by providing data &amp; valid evidence related to the compliance conditions set by MOEF.</p> <ul style="list-style-type: none"> <li>• The case was presented in front of the MCZMA committee in the 119th meeting of MCZMA and defending the case for relaxation of conditions set by MCZMA &amp; MOEF</li> <li>• The subsequent follow-up for the relaxation of conditions that were recommended for MOEF was also carried out.</li> <li>• MoEF permitted the night work vide letter dated 28/8/2017</li> </ul> <p>As a part of the MTHL GC, technical assistance was provided to MMRDA in the validation of the bird monitoring program process. Suggestions were also provided for the methodology that was being carried out for bird monitoring.</p> <p>As per the Employer's requirement, contractor JVs will prepare their EMP and GC will review and instruct necessary changes in compliances with all regulatory compliances as well as the approved JICA EIA.</p>
<p><b>j. Environmental Monitoring Plan (“EMoP”)</b> MMRDA takes overall responsibility for implementation of EMoP. During construction, environmental monitoring will be carried out by contractors under supervision by Construction Supervision consultant. The result shall be reported to the JICA India Office on a quarterly basis as a part of Progress Status Report (PSR) by filling in the Reporting Form of Environmental 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 completion of construction. The required amount of estimated environmental monitoring budget is borne by MMRDA.</p>	<p>Environmental monitoring will start during the Construction period. (As per the MOM Attachment of 2-4)</p>



Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
<p><b>k. Long Term Bird Monitoring</b> 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"> <li>MMRDA has appointed (BNHS) Bombay Natural History Society for bird monitoring and implementation of Flamingos and birds related mitigation measures &amp; bird monitoring program</li> <li>Rs31.92 Cr. deposited to Mangrove foundation of State government for periodical disbursement to BNHS</li> </ul>

**3.4 Qualitative and Quantitative Data of Monitoring Indicators**

Operation and Effect Indicator EIRR and / or FIRR  
Supporting data for Computing EIRR and/ or FIRR

Indicators	Original (Yr 2015)	Target (Yr 2023) 2 Years After Commercial Operation
Average Annual Daily Traffic (PCU/ day)		45,700
Daily Average Travel Time (min)*1	61 min	15.8 Min

\*1 Section on Sewri-Chirle

<b>EIRR</b>	<p><b>Original:</b> 13.7% Cost : Project cost (excluding Price Escalation, Tax and Duties and Administration cost) O&amp;M cost, Land Acquisition Benefit: Travel Time cost and Vehicle Operation cost Project Life: 32 Years</p>	<p><b>Actual: (PCR)</b> _____% Cost:</p>
<b>FIRR</b>	<p><b>Original:</b> 1.77% Cost : Project Cost, O&amp;M cost, Land Acquisition cost Benefit: Toll Revenue Project Life: 32 Years</p>	<p><b>Actual: (PCR)</b> _____%</p>

### 3.5 Monitoring Plan for the indicators

Monitoring Methods, Section(s)/department(s) in Charge of monitoring, are given below

<p>Original: (P/M and PCR)</p> <p><u>Monitoring Organization</u> PIU shall be In-Charge of Monitoring activities for the Project</p> <p><u>Submission of QPR and PCR</u> The timely submission of the following documents is required by MMRDA.</p> <ol style="list-style-type: none"> <li>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 as per annex II: 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 &amp; Quarterly Progress Reports (including S-Curve Chart) Prepared by the Consultant to JICA India Office on regular basis till completion.</li> <li>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 Project in the form of Project status Report (PSR) attached as per Annex II</li> </ol>
<p>Actual (P/R and PCR)</p> <p><u>Monitoring Organization</u> PIU for MTHL has been established and monitoring the Project</p> <p><u>Submission of QPR and PCR</u> Quarterly Progress Report will be prepared and Submitted to JICA on Quarterly basis QPR Submitted up to <b>31<sup>st</sup> March 2018.</b></p>

### 3.6 Achievement of the Project Objective

(Achievement of Project Objective shall be communicated after start of revenue Operation of the Project)

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

### 4.1 O&M and Management

Original:

Overall

MMRDA will be responsible for O&M after the Completion of the Project. O&M Budget will be allocated by MMRDA. O&M and increase in Toll rate will be done in accordance with Toll notification issued by Maharashtra Government.

Operation & Maintenance, Tolling and ITS

MMRDA will appoint Operation, Maintenance and Tolling Contractor for the road maintenance and Toll collection and allocated adequate budget for engaging the Contractor. The Budget for O&M will be provided by MMRDA.

Actual:

### 4.2 O&M Cost and Budget

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

It is assumed that O&M cost in Feasibility Study Report, 2012 is one percent of the total project cost, amounts 1,010 million INR at the year of Commercial Operation Date (COD). And it is annually escalated 5% of escalation.

JICA report

## 5.0 EVALUATION

### 5.1 JICA and Borrower / Executing Agency performance

JICA:  
(PCR)

Borrower/Executing Agency:  
(PCR)

### 5.2 Overall evaluation

(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.

**Experience learnt**

# **Annexure I Land Acquisition**

### Land Acquisition:

No	Description	Area	Status
1	<b>Land acquisition ROW (permanent)</b>		
1.1	<b>Sewri side</b>		
a.	Land Acquisition on Sewri Side for ROW (permanent)	10.089 Ha	<ul style="list-style-type: none"> <li>• Handing over of ROW and Casting yard area from MbPT by before 19<sup>th</sup> April 2018</li> <li>• 54 commercial Structures proposed to shift to Kanjurmarg East</li> <li>• MbPT Total 13 Lessees, out of which 6 Lessees Plots are with PAP houses and 7 Plots are with Structures.</li> <li>• Out of 18 Plots at Sewri Gadi Adda, 5 plots are in vacant position with MbPT and Notices to remaining 13 plots issued, under MR&amp; TP Act ,1966 Section 126 ,1(a) &amp; (b).</li> <li>• The process of compensation to lessees &amp; rehabilitation of PAPS is in Progress</li> </ul>
1.2	<b>Navi Mumbai side</b>		
a.	Area handed over by CIDCO to MMRDA	90.2956 Ha	In possession of MMRDA.
b.	Area remaining to be acquired from CIDCO	18.5887 Ha	Land of Cidco, Govt land, Private land, Private forest land. Handing over process is in progress
	<b>Total Land for ROW</b>	108.884 Ha	
2	<b>Land allocation for Casting yards (Temporary)</b>		
2.1	<b>Sewri side</b>		
a.	Package -1	15.17 Ha	Handing over of ROW area and Casting yard area from MbPT by before 19 <sup>th</sup> April 2018.
2.2	<b>Navi Mumbai Side</b>		
a.	Package -2	15.36 Ha	Both casting yard areas are handed over by CIDCO to MMRDA. However, some structures and containers are still to be removed from package -3 casting yard.
b.	Package -3	11 Ha	
	<b>Total Area for Casting Yards</b>	41.53 Ha	

# **ANNEXURE II PROCUREMENT AND PROJECT STATUS**

PROCUREMENT AND PROJECT STATUS

Type	Contract	Awarded or Estimated Value (in Rs. Cr.)	Current Status	Contractors	Award Date/As per PIP –Mar 18	Actual/ Projected as per PIP –Mar-18	Physical % complete Mar-18	Present Financial Progress (Up To 31 <sup>st</sup> Mar 2018)
CIVIL	Package-1 (CH 0+000 km to CH 10+380 km)	7637.30	Award	L&T-IHI (Consortium)	Nov 2017	Sep 2022		
	Package-2 (CH 10+380 km to CH18+187 km)	5612.61	Award	DAEWOO-TPL (JV)	Nov 2017	Sep 2022		
	Package-3 (CH18+187 – CH21+800)	1013.79	Award	L&T	Nov 2017	Sep 2021		
ITS	Package-4 Intelligent Transport System	144.26	Design Stage	--	Jul 2020	Sep 2022		

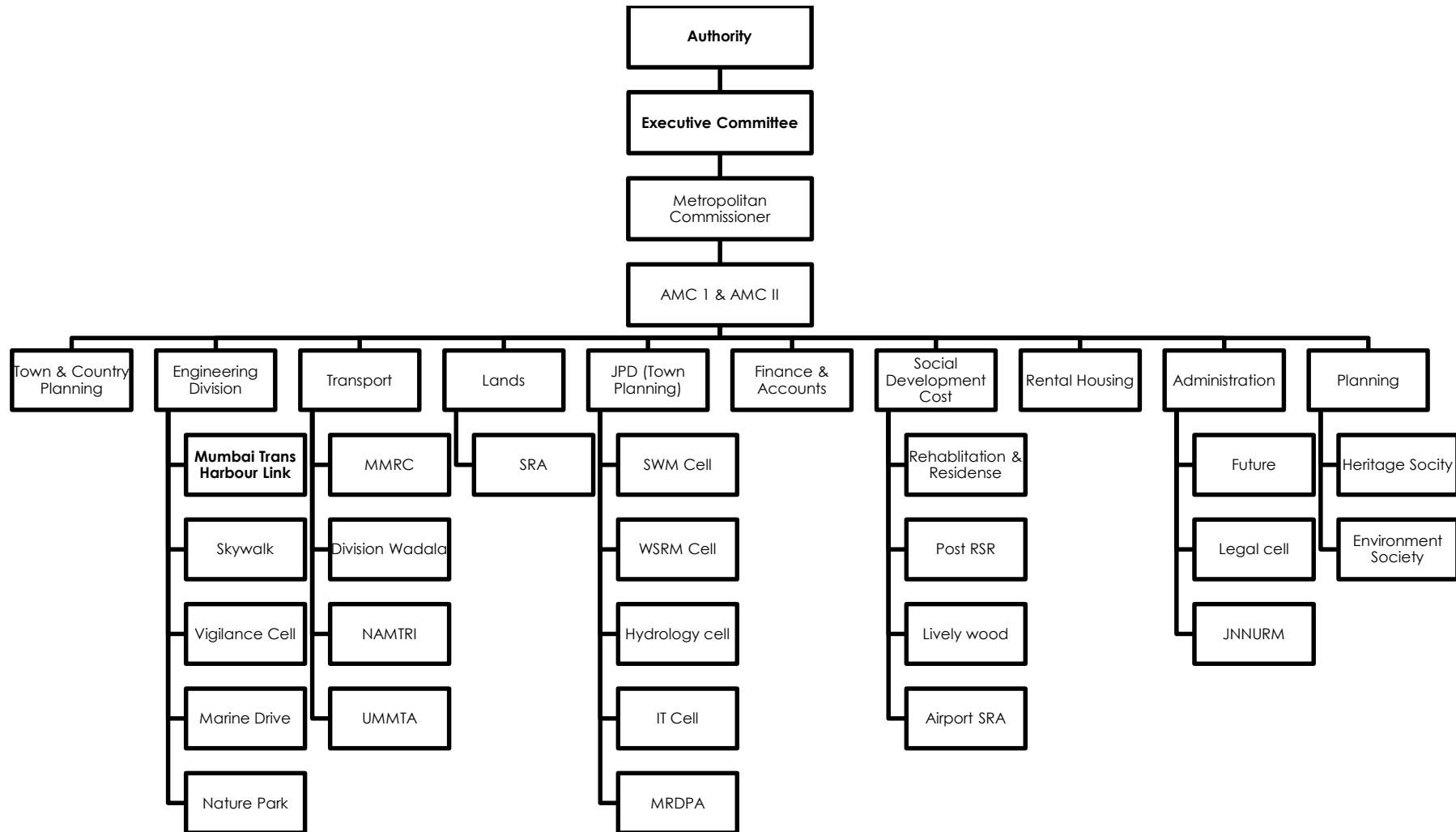


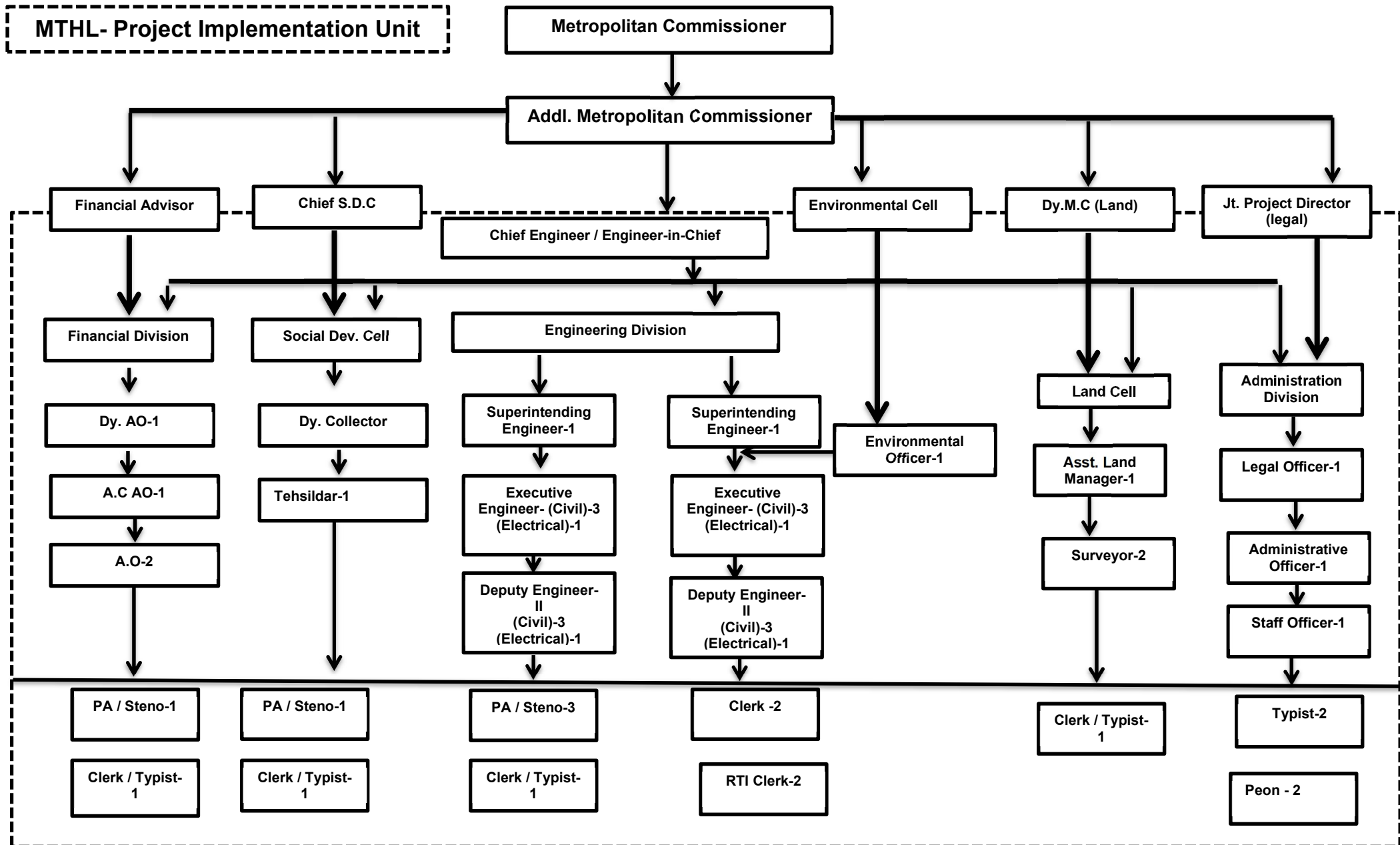
# **ANNEXURE III**

# **ORGANIZATION CHART**

(MMRDA Organization chart)

**MMRDA Organization chart**





# **ANNEXURE IV JICA'S CONCURRENCE STATUS**

### JICA'S CONCURRENCE STATUS

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 2106	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 2106	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 2106	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.	Packag-4 Intelligent Transport System	ICB with PQ (2P)	144.26	144.26	-	-	-			

**ANNEXURE V**  
**GC STAFF DEPLOYMENT POSITION**  
**1<sup>ST</sup> JANUARY 2018 TO 31<sup>ST</sup> MARCH**  
**2018**

**GC's Staff Deployment for Jan 2018**

	Organisation	Home Office	Expert's In India	Indian Personnel	Total
PA-1& PA2	AECOM	-	2	2	4
	PADECO	-	3	3	6
	Dar Al-Handasah	-	-	1	1
	T.Y.LIN	-	1	0	1
	Sub-total	0	5	6	12
PB-1, PB2 & PB3	AECOM	-	0	6	6
	PADECO	-	0	7	7
	Dar Al-Handasah	-	0	0	0
	T.Y.LIN	-	0	0	0
	Sub-total	0	0	13	13
Support Person	AECOM	-	-	5	5
	PADECO	-	-	5	5
	Dar Al-Handasah	-	-	-	0
	T.Y.LIN	-	-	-	0
	Sub-total	0	0	10	10
	<b>Total</b>	<b>0</b>	<b>5</b>	<b>29</b>	<b>35</b>

**GC's Staff Deployment for Feb 2018**

	Organisation	Home Office	Expert's In India	Indian Personnel	Total
PA-1& PA2	AECOM	-	4	3	7
	PADECO	-	2	3	5
	Dar Al-Handasah	-	-	1	1
	T.Y.LIN	-	1	-	1
	Sub-total	0	7	6	14
PB-1, PB2 & PB3	AECOM	-	-	8	8
	PADECO	-	-	9	9
	Dar Al-Handasah	-	-	-	0
	T.Y.LIN	-	-	-	0
	Sub-total	0	0	17	17
Support Person	AECOM	-	-	5	5
	PADECO	-	-	5	5
	Dar Al-Handasah	-	-	-	0
	T.Y.LIN	-	-	-	0
	Sub-total	0	0	10	10
	<b>Total</b>	<b>0</b>	<b>7</b>	<b>33</b>	<b>41</b>

**GC's Staff Deployment for Mar 2018**

	Organisation	Home Office	Expert's In India	Indian Personnel	Total
<b>PA-1&amp; PA2</b>	AECOM	1	3	3	7
	PADECO	-	2	4	6
	Dar Al-Handasah	-	-	1	1
	T.Y.LIN	-	1		1
	<b>Sub-total</b>	<b>0</b>	<b>6</b>	<b>8</b>	<b>15</b>
<b>PB- 1,PB2 &amp;PB3</b>	AECOM	-	-	9	9
	PADECO	-	-	9	9
	Dar Al-Handasah	-	-	-	0
	T.Y.LIN	-	-	-	0
	<b>Sub-total</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>18</b>
<b>Support Person</b>	AECOM	-	-	5	5
	PADECO	-	-	5	5
	Dar Al-Handasah	-	-	-	0
	T.Y.LIN	-	-	-	0
	<b>Sub-total</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>
	<b>Total</b>	<b>0</b>	<b>6</b>	<b>35</b>	<b>43</b>



# **ANNEXURE VI**

# **PROJECT PROGRESS PHOTOS**



Package-1 Geotechnical investigation Works Start in Marine Area at MP 118-B



Package-1 GTI Works Start at Sewri Interchange at BP-7 in Ramp B



Package-1 GTI Works Start at Sewri Interchange at BP-7 in Ramp B



Package-1 GT Investigation in progress at Marine Section



Package-1 GT Investigation in progress in Intertidal Section at MP10-B



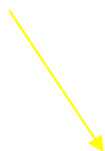
Package-1 GT Investigation in progress in Sewri Interchange at AP42



Package-1 Tree Survey in progress at Sewri Interchange STP area



Package-1 Geophysical Survey in progress in Marine Section



1<sup>st</sup> January 2018 to 31<sup>st</sup> March 2018



Package-1 Fencing work in progress in STP area at Sewri Interchange



Package-2 casting yard (4.3 Ha)



Package-2 Shivaji Nagar Interchange ROW.



Package -2 Erections of RCC Poles in Mudflat at Interchange ROW.



Team Leader MTHL-GC Site visit for Package-1 for Geotechnical investigation Works



Team Leader MTHL-GC Site visit for Package-1 for Geotechnical investigation Works





Package-1 Geotechnical investigation Works MP 54-1



Package-1 GTI Works MP no 55-1



Package-1 GTI Works MP 54



Package-1 Geotechnical investigation Works MP no 87A



Package-1 Geotechnical investigation Works MP no 120A



Package-1 Geotechnical investigation Works MP no 55-2



Package-1 Geotechnical investigation Works MP-5A



Package-1 Safety Pep Talk for workmen

Activity ID	Activity Name	Duration in Days	Start	Finish	Activity % Complete	2017				2018				2019				2020				2021				2022				2023				2024				2025																									
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2																												
<b>Mumbai Trans Harbour Link (MTHL) PIP (TA-Stage)</b>						2434																												14-Dec-16 A	22-Sep-24																												
<b>Milestones</b>						2264																												14-Dec-16 A	22-Sep-24																												
<b>MTHL-GC</b>						2641																												14-Dec-16 A	22-Sep-24																												
A1000	Commencement of GC Services	0	14-Dec-16 A		100%																																																										
A1020	Completion of GC Services	0		22-Sep-24	0%																																																										
<b>Package of Civil &amp; ITS</b>						314																												22-Sep-21	23-Sep-22																												
A2750	Package-3 Completion & Handover to MMRDA	0		22-Sep-21	0%																																																										
A2730	Package-1 Completion & Handover to MMRDA	0		22-Sep-22	0%																																																										
A2740	Package-2 Completion & Handover to MMRDA	0		22-Sep-22	0%																																																										
A2760	Package-4 Completion & Handover to MMRDA	0		23-Sep-22	0%																																																										
A2770	Commercial Operation Date	0		23-Sep-22	0%																																																										
<b>GC's Regular Progress Report &amp; Status Reports</b>						1630																												25-Jul-17 A	23-Sep-22																												
A2790	Monthly Reports	1630	25-Jul-17 A	22-Jun-22	18.8%																																																										
A2800	Quarterly Reports	1545	25-Jul-17 A	22-Jun-22	14.35%																																																										
A2870	Special occurrence report Monthly, Quarterly & Annual Reports	1545	25-Jul-17 A	22-Jun-22	14.35%																																																										
A2810	Annual Reports	1400	01-Jan-18 A	22-Jun-22	5.5%																																																										
A2820	Supervision Reports	1407	01-Jan-18 A	22-Jun-22	5.9%																																																										
A2830	Engineering Reports	1407	01-Jan-18 A	22-Jun-22	5.9%																																																										
A2840	Draft Final Reports	365	01-Feb-21	02-Apr-22	0%																																																										
A2850	Final Reports	365	19-Jul-21	17-Sep-22	0%																																																										
A2860	Completion reports	180	25-Feb-22	23-Sep-22	0%																																																										
<b>Preparation/ Finalization of O&amp;M Manuals by GC</b>						180																												25-Feb-22	23-Sep-22																												
A2780	Civil Works Manual including offshore and On shore	180	25-Feb-22	23-Sep-22	0%																																																										
A2880	Signalling / Traffic Control Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2890	Intelligent Transport Systems (ITS) Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2900	Commercial Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2910	Operating Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2920	Accident and Safety Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2930	Disaster Management Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2940	General Electrical Services and Equipment Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2950	Safety, Health and Environmental Manual	180	25-Feb-22	23-Sep-22	0%																																																										
A2960	Quality Assurance Manual	180	25-Feb-22	23-Sep-22	0%																																																										
<b>Tender Assistance stage</b>						1216																												14-Dec-16 A	02-Nov-20																												
<b>Package-1</b>						378																												14-Dec-16 A	23-Mar-18 A																												
A1040	Tender Assistant Leading Team	378	14-Dec-16 A	23-Mar-18 A	100%																																																										
<b>Tender Assistant</b>						41																												14-Dec-16 A	31-Jan-17 A																												
A1030	Tender Document Review	40	14-Dec-16 A	29-Jan-17 A	100%																																																										
A1050	Pre bid Meeting	1	30-Jan-17 A	31-Jan-17 A	100%																																																										
<b>Addendum -1</b>						78																												31-Jan-17 A	24-May-17 A																												
A1060	Preparing the Tender Pre Bid Quarry 1st Set replay	30	31-Jan-17 A	05-Apr-17 A	100%																																																										
A1080	Preparing the Tender Addenda -1 Contractual Part	30	31-Jan-17 A	07-Mar-17 A	100%																																																										
A1070	Preparing the Tender Addenda -1 Technical Part	30	08-Feb-17 A	07-Mar-17 A	100%																																																										
A1090	Tender Addenda -1 Submitting to MTHL-PIU/JICA	24	07-Mar-17 A	29-Apr-17 A	100%																																																										
A1100	Reviewing Tender Addenda -1 byMTHL-PIU/JICA	24	29-Apr-17 A	24-May-17 A	100%																																																										
<b>Addendum -2</b>						52																												07-Apr-17 A	01-Jun-17 A																												

■ Actual Work      ■ Remaining Work      ■ Critical Remaining Work  
◆ Milestone

Project Implementation Programme Progress Updated up to 31st March 2018

Date	Revision	Checked	Approved
31-Mar-18	Progress Updated up to 31 March 2018	JS	TL













Activity ID	Activity Name	Duration in Days	Start	Finish	Activity % Complete	2017				2018				2019				2020				2021				2022				2023				2024				2025	
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
<b>Contractor's Design and Construction Submissions</b>																																							
A2190	Survey and Additional Ground Investigation	120	22-Jun-18	20-Oct-18	0%																																		
A2200	Preliminary Design & Detailed Design (As Per Design Submission Programme)	540	22-Jun-18	14-Dec-19	0%																																		
A2230	Contractor to Submit Construction Submissions, e.g. Safety Docs, Traffic Diversions, Utilities Diversions,	90	22-Jun-18	20-Sep-18	0%																																		
A2210	GC to Review / Proof Check / Approve Contractor's Detailed Design	510	21-Aug-18	13-Jan-20	0%																																		
A2240	Contractor to Obtain Construction Permits of all Authorities	60	20-Sep-18	19-Nov-18	0%																																		
A2220	Contractor to Issue CRD and GFC Drawings	730	18-Jan-19	17-Jan-21	0%																																		
<b>Shivaji Nagar Interchange &amp; Viaducts on Land on Navi Mumbai Side</b>																																							
A2250	Construct Piles and Pile Caps	600	18-Jan-19	09-Sep-20	0%																																		
A2260	Construct Piers and Pier Caps	600	18-Apr-19	08-Dec-20	0%																																		
A2270	Construct PC Box Girder Decking (30m & 50m Spans)	420	14-Dec-19	06-Feb-21	0%																																		
A2280	Complete all Bridge Finishing Works	210	09-Sep-20	07-Apr-21	0%																																		
<b>7.8 km Marine Bridge above Sea/Creek (CH 10+380 km to CH 18+187 km)</b>																																							
A2290	Construct Piles and Pile Caps	730	19-Mar-19	18-Mar-21	0%																																		
A2300	Construct Piers and Pier Caps	730	17-Jul-19	16-Jul-21	0%																																		
A2310	Construct PC Box Girder Decking (50m Span)	480	21-Jun-20	14-Oct-21	0%																																		
A2320	Construct Steel Box Girder Decking (Obligatory Spans)	480	21-Jul-20	13-Nov-21	0%																																		
A2330	Complete all Bridge Finishing Works	270	17-Apr-21	12-Jan-22	0%																																		
<b>Remaining Works &amp; Taking Over Certificate</b>																																							
A2340	Construct all New at Grade Roadworks	270	06-Feb-21	03-Nov-21	0%																																		
A2350	Complete all E&M works, Road Finishing Works and Reinstatement Works	180	06-Jul-21	02-Jan-22	0%																																		
A2360	Achieve Issuance of Taking Over Certificate	253	12-Jan-22	22-Sep-22	0%																																		
<b>Package 3: 3.6 km long road &amp; bridge(10+187 to 21+800) + interchanges</b>																																							
<b>Contractor's General Activities / Site Installation</b>																																							
A2370	Mobilization	90	23-Mar-18 A	23-Jun-18	6.5%																																		
A2380	Commission Casting Yards & Batching Plant Facilities	210	23-Jun-18	19-Jan-19	0%																																		
A2390	Construct Temporary Access Road	300	23-Jun-18	19-Apr-19	0%																																		
A2400	Casting of Precast Concrete Segments / Girders	365	20-Mar-19	19-Mar-20	0%																																		
A2410	Fabrication of Steel Box Girder Segments	365	20-Mar-19	19-Mar-20	0%																																		
<b>Contractor's Design and Construction Submissions</b>																																							
A2420	Survey and Additional Ground Investigation	120	23-Jun-18	21-Oct-18	0%																																		
A2430	Preliminary Design & Detailed Design (As Per Design Submission Programme)	540	23-Jun-18	15-Dec-19	0%																																		
A2460	Contractor to Submit Construction Submissions, e.g. Safety Docs, Traffic Diversions, Utilities Diversions,	90	23-Jun-18	21-Sep-18	0%																																		
A2440	GC to Review / Proof Check / Approve Contractor's Detailed Design	510	22-Aug-18	14-Jan-20	0%																																		
A2470	Contractor to Obtain Construction Permits of all Authorities	60	21-Sep-18	20-Nov-18	0%																																		
A2450	Contractor to Issue CRD and GFC Drawings	730	19-Jan-19	18-Jan-21	0%																																		
<b>3.6 km Land Bridge (CH 18+187 km to CH 21+800 km) + Shivaji Nagar, SH 54, N</b>																																							
A2480	Construct Piles and Pile Caps	600	19-Jan-19	10-Sep-20	0%																																		
A2490	Construct Piers and Pier Caps	600	19-Apr-19	09-Dec-20	0%																																		
A2500	Construct PC Box Girder Decking (30m & 50m Spans)	420	15-Dec-19	07-Feb-21	0%																																		
A2510	Complete all Bridge Finishing Works	270	12-Jul-20	08-Apr-21	0%																																		
<b>Remaining Works &amp; Taking Over Certificate</b>																																							
A2520	Construct all New at Grade Roadworks	270	14-Mar-20	09-Dec-20	0%																																		
A2530	Complete all E&M works, Road Finishing Works and Reinstatement Works	180	11-Aug-20	07-Feb-21	0%																																		
A2540	Achieve Issuance of Taking Over Certificate	167	08-Apr-21	22-Sep-21	0%																																		
<b>Package 4: Intelligent Transport System</b>																																							
<b>Contractor's Construction and GC Construction Supervision Activities</b>																																							
<b>Contractor's Design, Manufacturing and Delivery of Equipment to Site</b>																																							
A2600	Contractor to Complete Preliminary Design & Detailed Design (As Per Design Submission Programme)	180	02-Nov-20	01-May-21	0%																																		
A2610	GC to Review / Proof Check / Approve Contractor's Detailed Design	180	01-Jan-21	30-Jun-21	0%																																		
A2620	Manufacturing, Testing and Delivery of ITS Equipment to Site	240	31-Jan-21	28-Sep-21	0%																																		
A2630	Manufacturing, Testing and Delivery of O&M Facility & Equipment to Site	240	01-May-21	27-Dec-21	0%																																		
<b>Installation, Testing and Pre-Commissioning of ITS Equipment</b>																																							
A2640	Installation, Testing and Pre-commissioning of Traffic Management System	420	01-May-21	25-Jun-22	0%																																		
A2650	Installation, Testing and Pre-commissioning of Toll Management System	420	01-May-21	25-Jun-22	0%																																		
A2660	Contractor to Achieve Issuance of Completion Certificate	60	25-Jun-22	24-Aug-22	0%																																		
<b>Integrated Testing and Commissioning</b>																																							

- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone

Project Implementation Programme Progress Updated up to 31st March 2018

Date	Revision	Checked	Approved
31-Mar-18	Progress Updated up to 31 March 2018	JS	TL



**ANNEXURE VI  
PROJECT IMPLEMENTATION  
PROGRAMME  
AND  
UPDATED PROGRESS UP TO 31<sup>st</sup> MARCH  
2018**