

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Fifteenth Implementation Support Mission (July 24 to August 27, 2015)

Aide Memoire

I. Introduction

1. A World Bank mission¹ visited demo projects and held discussions on the Project to review overall project progress and performance. The Mission met with the Project Management Unit (PMU) within the MoUD, visited Naya Raipur, Pimpri-Chinchwad, Hubli-Dharwad and held discussions with officials from Indore in Delhi and Mysore KSRTC officials through videoconferencing. The Mission also joined the MoUD Review of Pimpri-Chinchwad BRT Project in Pimpri-Chinchwad on 25-26 July 2015 and the DEA Portfolio Review on 26 August 2015. During the meetings, the mission had an opportunity to interact with the MoUD and state officials, city Project Implementing Units (PIU) as well as various consultants, contractors and NGO's assisting the PIUs with project preparation and implementation. The mission would like to express its appreciation for the hospitality extended and the useful discussions arranged during the field visits.

2. The main mission objectives included the following:

- Review Technical Assistance activities under the Capacity Building Component
- Review progress on City Demonstration Projects in Pimpri Chinchwad, Naya Raipur, Hubli Dharwad, Indore, Mysore ITS and Mysore PBS:
 - Review overall project implementation progress and timelines for launch
 - Review progress with procurement and awarded civil works packages
 - Review progress with land acquisition and resettlement issues and environment aspects
- Finalize scope of project restructuring

3. Key findings of the Mission were shared with the National Project Director Mr. M.K. Sinha, OSD (UT & MRTS), MoUD and National Project Manager, Mr. I.C. Sharma and his team on August 10, 2015. The Mission also debriefed Mr. Bhaskar Dasgupta, Director, DEA, on August 11, 2015. The summary of Mission highlights include the following:

- **Overall Project** - There has been progress on the Project with respect to procurements and land acquisition. Over 75 percent of the IBRD funds are committed and another 15 percent worth of procurements are under evaluation. Over 85 percent land acquisition has been completed in Hubli Dharwad and another 8 percent is under process. The progress on pending resettlement and land acquisition in Pimpri-Chinchwad however needs improvement.
- The overall implementation progress is rated *Moderately Unsatisfactory* as the Project will require additional time in which to complete remaining works. The achievement of PDO rating is also rated *Moderately Unsatisfactory* as with the delays in completion of project activities the full impacts would not be evident within the current closing timelines. The Project will require an extension to the Project Closing upto November 30, 2017 to ensure

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satisfactory completion and launch of proposed services and the rating could then be considered for upgrade to ‘Satisfactory’ status.

- **Pimpri-Chinchwad** –PCMC is gearing up for the launch of Corridor 2 and subsequently Corridor 3 over the coming month or two. PCMC and PMPML will need to adhere to a timebound action plan for completing pending works and actions upto launch. Meanwhile, Corridor 4 is expected to take another year for completion of Empire Estate flyover and remaining LA R&R.
- **Naya Raipur** –NRDA is targeting the end of the year for the launch of the BRT Lite Service. This will require stronger project management and quality control in view of the quality issues observed at site, in addition to completion of remaining critical actions such as final decision on funding of buses, Service Plan development, hiring of private operator and fare collection agency; The NMT package and balance works will however require at least until June 2016 to complete.
- **Hubli-Dharwad** – HDBRTS has completed procurement of all 9 packages with final two packages in various stages of bid evaluation. All procurements are proposed to be complete by March 31, 2016. There is steady progress in land acquisition and this is expected to be substantially complete by August 31, 2015. Progress on awarded packages needs improvement and the earliest the BRT service can be launched is third quarter 2017.
- **Indore** - In Indore, bids were found to be non responsive and therefore rebidding is proposed.
- **Mysore ITS** – The ITS Project has made good progress in resolving the technical glitches. The operational acceptance is awaited.
- **Mysore PBS** – Bids have been received for the PBS procurement and MCC/DULT propose to complete the evaluation within this month. The Project will require until December 2016 to complete.
- **Extension Request** – MoUD shall expedite submission of extension request upto November 30, 2017, to DEA.

II. Key Project Data

| Key Project Data | | Current Ratings and Flags | | |
|--------------------|-------------------|---------------------------|-----------------|----------------|
| Board Date | Dec 08, 2009 | | <i>Previous</i> | <i>Current</i> |
| Effectiveness Date | May 5, 2010 | Development Objectives | MU | MU |
| Closing Date | November 30, 2015 | Implementation Progress | MU | MU |
| GEF Grant | US\$ 18.45 mn | Project Management | MU | MU |
| IBRD | US\$ 105.23 mn | Safeguards | MU | MU |
| | | Procurement | MS | MS |
| | | Financial Management | MS | MS |
| Disbursed Amount | | Problem Flags | Four | |
| GEF | US\$ 8.39 mn | | | |
| IBRD | US\$ 39.8 mn | | | |

HS=Highly Satisfactory; S=Satisfactory; MS=Moderately Satisfactory; MU=Moderately Unsatisfactory; U=Unsatisfactory; HU=Highly Unsatisfactory; NA=Not Applicable; NR=Not Rated

III. Key Agreed Actions - To be Finalised

4. The following actions have been discussed and agreed:

| Actions to be Completed | By when | By whom | Status |
|--|------------------------|------------|--------|
| Submit Request for Project Extension upto November 30, 2017 | Sep 7 | MoUD/ PMU | |
| Submit Progress Reports; Contract wise physical & financial progress | Sep 18, Oct 15, Nov 13 | PMU & PIUs | |
| Audit | | | |
| a) External audit clarification | Sep 30, 2015 | MoUD/PCMC | |
| b) Appointment of internal auditors | Aug 31 2015 | MoUD/PMU | |

| Actions to be Completed | By when | By whom | Status |
|---|---------------------------|----------------|---------------|
| c) Internal audit report submission | Oct 31, 2015 | MoUD/PMU | |
| Submit communications plan for run up to the launch/ Launch of Rainbow website | Aug 10, 2015 | PCMC | |
| Corridor 2 & 3: Submit geometric works plan and remaining signal plans | Aug 31, 2015 | | |
| Corridor 3: Complete pending works | Aug 31, 2015 | | |
| Complete ETM installation at depots for Corridor 3 | Aug 31, 2015 | | |
| Complete construction of bus stops between Nashik Phata and Bhosari terminal | Aug 31, 2015 | | |
| Prepare and submit traffic management plan at Bhosari and improvements at the terminal to provide accessibility to feeder buses | Aug 31, 2015 | | |
| Launch of FOB tender on Nashik Phata | Aug 7, 2015 | | |
| Complete installation of electric meters, station doors, PIS on Corridor 3 | Aug 31, 2015 | | |
| Close monitoring of Empire Estate contract | Continuous | | |
| Complete removal of material from Pavana riverbed | Immediate | | |
| Complete all LA R&R activities | Aug 31, 2015 | | |
| Decision on appointment of Project Manager | Aug 5, 2015 | | |
| Submission of Action Taken Report to the Bank on all quality related issues | Aug 31, 2015 | | |
| Submit options analysis and concept plan for Telibanda pick up point | Aug 31, 2015 | | |
| Submit concept plan for space for feeder buses at Old Secretariat along with access egress plan for BRT buses | Aug 31, 2015 | | |
| Issue RFP for appointment of fair collection agency | Aug 14/Oct 20, 2015 | | |
| Complete procurement of bus operator | Oct 15, 2015 | | |
| Completion of NMT civil works on existing roads/new road | Nov 30, 2015/Mar 31, 2016 | | |
| Submit report on BRT feeder routes and service options | Aug 31, 2015 | | |
| Submit options for integration of smart card functionality between Naya Raipur and Raipur | Aug 31, 2015 | | |
| Submit revised BRT Lite implementation schedule | Sep 15, 2015 | | |
| Finalise Fare Collection Policy | Aug 31, 2015 | | |
| Develop a Communications & Outreach Plan for BRT Lite | Sep 30, 2015 | | |
| Submit documents pertaining to the consent of owners regarding drawing up of construction material for NMT tracks | Oct 31, 2015 | | |
| Submit note on likely impacts and proposed mitigation plans for affected shopkeepers at Old Mantralaya Site | Aug 31, 2015 | | |
| Submit Jubilee circle terminal options concept design/final designs | Aug 15/Sep 30 2015 | HDBRTS | |
| Submit Drafts of selected signal design plans | Aug 15, 2015 | | |
| Action plan for correction in the Navanagar | Aug 31, 2015 | | |

| Actions to be Completed | By when | By whom | Status |
|--|--|----------------|---------------|
| NMT alignment Submit ITS BER Award of contract for FoB Initiate SOP consultancy Notes on the proposed BRT extension upto Agriculture University and last mile connectivity at Toll Naka Approval and disclosure of RAP Addendum Submission of revised EA addendum Ensure safe working conditions at sites with ongoing civil works Mitigate residual LA and R&R impacts in already handed over first section in Mixed lanes Compensation Award to all villages/Towns Completion of payment of compensation and R&R assistance to all affected people Note on additional land acquisition and R&R impacts due to Dharwad Terminal and proposed mitigation measures for Bank's review | Aug 31, 2015 Aug 31, 2015 Sep 30, 2015 Aug 15, 2015 Sep 15, 2015 Aug 15, 2015 Immediate Immediate Aug 31, 2015 Sep 30, 2015 Sep 15, 2015 | | |
| Submit driving simulator draft bid document/ Initiate procurement Submit document on benefits from ITS initiatives Submit update on compliance Operational Acceptance | Aug 10, 2015/ Aug 25, 2015 Aug 10, 2015 Weekly Aug 31, 2015 | Mysore | |
| Seek no objection for extension to PMC contract Submission of revised ITS RFP Submit revised procurement plan BRT Accessibility Study – Submit minutes of negotiation Appointment of consultant for Business Plan study | Aug 12, 2015 Aug 20, 2015 Aug 25, 2015 Aug 14, 2015 Nov 30, 2015 | Indore | |
| Complete bid evaluation Award of contract Entrustment of statutory audit of PIU of MCC to the state AG | Aug 15, 2015 Aug 31, 2015 Within three months from restructuring | DULT/MCC | |

IV. Project Development Objectives

5. The project's development objective (PDO) is to promote environmentally sustainable urban transport in India and to improve the usage of environment-friendly transport modes through demonstration projects in selected cities. The key overall indicators to measure performance in achieving the project development objective are:

- The number of cities that develop an identifiable urban transport planning process (i.e., managed by professional units of government, following certain procedures and guidance, and involving various level of analytical work) increases.
- Mode shares in Pimpri-Chinchwad, Hubli-Dharwad and Naya Raipur become more sustainable by project end.

- A significant amount of co-benefits are achieved as forecast transport CO2 emissions in the demonstration cities are lower than their “business-as-usual” or “without-project” forecasts.

6. The activities under Component IB are well advanced. The Leaders in Urban Transport Planning training, introduced in CEPT University as well as those taking place in Singapore, Seoul and Dubai have been well received and are ensuring exposure to urban transport officials and decision makers to the complexities and multi-faceted nature of the issues. 200 officials have been trained so far. The technical assistance activities in regard to assistance with implementation of reforms, and development of a Research Facility within MoUD, are ongoing. Under the TA activities, Indian cities are receiving hands on technical assistance in areas such as creation of UMTA and UTF (8 cities), Transit-oriented development, NMT Master planning and Public Bike Sharing (6 cities), Traffic Management and Information Centers and National Urban Transport Helplines (5 cities), contracting of private operators in city bus services (3 cities) etc. All these activities are expected to result in an improved planning process for urban transport in Indian cities.

7. Among the city demonstration projects, the Mysore ITS project implementation has been completed and its performance is now stabilized. The other city demonstration projects, Pimpri-Chinchwad, Naya Raipur, Hubli-Dharwad and Indore are in various stages of implementation. As per current projections, BRT Corridor 2 and 3 in Pimpri-Chinchwad are proposed to be launched in the coming month, however, Corridor 4 is likely to be delayed to end of 2016; In Naya Raipur, the BRT Lite could be launched by year end or early next year; In Indore, with rebidding and roughly a year to implement end 2016 is likely date of completion; HDBRTS will require additional time for completion until end 2017; Mysore PBS bids are under evaluation and it would require a year for implementation. The PDO is expected to be partially achieved within the current timelines. The PDO risk rating is accordingly pegged at ‘*Moderately Unsatisfactory*’.

8. The results framework and indicators have been reviewed and will require streamlining to better reflect the project outcomes and outputs. The proposed changes are outlined in the Annex.

V. Current Implementation Progress

9. **Overall Status:** The Mission rates the overall project progress as *Moderately Unsatisfactory*. The capacity building component is progressing well, the procurements for the city demo projects component is substantially complete or in advanced stages, and land acquisition & resettlement is well advanced. The progress on awarded construction contracts requires improvement. However, with the necessary additional time the Project could be upgraded to *Satisfactory* status.

Status of Contract Award and Procurement in Numbers and Value in US\$m for IBRD

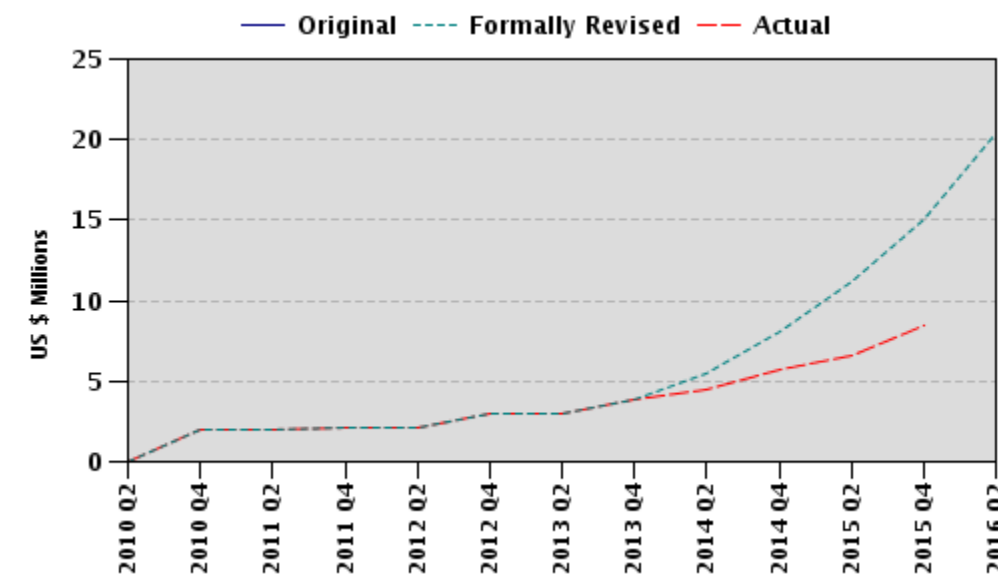
| | | Awarded | Under Procurement | | To be Initiated | | Total | |
|---------------|----|----------------|--------------------------|-----|------------------------|-----|--------------|------|
| PCMC | 2 | 36 | 0 | 0 | 0 | 0 | 2 | 36 |
| NRDA | 3 | 14 | 0 | 0 | 0 | 0 | 3 | 14 |
| HDBRTS | 7 | 30 | 2 | 15 | 1 | 10 | 10 | 55 |
| Total | 12 | 80 | 2 | 15 | 1 | 10 | 15 | 105 |
| | | 76% | | 14% | | 10% | | 100% |

10. The city-wise status of disbursement under the loan and grant is provided below. The table below provides the GEF grant estimates updated for the recent restructuring for which the modalities are substantially complete.

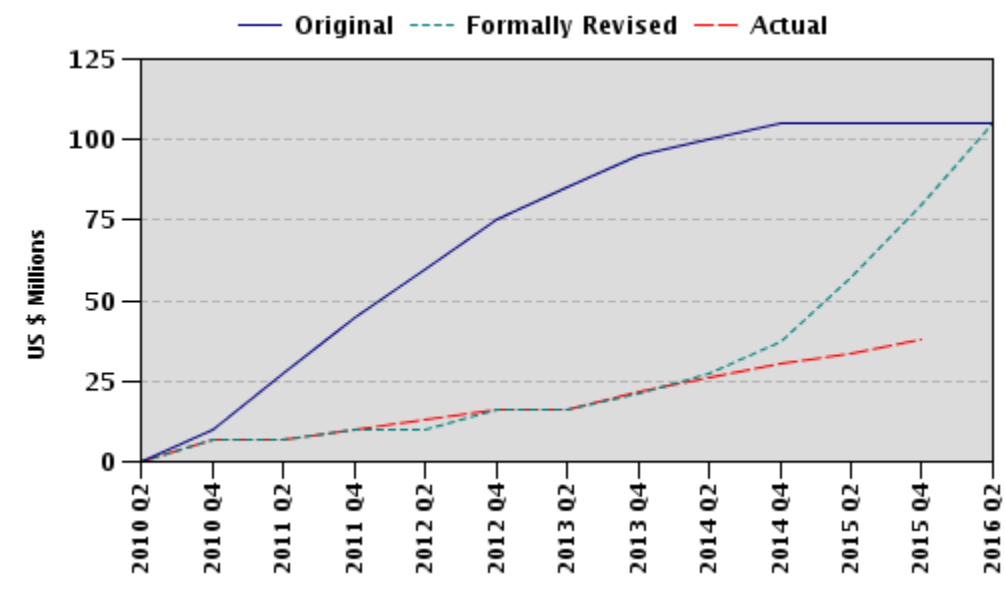
Disbursement Status (US\$ million)

| City | Amount Disbursed (Loan) | % disbursed | Amount Disbursed (GEF) | % disbursed |
|------------------|-------------------------|-------------|------------------------|---------------|
| Component 1B | - | - | 2.86 | 46.43% |
| Pimpri-Chinchwad | 28.00 | 78.71% | 0.88 | 46.48% |
| Naya Raipur | 4.04 | 29.01% | 0.92 | 48.47% |
| Indore | - | - | 0.67 | 35.19% |
| Mysore KSRTC | - | - | 2.08 | 83.61% |
| Hubli-Dharwad | 5.68 | 10.24% | 0.98 | 39.19% |
| Mysore MCC | - | - | 0.00 | 0.00% |
| TOTAL | 39.80 | 38% | 8.39 | 45.49% |

GEF



IBRD



Component 1B

Implementation Progress: **Moderately Satisfactory**

11. Component 1B covers a very large set of technical assistance activities in cutting edge areas in urban transport planning and implementation. Its progress is slowed down by the fact that draft guidance documents developed are required to be tested in a subset of cities prior to finalization and this adds substantially to the time and effort involved. At the same time it also adds far greater value to the process and resultant capacity building. MoUD and the PMU have been taking keen interest in furthering these activities. The mission reviewed the progress on the capacity building component and finds that of the 9 ongoing activities at least 7 would be substantially complete by year end. The updated status is tabulated below:

Status of Activities under Component 1B

| Sl No. | Activity | Committed Amount (Rs. Million.) | Status Update |
|--------|--|---------------------------------|---|
| 1 | Development of a structure and an operations manual for UMTA; Business Plan for Urban Transport Fund | 24,150,000 | UMTA & UTF guidelines being finalized. City specific reports under preparation. Capacity building workshops planned in Sep-Oct 2015 |
| 2 | Development of a standard architecture and plan for ITS and Traffic Management Center | 20,070,000 | Draft TMICC and NUTH generic documents have been finalised. City specific reports under review. One city level workshop completed in Guwahati, remaining planned in Aug-Sep 2015. |
| 3 | Development of a model NMT action plan, bike sharing plan and TOD Guidelines | 27,830,000 | Guidance documents are being finalised. All city reports have been submitted for review. Workshops planned in Sep-Oct 2015 |
| 4 | Development of a Research Program | 5,530,000 | Final operations manual being updated based on comments received. |
| 5 | GHG Emissions reduction assessment | 28,650,000 | City specific Draft Final Reports under review. Emission estimates |

| | | | |
|----|---|-------------|--|
| | | | based on 2 nd Annual Survey (Feb 2015) being prepared. |
| 6 | Leaders Program | 135,000,000 | 226 officials trained so far |
| 7 | Impact Evaluation Study for the Bus Procurement under JnNURM | 33,300,000 | Data collection report being reviewed. Activity excessively delayed; quality issues |
| 8 | Model Contract Agreements with Private Bus Operators & Guidelines for City Bus Services | 5,400,000 | Draft generic guideline being developed. City specific contract documents under preparation. |
| 9 | Preparation of GEF5 Project | 11,230,000 | Activity extension under process |
| 10 | National Communications Campaign on Sustainable Urban Transport | | Activity to be initiated. |
| 11 | Accessibility Study | 25,000,000 | ToR under preparation |
| 12 | Workshops | 30,000,000 | Ongoing |

Component IA

12. Activities under this component are supported / funded by UNDP. These mainly include:

- Business Plan for IUT
- 10 Urban Transport Planning Manuals
- 10 Training Toolkits
- Dissemination Activity
- Development of the National Urban Transport Knowledge Management Centre

13. The Toolkits and Training Modules have been prepared and training is ongoing. The development of the urban transport Knowledge Management Centre is ongoing and proposed to be completed by December 2015. UMTC was hired on 18 November 2014 to develop the KMC. The consultants are currently collecting traffic and transport data from Comprehensive Mobility Plans of all the selected cities. Instead of carrying out this activity for 3 selected cities on a pilot basis, the approach now being taken is to complete data population process for all the 50 cities as the data source is now limited to CMPs. After the World Bank's comments on the data formats, the consultants are now using simpler formats for data collection/entry and will be able to complete this activity by August 31, 2015. Simultaneously, data validation for the 40 cities completed so far is being done at the Institute of Urban Transport (IUT). The Mission was informed that further progress on data validation and launch of the web portal is now critically dependent on the issue of license agreement between MoUD and SAP. This is expected to be resolved soon. The Bank remains concerned about the following outstanding issues:

- *Revenue or Business Model* in place for operating the KMC i.e. what will it cost on an annual basis to sustain the KMC operation including for data updation. The Bank understands that this exercise has still not been undertaken.
- *Data updation.* The model for regular data updation has not been discussed or finalized. Without this critical activity the KMC could well lose its utility. The Mission was informed that MoUD will take a final call on this by probably linking it to its existing urban schemes.
- *Responsible Entity.* Who will operate, update and maintain the KMC. With the closing the UNDP component, the salaries of IUT staff would also be affected.

The UNDP executed component which covers project management costs also has a closing date of December 31, 2015. This will need to be extended in line with the extension to the Bank executed portion so as to ensure that the project management activities remain unaffected. At the same time, lack of clarity on above issues regarding KMC as well IUT raise concerns about sustainability.

Component 2: City Demonstration Projects

Implementation Progress: **Moderately Unsatisfactory**

| Project Rating: Implementation Progress | |
|--|-----------|
| Pimpri | MU |
| Naya Raipur | MU |
| Hubli-Dharwad | MU |
| Mysore | MS |
| Indore | MU |
| Overall Project | MU |

(i) **Pimpri-Chinchwad:** Physical progress of seven contracts combined together in BRT **Corridor 3 is about 85%**. BRT Corridor is now ready for plying of Buses. The BRT lane would be exclusive except for a length of 260 m where required land on one side is not available. Bus Stations and the Dedication (Railing for physically separating BRT Corridor from all other traffic) are likely to be completed shortly. Pedestrian Facilities for travel between ground level on NH4 and Corridor 3 at higher level, are likely to be ready not earlier than towards end-2016. Progress in the Bank-financed Contract I (Interchange at Nashik Phata) is satisfactory. The remaining Ramp 2 might get completed by end-2016. PCMC however needs to get some land into its possession for construction of Ramp 2 on Mumbai side.

Physical progress of all eight contracts combined together in BRT **Corridor 4 is about 61%**. Land is yet to be available for 1.46 km of length. There is no likelihood of the full length of the BRT Corridor being available for plying of Buses prior to towards end-2016. Progress in the Bank-financed Contract III (Empire Estate Grade Separator) is highly unsatisfactory. Non-availability of required Machinery, Labour and Materials is slowing down the progress. The progress can be assessed as about 50% in more than four years since April 2011. In the Mission's assessment, optimistically, one may expect the Contract (except the ascending and descending ramps in Empire Estate stretch) to be completed by around mid-2016 or so. Timely completion of land acquisition and resettlement activity and management of the Empire Estate contract are the two critical items holding up this corridor.

(ii) **Naya Raipur:** Works progress in the contract for Construction of BRT Bus Shelters, Pick-up Points, BRT Workshop Depot and Control Centre, started in December 2013 with 15 months completion period, is about 63% of likely Completion Cost. The Contractor's mobilization as well as progress has been slow. Although NRDA indicated that all works would be completed by September 2015, this may not be feasible and may require upto December 2016. The ITS vendor is mobilized and working with the PMC to finalise designs. Works progress in the contract for Non-Motorized Transport Infrastructure (Construction of Cycle Tracks, Walkways, etc), started in March 2014 with 15 months completion period, is about 35% of the likely Completion Cost. It should be possible for NRDA to launch the BRT Lite by end 2015 early 2016, provided they ensure timely completion of civil works, ITS installation, bus delivery, finalization of service plan and hiring of private operator.

(iii) **Mysore:** Most of the problems encountered by the ITS system for Mysore city bus have been addressed. However, for the overall system performance to improve KSRTC will need to make special efforts to instil greater discipline in its operations. The system is being closely monitored and once KSRTC is fully satisfied operational acceptance shall be declared.

(iv) **Indore:** After re-launching the ITS bid for the third time last year, two bids have been received in Feb 2015. However, these have been found non responsive and rebidding is proposed.

(v) **Hubli-Dharwad:** INR 337 million worth of works (about 18%) out of total about INR 1887 million of works (being financed by the Bank) has been carried out so far in 10 contracts of Depots, Workshops, Terminals, Bus Stations, Foot Overbridges etc being implemented by HDBRTSCL. 7 of the contracts have started, and their progress varies between 5% and 28%. Progress of all ongoing contracts is slow, overall about 11% in last 4 months (April-July 2015). 2 more contracts are likely to be awarded by end-September 2015, and designs are ongoing for the tenth one. The main BRT Corridor / Road works are being implemented through Karnataka Road Development Corporation Limited (KRDCL). In addition, KRDCL is implementing construction of Mixed Traffic Lanes along the Hubli-Dharwad BRT Corridor and 3 Flyovers and Road over Rail Bridges (RoBs) of total worth about Indian Rupees (INR) 2240 million (not financed by the Bank) under 3 contracts. 2 of the 3 contracts have started, with progress 0.6% and 5.6%. 3rd contract of RoBs is still to be awarded. It's assessed that all Works under the BRTS Project including the exclusive BRT Corridor cannot be completed earlier than mid-2017.

Details of the discussions with each of these cities are provided in Annex 2-6.

VI. Key Implementation Issues, Risks and Priority Actions

The key issues that need careful attention and close monitoring are:

14. **Pimpri-Chinchwad - Land Acquisition and resettlement impacts.** The outstanding land acquisition and resettlement implementation issues include (i) Shifting of remaining about 50 residential families and about 10 business and completion of associated land acquisition for a stretch of about 1.4 Kms at Khaledwadi along corridor 4. This action is delayed by more than 3 years; (ii) resolution of rehabilitation of affected industrial units in 60 meter stretch in Corridor 4, which is pending for more than two years; and, (iii) payment of land acquisition compensation in Corridor 3, is delayed by more than 2 years due to pending court case. These delays are directly affecting the completion of road construction in corridor 3 and 4. In addition, shifting of 144 families who are residing in transit housing for more than 4 years 6 months against the originally envisaged period of 18 months amount to serious noncompliance. Though, completion of the above pending actions were described in the Safeguards Implementation commitment plan by PCMC submitted in December, 2014, with a target date of May, 2015, it is considerably delayed. PCMC acknowledged the challenges faced in the pending land acquisition and resettlement actions, and assured the Mission that they would be able to make progress by September 30, 2015.

15. **Pimpri-Chinchwad - Flyover contract on Corridor 4 (Kalewadi Phata-Dehu Alandi Road):** Progress of this contract continues to be highly unsatisfactory. The progress can be assessed as about 50% in more than four years since April 2011. Non-availability of required Machinery, Labor and Materials was slowing down the progress. Reportedly, the Contractor was suffering from financial problems since the start of the contract. PCMC has taken some steps to improve the cash flow of the Contractor, however, because of the shortage of fund, the Contractor is unable to utilize its resources to its potential. PCMC has issued legal notice to the contractor on March 27, 2015. During the mission meetings the contractor shared with PCMC their commitment to complete the works and revised work plans to complete the remaining works by December 2015. The contractor has subcontracted the river portion to a contractor and the railway line portion to another contractor. They proposed to increase the pace of casting segments however, owing to the cashflow situation payment to suppliers and subcontractors and therefore works progress is getting intermittently affected. The Mission's assessment is, optimistically, one

may expect the Contract (except the ascending and descending ramps in Empire Estate stretch) to be completed by around mid-2016.

16. *Pimpri-Chinchwad – BRT Launch and Coordination among key stakeholders:* The trial runs for launch of BRT corridors 2 is proposed in August, 2015 and corridor 3 by September, 2015. Although the Mayor had announced the launch for both Corridor 2 and 3 on the same date, in view of the remaining activities the Mission recommended to PCMC to proceed with their earlier plan for a staggered launch starting with Corridor 2 and then Corridor 3. On Corridor 2, the following activities are ongoing (i) the ITS installations, (ii) Traffic signal installations (iii) BRT signage (iv) electric meters (v) station door installations (vi) rollers for station docking, and PCMC is targeting to complete these prior to Aug 15. The Mission noted that the pavement on the corridor in several sections had eroded and needed to be redone. The road markings also need to be freshly done on the entire corridor. For Corridor 3, although the station civil works are still underway and all installations will begin upon completion, PCMC was targeting completion of Corridor 3 by end August. In the Missions assessment, the remaining works including traffic engineering and signal control would require at least an additional month or so for completion. The Mission was concerned to note that despite earlier agreements and assurances PMPML was not planning for off board fare collection and the e-ticketing machines would not be in place at the time of corridor launch. It was agreed that PMPML would ensure (i) off board ticketing in the major stations on both the corridors at the time of launch, and (ii) ETMs on Corridor 3 at the time of launch. The Mission noted that joint review meetings were now being held between PMC, PCMC and PMPML to track the status of BRT corridor launch. The Mission reiterated its earlier recommendation for jointly developing a timebound implementation schedule capturing all the actions and its close monitoring by the key stakeholders. It also strongly advised PCMC and PMPML to work closely with the Promotion & Outreach Consultants to develop a Launch Plan.

17. **Hubli-Dharwad – Land Acquisition & Resettlement Progress:** The land acquisition and resettlement implementation is progressing steadily with completion of nearly 100% of 45 acres of Government land and compensation awards were made to 58% of 26 acres of private land. The remaining land acquisition is expected to be completed by August, 2015 with more than 2 years delay as planned in RAP. The progress in compensation awards is delayed due to inordinate delay in submission ownership document by the land owners.

18. The key challenges in land acquisition include: (i) completion of awarding remaining 11 acres of private land; (ii) shifting of all affected temples as there is no resolution on shifting of a Dharga and 3 other temples; and, (iii) dealing with Dharwad Land Losers Association who have appealed to the High court on compensation rates and options considered for BRT alignment within Dharwad Town and consider providing land for land. The affected petitioner are not allowing to the measurement to 23 affected properties for compensation award. This group is also writing to the Bank on their concerns in regard to avoiding the impacts to their properties by making alignment changes; and (iv) pending mitigation of impacts in about 100 meters of first milestone stretch handed over to the mixed lane contractor. The mission was informed that the land ownership issue on this stretch is now resolved by obtaining legal opinion and is expected to be resolved soon.

19. *Works Contract implementation progress:* The progress on the awarded works packages is slow and a matter of concern. The progress was at 5-28% of the awarded contracts. Presently, the main issues are: (a) Completion of Land Acquisition / Transfer and Resettlement, followed by relocation of utilities, (b) Non-availability of Natural Sand in the district, (c) Timely decision and issuance of drawings by HDBRTSCL and its Design Consultant, and (d) Poor resource planning and performance of Contractors. Based on current assessment the works cannot be completed before mid 2017.

20. *Launch of the BRTS.* Presently, the main issues which need to be addressed in order to be able to complete the BRT corridor in a timely fashion include: (a) Completion of Land Acquisition / Transfer and Resettlement, followed by relocation of utilities, (b) Designs for RoBs awaiting clearances from the Railways, followed by Invitation of Bids and Award of Works Contract, (c) Design to be finalised for Jubilee Terminal, followed by Invitation of Bids and Award of Works Contract, (d) Arrangements for completion of remaining works of 4-laning (exclusive BRT Corridor) over a total length of about 8.7 kms, (e) Traffic signal designs for all major intersections and hiring of vendor for implementation, (f) Timely resolution of issues on contracted works so they can progress and complete in a timely fashion, (f) completion of hiring of ITS vendor. Based on current assessment the BRTS cannot be completed before mid 2017.

21. **Naya Raipur - Works Contracts Progress & Quality:** The progress on the BRT Infrastructure contract, signed in December 2013 was about 63% in more than 100% of the contract life, and of the NMT Infrastructure package signed in March 2014 was just 35%. While majority of the design issues have been resolved the Mission noted some serious lapses in the construction works quality and laboratory tests being conducted, and advised immediate action to rectify the issues following necessary tests and consultation with Design Consultants. It was agreed that NRDA shall submit the Action Taken Report to the Bank at the earliest. The Mission feels that while the BRT infrastructure civil works could be substantially completed by December 2015, the NMT package would require additional time until mid 2016.

22. *Launch of BRT Lite:* The launch of the BRT Lite service requires not only the completion of civil works (stations, pick up points, depot & control room), but also buses, ITS installations, a service plan, bus operators, fare collection agents and promotion & outreach activities. The Mission again advised NRDA to prepare a BRT Implementation Schedule capturing all of these (and other remaining) activities to be able to plan realistically. There is continuing uncertainty in regard to the financing of Buses, the service plan is still under preparation, the fare collection policy is still to be developed and endorsed, and hiring of private operator is uncertain in the absence of buses and a service plan. The Mission advised NRDA to finalise the issue of buses at the earliest. The other major issue requiring early attention is filling up the vacancy of the Chief Project Manager at this critical stage of the Project.

23. *Indore BRT ITS Delays:* The procurement of ITS for the Indore BRT has to be re-launched as the bids received in February 2015 have been found non-responsive.

24. *Mysore ITS Project operational acceptance.* The ITS system for Mysore city bus, rolled out gradually since November 2012 had encountered initial system troubles viz. including VMU performance and ETA performance. Now that the system appears to be stabilizing KSRTC needs to issue operational acceptance at the earliest through close monitoring and resolution of remaining technical issues. The mission noted that several of the issues relating to poor performance of the ETA were linked to KSRTC actions as opposed to technical issues with the hardware or software.

VII. Safeguards – Environment and Social Management

Safeguards Rating: **Unsatisfactory**

| Project Rating: Safeguards | Social | Env |
|-----------------------------------|--------|-----|
| Pimpri | U | MS |
| Naya Raipur | S | S |
| Hubli-Dharwad | MS | MS |
| Mysore | - | |

| | | |
|------------------------|---|----------|
| Indore | - | |
| Overall Project | | U |

Environment Management

25. The mission noted deterioration in performance on environmental aspects during the execution of on-going works in Pimpri Chinchwad and Naya Raipur as well as uneven performance on several contracts in Hubli-Dharwad. The key concerns identified include delays in improvement of agreed actions to ensure safe worksites, non-implementation of EMP measures that reduce adverse impacts like restriction on flow of river Pavana in Pimpri, and recent installation of protective netting for hospital near Hosur interchange in Hubli-Dharwad. In light of post visit improvements undertaken and communicated to the Bank from PIUs in Hubli-Dharwad and Pimpri Chinchwad, , while the mission rates the project as Moderately Satisfactory and urges all stakeholders to ensure that the shortcomings are eliminated in a timely manner, Bank will review and confirm the progress on agreed actions in advance of the next mission. City wise summaries follow with details in respective citywise Annexes.

26. **Naya Raipur:** The Contractor constructing the BRTS infrastructure in Raipur and Naya Raipur needs to improve the performance on workers' safety. This is important in light of frequent movement of public close to worksites in Raipur and this needs to be a focus of the NRDA's PMC team going forward. For the NMT infrastructure, the mission advised the NRDA to confirm that the borrowed material used for constructing the widened embankment in Naya Raipur was made available with proper consent from the owners of the land in order to reduce any future disputes in this regard. It should also be ensured that concrete mixers are washed only in designated areas in the camp and not on roadside.

27. The mission was also informed that the reduction in the green strip due to change in the development plan is being compensated with the approved lay-out for the respective sector specifying the green area that would reduce the roadside green patches. It has been agreed that this information would be shared with the Bank as part of the QPR for the period July-September 2015.

28. **Hubli Dharwad:** The mission noted with concern that despite previous agreements, the implementation of mitigation and management measures agreed in the EMP, and as required by the local authorities like the Karnataka State Pollution Control Board, were not implemented. The mission reminded the HDBRTSCo that non-compliance consent conditions poses a regulatory risk and a real risk for the patients in the Hospital close to the workshop being constructed at Hosur in Hubli. It strongly urged HDBRTSCo to ensure that all conditions of the consent are complied by the Contractor urgently. Since the visit, the Contractor has shielded the hospital premises and is working on improving the conditions, including safety of workers and their children, in the work areas and labor camps. The mission also noted that contractor for 3 grade separators has begun work at several locations simultaneously, which is resulting in some sites being porous to movement of local people causing unsafe conditions. The mission advised HDBRTSCo to require the Contractor to ensure safe effective manning of entry and exit to the site and designation of a 'safe' passage in the RoW where works are not underway. HDBRTSCo has started to ensure construction zone safety practices are implemented in several project locations, where traffic is moving. The mission also noted that the PMC team working for the HDBRTSCo needs to have full-time environmental and safety resources since the work is now begun for development of the Mixed Traffic Lanes, where safety of vehicles moving the already constructed BRT lanes may be at risk. It was agreed that the HDBRTSCo will have coordination meeting of all environmental and safety contact points every week to ensure that issues related to the interfacing areas such as MTL and grade separators are resolved in a timely manner.

29. The revised EA addendum was reviewed and brief comments were provided during the discussions. The revised draft of the EA addendum has since been shared with the Bank. This version requires small changes for clarity and confirmation regarding budgeting following it can be formally reviewed and cleared for disclosure. It was further agreed that the new elements like the Mitra Samaj terminal would be analyzed and documented in a subsequent addendum.

30. The mission also noted that the plantation for this year has been underway and that the total sapling plantation already undertaken now exceeds the number of trees that would be required to be cut for the project. The mission attended a presentation on the inception report of the landscape architect and discussed how the consideration of specific locations along the corridor may be blended into the overall plan. The mission looks forward to reviewing the preliminary proposals in this regard.

31. **Pimpri Chinchwad:** The Contractor for Corridor 4 grade separator had not cleared the Pavana River bed, which would be needed for smooth passage of water to avoid flooding and carriage of sediment downstream. This was agreed in the April 2015 mission, as during each of the previous rainy seasons. The mission discussed the issue with PCMC officials, including possible methods to allow the passage of water while allowing the continued construction. The mission was informed that the Contractor has now been instructed to not work in the river bed until end of the rains in October. However, this is contravention of the EMP conditions. The mission urged PCMC to ensure that this important requirement is met urgently as construction of the bridge progresses. PCMC has started the removal of material to allow wider passage for water during the monsoon. Arrangements for stay of the newly deployed laborers in the area close to the river Pavana did not conform with the EMP. The mission advised the PCMC to ensure that immediate rectification of the shortcomings is undertaken by the Contractors.

32. The mission noted that the avenue plantation had been undertaken for the completed stretch of the Corridor 4. It was agreed that the updated numbers for the plantation undertaken for the project would be shared with the Bank by 7th August 2015.

Social Management

33. **Pimpri-Chinchwad:** There is limited perceived progress in the implementation of Social Safeguards Commitment plan for the balance land acquisition and resettlement activities submitted to the Bank in December, 2014. The target date for substantial completion of that commitment plan was May, 2015. As a result of this delay, the displaced families are now staying in transit housing for more than 4 years and 6 months and the construction is delayed by more than 3 years due to non-handing over of the land in certain stretches in Corridor 3 and 4 and it has huge cost and time over runs. The mission was also informed that the delays are further compounded because of both Town Planning and Legal department of PCMC are insisting on excessive documentation for allotment of EWS housing and completion of remaining land acquisition. In view of this, the Safeguard management for involuntary resettlement is retained at “Moderately Unsatisfactory”. The mission suggests the following sequence of actions to be attended by PCMC to complete the pending land acquisition and resettlement actions. The demonstrated progress in the actions listed in the Matrix will be an important consideration for the upgrade in rating. More details are provided in **Annex 3B**

Suggested LA/RR Implementation Progress Matrix for Outstanding Activities

| Resettlement of PAPs living in Transit Housing | Resettlement of those displaced families to EWS housing | Complete acquisition | pending | land |
|--|---|----------------------|---------|------|
|--|---|----------------------|---------|------|

| | | |
|--|--|--|
| <ol style="list-style-type: none"> 1. Complete repairs in 2-3 weeks to the proposed houses/ Building to be allotted at Vital Nagar housing. 2. Issue provisional possession letters to all 90 eligible PAPs and shift them on temporary basis by August 31. 3. Complete all formalities for permanent allotment as soon as possible. 4. Issue notices to 20 ineligible PAPs for shifting out of Transit by August 31 by paying shifting charges. 5. Complete eligibility requirements for the balance 36 families and issue temporary possession letters by August 31 6. Dismantle the Transit housing by September 30 7. Complete all formalities and regularize final allotment by October 31. | <ol style="list-style-type: none"> 1. Take a positive decision by August 31, to make eligible for ESW housing among those 20 + families who have second houses but sold out and remaining along Corridor -4 (Adarsh Nagar) 2. Complete formalities for the remaining about 50 families waiting for allotment and issue possession letters by August 31. 3. Complete formalities for those 20+ families having second houses and issue possession letters for EWS house allotment by August 31. 4. Resolve on the compensation and rehabilitation assistance for those affected 10+ business in survey No 80 at Adarsh Nagar on Corridor 4 and agree on their shifting mechanism. By September 30. | <ol style="list-style-type: none"> 1. Deposit compensation amount immediately with Collector as per court order for the pending land acquisition case in Corridor 3 by August 10 2. Facilitate payment of compensation to the land owner and take over the land from land owner and handover to the contractor in Corridor 3 by August 31. 3. Sign Tripartite agreement for Transfer of MIDC lands in 60 meters in corridor IV , by August 10 4. Submit tripartite agreement to the court for its direction on this land transfer issue by August 20. <p>Facilitate speedy land acquisition in 1.4 Km stretch through FSI route or compete land acuianprocess and takeover land and handover to the contractor by November 30. Based on the court directives complete the actions for taking over of the MIDC land by November 30.</p> |
|--|--|--|

34. **Hubli-Dharwad:** The HDBRTS, the implementation agency has safeguards capacity with one Manager, one Social Development Officer and two individual consultants to support the RAP implementation. In addition, there is a full time Land Acquisition officer with adequate support staff to advance the land acquisition. The M&E consultants are also providing concurrent feedback on implementation aspects. The mission also noted that interactive details of land acquisition and R&R implementation is available on LCD in the public Information Center and the mission suggested on how to further improve its presentations. Overall, the management of land acquisition is under control with regular oversight by MD, HDBRTS and Director DULT. In addition to the outstanding land acquisition and resettlement implementation, the project has encountered small additional private land and impacts to the licensed shopkeepers due to realignment of Dharwad Terminal (about 0.50 acre and about 10 shop keepers and a public library). In addition, among those displaced 12 land owners families, the need for support in their resettlement need to be looked into and the R&R assistance to land owners need to be negotiated in case those affected fully and need relocation as available in the RAP. The expenditure incurred for LA and R&R implementation is 27% of INR.2400 Million. The overall safeguards management for involuntary resettlement is rated as “Moderately satisfactory” for this city. More details are provided in **Annex 2**.

35. **Naya Raipur:** In addition to the few minor impacts described in the earlier section, the mission noted that the Project Management Consultants are monitoring the employment opportunities created under the contractors. As on date, in case of BRTS infrastructure contract, a total of 71,190 man-days are created for a period of 18 months with 58% are local and 24% are among the local labor are women. In case of other contract (road works), a total of 18,509 man-days were created in the last 7 months of contract period with 30% of them are local labor and 17% of them are women. Thus, the project is providing substantial employment to the local population.

36. The project encountered few impacts to 3 very small shop-keepers and partial impacts to some structures due to improvements of entry and exist access in Old Mantralaya pick-up point. In response to mission's suggestion, NRDA agreed to prepare a note on the likely impacts and propose mitigation measures. In case of affected shopkeepers they will propose rehabilitation measures either in any of the on-going Government programs or allot some designated spaces inside the pickup point to enable them to continue their livelihood. The Note will be shared with the Bank for review and comments.

VIII. Procurement, Expenditures and Disbursement Plans

Procurement

37. Mission noted that revised procurement plan from KSRTC is received, which is reviewed and cleared with some modification. Other IAs who had plan for new activities may submit their revised procurement plans after inclusion of the same and then initiate the procurement process.

38. MoUD as implementing agency has already finalized all consultancy contracts at their level. They need to monitor these contracts for timely completion.

39. For PCMC, all the contracts are already awarded. However the contract execution is slow for Empire Estate contract with Gammon India. Recently Gammon India has taken the services of a subcontractor, who is doing a faster work. The project officials have to monitor the contracts closely for expeditious completion of work as projected by the contractor. In another contract for Nasik Phata flyover, the work is almost complete except two ramps which are planned to be completed in 15 months' time.

40. KSRTC has processed for up gradation of ITS system in Mysore by processing variation to contract with CMC. CMC has completed the up gradation. System is now stabilized. KSRTC has to issue completion certificate and process for payment of CMC's final bill. The procurement of additional activities i.e. driving simulator, needs to be expedited.

41. Further for Mysore city, the DULT has proposed for public Bike Sharing Project(PBS) at a total estimated cost of INR 20.5 cr (capital cost INR 9.82 cr and O&M cost INR 10.62 cr for 6 years). The tender for the same is already opened on July 31, 2015 and to be processed for early award of the contract.

42. For Naya Raipur, the project has finalised the procurement of ITS component. PMC for ITS has given a forecast of starting the operation from 1st November 2015. Two civil contracts are under execution and at various stages of completion. Close monitoring from project side is required for their timely completion.

43. HDBRTS has initiated procurement process for ITS for Hubli Dharwad and tender for the same is already opened on July 27, 2015. The project needs to process the case expeditiously for early finalization. Civil contracts, which are already awarded, are at various stages of completion. Besides the final consultancy contract has also been awarded by HDBRTS.

44. AICTSL has processed for procurement of ITS for Indore city and as the bid is found to non-responsive, the project has to finalise the revised bid documents on priority.

45. PPR 15 for the project was conducted on April 13, 2015 and report with comments shared with the client for their perusal and necessary follow up actions. Similarly for PPR16, the request letter from Bank is already issued to the clients for submitting the list of contracts awarded between July 1, 2014 to June 30, 2015, which are below prior review threshold. All the IAs are requested to submit the list for SUTP and SUTP (GEF) separately. If there is no contract awarded in this category, then a nil reply may be sent.

46. Though there is some progress made in procurement activities as compared with that in last mission, the overall progress is slow, hence the procurement rating is retained as MS with details as follows:

| Project Rating: Procurement | |
|------------------------------------|-----------|
| Pimpri Chinchwad | S |
| Naya Raipur | S |
| Hubli-Dharwad | MS |
| Mysore | MS |
| Indore | MS |
| PMU-MoUD | S |
| Overall Project | MS |

Financial Management

47. The disbursements (excluding advance) stands at 28.83% and 45.49% against IBRD and GEF respectively. The IUFRR submission (last submitted till June 2015) is timely. The accounts for all the PIA's have been finalized and audit is expected to be taken up shortly. For PCMC, the audit by AG team is already in progress and during this the previous year audit para will also be considered by AG team for recertification. The hiring process for internal auditors is long overdue (last audit report till March 2014) and the audit committee has not been convened since November 2013. As appraised, the process of hiring of internal auditors is in its final leg and the firm is expected to be on board by August 31st 2015. With regard to Mysore City Corporation, the budget head has been created for the project with initial allocation of INR 6 crores for FY 15-16. The bank account for the project will be opened by now. On project audit, necessary actions need to be initiated by MCC to ensure entrustment of project financial statement audit within 3 months of restructuring.

48. The overall rating of the project is retained at MS.

X. Project Restructuring

49. As discussed in earlier sections, the Project will not be complete by the current closing date of November 30, 2015. The main contours of the proposed restructuring would be as follows:

- *Extension of Closing Date.* The Closing date will require an extension upto November 30, 2017, to ensure completion of all work and installations of HDBRTS and sufficient time for launch of the BRT Service.

- *Reallocations and Cancellations of IBRD.* The unallocated amount of US\$5.6 mn with Pimpri-Chinchwad is proposed to be merged with the existing category for Road Works & Structures where it is expected to be substantially utilised; In addition, the two separate disbursement categories for works and goods for Chhattisgarh are proposed to be combined for greater ease in utilization of funds.
- *Modifications to the Results Framework.* The need for better aligning the results framework to the Project outcomes and outputs was identified at the time of the MTR. The framework has been reviewed in detail and select changes proposed, these are outlined in detail in Annex 8.
- *Revision to Disbursement Projections.* With Project extension, the disbursement schedule will also need to be modified.

IBRD Reallocations & Cancellations in USD

| Current Category of Expenditure | Allocation | | Disbursement % (Type Total) | |
|------------------------------------|-----------------------|-----------------------|-----------------------------|----------|
| | Current | Proposed | Current | Proposed |
| Chhattisgarh Part 2A | 12,270,000.00 | 13,937,000.00 | 100.00 | 100.00 |
| Chhattisgarh Part 2A | 1,667,000.00 | 0 | 100.00 | 100.00 |
| Maharashtra Sub Comp 3A of Part 2B | 29,877,000.00 | 35,576,925.00 | 72.00 | 72.00 |
| Maharashtra Sub Comp 3B Part 2B | 0.00 | 0.00 | 100.00 | 100.00 |
| Maharashtra Sub Comp 3 Part 2B | 0.00 | 0.00 | 78.00 | 78.00 |
| UNALLOCATED | 5,699,925.00 | 0.00 | 0.00 | 0.00 |
| Goods and Works Part 2C | 55,453,000.00 | 55,453,000.00 | 100.00 | 100.00 |
| Designated Account | 0.00 | 0.00 | 0.00 | 0.00 |
| FRONT END FEE | 263,075.00 | 263,075.00 | 0.00 | 0.00 |
| Total: | 105,230,000.00 | 105,230,000.00 | | |

50. A request to this effect should be submitted by MoUD to DEA for onward transmission to the Bank at the earliest.

XI. Project Management

51. *Project Restructuring.* The previous restructuring was declared effective as of July 27, 2015. MoUD and PMU are requested to submit the new request for extending the Project at the earliest.

52. *Project Management & Staffing.* The overall slow progress of the city demonstration projects is symptomatic of weak project management and staffing of PIUs. The rating for Project Management is accordingly retained at MU. The filling of CPM position in NRDA needs to be expedited. Given that the UNDP executed component covering project management costs has a closing date of December 31, 2015, MoUD needs to ensure its extension or provision of alternate resources for continuity of PMU. At the same time, the PMC contract which closes in March 2016 will also require an extension.

53. *Study Tour & Annual Meet.* It is proposed to organize a Study Tour for the Project officials to good practices in urban transport (viz. city bus reform, BRT systems, traffic management systems, intermodal integration etc.) in South East Asian counties of South Korea and China in end October-early November. MoUD and PMU are requested to coordinate the list of officials travelling and the necessary clearances from DEA etc. MoUD and PMU should also organize the Annual Meet for the Project to facilitate knowledge exchange and cross learning.

XII. Next Mission for Bank's Implementation support

54. The next mission is proposed to take place between **16-25 November, 2015.**

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

List of Officials Met

1. Mr. D.S. Mishra, Additional Secretary, MoUD
2. Mr. M.K. Sinha, OSD (UT & MRTS), MoUD
3. Mr. R.K. Singh, Director (UT), MoUD
4. Mr. I. C. Sharma, National Project Manager, SUTP Project Management Unit, MoUD
5. Ms. Rana Amani, Deputy Project Manager, SUTP PMU, MoUD

6. Mr. Bhaskar Dasgupta, Director (MI), Department of Economic Affairs (DEA), MoF

7. Mr. Rajeev Jadhav, Commissioner, Pimpri Chinchwad Municipal Corporation
8. Mr. Rajan Patil, Joint City Engineer, Pimpri Chinchwad Municipal Corporation
9. Mr. Shrikant Savane, Executive Engineer, Pimpri Chinchwad Municipal Corporation

10. Mr. Rajat Kumar, CEO, NRDA
11. Mr. Salil Srivastava, Chief Engineer, NRDA

12. Mr. Sandeep Soni, CEO, AICTSL

13. Ms. V. Manjula, Commissioner, Directorate of Urban Land Transport, Govt. of Karnataka
14. Mr. C. M. Noormansoor, Managing Director HDBRTS

15. Mr. C. Mallikarjuna, CME, KSRTC
16. Mr. Ramamurthy, DC, MCTD, KSRTC
17. Mr. Gururaj, KSRTC

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)
Hubli-Dharwad

1. A World Bank mission visited Hubli-Dharwad on July 27 and Bangalore on July 28 to discuss the implementation of the Hubli-Dharwad BRT project. The meetings were attended by Ms. V. Manjula, Commissioner, DULT, Mr. C.M. Noormansoor, Managing Director, HDBRTS Company, and their team and consultants; PMU and PMC Teams.
2. **BRT Project:** The HDBRTS Project aims at improving bus services in the Hubli and Dharwad twin cities including the implementation of a 22.3 km BRT line, consisting of the 11.8 km long corridor between the two cities and extensions into their central districts. BRT operations are expected to commence by mid 2017. Proposed project components include:
 - Segregated central bus lanes with median bus stops.
 - Trunk and feeder services; off-board fare collection system, with integrated ticketing of trunk and feeder services.
 - The trunk fleet will initially consist of 110 standard (12m) and 30 articulated buses, with a floor height of 900 mm above ground level.
 - Level boarding and alighting.
 - ITS for BRTS and ATCS for traffic management along the corridor.
 - Comprehensive development of the city transport infrastructure including depots, workshops, terminals both for BRT and feeder buses; ITS for BRT and traffic management; and last-mile connectivity.
 - Interchange facilities between the BRT and suburban & city services.

Technical Discussions

3. **BRT Terminal in Dharwad:** For some time, it was intended to build an elevated transfer terminal at the northern end of the BRT. However, objections were voiced against a solution on viaduct, as it was considered to be visually obtrusive, and it was ultimately decided to build the Dharwad terminal at-grade. Being at-grade, it would provide an operational turnaround for BRT buses and a final BRT station, but no spaces for feeder buses which would presumably terminate at the CBT or the OCBS terminals. Some (20% or less) of the BRT buses might continue toward the Agricultural University and the NWKRSTC Regional Bus Terminal and provide a link with non-urban bus services.
4. Following the April 2015 mission, it was decided that the BRT buses would traverse Jubilee Circle and terminate at a curb-side end-station located along the existing one-way avenues near the Public library, fairly close to the CBT. Part of it would be built on land currently occupied by the Public Library. Steps are underway to acquire the land required.
5. Several options are being considered for the terminal, providing up to five loading bays (two for articulated and three for standard-size BRT buses). The mission feels that five loading bays could handle demand, provided buses are operated efficiently and without much layover time. Considering this will be by far the most important BRT loading point in Dharwad, a lower number of loading bays could result in operational problems, at least during peak hours. CEPT is currently evaluating the options and agreed to submit its Concept Design Report to DULT by August 10, 2015. The mission recommends that this report be sent to the PMU and the World Bank as soon as possible, but not later than by August 15, 2015. The terminal must be completed when BRT operations start (about mid 2017) which implies the following timetable:

- August 10, 2015: Concept Design Report
- September 30, 2015: Detailed designs & BoQs
- October, 2015: Bidding initiated
- December 2015: Award of construction contract
- March 2017: Construction completed.

6. **Traffic Signal Designs:** The BRT corridor will include about 40 signalized intersections, i.e. on the average there will be traffic signals every 590 meters. The placement of signals and the timing of the signal phases will affect both traffic safety and the efficiency of mixed-traffic flow and BRT operations. If done well, it will contribute substantially to the success of the entire scheme; if not, it may detract from the perception that the BRT project has been a useful investment.

7. In April, it had been the intention that the traffic signal supplier (C-DAC) would prepare both the physical layout and the phasing/timing of the signals. In this regard, given that there are very few BRT systems in India, it wishes to highlight two elements which are specific to BRT and should be factored in by the consultants when preparing the designs:

- How best to control right-turns by mixed traffic across the segregated busway; and
- How to minimize signal delays to BRT buses and avoid bus bunching at intersections, as this could severely undercut the objective of achieving reliable bus services and high commercial bus speeds.

8. It had been agreed during the previous mission (April 2015) that signal design plans, including the proposed signal phasing and timing, should be prepared as a matter of urgency for the 40 intersections (each intersection poses its own specific issues, therefore generalized standards do not suffice for signal installation). These plans should be developed at an appropriate scale, probably 1:500, and should include all elements of traffic engineering for each intersection, such as the locations of mixed-traffic, BRT and pedestrian signals, lane markings, zebra crossings, bollards, traffic signs, and the phasing and timing of the traffic signals, and – where required – proposed modifications of the geometric design of the intersection. To carry out the designs, some knowledge is also required of projected traffic flows, especially the number and type of vehicles crossing the busway. As was agreed in April with the technicians present at the mission meetings that the signal cycle (probably uniform for all signals) should not exceed 90 seconds and that bus-actuated skip phases might be considered to minimize BRT delays and bunching.

9. DULT indicated that the signal designs should be submitted no later than September 7, 2015. The mission recommends that drafts of selected signal design plans be available by August 10 and forwarded to the PMU and the World Bank by **August 15, 2015**. In this way, possible comments by the PMU and World Bank – which may well be generic and valid for most intersections – can be incorporated in the designs of the entire package (rather than having to wait until mid-September).

10. **Facilities for Non-Motorized Transport (NMT):** The mission visited a partially constructed NMT-way in Navanagar, which connects with a BRT station and would thus provide improved last-mile connectivity. It observed that the top of the stormwater drain (which is understood would become part of the sidewalk / footpath) follows an irregular vertical alignment, in order to provide access to the numerous driveways and entrances along a relatively steep section of the street. Pedestrians would not use a footpath with such an alignment, i.e. they would walk on the street roadway as is common in many places. The mission recommends that DULT or its engineers review this situation and make proposal how to overcome this situation (for example, the sidewalk might be widened substantially in this section, giving it a more even

vertical alignment) and advise the PMU and World Bank of the proposed solution, by *August 31, 2015*.

ITMS

11. HDBRTS Company received two bids for Supply, Installation, and Maintenance of ITS infrastructure on July 27th 2015. The Bank team encouraged HDBRTS to complete the evaluation process so that the SI contract can be awarded at the earliest. Regarding the SoP contract, proposals have been received and are under evaluation. Recognizing that SOP contract should precede the ITS implementation effort, the Bank team advised HDBRTS to expedite the SoP evaluation and award and to ensure sufficient overlap between the two contracts.

12. The OBITS on the newly procured Volvo buses is UBS II compliant. However, the technical specifications on UBS need to be requested from the Bus manufacturers and shared with ITS SI to facilitate integration.

13. HDBRTS Company has allocated its own funds to procure Traffic Signal and Red Light enforcement systems in support of the BRT network as it intends to implement the CoSiCost technology through CDAC. It was also understood that ITS PMC would be designated as the PMC for Traffic Signals and Red Light Enforcement systems

14. The Bank Team discussed the TMICC blueprint with HDBRTS Company in the context of how the proposed Control Center for BRTS could evolve into an Integrated Traffic Management and Information Control Center accommodating feeds from other non-BRTS transport management centers. The Bank team reiterated the need to bring the Police Departments in to the discussion on hosting, operations, and maintenance of Traffic Signals. The Bank team learnt that the initial plan is to host the Traffic Signal Controller at the BRTS Control Center and highlighted the need for a clear and unambiguous protocol that will govern the operations of the Traffic Signal and Red Light Enforcement System.

15. The Bank team also highlighted the need to coordinate traffic signals on feeder roads that impact the traffic flowing onto the BRT junctions. This would call for coordination between CoSiCost-based BRT junction signals and other signals in the feeder roads in the vicinity of the BRT corridor. One suggestion made was to bring the traffic signals on the feeder roads into the fold of the BRTS project and implement CoSiCost technology along the feeder roads, this would mean designing the traffic signals for not just 37 junctions in the BRT network but also additional key junctions in the vicinity of the BRT corridor.

16. The issue of pending civil works related to ITS communications infrastructure and the need for last mile (~500m) connectivity of fiber optic cabling from BRTS corridor to OCBS and other Bus Depots and the Control Center were also discussed. In order to expedite all pending work, the ITS PMC would appoint a communications specialist to work on AutoCAD designs for ductwork and resolve all issues related to civil works at all depots and Bus Centers. The AutoCAD designs would consider separation of electrical and communication cabling and individual fiber optic cabling as opposed to CAT6 cabling from a single OFC concentration point.

17. The Bank Team also discussed a 3G option to transfer video stored on bus. But the primary mode of downloading video footage from the Bus to the Control Center would be via multiple Wi-Fi access points connected to the Fiber network. Recognizing the need for expanded on-bus storage to address security concerns, the Bank Team is in support of the new proposal to include two (2) video storage units in each bus with a storage capacity of 30G per day that will be overwritten every 2 days. The Bank Team also identified the need to have Standard Operating Procedures for transfer of video via Wi-Fi access points.

Works being implemented by HDBRTSCo (*financed by the Bank*)

18. The Table at the end gives the overall status of all contracts. It's reported that the major contracts like PW-8, PW-9 and PW-10 are having about 45% of structural works and 55% of electro-mechanical, services and finishing works. Now that most of the initial problems are over, further progress in terms of % of contract amount is likely to be accelerated.

19. All Contractors are having difficulty in procuring Natural Sand because reportedly no license has been awarded for sand mining in Dharwad district. All the Contractors are using their old stock of Natural Sand until those are exhausted and possibly procuring Natural Sand from neighbouring districts. In addition, the Contractors might be using Natural Sand mined illegally. The Bank does not support use of illegal materials in constructions financed by the Bank. HDBRTSCL needs to get the Government of Karnataka's intervention to resolve the matter of availability of Natural Sand. The Contractor for Packages 5 and 10 has made its Mix Design using 60% crusher-run Sand and 40% Natural Sand.

- a) **Package 1:** This contract for Construction of four numbers of BRTS Bus Stations (BS) and Pedestrian Infrastructure between Hosur Cross and Hubli Railway Station started on 04 April 2015 with 12 months completion period. The Contractor has started Drain works. Out of the 4 BS locations, the Contractor can carry out works at BS-04 only where it has done barricading. The Contractor can start the works at BS-01 and BS-02 after the road is widened by the National Highways Authority of India (NHAI) involving acquisition of private land at BS-01 and transfer of government land at BS-02. HDBRTSCL is seeking land from North West Karnataka Road Transport Corporation (NWKRTC) for traffic diversion during construction of BS-03. The Contractor informed that it would take about 5 months to complete a BS after the site is available. The financial progress on this package is 6%.
- b) **Package 3A & 3B:** The bids for two contracts each of four numbers of Foot Over-bridges (FoB) have been received (dated July 3, 2015) and presently being evaluated. HDBRTSCL expects to award the contracts by end-September 2015, thus earliest completion of these works can be expected by June 2016. There is land availability issue at one of the Eight FoBs at Court Circle in Dharwad city.
- c) **Package 4:** comprising Drains, Walkways, Street Lights, Bollards, Sitting Benches, etc for a total length of 3.2 km in Dharwad and at Navanagar started on 10 November 2014 with 9 months completion period. Present physical progress is about 28% of the contract amount. The Contractor has completed almost the full Drain works. Existing Electrical Poles are required to be relocated (requiring about 1.5 months) before the Contractor can carry out the works for Walkways. Revised drawing(s) showing the layout of the new Street Light Poles are yet to be issued to the Contractor. The Contractor informed that it requires about 4 months to complete the remaining works.
- d) **Package 5:** comprising Construction of 13 Bus Stations (BS) at middle of the BRT Corridor width, started on 15 October 2014 with 12 months completion period. Physical progress of this contract has been only about 7% of contract amount. It's reported that the works at BS-11 (Unkal Lake) can be started only after availability of additional land required for diverting the vehicular traffic. The Contractor has started activities at all other 12 sites. Grade Slab at plinth / platform level has been completed at BS-14 (APMC), BS-16 (RTO Office) and BS-17 (Rayapura). Works ongoing at below Platform level at BS-05 (Hosur Interchange), BS-08 (BVB College) and BS-15 (Navanagar). Excavation for foundation is in progress at BS-06 (KIMS), BS-07 (Vidyanagar), BS-09 (Prerana Science College), BS-10 (Unkal Village) and BS-13 (Shantiniketan Layout). Barricading the site is in progress at BS-12 (Bhairidevikoppa). The Contractor's progress is very slow. It needs to be pushed for

accelerated progress and early completion of all works. The Contractor informed that it would complete all works under the contract in another 8 months by March 2016.

- e) **Package 6:** comprising Construction of 11 Bus Stations (BS) in the middle of the BRT Corridor width, started on 15 September 2014 with 12 months completion period. Physical progress of this contract is about 17% of contract amount. The Contractor could start its activities at 8 locations out of 11. BS-24 at Navlur Lake near Road over Rail Bridge (RoB) has been deleted from scope of this contract and will be part of the RoB contract to be implemented by Karnataka Road Development Corporation Limited (KRDCL). Instead, BS at Court Circle has now been included under this contract, which requires land acquisition. BS-29 (Toll Naka) requires land acquisition. Revised coordinates of changed location for BS-30 (Bagalkot) are yet to be received. Grade Slab at plinth / platform level has been completed and works above the Platform Level have started at BS-18 (IOCL), BS-19 (NGEF), BS-21 (Navlur Station), BS-22 (SDM Hospital), BS-23 (Sattur) and BS-26 (Lakhman Halli). Earthworks for foundation are in progress at BS-28 (Vidyagiri). Barricading the site is in progress at BS-27 (Gandhinagar Cross). The Contractor informed that it would take another 8 months until March 2016 to complete 9 BSs (except BS at Court Circle and BS-29 which require land acquisition).
- f) **Package 7** for Construction of Jubilee Terminal in Dharwad was on hold because of delays in finalizing the design option within Dharwad and difficulties in identifying suitable location with land availability. HDBRTSCL has now forwarded to Directorate of Urban Land Transport (DULT) its proposal on location of the proposed Jubilee Terminal, on approval of which the designs and preparation of bid documents will be taken up.
- g) **Package 8** comprising Depot and Divisional Workshop in Hubli and the Depot in Dharwad, started on 20 December 2013 with 15 months completion period, is progressing very slowly. Physical progress has been only 24% of the contract amount. There were initial delays for reasons beyond the control of the Contractor. The Contractor's mobilization has also been slow as well as progress of works has been lethargic. The Contractor had submitted Compensation Event details, and the PMC had made its recommendation to HDBRTSCL in respect of the impact of such events. It's however understood that the PMC is required to make its recommendation(s) again because of some discrepancy in its earlier recommendation. The Works Completion Period expired on 19 March 2015 as per contract. Extension of the Works Completion Period needs to be made urgently, without which the contract is 'at large'.

The laid Granular Sub Base (GSB) is required to be compacted / re-compacted as necessary. The Contractor is required to re-submit its Methodology for laying Dry Lean Concrete (DLC) and Pavement Quality Concrete (PQC) as well as submit Concrete Mix Designs for the same. The Project Management Consultant (PMC) suggested that the Contractor is required to concentrate on Pavement works, Roof Sheeting and Services works. It also suggested that the Contractor is required to mobilize a Senior Electrical Engineer. In addition, the PMC suggested that more Fitters (Bar Benders) and Carpenters (for Shuttering works) are required at Dharwad Depot site and more Carpenters and Shuttering Materials are required at Divisional Workshop site. The Contractor is required to carry out efficient planning, increase its resources including skilled staff, and manage its resources efficiently for higher productivity. It requires progress the works vigorously simultaneously in all 3 sites.

The Contractor expressed its intention of completing all works at Hubli Depot site by end-January 2016. Both the Contractor and the PMC expressed that it's possible to complete all works at Dharwad Depot site by end-December 2015, which may be optimistic. For the Divisional Workshop site, the Contractor had submitted a revised Work Program in May

2015. But, the Contractor is continuously falling behind its Program. The Contractor expressed its intention of completing all works at this site by October 2015, which appears too optimistic and impractical. The PMC opined that it may be possible to complete all works at this site in another 8 months by March 2016.

h) **Package 9** for Re-construction of OCBS (Old Central Bus Station) at Dharwad, started on 05 September 2014 with 12 months completion period. Its physical progress has been only about 13% of the contract amount. It's reported that the site was suffering from cash flow problem. With recent change in the Site Leadership of the Contractor, reportedly there are signs of better management. It's now expected that the progress may be made in a more organized manner. The Contractor is required to submit its Methodology for laying DLC and PQC as well as Concrete Mix Designs for the same. The PMC opined that the Site requires about 90 skilled and unskilled labourers in comparison to present strength of 20 only. The Contractor committed to increase the Labourer strength to 40-45. The PMC also suggested the need of an Excavator. The Contractor had submitted a revised Work Program in January 2015, which is not resource-based thus reasonableness of the Program cannot be assessed. The Contractor expressed its intention of completing all works under this contract by March 2016. The Contractor is required to carry out efficient planning, increase its resources as required, and progress vigorously in order to complete all works early.

i) **Package 10** for Construction of Hosur Interchange started on 15 May 2014 with 18 months completion period. Its physical progress has been 27% of contract amount. There were delays in providing 'Good for Construction' drawings to the Contractor. The progress of works was also affected initially due to delay in completion of dismantling of existing structure by NWKRTC. The PMC opined that the Site has adequate manpower and machinery. The PMC has been consistently (through all Mission visits) telling good about organization of this contract, but the same is not reflected in the progress. The Methodology for laying DLC and PQC submitted by the Contractor is under review by the PMC. The Contractor is presently preparing the Mix Designs for DLC and PQC. The Contractor has claimed an Extension of Time (EoT) for completion of all works until September 2016, which is under review by the PMC.

The Mission was informed that a large amount of works cannot be taken up due to non-availability of drawings or decision or land. Works at C-Block amounting about Indian Rupees 60 Million is on hold due to non-availability of revised Layout satisfying the requirements given by NWKRTC. Works held up due to non-availability of structural beam details in between grid D-H-1-3 in C-Block Workshop. Plastering and flooring works are held up in C-Block Workshop in absence of cable layout. Revised drawings for brick works and ground floor flooring works in B-Block satisfying the requirements of NWKRTC are pending. HDBRTSCL is required to respond to the Contractor's submission of Specifications of alternative Brands of Escalator, for the Contractor to further progress, to be implemented as Variation to the contract. Staircase and Slab detail drawings in between grid P1-P3-Ak-A1 in D-block are pending. Plastering and flooring works in toilet block below kiosk in grid A5-A-6 are held up in absence of cable layout. HDBRTSCL is required to supply external Road Level to the Design Consultant to facilitate fixing of the finished levels at 4-wheeler and 2-wheeler parking and taxi drop areas. Underground Water Tank works in D-Block requires additional land to be obtained from abutting NWKRTC Depot.

Works implemented through KRDCCL (not financed by the Bank).

20. Complete length of about 19 km long BRT corridor along Hubli-Dharwad Highway is being implemented through KRDCCL, except the Bus Stations therein.

a) The **4-laning works of Hubli-Dharwad Highway** (the BRT Corridor) started in September 2012 after making necessary design changes to fit the BRTS. Effectively, the 4-laned

Highway will become the exclusive BRT corridor after completion of the full width of the Highway comprising both exclusive BRT corridor and the mixed vehicular ways. 2 x 7.5 km of Concrete Pavement has been constructed, out of 2 x 11.75 km of Concrete Pavement proposed. Concrete Pavement could not be laid in length of about 1.9 km due to proposed Flyovers, in about 1 km for RoBs at Navlur and in about 1.6 km (Gateway Hotel to Sena College) due to land and utilities issues. Widening of pavements to 4-lanes in Hubli and Dharwad city areas could not be completed because of non-availability of encumbrance-free land due to difficulties in relocating existing utilities pending acquisition of land required for construction of full-width Road. No further works are being carried out under this contract. **KRDCL is required to engage an agency(ies) for completion of the remaining works of this contract in the stretch of about 1.6 km from Gateway Hotel to Sena College and in about 7.09 km in Hubli and Dharwad city areas.**

- b) The **Contract for Widening of Hubli-Dharwad Highway to 44 m** (about 10.55 km long) **and 35 m width** (7.09 kms within Hubli and Dharwad cities) / Construction of Mixed Traffic Lanes, with 18 months completion period, started on 23 March 2015. KRDCL has handed 1st Milestone stretches (4.32 km of continuous stretch on Right and a total of 5.511 kms in three stretches on Left) to the Contractor on 23 March 2015. The Contractor has carried out works worth INR 8.5 Million until now. In the 1st Milestone stretch, 2.3 km of water pipeline on Right is likely to be relocated by August 2015 and tree cutting in a length of about 400 m on Right is likely to be completed by mid-August 2015 and Payments for land in about 200 m length on Left are yet to be made. The contract is flawed to the extent that it does not specify the Site Handing Over (to the Contractor) dates for subsequent Sections / Milestone stretches, although it specifies the Completion Dates for those. In absence of stipulation of Site Handing Over Dates in the contract, those are being considered / interpreted arbitrarily. KRDCL advised that it expects to hand over to the Contractor most of the remaining stretches (involving Land Acquisition, R&R and Relocation of Utilities) in another 4 months. The Contractor has not been able to yet obtain Permission from the statutory authority to Operate Crusher and Hot Mix Plant (HMP).
- c) Contract for **Construction of Three Flyovers** started on 05 November 2014 with 14 months completion period. The Mission was informed that Encumbrance-free site for Flyover at Navanagar was handed to the Contractor on 02 February 2015 but the 'Good for Construction' drawings were issued to the Contractor on 05 May 2015, after which the Contractor started the works at this site from 21 May 2015. The Contractor has completed 15 Foundations and 8 Piers at this site. The Mission was informed that the additional land required for the Flyover at Unkal Lake is likely to be available in one month, after which the utility relocation will start. The Mission was also informed that the awards for acquisition of land for the Flyover at Unkal Cross are yet to be made. It's understood that all drawings for the Flyovers at Navanagar and Unkal Lake have been issued to the Contractor. Drawings for the Flyover at Unkal Cross are yet to be provided by the Design Consultant.
- d) 2-lane wide **Road over Rail Bridge (RoB)** is proposed to be constructed on both sides of the existing 2-lane RoB near Navalur. Revised General Arrangement Drawings (GADs), taking into account the Railways' comments, have been submitted to the Railways, approval of which is expected in 2 weeks. Thereafter, detailed designs will be submitted to the Railways' Proof Consultant. KRDCL now expects to invite the bids for construction of the RoBs, by end-August 2015. HDBRTSCL expects to complete acquisition of required private land in a short period. KRDCL has started relocation of Electric Poles. Karnataka Urban Water Supply and Drainage Board (KUWS&DB) has invited bids for relocation of water pipelines.

Environment

21. The mission visited BRT Infrastructure sites including depots and locations along the trunk corridor where grade separators are being constructed. It also visited locations where NMT improvements are underway. During the visit, a session was organized by HDBRTSCo where preliminary findings of the environmental audit undertaken were discussed. A follow-on meeting with Directorate of Urban Land Transport (DULT), GoK, and HDBRTSCo officials was also organized in Bengaluru where the mission discussed its findings, and agreed on the steps for the way forward.

22. The mission noted that the works along the BRT corridor have begun with two new contractors – employed by KRDCCL – creating BRT corridor infrastructure – i) mixed traffic lanes, and ii) grade separators in 3 locations.

23. **Site Safety:** During site visits, it was observed that close to the Navnagar grade separator site, the construction area has become very porous. Local people are using the construction area to access nearby properties, increasing the risk of accidental damage to life and limb for them as well as workers on the site. The mission advised HDBRTSCo to ensure that the sites are safe. It would include diverting local traffic temporarily for the duration of the construction. HDBRTSCo is in favor of getting a separate access in this location with physical barriers thereafter preventing access to site for persons not engaged in the construction activities. The mission agreed with the approach and requested HDBRTSCo to confirm the same in writing.

24. The mission also noted that the segregation of construction area for mixed traffic lanes also needs to improve. The provision of barricading of select sections, where the vertical level difference between the lanes in use for current vehicular traffic, and the adjacent area is a serious risk, especially at night, was discussed and agreed that the same would be examined in each stretch. In any case, the adherence to the requirements of the SP 55 of the Indian Roads Congress is a requirement of the contract and hence it must be ensured by KRDCCL and confirmed by HDBRTSCo for all contracts working on road works.

25. The mission observed that despite previous agreements, there is no progress in the improvement of safe working conditions in several on-going contracts for non-road BRT infrastructure. It was disappointed to note that even conditions of compliance with consents issued Karnataka State Pollution Control Board were not being adhered. The mission advised HDBRTSCo to ensure that the sites, such as the Hosur interchange with the workshop, were compliant with the KSPCB conditions, the requirements laid down in the EMP and other local regulations, failing which further downgrade of the performance on environmental aspects is quite possible. It was agreed that this will be taken up urgently for completion within the mission period. The confirmation regarding the implementation of this agreement is awaited from HDBRTSCo at the time of this writing.

26. **Environmental Audit:** A brief meeting was convened by the HDBRTSCo to discuss the environmental audit report. The original key person, who had been able to understand the ground reality has since left the selected consultant organisation. During the discussions, it was agreed that the new team will get a clear picture about the site conditions in time for submitting its findings report. The mission requested that the highlights of the report be shared with the Bank as part of the QPR for period ending September 30, 2015.

27. **Landscaping for Green BRTS Plan:** The landscape consultant team presented an inception stage presentation during the mission meetings in Bengaluru. The mission provided suggestions on the selection of species to be planted for compensation of trees cut, integration of the green spaces, and other related aspects of the assignment as concept designs and preliminary plans begin to take shape. The mission suggested that the revised EA documents (see below) need

to include such details so that the uninformed reader can gauge the importance attached by HDBRTSCo to environmental protection and enhancement.

28. **EA Addendum Documentation:** The mission reviewed the revised Addendum to the EIA/EMP document and provided comments on it to the DULT and HDBRTCo. While there is improved coverage of the issues identified and measures taken since the initial EIA/EMP were prepared, several key items need to be addressed – such as changes to the overall budget, incorporating estimates regarding the cost of landscaping. It was agreed that the documents will be revised very quickly and shared with the Bank for a more formal review for disclosure.

29. **Monitoring and Reporting on Environmental aspects, including Safety:** The PMC staffing needs to be confirmed as there will be increasing need to guide the various contractor teams as the work picks up speed across contracts (eventually all 10 could be ongoing at one point). The mission suggested HDBRTCo should ensure that the inputs needed for safe and environmentally acceptable work sites and execution are available to the contractor and monitoring and reporting of these aspects of works is closely followed-up on by all concerned – HDBRTSCo, KRDC, and Contractors. It also suggested that there should be formal coordination meetings on the issues around workers’ and general public safety close to work site, as well as EMP implementation with all stakeholders, including relevant officials of HDMC, whenever needed.

Social

30. The key progress in land acquisition and R&R Implementation is summarized below.

| No | Activity | Current Target | Progress | Remarks |
|----|--|----------------|--------------------|---|
| 1 | Private Land acquisition (in acres) | 26.35 | 15.27 (57.95%) | Awards for another 6.23 acres is expected shortly |
| 2 | Government land Transfer (in acres) | 45.34 | 45.17 (99.60%) | |
| 3 | No. of land owners received compensation | 575 | 112 (19.48%) | |
| 4 | No. of Non- title holders/ Tenants received assistance | 580 | 272 (46.90 %) | |
| 5 | Assistance for relocation/reconstruction of religious structures | 17 | 5 ((29.41%) | Resistance from 4 structures. |
| 6 | Financial Progress (INR. In Millions) | 2400 | 661.45 (27.56%) | |

31. **Land Acquisition.** Substantial progress is noticed on private land acquisition and all Government land transfers are completed except a small portion of land. As regards private land, all negotiations for compensation rates and Government approvals are obtained. The compensation award announcements are delayed since the collection and verification of ownership documents is taking longer time than originally envisaged. The compensation awards are being made after ownership details are collated to ensure that compensation is paid immediately after the compensation awards. In case of agricultural lands, the land owners have refused to consent award as they are expecting compensation as per non-agricultural lands. Therefore, General awards are proposed to be awarded. In case of HDMC lands, all pending land transfers are now completed and the affected persons who have constructed structures have been paid compensation for structures by treating them as encroached properties. The mission also observed that the negotiated compensation is being compared with the compensation

available as per new LARR act. Based on the comparative statement, additional compensation, if needed will be paid. While the valuation of structures is completed, there is resistance for valuation of structures in case of 23 properties in Dharwad. A small group, Land Owners Association in Dharwad, have a filed a case in court on multiple demands such as lower compensation, alternatives for alignment in Dharwad town, exploring possibility of land for land option, for shopkeepers rehabilitation, etc. The mission was informed that HDBRTS has provided a response to the court on the grievances filed by land owners association in Dharwad. A small additional land acquisition (about 0.50 acre) is triggered due to the proposed Dharwad Terminal. This small land acquisition will involve partial impacts to a Private library and a residential house and impacts to about 10-15 petty licensed shopkeepers of tailoring and footwear repair shops. The other issues noticed include: considerable delays in handing over of about 100 meters land in first milestone road stretch to be handed over to the contractor. This is delayed due to process followed for determining the ownership of impacted private properties.

32. **Construction of Mixed Lane.** The first milestone stretch of 6.25 Kms has been handed over and in this about 100 meters is not available due to encumbrances. The second milestone stretch consist of 5.50 Km is expected to be handed over by August 31,2015 and third and final milestone stretches of 7.00 Kms will be handed over by November 30, 2015, except those lands occupied by Dargh and 3 temples and the land for Dharwad terminal.

33. **R&R Impacts.** While substantial number of affected squatters have received R&R assistance (80 out of 87 PAPs), the assistance to tenants is considerably delayed (120 of 348) because shifting of tenants is required to be coordinated with payment of compensation to the corresponding owners. The mission noted that R&R assistance rates have been updated for 2015-16 and is being implemented. The mission was informed that 12 title holders are physically displaced. The mission suggested that HDBRTS and M&E consultants should meet these 12 families to ascertain how they have planned their relocation and ascertain whether they need any assistance and accordingly provide support as appropriate. It is learnt that some of them have now moved to rented houses

34. **Impact on Religious Structures** As many as 17 religious structures will be affected either fully or partially. Extensive consultations are part of shifting process. There is resistance in case of one Dargha and 3 temples. In case of remaining temples, either the work is completed and removed from the impact area or reconstruction is in progress. HDBRTS informed that appropriate measures will be taken to shift those 4 structures where there is resistance, when the progress in the remaining temples and road construction is advanced. Once an agreement is reached with Dargha committee owners, the other temples will come forward to agree on the same line of agreements made in Dargha.

35. **Concerns of Dharwad Land Losers Association.** This group has been writing to the Bank regularly. They are resisting the measurement of the affected structures for valuation for compensation determination on the grounds that they have filed a case in the court and want to wait until the court is heard. However, HDBRTS has planned to complete this work for these 23 structures with the help of police in order to complete the compensation award. Their grievances include: compensation rates are not in line with market rates, provide alternative land for construction of affected shops, consider other alignment options to avoid impacts to their business, provide additional FSI, take safety measures while shifting electric poles, etc. The mission invited them for a possible meeting, however, they could not meet the mission as the key person of the group was traveling.

36. **Addendum to RAP.** The updated version has been shared with the Bank during the mission. The addendum contains the updated land acquisition and resettlement impacts, consultations held as part of alignment changes with PAPs of Dharwad and revised time tables.

The mission advised HDBRTS to upload the consultation details and other key details related to land acquisition and R&R impacts on the website so that it is made available for the public. The Bank's concurrence with final observations has been shared. It was clarified to the mission that a budget of Rs. 2400 million has been approved and if additional budget support is needed for land acquisition and Resettlement impacts, HDBRTS/DULT will seek further approvals. With receipt of Bank's concurrence with comments, the addendum will be disclosed after obtaining the internal approval.

37. **Concurrent Monitoring of RAP implementation.** The mission interacted with concurrent monitoring consultants and they now submitted 7 progress reports summarizing their field visit observations and initial assessment of living standards among those who have shifted to the new places and described the process of negotiations, time taken for land acquisition. It is learnt that 2 vulnerable families received Old age/widow pension due their persuasion with the government. Similar efforts are in progress for allotment of houses under Indira Awas Yojana scheme. The current contract period has ended on June 30, 2015. The outstanding outputs include final quarterly report and final report on the overall support provided. The HDBRTS/DULT indicated to the mission that they will review the performance of the consultants and take a decision on extension of their contract until December, 2015 and also revise the scope of work outlining the key tasks to be performed during the extended period. The mission clarified that final impact evaluation on the impact of LA and R&R support to the PAPs will be undertaken towards end of the loan period to allow sufficient lead time for measuring the impact. The M&E consultants will only undertake an interim assessment as part of their scope of the contract.

38. **Dated Action Plan.** HDBRTS proposed the following updated dated action plan for the implementation of remaining key actions

| No | Actions | Responsibility | Revised Target Date | Remarks |
|----|--|-----------------|-------------------------|--|
| 1 | Mitigate residual LA and R&R impacts in already handed over first section in Mixed lanes. | HDBRTS | Immediate | Pending since April, 2015 |
| 2 | Compensation Award to all villages/Towns | KRDCL /HDBRTSCO | 31-Aug-15 | Original Target date April, 2013 (31-Mar- for Dharwad and Navlur) |
| 3 | Payment of difference amount of compensation due to new LA Act, if any to those 112 owners who have received by Jun 30, 2015 | HDBRTS | 31-Aug-15 | |
| 4 | Completion of payment of compensation and R&R assistance to all affected people | HDBRTS | 30-Sep-15 | |
| 5 | Handover of encumbrance free Second and third sections for construction of mixed lanes | HDBRTS | 31-Aug-15/ 30-Nov-15 | Pending since May 31, 2015 |
| 6 | Note on additional land acquisition and R&R impacts due to Dharwad Terminal and proposed mitigation measures for Bank's review | HDBRTS | 15-Set-15 | |
| 7 | Assistance to reconstruction of affected religious structures and affected portion is removed | HDBRTS | 30-Sept-15 | Original Target date: 31-Jul-14 |

Branding and Communications

39. Outreach Activities: The implementation of the activities identified as part of the communications plan are ongoing. Major initiatives for targeted stakeholder outreach have been undertaken. The activities carried out from April to July included (a) launch of the BRTs logo and Service in April (b) three orientation programs for IMA doctors, HDUDA and other district level officials in the month of May (c) yoga day celebration for police officials and another orientation program for RTO officials in June (d) participation of HDBRTS in a Public Information Campaign by installing an info stall from July 3-5 along with an orientation program for NGOs also in July. Activities planned for the subsequent months (August-October) include orientation programs for companies and corporate sector officials, auto rickshaw associations, and IMA doctors. Presentations/events in schools and colleges is an ongoing activity. Street plays are also planned along with preparation of jingles.

40. Branding Activities: The bus design and colour have been finalized and the service has been named as 'Chigari'. The BRT brand launch (logo, colour palette) was launched on April 11, 2015 by the Karnataka State Chief Minister.

41. Media Analysis: A presentation was made by the consultants on the progress of media monitoring for the second quarter of 2015. It was revealed that the number of articles in the current quarter has gone up to 42 nos. as compared to the first quarter numbers (18 nos). Most of these are related to the progress of land acquisition (48%). Launch of the BRT name and logo also received wide media coverage in this quarter (31% as general BRT related articles). Improvement was observed in the rating of most articles as compared to that in the previous quarter (reduction in moderately unfavorable articles from 61% to 24% in the current quarter; 22% of the articles were rated as highly favorable as compared to 11% in the previous quarter). Articles rated as 'favorable' were found to be mostly related to the BRT logo launch, land acquisition and construction progress.

42. The Mission advised HDBRTS to update the website with all latest presentations and promotion material that has been finalized. The homepage of the website can have a link to the interactive presentation that has been developed by HDBRTS for BRTs promotions. The newer set of FAQs developed by the consultants should also be updated on the website. The Mission also advised HDBRTS/ DULT to update the FAQs in regard to the more recent queries from affected PAPs such as policy on setbacks, FSI etc.

43. The Communications contract is closing this year end and needs to be extended. HDBRTS will review their performance and then work on its extension.

44. **BRT Implementation Schedule:** The Mission reviewed the sub activities and their likely completion dates ie. BRT implementation schedule.

- Complete all land acquisition – August 31, 2015
- Shifting of Utilities – February, 2016
- Balance work on BRT corridor – July 2016
- Construction on mixed traffic lanes - September 2016
- Construction of all three flyovers – June 2016
- Construction of ROB – June 30, 2017
- Construction of BRT bus stations – July 2016
- Construction of Depots and Workshop to be over by July, 2016
- Construction of OCBS and terminal – March 2016
- Completion of work on NMT facility – December 2015

- Constructions of BRTS station and pedestrian infrastructure between Hosur to Railway station – June 2016
- Dharwad Terminal – March 2017
- Installation of ITS – February 2017
- Delivery of standard buses – May 2016
- Delivery of articulated buses – October, 2016

Key Agreed Actions

- Submission of Jubilee circle terminal options concept design – Aug 15, 2015; final designs – September 30, 2015
- Submit Drafts of selected signal design plans – August 15, 2015
- Action plan for correction in the Navanagar NMT alignment: August 31, 2015
- Submit ITS BER/ Final award – August 31, 2015/ October 15, 2015
- Award contract for FoB – August 31, 2015
- Initiate SOP consultancy – September 30, 2015
- Share pending drawings for ducts for ITS cables in all depots/ stations – August 15, 2015
- Notes on the proposed BRT extension upto Agriculture University and last mile connectivity at Toll Naka – Aug 15, 2015
- Update HDBRTS website with latest FAQs, presentations and other promotional material – Immediate
- Approval and disclosure of RAP Addendum – September 15, 2015
- Submission of revised EA addendum – August 15, 2015
-
- Ensure EMP compliance in terms of worker safety, cordoning of work sites etc – Continuous
- Note on site conditions and findings to be submitted by Environment Audit Consultants – September 30, 2015
- Mitigate residual LA and R&R impacts in already handed over first section in Mixed lanes – Immediate
- Compensation Award to all villages/Towns - August 31, 2015
- Payment of difference amount of compensation due to new LA Act, if any to those 112 owners who have received by Jun 30, 2015 – August 31, 2015
- Completion of payment of compensation and R&R assistance to all affected people - September 30, 2015
- Handover of encumbrance free Second and third sections for construction of mixed lanes – August 31- November 30, 2015
- Note on additional land acquisition and R&R impacts due to Dharwad Terminal and proposed mitigation measures for Bank's review – September 15, 2015
- Assistance to reconstruction of affected religious structures and affected portion is removed – September 30, 2015.

Annex 2A
SUTP : Hubli-Dharwad : Status of Civil Works Contracts under the World Bank Funding

| Package | Name of Works | Contractor | Contract Amount / Estimated Amount (INR Millions) | Works Start Date | Works Completion Period (months) | Scheduled Works Completion Date | Value of Works Done (INR Millions) | Physical Progress % of Contract Amount | Remarks |
|---------|---|---|---|------------------|----------------------------------|---|------------------------------------|--|---|
| PW-1 | Bus Stations (4 numbers) and Pedestrian Infrastructure (Hosur Cross to Hubli Rly Stn) | Suprada Construction Company, Dharwad | 86.5 | 04Apr15 | 12 | 03Apr16 | 4.5 | 5.2% | Works cannot be started at 3 Bus Stations |
| PW-3A | Foot Over Bridges (4 numbers) | | 97.3 (estimated) | | 09 | Bids received. Contracts likely to be awarded by end-September 2015. There is Land issue at one site at Court Circle in Dharwad city. | | | |
| PW-3B | Foot Over Bridges (4 numbers) | | 114.6 (estimated) | | 09 | | | | |
| PW-4 | Non Motorized Transport (3.2 km long in Dharwad and at Navanagar) | Suprada Construction Company, Dharwad | 124.2 | 10Nov14 | 09 | 09Aug15 | 35.0 | 28.2% | Electric Poles to be relocated. Layout of new Street Light Poles awaited. |
| PW-5 | Bus Stations (13 numbers) | Rajdeep Buildcon Private Limited, Ahmednagar, Maharashtra | 140.7 | 15Oct14 | 12 | 14Oct15 | 9.8 | 7.0% | Works cannot start at One Bus Station |
| PW-6 | Bus Stations (11 numbers) | Suprada Construction Company, Dharwad | 115.8 | 15Sep14 | 12 | 14Sep15 | 20.0 | 17.3% | Works cannot start at 3 Bus |

| Package | Name of Works | Contractor | Contract Amount / Estimated Amount (INR Millions) | | Works Start Date | | Works Completion Period (months) | | Scheduled Works Completion Date | Value of Works Done (INR Millions) | | Physical Progress % of Contract Amount | | Remarks | | |
|---------|---|---|---|-------|------------------|----|----------------------------------|---------|---|------------------------------------|------|--|---------|---|------|-------|
| | | | | | | | | | | | | | | Stations | | |
| PW-7 | Jubilee Terminal | | 78.3 (old estimate) | | | | 10 (likely) | | Exact location is being finalized, following which the designs will be prepared | | | | | | | |
| PW-8 | Depot at Hubli | Shreehari Associates Private Limited, Aurangabad, Maharashtra | 564.5 | 180.4 | 20Dec13 | 15 | 12 | 19Mar15 | 19Dec14 | 135 | 60.0 | 23.9% | 33.3% | Contract 'at large' without extension of Works Completion Period | | |
| | Depot at Dharwad | | | 109.8 | | | | | 20Dec13 | | 12 | | 19Dec14 | | 27.3 | 24.9% |
| | Divisional Workshop at Hubli | | | 274.4 | | | | | 20Dec13 | | 15 | | 19Mar15 | | 47.7 | 17.4% |
| PW-9 | OCBS (Old Central Bus Station) at Dharwad | Shreehari Associates Private Limited, Aurangabad, Maharashtra | 148.7 | | 05Sep14 | | 12 | | 04Sep15 | 19.0 | | 12.8% | | | | |
| PW-10 | Hosur Interchange | Rajdeep Buildcon Private Limited, Ahmednagar, Maharashtra | 416.5 | | 15May14 | | 18 | | 14Nov15 | 114.0 | | 27.4% | | Large amount of works on hold due to non-availability of drawings / decision / land | | |

Status of Works being / to be implemented through KRDC and not financed by the Bank

| Name of Works | Contractor | Contract Amount / Estimated Amount (INR Millions) | Works Start Date / Expected Start | Works Completion Period (months) | Works Completion Date | Value of Works Done (INR Millions) | Physical Progress % of Contract Amount | Remarks |
|---|---|---|---|----------------------------------|-----------------------|------------------------------------|--|---|
| 4-laning of Hubli-Dharwad Highway (about 19 km long) | GVR Infrastructure, Hyderabad | 1191 | Apr11 (actual start in Sep12 to accommodate BRTS) | 24 | | 349 | 29.3% | No further works to be carried out under this contract. Remaining works could not be done due to encumbrances and Structures to be constructed. Agency (ies) to be engaged for completion of remaining works in 1.6 km from Gateway Hotel to Sena College and in about 7.09 km in Hubli and Dharwad city areas. |
| Widening of Hubli-Dharwad Highway to 44m (10.55 kms) / 35m (7.09 kms) / Construction of Mixed Traffic Lanes | RNS Infrastructure Limited, Hubli | 1469.3 | 23Mar15 | 18 | 22Sep16 | 8.5 | 0.6% | 1 st Milestone stretch handed to the Contractor, wherein water pipeline to be relocated, trees to be cut and land to be acquired. KRDC expects to hand over to the Contractor most of the remaining stretches involving Land Acquisition, R&R and Relocation of Utilities, in another 4 months. |
| Flyovers at Unkal Cross, Unkal Lake and Navanagar | Rajdeep Buildcon Private Limited, Ahmednagar, Maharashtra | 359.5 | 05Nov14 | 14 | 04Jan16 | 20 | 5.6% | Encumbrance-free site at Navanagar handed to Contractor on 02 Feb 2015, and 'Good for Construction' drawings handed to Contractor on 05 May 2015. There are Land and Utility issues at other 2 flyover sites. |
| Road over Rail Bridges (RoBs) | | 410 (approx. estimated) | | 15-18 (likely) | | | | Approval of revised General Arrangement Drawing (GAD) by Railways expected in 2 weeks, after which detailed drawings will be submitted to the Railways' Proof Consultant. Bids expected to be invited by end-August 2015. Acquisition of private lands likely to be completed shortly. Relocation of Electric Poles ongoing. Bids invited for relocation of water pipeline. |

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Pimpri-Chinchwad

1. A World Bank Mission visited Pimpri-Chinchwad Municipal Corporation (PCMC) on July 25 and 26 along with the MoUD team and again on July 29 and 30, 2015 to discuss the implementation of the Pimpri-Chinchwad component of SUTP. It met the Commissioner of PCMC, Mr. Rajeev Jadhav; Joint City Engineer, Mr. Rajan Patil; and their staff and consultants; also present were Mr. I.C. Sharma, National Project Director of SUTP and his Project Management Consultants, and ITDP which is providing assistance with the BRT Project. On July 30, a meeting was held at PMPML, chaired by Ms. Mayura Shindekar, CEO of the BRT Cell, to discuss several aspects of the proposed BRT, in particular the ITS component. The mission carried out site visits along Corridors 2 and 3 and also visited all the terminal facilities and some of the bus stops.

Proposed BRT Program in Pimpri-Chinchwad:

2. The following four BRT corridors are being implemented:

- (1) Old NH-4 (Mumbai-Pune road),
- (2) Aundh-Rawet road,
- (3) Nashik Phata to Wakad road,
- (4) Kalewadi to Dehu-Alandi road,

3. The first two corridors were sanctioned initially by JnNURM, and road construction has been completed since some time. Corridors 3 and 4 are implemented under the World-Bank supported SUTP. Out of the four corridors, PCMC is now getting ready to launch Corridor 2 in August, 2015 and subsequently Corridor 3 by September 2015. Launch of the remaining corridors will take place in early 2016.

World Bank Supported Project

Corridor 3 (Nashik Phata - Wakad): Construction Progress

4. This BRT Corridor of about 8 km length is being constructed under 7 works contracts, out of which only Contract I (costing about 44% of the total cost of 7 contracts) is being financed by the Bank. The Table hereafter presents the overall status of the 7 contracts in this corridor. Overall progress is about 85% of likely total amount of seven contracts. This BRT Corridor is presently ready for plying of Buses, except for a length of 260 m where no exclusive BRT Corridor will be available because of non-availability of land on one side. Bus Stations and the Dedication (Railing for physically separating BRT Corridor from all other traffic) are likely to be completed shortly. Pedestrian Facilities for travel between ground level on NH4 and Corridor 3 at higher level, are likely to be ready not earlier than towards end-2016.

5. **Contract I: Interchange at Nashik Phata (Bank-financed):** Progress of this contract was satisfactory. All works except Ramp 2 were complete long back. In view of non-availability of additional land, an alternative layout was prepared for Ramp 2. The revised General Arrangement Drawing (GAD) was issued to the Contractor on 13 November 2014. Because of objections raised by abutting locality people, the works could not be started. Taking account of

the objection made by the local people, the GAD has been further modified by incorporating a Pedestrian Underpass on the Right Side (Pune side) and issued to the Contractor on 14 July 2015. A part of the land required for construction of the Ramp on Left Side (Mumbai side) is still not in possession of PCMC. The Contractor has completed storm water drain relocation works on Left Side. The Contractor intends to start the construction works on Left Side shortly. The Contractor has just started the utility (storm water, water supply and electrical) relocation works on the Right Side. The Contractor informed that it would take 15 months (from 14 July 2015) to complete all works for Ramp 2 and would claim for Extension of Time (EoT) for completion of works accordingly.

6. Earlier Missions were informed that the Contractor had made Claims towards Compensation for Delays beyond its control (such as, delay in getting encumbrance-free land). Dispute Adjudication Board (DAB) was not established. The Contractor then notified, in June 2014, for resolution of the disputes through Arbitration. Arbitration Board was formed in February 2015. It's understood that the Contractor's total Claim is for an amount of INR 713.6 million of which INR 499.1 million is towards 'Idling of Resources'. The Contractor's 'Statement of Claim' is scheduled to be submitted to the Arbitration Board by 31 August 2015.

7. The Project Management Consultant (PMC)'s original contract was for 30 months. Subsequently, its services were extended for another 30 months ending 31 August 2015. The Mission learned that the PMC is not being paid for its services during the extended period. The Mission noted that the PMC's contract stipulates specific provision for payment for the services during extended period of the contract.

8. **Contract II:** All contract works are close to completion.

9. **Contract III:** All works have been completed except for 260 m length where required land on one side is not available. Thus, there will be no exclusive BRT Corridor in that 260 m length.

10. **Pedestrian Facilities for crossing of BRT Corridor 1 on Mumbai-Pune National Highway 4 (NH4) as well as for travel between ground level on NH4 and Corridor 3 at higher level:** Unless these are constructed, both Corridor 1 and Corridor 3 BRT cannot be satisfactorily utilized by the public. Single bid for these works of 14.4% higher than the estimated cost, received on 15 March 2014, was not accepted by PCMC. PCMC has prepared revised design with improved specifications, bids for which are expected to be invited by 10 August 2015. These works can be expected to be completed before end of 2016.

11. **Construction of Bus Stops:** Both the contracts are ongoing.

12. **Dedication of Corridor:** The works for erecting Railing-type Separator to create completely physically separated exclusive BRT Corridor disallowing any pedestrian to cross or walk through the BRT Corridor, are ongoing.

13. **Link between Nashik Phata and Bhosari:** Most BRT bus routes serving Corridor 3 will pass straight through the Nashik Phata flyover and terminate at Bhosari. In the future, some BRT buses coming from Corridor 1 will also terminate at Bhosari. As noted in previous aide-memoires, BRT buses will operate in mixed traffic between Nashik Phata and Bhosari, and have low entry stops at the curb, compatible with the left-hand doors of BRT buses. While this section would not be a BRT as such, it would be desirable from the operational and image viewpoints, if these stops have at least a modern shelter and a paved platform; this principle had been agreed

with PCMC in the past. It is thought that there will be eight such stops (four on each side of the road) in this section. PCMC plans to undertake the *bus stop improvements along Nashik Phata to Bhosari link will be executed through existing bus station contracts*. The locations of these bus stations was communicated to PCMC during the mission by PMPML. The Mission again repeated its previous recommendation of executing this on urgency. PCMC will be able to construct the bus stations in two weeks so that these are ready by the time Corridor 3 is launched as the buses will be plying right upto Bhosari. The mission recommends that PCMC coordinate this issue with PMPML and advise, that this work should be completed no later than the initiation of BRT services along Corridor 3. The mission recommends that PCMC advise the PMU and the World Bank *by August 31, 2015* of the physical progress in this regard.

14. **Corridor 3 launch:** All remaining finishing works that are pending are proposed to be completed by August 31, 2015 for the tentative launch by September, 2015.

Traffic Engineering and Signal Control on Corridor 3

15. **Pedestrian Access to BRT stations:** The mission visited a stretch of Corridor 3 and noted that most BRT stations are accessible from nearby signalized intersections. At several locations, however, this is not the case, and table-top crossings were added at those locations, correctly so. However, pedestrian barriers were subsequently installed at these locations, blocking pedestrian access. The mission recommends that these barriers be removed at these locations. It also recommends that the pedestrian access to all stations be reviewed in a consistent manner, and that the PMU and the World Bank be informed by *August 31, 2015* of the pedestrian accesses that will be in place when BRT operations begin.

16. **Traffic Signal Designs:** The PCMC Electrical Department sent the PMU and the World Bank signal design drawings and received comments in early July. It agrees with almost all of the Bank's and PMU's suggestions. The mission recommends that the Electrical Department send the revised drawings to the PMU and the World Bank *by August 31, 2015*. This would include signal phasing and timing, signing, roadway marking, and additional civil works that may yet have to be carried out. It should also include updated designs for the four (current) roundabouts and for Kalpataru junction – both cases are explained in the following two paragraphs.

17. **Roundabouts:** In general, much traffic signal and traffic engineering work is still incomplete. For example, at four roundabouts which had been built with private-sector support, the traffic police insists (at most places correctly so in the mission's view) that the junctions be converted to standard cross intersections. The PCMC Electrical Department and their consultant prepared signal designs for cross intersections (rather than roundabouts) and progress appears to be at a standstill until the junction configuration has been agreed. The mission recommends that PCMC advise the PMU and the World Bank *by August 31, 2015* of the decisions taken and agreed with the Police Department, including updated geometric layouts and signal designs.

18. **Kalpataru Junction:** At this non-signalized junction, Corridor 3 is joined by a busy street which serves a large residential colony. According to the original Corridor design, the new BRT busway would close off any cross movement, obliging some of the movements to/from the Colony to make long detours, adding U-turns at the next intersection. In the mission's view, this would add unnecessarily to traffic flows and affect traffic safety, when compared to a signalized intersection at this location. The mission recommends that PCMC advise the PMU and the World Bank *by August 31, 2015* of the technical justification to close off that junction or, alternatively send proposed geometric and signal designs for a standard T-intersection at this location.

19. **Bhosari Terminal:** The mission visited the almost completed BRT-type terminal at Bhosari. It observed the somewhat chaotic traffic and pedestrian flow in its vicinity and recommends that PCMC send geometric (and possibly signal) designs to the PMU and the World Bank *by August 31, 2015*, indicating how general traffic will be handled safely, and especially, how bus passengers will have safe access to the terminal.

20. With regard to the terminal itself, it observed that the platform for feeder buses is about 600 mm above the level of the feeder bus lane. When asking how passengers would have access to the 250 mm high entry step of the feeder buses, it was advised that the feeder-bus lane was yet to be raised by 200-300 mm to make passenger access more convenient. It also observed that no horizontal rollers had been placed at the BRT platforms to ease bus docking, and was told that these were yet to be installed. The mission recommends that PCMC advise the PMU and the World Bank *by August 31, 2015*, whether and when these improvements will be carried out.

Corridor 4 (Kalewadi to Dehu-Alandi road): Construction Progress

21. This BRT Corridor of about 8 km length is being constructed in 8 works contracts, out of which only Contract III (costing about 43% of total cost of 8 contracts) is being financed by the Bank. The Table hereafter presents the overall status of the 8 contracts in this corridor. Overall progress is about 61% of total cost of eight contracts. There is no likelihood of the full length of the BRT Corridor being available for plying of Buses prior to towards end-2016.

22. **Contract I:** All works are complete.

23. **Contract II:** Land is not available for this contract, and therefore no work has been carried out. The Mission was informed that the works can be completed by the selected Contractor in about 12 months after the land is available.

24. **Contract III: Empire Estate Grade Separator (Bank-financed):** Progress of this contract is highly unsatisfactory. Since start in April 2011, the progress is only 44.3% of revised contract amount until 28 July 2015. Components V, VI and VII (costing INR 120.2 million) are not part of the main BRTS Corridor, in which works amounting INR 3 million only have been carried out in Component VII. Components V and VI, ascending and descending Ramps in Empire Estate stretch, are presently on hold because of objection by the Empire Estate community. Thus, the progress works out to 50.1% (in monetary terms) of the BRTS Corridor under this contract. It's understood that the Payment Schedule is little back-loaded, and thus, the actual progress may be assumed somewhat higher. Even considering the delays caused due to changes in general arrangement made by PCMC and in handing over encumbrance-free lands to the Contractor, the progress by the Contractor has been very low. Reportedly, the slow progress was mainly due to inadequate financial inflow for execution of works. The Contractor was suffering from financial problems since start of the contract. Because of shortage of fund, the Contractor is unable to utilize its resources to its potential. Non-availability of required Machinery, Labourers and Materials was slowing down the progress. The progress in last four months (April to July 2015) has been 5.9%, somewhat better than its average progress since start.

25. Following PCMC's Notice (dated 24 March 2015) to Correct under Clause 15.1 of the Contract asking the Contractor to show desired planned improvement in progress by 28 April 2015, the Contractor submitted its response on 27 April 2015 together with a Work Program showing completion of all works (except Components V and VI, which are on hold) by December 2015. The PMC opined that the Program is reasonable resource-wise as shown on paper. The

Program is however incomplete, because it does not show the corresponding Value of Works to be carried out. Although the Contractor's Program was based on Casting of 55 pre-cast superstructure Segments and Erection of 70 Segments per month, PCMC gave a lesser target (Casting of 40 Segments and Erection of 60 Segments per month) to the Contractor in a meeting on 15 June 2015. The Contractor however could Cast 38 Segments and Erect only 23 Segments during one month ending 15 July 2015. Thus, the progress is substantially behind the Program submitted by the Contractor on 27 April 2015. The April 2015 Bank Mission had expressed that the Contractor's presentation of completion of works by December 2015 was unrealistic. The Mission felt that its assessment during April 2015 Mission of completion of the BRT Corridor under this contract not earlier than mid-2016 remains.

26. The Contractor has mobilized towards end-May 2015, a specialized agency for works for Bridge across River Pawana. It has already cast a new superstructure span within the high river flow width, for which pre-stressing are yet to be done. Thus, three of total eight superstructure spans have been cast until now. Although it's a positive development, the works of the third span have been carried out violating the environmental / hydraulic requirements by erecting staging thus partially obstructing the main river flow in the high water season. Assuming that the agency is able to continue in the same speed, there is a likelihood of completion of all works for the Bridge before mid-2016 provided its financial and material requirements are timely provided by the main Contractor. It should however be ensured that the river flow is not blocked during the high water period.

27. The Contractor has completed all piling works for the Road over Rail Bridge (RoB). Later, the Contractor will be required to obtain the 'time blocks' from the Railways for erection of the superstructure.

28. PCMC is required to resolve the issue of obstruction / opposition created for works in the stretch from P12 to P17 by a Land Owner who claims of not been compensated for full land.

29. Although full land for Approach to Bridge across River Pawana under Component 1 was handed to the Contractor in December 2013, the Contractor started the works therein towards end-March 2015 and stopped thereafter due to scarcity of resources. The Contractor is required to progress on this stretch so as to complete the BRTS Corridor.

30. The Extension of Time (EoT) for completion of works until 30 April 2015 has already expired, but no further EoT has been agreed by PCMC. It's understood that the Contractor claimed an EoT until 31 December 2015, which was forwarded by the PMC to PCMC with its recommendation(s), but PCMC has not conveyed its decision on the same. The contract is 'at large' unless the EoT is issued by PCMC.

31. Written brief report on this contract presented to the Mission is inadequate and lacks key information required to review performance of the contract. The Mission would prefer a brief Report containing, besides the information presently being provided, (i) important contract data, (ii) an S-curve showing month-wise and cumulative 'planned target' as per approved work program prevailing in the respective month and 'achievement' (both in terms of 'total value of works') since start of the contract, (iii) current issues together with PCMC and PMC's recommendations and actions agreed, (iv) Contractor's available resources and PCMC and PMC's comments thereon, (v) information on variations, claims, disputes if any, and (vi) annex the Minutes of Monthly Review Meeting.

32. **Contract IV:** Works are ongoing. Land is available except for 60 m of private land.

33. **Contract V:** All works under this contract are complete.
34. **Construction of Bus Stops:** Both the contracts are ongoing.
35. **Dedication of Corridor:** The works for erecting Railing-type Separator to create completely physically separated exclusive BRT Corridor disallowing any pedestrian to cross or walk through the BRT Corridor, are ongoing.

Corridor 2 (Aundh-Rawet road now renamed as Sangvi Phata – Kilwale)

36. This 14 km long BRT corridor has 21 BRT stations. Launch of this corridor is being planned on August 15, 2015. The bus lane dedication is complete and few open sections will be closed before the launch. All 21 bus stations are ready along with power connection and fittings. The electric meters are however still to be installed. Ticketing kiosks are still pending in 6 stations and will be completed within a week's time. The signages are in place and minor corrections and fixes will be completed prior to the launch. Out of all the finishing works, electrical works related to lighting and ITS are pending and will be complete by August 5, 2015. The Mission pointed out that there are still a lot of pending infrastructure finishing works that are still incomplete despite repeated recommendations by the Mission since the last 3 missions. PCMC needs to make sure that the corridor should be ready with the full comprehensive list of actions to be completed ahead of the launch.

37. **Traffic Engineering and Signal Control on Corridor 2:** The mission made an extensive field visit of the entire corridor, together with engineers from the PCMC Electrical Department, their consultants and PCMC's Officer on Special Duty for BRTS. It was impressed by the progress achieved in installing overhead signals to control the busway and the main-road traffic, with the objective of having these signals operating before mid-August. However, many signals are yet to be placed, to control pedestrian movements at several junctions (although pedestrian mid-block signals will be installed). In a productive exchange of emails in June and July (and a Video Conference on May 7), general agreement had been reached between the PMU/World Bank and the PCMC Electrical Department on traffic signal designs. However – due to PCMC's delay in building planned curb revisions and triangular islands – there is still uncertainty where to locate many pedestrian and vehicular signals. The mission recommends that PCMC send the PMU and World Bank **by August 31 2015** a time-bound plan to complete the geometric and signal works along Corridor 2. This should also include the currently non-signalized Wakad Phata T-junction which until recently was intended to be closed off – a decision which is being reconsidered.

38. **Junction Layouts Being Redesigned:** In addition to the above, geometric layouts are still being redesigned with the advice from ITDP, for the following five key intersections:

- a) *Rakshak Junction.* This wide junction gives enough space for several site-specific improvements. For example, additional mixed-traffic lanes will be provided for the Aundh-Ravet road to allow for a right turn lane in the southbound direction. Also, the islands next to the Army gate will need revision, in response to a request from the Armed Forces.
- b) *Wakad Y Junction,* where the construction of a vehicular underpass has just begun. This will change the signal control at this location to that of a pedestrian crossing, perhaps with a facility for U-Turns.
- c) *Jagtap/Sai Dairy Junction,* where Corridors 2 and 3 intersect. As suggested previously, a careful analysis is needed for this junction which will be the main

bottleneck on both corridors. As opposed to the other junctions, modifications may also be required of the busway ends to allow for the BRT routes turning from Corridor 2 into Corridor 3, and vice versa.

- d) *Kalewadi Phata Junction*, where Corridors 2 and 4 intersect. Located underneath a flyover (bypassing straight-through traffic on Aundh-Ravet Road), the geometric design should take account of the flyover columns and allow for safe pedestrian crossings at this busy intersection; previous designs were made on an incorrect base map and may have to be revised.
- e) *Dange Junction*, which is also located underneath a flyover (bypassing straight-through traffic on Aundh-Ravet Road). The original roundabout design was not approved by the traffic police, and an alternate cross intersection has thus been designed. The traffic operation on this junction will also have to allow for northbound BRT buses to turn off from the busway to continue along the side street in mixed traffic.

39. Except for junction (c), it is not expected that the final junction designs would affect the geometric layout and signal control of the BRT busway. However, the junctions are located near BRT stations. In the interest of pedestrian safety, the overall designs should be completed as soon as possible. The mission thus recommends that the geometric layouts and signal designs be sent to the PMU and World Bank as soon as possible, but not later than **August 31, 2015**.

40. **Road Markings and Traffic Signs:** Most of the Corridor 2 alignment still does not have lane markings. The mission was advised that designs exist for this important work and recommends that these designs be sent to the PMU and World Bank as soon as possible, but **not later than August 15, 2015**. Apart from the lane markings and traffic signs themselves, these designs should include properly marked right-turn lanes, directional arrows, bollards, pedestrian railings and other traffic engineering elements.

41. **Tabletop Crossings across Busway:** The mission observed that table-top pedestrian crossings have recently been added across the Corridor 2 busway. The concept of tabletop crossings across the busway has been extensively discussed and recommended against in the past. It is disappointing that PCMC continues following that erroneous design. The mission recommends that PCMC cease building such tabletops across the busway, which is contrary to the BRT objective of providing improved public transport quality.

42. **Rollers to Assist Bus Docking at Stations:** Horizontal rollers are being installed at all BRT stations. The mission also visited the almost completed transfer terminal at the northern end of the BRT corridor. It observed that no horizontal rollers had been placed at the BRT platforms and was told that these were yet to be installed. The mission recommends that PCMC inform the PMU and the World Bank **by August 31, 2015** of the status of roller installation at BRT stations and the terminal.

43. **Surface of Busway Lanes at Stations:** Particularly in the northern section of Corridor 2, the mission observed that the busway pavement along BRT stations is in a deplorable shape. BRT operation should not start before this has been fixed. The mission therefore recommends that these busway sections be resurfaced as soon as possible, at a high quality (as the deceleration/acceleration of BRT buses places a high demand on the structural strength of the busway), and advise the PMU and World Bank on the status of this work by **August 31, 2015**.

ITMS:

44. On Corridor 2, 21 stations in the table presented by ITS PMC (UMTC) needs to be identified for Communications Infrastructure to activate the PIS display (i.e. 3G Router / Leased line adapters). Furthermore, the Bank Team highlighted the need for a common checklist for all ITS infrastructure on a per bus station basis for both PMPC and PMC.

45. Keeping in mind the overall network, the Bank Team recommended that the data on the network be collected so as to meet the requirements of all stakeholders. When issuing on-board tickets via ETM on a BRTS and mixed traffic routes, the ETM data for BRT segment should be easily segregated from the consolidated ETM data.

46. The Bank Team expressed concern on the schedule (as proposed by ITS PMC) for completing installation of ITMS within 10 days for all Buses and Bus Stations and testing of ITS HW and SW in 2 weeks. The schedule seems very aggressive. In addition to unit level testing, integration testing of all ITS functions related to on Bus, Bus Stations, and Control Center operations should be thoroughly tested prior to the launch date. This should include, inter alia, integrated testing of payment, Bus scheduling, Bus location, driver, conductor, Depot Management, and BRT user services. Completing the testing satisfactorily is critical to the success of the trial and subsequent operations. The World Bank team encouraged the ITS PMC to work closely with the ITS Systems Integrator to develop a detailed test plan and perform the integration testing exhaustively.

47. It was understood that NGOs have requested that GTFS streams corresponding to the proposed BRT network should be made available. In the context of ensuring BRT Network information is disseminated to BRT users, WB team reiterated that GTFS data streams be made available to third party software developers to build innovative applications.

48. Leading up to the launch, the WB team highlighted the need to disseminate BRT information including static route maps, fare information, bus schedule etc. to users through smartphone apps. WB team encouraged PMPML to explore the possibility of reusing or leveraging an APP developed for non-BRT bus network for PMPML.

49. The WB team identified the need to solicit citizen feedback and grievance management both during the pre-launch and operational phases. All feedback and suggestion should be directed to a nodal point of contact at PMPML for redressal and resolution. The Bank highlighted the benefits of effective citizens engagement and grievance redressal including reporting to stakeholder community, and encouraged PMPML to explore the possibility of re-using existing Grievance Management system used for non-BRT network,

50. The WB team pointed the critical need to have a dedicated website to host all content related to the Rainbow BRT brand. This will require procurement and activation of a branded URL that could have reverse and forward links to PMPML website.

51. The ITS systems Integrator will develop a Trip Planner for the BRT network. This Trip Planner page should be made available on or linked to the Rainbow BRT Web page.

52. The WB team understood that the ITS SI would develop a Smartphone App to disseminate the trip planning, BRT schedule and fare information to BRT users but pointed out that it is critical to make this app available to the public ahead of the launch.

53. The Bank team also encouraged PMPML to design and host BRT User Satisfaction survey online (preferably on the Rainbow BRT webpage) periodically during the operational

phase, share the results with stakeholders, and proactively utilize the results to improve the service.

54. WB pointed the need to maintain an online database to capture BRT accident data and publish the information on a GIS-enabled map so that BRT safety could be enhanced.

55. WB team asked ITS PMC to ensure passenger count information is updated at the control center in real-time.

56. Taking into account the financial impact of subjecting the entire fleet of buses to the trial, the WB advised PMPML to run 10 buses in the trial mode at a time but exhaust the entire fleet of 110 buses on a rotational basis in order to maximize the utilization of the trial period. The WB and PMPML acknowledged that this approach, while not incurring any additional costs, will not subject the BRT network to stress testing.

57. WB team pointed out that the Driver and Conductor training will not be considered complete until Drivers and Conductors are instructed on all aspects of Standard Operating Procedures related to on-board and central ITS functions.

58. WB suggested using a crowdsourcing approach to solicit feedback from Users on BRT Access Plan and embed the feedback form into the Rainbow BRT web page. The WB and the PIU recognized the crowdsourcing or public consultation approach has a huge PR benefit.

59. WB identified the need to have a certain number of emergency tow-away vehicles at key locations along the BRT corridors and equally importantly the SOP for identification and management of incidents.

60. The WB team understood that the ETMs were tested for 11 hours of continuous operation. Notwithstanding an 8-hour use schedule, WB team pointed out the need to arrange for spares for ETM batteries.

61. SOP training for Conductors should include ETM cash and Data deposition.

62. The SLA between Systems Integrator and GPRS/3G service provider (Vodafone) should be reflected in the SLA between PMPML and the Systems Integrator. Recognizing that mobile data connection will be lost around the cantonment area, the Bank team asked the ITS PMC (UMTC) to ensure the NEC AVL system is accordingly tuned and tweaked to compensate for the coverage loss.

63. In addition to testing the geo-fencing feature on the AVL system prior to launch, the Bank Team discussed the need to establish standard operating procedures to respond to incidents involving the violation of the geo-fence policy.

64. The Bank Team was informed that the ETM feature will not be available on the BRT network until December 2015 due to the testing and audit requirements. The Bank Team pointed out that the ETM feature is a core and value-adding part of the BRT ITS system and that it should be made available as soon as the network is launched. The Bank Team urged the ETM PMC to allocate additional resources and expedite the testing and auditing process such that the ETM feature could be rolled out across the network as soon as the audit is completed for the test depot.

65. While some work still needs to be done in terms of installing and configuring the traffic signals in support of the BRT network, the Bank Team encouraged PMC and PCMC to collaborate with respective Traffic Police Departments to agree on a plan for hosting, operation, and maintenance of the traffic signals as it pertains to the BRT network.

66. **Operations Management by PMPML:** The Mission held discussions with the PMPML team about its preparedness for the upcoming launch of BRT in PCMC. PMPML has a fleet of 950 buses with BRT specifications which includes 650 buses owned and maintained by private operators. In addition it will be procuring 165 buses under JnNURM and 25 articulated buses by December 2015. PMPML shared the following update on the BRT Service launch:

- It plans to launch the PMC corridor and Corridor 2 of PCMC on the same date, Corridor 3 will be launched in another one month's time. PMPML has approved the service plan prepared through consultants by PCMC.
- PMPML has identified separate BRT operators for each corridor. Currently, it has designated one operator for the PMC corridor and another for Corridor 2 and a third operator for Corridor 3.
- A security agency has been appointed for both the corridors (21 stations on Corridor 2 and 15 stations on Corridor 3).
- Traffic wardens have already been hired for the PMC corridor and 35 wardens are being hired for the PCMC corridors.
- Corridor 2 will have 110 buses. Trial runs are to be carried out by 10 buses as a sample of the 110 buses everyday rotated through the day so every bus-driver runs through the entire corridor for one week prior to the launch. The Mission strongly advised PMPML and PCMC to consider opening the service to passengers for free during the trial run period.
- Corridor 3 will have 30 buses. The operational headway will be 10 minutes and the frequency is 2-3 minutes. The headway could be increased based on increased demand.
- The Control Room for ITMS will be at Swargate. Works in the control center are expected to be complete by September 15, 2015. Until such time, the two operational corridors will be monitored from within the PMPML office.
- The ITS vendor has started installation of PIS on bus stations and on buses. For Corridor 2 the installations are proposed to be complete by August 12, 2015 and August 20, 2015 for Corridor 3.
- The ETMs are installed depot wise instead of route wise. The first ETM system will be installed in Pune station depot by August 5, subsequently the roll out on the PCMC depots covering Corridor 2 can only be completed by December 2015. This was not brought to the Mission's notice in the previous meetings. The Mission urged PCMC and PMPML to make sure that at least the depot covering PCMC Corridor 3 should be completed on priority as it is a simpler installation having only 30 buses by September before its launch.
- Although previously agreed to by PMPML, it is not planning to launch the BRT corridors with off board fare collection as they do not have requisite number of conductors and though the hiring process is on it would only be concluded by November 2015. The Mission expressed strong concern over this development and it was agreed that PMPML would launch off board fare collection on the heavily trafficked stations on Corridor 2 (at least 6) and Corridor 3.
- Classroom training for drivers is currently ongoing. The Mission repeated its previous recommendation of conducting mock trainings for the drivers on their respective corridors on which they will be plying BRT buses post launch. These on site trainings will help them in acclimatizing to the corridor specific driving conditions. Trainings

should intensify during the trial runs starting August 1, 2015 on both the corridors (PMC and PCMC Corridor 2).

BRT Implementation Schedule. PCMC proposes to launch Corridor 2 on August, 2015 and Corridor 3 subsequently by September, 2015. The mission noted that the implementation schedule was rudimentary and neither included the complete set of activities required upto launch nor identified timelines for completion of each activity.

67. The Mission reiterated its earlier advise to PCMC and their BRT Advisor to develop in consultation with PMPML a detailed action plan required for the successful launch of BRT. This would help all stakeholders be aware of critical actions, plan around slippages or early deliveries and know exact launch dates. It was happy to note though that joint review meetings were now being conducted periodically. The key activities and their likely completion dates are outlined below:

- Complete bus stations with finishing works along Corridor 3 – August 10, 2015
- Complete balance infrastructure improvements i.e. passenger access, table top, signals etc
- Complete traffic signal plans for Corridor 2 and 3 – August 10, 2015
- Complete construction of Nashik Phata Ramp 2 – August 31, 2015
- Completion date for Bhosari stations – April 30, 2015
- Completion date for Bhosari terminal – July 31, 2015
- Complete finishing works, station doors installation at bus stations – April 30 to Aug 31
- Complete balance infrastructure improvements i.e. passenger access, table top, signals etc
- Award contract for construction of passenger access between Corr 3 & 1 – July 2015
- Complete hiring of traffic wardens, security and housekeeping staff
- Complete ETM Installation – April 15, 2015/ August 15, 2015
- Complete ITS Installation – April 30, 2015/ August 31, 2015
- Launch Communications Plan and activities
- Driver Training – Two weeks (?)
- Trial Runs – Two weeks (?)

Studies, Technical Assistance (TA) and Capacity Building:

68. Presentations were made of various studies under implementation, financed under the GEF grant.

- a) ***BRT Passenger Access:*** The consultants are currently at the detailed designs stage. Concept plans and detailed plans for Corridor 1 have been developed simultaneously as per a previously agreed decision. The detailed designs for Corridor 1 were presented. The Consultants have prepared prototypical concept designs for a few of the intersections on Corridor 2, 3 and 4. These designs have been prepared keeping all the universal accessibility principles in consideration. The consultants have included the three new FOBs being planned at Dapodi, Station 14 site and Nashik Phata and submitted the draft detail designs report on Corridor 1 to PCMC on July 9, 2015. The remaining deliverables including Implementation plan and changes to the development control norms will be submitted as soon as they receive comments on the draft designs. The Mission advised the consultants to review the existing DCR for PCMC and identify areas for improvement after reviewing available documentation and DCRs that have been amended in other cities. The consultants will also prepare tender documents for the works contract. Regarding their scope of work for two-way communication plans, the mission advised the consultants to provide their concept plans to the Communications team for being put up on the Rainbow

website to seek feedback on their designs from the users. The consultants were also asked to review the Nashik Phata FOB design being prepared by another consultant specifically for better access to the Kasarwadi Railway station from the BRT stations.

One workshop has already been organized in December 2014 from which the consultants received useful set of comments which they have incorporated. The final workshop is now planned to be organized in September in which the designs and implementation plan will be discussed and shared.

The contract for this consultancy expired in November 2014. The Mission advised PCMC to urgently extend this contract so that necessary work can be done for Corridor 2, 3 and 4.

- b) **Promotion & Outreach Plan for BRT:** The mission discussed in detail the communication arrangements leading to the launch/trial run of the initial BRT corridors in PCMC planned for August 15th. The discussion highlighted the possibility of serious logistical and reputational risks, if the general public in Pimpri Chinchwad, were not communicated to effectively on the launch of the BRT trials. Given that the launch will attract high media scrutiny, inconvenience to commuters in all likelihood, would result in prominent negative coverage (along with NGO complaints and questions from the people's representatives) and an adverse impact on the relationship between Rainbow BRT and its customers. The communication, in addition to informing commuters about the new services, needed to address the anxieties that they may have given the experience Pune's initial pilot that did not perform as per expectations, and the recent decision of the Delhi government to scrap the BRT infrastructure. It was agreed that a robust communication plan was required to help manage the opportunities and risks that the trial run would pose.

Some of the decisions taken:

- Acknowledging that teething issues are bound to take place as the service commences, it was agreed that the initial launch period would be announced as a 'full trial' phase – with all the BRT buses providing operating on the new routes, without the commuters having to pay for it. Rainbow BRT would utilize this period to seek feedback from users – to help strengthen the service and plug the gaps prior to the formal launch. This approach could convert a phase of serious reputation risks into a positive gesture – and help gain all round goodwill and the confidence of the commuters.
- Information flow to the consumers will be critical. This includes information about bus routes and timing; the dos and don'ts of using the BRT; answers to the most likely questions; and a robust feedback and grievance redressal system. To achieve this, in addition to the help lines, it was decided to create a new standalone website for Rainbow BRT. While this site would be linked to the relevant utilities, it would be maintained separately. Deadline: August 10th; An app for the commuters would also be ready by September.
- In order to inform consumers of the new service, highlight that this will be a trial period and that their feedback would be crucial, a set of two advertisements conveying these messages, along with a link to the new website, would be placed just before the launch of the trial run – on the front pages of 2-3 of the leading publications.
- It was also decided that the communications firm working on the project would submit a detailed plan for the launch of the trial run, including the specific messages which would be delivered in the run up to the launch. This would include daily media briefings on the preparation and placement of articles on some of the key highlights in the preparation process – including training of drivers, ticket counter operators, etc. Some of the messaging needs to be aimed at instilling pride amongst the local citizens – by having the

commissioner share the vision of making it India's best operated BRT. Deadline: August 6.

- c) **Monitoring and Evaluation:** The Consultants gave a presentation of their data analysis from their first annual report. According to the data collection, proportion of male and female passengers using the bus service is almost the same. The user satisfaction has reduced as compared to the baseline collected in 2013. The users also gave a low rating to the schedule adherence of the current bus operations. The mode share of cars has increased by 30%, and the share of IPT has reduced due to several restrictions introduced on plying them. The PMPML bus share has increased from 8% captured during the baseline survey in 2013. This is specifically due to improvement in the frequency of bus services along on Corridor 2, 3 and sections of Corridor 4. Speeds have reduced on Corridor 1 and 2. Average speeds have improved on Corridor 3. The NMT audit conducted by the consultants revealed that the facilities are better on Corridor 3 and 4 as compared to those observed in 2013. The survey reveals that the quality of NMT facilities have deteriorated on Corridor 2 and 1. The consultants are finalizing the data report and will be able to share the draft report by August 10, 2015. The Mission advised to PCMC that subsequent post BRT surveys need to be done in 6 months interval instead of annual reporting so that the feedback of the passengers is captured at the earliest of the BRT service quality on Corridor 2 and 3.

Environment Management

69. The mission met with the PCMC team and their consultants supervising the construction of the Flyover along Corridor 4. It also visited select locations on the corridor where construction is underway to review the implementation of the EMP provisions, especially with reference to Pavana River and safety of workers and residents close to these areas.

70. EMP implementation near the Pavana River: The agreement to remove the material from the Pavana River bed is not complied in full. This has been required in advance of each monsoon season so that the flooding and washing away of the material can be avoided. However, in order to allow the new sub-contractor identified to accelerate progress on the project, PCMC had deferred this activity. The mission was informed that there was one flood late in July when the area was overtopped but the material still remains in the river. The mission was informed that no further activity is envisaged in the river bed until the end of rains around October 2015. The mission strongly recommended to the PCMC that this violation of the EMP be redeemed and the river flow restored immediately. The PCMC has agreed to do the needful.

71. The new sub-contractors, assisting the main Contractor for concrete and steel work has also brought in new labor gangs. However, the facilities for them are well-below requirements of the EMP agreed by PCMC. The mission advised the PCMC to ensure that these be improved – workers' accommodation needs to be above the ground level to avoid flooding, there should be provision of toilets and sanitary facilities, and there should be protection from vectors. These would be communicated to the Bank once done.

72. Plantation within PCMC corridors: Fresh plantation was observed along the recently completed stretches close to the road approaches of the Empire Estate fly-over where the full section has been constructed. The mission was informed that almost all the agreed plantation under the project has been completed and the only portion that remains is for road stretches which are still being constructed. The mission reiterated its previous recommendation of confirmation of the final numbers in the QPR as well as update on the same in the PCMC website. It was agreed

that PCMC QPR for the period ending September 2015 would have accurate numbers for all these achievements.

73. **Funds Utilization and Disbursement Projections:** Detailed item wise discussions were held with PCMC on funds utilization. The Mission learnt that the latest IUFRR did not reflect disbursements in January and February. PCMC informed the mission that of the March IUFRR would capture the entire quarters disbursement. The Mission advised PCMC to utilize the savings (approximately Rs. 3 Crores) from the grant amount for communications activities ahead of the launch. Training activities for traffic police and other staff like drivers etc could also be planned.

74. **Key Agreed Actions**

- Prepare Communications Launch Plan /Launch of Rainbow website – August 10, 2015
- Corridor 2: Submission of base maps for lane marking and crossings– August 1, 2015
- Submit communications plan for run up to the launch – August 6, 2015
- Corridor 2 & 3: Submit geometric works plan and remaining signal plans - August 31, 2015
- Corridor 3: Complete pending works (signages, infrastructure, clean up around stations, removal of barriers, surface improvement of corridor, lighting, fixtures etc)– August 31, 2015
- Corridor 3: Confirm to Bank on decision taken regarding access to residential area at Kalpataru junction – August 31, 2015
- Corridor 3: Confirm to Bank on decision taken and agreements between PCMC and Police Department on four roundabouts on Corridor 3 for signal installation – August 31, 2015
- Complete installation of electric meters, station doors, PIS on Corridor 3 – August 31, 2015
- Complete ETM installation at depots for Corridor 3: August 31, 2015
- Complete construction of bus stops between Nashik Phata and Bhosari terminal – August 31, 2015
- Prepare and submit traffic management plan at Bhosari and improvements at the terminal to provide accessibility to feeder buses– August 31, 2015
- Finalize design for pedestrian facility at Nashik Phata interchange – August 6, 2015
- Launch of FOB tender on Nashik Phata – August 7, 2015; Commissioning of work – November 1, 2015
- Complete works on ITS control room at Swargate – September 15, 2015
-
- Complete construction of Ramp 2 on Nashik Phata – June 2016
- Extend Corridor 3 PMC’s contract – Immediate
- Extension of contract for MVA Systra (Accessibility planning to BRT stations) – Immediate
- Submission of M&E annual report – August 10, 2015
- Close monitoring of Empire Estate contract – Continuous
- Removal of material from Pavana riverbed – Immediate
- Shift workers accommodation to higher level near Pavana River and confirm action taken to the Bank – Immediate
- Confirmation on final numbers of trees planted – September 30, 2015
- Complete all LA R&R activities- August 31, 2015

Annex 3-A

| Contract | Description | Length (km) of exclusive BRT corridor | Original Contract Amount (million INR) | Revised Contract Amount (million INR) | Works Start Date | Original Works Completion Date | Extended Works Completion Date | Approximate Value of Works Done (million INR) | Physical Progress (in financial terms) | Remarks |
|-------------------|--|---------------------------------------|--|---|--------------------|--------------------------------|--------------------------------|---|---|---|
| Corridor 3 | | | | | | | | | | |
| 3-1 | Interchange at Nashik Phata (Bank-financed) | 0.9075 | 988.1 | 990.05 | 12 Jul 2010 | 13 Jan 2013 | 31 Aug 2015 | 909.95 | 91.9% | Ongoing |
| 3-2 | Nashik Phata to Kasptewasti | 4.85 | 571.1 | | 25 Aug 2009 | 24 Feb 2011 | 31 Mar 2015 | 532.9 | 93.3% | Ongoing |
| 3-3 | Kasptewasti to Wakad | 2.28 | 288.7 | 400.1 (0.9 km length added, which is not an exclusive BRT corridor) | 25 Aug 2009 | 24 Feb 2011 | 31 Aug 2013 | 364.4 | 91.1% (100% of 2.28 km exclusive BRT corridor, except for one side of 260 m length) | Contract closed. Required land not available on one side for 260 m length, thus there will be no exclusive BRT corridor in that length. |
| | Pedestrian Facilities | | 153.2 (Estimated Cost) | Earlier bidding process cancelled. Fresh bids (with works completion period 12 months) are likely to be invited by 10 Aug 2015. | | | | | | |
| | Construction of 8 Bus Stops | | 38.96 | | 05 Mar 2014 | 04 Sep 2014 | | 35.8 | 91.9% | Ongoing |
| | Construction of 7 Bus Stops | | 34.09 | | 07 Nov 2014 | 06 May 2015 | | 28.6 | 83.9% | Ongoing |
| | Dedication of | | 49.83 | | 12 | 11 May | | 35.2 | 70.6% | Ongoing |

| Contract | Description | Length (km) of exclusive BRT corridor | Original Contract Amount (million INR) | Revised Contract Amount (million INR) | Works Start Date | Original Works Completion Date | Extended Works Completion Date | Approximate Value of Works Done (million INR) | Physical Progress (in financial terms) | Remarks |
|-------------------|--|---|--|---------------------------------------|--------------------|--------------------------------|--------------------------------|---|--|--|
| | Corridor | | | | Aug 2014 | 2015 | | | | |
| Corridor 4 | | | | | | | | | | |
| 4-1 | Kalewadi Phata to Chinchwadgaon Bridge Phata | 1.600 | 241 | | 25 Aug 2009 | 24 Feb 2011 | 30 Sep 2013 | 238 | Complete | |
| 4-2 | Chinchwadgaon Bridge Phata to Pawana River Bridge Approach | 1.400 | 198.9 | | 14 Dec 2010 | 13 Jun 2012 | 31 Mar 2014 | 0.0 | 0% | Land not available for the full length |
| 4-3 | Empire Estate Grade Separator (Bank-financed) | 1.600 | 984.0 | 992.8 | 06 Apr 2011 | 10 Oct 2013 | 30 Apr 2015 | 440.1 | 44.3% | Contract 'at large' |
| 4-4 | Pawana River to KSB Chowk | 2.080 | 372.9 | | 28 Feb 2013 | 31 May 2014 | 31 May 2015 | 321.7 | 86.3% | Works ongoing. Land not available for 60 m length. |
| 4-5 | KSB Chowk to Dehu Alandi Road | 1.450 (total length of contract 3.795 km) | 370.7 | | 25 Aug 2009 | 24 Feb 2011 | 31 May 2015 | 345 (approx.) | Complete | |
| | Construction of 10 Bus Stops | | 48.6 | | 05 Mar 2014 | 04 Sep 2014 | | | | Ongoing |
| | Construction of 10 Bus Stops | | 48.6 | | 05 Mar 2014 | 04 Sep 2014 | | | | Ongoing |
| | Dedication of Corridor | | 49.6 | | 05 Mar 2014 | 04 Dec 2014 | | | | Ongoing |

Social Management

Pimpri-Chinchwad BRT

Land Acquisition and Resettlement Implementation

75. There is no perceived progress in the implementation of pending land acquisition and resettlement and as a result the construction of Corridor 4 will have serious implications. The handing over of 1.4 Kms stretch at Adrash Nagar in Khalewadi is seriously affected since the people residing on this stretch (about 50 houses) need to be shifted first and only then can the land acquisition process be completed. This is expected to take substantial amount of time. The mission noted during this time that there are about 10-15 business which will also be affected on this stretch. This issue could complicate further as PCMC needs to negotiate with the affected businesses who are expecting a fair compensation as per new LARR Act provisions and assistance for the losses to their business.

76. **Land acquisition Progress.** The total land acquisition required for two corridors (No 3 and 4) is about 50 hectares private land and another 10 hectares of Government land. No update on the land acquisition progress was provided to the mission by PCMC. Out of the total, about 93% of private and 95% of Government land is available. The remaining land acquisition is delayed due to pending court cases or due to encumbrances on the site earmarked for acquisition. A brief account of pending land acquisition cases is provided below.

77. **Case 1 (Corridor 4):** 4.69 hectares of land involved along a stretch of 1.4 Kms near MM school to Pawana river is a complex case. The affected persons need to be shifted to EWS houses and some of them are not eligible and their case needs to be dealt with separately. In addition, it is now identified that about 10-15 additional small businesses will also be affected on this stretch as the Mission interacted with those people during field visits. Only after shifting these affected people, land can be made free of encumbrance and only then the land department can complete the land acquisition process. Out of the total land, 1.7 hectares is being pursued through land acquisition, while 1.9 hectares is being considered through offer of TDR and the remaining 1.09 hectares is being offered FSI in lieu of compensation. The mission was informed that in case of those who have a second house as per records (even though it's sold), the members of Council have passed a resolution regarding this, however, the approval is pending with the Commissioner. Without this positive decision, the shifting of some people will be difficult.

78. **Case 2 (corridor 4):** This relates to MIDC land in Indo Euro city building of about 0.23 hectares and the process of private negotiations on the price and submission to court on the agreed price, etc. The number of units affected are 22 consisting of two societies. There is no resolution forthcoming on the agreement with commissioning rehabilitation assistance to be offered to the affected industrial unit. PCMC has indicated that they are planning to approach the court asking them to intervene in this case since no resolution is forthcoming.

79. **Case 3 (Corridor 4):** This involves 4.29 hectares in Kudalwadi area. Out of these 3 hectares is being pursued through land acquisition and another 1.29 hectares is being pursued through TDR route. The mission was informed that the Collector has made an award as per the court direction and PCMC needs to deposit money within 6 weeks and then this land will be available once the Collector makes compensation payment to the land owners.

80. **Case 4 (Corridor 4).** It seems that the land owners in P11-P17, are opposing on the ground that they have not received full compensation. This issue needs to be resolved as appropriate to avoid any objection to construction.

81. In addition to the above, it was revealed that there is some resistance from the local residents near Empire Estate (slip roads/Ramps) and Nashik-Phata Ramp-2 Right side of the ramp). These objections need to be looked into and appropriate measures must be taken to minimize the obstructions to the local residents due to construction related activities.

82. The summary of land acquisition details and progress is presented below.

| No | Land acquisition Impacts | Kalewadi-Dehu-Alandi Road (Corridor 4) | Nashik Phata Flyover | Nasikphata-Wakad Road (Corridor 3) | Total |
|--------------------------------------|---|---|----------------------|-------------------------------------|----------------|
| (i) Private Land | | | | | |
| 1 | Land acquisition (in Ha) | 20.90 (100%) | 1.09 (100.0%) | 27.30 (100.0%) | 49.29 (100 %) |
| 2 | Land acquisition completed | 18.40 (88.05%) | 1.09 (100.0%) | 26.25 (96.15%) | 45.74 (92.79%) |
| (ii) Government Land Transfer | | | | | |
| 3 | Land Transfer (in Ha) | 8.29 (100.00%) | 00 | 1.43 (100.0%) | 9.97 (100.00%) |
| 4 | Land transfer completed (in ha) | 8.07 (97.34%) | 00 | 1.43 (100.0%) | 9.50 (95.28%) |
| (iii) Compensation payment | | | | | |
| 5 | Award Amount (INR/Millions) | 54.31 | 74.26 | 55.75 | 459.75 |
| 6 | No. of land owners as per LA compensation Award | NA | NA | NA | NA |
| 7 | No of land owners received compensation | NA | NA | NA | NA |
| 8 | No. of People opted for FSI/TDR | 46 (100.0%) | 02 | 149 (100.0%) | 197 (100.0%) |
| 9 | No. of people received FSI/TDR | 44 (95.65%) | 00 (0.00%) | 143 (95.97%) | 187 (94.92%) |

Note: The discrepancies and details of people receiving compensation need to be attended by PCMC.

83. **Entitlements to different Impact groups.** The payment of R&R assistance has been made to all those who came forward. A notice was published in the local newspaper in case of those who could not avail this opportunity. Since there were people who did not turn up to receive the assistance, the targets have been revised and reflected below. The mission noted that some shops are constructed at Mukai Chowk Terminal on Corridor 2. The allotment of these shops and other shops (if any) should be considered for those with whom PCMC has already executed MOU for allotting shops in the future (32 Persons). The progress to date is as follows.

| No | Type of assistance | Target | Revised Target | Progress | Remarks |
|----|---|--------|----------------|-------------|---|
| 1 | Transportation allowance | 282 | 187 | 187 (100.0) | |
| 2 | Assistance for Vulnerable Families | 76 | 54 | 54(100.0%) | |
| 3 | Payment of subsistence allowance | 68 | 35 | 35(100.0%) | |
| 4 | Subsistence allowance for Non- title holders | 72 | 5 | 5 (100.0%) | |
| 5 | Allotment of EWS Houses (handover of house keys) | 257 | 123 | 77 (62.60%) | The issue of those having a second house but have sold it off needs to be resolved |
| 6 | Allotment of alternative houses to affected squatter families | 144 | 144 | 00 | 8 people have paid self-contribution and Bank loan is approved for another 50 families. |
| 7 | Payment of Vulnerability assistance to Squatter families | 93 | 79 | 79 (100.0%) | |
| 8 | Payment of additional subsistence allowance to shopkeepers | 34 | 26 | 26 (100.0%) | |
| 9 | Payment of R&R assistance to affected shopkeepers | 32 | 25 | 25 (100.0%) | |
| 10 | MOUs with shopkeepers | 32 | 32 | 26 (81.25%) | Shops will be allotted as and when ready |

84. **EWS Housing.** The allotment of EWS housing to eligible PAPs is at various stages. The mission was informed that the occupation certificate has been received recently and thus the houses are now available for allotment to those whose pre allotment process has been completed. The revised target is 123 after excluding those 134 who have not responded or became ineligible after due verification. Out of these 123, as of now, 77 families have been given possession letters and have shifted. The process for the remaining about 50 families is delayed and a decision on those who own a second house (and have sold it) needs to be taken, otherwise, there will be a resistance among these people. The field visit to Corridor 4 and based on the information provided by consultants who are supporting PCMC reveals that about 50 families (including 22 who are not eligible) and additional about 10 small business on the ground are affecting the land handover of 1.4 Kms on corridor 4. The impacted small shops include a marriage hall automobile repair shops, a Glass Centre, Flower merchants and some tea shops. These shopkeepers informed that their affected area is about 1.5 acre. This land acquisition issue along the 1.4 km stretch is further getting complicated due to discrepancies in the land record as informed by the census and as per local people during the field visits. Attending to these discrepancies is taking more time.

85. **Resettlement of those residing in the Transit camps.** The resettlement of those 144 families residing at Transit site continue to be delayed. It is no more than 4 and half years since these people have been residing on this site. The key issue affecting is the self-contribution by the PAPs. As of now 8 families have made the deposits. In case 50 of 67 families, the loans are approved by the Bank. On the other hand the proposed building located at Vittal Nagar is also

not ready as this is now in dis-use status as observed during the field visits. The delay in allotment to those who have made the self-contribution deposit almost 2 months ago, will have negative impacts if these people did not get a house at the new location immediately. Among those 144, 90 are found to be eligible and 20 have alternative houses and the verification for the remaining 34 is in progress. More recently on July 17, a meeting was held by Commissioner with these people to pursue them to come forward to move to Vittal Nagar and mobilize the self-contribution. The mission avoided visiting this Transit site this time on the advice of PCMC as they perceived that any visit by the Bank Team may induce additional expectations among these people.

86. Agreed Actions

- Sign a Tripartite Agreement on rehabilitation of industrial units in MIDC land – August 31 2015
- Take a decision on eligibility for EWS housing for PAPs who own another house but sold out – August 31, 2015
- Issue of possession letter to eligible PAP living in Transit housing – August 31, 2015

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Naya Raipur

1. A World Bank mission met Naya Raipur Development Authority (NRDA) officials on July 31 and August 1, 2012, to discuss the implementation of the Naya Raipur component of the Sustainable Urban Transport Program (SUTP). The meetings were chaired by Mr Rajat Kumar, CEO, NRDA, and Mr Salil Shrivastava, Chief Engineer, NRDA and his team, along with representatives of the PMU and the consultants working with NRDA on various activities.

Non-Motorized Transport (NMT)

2. **Non-Motorized Transport Infrastructure (Construction of Cycle Tracks, Walkways, CD Structures):** Scope of this contract comprises construction of Cycle Tracks, Walkways / Foot Paths, Cross-drainage Structures, and Road Furniture including Signage. This contract of INR 416.5 million with 15 months completion period started on 28 March 2014. Subsequent to modification of the proposed road cross-sections and detailed review of the proposed works, it's now estimated that the Completion Cost of the contract is likely to be about INR 481.8 million. Physical progress has been about 35% of likely Completion Cost. A Technical Note is presented at Annex 4A

3. The Contractor could not initially proceed on about 85% of contract works involving **Road works** because of NRDA's review of the proposed Road Cross-Sections. Final Road Cross-Sections were issued to the Contractor on 10 October 2014 (about 6.5 months after contract start) and Final Road Levels (FRLs) were issued starting from 15 October 2014. Out of about 40 kms of Cycle Tracks, the Contractor has laid 1st layer of Wet Mix Macadam (WMM) in about 27 kms. The WMM layer is open to ongoing rains thus vulnerable to damages which require necessary rectification prior to laying the upper layers. Out of about 28 kms of Footpaths, Granular Sub base (GSB) has been laid in about 17 kms, Plain Cement Concrete (PCC) laid in 5 kms, and Paving Tiles laid in 3 kms. These GSB layers are also vulnerable to the ongoing rains and may require necessary rectification prior to laying upper layers. Top level of the small slab covering the storm water entry does not match with the Footpath level at many locations. These need to be rectified suitably. Out of about 80 kms of pre-cast Kerbs to be laid, about 48 kms have been laid. In case of cast-in-situ Kerbs, only 4 kms have been laid out of about 45 kms to be laid. The Mission noted some length of cast-in-situ Kerb damaged by the rains, which require dismantling and relaying. The contract also includes laying of Paving Blocks in about 4 km length of Pedestrian Crossings.

4. There are about INR 45 million worth of works for **Cross-Drainage Structures**. Out of the Six Minor Bridges, Deck Slab completed for Five, Superstructure works ongoing for One. The Mission noted that the deck slab of the Minor Bridge structure at Km 4.800 on Road No. 2, cast about 3 months back, is full of cracks. Investigation should be made into it, as suggested in the attached Technical Note at Annex 4A, and remedial measures taken. The Mission was surprised to note the quality of Services being provided by the Project Management Consultant (PMC). Neither the PMC nor the Contractor or NRDA representatives have noticed such extensive cracks in the deck slab in 3 months period. It's necessary that NRDA and the PMC should jointly inspect all structures as to their acceptability. Out of about 34 Pipe Culverts to be constructed, 20 structures are complete and protections works for those being started, pipes have been laid for another 12 and head works in progress for two of the 12. Structure works for One

Box Culvert is complete (protection works to be carried out), and designs are being prepared for the other Box culvert.

5. PMC explained that the most critical activity in this contract now is Procurement and Laying of Paving Tiles in the Footpath areas. About 2 million pieces of Tiles are required, out of which only 200,000 Tiles have been procured until now. About 100,000 sqm of Paving Tiles to be laid. Presently, about 70 workers are laying the Tiles @ about 5-6 sqm per day per person. After the monsoon rain is over in September, the rate of laying the Tiles is likely to increase. It's assessed that it may take at least another 6-7 months to complete laying of the Paving Tiles in the Footpaths with the present strength of workers. The Contractor needs to procure the Tiles in advance to match with the speed of laying the Tiles.

6. The Contractor expressed that it would complete all works under the contract by December 2015, which appears impractical in view of the discussions made in preceding paragraph. Although the April 2015 Mission had suggested that the Contractor should submit a Resource-linked Work Program, it's understood that the Contractor has not submitted any such Program. Such a Program will push the Contractor to review and augment its Resources as well as assist the PMC and the NRDA to monitor the progress and performance of the Contractor. In order for the Contractor to complete all works by December 2015, it requires to carry out on average about 63 million worth of works in each of the coming months, whereas it has carried out on average only about 18 million worth of works per month since April 2015.

7. Quality Control Issues

A. Field Observations (under Quality Assurance)

- i. Concrete cover over each catch-pit on edge of walkway meant to collect rain water has to be set properly at level with finished tiled surface of walkway. At present these are not aligned.
- ii. Problem of periodic cleaning of catchpit removing manually the concrete cover during maintenance of walkway has to be resolved to avoid clogging of the proposed drainage system
- iii. Newly built CD structure in RCC cast in two panels was inspected during visit at Ch.4.800 km on Road No 2. It was found that top slabs had numerous cracks of various widths which are detrimental to durability of the structure.

It is suggested that detailed investigations be carried out to check width and depth of penetration of cracks with physical mapping, test of uniformity of concrete quality through the depth of slab by UPV test, check of strength of set concrete by Schmidt Hammer and core test, extent of corrosion in reinforcement bars by Half-cell potential measurements etc to ascertain if these slabs have to be dismantled or can be retained with adequate corrective action. Such investigation should be got done through expert Concrete Technologist from Civil Engg Dept, NIT Raipur or IIT,Kharagpur or similar Govt Engg Institute.

B. Quality Control (QC)Issues

- i. Manufacturer's Test certificates (MTC) for cement and reinforcement bars have been mostly signed by Authorised Signatory without mention of name and designation, which is not acceptable. All such laboratory test certificates shall be

signed by Chemist or Quality control-in-charge with name and designation mentioned on the same. Also, 'Report is computer generated and so no signature is required' is not acceptable in any such test certificate.

- ii. MTCs of Ultratech cement 43 grade kept in record are not complete in absence of 28 days strength for cement of several weeks. In external approved laboratory no chemical test of cement has been done.
- iii. MTC for reinforcement supplied by SAIL has been typed by marketing dept of Bhilai which is not acceptable and it should have been issued by QC Dept of Bhilai Steel Plant.
- iv. No test for chloride and sulphate content in all ingredients used in concrete has been conducted to ascertain chloride and sulphate content in concrete which is an essential requirement to ensure concrete durability. Tests for chloride and sulphate content in concrete shall be conducted immediately to check if these are within permissible limits as per relevant code.
- v. Test of materials in private external laboratory should be avoided unless it has NABL accreditation. Help of NIT, Raipur or any other Govt Engg college may be taken as much as possible.
- vi. Stone aggregates and sand have been used so far without any test which is against stand engineering practice and stipulations of contract.
- vii. No test for chemical admixture has been done so far in an external approved laboratory.
- viii. For NP 4 class RCC hume pipes and Catch –pit concrete covers supplied on outsourced basis by approved manufacturers no test result for ingredients used e.g reinforcements ,stone aggregates, sand, cement, water and admixture, if any has been collected from the parties. This should be done immediately and continued till last supply of these products.

Bus Rapid Transit (BRT) Lite

8. Three BRT corridors are planned:
 - Corridor 1: Naipur Railway Station – NH6 – Capital Complex in Naya Raipur (24.7 km)
 - Corridor 2: Kabir Nagar (Raipur) – NH43 – Capital Complex in Naya Raipur (37.5 km)
 - Corridor 3: Along the main east-west axis of Naya Raipur, between NH43 and NH6 (17.8 km).

Construction of BRT Bus Shelters, Pick-up Points, BRT Workshop Depot and Control Centre

9. Scope of this contract originally included construction of Bus Workshop Depot and Control Centre, Eight Bus Shelters, and a Pick-up Point near Old Mantralaya. The contract of Indian Rupees (INR) 298.9 million with 15 months completion period started on 31 December 2013. Subsequently, construction of another Pick-up Point at Raipur Railway Station of approximately INR 9 million was added to the contract as Variation. April 2015 Mission was informed that the Completion Cost is likely to be about INR 239.6 million. The reduction is because of higher provision of several items in the contract. Progress of works until July 2015 is

about 63% of likely Completion Cost. The contract has been extended until 30 September 2015. A Technical Note is presented at Annex 4A.

10. At the proposed **Pick-up Point near Old Mantralaya**, Dry Lean Concrete (DLC) has been completed in the full pavement area and about 40% of the Pavement Quality Concrete (PQC) has been laid. But, no groove has been cut at the joints in the PQC, which is a serious breach of construction requirement. The structure of the Bus Station has been completed including the roof, the finishing works to be carried out.

11. At the **Workshop Depot and Control Centre** site, almost full Compound Wall is completed, Underground Water Tank structure almost complete, finishing works ongoing for Washing Ramp and Inspection Pit, almost full Pavement Quality Concrete (PQC) works have been completed, and structures for Workshop and Control Centre are complete and internal and finishing works ongoing therein. At this site also, the grooves have not been cut timely at the joints in the PQC which is a serious breach of construction requirement. The Contractor of Naya Raipur Phase II has started constructing the Service Road (of NRDA-1 / Expressway) abutting this Complex, to which the entry / exit to / from this Complex will be connected. No permanent arrangement for flow of storm water (discharged from the site) outside of the site towards the outfall has been planned for execution.

12. The structures have been completed including the roofing for **Bus Shelters** 1 to 6 and 8. Finishing works are ongoing at these Shelters. At the Shelter 8 site, construction of walls is ongoing. April 2015 Mission had suggested that the NRDA needs to implement appropriate safety measures for the bus passengers crossing the high-speed arterial road at grade to / from the Bus Shelters located in the median of the road.

13. At the proposed **Pick-up Point at Raipur Railway Station**, the structure of the Bus Station has been completed including the roof, the finishing works to be carried out. Wall edges are not correctly aligned at some places, needs correction. A few pre-cast concrete heavy-weight slabs have been placed (practically permanently fixed) at the platform of the Bus Station to cover an existing Sewer trench. The arrangement needs to be appropriately made considering if any need of opening in future, and the Platform Flooring to be laid accordingly thereupon. Pavement works abutting the Bus Station is not within the contract. **NRDA needs to make arrangement of carrying out the required Pavement works.** The April 2015 Mission was informed that decision was taken in consultation with the Railways, to **construct a safe clear pedestrian pathway between the Pedestrian Crossing at the Pick-up Point and the Railway Station Building**, no arrangement has been made by NRDA to implement the same until now. During the field visit the mission was informed that the table top footway between the bus terminal and the railway station is planned to be 2 meters wide. The Mission recommends that this footway should be atleast 4 meters wide, in addition to the ramps on both sides.

14. Works Completion Period for the contract has been extended until 30 September 2015. The Contractor informed that it would complete all works by September / October 2015. Value of works carried out by the Contractor is about INR 2 million per month recently. Considering that about INR 4 million worth of bought-out items remaining to be incorporated in the works (as informed to the Mission), there appear to be a likelihood of completion of all works in this contract by around October 2015

STATUS OF THE WORKS CONTRACTS

| Contract Description | Name of Contractor | Original Contract Amount (million INR) | Likely Completion Cost (million INR) | Works Start Date | Original Works Completion Date | Extended Works Completion Date | Approximate Value of Works Done (million INR) | Physical Progress |
|--|--|--|--------------------------------------|------------------|--------------------------------|--------------------------------|---|---------------------------------|
| Bus Shelters, Pick-up Points, Workshop Depot and Control Centre | Essel Infrastructure Private Limited, Raipur | 298.9 | 239.6 | 31 Dec 2013 | 30 Mar 2015 | 30 Sep 2015 | 150 | 62.6% of likely Completion Cost |
| Non-Motorized Transport Infrastructure (Cycle Tracks, Walkways, etc) | BSBK Private Limited, Bhilai, Chhattisgarh | 416.5 | 481.8 | 28 Mar 2014 | 27 Jun 2015 | 30 Nov 2015 | 167 | 34.7% of likely Completion Cost |

15. Quality Control

A. Field Observations (under Quality Assurance)

i. In construction of Pavement Quality Concrete (PQC) slab three types of joints required i.e Longitudinal, Transverse Contraction and Transverse Expansion joint as shown in 'Pavement Joint Plan' in Design Consultants' relevant drawing and released for construction have not been provided during construction of Pavement slabs in progress at Old Mantralaya and substantially completed at Workshop Depot. Also cutting of grooves is delayed very much due to mobilisation of inadequate number of groove cutting machines.

Details of joints are neither clear nor all have been provided in this drawing which should have been asked from Designers before start of construction. Under the situation Design Consultants' Representative should be immediately called and necessary remedial action should be proposed by the agency. Missing details should also be asked for provision In PQC slabs still to be cast.

ii. In Pick-up point near Rly Station RCC covers have been provided over existing underground drain at two locations at platform/passenger walkway level in a haphazard way without thinking of difficulties of manual lifting in case of emergency, safety of passengers during movement over these slabs with lifting hooks etc.

The arrangement needs reworking to satisfaction.

iii. Two Nos RCC 'Signage' structures 8 m high with a heavier section on top due to flaring from bottom level have been constructed at each Pick-up Point. It was noted that during construction at bottom of this structure at junction between wall base and slab one 75 mm

thick kicker/starter concrete has been laid without proper compaction and in this stretch development of required strength concrete is doubted.

It is suggested that in-place strength of concrete at this level be checked by Schmidt Hammer test and UPV test together and on the basis of that design of this structure be checked for stability under vertical load and moment due to horizontal forces from wind and/ or seismic forces as per codal requirements.

- iv. Due to not taking proper care in maintaining finished level of RCC walls at some places reinforcement bars are seen protruding above finished level and on that surface laying of finishing tiles is not acceptable.

In such stretches it is suggested that top of wall be dismantled manually by minimum 20 cm depth, reinforcements cut/bent to required level and wall is rebuilt to the desired finished level.

- v. At Control Centre finish of exposed aggregate external wall needs improvement by use of cement from same lot for total area and taking care not to allow any splashes from painting on adjoining roof sheets/steel structure, as exposed aggregate finish surfaces are sensitive to such patch works.

B. Quality Control (QC) issues

- i. A hard copy of relevant codes referred in contract is not available at site.
- ii. No test for chloride and sulphate content in all ingredients used in concrete has been conducted to ascertain chloride and sulphate content in concrete which is an essential requirement to ensure concrete durability. Tests for chloride and sulphate content in concrete shall be conducted immediately to check if these are within permissible limits as per relevant code.
- iii. Test of materials in private external laboratory should be avoided unless it has NABL accreditation. Help of NIT, Raipur or any other Govt Engg college may be taken as much as possible.
- iv. For flyash bricks used in Control Centre no details are available at site on composition of these bricks i.e lime and flyash or cement and flyash. Again there are no test results available for flyash.

It is to be ensured that for such outsourced/bought-out materials satisfactory test certificate of all ingredients used in the product shall be collected and kept in record.

- v. Manufacturer's Test certificates (MTC) for cement, reinforcement bars and admixtures have been mostly signed by Authorised Signatory without mention of name and designation, which is not acceptable. All such laboratory test certificates shall be signed by Chemist or Quality control-in-charge with name and designation mentioned on the same.

Also, 'Report is computer generated and so no signature is required' is not acceptable in any such test certificate.

- vi. In the same cement store two different brands of cement have been stored, one type being meant for another site of the contractor which practice is not acceptable due to control problems.
- vii. No test has been conducted in approved external laboratory for chemical admixtures used in the project. Such test shall be immediately conducted at a frequency agreed with PMC.
- viii. No test for Dry Film Thickness (DFT) of paint applied on structural steel members used in the project has been done nor record maintained, which should be done immediately.

Technical Discussions

16. **Terminal of BRT-Lite at Raipur Railway Station:** During a field visit the mission observed that the table-top footway between the bus terminal and the railway station is planned to be 2 meters wide. Considering the expected high pedestrian volumes, especially after a BRT-Lite bus has arrived, it recommends that the footway should be at least 4 meters wide, in addition to the ramps on both sides.

17. **Terminal of BRT-Lite at Old Secretariat:** Currently, the layout of the terminal area does not provide for feeder buses delivering passengers that would transfer to the BRT-Lite. The mission recommends that NRDA design space for those feeder buses, and send a concept report to the PMU and World Bank by **August 31, 2015**. The trajectory of transferring passengers would desirably be short and convenient. As a general comments, the access and egress roads and the circulation plan for the entire area surrounding the terminal should be reviewed. The mission recommends that any (probably minor) works that may be required to ensure the fluid movement of buses and minibuses be defined as soon as possible, and that a report and plans on that subject be sent to the PMU and the World Bank by **August 31, 2015**.

18. **Possible Pick-up Point at Telibanda:** It is virtually certain that the bus service plan will recommend a pick-up point for the BRT-Lite at Telibanda, connecting with several feeder routes. NRDA officials and the mission visited the area and, from a technical viewpoint, there appear to several physical options to facilitate the interchange of passengers in this area. The mission recommends that NRDA prepare an option analysis and concept plan for the Pick-up-Point and send it to the PMU and the World Bank by **August 31, 2015**.

19. **Intelligent Transport Systems.** The project agreement for the ITS system integrator has been signed with Rosemerta Technologies based in Gurgaon, India. The award of contract is however awaited.

20. Buses for the proposed BRT network have been ordered from TATA and are UBS compatible but without OBITS to avoid complications in integration with AVL system. The Bank team encouraged the ITS PMC and SI to perform exhaustive testing of OBITS in isolation and in concert with the centralized ITS equipment. Two type approved buses will be shipped to Gurgaon directly where SI and ITS PMC (both offices located in Delhi) will be able to install and test the OBITS.

21. The Bank Team understood that the ITS SI already has a team at NRDA to assist with the deployment of ITS (Control Center etc.) but suggested that ITS PMC team also be located at NRDA to facilitate smoother collaboration with SI and deployment and testing of ITS on buses and at the Control Center.

22. The Bank Team suggested that while the OBITS is being tested in Delhi by the ITS SI and the ITS PMC, the AVLS could also be tested remotely with the AVL system server located at the NRDA control center. This concurrent testing will potentially save overall time for testing and launch.
23. Training of Operator Bus Drivers should include on-board ITS equipment and the Standard Operating Procedures (SoP) centered around the ITS equipment at the Bus Depot and the Control Center. It was agreed that NRDA will support ITS SI and PMC in defining the SoP for the ITS-enabled BRT network.
24. The Bank team understood that BSNL does run a fiber along the proposed BRT corridor. Airtel and IDEA also seem to have IP MPLS connection at all bus stations, but an IDEA 3G service (feasibility study done) will likely be utilized. The Bank suggested that since CCTV and PIS are operating at the Bus Shelters, it might be useful to consider fiber connectivity at the stations to facilitate the transfer of live video to the control center. It is important to send CCTV images from both Bus and Bus Shelters to the Control Center so that any untoward incidents can be addressed and responded to in near real-time. Alternatively, keeping the benefits of surveillance in mind, the Bank team urged NRDA and the SI to consider sending surveillance pictures from the CCTV cameras onboard buses and at the Bus shelters to the Control center periodically using a 3G communication channel.
25. The Bank team has highlighted the need for NRDA to define custom reports based on its needs including KPIs and Service Level Agreements for Bus Operators, ITS performance Indicators, Statistics that need to be shared with Public etc. and those that might be required to satisfy dashboarding needs of NRDA stakeholders.
26. Recognizing that the AVL and Fare Collection System are independent, the Bank suggested that the fare Collection System could be tested independent of the AVLS sub-system in order to ensure acceptance of the overall system in time for the launch. Financial Audits will also need to be done.
27. ITS PMC to provide guidance to NRDA on options for fare Policies, including implementation of passes.
28. Bank team highlighted the need for SOP to be identified for the NR BRT operations. While the SI can help with the procedures to enter the Bus schedule into the system, NRDA needs to create the schedule. The SOP should also include procedures for deposition of cash by ETM Operators at the stations.
29. Bank team identified the need for testing the geo-fencing feature using the local Lat/Long of Naya Raipur in addition to testing the feature in a simulated environment in Gurgaon.
30. The SI should develop a Smartphone/web -based Trip Planner application that captures all route information proposed for the BRTS corridors.
31. The Bank team suggested passenger WI-FI access on board the BRT buses and at the BRT stations. The bank understood from NRDA that the Smart City initiative will enable the broadband connectivity including passenger Wi-Fi access to passengers at the BRT Bus Stations.
32. All ITS communications infrastructure design at Bus Stations and the Bus Depots should be overlaid on the structural design by the ITS PMC and shared with the construction team as soon as possible to facilitate the completion of the civil works.

33. The Bank team discussed the need to establish the last mile connection between the BSNL fiber optic cable and the Control center. The fiber optic cabling design supporting a 40mm conduit to accommodate the required Bandwidth should be made available to the civil works team as soon as possible.

34. The topic of interoperability of fare cards was also discussed with NRDA. The Bank Team recommended that there be a MoU between Raipur Bus service Operator for compatibility of Smart Cards currently used on the RNNTL City Bus service and the proposed BRT network. The ETM and the Smart Card available on the RNNTL service is provided by Prati Nidhi, a Pune-based manufacturer. The ITS PMC has been asked to deliver a report within a month on how the integration between the two Smart Card Systems could be enabled. Based on the integration strategy recommended, the System Integrator should redesign the ETM sub-system such that the integration of fare cards can be supported.

35. DIMTS, the project management consultancy for ITS, are undertaking a site survey of the depot, bus stops, pick up points and the control center for identification of location of equipment and systems. They have been preparing a detailed layout of the placement of all equipment and have submitted these to NRDA. Subsequent deliverables will include a functional requirement system and system specifications and will be submitted to NRDA by August 17, 2015. Application development/customization and testing is planned to be complete by October 30, 2015.

36. **Bus Delivery.** The Mission was informed that the prototype for the 40 ordered buses from Tata Motors was reviewed and commented upon by NRDA. One of these comments is resolved; the manufacturer will be able to supply buses in 45 and 90 days respectively. However, owing to the lack of clarity on the funding of sanctioned buses by MoUD, NRDA has been unable to move forward on the next steps. The Mission expressed serious concern over the matter and advised NRDA to take an early decision as the BRT Lite launch would be uncertain without a final decision on this matter. The Mission recommended that the decision be made by August 31, in order to ensure timely delivery of buses and launch of the service by year end.

37. **BRT Operator:** The RFP for hiring the BRT operator has been issued on July 28, 2015, and the pre-bid is proposed on 14 September 2015. The contract is modelled on a gross cost contract template. The Mission advised NRDA to expedite the procurement as the operator would require 1-3 months mobilization time once the contract was awarded.

38. **Fare Policy.** The Mission advised NRDA to review and finalise the Fare Policy for the BRT Lite at the earliest. This would also go into the ETM/ smart card programming by the ITS vendor. The current interim bus service being operated by NRDA has a large number of buses being used for transferring Government employees from Raipur to Naya Raipur and the service is free. It was advised by the Mission to ensure a paid service even if the Government of Chhattisgarh intended to subsidize the travel of government employees. The preparation of a fare policy is within the scope of the Service Plan consultants and it was discussed that they should develop and present various options to NRDA to enable them to finalise the policy. It was agreed that this would be done by September 15, 2015.

39. **Technical Assistance and Capacity Building**

- a) **TA on Transit Oriented Development (ToD):** Based on findings of the TOD study by IBI, changes have been made to the Naya Raipur Development Plan in its Chapter 9 and Chapter 18. Majority of the recommended norms that facilitate TOD implementation

have been incorporated in these chapters. Planning of certain sectors has also been modified based on the TOD concepts. NRDA has received in principle approval from the Government of Chhattisgarh in March 2015. Statutory orders are to be issued only after successful completion of a public consultation. NRDA has already issued a public notification to this effect and comments have been received. These are currently under review. A final notification will be issued once the process has been completed.

- b) **Regional Mobility Plan.** The consultants (LEA Associates) gave a presentation on the Regional Mobility Plan for Greater Raipur Region and on the progress made so far. The consultants discussed the survey analysis and major findings of the transport model that has been prepared. A draft of the road network improvement and Public Transport plan was shared with the Mission. The consultants also shared some of the recommendations that have emerged from the TDM process. The consultants were advised to refer to the railways vision plan for 2020 for upcoming rail developments around the region. The consultants informed the mission that they are still calibrating and fine tuning the TDM and changes may happen to the mode share assignment to make them more realistic. One workshop has been organized and the second one will be organized once the a draft of the strategies and recommendations are in place. The Draft Final Report will be submitted by September 30, 2015.
- c) **Bus Service Plan and Financial Plan:** Previous Bank missions had commented on the technical scope of this activity, the importance of which had been discussed for some time. Considering that NRDA intends to have BRT Lite operations starting in the near future, the design of the service plan is now clearly on the critical path.

In early 2015, the consultants already working on the Monitoring & Evaluation Study (DIMTS) were contracted to prepare the “Service and Business Plan for City Bus operations”. For the first phase of the study (Service Plan), the output of which is due now, the study should focus on defining an initial service plan for a relatively short-term horizon. A small set of options for services along Corridor 1 should be defined and agreed with NRDA, and then tested by a simple model. The options might include the possible incorporation of express services, and variations of bus size and service frequency.

The consultants presented the current status of their work which in the mission’s view, was too general to provide practical results that could lead to a service plan for the BRT-Lite along Corridor 1. Rather than conducting a general bus route rationalization study for northern Raipur, the mission suggested that the consultants focus on the BRT-Lite corridor and define feeder routes to the Railway-Station and Old-Secretariat terminals. Moreover, the options of introducing intermediate pick-up points should be examined at Telibanda and possibly at Serikedi, also to be served by feeder routes.

The mission repeated its previous recommendation that transport modeling should be kept simple for that purpose and just cover the influence area of the proposed BRT-Lite services rather than the entire metropolitan region. Alternative bus service plans could be evaluated on the base of existing public transport origin-destination matrices. The second phase of the study, for which results are to be produced within nine months, might employ a more sophisticated modeling approach.

The mission recommends that the consultants urgently define 3-4 options for BRT-Lite and feeder route services, taking account of estimated passenger demand and of the available street system where feeder buses or minibuses would run. Following some tests

as outlined in the preceding paragraph, and an evaluation of operational and financial implications, a recommended BRT-Lite (plus feeder route) service plan should be defined. The mission also recommends that the report describing the results of this work be submitted as soon as possible and then sent to the PMU and World Bank no later than **August 31, 2015**.

40. **Marketing and Communications Strategy:** NRDA needs to engage a marketing and communications firm to start the marketing campaign ahead of the BRT launch which is tentatively being planned for year end. Discussions were held on how events promoting NMT and BRT can help in spreading awareness on BRT amongst the public. NRDA plans to seek support from existing agencies and NGOs in organizing these public awareness events.

41. **Utilization of the Balance Amount:** NRDA has a balance amount of US\$ 0.5 million. NRDA shall confirm to the Bank if any further consultancy is envisaged for procurement.

42. **BRT Lite Implementation.** The mission expressed concern over the delays in completing the ongoing civil works. NRDA confirmed that they were closely reviewing the situation and would target the launch of the BRT Lite by November 1, 2015, their State Day. The Mission advised NRDA to start working backwards and develop a BRT Implementation Schedule capturing all the critical activities to be completed ahead of launch (including BRT pickup points and key stations, bus delivery and hiring of bus operators, ITS installation, service plan, communications, fare collection agents, traffic wardens, security & housekeeping etc.). It was agreed that NRDA would share the plan with PMU and the Bank by August 31, 2015.

- Completion of Stations & Control Centre – October 1 – November 30
- Delivery of buses – October 15 - November 15, 2015
- Appointment of bus operator – October 15, 2015
- Bus operator/ driver training – December 1-15, 2015
- Installation and Testing of ITS – October 15 – November 30, 2015
- Completion of procurement for fare collection agency – October 15, 2015
- BRT Service Plan route options report – September 15, 2015
- Fare Policy Finalisation – September 30, 2015

Project Management. The Mission was informed that the Chief Project Manager had asked to be relieved from the job as they had certain pressing personal commitments. As such, the project has no Project Manager at the moment. This was raised by the Mission in the discussion with CEO NRDA as a serious matter especially now that they were getting into the critical phase. He acknowledged this to be a problem and promised to find a suitable replacement by August 15, 2015.

The Mission also advised NRDA to ensure a proper team at the newly created SPV and for it to be fully engaged with the current implementation phase so they could hit the ground running during operations. Presently, the SPV is staffed with only an MD and Transport Planner and most of their time is spent managing the interim bus operations between Raipur and Naya Raipur. It will be important for this team to be enhanced and for them to be fully involved in the service planning, bus procurement, procurement of fare collection agency, ITS implementation and BRT Lite Implementation Schedule planning etc.

Environment Management

43. The mission visited the work sites in Naya Raipur and Raipur to understand the extent to which the EMP provisions are being used during construction. It also discussed the progress on various aspects with NRDA officials, the consultant team assisting them to supervise the implementation, and contractor representatives. It briefed the Chief Engineer, NRDA and also met with the new CEO of the NRDA to apprise him of the mission findings.

44. BRTS Infrastructure: Pick-up point sites within Raipur – Railway Station and Old Secretariat have large number of general public using the area of the locations being improved. The mission noted that the contractor's work area safety needs to improve to avoid mishaps or accidents. It was also informed that the transplantation has been very successful and all 38 trees transplanted in the Old Secretariat site have survived the first year. The mission suggested that experience be documented by the PMC for use by MoUD. At the Depot site, the works are nearing completion, and the water harvesting and recycling systems are being installed as per design.

45. NMT Infrastructure: For widening the embankments for installation of footpaths and cycle tracks, the Contractor has borrowed earth from Mandir Hasaud, outside Naya Raipur city limits. The mission suggested that NRDA should keep written records regarding the consent and confirmation of land owners since the soil quantities involved are fairly large and total land area from which borrowing has occurred is running into several acres. It was agreed that the QPR for the period ending September 2015 will include documentation pertaining to the consent of owners and confirmation that the borrow area redevelopment is in line with their agreement. At worksites, the contractor's concrete mixers are sometimes washed to avoid hardening of concrete in the mixers. This has the potential to restrict movement of water if waste concrete hardens in water passages like drains and this needs to be completely avoided. The mission advised NRDA to ensure that these are washed only in the Contractor's camp site.

46. TOD related changes to Development Plan: NRDA confirmed that the removal of the green strips along roads in select sectors to allow direct access where the development plan has been enhanced to facilitate Transit Oriented Development will have no net impact. The green areas in the respective sectors are being densified to ensure that the total green cover is maintained.

55. **Social.** The project encountered few impacts to 3 very small shop-keepers and partial impacts to some structures due to improvements of entry and exist access in Old Mantralaya pick-up point. In response to mission's suggestion, NRDA agreed to prepare a note on the likely impacts and propose mitigation measures. In case of affected shopkeepers they will propose rehabilitation measures either in any of the on-going Government programs or allot some designated spaces inside the pickup point to enable them to continue their livelihood. The Note will be shared with the Bank for review and comments.

47. **Key Agreed Actions**

- Submit monthly progress report contract wise – Continuous
- Decision on appointment of Project Manager – August 5, 2015
- Submission of Action Taken Report to the Bank on all quality related issues highlighted by Bank– August 31, 2015
- Submit options analysis and concept plan for Telibanda pick up point – August 31, 2015
- Submit concept plan for space for feeder buses at Old Secretariat along with access egress plan for BRT buses - August 31, 2015
- Issue RFP for appointment of fair collection agency –August 14, 2015; Complete procurement by October 20, 2015

- Complete procurement of bus operator – October 15, 2015
- Completion of NMT civil works on existing roads– November 30, 2015; new road – March 31, 2016
- Submit RMP Draft Final Report – September 30, 2015
- Submit report on BRT feeder routes and service options– August 31, 2015
- Submit options for integration of smart card functionality between Naya Raipur and Raipur – August 31
- Submission of ITS functional requirement and system specifications draft report – August 17, 2015
- Submit revised BRT Lite Implementation Schedule – September 15, 2015
- Finalise Fare Collection Policy – August 31, 2015
- Develop a Communications & Outreach Plan for BRT Lite – September 30, 2015
- Complete consultation process for TOD policy and issue notification on changes in policy (if any) – August 31, 2015
- Submit documents pertaining to the consent of owners regarding drawing up of construction material for NMT tracks – October 31, 2015
- Submit note on likely impacts and proposed mitigation plans for affected shopkeepers at Old Mantralaya Site – August 31, 2015

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Indore

1. The World Bank mission, along with PMU and PMC, held discussions with Mr. Sandeep Soni, CEO, AICTSL on the project progress in regard to the Indore component in Delhi on April 14, 2015

BRT Corridor

2. **BRTS corridor:** The High Court decided in favour of the BRT in mid March 2015. The 12 km corridor runs from Niranjapur towards the north of the city to Rajiv Gandhi chowk in the south. There are 7 interchanges with the city buses in between these two points. With the court ruling in place, the average travel time for a BRT bus from end to end reduced to 35 minutes from 45-50 minutes. Accident rates have reduced with mixed traffic no longer being allowed within the BRT corridor.

3. Corridor extension is proposed for another 8 kms as per in principle approval by the AICTSL Board and Sarak Suraksha Committee in Indore. Stations will be developed on PPP. Road widening works (6 lanes) are already ongoing. AICTSL needs to develop depots for maintenance of the new bus fleet.

4. **BRT Operations.** AICTSL has 40 buses in operations and the daily passenger traffic is 50,000 on the BRT corridor as compared to the 70 buses in operation for ordinary city bus services which experience a daily ridership of about 30,000. Additional 5-6 buses areas expected to be added to the BRT fleet in the coming months. The service frequency of BRT ranges from 3 minutes – 5 minutes. The Mission was informed that the service ridership has had no impact despite an increase in the fare slabs for longer distances in the month of July. However, despite substantial revenue generated from fare box, advertisements and other long distance services, AICTSL is still under a deficit Rs 35 lakhs/month. The BRT service has been hugely popular and the cash-flow deficit is expected to reduce further..

4. **ITS Component.** Two bids were received and opened on Feb 2, 2015. The bid evaluation has been completed and the decision to proceed with rebidding has been taken. It was agreed that the rebidding and bid award would be completed by December 2015.

5. The Mission again reminded AICTSL of the closing date of the Project (November 30, 2015) and advised them to make an early decision in regard to ITS, so that the grant funds could be reallocated and utilized in case there was likely to be further delays in decision making.

6. **PMC for ITS:** IBI has been given an extension until March 2017 at an additional cost of Rs 75 lakhs over the expired contract. The Mission advised AICTSL to share the details for Bank's no objection.

7. **Technical Assistance Activities.** The Mission reviewed the status of the proposed TA activities.

(i) *Preparation of BRT Accessibility Plan, including pedestrian access:* The negotiations and draft initialed contract have been pending for quiet sometime and it was agreed that AICTSL would complete these actions by August 25, 2015.

(ii) *Monitoring & Evaluation Study.* 8 EOIs were received out of which only 1 EOI qualifies. AICTSL was advised to seek additional EoIs.

(iii) *Preparation of a business plan for AICTSL.* 11 EoIs were received. 6 EOIs have been shortlisted and RFP would be issued shortly.

8. **Key Agreed Actions:**

- Seek no objection for extension to PMC contract – August 12, 2015
- Submit revised ITS RFP – August 20, 2015
- Initiate rebidding of ITS package – Sept 7, 2015
- Submit revised procurement plan – August 25, 2015
- BRT Accessibility Study – Submit minutes of negotiation – August 15, 2015
- Submission of the copy of the contract agreement with the selected candidate for the post of ITS expert/ transport planner -August 15, 2015
- Appointment of consultant for Business Plan study – November 30, 2015
- Appointment of consultant for Monitoring and Evaluation study – December 31, 2015

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Mysore

1. A World Bank mission held discussions with Mr. Mallikarjuna, Chief Mechanical Engineer, KSRTC, his team including MCTD officials, their consultants and vendors through a Video Conference call on August 4, 2015 to discuss the project's progress. Also present in the meeting were representatives from PMU and PMC.

GEF-SUTP Funded Project

2. **Intelligent Transport Systems.** Intelligent Transport System (ITS) was implemented and launched in November 2012, and has following sub components:

- Passenger Information System (PIS)
- GPS based Automatic Vehicle location (AVL) System
- Monitoring center to track and monitor bus movement through GPRS based devices

3. The Mission was informed that most of the underlying technical problems have been resolved and the system is working well with 100% of the ITS commissioning complete. The Mission was informed that 436 buses installed with ITS are currently in operation. Of these 410 buses are currently being tracked. Schedules are continuously being corrected in Form IV as per the kilometres being tracked on ITS. A gap of 3.7% between the Form IV kilometres and the actual operated kilometres has been identified and cut down with the help of ITS.

4. **ETA:** Performance of ETA prediction on PIS boards at bus stops varying from 58% - 85% (example - prediction rate at Railway station is 58%, and at Ashoka Circle bus stand is 87%). In both the cases, prediction rate is lower than what is defined in the SLA. Overall average prediction rate is 54% for the PIS board at the Railway Station based on the survey conducted by KSRTC. The Mission advised KSRTC and CMC to include reasons for low prediction rate (if any) and necessary action plans to resolve the issue. As per the analysis, VMU's hardware failure is only affecting 10% ETA prediction, remaining 90% are due to operational issues. Bank team advised KSRTC to strengthen their processes and provide more training to bus drivers and other depot staff. With this the 3.7 percent VMU failure rate shown in the Progress reports is better explained. In the following weeks there was a significant improvement in performance presumably as the avoidable problems were managed.

5. On an average around 4% of all the buses are entering into service with defective VMU units every day. Mission was informed that VMU's are failing because of high spike from the bus electrical system (mainly older buses) – blowing the VMU fuse and in some cases damaging SD memory card installed within VMU (to store audio files for announcement). There are also several instances of 'data not received'. The Mission recommended CMC team to look for root cause of the problem and resolve the issue from the source. Doing preventive maintenance is not recommended for longer periods as this will increase the operation cost. Also, the VMU resolution rate remained well above the threshold of 8 hrs. KSRTC would be well advised to develop a checklist of issues that require attention and resolution of CMC so operational acceptance

6. **PIS:** Around 40 PIS board are not installed / dysfunctional because of non-availability of electricity in bus shelters. Bank team was informed that KSRTC team has started talking to electricity board and the problem is expected to be resolved soon.

Over all ITS system in Mysore is working well, there are still some teething issues which are mostly due to behavior issues within organization and few due to technology issues.

7. The M&E consultant's contract with KSRTC has ended on March 31, 2015. The mission advised KSRTC to extend their contract by another 3-6 months, to until after the operational acceptance is provided to be able to capture the 'after project' impacts. KSRTC informed that they have received a proposal for extension of scope from the M&E consultants which is under their review.

8. **Additional Grant:** Under the previous project restructuring, KSRTC has received an additional GEF grant amount of \$0.6 million towards (i) project management of ITS/M&E of the project and , (ii) marketing & communications of ITS, (iii) driver training simulator. KSRTC has shared a procurement plan for procurement of activities/items. However it has not been able to initiate the procurement so far. The Mission expressed its concern over this delay and has advised KSRTC to urgently start procurement of the simulators since the draft technical specifications have already been shared with them by PMU in June 2015.

9. The Bank asked KSRTC to confirm the financing arrangement for the operations phase.

10. **Comprehensive Service Operations Analysis Study.** The Bank had suggested that the immediate action plan focus on service design and operation and that it is important to first develop and implement a service plan that: 1) provides reliable service (actual operations reflected in passenger timetables) and 2) makes the most cost effective use of limited funding and service resources. The World Bank acknowledged the importance of other improvements suggested in task reports (e.g., improved passenger information, better fleet planning), but felt that these improvements should be addressed after a sound service plan has been implemented.

It had recommended that the immediate action plan focus on following three important improvement areas that were identified in the service analysis work:

- Assessment of poorly-performing routes
- Scheduling of realistic running times by time-of-day and day-of-week
- Revision of operating procedures regarding initial departure of trips from route terminals.

11. The World Bank reviewed the Final Implementation plan shared with the Bank on June 23, 2015 and made the following observations.

KSRTC/Lumiplan has made a good faith effort to address the concerns raised by the World Bank previously. The only difference of opinion that exists is KSRTC's focus on EPKM. KSRTC uses the "operating deficit" or the "Margin per Kilometer" (MPKM) as the basis for route analysis. The consultants did come up with an A to E scale based on MPKM which is a reasonable way to examine route performance. However, they still want to use EPKM as one factor in route analysis. The Mission agrees with the approach that uses load factor and cancellation as the basis for route analysis. It is suggested that KSRTC use MPKM (instead of EPKM) as the third factor in this analysis.

Key Agreed Actions:

- Submit driving simulator draft bid document – August 10, 2015
- Initiate procurement of simulator – August 25, 2015
- Complete extension of scope of M&E Consultants – August 25, 2015
- Submit document on benefits from ITS initiatives – August 10, 2015

- Submit update on compliance– Weekly
- Operational Acceptance – August 31, 2015
- Submit revised CSOA Report – May 25, 2015

INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Mysore – Proposed Public Bike Sharing Project (PBS)

1. The inclusion of the Mysore Bike Sharing Project into SUTP has now been processed. The project includes 450 bikes, 52 docking stations and a central control centre.
2. MCC shall be the implementing agency for this activity with a committee for managing the overall administration of the project. The project monitoring committee has been set up as on May 15, 2015 and is chaired by the Deputy Director of Mysore District. It consists of the Mysore City Corporation Commissioner, the Commissioner of Police, Mysore, Commissioner Urban Development Authority and a representative of Commissioner DULT. The total project capital cost and operating cost for one year is estimated to be roughly Rs. 80 million and after budgeting an additional amount for technical assistance and capacity building a total GEF grant amount of \$1.6 million have been allocated to the Project.
3. The procurement for Mysore PBS is ongoing and it is proposed to contract out to a private developer on a design, supply, install and operate model. The final date for bid submission was July 31, 2015, and bid evaluation is ongoing and the award of contract is expected by end of August.
4. **Key agreed actions included:**
 - Complete bid evaluation – August 15, 2015
 - Award of contract – August 31, 2015
 - Entrustment of statutory audit of PIU of MCC to the state AG – Within 3 months of restructuring

Financial Management

- A.** Budget & Expenditure: The budgetary allocations for FY 15-16 have been allocated to all PIA's². In view of present project closure in November 2015, the same was critical to ensure adequate fund flow. The time extension on project is under discussion.
- B.** Disbursement profile: As on August 27th 2015, the disbursement profile (including advances) stood at 37.83% against IBRD and 45.49% against GEF financing. Disbursements reflect the expenditure claimed by project until March 2015. Overall position is stated below and the PIU wise disbursement position is summarized in Annexure 1).

| IBRD status of Disbursement | | USD Million |
|-----------------------------|---------------|---------------|
| Financing source | Allocation | Disbursement* |
| IBRD | 105.23 | 30.34 |
| DA Advance | - | 9.46 |
| Total | 105.23 | 39.80 |
| % Disbursed inc DA | | 37.83% |
| % Disbursed exc DA | | 28.83% |
| Including front end fees | | |

| GEF status of Disbursement | | USD Million |
|--|--------------|--------------|
| Financing source | Allocation | Disbursement |
| GEF | 18.45 | 6.39 |
| DA Advance | - | 2.00 |
| Total | 18.45 | 8.39 |
| % Disbursed inc DA | | 45.49% |
| % Disbursed exc DA | | 34.65% |
| *Excluding agency fees of US\$ 1.88 mn | | |

- C.** Restructuring and its impact on FM arrangements for the project: The restructuring has been counter signed by respective state government. The effect on the revised allocation to KSRTC and HDBRTS along with change in disbursement category for PCMC will be reflected in upcoming IUFR.
- D.** Mysore PBS- An amount of USD 1.60 million has been allocated under category 5 under this component. On FM arrangements, budget head for the project stands created with an initial allocation of INR 6 crores of FY 15-16. The project bank account will be opened shortly. MCC needs to initiate for necessary entrustment of audit.
- E.** External Audit- Basis the preliminary discussions held with PMU , there is a high likelihood of audit reports for all PIU's to be concluded before the agreed timeline. It was appraised to

² As confirmed by PMU

PMU that the submission for audit report wef FY 15 has been extended from 6 to 9 months. The responses furnished by PCMC against the audit objection raised by AG in FY 13-14 audit report is to be undertaken during the present audit cycle.

- F. Internal Auditors: The mission was informed that the process of appointment of internal auditors is in its final leg and the firm is expected to be on board by August 31st 2015. The hiring process for internal auditors is long overdue (last audit report till March 2014) and the audit committee has not been convened since November 2013. Any further slippage on this aspect will have an adverse effect on FM rating of MoUD.

Project Rating: Financial Management

| PIU | Rating |
|------------------------|--------|
| Pimpri | MS |
| Naya Raipur | MS |
| Hubli | MS |
| Mysore | S |
| Indore | MS |
| PMU – MoUD | MS |
| Overall Project | MS |

Key Actions

| <u>S.No.</u> | <u>Actions</u> | <u>By Whom</u> | <u>By When</u> |
|--------------|--|----------------|-----------------------------------|
| <u>1</u> | Entrustment of statutory audit of PIU of MCC to the state AG | MCC | Within 3 months of restructuring |
| <u>2</u> | External audit clarification | PMU and PCMC | Sep 30 2015 |
| <u>3</u> | <u>Internal Audit</u> d) Appointment of internal auditors Internal audit report submission | MoUD PMU | August 31 2015 October 31 2015 |

PIA's wise disbursement profile USD/Mn

| IBRD- PIU wise disbursement USD/mn | | | | |
|---|---------------|--------------------|---------------|----------------|
| PIU's | PCMC * | Naya Raipur | HDBRTS | Total** |
| IBRD allocation ** | 35.58 | 13.94 | 55.45 | 105.23 |
| Designated advance | 6.46 | 1.00 | 2.00 | 9.47 |
| Reimbursements | 22.10 | 3.60 | 4.37 | 30.33 |
| Total Disbursements | 28.56 | 4.60 | 6.37 | 39.81 |
| % Disbursed inc DA | 80.28% | 32.96% | 11.50% | 37.83% |
| % Disbursed exc DA | 62.12% | 25.79% | 7.89% | 28.83% |
| ** Including the unallocated amount for Maharashtra of US 5.70 | | | | |
| ** Including the front end fees of USD 0.263 mn | | | | |

| GEF- PIU wise disbursement | | | | | | | USD /mn | |
|---|-------------|--------------------|---------------|--------------|-------------|---------------|----------------|--------------|
| PIU's | PCMC | Naya Raipur | Indore | KSRTC | MoUD | HDBRTS | Mysore | Total |
| Revised GEF allocation | 1.90 | 1.90 | 1.90 | 2.50 | 6.15 | 2.50 | 1.6 | 18.45 |
| Designated advance | 0.46 | 0.23 | 0.23 | 0.23 | 0.85 | - | 0 | 2.00 |
| Reimbursements | 0.42 | 0.69 | 0.44 | 1.85 | 2.01 | 0.98 | | 6.39 |
| Total Disbursements | 0.88 | 0.92 | 0.67 | 2.08 | 2.86 | 0.98 | - | 8.39 |
| % Disbursed inc DA | 46.48% | 48.47% | 35.19% | 83.61% | 46.43% | 39.19% | 0.00% | 45.49% |
| % Disbursed exc DA | 22.27% | 36.36% | 23.14% | 74.37% | 32.61% | 39.19% | 0.00% | 34.65% |
| * Excluding the GEF agency fees of USD 1.88 mn | | | | | | | | |

Results Framework and Monitoring
INDIA: SUSTAINABLE URBAN TRANSPORT PROJECT

| Project Development Objective (PDO): The project's development objective (PDO) is to promote environmentally sustainable urban transport in India and to improve the usage of environment-friendly transport modes through demonstration projects in selected cities. | | | | | | | | | | | | |
|---|--------------------------|--|-----------------|----------|----------------------------|------|------|-----|-------|--------------------|---|------------------------------------|
| PDO Level Results Indicators* | Core | D=Dropped C=Continue N= New R=Revised | Unit of Measure | Baseline | Cumulative Target Values** | | | | | Frequency | Data Source/ Methodology | Responsibility for Data Collection |
| | | | | | YR 1 | YR 2 | YR 3 | YR4 | YR5 | | | |
| Indicator One: The number of cities that develop an identifiable urban transport planning process (i.e., managed by professional units of government, following certain procedures and guidance, and involving various levels of analytical work and stakeholder's participation) increases, by project end | <input type="checkbox"/> | <i>Dropped</i> | | 0 | | | | | 6.00 | Annual Reports | Monitoring of progress with NUTP implementation in NURM | PMU |
| Indicator One: Number of cities that adopt environmentally friendly Urban Transport practices and approaches provided by the project | <input type="checkbox"/> | New | | 0 | | | | | 6.00 | Annual Reports | Monitoring of progress with NUTP implementation in NURM | PMU |
| Indicator Two: Hubli Dharwad: Public transport mode share increases | <input type="checkbox"/> | Revised | Percent | 30.00 | | | | | | Ex-post evaluation | Household Survey – on sample basis | PIU |
| | | | | | | | | | 33.00 | | | |

| | | | | | | | | | | | | |
|---|--------------------------|----------------|---------|-------------------|--|--|--|--|-----------|---------------------------|------------------------------------|-----|
| Indicator Three: Pimpri: Modal share by public transport increases | <input type="checkbox"/> | Continue | Percent | 4.2% | | | | | 8% | Ex-post evaluation | Household Survey – on sample basis | PIU |
| Indicator Four: Naya Raipur: Public Transport trip mode share between Raipur and Naya Raipur increases | <input type="checkbox"/> | Revised | Percent | 0% | | | | | 50% | Ex-post evaluation | Household Survey – on sample basis | PIU |
| | | | | | | | | | 35% | | | |
| Global Environmental Objective Indicators | | | | | | | | | | | | |
| Indicator One: The number of cities that develop an identifiable urban transport planning process (i.e., managed by professional units/institutions of government, following certain procedures and guidance, and inv | <input type="checkbox"/> | <i>Dropped</i> | Number | 0 | | | | | 6 | | | PMU |
| Indicator One: Number of cities that adopt environmentally friendly Urban Transport practices/approaches provided by the project | <input type="checkbox"/> | New | Number | 0 | | | | | 6 | Continuous | Monitoring of progress | PMU |
| Indicator Two: Mode Shares in Pimpri-Chinchwad, Naya Raipur, Hubli-Dharwad become more sustainable by Project end | | <i>Dropped</i> | Number | 4.2% 0% 30% | | | | | 8% 50% | Ex-post evaluation | Household Survey – on sample basis | PIU |
| Indicator Three: Forecast CO2 emissions over 10 years in the cities participating in Component 2 are at least 128,000 tons lower than BAU forecasts | <input type="checkbox"/> | Continue | Number | 0 | | | | | 128000 | Annual activity reporting | Primary Surveys | PMU |

INTERMEDIATE RESULTS

| | | | | | | | | | | | | |
|---|--------------------------|----------------|------------|---|--|--|---|--|----------------------------|---------------------------|-------------------------------------|-----|
| Intermediate Result (Component One): | | | | | | | | | | | | |
| Revised Intermediate Result (Component One): | | | | | | | | | | | | |
| Intermediate Result indicator One: More states and cities develop strategies for implementing the urban transport reforms | <input type="checkbox"/> | <i>Dropped</i> | Number | 0 | | | | | 2 | Annual activity reporting | PMU activity report | PMU |
| Intermediate Result indicator Two: MOUD partners with states / cities to identify local issues and develop sustainable local solutions | <input type="checkbox"/> | <i>Dropped</i> | Number | 0 | | | | | 20 | Annual activity reporting | PMU activity report | PMU |
| Intermediate Result indicator One: MoUD partners with states/cities to develop capacity and support cities in sustainable local solutions | <input type="checkbox"/> | New | Number | 0 | | | | | 20 | Annual activity reporting | PMU activity report | PMU |
| Intermediate Result (Component Two): | | | | | | | | | | | | |
| Revised Intermediate Result (Component Two): | | | | | | | | | | | | |
| Intermediate Result indicator One: Pimpri: At project end, the BRT corridors developed in Pimpri will carry at least 75 percent of their anticipated ridership for that year | <input type="checkbox"/> | <i>Dropped</i> | Percentage | 0 | | | | | 75% of projected ridership | Ex-post evaluation | Passenger Boarding Account | PIU |
| Intermediate Result indicator One: Pimpri Chinchwad - Two BRT corridors are operational | <input type="checkbox"/> | New | Number | 0 | | | | | 2 | Ex-post evaluation | Site inspection and technical audit | PIU |
| Intermediate Result indicator Two: Naya Raipur – At least | <input type="checkbox"/> | Continue | Number | 0 | | | 1 | | 2 | Before and after reports | Site inspection and technical | PIU |

| | | | | | | | | | | | | |
|---|--------------------------|----------------|------------|------|--|--|----|--|--------------------------|--------------------------|-------------------------------------|-----|
| two Public Transport corridors are established and in operation between Naya Raipur and Raipur | | | | | | | | | | | audit | |
| Intermediate Result indicator Three: Naya Raipur – Safe sidewalks and cycle tracks are provided on the main roads of Naya Raipur | <input type="checkbox"/> | Continue | Km | 0 | | | 10 | | 36 | Before and after reports | Site inspection and technical audit | PIU |
| Intermediate Result indicator Four: Hubli Dharwad – One BRT corridor in operation and carrying 75% of project ridership. | <input type="checkbox"/> | <i>Dropped</i> | Percentage | | | | | | | Before and after reports | Primary Survys | PIU |
| Intermediate Result indicator Four: Hubli Dharwad – BRT corridor is operational | <input type="checkbox"/> | New | Text | | | | | | All civil works complete | Before and after reports | Site inspection and technical audit | PIU |
| Intermediate Result indicator Five: Hubli Dharwad – Safe pedestrian access to BRT | <input type="checkbox"/> | Revised | Number | 0.00 | | | | | | Before and after reports | Site inspection and technical audit | PIU |
| | | | | | | | | | 22.00 | Before and after reports | Site inspection and technical audit | PIU |
| Intermediate Result indicator Six: Mysore - ITS systems and units are installed, functioning, and utilized at Mysore for at least 80% of their intended of revenue vehicle kilometers of service by project end. | <input type="checkbox"/> | Continue | Percentage | 0 | | | | | 80 | Monthly | Progress reports | PIU |
| Intermediate Result indicator Seven: Indore - ITS systems and units are installed, functioning, and utilized at Indore for at least 80% of their intended of revenue vehicle kilometers of service by project end. | <input type="checkbox"/> | Continue | Percentage | 0 | | | | | 80 | Monthly | Progress reports | PIU |
| Intermediate Result indicator Eight: - Roads constructed, non-rural | <input type="checkbox"/> | <i>Dropped</i> | Kilometers | 0 | | | | | 2.5 | Before and after reports | Site inspection and technical audit | PIU |

| | | | | | | | | | | | | |
|--|--------------------------|-----|------|--|--|--|--|--|-------------------------------------|-----------------------------|---|-----|
| Intermediate Result indicator Nine: Mysore PBS - PBS system installed and functioning | <input type="checkbox"/> | New | Text | | | | | | PBS installed and functioning | Before and after reports | Site inspection and technical audit | PIU |
|--|--------------------------|-----|------|--|--|--|--|--|-------------------------------------|-----------------------------|---|-----|

***Please indicate whether the indicator is a Core Sector Indicator (see further <http://coreindicators>)**

****Target values should be entered for the years data will be available, not necessarily annually.**