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

Seventeenth Implementation Support Mission
(April 3 - 22, 2016)

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, held discussions with Mysore KSRTC officials and Mysore MCC officials in Bangalore through videoconferencing and with Indore AICTSL officials through audioconference. The Mission also joined the DEA Portfolio Review on 8 April 2016 in Lucknow and the Stakeholder Workshop organized by MoUD to present the Guidance Documents being developed for Model Contracts for Private City Bus Operations. 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

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 27 April 2016. Subsequently, Mr. Bhaskar Dasgupta, Director DEA, was debriefed on 28 April 2016. The summary of Mission highlights include the following:

- **Overall Project** - Over 80 percent of the IBRD funds are committed and roughly 15 are under procurement in Hubli Dharwad. Land acquisition is progressing in Hubli Dharwad and will now require careful attention for completing the balance difficult sections. In Pimpri-Chinchwad, meanwhile, besides the pending resettlement of displaced persons, it seems that compensation payments are inordinately delayed in many instances adding to the seriousness of non-compliances. Safeguards rating is accordingly downgraded to ‘Unsatisfactory’ and will be considered for an upgrade once these have been tended to.
- **Component IB** - The TA and training activities are progressing satisfactorily.
- **Pimpri-Chinchwad** – The launched BRT Corridor 2 and Corridor 3 continue to show increasing ridership. PCMC and PMPML need to focus on the emerging operational issues

1The mission comprised of Nupur Gupta (Sr. Transport Specialist and Task Team Leader), S. Krishnamurthy (Sr. Financial Management Specialist), I. U. B. Reddy (Sr. Social Development Specialist), Satyanarayan Panda (Procurement Specialist), Gaurav D. Joshi (Sr. Environmental Specialist), Raman Krishnan (Sr. ICT Policy Specialist), Sona Thakur (Sr. Communications Officer), Sujit Das (Consultant – Transport Engineer), Gerhard Menckhoff (Consultant – BRT), Brendan Finn (Consultant – Public Transport), Kartik Ta (Consultant – Structural Engineer) and Genevieve M. Dutta (Program Assistant).
(passenger access, traffic engineering and traffic signal phasing, bus bunching etc.) to ensure successful BRT operations and launch of the most complex Corridor 1. Corridor 4 will require until end 2016 for completion of Empire Estate flyover. The long pending LA R&R issues and non-compliances require priority attention and resolution.

- **Naya Raipur** – NRDA has resolved the issue of financing of buses and with this the linked activities of ITS installations, Service Plan finalization and hiring of operator can be initiated.

- **Hubli-Dharwad** – Bids are under evaluation for the ITS and procurement is being initiated for Dharwad Terminal and station doors. There is steady progress in land acquisition. Construction packages require tighter oversight and supervision.

- **Indore** - In Indore ITS bid process is ongoing and running behind schedule.

- **Mysore ITS** – KSRTC is now beginning to realize the benefits of the ITS Project. However, the maintenance support being extended to the project by the vendor has been found wanting. The next Knowledge Exchange Workshop on ITS in Public Transport is proposed to be held in Mysore on 30-31 May, 2016.

- **Mysore PBS** – PBS procurement has been completed and the implementation is ongoing.

- **Project Management** – MoUD has provided a six month extension to the PMC contract which will now end in September 30, 2016. The procurement of the PMC until project completion must be completed within this timeline to ensure continuity of services.

### II. Key Project Data

<table>
<thead>
<tr>
<th>Key Project Data</th>
<th>Current Ratings and Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Date</td>
<td>Dec 08, 2009</td>
</tr>
<tr>
<td>Effectiveness Date</td>
<td>May 05, 2010</td>
</tr>
<tr>
<td>Closing Date</td>
<td>March 31, 2018</td>
</tr>
<tr>
<td>GEF Grant IBRD</td>
<td>US$ 18.45 mn, US$ 105.23 mn</td>
</tr>
<tr>
<td>Disbursed Amount</td>
<td>GEF $9.86 mn, IBRD $47.0 mn</td>
</tr>
</tbody>
</table>

**Problem Flags**:
- **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

4. The following actions have been discussed and agreed:

<table>
<thead>
<tr>
<th>Actions to be Completed</th>
<th>By when</th>
<th>By whom</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Signing of amendments from last Restructuring</td>
<td>Immediate</td>
<td>DEA/MoUD</td>
<td></td>
</tr>
<tr>
<td>Submit Progress Reports; Contract wise physical &amp; financial progress</td>
<td>May 10, Jun 10, Jul 10</td>
<td>PMU &amp; PIUs</td>
<td></td>
</tr>
<tr>
<td>Submit Progress Updates on PCMC Action Plan for Safeguards</td>
<td>May 15, May 31, Jun 15, Jun 30</td>
<td>PMU/PCMC</td>
<td></td>
</tr>
</tbody>
</table>
| Audit
  a) Internal audit Report for all PIUs | May 31 | MoUD/PMU |
  b) Entrustment of audit of MCC PIU by CAG to State AG | Jul 31 | MCC/DULT |
| Component IB
  i) Finalise Guidance Docs for PCIB1, PCIB2, PCIB3 | May 31 | MoUD/PMU |
  ii) GHG Emissions Study for Mysore PBS initiated | May 31 | MoUD/PMU |
<table>
<thead>
<tr>
<th>Actions to be Completed</th>
<th>By when</th>
<th>By whom</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(iii) Initiate Procurement of Accessibility Study</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corr 2: Redesign geometrics and traffic signal control on key intersections and improve pedestrian access</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corr 3: Submit traffic management plan for Bhonsari Terminal</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corr 1: Submit intersection traffic engineering designs including signal phasing &amp; geometrics</td>
<td>Jun 10</td>
<td></td>
<td></td>
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<tr>
<td>Complete ETM installation at depots for Corridor 3/ All</td>
<td>Apr 30/Jul 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit Acceptance Test Plan/ Complete ITS operational acceptance</td>
<td>Apr 30/May 31</td>
<td></td>
<td></td>
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<tr>
<td>Initiate off board collection study procurement</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extend PMC contract for Corridor 3 &amp; 4</td>
<td>Immediate</td>
<td>PCMC</td>
<td></td>
</tr>
<tr>
<td>Submit revised design options for 2 ramps at Empire Estate intersection</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close monitoring of Empire Estate contract – ensure Railway clearance to RoB erection plan and time block &amp; completion of spans across river prior to monsoon</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete shifting of transit camp PAPs to permanent houses</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion allotment of EWS housing to all eligible people and decide on support to those ineligible people for EWS housing and affected small businesses</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure compensation disbursement to all titleholder on Corr 3&amp;4 where general award was passed – first batch/ All</td>
<td>May 15/ Jun 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure compensation/ TDR issuance to those landowners directly negotiated with PCMC – first batch/ All</td>
<td>May 15/ Jun 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete all LA R&amp;R activities</td>
<td>Jun 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submission of Action Taken Report on remaining quality related issues</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define itemized schedule and action plan to complete works at and around Railway Stn</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define itemized schedule and action plan to complete works at and around Old Sect</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit balance designs for footpath @ Railway Stn; pedestrian crossing on GE Road; BRT stop@ Telibandha etc.</td>
<td>May 15/ Jun 15</td>
<td>NRDA</td>
<td></td>
</tr>
<tr>
<td>Share review of access roads &amp; circulation plan at Old Secretariat</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete procurement of bus operator</td>
<td>Jul 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete works, ITS installation per plan</td>
<td>Apr 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit final report on BRT feeder routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actions to be Completed</td>
<td>By when</td>
<td>By whom</td>
<td>Status</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>----------</td>
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</tr>
<tr>
<td>Submit draft Business Plan</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finalise Fare Policy</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit revised BRT Lite implementation schedule</td>
<td>Apr 30</td>
<td></td>
<td></td>
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<tr>
<td>Develop a Communications &amp; Outreach Plan for BRT Lite</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Complete social impact assessment and mitigation for Old Secretariat site</td>
<td>May 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete outstanding environment issues highlighted</td>
<td>Apr 30</td>
<td></td>
<td></td>
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<tr>
<td>Issue Jubilee circle terminal bid doc</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit select intersection traffic engineering and signal design plans</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit ITS BER</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sign contracts for Traffic Mgmt/ RoB for Mitra Samaj</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit BRT Service Plan options</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extend consultancy contracts for (i) construction PMC (ii) ITS PMC (iii) Comm &amp; Outreach</td>
<td>May 15</td>
<td></td>
<td>HDBRTS</td>
</tr>
<tr>
<td>Ensure media engagement on (i) HDBRTS progress (ii) Green BRTS implementation (iii) Bus fuel issue</td>
<td>Continuous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation Award to all villages/Towns</td>
<td>Jun 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Update Green BRTS Impl Plan</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclose Env Audit Report</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finalize driving simulator bid</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Workshop on ITS</td>
<td>May 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit update on compliance</td>
<td>May 30-31</td>
<td></td>
<td>Monthly</td>
</tr>
<tr>
<td>Issue ITS pre-bid clarifications &amp; addenda/Submit BER</td>
<td>Apr 30/ Jun 30</td>
<td></td>
<td>Indore</td>
</tr>
<tr>
<td>Entrustment of statutory audit of PIU of MCC to the state AG</td>
<td>Jul 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit Revised Location photos &amp; confirmation of no impacts</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit Acceptance Test Plan</td>
<td>Apr 30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:

- Number of environmentally friendly urban transport practices and approaches provided by the project that are adopted by cities.
- 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 270 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 and adoption of good practices and approached in Indian cities.

7. Among the city demonstration projects, the Mysore ITS project implementation is complete and they are beginning to use the available data for improving the operating performance of the service and providing timely information to users on expected time of arrival. The other city demonstration projects, Pimpri-Chinchwad, Naya Raipur, Hubli-Dharwad and Indore are in various stages of implementation. BRT operations are ongoing on Corridor 2 and 3 in Pimpri-Chinchwad and Corridor 1 is proposed for launch in second half of 2016, however, Corridor 4 is likely to be delayed to early 2017; In Naya Raipur, the BRT Lite is expected to be launched by end 2016; In Indore, with rebidding and roughly a year to implement mid 2017 is likely date of completion; HDBRTS will require additional time for completion until end 2017; Mysore PBS implementation is expected by end 2016. The PDO is expected to be achieved within the extended closing timelines. The PDO risk rating is accordingly rated ‘Moderately Satisfactory’.

V. Current Implementation Progress

8. Overall Status: The Mission rates the overall project progress as Moderately Satisfactory. 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 and resettlement is also well advanced. The progress on awarded construction contracts requires improvement. However, with the necessary additional time the Project is likely to be completed within its revised timelines.

| Status of Contract Award and Procurement in Numbers and Value in US$mn for IBRD |
|---------------------------------|----------------|----------------|----------------|----------------|
| | Awarded | Under Procurement | To be Initiated | Total |
| PCMC | 2 | 36 | 0 | 0 | 0 | 2 | 36 |
| NRDA | 3 | 14 | 0 | 0 | 0 | 3 | 14 |
| HDBRTS | 8 | 35 | 2 | 15 | 1 | 5 | 11 | 55 |
| Total | 13 | 85 | 1 | 13 | 1 | 7 | 16 | 105 |
| | 80% | 15% | 5% | 100% |

9. The city-wise status of disbursement under the loan and grant is provided below.

Disbursement Status (US$ million)
<table>
<thead>
<tr>
<th>City</th>
<th>Amount Disbursed (Loan)</th>
<th>% disbursed</th>
<th>Amount Disbursed (GEF)</th>
<th>% disbursed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1B</td>
<td>-</td>
<td>-</td>
<td>3.33</td>
<td>54.15%</td>
</tr>
<tr>
<td>Pimpri-Chinchwad</td>
<td>30.68</td>
<td>86.23%</td>
<td>1.00</td>
<td>52.63%</td>
</tr>
<tr>
<td>Naya Raipur</td>
<td>6.82</td>
<td>48.92%</td>
<td>1.27</td>
<td>66.84%</td>
</tr>
<tr>
<td>Indore</td>
<td>-</td>
<td>-</td>
<td>0.79</td>
<td>41.36%</td>
</tr>
<tr>
<td>Mysore KSRTC</td>
<td>-</td>
<td>-</td>
<td>2.24</td>
<td>89.96%</td>
</tr>
<tr>
<td>Hubli-Dharwad</td>
<td>9.51</td>
<td>17.15%</td>
<td>1.11</td>
<td>44.25%</td>
</tr>
<tr>
<td>Mysore MCC</td>
<td>-</td>
<td>-</td>
<td>0.12</td>
<td>7.80%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>47.01</td>
<td>44.67%</td>
<td>9.86</td>
<td>53.42%</td>
</tr>
</tbody>
</table>

**Component 1B**

Implementation Progress: *Moderately Satisfactory*

10. 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 this is updated in the table below.

**Status of Activities under Component 1B**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Activity</th>
<th>Committed Amount (Rs. Million.)</th>
<th>Status Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Development of a structure and an operations manual for UMTA; Business Plan for Urban Transport Fund</td>
<td>24,150,000</td>
<td>Stakeholder Workshop held to finalize the UMTA &amp; UTF guidelines and draft Bill. City specific workshops complete.</td>
</tr>
<tr>
<td>2</td>
<td>Development of a standard architecture and plan for ITS and Traffic Management Center</td>
<td>20,070,000</td>
<td>TMICC and NUTH generic documents finalized with balance minor edits and proofing. City specific reports finalized and workshops conducted.</td>
</tr>
<tr>
<td>3</td>
<td>Development of a model NMT action plan, bike sharing plan and TOD Guidelines</td>
<td>27,830,000</td>
<td>Guidance documents for ToD in final stages, and for NMT and PBS being finalized. All city reports submitted and workshops complete.</td>
</tr>
<tr>
<td>4</td>
<td>Development of a Research Program</td>
<td>5,530,000</td>
<td>Final operations manual pending MoUD approval.</td>
</tr>
<tr>
<td>5</td>
<td>GHG Emissions reduction assessment</td>
<td>28,650,000</td>
<td>City specific Draft Final Reports under review. Emission estimates being revised. Mysore PBS yet to be added to scope.</td>
</tr>
<tr>
<td>6</td>
<td>Leaders Program</td>
<td>135,000,000</td>
<td>270 officials trained</td>
</tr>
<tr>
<td>7</td>
<td>Impact Evaluation Study for the Bus Procurement under JnNURM</td>
<td>33,300,000</td>
<td>Activity excessively delayed; quality issues</td>
</tr>
<tr>
<td>8</td>
<td>Model Contract Agreements with Private Bus Operators &amp; Guidelines for City Bus Services</td>
<td>5,400,000</td>
<td>Draft generic guideline and model contracts being finalized following Stakeholder Workshop. City specific contract documents prepared.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Budget (in Rupees)</td>
<td>Status</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Preparation of GEF5 Project</td>
<td>11,230,000</td>
<td>Activity extension processed; documents still not finalized</td>
</tr>
<tr>
<td>10</td>
<td>National Communications Campaign on Sustainable Urban Transport</td>
<td></td>
<td>Activity under review</td>
</tr>
<tr>
<td>11</td>
<td>Accessibility Study</td>
<td>25,000,000</td>
<td>ToR under preparation; procurement yet to be initiated</td>
</tr>
<tr>
<td>12</td>
<td>Workshops</td>
<td>30,000,000</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

11. In a nutshell:
- The Research Program design and operations manual has been finalized and awaiting MoUD go ahead for initiating the Research Program.
- Guidance Documents covering seven topics (UMTA, UTF, ToD, NMT Masterplan, TMICC, NUTH, contracting Private Bus Operations) are in draft final stages, and expected to be finalized over the next few months.
- The Impact Evaluation Study on the Bus Funding scheme is excessively delayed and there are serious quality issues on account of non-availability of technical experts on the team.
- The quality of the GHG emissions study also requires improvement and the Mysore PBS project which was included into SUTP last year will also require similar analysis as per GEF requirement.
- The procurement of the Accessibility Study is delayed and needs to expedited.

Component IA

12. Activities under this component are supported / funded by UNDP. These mainly include:
- Business Plan for IUT - Completed
- 10 Urban Transport Planning Manuals - Completed
- 10 Training Toolkits - Completed
- Dissemination Activity - Ongoing
- Development of the National Urban Transport Knowledge Management Centre - Ongoing

13. The Toolkits and Training Modules have been prepared and training is ongoing. The development of the Urban Transport Knowledge Management Centre is substantially complete and a workshop to share its functioning and utility is proposed. The approach being taken is to complete data population process for all the 50 cities as the data source is now limited to CMPs. Simultaneously, data validation is being done at the Institute of Urban Transport (IUT). The license agreement between MoUD and SAP in now in place. Further, it was found that the team in IUT is not in place to take over the KMC from UMTC. 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 loose 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.

Component 2: City Demonstration Projects
Implementation Progress: **Moderately Satisfactory**

<table>
<thead>
<tr>
<th>Project Rating: Implementation Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pimpri</td>
</tr>
<tr>
<td>Naya Raipur</td>
</tr>
<tr>
<td>Hubli-Dharwad</td>
</tr>
<tr>
<td>Mysore</td>
</tr>
<tr>
<td>Indore</td>
</tr>
<tr>
<td>Overall Project</td>
</tr>
</tbody>
</table>

(i) **Pimpri-Chinchwad**: Physical progress of works in BRT Corridor 3 is about 88%. BRTS has been commissioned in this Corridor on November 28, 2015. The BRT lane is exclusive except for a length of 260 m where construction works are ongoing. Pedestrian Facilities for travel between ground level on Mumbai-Pune Highway (NH4) and Corridor 3 at higher level are awarded and likely to be ready not earlier than early-2017 which means that this important connection will not be available for sometime after the launch of Corridor 1. The remaining Ramp 2 under this contract (delayed due to non-availability of land and subsequent design changes) is likely to be completed by early-2017. PCMC however needs to get some land into its possession for construction of Ramp 2 on Mumbai side. Meanwhile, it will be important for PMPML to increase the number of routes and buses plying on this corridor for its potential to be achieved.

Physical progress of all contracts combined together in BRT Corridor 4 is about 69%. Land is yet to be available for about 1.06 km of length. There is no likelihood of the full length of BRT Corridor being available for plying of Buses prior to early-2017. Progress in the Bank-financed Contract III (Empire Estate Flyover) has been unsatisfactory but appears to be picking up. The progress in this contract can be assessed as about 65-70% of the Value of Works excluding two Ramps which are on hold now. The Contractor has targeted to complete all works except the two Ramps by October 2016. PCMC needs to resolve all remaining land issues. At its current pace of progress the grade separator may not be ready before March 2017. 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 78% of likely Completion Cost. The Contractor’s progress remains slow. However, they now propose to complete the works by June 30, 2016. The resolution of the funding issue of buses means that activities held up such as ITS installations, procurement of bus operator etc. can now be planned and initiated. Works progress in the contract for Non-Motorized Transport Infrastructure (Construction of Cycle Tracks, Walkways, etc), started in March 2014 with a 15 months completion period, is at about 65% of the likely Completion Cost. It would require until July 31, 2016 for completion. It should be possible for NRDA to launch the BRT Lite by end 2016, provided they ensure timely completion of civil works, bus delivery, ITS installation, finalization of service plan and hiring of private operator.

(iii) **Mysore**: The ITS system for Mysore city bus is now performing well and in the operations phase. Issues around vendor support for maintenance and spares need to be resolved by KSRTC.
Indore: Rebidding has been initiated, however, there have been long delays by AICTSL in finalizing its prebid responses and addenda.

Hubli-Dharwad: Indian Rupees (INR) 591 million worth of works (about 30%) out of total about INR179 million of works (being financed by the Bank) has been carried out in 10 contracts of Depots, Workshops, Terminals, Bus Stations, Foot Overbridges, Walkways, etc being implemented by Hubli Dharwad BRTS Company Limited (HDBRTSCL). Nine contracts are ongoing, and their progress varies between 47% and 1.5%. Progress of all ongoing contracts is slow, overall about 9% only in last 4 months (December 2015 to March 2016). There are still several issues related to availability of construction site, finalization of construction locations and traffic diversion plan in consultation with Traffic Police and finalization of drawings. All Contractors are required to augment their resources and vigorously progress the works for early completion. Optimistically, the works being implemented by HDBRTSCL are likely to be completed in 2nd half of 2017.

Road works along Hubli-Dharwad BRT Corridor are being implemented through Karnataka Road Development Corporation Limited (KRDCL). KRDCL had taken up works of 4-laning the Corridor (not financed by the Bank), only 30% of which could be implemented. KRDCL is now implementing remaining about 8.7 km of 4-laning works (exclusive BRT Corridor), construction of Mixed Traffic Lanes, Three Flyovers and Two Road over Rail Bridges (RoBs) along the Corridor of total worth about INR269 million (not financed by the Bank) under Four contracts. Two contracts are ongoing (progress is about 5% and 27%), although large parts of the sites could not be handed to the Contractors yet due to encumbrances. Letter of Acceptance (LoA) is likely to be issued for other Two contracts in April 2016.

It appears that all Works under the BRTS Project including the exclusive BRT Corridor optimistically can be completed in 2nd half of 2017.

Mysore PBS: The implementation is ongoing and the trial run is expected to be launched over the next three four months.

Details of the discussions with each of these cities are provided in Annex 2-7.

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 key challenge faced by PCMC in managing social impacts are: (i) inordinate delays (about 4 years) in shifting of remaining about 50 residential families to EWS housing; (ii) resolving the compensation issue for about 20 small business; (iii) completion of associated land acquisition for a stretch of about 1.0 Kms at Khaledwadi along corridor 4 after shifting the people residing on the corridor; and, (v) finding a satisfactory resolution on rehabilitation of affected industrial units in 60 meter stretch in Corridor 4 (pending for more than two and half years). In addition, shifting of 144 families who are residing in transit housing for more than5 years against the originally envisaged period of 18 months amount is affected due to delays in undertaking the repairs to the building where people are planned to be shifted. PCMC has missed all previously assured target dates in addressing the above pending issues.

15. The project is also witnessing non-compliances with policy provisions related to land acquisition and compensation payment. A large number of land owners are yet to receive compensation. In addition, about 150 land owners whose lands are acquired through private negotiations and taken lands on advance possession were also yet to be paid compensation. Due
to the non–compliances mentioned above in payment of compensation, inordinate delays in shifting of displaced families from transit to permanent housing and uncertainties in decision making related to payment of compensation for affected assets as well as completing the remaining land acquisition, the safeguards management rating is downgraded to “Unsatisfactory”.

16. Pimpri-Chinchwad - Flyover contract on Corridor 4 (Kalewadi Phata-Dehu Alandi Road): Since start in April 2011, the progress is only 56.6% (in monetary terms) of revised contract amount until 27 March 2016. The Contractor made changes in its Contract Management Team around mid-November 2015, which has resulted in some improvement. Progress since the last Bank Mission, as reported, has been 7.3% (in monetary terms) of Value of Works (excluding Components V and VI) in about 4 months from 01 December 2015 to 27 March 2016. For Bridge across River Pawana, in last four months, only one Superstructure Span has been cast and four Spans are still remaining to be cast. The Agency is presently erecting the temporary structures for the Fifth superstructure span (out of a total of Eight Spans). The Contractor now expects to cast two more Superstructure Spans by end of May 2016, which will require very efficient performance compared to last four months. The Contractor has not submitted yet its erection plan for the Superstructures for the Road over Rail Bridge (RoB) for clearance from the Railways including from Railway Safety wing. This has a potential of delay in completion of the RoB, if the Railways’ clearance for Superstructure Works cannot be obtained in time. The Contractor has submitted to PCMC in March 2016, a Work Program showing Completion (except for Components V and VI) by October 2016 and sought Extension of Time (EoT) until October 2016. Completion in October 2016 is feasible provided PCMC can resolve all remaining land issues and PCMC & the Contractor can obtain the Railways’ Clearance of its Superstructure Erection Scheme for the RoB efficiently and the Contractor can scale up its progress suitably.

17. Pimpri-Chinchwad – BRT Launch and Coordination among key stakeholders: Two BRT corridors have been launched in Pimpri-Chinchwad – Corridor 2 in September, 2015 and Corridor 3 in November, 2015. While overall there has been a strong positive public response to the launched BRT corridors, the ridership has grown and there is a sense that there are time savings, there are still several issues that require attention to improve the overall performance of the system and the experience of the users. These are in the areas of (i) ITS and passenger information systems, (ii) Traffic signal phasing which is resulting in lack of priority to the BRT and delays (iii) major intersections with poor geometry making passenger access unsafe (iv) problems with station doors and bus doors (vi) issues of bus bunching (vii) large gaps in bus docking, (viii) poor pavement quality and road markings in several sections and issues of cleanliness around stations (ix) need for fare rationalization, launch of e-ticketing and off board fare collection, etc. The resolution of these will require the concerted efforts of different departments (engineering and electrical) within PCMC, PMPML and the Traffic Police. The Mission was concerned to note that there was no noticeable progress on these highlighted matters from previous missions. The Mission reiterates its earlier recommendation for jointly developing a time-bound implementation schedule capturing all the actions and its close monitoring by the key stakeholders. Without this close coordination ensuring prompt action and resolution on emerging issues would remain difficult and this lack of attention to details may be especially costly for Corridor 1 which is proposed for launch next.

18. Hubli-Dharwad – Land Acquisition & Resettlement Progress: The key result indicators performance for social safeguards is 83% indicating that substantial progress has been made to reach the end of project target of 100% (number of project affected families receiving compensation and R&R assistance). The land acquisition and resettlement implementation is progressing steadily. As on date, 87% of 26 acres private land acquisition is completed and 82% of land owners have received the compensation. The progress in payment of R&R assistance is
about 84% the remaining land acquisition and payment of R&R assistance is expected to be completed shortly, with more than 3 years delay against the planned date of April, 2013.

The key challenges in land acquisition include: (i) completion of awarding remaining 6 acres of private land due to resistance from shopkeepers in Dharwad; (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; (iii) handing over of remaining about 50% of road length to the contractor of mixed traffic lanes construction due to pending removal of encumbrances; and (iv) seeking additional budget of about INR. 800 for the remaining land acquisition form the Government. More details are provided in Annex2.

19. **Works Contract implementation progress and launch of BRT**: The progress on the awarded works packages is slow and at about 30 percent for Bank funded packages. The progress was a roughly 9% in the last four months which is still far short of the expected 10% per month. Contracts PW-8 and PW-9 (same Contractor) are performing specifically poorly. Unless this Contractor revamps its all sites urgently with required resources, HDBRTSCL may consider taking contractual remedial action. Bids for the tenth one (Construction of Terminal at Mitra Samaj) is likely to be invited by end-April 2016. Presently, the main issues are: (a) Completion of Land Acquisition / Transfer and Resettlement, and Relocation of Utilities, (b) Approval of Design and Drawings for the RoBs from the Railways, and KRDC to pay Supervision and Maintenance charges for the RoBs to Railways, (c) Invitation of Bids and Award of Works Contract for Construction of Terminal at Mitra Samaj, (d) Timely decision and issuance of drawings by HDBRTSCL and its Design Consultant, and (e) all Contractors required to vigorously progress the works for early completion.

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, , (b) Relocation of Utilities on main corridor, (c) Invitation of Bids and Award of Works Contract for Terminal at Mitra Samaj, (d) issuance of letter of award for RoB and construction of remaining 8.7 kms of 4-laning (exclusive BRT Corridor), (e) Timely decision and issuance of drawings by HDBRTSCL and its Design Consultant, and (f) all Contractors required to vigorously progress the works for early completion. (g) Traffic signal designs for all major intersections and hiring of vendor for implementation, (h) completion of hiring of ITS vendor. Based on current assessment the BRTS cannot be completed before end 2017.

21. **Naya Raipur - Works Contracts Progress & Quality**: 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 78% of likely Completion Cost in 180% of the contract life. The Contractor’s progress remains slow and they now propose to complete the works by June 30, 2016. Works progress in the contract for Non-Motorized Transport Infrastructure (Construction of Cycle Tracks, Walkways, etc), started in March 2014 with a 15 months completion period, is at about 65% of the likely Completion Cost in 160 percent of contract life. It is estimated that it would require until July 31, 2016 for completion. NRDA has initiated the process for addressing the lapses in the construction works quality identified in the previous missions. However, the testing formalities in regard to the deck slab in the NMT package need to be expedited for an early diagnosis for the the source of the cracks so that suitable mitigation measures can be adopted. NRDA agreed to have the tests conducted in a NABL accredited laboratories at the earliest. It was observed that on the Team Leader of the Project Management Consultants had been changed and the quality of supervision support was not as per expectation.
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. With the issue around the financing of Buses resolved and delivery expected over the next 60-120 days, the service plan and business plan is being finalised, the ITS vendor is gearing up for ITS installations, and hiring of private operator has been initiated. In addition, access improvements need to be taken up around the major pick up points, and a new point developed at Telibandha chowk and Gadhi chowk. The Mission advised NRDA to ensure speedy completion of all modalities related to finalization of the bus delivery schedule. If these multiple activities can be coordinated and managed the BRT Lite service could be launched by year end.

23. **Indore BRT ITS Delays:** The procurement of ITS for the Indore BRT has been re-launched, however the process is moving extremely slowly. The clarifications and amendments from the prebid meeting held on January 28, 2016, have still not been finalized and issued. There are concerns that Indore may lose the Government of India funding it had secured as part of NURM as that window is only available until March 2017.

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 is operationally accepted the Mission noted with concern that delays in rectifying issues and availability of spares remained unaddressed by the vendor, leading to non-compliances with laid down SLAs and worse still, a poor operating performance of the system. This was discussed in detail with Mssrs. TCS and they have confirmed that the spare parts issue will be resolved by month end and the long pending route cause analysis around the VMU fuse and other issues would be taken up immediately to find solutions which can be sustained.

### VII. Safeguards – Environment and Social Management

Safeguards Rating: **Unsatisfactory**

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<th>Project Rating: Safeguards</th>
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#### Environment Management

25. The project performance on environmental aspects is currently rated as Moderately Satisfactory as there are some improvements in the situation on site safety in some locations. However, issues around environmental aspects of construction management, as well as safety of both workers and other users of the facilities continue to affect full implementation of the EMP. City-wise summaries follow with details in respective city-wise Annexes.

26. **Naya Raipur:** The implementation of EMP provisions has slipped across both Works contracts. For the BRT infrastructure contracts, the issues are around safety of personnel – inadequate personal protective equipment and hazardous situations like electric shock vulnerability mar the sites which mostly are restricted for use by public. For the NMT works, inappropriate disposal of waste concrete and wash water from the mixers were observed during
the visit. In addition, mixing of asphalt and soil where new cycle track is being laid was also observed. While the contractor is procuring asphalt from duly licensed supplier, the issue of handling the wasted material needs to be managed properly. The mission agreed that NRDA should confirm the extent to which such material can be used in filling up shoulders, a key pending activity so that there is less quantity required for disposal.

27. At the pick-up point in the old Mantralaya site, the trees around the site have been now protected well, with good soil to cover roots and a low all to prevent direct collisions. The mission also advised NRDA to confirm that the arrangements have been made for safe disposal of asbestos sheets that are used as wall material by the contractor for storage at the edge of the bus station site. It was agreed details will be provided about the same in the next QPR.

28. If improvements to accommodate improved passenger facilities are undertaken at Telibandha intersection, several trees would be impacted. It was agreed that the option of transplanting these in the vacant plot behind the current location of the bus-stop would be considered as a first option. This, however, requires close coordination with the Raipur Municipal Corporation and NRDA should start this dialogue early to avoid any surprises later.

29. The Regional Mobility Plan study report has been updated with latest data on air pollution. The changes to the results need to be discussed in the report with recommendations to factor in this potential impact of GHG emission reductions early in the decision making process. It was also agreed that the new set of assumptions made for the modeling undertaken would be explicitly stated in the documentation with the report to allow readers to make informed judgments.

30. **Hubli Dharwad:** Significant variations in contractor performance on safety – both for workers and other road users, continue to challenge the effective implementation of the EMP provisions for HDBRTSCo. Some contractors have shown significant responsiveness and improved their facilities. However, couple of persistent under performers continue to hamper significant progress on this important aspect. It was agreed that the HDBRTSCo will take serious action against continuously lagging contractors as per contract provisions and share the results as part of the QPR for June 30, 2016. In addition, HDBRTSCo will also increase the level of effectiveness of the coordination meetings between KRCL, both PMC teams assisting KRCL, Contractors working on the corridor, and HDMC to allow smooth and safe movement of people and traffic as construction progresses.

31. The mission also reviewed the extent of survival of plantation. After the initial shock just around 50% of saplings planted in the 1st year (2013) surviving, the survival rates are improving with around 80% survival maintained for the subsequent two years’ plantation. Currently, the project has already planted more saplings than trees cut for the improvements. By project end, it is expected that over 20,000 saplings will survive, in lieu of the about 4000 trees cut. There has been some damage to existing plantation that was saved by sensitive design of the layout. The mission urged HDBRTSCo to restrain the contractor from causing any unnecessary damage to the trees in the site.

32. The compliance of audit findings from last year is still not publicly disclosed, though HDBRTSCo believes it has already responded adequately to all the observations shared by the Independent Audit team. It was agreed that the full compliance report would be disclosed on the HDBRTSCo website before April 30, 2016.

33. While the bidding process for the Navanagar Rail Over Bridge is advancing, the mission reminded HDBRTSCo to confirm the extent to which debris from the road could be used for the embankment. It has been agreed that the necessary testing to determine suitability of
discarded/removed road material as fill would be completed by April 30, 2016 and reflected in the contract.

34. The Bank had already given its no-objection for the addendum to the EA documentation for Mitra Samaj location in advance of the mission. It also confirmed that if the connection to Dharwad Agricultural University is undertaken during project life, the environmental aspects would be duly considered and another addendum documenting impacts and selected mitigation measures would be shared with the Bank before any work is undertaken in that stretch.

35. **Pimpri Chinchwad:** The plantation along the completed BRT stretches, at the edges of the RoW and in the median, has been undertaken by PCMC Horticulture Department. This has shown good progress with high survival rates of around 85% in most stretches, except where people have either not allowed trees to grow or where there have been collisions. The PCMC has advantageously used the Durga Tekri area for additional plantation as blocks in previous years to compensate for the trees that could not be accommodated in the RoW. The survival rate for the block plantation is also quite high of 85-90%.

36. The provision of facilities for workers on the grade separators campsites, which have expanded to handle the higher speed of construction, need further improvement to bring it in line with EMP provisions. The mission has agreed that continued improvement in the stay, drinking water, and sanitation facilities for workers, and systematic planning for readiness to remove the diversion created in the Pavana River in advance of monsoon, would be reviewed in the 1st week of June, 2016. If there is strong progress on both these counts, then the project performance would be upgraded. However, this will require concerted effort between the Contractor, PCMC, and their consultants.

**Social Management**

37. **Pimpri-Chinchwad:** The progress noticed since last supervision mission in November, 2015 includes: (i) allotment of additional 25 EWS houses, (ii) commencement of repairs to alternative building for resettling those residing in Transit housing, and, (iii) additional self-contributions and approval of Bank loans toward self-contributions of beneficiary living in Transit housing. However, most of previously committed dates for resettlement of displaced families in Transit site is missed by PCMC. The key challenge faced by PCMC in managing social impacts are: (i) inordinate delays (about 4 years) in shifting of remaining about 50 residential families to EWS housing; (ii) resolving the compensation issue for about 20 small business; (iii) completion of associated land acquisition for a stretch of about 1.0 Kms at Khaledwadi along corridor 4 after shifting the people residing on the corridor; and, (v) finding a satisfactory resolution on rehabilitation of affected industrial units in 60 meter stretch in Corridor 4 (pending for more than two and half years). In addition, shifting of 144 families who are residing in transit housing for more than 5 years against the originally envisaged period of 18 months amount is affected due to delays in undertaking the repairs to the building where people are planned to be shifted. PCMC has missed all previously assured target dates in addressing the above pending issues. The project is also witnessing non-compliances with policy provisions related to land acquisition and compensation payment. A large number of land owners are yet to receive compensation and PCMC will confirm the actual number of land owners who are yet to receive compensation. In addition, about 150 land owners whose lands are acquired through private negotiations and taken lands on advance possession were also yet to be paid compensation.

38. Due to the non–compliances mentioned above in payment of compensation, inordinate delays in shifting of displaced families from transit to permanent housing and uncertainties in decision making related to payment of compensation for affected assets as well as completing the
remaining land acquisition, the safeguards management rating is downgraded to “Unsatisfactory”. In order to address the above shortcoming, the Bank Team has written to PCMC in attending the pending tasks in a time bound manner and take decisions to bring safeguards management into compliance status are summarized in Annex 3.

39. **Hubli-Dharwad:** The progress noticed since last supervision mission in November, 2015 includes (i) Payment of land acquisition compensation to about 100 additional land owners; (ii) R&R assistance to about 130 additional families and (iii) payment of pending R&R assistance to 16 displaced land looser families. The issue of Income tax deduction from compensation amounts is not yet resolved. As a result, the land owners are required to a pay a substantial amount towards income tax thus reducing their net compensation to below replacement costs. HDBRTS is following up with income tax authorities on this issue but no resolution has come through. The Project Management Consultants to the project have indicated that it will follow up with Ministry of Rural Development who is the nodal department for RTFCTLARR Act, based on the detail provided by HDBRTS Company. The mission interact with affected shop keepers due to the proposed Dharwad Bus Terminal, who indicated that they have been doing business at this place for more then 30-40 years and their displacement without adequate rehabilitation measures is likely to impoverish them as they are found to be medium sized shops with substantial income and also some of them have taken loans from the Banks to run their current businesses and they will not be able to re-pay instalments if they fail to reestablish their businesses. The Bank team suggested to discuss with individual shopkeepers and propose suitable measures. The overall social safeguard management is retained as “Moderately Satisfactory” and will be reviewed during next mission based on the further progress and compliance with policy provisions.

40. **Naya Raipur:** The NRDA has confirmed earlier that 3 small shops will be affected at old Mantralaya pick-up point and the shop keepers will be provided alternative pre-fabricated shops at the same site itself to ensure that their livelihood is maintained. However, the assessment of impacts at the existing point is not yet complete. The mission once again visited the site along with NRDA staff and noticed that some of houses and boundary walls including a temple will be affected to maintain a clear width of 7.5 meters wide road at the exit point. The NRDA agreed to undertaken the inventory of impacts coming within 7.5 meter width and propose measures to mitigate those impacts in line with policy provisions. The employment generated under two contracts is also being monitored. As on date 81,884 man days or 3412 man-months of unskilled employment has been generated since January, 2014 under the two ongoing contractors and out of these 62% are local labor and out of local labour 35% are women.

**Results Framework Indicators and Monitoring.** Following the restructuring of the project in November, 2015, two indictors related to land acquisition and resettlement were incorporated in the results Framework Matrix. The progress in implementation of these indicators is summarized below.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Baseline</th>
<th>End of project Target</th>
<th>Current status (March 31, 2016)</th>
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<tbody>
<tr>
<td>PCMC: Percentage of Displaced families that are resettled in alternative houses</td>
<td>217*</td>
<td>100.00%</td>
<td>47.00% (102 PAFs)</td>
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<tr>
<td>HDBRTS : Percentage of PAPs received compensation and R&amp;R assistance</td>
<td>1,162*</td>
<td>100.00%</td>
<td>83.73% (973 PAPs)</td>
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*current target and subject to change
VIII. Procurement, Expenditures and Disbursement Plans

41. **Procurement.** Mission noted that revised procurement plan from HDBRTS is received in Nov 2015, which is reviewed and returned with comments. HDBRTS is requested to submit the final procurement plan after complying with the comments. 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.

- MoUD as implementing agency has already finalized all consultancy contracts at their level. They need to monitor these contracts for timely completion.
- For PCMC, all the contracts are already awarded. However, due to inordinate delay in contract execution by Gammon India, the client had issued a show cause notice after which performance improved. PCMC will require strong contract management.
- For Mysore city, the DULT has finalized the tender for public Bike Sharing Project PBS and signed the contract.
- For Naya Raipur, all the contracts are already awarded including the procurement of ITS. Close monitoring from project side is required for their timely completion.
- HDBRTS had initiated procurement process for rebid of ITS as earlier tender for the same could not be finalized due to technical non responsiveness. The bid is already opened and under evaluation by the project. The project needs to process the case expeditiously for early finalization.
- Similarly AICTSL has rebid the ITS procurement for BRTS as earlier tender for the same could not be finalized due to technically non responsive bids. The project has to finalise the same on priority after opening.

42. For PPR16, the list of contracts awarded between 1st July 2014 to 30th June 2015 has already been received from implementing agencies and PPR is already conducted at HDBRTS office during the supervision mission. The PPR report will be shared with the client shortly for complying with the comments.

43. There is some progress made in procurement activities as compared with that in last mission, hence the overall procurement rating is upgraded to satisfactory from earlier MS with details as follows:

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<tr>
<th>Project Rating: Procurement</th>
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<td>Mysore ITS</td>
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<td>Indore</td>
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<td>Mysore PBS</td>
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<td>PMU-MoUD</td>
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<td><strong>Overall Project</strong></td>
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**Financial Management**

44. The disbursements (excluding advance) stands at 44.67% and 53.42% against IBRD and GEF respectively. The IUFR submission (last submitted till February 2016) is timely. The next
IUFR is expected to be submitted before May 15, 2016. The audit for all PIA’s pertaining to FY 14-15 have been submitted to the Bank and reviewed.

45. 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. On project audit, necessary actions needs to be initiated by MCC to ensure entrustment of project financial statement audit by June 2016. The internal audit report should be submitted by May 2016.

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

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<th>PIU</th>
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<td>Pimpri</td>
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X. Project Management

47. Project Restructuring. The Project Closing Date has now been extended to March 31, 2018. However, the countersignatures of DEA are now awaited and need to be expedited for the IBRD reallocations and changes to results framework to become effective.

48. 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 as major issues around land acquisition & resettlement, procurement, contract management and slow works progress continue. The Mission was pleased to note that the UNDP executed component covering project management costs has also been extended. While the PMC contract which closes in March 2016 has been extended until Sept 30, 2016, the rehiring of the PMC until the revised closing date needs to be expedited.

49. Knowledge Exchange Workshop on ITS in Mysore. The second knowledge exchange workshop on ITS is being scheduled on 30-31 May 2016, following the successful launch of the system in Mysore, to share learnings and exchange experiences among Indian cities.

50. Annual Meet. It is proposed to organize the next Annual Meet at Pimpri-Chinchwad where the BRT corridors are now in operation to facilitate knowledge exchange and cross learning among cities. This maybe organized around the next mission in August 2016.

XII. Next Mission for Bank’s Implementation support

51. The next mission is proposed to take place between **25 July to 8 August, 2016.**
Annex 1

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

List of Officials Met

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

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

8. Mr. Salil Srivastava, Chief Engineer, NRDA
9. Mr. L.K. Panigrahi, CPM SUTP, NRDA

10. Mr. Sandeep Soni, CEO, AICTSL

11. Ms. V. Manjula, Commissioner, Directorate of Urban Land Transport, Govt. of Karnataka
12. Ms. Deepa Cholan, Managing Director HDBRTS
13. Mr. Satyamurthy, Mysore City Corporation

14. Mr. Ramamurthy, DC, MCTD, KSRTC
15. Mr. Gururaj, KSRTC
INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Hubli-Dharwad

1. A World Bank mission visited Hubli-Dharwad on April 3-5, 2016 to discuss the implementation of the Hubli-Dharwad BRT project. The meetings were attended by Ms. V. Manjula, Commissioner, DULT; Dr. Deepa Cholan, Managing Director, HDBRTS Company; their teams and consultants; and representatives of the PMU and PMC.

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:** The transfer terminal at the northern end of the BRT will provide an operational turnaround for BRT buses and a final BRT station. Feeder buses will mostly use the nearby CBT and OCBS terminals. About 20% of the BRT buses may branch off and continue in mixed traffic towards the NWKRTC Regional Bus Terminal and thus provide a link with non-urban bus services. Some of those BRT buses could continue from there and serve the Agricultural University.

4. The selected terminal option will provide six loading bays (two for alighting, two for boarding, and two for both). In addition, there will be space in the same complex to permit the layover of four BRT buses. CEPT’s design envisages two levels for the terminal, due to the differential in terrain levels. The mission agrees that the proposed terminal could handle the expected demand, provided buses are operated efficiently. As the terminal must be in place when BRT operations start (second semester of 2017), the mission recommends that the construction contract be awarded as soon as possible, and no later than May 31, 2016.

5. As the origin or final destination for many passengers is expected to be CBT and OCBS terminals the mission again raised the issue of designing a convenient last mile connection between the BRT terminal and these locations which are roughly 250-500m away. It was agreed that CEPT would prepare conceptual designs for these two connections which could be a combination of grade separated or at grade and these would be shared with the Bank by May 15, 2016.
6. **Traffic Signal Designs:** The BRT corridor will have traffic signals at 29 intersections and 10 mid-block locations (for pedestrian access), i.e. on the average there will be traffic signals every 560 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. (In addition 14 non-BRT intersections will be signalized in the central districts of Hubli and Dharwad).

7. The IT consultants (IBI) presented signal and phasing layouts for five sample junctions: (i) Hosur Circle, (ii) KIMS, (iii) Navanagar ROB, (iv) Bagalkot Petrol Pump, and (v) Jubilee Circle. These were discussed at length. While agreeing with many elements of IBI’s designs, the mission recommended to minimize the number of signal phases wherever possible, by relocating some pedestrian movements (Hosur Circle) or by revising the circulation pattern if possible (Jubilee Circle).

8. It has been decided that the Centre for Development of Advanced Computing (C-DAC) with help from CEPT will do the detail design of both the physical layout and the phasing/timing of the signals, and subsequently be responsible for supplying and installing the signals. C-DAC apparently has experience in this field, and among its projects has been the installation of traffic signals along the BRT corridor in Indore. Its proposal to DULT includes the signal layout and phasing for a typical four-legged intersection, and one for a typical mid-block location. The phasing proposed for the intersection implies a five-phase operation (four for each mixed-vehicle approaches and one for the BRT), which the mission considers less than optimal for a BRT corridor – especially where there are relatively few mixed-traffic right turns from the main corridor. Much more green time can be given to the BRT when it operates in parallel with the straight mixed-traffic flow, while right-turning vehicles would receive relatively short green times. IBI’s sample signal phasings do follow that approach. Controlling the right turns, however, requires additional signal indications which are not yet included in C-DAC’s typical design.

9. Designs for typical intersections are useful at an early stage of signal planning, but it is important to remember that few intersections along the BRT corridor are “typical”; thus, the final signal designs must be prepared case by case on plans that are to-scale. It was agreed during this and the previous mission that C-DAC should seek approval for each signal design before proceeding with the installation. Given that there are few BRT systems in India, the mission wishes to highlight two elements which are specific to BRT and should be factored in 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.

   Most of all, a traffic signal layout should be part and parcel of a traffic engineering analysis – balancing the objectives of flow efficiency and traffic safety (see next paragraph for specific elements to be included in this work). While it is recognized that C-DAC prepared the traffic signal designs for the BRT corridor in Indore, it is worth noting that the Hubli-Dharwad BRT will have higher bus frequencies than the one of Indore. Also, especially in the built-up areas of Hubli and Dharwad, the intersections are much more complex. It is therefore strongly recommended that the signal designs be based on professional traffic engineering analyses and reviews.

10. *It had been agreed during previous missions* that signal design plans, including the signal phasing and timing, should be designed case by case, as each intersection poses its own specific issues and generalized standards would not suffice. These plans should be developed at an
appropriate scale, probably 1:500, and should include all elements of traffic engineering such as
the locations of mixed-traffic, BRT and pedestrian signals, refuge islands, pedestrian barriers,
lane markings, zebra crossings, bollards, traffic signs, the phasing and timing of the traffic
signals, and – where required – proposed modifications of the geometric design of the
intersection. As was agreed with the technicians present at previous mission meetings, the signal
cycle (probably uniform for all signals) should not exceed 90 seconds, and bus-actuated skip
phases might be considered to minimize BRT delays and bunching.

11. DULT agreed that the traffic signal designs should be submitted for approval prior to
their installation. It is envisaged that the contract with C-DAC will be signed \textit{in April 2016}, and
that the detailed designs would be completed two months later. \textit{The mission recommends} that
some signal design plans (a sample of about 5-10 locations) be produced quickly and forwarded
to the PMU and the World Bank, \textit{no later than May 31, 2016}.

12. \textbf{BRT Service Plan:} CEPT is planning to carry out surveys in about two months, to
update previous demand forecasts and to establish the data base for evaluating possible BRT
service plans. These will consist of alternative combinations of bus size, express versus all-stop
services, and terminal points (such as Chennama vs CBT in Hubli, and Regional Bus Terminal vs
Dharwad BRT terminal. \textit{The mission recommends} that the main service plan options be defined
soon and sent to the PMU and World Bank by \textbf{May 31, 2016}.

13. \textbf{Pedestrian Facilities:} It was noted that, in central Hubli, it is proposed to reduce
footpath widths to about 2 meters in order to have space for 7.5 meter wide mixed-traffic
carriageways. As pedestrian flow is quite heavy at many locations, the mission is of the opinion
that the standard 7.5 m width normally used to design high-speed roads is not appropriate here,
especially not at the expense of pedestrian space. \textit{It recommends} to reconsider this design and
provide footpaths of at least 3 meters width, and advise the PMU/Bank of the final decision by
\textbf{May 31, 2016}.

14. The mission visited the pilot footpath project in Navanagar, which has been vastly
improved since the team’s last visit. \textit{It recommends} to provide footpath continuity across the
unpaved side road, and to ensure that tactile strips be placed in a manner that visually impaired
pedestrians are not led into an obstacle or a hole.

15. The mission was also apprised of the delays in the Dharwad portion of the footpath work
which has been held up owing to the discussions around widening of the road corridor by
KRDCL in that stretch. The drainage works have already been taken up in the 2km stretch but the
remaining work is held up. It was discussed and agreed that HDBRTS may identify another 2 km
stretch and take up the works there rather than keep waiting for a resolution which may take time
and further delay the package.

\textbf{ITMS}

16. \textbf{ITS bids.} The mission was informed that 3 bids had been received by HDBRTS for the
ITS tender on 30 March 2016. An evaluation committee comprising of representatives from
KMRL, and other experts has been constituted and the evaluation is expected to be completed
by May 15, 2016.

17. Ducting between bus stations along the median and also the redundancy cabling beyond
the mixed lane needs to be still completed. Furthermore, the ducting to facilitate off-corridor
communications ill also need to be installed. HDBRTS should either extend the scope of current
contractors or procure a new contractor to complete the pending duct works.
18. PMC to covert the revised raw Bus Station diagram (with ducting requirements) into AutoCAD format. The ITS PMC should quickly review and share comments, if any, to the PMC. The finalized drawings should then be shared with the contractor for incorporation into the civil works.

19. The Bank Team encouraged HDBRTS to consider synchronizing the delivery of buses and the timing for ITS integration in order to ensure the ITS operational acceptance is achieved as per the contract milestone. A proposal to advance delivery of sample buses from different manufacturers and pilot test OBITS to facilitate ITS integration was also discussed.

20. The Bank team together with HDBRTS, ITS PMC, and the PMC inspected the routing of data and utility ducts and discovered severe misalignment at a station designed to support FOB and an elevator. The Bank team urged remediation of this to ensure ducting at every station that has FOB and elevator is feasible and that conduits can be routed through the elevator at FOB stations as per specs. The PMC will revise AutoCAD drawings for these stations.

21. HDBRTS, in order to facilitate quicker ITS integration, is considering installing overhead OFC as a temporary measure until underground ducting is done. The Bank team urged HDBRTS to consider issues related to vandalism and theft.

22. Passenger Sliding Door (PSD) had been removed from the ITS tender following feedback from vendors is proposed to be procured separately. Bidding documents have been finalized and cleared by the Bank. The Bank team suggested that the PSD tender include procurement, installation, and testing of RFID electronics at Bus shelters and inside buses.

23. **ITS PMC Contract Extension.** ITS PMC contract will need to be extended. The skill mix needs to be revisited for the extension. There will be no need for design, bidding and procurement experts. Instead, support for vendor management and testing and integration skills will be required. The extension will be needed at least until at least until operational acceptance is accomplished. The Bank team discussed the issues related to the current contract with ITS PMC and urged HDBRTS to negotiate a revised work plan with the PMC at the earliest so that the extension could be effected so as to maintain continuity.

**TA Activities**

24. **HD City Plan.** The Consultants have recently come on board and they made a presentation to the mission on their Inception Report. The mission was happy to note the comprehensive coverage of topics including adaptation impacts. It emphasized the need for timebound completion of the activity also advised DULT and the Consultants to ensure adequate availability of these key resources on the ground while noting that both the Team Leader and the Dy Team Leader were based outside the country and. Given the multiplicity of stakeholders the need for having strong linkages with concerned organizations was discussed and the setting up of a Steering Committee was appreciated. The Bank team encouraged the consultancy to build on all recently documented Smart City collateral including the HD Smart City proposal and the NASSCOM framework for Smart City development. The need for improvement of ICT infrastructure in the city plan and harmonization of GIS layers and formats across the state were also discussed.

25. The Bank team appreciated the focus on consultations and emphasized public consultations throughout the plan formulation process and also suggested organizing a hackathon to crowdsource innovative inputs into the design. It will be useful for HDBRTSCo and their communications consultants to collaborate closely with the team preparing the HD City Plan to ensure that the consultations around the preparation of the Plan are indeed participatory and range
across stakeholder groups, especially the poor. A robust participatory process can help increase the acceptability of the City Plan and strengthen its usefulness as a planning tool for the future.

26. **SOP Study.** The SoP consultants are also on board and have completed a comprehensive mapping of all the existing critical processes at NWKRTC. The next step would be to evaluate international experience in this regard and come up with recommendations for streamlining and improving the process flows through ITS.

27. **Communications & Outreach.** The contract of the communications consultants has come to an end but given the delay in progress some key deliverables, especially the Pre-Launch and Launch Campaigns, remain unmet. HDBRTSCo is weighing the option of either extending the existing contract or else going for a fresh consultancy. It might be useful for HDBRTSCo to consider the advantages of keeping on consultants who have acquired a familiarity with the communications landscape and has built effective networks with stakeholders. Having a break in communications and outreach activities at this critical phase in the project might not be recommended. In the meantime, there are several aspects that need to be addressed through proactive stakeholder communications:

- **General Award to some Dharwad residents/shopkeepers:** This could be potentially sensitive in the event that the government has to exercise its right to eminent domain. It would be useful to utilize the communications consultants to ensure that the context in which this General Award is being made (the various design options explored, the impact on project progress, the generous compensation being offered etc) is clearly understood by all stakeholders, including the media.
- **Adverse media reporting,** especially of late in regard to survival of tree plantations and CNG buses instead of diesel buses, needs to be proactively tracked and responded to.
- **Continuing proactive communications with critical stakeholder groups:** Outreach to stakeholder groups who will be critical to the success of the BRT operations has begun with information-sharing sessions for KRDCL staff and traffic police staff. Similar sessions at regular intervals updating these stakeholders about project progress will help increase their involvement and engagement with the project. It will also be important to extend the outreach, at the appropriate time, to other important groups like auto-drivers and the private bus operator in order to ensure that any apprehensions they might have about the impact of the BRT operations on their livelihood are allayed.
- **Increasing communications around project progress:** It will be useful to convey a sense of progress to the general public and to key stakeholders by utilising channels such as the project website, newsletter and Facebook. Small updates (with appropriate site photographs) can help convey a sense of momentum, as will quarterly briefings to the city media.

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

28. **About 30% (in monetary terms) of works** being financed by the Bank, has been carried out in 10 contracts being implemented by HDBRTSCL. Nine contracts are ongoing, and their progress varies between 47% and 1.5%. Progress of the contracts overall 9% in last four months (December 2015 to March 2016), as reported by HDBRTSCL, has been relatively better in comparison to earlier periods. However, this is much less than the desirable progress of say at least 10% per month. Bids are likely to be invited for the tenth one (Construction of Terminal at Mitra Samaj) by end-April 2016. The Table at the end gives the overall status of all contracts.

29. HDBRTSCL needs to monitor the Contractors’ performance together with land / site handing over, finalizing construction locations and traffic diversion plans in consultation with Traffic Police and issuance of some final drawings closely. All Contractors are required to
vigorously progress the works for early completion by augmenting their resources. **Contracts PW-8 and PW-9 (same Contractor) are performing very poorly**, and has progressed only 3.6% and 5.2% respectively in last Four months in spite of having no site or drawing issue. Unless this Contractor revamps all sites urgently with required resources, HDBRTSCL may consider taking contractual remedial action. Contractual Works Completion Period has expired for three works contracts. HDBRTSCL is required to extend the Works Completion Periods with conditions if any. Optimistically, the works being implemented by HDBRTSCL are likely to be completed in 2\textsuperscript{nd} half of 2017.

30. **PW-1**: This contract for Construction of four numbers of BRTS Bus Stations (BS) including Concrete Pavement at those locations and 1 km long Pedestrian Walkway between Hosur Cross and Hubli Railway Station started on 04 April 2015 with 12 months works completion period. The Contractor has completed 700m of Pedestrian Walkways but can do the remaining length of 300m after HDBRTS lays underground electric cables and relocate electric poles under the supervision of Hubli Electric Supply Company (HESCom). The works can start at BS-01 after the final location drawing with coordinates agreed with the Traffic Police is issued. The Contractor will be able to start the works at BS-02 after HDBRTS constructs the Diversion and Footpath for which bids have been received by HDBRTSCL. The Contractor can start the works for BS-03 at Rani Chennamma Circle after the Location of BS-03 is agreed with the Traffic Police together with the traffic diversion plan. Roof works have been completed at BS-04.

31. **PW-2**: Detailed designs, drawings and cost estimate for Construction of Terminal at Mitra Samaj in Dharwad are now being reviewed by HDBRTS. It expects to invite the bids for the works (with Works Completion Period to be 12 months) by end-April 2016. Land acquisition process is ongoing.

32. **PW-3A**: The contract for Construction of Four FoBs started on 06 November 2015 with 9 months works completion period. Drawing with final location of the FoB at Rani Chennamma Circle agreed with the Traffic Police needs to be issued, and the Site to be handed to the Contractor. The Contractor has started the works at Hosur Interchange. However, the drawing for the Footing common with PW-10, to be constructed under this contract, needs to be issued. The Contractor has started works at Prerana College site. However, revised General Arrangement Drawing (GAD) showing changed location(s) of staircases to be issued. Works for diversion of traffic are in progress at Unkal Lake site. Electric cabling works for the Bus Stations below the ground level at all FoB locations are to be carried out early under PW-1 and PW-5 contracts.

33. **PW-3B**: The contract for Construction of Four FoBs, won by the same Contractor for PW-3A, started on 06 November 2015 with 9 months works completion period. One FoB has been dropped from the scope, thus Three FoBs to be constructed under this contract. Works have started at Navanagar site, but the works for the central structure can be taken up after the traffic can be diverted. Works at Rayapur site has also started. However, an existing structure needs to be partially dismantled to allow the Contractor to take up works for the structure on Right side. The site for Dharwad Court Circle has not been handed to the Contractor yet. Electric cabling works for the Bus Stations below the ground level at all FoB locations are to be carried out early under PW-1 and PW-5 contracts.

34. **PW-4** comprising Drains, Walkways, Street Lights, Bollards, Sitting Benches, etc for a total length of 3 km in Dharwad, Navanagar and Hubli (following changes in the scope of works) started on 10 November 2014 with 9 months completion period. Present physical progress is about 45% of the contract amount. Works completion period of the contract has been extended until 30 June 2016. The Contractor has completed the full Drain works. It has also completed
Walkways on one side in Navanagar and presently working on erecting new Street Light Poles therein. The Walkways and Street Lighting works on the other side in Navanagar can be carried out after underground cables for domestic electricity supply are laid. HDBRTSCL is required to take up the works of removing the existing poles and laying underground cables under the supervision of HESCom. In 1.3 km in Dharwad, Walkways can be laid after the road works and utility ducts are laid under another project. It’s doubtful whether all contract works can be completed by the extended date of 30 June 2016.

35. **PW-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 about 47% of the contract amount. The Works Completion Period of this contract has been extended until 20 June 2016. The Contractor is doing works at all 13 sites. It has completed the Roof works at Two locations (Vidyanagar and Prerana Science College), fixed the Purlins at roof level at Four locations (Shantiniketan Layout, APMC, RTO Office and Rayapura), completed erection of truss at roof level at Four locations (Hosur Interchange, KIMS, BVB College and Unkal Village), completed up to Roof Beam at Two locations (Bhairidevikoppa and Navanagar) and completed Platform Raft at Unkal Lake. HDBRTSCL needs to clarify to the Contractor about laying the flooring pending finalization and installation of the ITS-enabled Doors through a separate Contractor. The Contractor expects to complete all works by September 2016.

36. **PW-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. Two more BS (at NTTF and at Jubilee Circle) at a cost of INR19.8 million have been added to this contract, totaling 13 BS. Physical progress of this contract is about 40% of increased contract amount. The Works Completion Period of this contract has been extended until 31 July 2016. The Contractor has completed the Roof works at Six locations and cast up to Roof Beams at Two locations. Although the Contractor had committed during the last Mission in early December 2015 that it would complete these Eight BS by April 2016, it now informed the Mission that it would complete these Eight BS by July 2016. The Contractor got access to Four more sites recently. It has completed the Foundation works at Bagalkot and Jubilee Circle, completed the Barricading at Toll Naka and started the Barricading at Court Circle. The Traffic Police has not yet agreed to the traffic diversion plan at NTTF, thus the Contractor could not start the works here. The Contractor informed that it would complete these Five BS by December 2016. HDBRTSCL needs to clarify to the Contractor about laying the flooring pending finalization and installation of the ITS-enabled Doors through a separate Contractor.

37. **PW-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 about 32% of the contract amount. Progress of the works has been only 3.6% in last four months, thus averaging only 0.9% per month, since the Mission’s last visit in early December 2015. As before, the sites do not have the required Cash Flow and thus low availability of Manpower and Materials. The Contractor informed the Mission that it has submitted a Work Program on 02 April 2016 showing completion of all works under the contract by 30 November 2016. The Contractor is required to carry out efficient planning, increase its resources, and manage its resources efficiently for higher productivity. It requires progress the works vigorously simultaneously at all Three sites. HDBRTSCL is having dialogue with the Contractor regarding how the Contractor can revamp its sites for satisfactory progress. Unless the Contractor revamps its sites urgently with required resources, HDBRTSCL may consider taking contractual remedial action.

38. **PW-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
18% of the increased contract amount (variation of INR18 million worth of works). It has carried out only INR86 million worth of works (about 5% of increased contract amount) in last four months since the last Mission in early December 2015. On notification by the Employer, the Contractor has submitted a Work Program on 02 April 2016 showing completion of all works by 30 November 2016 and also sought Extension of Works Completion Period (EoT) until 10 December 2016. The Program is not resource-based, thus reasonableness of the Program cannot be assessed. The PMC informed that the site is suffering from Cash flow as well as Skilled Manpower like Bar Benders and Carpenters, and Materials like Shuttering Materials, Cement, Sand, Reinforcement Steel, Aggregates, etc. The Contractor is required to carry out efficient planning, increase its resources as required, and progress vigorously in order to complete all works early. In view of continuance of such poor performance by the Contractor, HDBRTSCL may consider taking contractual remedial action.

39. **PW-10** for Construction of Hosur Interchange started on 15 May 2014 with 18 months completion period. Reportedly, its physical progress has been about 45% of contract amount. The contract has been extended until 30 June 2016. The Contractor has augmented its concrete production capacity by mobilizing a Concrete Batching Plant (CBP) of 30 cubic meter per hour (cum/hr) capacity in addition to its earlier CBP of 18 cum/hr capacity. Although these CBPs are supplying concrete for the Contractor’s other nearly contracts also, concrete production capacity is not likely to be critical for this contract. Presently, the most critical activity is fabrication of Mushroom Columns. Reportedly, out of total 83 Columns, 70 numbers are remaining to be assembled. In order to facilitate easier fabrication and faster progress by the Contractor, HDBRTSCL, its Design Consultant and the Contractor are presently in the process of agreeing an acceptable alternative detail for the Columns. Once the alternative details are approved by the Design Consultant and HDBRTSCL expectedly within a week after the Contractor produces a proto-type in next 3 days, the Contractor plans to mobilize more manpower for the Fabrication works within a fortnight thereafter. Presently, it has about 30 fabrication workers with 10 workers per Team. It plans to mobilize more about 25 workers leading to formation of 9 Teams each comprising 6 workers. The Contractor expects to assemble One Column with modified details by One Team of 6 workers in 10 days. Thus, the Contractor will be able to complete assembling of all Mushroom Columns not earlier than end-July 2016. The Contractor presented a Program showing completion of all works by 30 June 2016 and also verbally committed to complete all works by 30 June 2016. However, as evident from the preceding discussions, that’s not a practicable program. The Mission considered that, optimistically, the earliest completion could be possibly around September-October 2016. The Contractor is required to have efficient planning, required cash flow and timely procurement and implementation for early completion of the contract.

Works being / to be implemented through Karnataka Road Development Corporation Limited (KRDCL) (not financed by the Bank)

40. Complete length of about 19 km long BRT corridor along Hubli-Dharwad Highway is being implemented through KRDCL, except the Bus Stations and Foot Over Bridges (FoB) therein. Optimistically, the works can be completed in 2nd half of 2017.

41. **4-laning works of Hubli-Dharwad Highway** (the BRT Corridor) had started in September 2012. 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 Mixed Traffic Lanes being constructed under a separate contract. 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 done
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. This contract has been closed. Remaining works are being taken up under a separate contract described in the following paragraph and Flyovers and RoBs are being taken up under separate contracts as described below.

42. KRDCL has received Bid for completion of the remaining 4-laning works of Hubli-Dharwad Highway in about 1.6 km from Gateway Hotel to Sena College and in about 7.09 km in Hubli and Dharwad city areas (exclusive BRT corridor), scheduled to be completed in 14 months from Start Date of the works contract. KRDCL expects to issue the Letter of Acceptance (LoA) to the selected Bidder by around 20 April 2016. KRDCL plans to engage a Consultant for Supervision and Management of the works contract.

43. The Contract for Construction of Mixed Traffic Lanes on Hubli-Dharwad Highway (SH-73) started on 23 March 2015 with 18 months completion period. KRDCL has handed to the Contractor 1st Milestone stretches (4.32 kms on Left and 5.511 kms on Right) on 23 March 2015 and 2nd Milestone stretches (4.87 kms on Left and 3.07 kms on Right) on 22 August 2015. The Contractor has carried out works worth only about 5% of the contract amount in 12 months. Presence of Water Pipeline in the handed stretches on Left (except for 1.2 km length) was hampering progress of works. New Water Pipeline has been operative in 2.3 kms length only recently. Thus, the Contractor cannot still make substantial works in most of the handed length on Left (except for 3.5 kms length) because of the presence of Water Pipeline (relocation in progress). The Contractor was unable to progress works in about 3.5 kms length in the handed stretches on Right pending availability of design of Retaining Walls. The Mission was informed that the design of the Retaining Walls is presently available and would be informed to the Contractor shortly. Presence of Underground Utilities is still hampering the progress in some lengths in the handed 2nd Milestone stretches. Until now, the Contractor has started works in about 3.9 kms length on Right and in about 3.2 kms length on Left in the handed stretches.

44. Contract for Construction of Three Flyovers started on 05 November 2014 with 14 months completion period. July 2015 Mission was informed that Encumbrance-free site for Flyover at Navanagar was handed to the Contractor on 02 February 2015 and the ‘Good for Construction’ drawings were issued to the Contractor on 05 May 2015, after which the Contractor had started the works at this site from 21 May 2015. There has been good progress in construction of this Flyover. All works for this Flyover are likely to be completed by end-June 2016. Site for the Flyover at Unkal Lake was handed to the Contractor on 14 September 2015. Due to presence of private properties, buildings, temples and electric poles, construction of the diversion for vehicular traffic movement at Unkal Lake site got delayed and now been completed. Vehicular traffic would be diverted to the newly-constructed diversion on clearance from the Traffic Police, and the Contractor will start the works for the Flyover thereafter. Gas pipeline needs to be relocated to facilitate construction of Flyover at Unkal Lake. The Diversion for traffic movement on Left for construction of Flyover at Unkal Cross can be constructed after the overhead electric lines are relocated, and the permanent works for the Flyover can be partially started thereafter. Because of presence of a Temple in the area required for Diversion of traffic on Right for construction of this Flyover, alternative layout for the diversion on right is presently being looked into.

45. 2-lane wide Road over Rail Bridge (RoB) is proposed to be constructed on both sides of the existing 2-lane RoB near Navalur. Approval of the General Arrangement Drawings (GADs) has been received from the Railways. KRDCL has received the Bids for Construction of the RoBs (including approaches) and now expects to issue the LoA by around 10 April 2016. Detailed designs and drawings are presently being reviewed by the Proof Consultant, which will be submitted for the Railways’ clearance after receiving approval from the Proof Consultant. The
engaged Contractor’s work progress will depend upon availability of final drawings as well as unencumbered site. Water Supply pipeline needs to be relocated. Electric poles are to be relocated following dismantling of existing structures. KRDCCL needs to pay Supervision and Maintenance charges for the RoBs to the Railways. KRDCCL plans to engage a Consultant for Supervision and Management of this works contract.

Environment

46. The mission visited select sites along the BRT corridor and plantation undertaken at the Sewage Treatment Plant outside Hubli. It discussed its observations with the HDBRTSCo team, their consultants and KRDCCL representatives to confirm the status of the project, and the agreements on next steps to improve EMP implementation.

47. Site Safety: The site safety performance of contractors continues to remain patchy with particular concern around contract package 8 and 9. In addition, the opening of residential facilities in the Dharwad depot site, which had been previously vacated due to inadequate facilities poses a clear challenge for effective implementation of EMP provisions across contracts. While there is some improvement in package 6, other contracts continue to show mixed results. In addition, the presence of the 2 PMC teams poses a coordination challenge for ensuring that the sites actually are safe. It was agreed that the HDBRTSCo will hold periodic meetings with participation of KRDCCL, the 2 PMC teams, and key Contractor representatives to ensure that the safety on-site is not compromised.

48. Plantation under the Green BRTS Plan: The mission also reviewed the extent of survival of plantation. After the initial shock of just around 50% of saplings planted in the 1st year (2013) surviving, the survival rates are improving with around 80% survival maintained for the subsequent two years’ plantation. The higher survival rates are also predicated on the advance notice to Forest Department in the 2nd and 3rd years, which was missing in the first year.

49. It also follows the change in strategy to entrust the work to Forest Department, rather than others. In addition, larger areas are being now chosen to allow better control of access to site, as well as improved monitoring. At the STP site, outside Hubli, the mission noted that the area is now being fitted with water spraying facilities and will therefore likely continue to see high survival rate.

50. The mission urged HDBRTSCo to update the Green BRTS plan, discuss and finalize it in the Green BRTS committee meeting, and subsequently disclose it in the website to signal its continued commitment to this important initiative. Other locations for planting to be undertaken during coming rainy season is under identification in consultation with the Forest Department.

51. Environmental Audit: The mission was informed that HDBRTSCo seems to be able to respond to all the observations of the Independent Audit satisfactorily. The mission advised the HDBRTSCo team to prepare a response, discuss it with the Audit team, and finalize it. The same should be disclosed on HDBRTS website also.

52. Reuse of Debris from the road: While the bidding process for the Navanagar Rail Over Bridge is advancing, the mission reminded HDBRTSCo to confirm the extent to which debris from the road could be used for the embankment. It has been agreed that the necessary testing to determine suitability of discarded/removed road material as fill would be completed by April 30, 2016 and reflected in the contract.

53. EA Addendum Documentation: The Bank had already given its no-objection for the addendum to the EA documentation for Mitra Samaj location in advance of the mission. It also
confirmed that if the connection to Dharwad Agricultural University is undertaken during project life, the environmental aspects would be duly considered and another addendum documenting impacts and selected mitigation measures would be shared with the Bank before any work is undertaken in that stretch. This would include an inventory of sensitive receptors along the stretch, any anticipated negative impacts on these, and measures to be implemented to ensure compliance with the project ESMF, along with the resources required for the same.

**Social**

54. *The key progress in land acquisition and R&R Implementation as of March 31, 2016, is summarized below.*

<table>
<thead>
<tr>
<th>No</th>
<th>Activity</th>
<th>Current Target</th>
<th>Progress</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Private Land acquisition (in acres)</td>
<td>26.35</td>
<td>22.91</td>
<td>(86.94%)</td>
</tr>
<tr>
<td>2</td>
<td>Government land Transfer (in acres)</td>
<td>45.94</td>
<td>45.94</td>
<td>(100.00%)</td>
</tr>
<tr>
<td>3</td>
<td>No. of land owners received compensation</td>
<td>575</td>
<td>479</td>
<td>(82.58%)</td>
</tr>
<tr>
<td>4</td>
<td>No. of Non-title holders/ Tenants received assistance</td>
<td>570</td>
<td>483</td>
<td>(84.74%)</td>
</tr>
<tr>
<td>5</td>
<td>Assistance for relocation/reconstruction of religious structures</td>
<td>17</td>
<td>11</td>
<td>(64.70%) Resistance from 4 structures.</td>
</tr>
<tr>
<td>6</td>
<td>Financial Progress (INR. In Millions)</td>
<td>2,400</td>
<td>2,327</td>
<td>(96.96%)</td>
</tr>
</tbody>
</table>

55. **Land Acquisition.** The project has come a long way in completing the land acquisition as summarized above. The remaining small land acquisition is a challenge since it is mostly in cities of Hubli and Dharwad and some of the shopkeepers in Dharwad are resisting land acquisition and have also challenged it in the court. The comparison of compensation paid under consent award with compensation due under new act is not yet completed to conclude that compensation paid under consent award is not lower than compensation due under new Act and it was informed that this will done once the remaining land acquisition is completed. The mission noted that several land owners are seeking additional information related to land acquisition and so far 234 requests (about 40%) were received seeking additional information related to structural valuation, copies of compensation award, request for re-measurement of affected area, Government orders on approval of compensation amount, proceedings of the negotiations of compensation and maps of affected area. The mission was informed that replies to the queries were provided and attended to re-measurements where required. These requests from affected land owners reflects the people’s interest to know more details and fact on the land acquisition and compensation determination process. As on date 400 land owners were given stamp duty exemption certificate to enable them to get exemption if they purchase property from the compensation duty. It was decided that HDBRTS will approach the Stamps and Registration department to gather how many of those have sought exemption so far.

56. **Budget Availability.** Out of the total budget of INR. 2400 Million available for land acquisition and resettlement, so far INR. 2320 (96%) has been spent and it is now estimated another INR. 800 Million is required and HDBRTS is seeking Government’s approval for this additional budget support. It is estimated that the overall land acquisition and resettlement cost on this project is expected to be about 40% of the project cost of about INR.7750 Million, reflecting a high proportion of cost of land acquisition.
57. **Construction of Mixed Lane.** Though substantial land acquisition is completed, the site handed over to the contractor of mixed lanes is only about 50% of the total length of the road (9.19 Kms on LHS and 8.58 Kms on RHS, out of the total length of 18.84 kms). The mission once again suggested that a joint field visit by contractor, KRDCL and HDBRT should be undertaken to identify the encumbrances on the ground to record the list of encumbrances and sign jointly by all parties, so that HDBRTS can concentrate in attending those encumbrances.

58. **R&R Impacts.** As on date 80% of 570 non-title holders including tenants were paid R&R assistance. In addition, 16 displaced title holders were recently paid R&R assistance amounts as available to non-title holders. As discussed elsewhere the displaced landowners need additional support for their proper resettlement and HDBRTS is following up with local municipality for providing such support.

59. **Impact on Religious Structures** As many as 17 religious structures will be affected either fully or partially. As on date 11 structures (65%) are either shifter or likely to be shifted as their reconstruction is completed. There continues to be resistance in case of Dargha and three other temples. HDBRTS informed that land acquisition notices were served with Dargha, the most difficult case among all the affected workshop places. The satisfactory relocation of Dharga and few other temples will remain to be a challenge and requires to be dealt in an amicable manner to avoid litigation and thus avoiding the risk of inordinate delays in road construction.

60. **Addendum to RAP.** The mission discussed on the draft report for Dharwad Terminal submitted by HDBRTS and suggested that it requires to be strengthened, especially on the proposed rehabilitation measures for the tenant shopkeepers and also possibility of relocating the licensed shopkeepers elsewhere in the city roads for re-establishing their kiosks. The mission visited the Dharwad Terminal and interacted with affected PAPs. There are 5-6 licensed small shopkeepers, who require to be shifted to other vacant spaces elsewhere in the city to allow continuity with their vending activities. In case of 25 affected tenants, they mentioned that were doing businesses in this place for more than 20-30 years with nominal rents to the Trust. They mentioned that this sudden displacement puts them into difficult situation as alternative rented premises are not available and also it will trigger higher rents and huge advance deposits which they cannot afford. Moreover, some of them also expressed that they have borrowed money form the Banks for running their current business and displacement will put them into lot difficulties and as such they wanted for proper resettlement and would like to be shifted to some place by constructing alternative shopping complex in some vacant Government lands. They also mentioned that they were not consulted. The mission advised HDBRTS to have a follow-up consultations with this group and come out with more suitable rehabilitation measures to ensure their rehabilitation and reflect in the RAP addenda.

61. **Consultations with PAPs.** The mission held discussion with a group of displaced land owners. So far 16 land owners have lost fully their houses or shops and during the last supervision mission, it was observed that these were not provided with R&R assistance. The R&R assistance amounts are now paid, however, these are similar to what is available to the informal PAPs. As per policy provisions these were expected to be discussed in case of land owners and agreed on type of assistance or additional costs required for resettlement or rehabilitation of displaced families during compensation negotiations. However, no efforts were made to discuss and agree on R&R measures during the negotiations, since negotiations were mostly focused on compensation rates. Most of the people mentioned that they are yet to resettle properly as most of them are still residing in the rented houses/shop with higher monthly rents ranging between INR 4,000-6000. Their concerns include that in case of those who are already purchased sites or purchasing shortly, require assistance for faster building approvals and waivers.
for water, electricity, drainage connection and associated permission from the local authorities. In summary, the displaced families are expecting the following support.

- Allotment of shop/houses in HDMC’ schemes;
- Support for construction of alternative houses; and,
- Jobs in BRTS company

62. The mission was informed that HDBRTS is following up with local Municipality for assisting the displace families on the above issues.

63. **Concurrent Monitoring of RAP implementation.** The mission interacted with concurrent monitoring consultants. They have now submitted 9 progress reports summarizing their field visit observations and the last report is under verification. The HDBRTS/DILT is not sharing these report with the Bank. The contract has come to end in March, 2016 and the consultants are documenting the process followed by them and lesson learned. HDBRTS should assess the performance of these consultants and take decisions for the contract extension as needed.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
<th>HDBRTS</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete remaining land acquisition</td>
<td>April 30, 2016</td>
<td>HDBRTS</td>
<td>Original target April, 2013 and now proposed by June 30, 2016</td>
</tr>
<tr>
<td>Finalize Supplementary RAP for Dharwad Bus Terminal</td>
<td></td>
<td>HDBRTS</td>
<td>Need additional consultations with shopkeepers</td>
</tr>
<tr>
<td>Secure additional budget for remaining land acquisition</td>
<td>ASAP</td>
<td>HDBRTS/ KRDCL/ Contractor</td>
<td>About INR. 800 Million additional budget is required</td>
</tr>
<tr>
<td>Joint verification (HDBRTS&lt; KRDCL a contractor) of Mixed Lanes road stretch to identify the encumbrance on the ground to speed up the site hand over to contractor</td>
<td>ASAP</td>
<td>HDBRTS/ KRDCL/ Contractor</td>
<td></td>
</tr>
</tbody>
</table>

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

- Complete all land acquisition – June 30, 2016
- Shifting of Utilities – June, 2016
- Balance work on BRT corridor – June 2017
- Construction on mixed traffic lanes - June 2017
- Construction of all three flyovers – Feb, Mar, Oct 2017
- Construction of ROB – Oct 31, 2017
- Construction of BRT bus stations – Nov 2016
- Construction of Depots and Workshop to be over by Mar, 2017
- Construction of OCBS and terminal – March 2017
- Completion of work on NMT facility – June 2017
- Constructions of BRTS station and pedestrian infrastructure between Hosur to Railway station – Oct 2016
- Dharwad Terminal – July 2017
- Installation of ITS – August 2017
- Delivery of standard buses – June 2017
• Delivery of articulated buses – June 2017

Key Agreed Actions

• Submit BER for ITS – May 15 2016
• Finalise evaluation for depot equipment and award contract – May 31
• Sign contracts for construction of RoB and balance work on BRT lanes – April 30
• Sign contract with C-DAC – April 2016
• Award construction contract of Dharwad BRT terminal – May 31
• Submit detailed traffic signal and traffic engineering designs for 5-10 sample locations along the BRT corridor – May 31
• Send BRT service plan options – May 31
• Advise on final decision regarding footpath widths in central Hubli – May 31
• Finalise design options for connectivity between BRT Terminal at Dharwad and CBT and OCBS – May 31
• Finalise designs for additional 2 km pedestrian facility and handover to contractor – May 31
• Early resolution to the contractor non-performance on package 8 and 9
• Extend contracts for (i) Construction PMC, (ii) ITS PMS, and (iii) Communications & Outreach consultants – May 15
• Submit Inception Report for HD City Plan – Apr 22
• Submit ‘Existing Processes’ Report from SoP Consultants – Apr 22
• Ensure engagement with media editors/ press releases on (i) HDBRTS progress (ii) Green BRTS Implementation plan, status and survival, (iii) Procurement of Buses and their fuel type - Continuous
• Approval and disclosure of RAP Addendum for Mitra Samaj following consultations – April 30, 2016
• Ensure EMP compliance in terms of worker safety, cordonning of work sites etc – Continuous
• Disclose Environment Audit report and compliance – Apr 30
• Completion of all LA R&R – June 30, 2016
Annex 2A  
SUTP : Hubli-Dharwad : Status of Civil Works Contracts under the World Bank Funding (March 2016)

<table>
<thead>
<tr>
<th>Package</th>
<th>Name of Works</th>
<th>Contractor</th>
<th>Contract Amount / Estimated Amount (INR Millions)</th>
<th>Works Start Date</th>
<th>Original Works Completion Date</th>
<th>Extended Works Completion Date</th>
<th>Value of Works Done (INR Millions)</th>
<th>Physical Progress % of Contract Amount</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW-1</td>
<td>Bus Stations (4 numbers) and Pedestrian Infrastructure (Hosur Cross to Hubli Rly Stn)</td>
<td>Suprada Construction Company, Dharwad</td>
<td>86.5</td>
<td>04Apr15</td>
<td>03Apr16</td>
<td></td>
<td>12.6</td>
<td>14.6%</td>
<td>Works could not start at 3 Bus Stations and for 300m of Walkways for various reasons</td>
</tr>
<tr>
<td>PW-2</td>
<td>Construction of BRTS Terminal at Mitra Samaj, Dharwad</td>
<td></td>
<td>113.3</td>
<td></td>
<td></td>
<td>Detailed designs, drawings and cost estimate are under review by HDBRTSCL. Bids are expected to be invited by end-April 2016. Land acquisition process ongoing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PW-3A</td>
<td>Foot Over Bridges (4 numbers)</td>
<td>Swarna Techno Constructio n Private Limited, Hubli</td>
<td>100.8</td>
<td>06Nov15</td>
<td>05Aug16</td>
<td></td>
<td>1.5</td>
<td>1.5%</td>
<td>Final location drawing and site for one FoB to be handed to Contractor</td>
</tr>
<tr>
<td>PW-3B</td>
<td>Foot Over Bridges (4 numbers)</td>
<td>Swarna Techno Constructio n Private Limited, Hubli</td>
<td>118.2</td>
<td>06Nov15</td>
<td>05Aug16</td>
<td></td>
<td>3.5</td>
<td>3.0%</td>
<td>One FoB dropped. Site for one FoB to be handed to</td>
</tr>
</tbody>
</table>

33
<table>
<thead>
<tr>
<th>Package</th>
<th>Name of Works</th>
<th>Contractor</th>
<th>Contract Amount / Estimated Amount (INR Millions)</th>
<th>Works Start Date</th>
<th>Original Works Completion Date</th>
<th>Extended Works Completion Date</th>
<th>Value of Works Done (INR Millions)</th>
<th>Physical Progress % of Contract Amount</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW-4</td>
<td>Non Motorized Transport (3.2 km long in Dharwad and at Navanagar)</td>
<td>Suprada Construction Company, Dharwad</td>
<td>124.2</td>
<td>10Nov14</td>
<td>09Aug15</td>
<td>30Jun16</td>
<td>56.4</td>
<td>45.4%</td>
<td>Most of the works on hold, beyond the control of Contractor</td>
</tr>
<tr>
<td>PW-5</td>
<td>Bus Stations (13 numbers)</td>
<td>Rajdeep Buildcon Private Limited, Ahmednagar, Maharashtra</td>
<td>140.7</td>
<td>15Oct14</td>
<td>14Oct15</td>
<td>20Jun16</td>
<td>65.8</td>
<td>46.8%</td>
<td></td>
</tr>
<tr>
<td>PW-6</td>
<td>Bus Stations (11 numbers) + 2 numbers added</td>
<td>Suprada Construction Company, Dharwad</td>
<td>115.8 + 19.8 (variation)</td>
<td>15Sep14</td>
<td>14Sep15</td>
<td>31Jul16</td>
<td>54.1</td>
<td>39.9%</td>
<td>Works cannot start at NTTF site until traffic diversion plan agreed with Traffic Police</td>
</tr>
<tr>
<td>PW-7</td>
<td>Depot at Hubli</td>
<td>Shreehari Associates Pvt Ltd, Aurangabad</td>
<td>564.5 + 11.7 (variation)</td>
<td>20Dec 3</td>
<td>20Dec 3</td>
<td>19Mar 5</td>
<td>19Dec 4</td>
<td>181.6</td>
<td>31.5%</td>
</tr>
<tr>
<td>PW-8</td>
<td>Depot at Hubli</td>
<td>Shreehari Associates Pvt Ltd, Aurangabad</td>
<td>180.4 + 11.7 (variation)</td>
<td>20Dec 3</td>
<td>20Dec 3</td>
<td>19Mar 5</td>
<td>19Dec 4</td>
<td>181.6</td>
<td>31.5%</td>
</tr>
<tr>
<td>Package</td>
<td>Name of Works</td>
<td>Contractor</td>
<td>Contract Amount / Estimated Amount (INR Millions)</td>
<td>Works Start Date</td>
<td>Original Works Completion Date</td>
<td>Extended Works Completion Date</td>
<td>Value of Works Done (INR Millions)</td>
<td>Physical Progress % of Contract Amount</td>
<td>Remarks</td>
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<td>---------</td>
</tr>
<tr>
<td></td>
<td>Depot at Dharwad, Maharashtra</td>
<td>Shreehari Associates Pvt Ltd, Aurangabad, Maharashtra</td>
<td>148.7 + 18 (variation)</td>
<td>05Sep14</td>
<td>04Sep15</td>
<td>29.7</td>
<td>17.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Divisional Workshop at Hubli</td>
<td>Rajdeep Buildcon Pvt Ltd, Ahmednagar, Maharashtra</td>
<td>416.5</td>
<td>15May14</td>
<td>14Nov15</td>
<td>30Ju16</td>
<td>186.1</td>
<td>44.7%</td>
<td></td>
</tr>
</tbody>
</table>

**Annex 2B**

**Status of Works being / to be implemented through KRDCL and not financed by the Bank (March 2016)**

<table>
<thead>
<tr>
<th>Name of Works</th>
<th>Contractor</th>
<th>Contract Amount / Estimated Amount (INR Millions)</th>
<th>Works Start Date / Expected Start</th>
<th>Works Completion Period (months)</th>
<th>Works Completion Date</th>
<th>Value of Works Done (INR Millions)</th>
<th>Physical Progress % of Contract Amount</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-laning of Hubli-Dharwad Highway</td>
<td>GVR Infrastructure, Hyderabad</td>
<td>1191</td>
<td>Apr11 (actual start in Sep12 to accommod</td>
<td>24</td>
<td>349</td>
<td>29.3%</td>
<td>Works could not be completed due to encumbrances and Structures to be constructed. Contract closed.</td>
<td></td>
</tr>
<tr>
<td>Name of Works</td>
<td>Contractor</td>
<td>Contract Amount / Estimated Amount (INR Millions)</td>
<td>Works Start Date / Expected Start</td>
<td>Works Completion Period (months)</td>
<td>Works Completion Date</td>
<td>Value of Works Done (INR Millions)</td>
<td>Physical Progress % of Contract Amount</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------</td>
<td>------------------------------------</td>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(about 19 km long) (exclusive BRT Corridor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bid for works contract received on 04 February 2016. KRDCL expects to issue the Letter of Acceptance (LoA) by around 20 April 2016.</td>
</tr>
<tr>
<td>Remaining works of 4-laning of Hubli-Dharwad Highway in about 8.7 kms length (exclusive BRT Corridor)</td>
<td></td>
<td>426.3</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>About 8.9 kms length (out of about 17.64 kms to be constructed) handed to Contractor. Presence of Water Pipeline and Underground Utilities in the handed stretches hampering progress of works. Remaining stretches to be handed to Contractor involve Land Acquisition, R&amp;R and Relocation of Utilities.</td>
</tr>
<tr>
<td>Construction of Mixed Traffic Lanes on Hubli-Dharwad Highway (SH-73)</td>
<td>RNS Infrastructure Limited, Hubli</td>
<td>1469.3</td>
<td>23Mar15</td>
<td>18</td>
<td>22Sep16</td>
<td>68.5</td>
<td>4.7%</td>
<td>Permanent works carried out at Navanagar site. Diversion for traffic movement completed at Unkal Lake site, permanent works yet to start. Site at Unkal Cross requires temple to be relocated, demolition of some structures and relocation of electric poles.</td>
</tr>
<tr>
<td>Flyovers at Unkal Cross, Unkal Lake and Navanagar</td>
<td>Rajdeep Buildcon Private Limited, Ahmednagar, Maharashtra</td>
<td>359.5</td>
<td>05Nov14</td>
<td>14</td>
<td>04Jan16</td>
<td>95.1</td>
<td>26.5%</td>
<td>Bids for works contract received. LoA likely to be issued by around 10 April 2016. Detailed designs and drawings presently under review by Proof Consultant, to be submitted to Railways for their clearance. Water Supply pipeline to be relocated. Electric poles to be relocated following dismantling of existing structures.</td>
</tr>
<tr>
<td>Road over Rail Bridges (RoBs)</td>
<td></td>
<td>441.5 (estimated)</td>
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<td>14</td>
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INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Pimpri-Chinchwad

1. A World Bank Mission visited Pimpri-Chinchwad Municipal Corporation (PCMC) on April 6 and 7, 2016 to discuss the implementation of the Pimpri-Chinchwad component of SUTP. It met with Mr. Rajeev Jadhav, Commissioner of PCMC; Mr. Abhishek Krishan, CMD, PMPML; Mr. Rajan Patil, Joint City Engineer; and PCMC’s 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. The mission also carried out site visits along Corridor 1 and 2, as well as corridor 4 which is still under construction.

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, BRT services are now operating along Corridors 2 and 3. Launch of Corridor 1 is expected in the second semester of 2016, and Corridor 4 in 2017.

World Bank Supported Project

Corridor 3 (Nashik Phata - Wakad): Construction Progress

4. This BRT Corridor of about 8 km length is being constructed under 8 works contracts, of which only Contract 1 (costing about 48% 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 88%** of likely total amount of eight contracts. BRTS has been commissioned in this Corridor in November 2015. However, there is no exclusive BRT Corridor for a length of 260 m, where construction works are yet to be completed. Ramp 2 connecting the Nashik Phata Flyover and Mumbai-Pune Highway (NH4) and Pedestrian Facility for travel between ground level on NH4 and Corridor 3 at higher level, are likely to be ready not earlier than early-2017.

5. **Contract I: Interchange at Nashik Phata (Bank-financed):** Progress of this contract was satisfactory. All works except Ramp 2 were completed long back. In view of non-availability of required additional land, alternative layout (by deleting footpath) was prepared for Ramp 2. Modified General Arrangement Drawing (GAD) incorporating a Pedestrian Underpass as demanded by the local people on Right Side (Pune side) was approved / issued on 14 August 2015. Extension of the Contract has been agreed until 31 December 2016. Following completion of utility relocation works, the Contractor has completed Six Pile Foundations and Two Piers out of a total of Eight Foundations on Right Side. **A part of the land required for construction of Ramp on Left Side (Mumbai side) is still not in possession of PCMC and thus could not be**
handed to the Contractor. The Contractor has completed storm water drain relocation works on Left Side. It’s understood that, in view of difficulty of acquiring private land, PCMC is now considering to construct 4.25m wide (instead of a minimum of 5.5m recommended by The Indian Roads Congress) Ramp on Left Side considering that it’s a down-ramp.

6. The Contractor had made several Claims, which were not agreed to by PCMC and thus Disputes arose. Dispute Adjudication Board (DAB) was not established under the Contract. 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’ and INR 107.8 million is towards ‘Loss of Overhead and Profits’. The Contractor had submitted its ‘Statement of Claims’ in August 2015. Arbitration Board has granted extension up to 31 May 2016 for PCMC to submit its ‘Response’.

7. The Mission noted that the PCMC Officials (instead of the Project Management Consultant whose services were not extended beyond 31 August 2015) are continuing supervision of the Contractor’s works.

8. **Contract II**: All contract works complete.

9. **Contract III**: All works have been completed except for 260 m length where required land on one side was not available. Land in that 260 m is presently available with PCMC. New contract for the works in that 260 m length has started on 3rd March 2016 with 9 months completion period.

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. The Works Contract for Construction of these Pedestrian Facilities has started on 29th February 2016 with 12 months completion period.

11. Construction of Bus Stops: 14 Bus Stops have been completed under two contracts, out of 15 planned.

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, have been completed except for the 260 m length where the road works have not been completed.

13. Corridor 4. 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 69% of total cost of eight contracts. Optimistically, full length of the BRT Corridor may be available for plying of Buses in early 2017.

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

15. **Contract II**: Land is now available for about 400m length in this 1.4 km long contract. The original Contractor has recently started the works. PCMC needs to arrange the remaining land in about 1km length. PCMC is optimistic to complete the works under this contract by December 2016.
16. Contract III: Empire Estate Flyover (Bank-financed): Progress of this contract is unsatisfactory. Since start in April 2011, the progress is only 56.6% (in monetary terms) of revised contract amount until 27 March 2016. Components V and VI, ascending and descending Ramps in Empire Estate stretch, costing INR 95.6 million, are presently on hold reportedly due to objection by the Empire Estate community. Thus, progress works out to 62.6% (in monetary terms) of the Value of Works excluding Components V and VI. 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 has been mainly due to inadequate financial inflow for execution of works. The Contractor was suffering from financial problems since start of the contract.

17. The Contractor made changes in its Contract Management Team around mid-November 2015, which resulted in recovery from a hope-less situation since January 2016. However, the recent progress is not more than 2% of the Contract Amount per month, which is unsatisfactory at this stage of the contract. Although availability of fund may not be a major issue for the Contractor at this time, but it has not been able to scale up its progress to a satisfactory level.

18. The Works Completion Period for the Contract was extended until 29 February 2016, freezing the Price Adjustment as on 30 April 2015 except for the Rail over Road Bridge (RoB). Progress since the last Bank Mission, as reported, has been 7.3% (in monetary terms) of Value of Works (excluding Components V and VI) in about 4 months from 01 December 2015 to 27 March 2016.

19. 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. It’s learnt that the Land Owners are not presently allowing construction works (including for Abutment of the Bridge) and asking for more compensation.

20. The Contractor has reportedly re-mobilized from December 2015 the specialized agency for superstructure works for Bridge across River Pawana. However, in four months, only One Superstructure Span has been cast and Four Spans are still remaining to be cast. The Agency is presently erecting the temporary structures for the Fifth superstructure span (out of a total of Eight Spans). The water course of the River has been practically fully blocked for the construction purposes. With the expected onset of monsoon from 1st week of June, it will be necessary to clear the full width of the waterway early. The Contractor now expects to cast Two more Superstructure Spans by end of May 2016, which will require much efficient performance than the last Four months. With clearing the waterway from any obstruction in June 2016, the Contractor will be able to cast the remaining Two Superstructure Spans by approaching from Kalewadi Phata side (which is dependent on availability of unencumbered access by the Contractor, discussed in the preceding paragraph). Or else, it needs to wait until it’s allowed to block part of the waterway for approaching from Empire Estate side when the water flow in the River substantially reduces from November-December 2016 or so.

21. For the Road Over Rail Bridge (RoB), technical solution following cutting off the reinforcement bars protruding from the Piles by the miscreants has been agreed, and works on Pile Caps have started. Load Test on the Piles has not been undertaken until now. In addition, the Contractor has not submitted yet its Erection Plan for the Superstructures for clearance from
the Railways including from Railway Safety wing. This has a potential of delay in completion of the RoB, if the Railways’ clearance for Superstructure Works cannot be obtained in time. Fabrication for the superstructure of the RoB is ongoing, 70 Tonnes of Structural Steel are yet to arrive at site. The Contractor’s present plan is to complete the Fabrication by end-April 2016, complete the Sub-structure works up to Pier Caps by end-May 2016 and erect the Superstructures in June 2016 by obtaining ‘time blocks’ for erection from the Railways.

22. PCMC is required to resolve the issue of obstruction / opposition created for works at P17 by a Land Owner. In addition, the Contractor needs to progress the works of Component 7 (Loop) concurrently with other works.

23. The Contractor has submitted to PCMC in March 2016, a Work Program showing Completion (except for Components V and VI) by October 2016 and sought Extension of Time (EoT) until October 2016. Completion in October 2016 is feasible provided PCMC can resolve all remaining land issues and PCMC and the Contractor can obtain the Railways’ Clearance of its Superstructure Erection Scheme for the RoB efficiently and the Contractor can scale up its progress suitably. The Project Management Consultant (PMC) expressed that availability of more numbers of skilled and unskilled labourers can result in faster progress.

24. The Indian Institute of Technology (IIT) Mumbai has submitted its Report relating to the Need and Justification for proposed Ascending and Descending Ramps in Empire Estate stretch (Components V and VI) which is under review of PCMC. It was agreed that a copy would be shared with the PMU and the Bank by April 30, 2016.

25. 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’s and PMC’s recommendations, and actions agreed, (iv) Contractor’s available resources together with PCMC’s and PMC’s comments thereon, (v) information on variations, claims, disputes, if any, and (vi) annex the Minutes of Monthly Review Meeting.

- Contract IV: Works are ongoing. Land is not available for a length of 60 m.
- Contract V: All works under this contract are complete.
- Construction of Bus Stops: Both the contracts are ongoing.

26. 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.

Technical Discussions on Rainbow BRT in Operation
27. BRT bus operations started on Corridor 2 (Sangvi Phata – Kilwale) on September 5, and on Corridor 3 on November 28, 2015. It goes to the credit of PCMC to have completed these BRT corridors, the first of which is probably the most heavily traveled in India. The previous mission inspected sections of the two corridors, and before that, the Bank’s BRT specialist visited Pimpri-Chinchwad October 5-9, 2015 and provided technical observations on Corridor 2. Below
are the current mission’s observations, repeating selected elements of the previously shared comments which have not yet been acted upon.

**Road and Station Infrastructure**

28. Traffic flow at most intersections is chaotic, and conditions for pedestrians (including passenger access to BRT stations) are deplorable. Suggestions of previous Bank missions have generally not been implemented. The geometric design of intersections favors motor vehicles at the expense of pedestrians. Large radii at corners and the scarcity of refuge islands encourage the quick movement of cars and two-wheelers and contribute to the risk of pedestrian accidents. The mission repeats its previous recommendation that PCMC define a time-bound action program to fix up these intersections and send it to the PMU and the Bank by May 31, 2016.

29. Key Corridor 2 intersections: The previous mission flagged three intersections (Jagtap Dairy, Kalewadi Junction, and Dange Chowk) where the traffic engineering works had been implemented piecemeal, resulting in geometric layouts that were disjointed and hazardous, especially for pedestrians. PCMC indicated that action had been taken at the two latter junctions. The current mission visited them and observed the following:

- Some triangular islands were built, but these are (a) not conveniently located with regard to pedestrian crosswalks, and (b) are about 40-50 cm high (without access to wheelchairs) so that even able-bodied pedestrians do not use them. This needs to be corrected.
- At Dange Chowk, a skip phase for BRT buses has been added (as suggested), but the traffic signal cycle is 200 seconds long, despite the 120 seconds that were agreed with the traffic police in December 2015 – this needs to be corrected.
- In view of the insufficient improvements made to date, the mission repeats its previous recommendation that each intersection be redesigned as a unit, and that modifications be made to the current curb alignments, traffic islands, crosswalks, pedestrian signals, and signal cycles. It recommends that PCMC send the designs to the PMU/Bank by May 31, 2016.

30. Kalewadi Junction: When inspecting that junction, the mission noted that no separate traffic signals had been installed for right turns across the busway – as had been agreed several times with the World Bank team. The mission was told that many other junctions on Corridor 2 were also lacking right-turn signals. The mission recommends that PCMC advise the PMU and World Bank, which other junctions of Corridor 2 are lacking separate right-turn signals, and inform what actions it plans to take to rectify that situation, no later than May 15, 2016.

31. Corridor 4 (still under construction) will intersect with Corridor 2 at Kalewadi Junction, and some passengers will transfer between the two lines. Because of a high-tension tower, the nearest BRT stations on Corridor 2 is located about 100 meters to the north of the junction, and transfer passengers will have to walk on the eastern footpath of the Aundh-Ravet Road, which is in a poor condition. The mission suggests that PCMC rehabilitate that footpath, so it is convenient for transfer passengers to walk on and recommends that PCMC advise the PMU / Bank by May 31, 2016, when it plans to undertake those works.

32. Bus shelters on Hinjewadi section: Corridor 3 buses also run in mixed traffic at the western end. Between Wakad Gaon and Hinjewadi, only one formal bus stop in that stretch (about 4 km long) was observed. The mission recommends that, similar to the Bhosari spur, bus shelters ought to be installed soon in that section.
The mission also recommends that discussions be initiated with MIDC to extend the segregated busway to Hinjawadi.

33. Routine maintenance: A safety audit report prepared by IIT Bombay (September 2015) notes that “BRTS lanes are looking very untidy, markings are not visible, and it’s not properly maintained; overall it is not looking aesthetic. Therefore proper routine maintenance strategy is strongly recommended.” The mission repeats its previous recommendation that a routine maintenance strategy be prepared and that adequate funds be budgeted for the purpose in 2016 and subsequent years.

34. Daily cleaning at stations: PMPML entered into contracts with a private company to clean all BRT stations. The stations themselves look clean, including the immediate access ramps. However, much accumulated trash was observed on the pedestrian ways connecting the station ramps with the nearest crosswalk. These pedestrian ways are not included in PMPML’s cleaning contracts, as it is the responsibility of the local government body to keep them clean. The mission repeats its previous recommendation that PCMC follow up with the local government body to regularly clean the station accesses. The mission further recommends that PMPML’s station cleaning contract for the next BRT line (Corridor 1) also include the accessway connecting the BRT station with the nearest crosswalk / intersection.

Traffic Signals and other traffic engineering elements

35. Signal cycles are too long – The actual length of signal cycles is different from previous agreements between PCMC and the World Bank (90 seconds as a rule, up to 120 sec at very busy intersections, much less during off-peak-hours). This slows down the BRT travel speed, creates long queues of mixed traffic which then obstructs upstream intersections, and implies long waiting times for pedestrians wanting to cross the street (one of the reasons why pedestrians cross against the red light). At a meeting with the Traffic Police, arranged by PCMC on December 2, it was agreed that the signal cycles would be reduced to 90-120 seconds to comply with previous agreements between the Bank team and the PCMC Electrical Department. The current mission was verbally advised that signal cycles had been shortened, but when visiting the junction at Dange Chowk, this was clearly not so. It therefore repeats its previous recommendation that PCMC advise the PMU and the Bank of the actually observed signal cycles along Corridors 2 and 3, by May 31, 2016.

36. At some pedestrian signals giving access to BRT Stations, such as Aundh Hospital and several crossings north of Dange Chowk, the pedestrian demand is very low and does not warrant the stopping of motorized traffic during each signal cycle. The Traffic Police agreed with the previous mission that a test should be carried out with pedestrian push buttons mounted on the signal pole – only when actuated, a green pedestrian light would appear, and mixed-traffic would be given a red signal. The PCMC Electrical Department did install a push-button actuated signal, but at an inappropriate location (and having vehicular signals that changed from green to red without an intermediate amber period) – no wonder that the experiment failed. The Electrical Department told the current mission that the pilot test would be repeated by June 2016, properly designed and at an appropriate location. The mission recommends that PCMC advise the PMU and the Bank by July 31, 2016 of the results from the new pilot installation.

37. Pedestrian conditions are chaotic and dangerous at many junctions. Where left-turning traffic is heavy, it is almost impossible for pedestrians to even reach the BRT platform, safely. The mission repeats its previous recommendation that PCMC advise the
PMU and the Bank by May 31, 2016 of its strategy to improve pedestrian convenience and safety at intersections.

38. The role of the Traffic Police is vital for efficient BRT operation, adequate traffic flow, and pedestrian safety. It had been suggested that PCMC, PMC and PMPML regularly interact with the traffic police about traffic management, intersection improvements, and enhanced traffic signal operation. In the December meeting with the Traffic Police, it was agreed that regular coordination meetings with the PCMC would be held. Two such meetings took place in 2016 between the Police and the PCMC Electrical Department, but evidently without representatives of the Engineering Department. It was advised that the Engineering Department would be represented in meetings carried out from May onwards. The mission repeats its previous recommendation that PCMC ensure regular coordination meetings with the Traffic Police.

39. Bhosari Terminal: Traffic management elements and facilities for pedestrian movement are yet to be built at Bhosari Terminal. The Electrical Department told the mission that signal designs had been prepared and could quickly be made available. The mission repeats its previous recommendation that PCMC provide the designs for traffic signaling and phasing no later than May 15, 2016.

40. Other aspects of BRT operations:

- Route number signs: Bus number and direction panels are not lit when the ITMS is not functioning. Even when the ITMS is functioning properly, it is difficult to know to which route a bus belongs that has just arrived at a station platform (as the sign is only at the front of the bus). There are lit signs at the left side of the new buses, but these cannot be seen from the BRT platform which is to the right of the buses. The mission recommends that, in the future, lit signs also be specified for the right side of buses that run on the busway. For the short term, the mission recommends that PMPML paste large (cardboard or plastic) signs with the bus route numbers on two windows on the right side of the bus, which would be visible from the station platforms.

- Station and bus doors: It was also observed that the station door sometimes did not open, with people leaving the bus being caught between the bus and the (closed) station door. In all cases, the security guard or passengers forced the door open from the inside. Also, sometimes only one half of the bus door opens or, reportedly, it does not open at all. The mission recommends that these malfunctions be rectified and that PMPML and PCMC advise the PMU and the Bank by May 31, 2016 of the actions taken.

- Docking of buses. In general, buses dock quickly, without touching the horizontal rollers installed at each station door. A traffic safety audit conducted by IIT Bombay in September 2015 highlights the poor docking as an important safety issue: “The clearance between the platform and the bus is more than acceptable limit”. Based on a survey carried out in February 2016 by the monitoring consultants (IBI), 90.2% of all observed gaps exceeded the maximum safe distance of 10 cm. This is not acceptable. The mission repeats its previous recommendation that PMPML rectify this problem through more training, supervision and other possible measures. The previous mission agreed with the plan that PCMC add pavement markings at stations to assist drivers in properly aligning the bus, but did not see any such lines having been painted. The mission recommends placing these pavement markings as soon as possible. The mission further recommends that PCMC and
PMPML advise the PMU and the Bank by *May 31, 2016* of the actions taken to reduce the docking gap to an acceptable level.

41. **Technical Discussions on Corridor 1 (Old Pune - Mumbai Road)**

- **Time-bound Action Plan to Complete BRT Corridor 1:** This corridor is the most visible thoroughfare in the Corporation area, has the highest public transport demand, and thus is already served by many bus lines which will become BRT services in the future. It is therefore crucial that all elements be well planned and executed in order to result in a successful BRT operation. PCMC wisely completed Corridor 2 first, which makes it possible to learn from that experience before launching similar services on Corridor 1. *The mission recommends* that PCMC incorporate those lessons when completing the current BRT infrastructure on the Pune – Old Mumbai road and incorporate the advice available from its monitoring and access consultants, as well as ITDP, the Police Department, PMPML and some traffic safety proposals prepared in 2014 by IIT Mumbai. *The mission recommends* that PCMC update its action program to complete the remaining works, and send it to the PMU and the World Bank for their information, no later than *May 31, 2016*.

- **Traffic Safety Audit:** About two years ago, IIT Mumbai carried a traffic safety audit for Corridor 1. Some of their recommendations have been carried out, others not yet. Also, the World Bank provided critical comments at the time, implying that the safety audit might need some modifications. *The mission recommends* that PCMC prepare, by *May 31, 2016*, a status report on IIT’s recommendations, indicating (a) those that have been implemented, (b) those that it plans to implement in 2016, (c) those that it decided to drop from IIT’s recommendations, and (d) any modified or additional traffic safety improvements that have been or will be implemented.

- **BRT Stations at Pimpri:** The mission and staff of the PCMC Engineering Department visited the BRT stations already built in the block between Pimpri Chowk and Morwari Junction, just in front of the PCMC building. It fully agrees with the plan to add a second set of ramps at the northern sides of the stations, thereby providing direct access to the BRT stations from the pedestrian bridges across the expressway lanes of the Old Pune-Mumbai Highway. However, it learned to its surprise that in this block no physical segregation is planned between the BRT busway and mixed traffic lanes, as this would not leave enough space for efficient mixed-traffic flow. *The mission observed* that there is probably more space to locate a segregated busway in this section (compared to most others of Corridor 1) *and strongly recommends* that a with-busway alternative be considered, made possible by changing the 45-degree parking with parallel curb parking, or perhaps by removing some parking altogether. *It recommends* that PCMC prepare by *May 31, 2016* preliminary at-scale designs for that stretch, with a segregated busway, to ascertain the exact roadway width that would be left for mixed traffic.

- **Traffic Engineering and Signal Control:** During field visits of the corridor in 2014, previous missions noted that the signals of most major intersections operate in four phases, requiring rather long signal cycles (120 seconds or more). As it was decided to build the busway segregation all the way up to the intersections, additional signal phases will be required because right turning mixed-traffic movements, and U-turns, cannot be eliminated. With the current signal phasing approach, this would require yet longer signal cycles, resulting in excessive delays for both public transport and mixed traffic; it would also contribute to
bunching of BRT buses – which must be avoided at all cost. As highlighted earlier, these problems have been observed at several junctions of Corridor 2 and will pose yet a greater challenge on Corridor 1 as it carries higher bus volumes.

- PCMC has been preparing Terms of Reference to carry out signal designs at all intersections of Corridor 1. It was agreed, that these TOR be expanded to also cover full traffic engineering designs, in addition to signal installations and phasing, including provision of pedestrian refuge islands, other geometric traffic channelization, lane and other road markings, traffic signs, pedestrian crosswalks, bollards and pedestrian barriers, curb ramps and tabletop crossings, etc., as may be required to facilitate efficient and safe traffic flow and pedestrian movement. The consultants were to be contracted by April 30. It was suggested that they might benefit from the international experience of MVA, a firm that already has a contract with PCMC, and that MVA mobilize an internationally experienced traffic engineer to assist PCMC’s consultants. The mission recommends that PCMC confirm to the PMU and the World Bank by May 15, 2016 that the consultants have been contracted. It also recommends that PCMC send the PMU and the Bank, by June 30, 2016, the designs that the consultants have produced by that date.

- During the meeting with the Municipal Commissioner, the mission raised its concern about the lack of importance that PCMC is giving to traffic engineering. Going beyond the issues faced by SUTP, Pimpri-Chinchwad has now grown to a size that merits the creation of a professional traffic engineering cell. The mission encourages PCMC to take the action necessary for the creation and staffing of that cell.

- Signal Phasing: In December 2014, representatives of the PCMC Electrical Department presented planned traffic signal improvements at about 20 intersections along Corridor 1, based on 90-second signal cycles. At virtually all intersections, the proposed traffic signal control envisaged separate phases for (i) cross traffic, (ii) the straight movements along the corridor including the BRT busway, and (iii) right turns from the mixed traffic lanes on the service road. One of the lessons learned in the last year, and supported by both the traffic police and the Bank missions, is the possible insertion of intermediate skip-phases for BRT buses at some key intersections. The mission recommends that the PCMC Electrical Department and their consultants, when updating the plans prepared in 2014, consider the use of such skip phases where required to avoid excessive waiting times for the BRT and submit their new phasing plans to the PMU and the World Bank no later than June 30, 2016. (see above)

- Passenger Access to BRT Stations: Passenger access to the BRT stations is still one of the great shortcomings on Corridor 2 – this has been highlighted by this and previous missions and is also reflected in the monitoring data collected by IBI. IIT Mumbai made some general recommendations on how to provide safe pedestrian access. While containing some interesting suggestions, however, that audit did only make rudimentary proposals which are quite insufficient to assure modern access to the BRT stations. In the meantime, MVA has completed access plans for all BRT stations and intersections on Corridor 1. The mission recommends that PCMC indicate by May 31, 2016 which of MVA’s recommendations (a) have already been implemented, (b) will be implemented in 2016, and (c) will not be implemented in the foreseeable future.

- Passenger Transfers between BRT Corridors 1 and 3: With the expected launch of BRT services on Corridor 1, it is now time to complete the passenger transfer facilities with Corridor 3, at Nashik Phata. The mission was advised that the construction contract for the
FOBs connecting the two corridors had been awarded. *The mission recommends* that PCMC inform the PMU and the World Bank, *by May 15, 2016*, of the expected schedule for completing the works, including the Corridor 3 BRT station on top of the flyover.

### Intelligent Transport Management System:

42. The mission was informed that the performance of the recently implemented ITS system had improved and that the on board equipment was being certified by ARAI. The mission noted with concern, however, that no reports were available from the PMC to explain the performance as agreed in previous missions. It was also shared that while there had been some delays with the deployment of ETMs owing to opposition of conductors, the deployment had been initiated in Bhonsari depot covering corridor 3 and it was expected to be complete by April 30, 2016, and the entire deployment covering all depots by July 31, 2016.

43. The Bank team emphasized the need to have a common understanding of the requirements and timeline for issuance of completion certificate to the ITS vendor and urged the ITS PMC to review the ITS vendor contract and outline a robust Acceptance test plan with test criteria, test procedures, pass/fail criteria based on core functional requirements and the SLA defined in the contract. Among other essential features and stated SLA, the Acceptance Test plan should systematically test such features such as geo-fencing, smartphone app, ETA accuracy, stop skipping, de-bunching etc.

44. In discussions with the ITS vendor, it was understood that the ETA inaccuracy is due to mobile service drop outs at bus stations and not so much the on-bus drop outs. Before embarking on the plan to install OFC, The Bank team urged PMPML to discuss the issue of station drop outs with the mobile service provider to explore options to strengthen the service coverage.

45. In terms of PIS operations, the Bank team had previously suggested several changes with a view to improve user experience of LCD displays at Bus shelters including change of background colors, font size, capitalization of station names, re-arrangement of columns etc. Changes to PIS display format have been made with respect to font size, background colors, and capitalization of station names. However, the re-arrangement of columns on the display could not be made due to requirements of reprogramming the PIS database currently hosted in Delhi for test purposes. It was understood that once the servers are relocated at the control center, the PIS database would be modified to effect the required changes.

46. The ETA accuracy across the network is currently about 85%. The loss of accuracy at some stations has been attributed to connectivity drop outs. This issue is being addressed through the installation of wired connectivity (e.g. Fiber Optic cabling) at stations. The ETA accuracy is expected to improve with the wired connectivity.

47. No further malfunctioning of station PIS display units has been reported. It was understood that the remote diagnostics of Station PIS units is enabled through SNMP protocol and will be tested once the PIS database is hosted and tested at the proposed control center.

48. All the four (4) LED displays (front, rear, left side, and in-bus) inside the buses allocated to ITS vendor for installation and testing are fully operational. Currently, the buses do not have an LED display on the driver side facing the passengers at the station. The mission team had recommended displaying the route information on a cardboard in the short term and installing a fifth LED display facing the station in the longer term.
49. It was understood that about 70% of the civil works for Control Center has been completed. However, addressing a few issues related to the contract for civil works would help PCMC and PMPML ensure timely completion of the works in the control center. Any delay in the readiness of the control center would negatively impact the operational certification of the overall ITS.

50. The Bank team urged the ITS PMC to facilitate more frequent meetings (once a week) between ITS vendor, PMPML, and PCMC teams to discuss outstanding issues and help accelerate the process of achieving operational acceptance. Likewise, the ETM consultant should convene frequent meetings between CBI, PMPML, and Depot Managers to implement the ETM Acceptance Test plan and help meet the milestones towards operational acceptance of ETMs in the entire network (expected by end July 2016). The ETM test plan should also test any customization of the dashboard being implemented by CBI.

51. The Bank team underscored the need for PMPML to build its ITS capacity and hire a Transport and ICT specialist that can take over the AVL and ETM system upon successful acceptance and start analyzing the big data for use in the optimization and planning process. Alternatively, PMPML could consider on-boarding an industry expert to analyze the data twice a year. The Bank team encouraged PMPML to implement both these options in an effort to strengthen its capacity to handle ITS operations and maintenance.

52. Although the AVL system being deployed support driver login feature to enable mapping of driver profile to a particular bus route and a bus, this feature has not been implemented. The Bank team discussed the benefits (including measurement of driver performance and improving driver behaviors in response to harsh braking, acceleration, route adherence etc.) of implementing this feature and urged PMPML to provide the ITS vendor with necessary SOPs to be implemented in the system. It was agreed that the Driver Login feature will be implemented by April 15 2016.

53. Finally, it was agreed that, in order to ensure business continuity, PCMC and PMPML would extend suitably the ITS PMC and PMC contracts that are about to expire.

Studies, Technical Assistance (TA) and Capacity Building:

54. Presentations were made of various studies under implementation, financed under the GEF grant.
   • **BRT Passenger Access:** The consultants (MVA) had submitted the detailed designs and implementation plan for Corridor 1 in September 2015. Following a workshop in January 2016 and upon instructions received from PCMC, MVA submitted a modified version of its original designs, keeping the geometrics of major junctions unchanged from their current condition. This is quite unfortunate as the current layouts are neither efficient nor pedestrian-friendly. MVA, along with the traffic signaling cum engineering consultants who are about to be contracted (see above) will need revisit the geometric design of the junctions. The detailed designs of MVA for corridor 1 were reviewed along with PCMC and one of the primary concerns of PCMC was the high costs of the improvements suggested by MVA (roughly INR 30 crores). Accordingly, in previous meetings there have been discussions within PCMC on reducing the scope of the improvements and focusing on footpaths and side street improvements in Phase 1 and pedestrian refuges and plazas and cross over facilities in Phase 2. This is worrying as there are several high priority interventions for improving passenger access and safety.
which require immediate attention. Following the review of designs, it was suggested MVA revisit their recommended designs from the following perspective:

- Dedicated cycle tracks along the main corridor, especially in view of negligible cycling traffic, and to the detriment of sidewalks may not be worthwhile in the first instance. MVA should therefore prepare designs without cycle tracks but wide and continuous footpaths. Also, removing existing trees along the footpath and designing the landscaping between the NMT lane and the MV lane may not be desirable.
- The designs should factor in access from both sides of the stations in case of select highly trafficked stations besides midblock stations.
- Review intersection designs.

- There are many BRT stations located midblock, between major intersections. MVA has prepared layouts for these, and it was agreed that mid-block access improvement are the net highest priority. The mission recommends that PCMC, based on MVA’s technical advice, send the PMU and Bank by June 30, 2016 complete designs for these mid-block locations, including the location of painted crosswalks, placement of bollards and pedestrian barriers, traffic signals, and street lighting (using then standards proposed by IIT).

- Promotion & Outreach Plan for BRT: The consultants (IBI Group / CEE) are now winding up the engagement. The Rainbow website and the active engagement on social media has been an effective communication tool with the public. While a lot of positive feedback is flowing in, there are queries, suggestions and areas for improvement also being highlighted which need to be responded to. PMPML informed the mission that they were in the process of setting up a Grievance Redressal Unit and this function would also be taken up by them. Meanwhile, PCMC was advised to extend the consultant contract to cover the launch of the next corridor.

- Parking Policy and Master Plan: The contract was signed with UMTC in October 2013, the study commenced in November, and the Draft Report had been submitted and commented on by the Bank. It was agreed in the last review meeting on Sept 30, 2015, that the consultants (i) needed to revisit some of the parking policy principles and language to make it more transit friendly and geared towards disincentivising personal modes; (ii) need to separate out the recommended parking policy and implementation plan out of the detailed technical analysis; (iii) PCMC needs to organize discussions with key internal stakeholders such as Town Planning Dept, Traffic Police, Corporators etc. to gain consensus on the policy and implementation. PCMC proposed to organize a consultation in each of the 6 wards of the city. All of these actions are yet to be completed and the Mission urged PCMC and the consultants to move forward with these to ensure the policy and implementation plans early adoption.

- Monitoring and Evaluation; the consultants (IBI Group) presented a “Review of Post-Launch Operations”, taking account of field surveys carried out between November 2015 and March 2016. Their key recommendations are:
  - Increase BRT fleet size
  - Re-route BRT routes with very low frequency, i.e. carry out a further route rationalization on Corridor 2.
  - Increase routes on Corridor 3
  - Improve bus headway adherence
  - Several other operational improvements
- PMPML’s BRT cell should hire traffic/transport planners and communication experts
- Pedestrian safety and accessibility should be improved
- For Corridor 2, a study should be carried out to improve junctions and signal designs
- The connectivity between Corridors 3 and 1 (i.e. the pedestrian bridge at Nashik Phata) should be expedited

The mission recommends that PCMC and PMPML inform the PMU and Bank by June 30, 2016, on the actions taken (or to be taken) to implement the above recommendations.

- **GEF funding:** It had been suggested that some of the remaining GEF funds might be used to provide assistance on BRT operational aspects for aspects that are considered high-urgency. Examples:
  - Design by experienced traffic engineers to improve functionality and safety of intersections geometrics, pavement markings, traffic signs (including phasing and timing)
  - Study to define a strategy for introducing off-board fare collection
  - Individual consultant to assist PMPML in addressing bus bunching
  - Driver Training
  - Other assistance

- **Off-board fare collection:** Late in 2015, PMPML (through PCMC) submitted a draft terms of reference (TOR) to carry out a study of fare collection options. The Bank’s comments were discussed with PCMC and ITDP, and there was agreement that most suggested modifications would be incorporated in the revised text. There has not been much progress on this in recent months. The mission recommends that PMPML submit the revised TOR to PCMC, which would then pass it on to the PMU and the World Bank for no-objection. The mission further recommends that the text of a notice be drafted to request Expressions of Interest (EOI), and be sent to the PCMC, PMU and the World Bank as a matter of urgency, no later than May 15, 2015.

- **Bus Bunching:** One of the main issues is the bunching of buses, which to some degree (but not entirely) is due to the long mixed-traffic runs in Pune before reaching the busway in Pimpri. The long traffic signal cycles also contribute to that phenomenon. As bus bunching severely affects the quality of the BRT service, the mission recommends that PMPML give urgent attention to this problem. Other contributing factors would be irregular bus dispatching at depots, traffic signal timing, and driver behavior. Moreover, the ITMS systems is not currently being used to control bus headways. It was agreed that it would be useful to identify the key factors of bus bunching in Pimpri and to develop a strategy to reduce this phenomenon to the minimum possible. The mission repeats its previous recommendation that ITDP, in collaboration with PMPML, define a simple TOR for an individual consultant to carry out that work, to be funded under the GEF part of the project. The mission further recommends that PMPML submit those TOR to PCMC, PMU and the World Bank by May 31, 2016, together with the names of at least three bus operations specialists, one of whom would be selected for this task.

**Discussions with PMPML**

55. The mission met with PMPML team and held discussions on the performance of the two BRT corridors and the preparedness for launch of Corridor 1. The mission congratulated PMPML on the performance of the BRT corridors and the growing
ridership and revenue levels. The mission was informed that the ridership on both Corridor 2 & 3 has been growing and has increased from 61,000 to 84,000 between September 2015 and February 2016, and 10,000 to 17,000 between December 2015 to Feb 2016 respectively. The revenue has also gone up at the same time. There are about 110 buses plying on Corridor 2 and 30 buses on Corridor 3.

56. It was also highlighted that there was a need to improve the number of routes and buses on Corridor 3 as well as plan for buses for Corridor 1. PMPML informed that they were in discussions with KFW for a loan to address fleet enhancement and infrastructure rehabilitation and construction. Separately, PCMC also shared that they were financing 20 AC buses for the BRT corridor and plans were afoot for another 500 buses for PMPML.

57. The need for improving the ITS system performance, completing the control centre and having a clear system acceptance test plan in place for emphasized. PMPML confirmed that the ETM deployment which had been slow to start was now moving forward and would be completed by July 2016.

58. The issues of bus bunching, docking gaps, and off board fare collection systems and fare rationalization were discussed at length and it was agreed that PMPML will move forward with the agreed studies and training program with the help of PCMC GEF grant facility.

59. The issue of security for the Corridor stations came up and how that was holding up the fitment of ITS and other electronics etc. PMPML confirmed that they were in the process of re-hiring the security wardens as the previous contract was also coming to an end. They also agreed to consider including within the scope of station cleaning the cleaning of the access passage to the stations.

**Environment Management**

60. 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. It also met with the Horticulture Department to understand the status of plantation, both at Durga Tekri and at the edge of the RoW, and in the median along BRTS corridors.

61. EMP implementation near the Pavana River: The mission noted that the Pavana river flow is diverted to allow the construction of the cast-in-situ spans, which would be completed by June 1, 2016. The mission urged PCMC to ensure that the Contractor prepare and get approved a plan to dispose of the large quantity – over 5,000 cu. m. of waste coming from the river – mostly construction material. In addition to identifying the location, the key issue that the plan should help the contractor and PCMC think through is the safe movement of the transporting vehicles without hampering traffic as all potential disposal site are located on the opposite side of the corridor 1 as the Pavana river. In addition, the facilities for the workers also need to be improved to accommodate the higher numbers that are being currently employed at site to accelerate the progress of works.
62. **Plantation within PCMC:** The mission met with the Horticulture Department head and discussed the progress in plantation. It was pleased to hear that the plantation undertaken by PCMC in Durga tekri was quite successful. For the plantation along the corridor, mixed results were obtained as the local people, in some stretches, were not cooperating and disturbing the newly planted saplings. The mission agreed that this should be documented as a good practice by the NPMU’s PMC for development of its compendium for use by MoUD and other cities across the country. It was agreed that the actual data regarding the plantation undertaken at Durga Tekri across the various years, rates of survival, and status of plantation along the BRTS corridors would be confirmed by PCMC through the Horticulture Department by XXX. This information would also be disclosed on the PCMC website.

63. **Key Agreed Actions**

- PCMC to confirm contracting of traffic engineering consultant – May 15, 2016
- PCMC to advise on missing right-turn signals on Corridor 2 and how to rectify this – May 15
- PCMC to inform Bank on implementation plan and time schedule to achieve passenger transfers between Corridors 1 and 3 – May 15
- PCMC to send traffic management plan for Bhosari terminal – May 15
- PMPML and PCMC to issue EOI for off-board fare collection study – May 15
- PCMC to prepare at-scale layout of busway segregation between Pimpri Chowk and Morwari Junction – May 31
- PCMC to define a time-bound action program to improve pedestrian conditions at Corridor 2 intersections – May 31
- PCMC to redesign geometrics and signal control at Jagdap Dairy, Kalewadi Junction and Dange Chowk – May 31
- PCMC to advise on possible footpath improvement north of Kalewadi junction to facilitate transfer passengers between Corridors 2 and 4 – May 31
- PCMC to advise on observed signal cycles at Corridor 2 & 3 intersections – May 31
- PCMC to advise on strategy for improved pedestrian convenience and safety – May 31
- PMPML and PCMC to advise on actions taken to ensure correct bus and station door closing – May 31
- PCMC and PMPML to advise on painting of lines at BRT stations and other measures to improve bus docking – May 31
- PMPML to draft TOR for expert to address bus bunching issue – May 31
- PCMC to advise on actions taken to implement IIT traffic safety audit – May 31
- PCMC to advise on the implementation of MVA access recommendations – May 31
- PCMC to send time-bound action program to complete works on Corridor 1 – May 31
- PCMC to send designs for pedestrian access to mid-block BRT stations and for select highly trafficked stations on Corridor 1 – June 20
- PCMC to send traffic engineering designs for Corridor 1, including signal phasing and possible geometric improvements – June 30
- PCMC to advise on actions taken to implement recommendations of Monitoring Consultants – June 30
- PCMC to advise on revised pilot scheme to install push-button actuated pedestrian signals – July 31
- Complete ETM installation at depots for Corridor 3: Apr 30; All corridors – Jul 31
- Resolve PIS and ETA issues and submit ITS performance reports/ Complete operational acceptance – May 31
- Submit the system acceptance test plan – Apr 30
- Complete works on ITS control room at Swargate – May 31
- Complete construction of Ramp 2 on Nashik Phata – Dec 2016
- Submit the design options for the two ramps at Empire Estate intersection for Bank review – Apr 30
- Extend Corridor 3 and 4 PMC’s contract – Immediate
- Complete all LA R&R activities – Jun 30, 2016
  - Tripartite agreement on MIDC land – Apr 30
  - Compensation payments / TDR issuance to 148 PAPs where PCMC has negotiated settlement – Jun 15
  - Finalisation Compensation payment (or deposit in court) to titleholders on Corr 3 & 4 – June 15
  - Shifting of PAPs from Transit to permanent housing – May 15
  - Completion allotment of EWS housing to all eligible people and decide on support to those ineligible people for EWS housing and affected small businesses – May 15
<table>
<thead>
<tr>
<th>Contract</th>
<th>Description</th>
<th>Length (km)</th>
<th>Original Contract Amount (million INR)</th>
<th>Revised Contract Amount (million INR)</th>
<th>Works Start Date</th>
<th>Original Works Completion Date</th>
<th>Extended Works Completion Date</th>
<th>Approximate Value of Works Done (million INR)</th>
<th>Physical Progress (in financial terms)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1</td>
<td>Interchange at Nashik Phata (Bank-financed)</td>
<td>0.9075</td>
<td>988.1</td>
<td>988.1 + 11.1 (adjustment to Contract Price) + 142.1 (variation) = 1,141.3</td>
<td>12 Jul 2010</td>
<td>13 Jan 2013</td>
<td>31 Dec 2016</td>
<td>880.8 + 11.1 + 142.1 + 15 (ongoing Ramp 2 works) = 1,049</td>
<td>91.9%</td>
<td>Land issue on Left Side of Ramp 2 to be resolved</td>
</tr>
<tr>
<td>3-3</td>
<td>Kasptewasti to Wakad</td>
<td>2.28</td>
<td>288.7</td>
<td>25 Aug 2009</td>
<td>24 Feb 2011</td>
<td>31 Aug 2013</td>
<td>364.4</td>
<td>Complete</td>
<td></td>
<td>260 m length has been contracted separately</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.26</td>
<td>62.1</td>
<td>04 Mar 2016</td>
<td>03 Dec 2016</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pedestrian Facilities</td>
<td>99.4</td>
<td></td>
<td>29 Feb 2016</td>
<td>28 Feb 2017</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction of 8 Bus Stops</td>
<td>38.96</td>
<td></td>
<td>05 Mar 2014</td>
<td>04 Sep 2014</td>
<td>38.0</td>
<td>Complete</td>
<td>14 Bus Stops constructed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction of 7 Bus Stops</td>
<td>34.09</td>
<td></td>
<td>07 Nov 2014</td>
<td>06 May 2015</td>
<td>33.5</td>
<td>Complete</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dedication of Corridor</td>
<td>49.83</td>
<td></td>
<td>12 Aug 2014</td>
<td>10 Nov 2015</td>
<td>46.2</td>
<td>Complete</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-1</td>
<td>Kalewadi Phata</td>
<td>1.600</td>
<td>241</td>
<td>25 Aug 2009</td>
<td>24 Feb 2011</td>
<td>30 Sep 2013</td>
<td>238</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Annex 3-A**
<table>
<thead>
<tr>
<th>Contract</th>
<th>Description</th>
<th>Length (km) of exclusive BRT corridor</th>
<th>Original Contract Amount (million INR)</th>
<th>Revised Contract Amount (million INR)</th>
<th>Works Start Date</th>
<th>Original Works Completion Date</th>
<th>Extended Works Completion Date</th>
<th>Approximate Value of Works Done (million INR)</th>
<th>Physical Progress (in financial terms)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-2</td>
<td>Chinchwadgaon Bridge Phata to Pawana River Bridge Approach</td>
<td>1.400</td>
<td>198.9</td>
<td>14 Dec 2010</td>
<td>13 Jun 2012</td>
<td>31 Mar 2014</td>
<td>0.3</td>
<td>0.1%</td>
<td>Land is now available for about 400m length. Contractor has started works recently.</td>
<td></td>
</tr>
<tr>
<td>4-3</td>
<td>Empire Estate Grade Separator (Bank-financed)</td>
<td>1.600</td>
<td>984.0</td>
<td>06 Apr 2011</td>
<td>10 Oct 2013</td>
<td>29 Feb 2016</td>
<td>561.6</td>
<td>56.6%</td>
<td>Site availability issues to be resolved by PCMC. Contractor has planned to complete (except Components V and VI) by Oct 2016.</td>
<td></td>
</tr>
<tr>
<td>4-4</td>
<td>Pawana River to KSB Chowk</td>
<td>2.080</td>
<td>372.9</td>
<td>28 Feb 2013</td>
<td>31 May 2014</td>
<td>31 Mar 2016</td>
<td>350.9</td>
<td></td>
<td>Work ongoing. Land not available for 60 m length.</td>
<td></td>
</tr>
<tr>
<td>4-5</td>
<td>KSB Chowk to Dehu Alandi Road</td>
<td>1.450 (total length of contract 3.795 km)</td>
<td>370.7</td>
<td>25 Aug 2009</td>
<td>24 Feb 2011</td>
<td>31 May 2015</td>
<td>353.5</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction of</td>
<td>50.5</td>
<td>05 Mar 2014</td>
<td>04 Sep 2014</td>
<td></td>
<td>47.9</td>
<td>Ongoing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract</td>
<td>Description</td>
<td>Length (km) of exclusive BRT corridor</td>
<td>Original Contract Amount (million INR)</td>
<td>Revised Contract Amount (million INR)</td>
<td>Works Start Date</td>
<td>Original Works Completion Date</td>
<td>Extended Works Completion Date</td>
<td>Approximate Value of Works Done (million INR)</td>
<td>Physical Progress (in financial terms)</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------</td>
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<td>-------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>10 Bus Stops – Part I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of 10 Bus Stops – Part II</td>
<td></td>
<td>51.1</td>
<td>05 Mar 2014</td>
<td>04 Sep 2014</td>
<td>24.4</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Dedication of Corridor</td>
<td></td>
<td>50.6</td>
<td>05 Mar 2014</td>
<td>04 Dec 2014</td>
<td>19.4</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
<td></td>
</tr>
</tbody>
</table>
Social Management

Land Acquisition and Resettlement Implementation

1. The pending land acquisition continues to affect the construction of Corridor 4 and will have serious implications in completing the remaining construction due to the pending land acquisition and compensation payments. The detail are summarized below

2. Case 1 (Corridor 4): 4.69 hectares of land involved along a stretch of 1.4 Kms² near MM school to Pawana river, near Adarsh Nagar is a complex case, where about 50 families are residing. 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, about 50 small businesses who have approached to Pune District Court on the compensation issue is also affecting the remaining construction. 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. Thus, the pending land acquisition is a complex one since some of the affected households may not be eligible for EWS housing (about 25) and getting them vacated without any assistance will be difficult.

3. 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. The mission was informed that there is an agreement on the tripartite agreement but this needs to be endorsed by MIDC before submitting to the court. Once this is submitted to the court, it will give a direction on how to proceed further in the rehabilitation of the affected units and compensation payable to the affected unit by PCMC. During the mission, PCMC informed that MIDC is seeking certain clarifications and hopes to submit it to the court by end of April, 2016.

4. Case 3 (Corridor 4). It seems that the land owners in P11-P17, are obstructing construction on the ground that they have not received full compensation since the land has been taken on advance possession and payment of compensation has been delayed. It is understood that PCMC is advising the land owner to take TDR in lieu of compensation and the land owner is not keen in taking TDR and asking PCMC to pay cash. Any delay in paying compensation, will have implications in completing remaining construction.

5. Case 4 (Corridor 3). 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.

6. The mission also met the Special Land Acquisition Officer (SLAO), who mentioned that a large number of the land owners have not come forward to claim the compensation and they are unable to deposit the compensation amounts in the courts since the court has been insisting them to submit only those amount where the land owners have refused to accept the compensation.

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2 PCMC is yet to be updated on the roads stretches that are not available for construction. Once this is made available, this will be updated.
amounts. The summary of land acquisition details and progress is presented below and is subject to correction once PCMC provides updated details.

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Land Acquisition Target (in Ha)</th>
<th>Land Acquisition through Act (in Ha)</th>
<th>Land Acquisition through TDR/FSI</th>
<th>Total Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalewadi-Dehu Alandi Road</td>
<td>40.75</td>
<td>27.25</td>
<td>9.74</td>
<td>36.99 (90.77%)</td>
</tr>
<tr>
<td>Nasikphata-Wakad Road</td>
<td>61.90</td>
<td>15.03</td>
<td>38.14</td>
<td>53.17 (85.89%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102.65 (100.00%)</strong></td>
<td><strong>42.28 (100.00%)</strong></td>
<td><strong>47.88 (100.00%)</strong></td>
<td><strong>90.16 (87.88%)</strong></td>
</tr>
</tbody>
</table>

*subject to confirmation by PCMC

<table>
<thead>
<tr>
<th>Corridor</th>
<th>No of Title holder as per Compensation Award</th>
<th>No of title holders received compensation</th>
<th>No of Titleholders opted for TDR/FSI</th>
<th>No of Title holder received TDR/FSI certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalewadi-Dehu Alandi Road</td>
<td>3294</td>
<td>580</td>
<td>46</td>
<td>44</td>
</tr>
<tr>
<td>Nasikphata-Wakad Road</td>
<td>3693</td>
<td>416</td>
<td>151</td>
<td>143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6987</strong></td>
<td><strong>996 (14.25%)</strong></td>
<td><strong>197</strong></td>
<td><strong>187 (94.92%)</strong></td>
</tr>
</tbody>
</table>

*Subject to confirmation by PCMC

7. **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 progress to date is as follows.

<table>
<thead>
<tr>
<th>No</th>
<th>Type of assistance</th>
<th>Target</th>
<th>Revised Target</th>
<th>Progress</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transportation allowance</td>
<td>282</td>
<td>187</td>
<td>187 (100.0%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Assistance for Vulnerable Families</td>
<td>76</td>
<td>54</td>
<td>54 (100.0%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Payment of subsistence allowance</td>
<td>68</td>
<td>35</td>
<td>35 (100.0%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Subsistence allowance for Non- title holders</td>
<td>72</td>
<td>5</td>
<td>5 (100.0%)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Allotment of EWS Houses (handover of house keys)</td>
<td>257</td>
<td>123</td>
<td>102 (89.93%)</td>
<td></td>
</tr>
</tbody>
</table>
6. Allotment of alternative houses to affected squatter families

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<tbody>
<tr>
<td></td>
<td>Allotment of alternative houses to affected squatter families</td>
<td>144</td>
<td>144</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>20 paid self-contribution and Bank loans approved for 56 people</td>
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7. Payment of Vulnerability assistance to Squatter families

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<tbody>
<tr>
<td></td>
<td>Payment of Vulnerability assistance to Squatter families</td>
<td>93</td>
<td>79</td>
<td>79 (100.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
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8. Payment of additional subsistence allowance to shopkeepers

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</thead>
<tbody>
<tr>
<td></td>
<td>Payment of additional subsistence allowance to shopkeepers</td>
<td>34</td>
<td>26</td>
<td>26 (100.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
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9. Payment of R&R assistance to affected shopkeepers

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<tbody>
<tr>
<td></td>
<td>Payment of R&amp;R assistance to affected shopkeepers</td>
<td>32</td>
<td>25</td>
<td>25 (100.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
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10. MOUs with shopkeepers

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</thead>
<tbody>
<tr>
<td></td>
<td>MOUs with shopkeepers</td>
<td>32</td>
<td>32</td>
<td>26 (81.25%)</td>
</tr>
<tr>
<td></td>
<td>Shops will be allotted as and when ready</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

8. **EWS Housing.** The allotment of EWS housing to eligible PAPs is at various stages. Out of those 123 identified as eligible and out of these 102 families have moved into new houses and the remaining are waiting the allotment.

9. **Resettlement of those residing in the Transit camps.** The resettlement of those 144 families residing at Transit site continue to be delayed. It is more than 5 years since these people have been residing on this transit site. There is some progress since last mission in November 2015 as regards payment of initial contribution, approval of Bank loans and commencement of repairs to building where these people will be resettled. As on date 20 of them have self-contribution and Bank loans are approved for another 56 PAPs. PCMC has assured that since the repairs are about to be completed in first three floors, they will resettle all those who have paid self-contribution who have signed mortgage deed with the Bank and the remaining families by May, 2016. During consultations people expressed that they would like to move together rather than in batches and requested PCMC for an increase in the height of boundary wall, construction of a wall separating them from other buildings and provide separate access to the building at the new site.

10. **Consultations with PAPs.** The mission held consultations with about 10 PAPs along with local corporator. Their main concerns included that some of the people who are declared ineligible for EWS, some of them do not have houses, as their alternative houses were affected by other development projects such as Garden project or other BRT corridors and in some cases the houses are occupied by their married children and in some cases the alternative houses were sold out. Some of the PAPs mentioned that PCMC is insistent that they take TDR in lieu of compensation. Some of the people also expressed that their lands were taken in advance possessions, but compensation has not been paid even after one year. In case of one of the PAPs, the house and his small industry is affected and PCMC is not providing alternate site for relocation of small scale unit. The Commissioner clarified that in those cases where large land parcels are lost PAPs are encouraged to opt for TDR, since the rules were made very attractive recently and is more beneficial than cash compensation. In case of those who are identified as ineligible, PCMC need to verify case by case to understand their concerns before taking any action as not-eligible. Some of them who do possess houses have expressed that they will vacate the houses after receiving compensation for the land that is currently occupied by them.
Follow-up actions.

11. Following, the discussions during the supervision mission and discussion during the Tri-partite Portfolio Review meeting on April 08, 2016 at Lucknow, the Task Team has written to PCMC to complete the following tasks in a time bound manner and provide clarifications where required and attend the non-compliances to bring the social management to a satisfactory level.

- All those families living in the transit site and have paid cash towards beneficiary contribution and those who have signed mortgage deed for Bank loan will be issued possession letters and shifted to Vittal Nagar building by April 15, 2016 and the remaining families by end of May, 2016;

- The land compensation for those land owners (about 150 land owners) whose lands are acquired through private negotiations and taken lands through advance possession will be paid compensation in line with RTFCTLARR Act, by April 21, 2016;

- PCMC will follow up with MIDC to ensure that tripartite agreement in case of affected MIDC land, will be submitted to the court by April 30, 2016 and a copy of the agreement will be shared with the Bank for records;

- PCMC will confirm the details of private land acquisition for Corridor 3 and 4 at the earliest. The details include: (i) the extent of land acquired and number of land owners affected, (ii) number of land owners paid compensation and outstanding; (iii) number of land owners opted for TDR/FSI and the status of issue of TDR/FSI certificates; and, (iv) target date for payment of compensation for those outstanding or deposit in the court if not possible to pay compensation due to dispute in ownership or apportionment of compensation amount among the claimants.

- As regards those not eligible for EWS housing, PCMC will review with the concerned people on case by case basis since some of them have indicated that they will be losing their alternative house to other projects or occupied by other family members due to marriage, etc. In case of those not eligible for EWS housing, the land owners mentioned that they will vacate the land after the land compensation is paid. Therefore, the land acquisition process need to be expedited and pay compensation. PCMC should confirm when they will be able to complete the land acquisition and payment of compensation or allot EWS housing so that the land will be made available to the contractor. PCMC will confirm a time frame for issuing possession letters to the remaining eligible people for EWS housing and pay land compensation, so as to hand over the remaining land to the contractor;

- In case of those who are not eligible for EWS housing, the Bank team has been advising PCMC to consider paying compensation for affected structures since the High court had ordered to pay compensation for structures in case of Mr. Lakshman Gosavi in May, 2014. On the lines of the court order, PCMC should consider to pay compensation for affected structures in case of those who are not eligible for EWS housing, so as to comply with the Bank’s policy provisions on Involuntary resettlement, that all affected assets is to be compensated irrespective of legal status; and,

- In case of affected small business (about 50), PCMC will offer an alternative rental shops available with PCMC and expedite payment of compensation for the affected land in accordance with RTFCTLARR Act. PCMC will indicate a time frame and complete this task within the committed time frame.
<table>
<thead>
<tr>
<th>Actions to be Completed</th>
<th>By when</th>
<th>By whom</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete remaining land acquisition and allot EWS housing/shops to hand over remain gland to contractor</td>
<td>Over Due</td>
<td>PCMC</td>
<td>Revised target for completion is June 30, 2016</td>
</tr>
<tr>
<td>Submission of Tripartite agreement to court on rehabilitation of affected industrial units on MIDC land</td>
<td>Over Due</td>
<td></td>
<td>Revised target date is by April 30, 2016</td>
</tr>
<tr>
<td>Shifting of Displaced families living in Transit housing</td>
<td>Over Due</td>
<td></td>
<td>Expected shortly to shift first batch once the repairs are completed by May 15</td>
</tr>
<tr>
<td>Payment of Compensation for those whose lands are taken on advance possession.</td>
<td>30-Apr-16</td>
<td></td>
<td>First batch by May 15 and remaining by Jun 15</td>
</tr>
</tbody>
</table>
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 April 8-9, 2016, to discuss the implementation of the Naya Raipur component of the Sustainable Urban Transport Program (SUTP). The meetings were chaired by Mr Salil Shrivastava, Chief Engineer, NRDA and Mr. L.K. Panigrahi, Chief Project Manager and their 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 484.8 million. Physical progress has been about 65% of likely Completion Cost.

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-Secciones. Final Road Cross-Section 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 both layers of Wet Mix Macadam (WMM) of total thickness 225 mm in about 37 kms. Again, out of about 28 kms of Footpaths, 21km length has been completed in all respects. PMC is of the view that with present rate of progress remaining work in this section would be completed by end June, 2016. Out of about 80 kms of pre-cast concrete kerbs to be laid, about 58 kms have been laid. In case of cast-in-situ kerbs, only 15 kms have been laid out of a total quantity of 45 kms. The contract also includes laying of Paving Blocks in about 4 km length of Pedestrian Crossings for which materials have been procured but laying is not started yet. PMC is of the view that this work would be completed by end July, 2016.

4. There are about INR 45 million worth of works for Cross-Drainage Structures. Out of the Six Minor Bridges, Deck Slab and Superstructure works completed for Five Nos. The Mission had noted that the deck slab of the Minor Bridge structure at Km 4.800 on Road No. 2, cast about 7 months back, was full of cracks. Apart from tests already conducted it was considered necessary to check if high chloride and sulphate content in set concrete could be the reason for such cracks before taking decision on epoxy grouting. However, the test was not done as per relevant code and core samples will have to be sent for retesting. In the meantime during meeting on the suggestion of PMC it was agreed that while above testing would be conducted the Contractor would be allowed to proceed with injection of epoxy of approved make applied through authorized applicator of the epoxy supplier, followed by checking efficacy of grouting through appropriate tests. However, if test results on core are subsequently not found to be satisfactory then the concerned deck slab panels would be dismantled, removed and re-built by the Contractor at no extra cost to the contract.
5. PMC explained that the most critical activity in this contract now is Procurement and Laying of Paving Tiles in the Footpath areas. About 90,000 sqm of Paving Tiles are to be laid out of which 68,000 sqm area have already been laid. For the balance quantity procurement plan has been submitted by Contractor to PMC along with activity wise manpower deployment. On the basis of current mobilization and rate of progress at 8,000 sqm per month PMC considers the schedule of completion of work by mid-June, 2016 as realistic.

6. Works Completion Period for the contract has been extended until 30 April 2016. The Contractor informed that it would complete all works by 31st July, 2016. With increase of resources and upgrading of capacity of Hot Mix Plant, PMC is of the view that it should be possible to meet the target of completion.

### Bus Rapid Transit (BRT) Lite

7. Three BRT corridors are planned:
   - Corridor 1: Raipur 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).

8. **Construction of BRT Bus Shelters, Pick-up Points, BRT Workshop Depot and Control Centre.** 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. The Completion Cost subsequently reduced to INR 247.3 million because of higher provision of several items in the contract. Progress of works until Nov, 2015 is about 78% of likely Completion Cost. The contract has been extended until 31 March 2016 with further extension of time till 30 June, 2016 under process.

9. At the proposed **Pick-up Point near Old Mantralaya,** Dry Lean Concrete (DLC) has been completed in the full pavement area and about 80% of the Pavement Quality Concrete (PQC) has been laid. Cutting of grooves at the joints in the PQC and their sealing had been initially delayed beyond stipulated period but now completed including sealing of grooves. The structure of the Bus Station has been completed including the roof while for false ceiling work aluminium framing is now in progress. During field inspection on PQC laid at Old Mantralaya site it was noticed that due to saw-cutting not being done at exact location of construction joint before application of sealant, cracks of long length have appeared parallel to sealant alignment at a distance of 2 to 3 cm at several joint locations in the yard. These small strips of concrete are vulnerable to being removed with movement of vehicles over the PQC and need to be closely observed. Suitable necessary action would have to be taken at appropriate time for repair/rehabilitation.

10. At the **Workshop Depot and Control Centre** site, about 96 p.c Compound Wall is completed leaving only temporary entrance area. Underground Water Tank structure is almost complete, finishing works ongoing for Washing Ramp and Inspection Pit, full Pavement Quality Concrete (PQC) works have been completed, and structures for Workshop and Control Centre are complete. However, internal and finishing works are ongoing therein.
11. The structures have been completed including the roofing for **Bus Shelters** 1 to 8. Finishing works are ongoing at these Shelters. Previous missions had suggested that 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 in response to which NRDA has initiated the procurement of a safety audit.

12. At the proposed **Pick-up Point at Raipur Railway Station**, the structure of the Bus Station has been completed including the roof while the finishing works are in progress. Pavement works abutting the Bus Station are not within the contract. For this extra work drawing has been issued by PMC to contractor with a copy to NRDA. Now NRDA needs to make arrangement of carrying out the required Pavement works in consultation with Indian Railways.. Although previous Missions were 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**, NRDA has agreed to developing conceptual drawings for the pathway and parking area for discussion with Railways.

### STATUS OF THE WORKS CONTRACTS

<table>
<thead>
<tr>
<th>Contract Description</th>
<th>Name of Contractor</th>
<th>Origin Contra ct Amou nt (millio n INR)</th>
<th>Likely Completion Cost (million INR)</th>
<th>Wors ks Start Date</th>
<th>Original Works Completi on Date</th>
<th>Extende d Works Completi on Date</th>
<th>Approxim ate Value of Works Done (millio n INR)</th>
<th>Physical Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Shelters, Pick-up Points, Workshop Depot and Control Centre</td>
<td>Essel Infrastructure Private Limited, Raipur</td>
<td>298.9</td>
<td>239.6</td>
<td>31 Dec 2013</td>
<td>30 Mar 2015</td>
<td>31 Mar 16 (Request for Extn upto 30.6.16)</td>
<td>186.2</td>
<td>77.7% of likely Completion Cost</td>
</tr>
<tr>
<td>Non-Motorized Transport Infrastructure (Cycle Tracks, Walkway, etc)</td>
<td>BSBK Private Limited, Bhilai, Chhattisgarh</td>
<td>416.5</td>
<td>481.8</td>
<td>28 Mar 2014</td>
<td>27 Jun 2015</td>
<td>30 Apr 16 (Request for Extn upto 31.7.16)</td>
<td>315.0</td>
<td>65.4% of likely Completion Cost</td>
</tr>
</tbody>
</table>

**Technical Discussions**

13. **Terminal of BRT-Lite at Raipur Railway Station:** During a field visit the mission observed that work progress had been slower than expected. While some elements of the station may be delayed until system opening is clearly defined (to avoid vandalism), there is no such reason to raising the bus roadway by 300 mm nor building
the 4m wide table-top footpath to the railway station. With regard to the latter, it was agreed that NRDA will determine its exact location and the layout of vehicle parking in front of the railway station, no later than April 16, 2016. Following approval of the plan by the railway authorities, construction of the table-top footpath could begin.

14. It was noted that the southern access ramp to the BRT terminal ends in an ill-defined area used by buses, other motor vehicles and pedestrians. In order to improve access conditions for BRT passengers and minimize accident hazards, it was agreed that NRDA will prepare a traffic engineering design of that area, including an at-grade pedestrian crossing of Station Road, no later than May 15, 2016. Following approval of the plan by the Raipur Municipal Corporation, works could begin to improve the traffic and pedestrian conditions in that area.

15. There are thus multiple outstanding works in the terminal area, some of them requiring approval by the railway authorities and the Municipal Corporation. The mission recommends that NRDA prepare an itemized schedule and dated action plan to complete the designs, approvals and works and send it to the PMU and World Bank by May 31, 2016.

16. 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 previous mission recommended that NRDA design space for those feeder buses, and send a concept report to the PMU and World Bank. However, NRDA feels that there would not be enough capacity for the extra buses in the narrow access roads to the terminal. That argument is not very convincing, considering that there would be only one feeder bus every 3-5 minutes while many more cars and small vehicles use the same roads. There may however be operational constraints faced by the city bus company to terminate some of their buses at the Old Secretariat.

17. The routing of feeder buses will depend on the BRT service plan, which is yet to be finalized. It is expected that the city buses plying along GE Road will continue to operate to Gadhi Chowk and the Railway Station. If so, it will be imperative to establish bus stops at the junction of GE Road with the accessway to the Old Secretariat, and to build the planned footpath on the eastern side of that accessway. Moreover, a pedestrian crossing (cutting though the massive median segregation of GE Road) will be needed to connect the inbound city buses with the BRT terminal. It was agreed that NRDA will prepare a geometric layout of an at-grade pedestrian crossing at that location, no later than May 31, 2016. Following approval of the layout by the Raipur Municipal Corporation, works could begin to establish that crossing (which might be combined with an opening for U-turns of motor vehicles).

18. The previous mission had also recommended that the access and egress roads and the circulation plan for the entire area surrounding the terminal should be reviewed and that any (probably minor) works that may be required to ensure the fluid movement of buses and minibuses be defined. No such review was made, and the mission thus repeats its previous recommendation to carry out that review and advise the PMU and the Bank of the conclusions, by May 31, 2016.
19. Similar to the case of the Railway station, there are multiple outstanding works in and near the Old Secretariat, some of them requiring approval by the Municipal Corporation and the City Bus company. *The mission recommends* that NRDA define an itemized schedule and dated action plan to complete the designs, approvals and works and send it to the PMU and World Bank *by May 31, 2016*.

20. **Pick-up and Drop-off Points at Gadhi Chowk:** The initial review of the service plan indicated that a pick-up and/or drop-off point for the BRT-Lite may be required near Gadhi Chowk, to connect with city center destinations and several feeder routes, obviating the need for BRT passengers to travel all the way to the Railway Station. This concept has now been accepted by NRDA and its service plan consultants, and an acceptable location has been identified for the drop-off point. NRDA voiced some concerns regarding a pick-up point for Naya Raipur-bound buses coming from the Railway Station. However, following a joint field inspection during the evening peak traffic period, a logical space was identified in a reserved area northwest of the main intersection (which is already being used by the City buses to pick up passengers). There seemed to be general agreement that there could be adequate space for a BRT-Lite pick-up point. However, it was felt that while a drop of point could be provided to passengers at Gadhi Chowk it might be preferable to limit pick ups to the Railway station and Old Secretariat locations only. These provide safer and superior quality infrastructure commensurate with the branding of the BRT service. The bus stops could serve the BRT-Lite without additional works, but it would be desirable to improve the footpaths in the area and possibly build simple shelters. *The mission recommends* that NRDA consider such improvements and send any proposed layout plans to the PMU and the World Bank *by May 31, 2016*.

21. **Pick-up and Drop-off Points at Telibanda:** The bus service plan has confirmed the establishment of a pick-up and drop-off point at Telibanda, connecting the BRT-Lite with some feeder routes. NRDA officials and the mission visited the area again and agreed in principle to lengthen the existing City bus stop so it could also accommodate the BRT-Lite buses. Designs will need to be prepared, covering the following elements:
   a. Lower the existing curb platform from the current 450-500 mm to 150-200 mm to ease the passage of bus passengers.
   b. Lengthen the bus stop platform to about 30 m
   c. Replace the existing bus shelters, at least that in westbound direction.
   d. Cut the median barrier and install a safe at-grade pedestrian crossing to connect the two bus stops which are at opposite sides of Telibhanda Main Road.  

*The mission recommends* that NRDA prepare the necessary designs and send them to the PMU and the World Bank *by May 31, 2016*.

22. **Intelligent Transport Systems.** The contract for the ITS system integrator has been signed with Rosemerta Technologies based in Gurgaon, India. The detailed design has been completed and order placement and delivery shall now commence with a schedule for delivery of buses now available. The Mission held discussions with the vendor and the ITS PMC on key areas:

- Number and placement of PIS displays and CCTV cameras at Railway Station and Old Mantralaya were clarified. The Bank team encouraged the civil works contractor to work with ITS Systems Integrator to provision all required ducting (including for Station Sliding Doors) as per final cabling schematics provided by the ITS Systems Integrator.
• The Bank team inspected the Training Room for corporate training in the upper level and AVCL room at the Control Center. The Bank team suggested that all training related to Bus operations and maintenance be introduced in the larger AVCL area.

• Smoke Detectors have been installed in the area between ceiling and false ceiling in the Data Center. The Smoke Detection Alarm panel to be tested and SOP for fire related events to be developed by the ITS vendor (DR switchover, Server Shutdown etc.).

•Regarding fare integration, the Bank team recommended that the ITS vendor, as part of operational acceptance testing, demonstrate compliance of the ETM to be deployed in the Naya Raipur network with NPCI National Common Mobility Card specifications through a SAM module even before SUDA, the State Urban Development Agency, is able to sign the MoU with NPCI for state-wide deployment of NCMC-compliant fare systems. SUDA should also work with commercial Banks interested in issuing smart cards for the transit markets in the state. The ITS vendor will provide ETMs with two SAM slots. One will be able to comply with NPCI specifications.

• Availability of Buses and readiness of sites (Bus Shelters and Control Center) were flagged as two potential gating issues in the timely deployment of ITS. The Bank team advised ITS vendor to outline clearly the standard operating procedures associated with physical security of ITS equipment at Bus shelters, Depots, and on Buses until and after operational acceptance and get these SOPs approved by NRDA.

• The Bill of Material (BOM) for mobilization of ITS equipment should be finalized and approved by NRDA by April 18th 2016. This will help the ITS vendor in sourcing the correct quantities of ITS equipment for different Bus Stations and the Control Center. The BOM should reflect procurement of ITS equipment (ETM and Basic PIS display) required at two (2) additional pick-up/drop-off points at Telebandha.

• Since the original contract with ITS vendor calls for the start of O&M period after completion of acceptance testing as on Nov 2015, the contract needs to be suitably amended and time for O&M extended to reflect the delays in start of ITS deployment. The Bank team recommended that the installation of ITS equipment be synchronized with the delivery of UBS-II compliant buses.

• It was understood that the Fare collection agency will be issued a contract by April 12 2016. The Bank team urged the ITS vendor to work closely with the chosen Fare Collection agency to finalize programming of fare policy and incorporation of SOPs related to use of ETMs.

23. **Bus Delivery.** The Mission was pleased to learn that NRDA has now resolved the financing issue and the state government shall be part funding the buses and the balance funds would come from a HUDCO loan. NRDA has reconfirmed the order for 30 buses with Tata Marcopolo, and delivery is now proposed in 60 and 120 days. This period will now commence once the ITS points are reconfirmed to the manufacturers.

24. **BRT Operator:** The RFP for hiring the BRT operator had been issued on July 28, 2015, and the bid submission was proposed for Oct 30. The contract is modelled on a gross cost contract template. However, this had had to be stalled in view of lack of clarity on buses. NRDA has now relaunched the tender for bus operator for bus operations for 4 years extendable subject to satisfactory performance. The mission advised NRDA to consider the term of the contract and
various other issues such as depot equipment installation etc. carefully as they would have a
baring on the quality of services that would be forthcoming.

25. **Fare Policy.** NRDA and its consultants presented the broad fare policy approved by
NRDA for the BRT service. The Mission noted with concern that the 25 km distance between
Raipur to Naya Raipur was proposed to cost Rs. 45 on the AC buses proposed on the BRT, which
was clearly way in excess of the locally available alternatives of RNNTL, etc. as also fares in
other parts of the country. NRDA is strongly advised to revisit the AC rolling stock proposed to
be procured for the BRT which appeared to have the impact of doubling the fares or consider
bringing the fares in line with levels prevalent in the region to ensure attractiveness of the service
and adequate ridership. In other cities where BRT services have been launched efforts have been
made by the implementing agencies to ensure a competitive fare for the BRT in order to ensure
its success. In most cases these have been set equivalent to the city bus service levels in the initial
stages.

26. **Technical Assistance and Capacity Building**

**Regional Mobility Plan.** The consultants (LEA Associates) had prepared a presentation on the
Draft Final Regional Mobility Plan for Greater Raipur Region (GRR). The draft plan for 2034
(with 2019 and 2024 as intermediate target years) envisages a total population of about 6 millions
in the GRR, spread over an area of 5,156 square km. In addition to major road investments
including three ring roads, the plan includes 142 km of suburban railways (an increase of 28 km
over the previous draft) and 277 km of BRTS corridors (a decrease of 39 km). It is envisaged that
the final plan will be presented in Delhi later this month.

**Bus Service Plan and Financial Plan:** Previous Bank missions had commented on the technical
scope of this activity, the importance of which is being discussed for some time. The service
plan report was delivered on December 2, 2015, shortly after the previous mission. On December
8, the consultants presented it in Delhi to representatives of the PMU, PMC, NRDA and the
World Bank. Extensive comments were provided at the time, and also to a revised draft
submitted in mid-December. The consultants (DIMTS) plan to submit the final version of the
report, taking account of the comments received, *no later than April 22, 2016.*

27. **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 end 2016. 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. This activity now needs to be expedited in
view of the limited time remaining for the launch of the BRT Lite.

28. **BRT Lite Implementation.** NRDA is likely to launch the BRT Lite this November 2016
on their State Day. The Mission feels that is still possible for NRDA to meet this timeline and
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 April 30, 2016., covering the
following aspects.

- Completion of Stations & Control Centre – June 30
- Completion of additional pick up drop off points at Telibandha and Gadhi Chowk –
- Completion of access improvements around terminal locations
- Delivery of buses – August 31
- Appointment of bus operator – July 31
- Bus operator/ driver training – Oct 1
- Installation and Testing of ITS – Sept 30
- Completion of procurement for fare collection agency – April 30
- BRT Service Plan – April 30
- BRT Business Plan – May 31
- Fare Policy Review and Finalisation – May 31
- Communications & Outreach plan and implementation – August-December 2016

29. **Project Management.** The Mission again 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**

30. The mission visited the work sites in Naya Raipur and Raipur to understand the extent of implementation of EMP provisions 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.

31. **BRTS Infrastructure:** At the Naya Raipur depot site, there needs to be continued focus on the safe movement of workers, which is currently at risk due to improper handling of safety issues, like the open live cables, even though secure underground ducting is available for the safe passage of electricity and the provision of PPE for workers. At the pick-up point in the old Mantralaya site, the trees around the site have been now protected well, with good soil to cover roots and a low all to prevent direct collisions. The mission also advised NRDA to confirm that the arrangements have been made for safe disposal of asbestos sheets that are used as wall material by the contractor for storage at the edge of the bus station site. While this is PWD property, NRDA needs to ensure that its removal from the site is secured and is acceptable to the Chhattisgarh Environment Conservation Board. It was agreed details will be provided about the same in the next QPR. If improvements to accommodate improved passenger facilities are undertaken at Telibandha intersection, several trees would be impacted. It was agreed that the option of transplanting these in the vacant plot behind the current location of the bus-stop would be considered as a first option. This, however, requires close coordination with the Raipur Municipal Corporation and NRDA should start this dialogue early to avoid any surprises later.

32. **NMT Infrastructure:** Despite previous agreement to avoid it, the contractor’s concrete mixers are sometimes washed at the edge of the worksite to avoid hardening of concrete in the mixers or disposal of excess/unsuitable concrete. This creates a layer of impervious material and prevents percolation of water. In addition, it was observed that wasted bitumen is also mixed with soil in one or two locations, which will require proper segregation and disposal of the bituminous material in a safe location. The Contractor has confirmed that the HMP from which asphalt for the project is procured, has a license that is valid until April 2017. Disposal of debris needs to be worked out and the mission agreed that NRDA should have test undertaken to confirm the
suitability of such debris as part of the filling up of shoulders. The construction of water harvesting structures is still pending.

33. **Regional Mobility Plan**: The Regional Mobility Plan study report had used erroneous data for computing the daily traffic and it had been corrected. In addition, it also now uses latest data on air pollution. The changes to the results need to be discussed in the report with recommendations to factor in this potential impact of GHG emission reductions early in the decision making process. It was also agreed that the new set of assumptions made for the modeling undertaken would be explicitly stated in the documentation with the report to allow readers to make informed judgments.

34. **Social**. NRDA has confirmed earlier that 3 small shops will be affected at old Mantralaya pick-up point and the shop keepers will be provided alternative pre-fabricated shops at the same site itself to ensure that their livelihood is maintained. However, the assessment of impacts at the existing point is not yet complete. The mission once again visited the site along with NRDA staff and noticed that some of houses and boundary walls including a temple will be affected to maintain a clear width of 7.5 meters wide road at the exit point. The NRDA agreed to undertake the inventory of impacts coming within 7.5 meter width and propose measures to mitigate those impacts in line with policy provisions. The employment generated under two contracts is also being monitored. As on date 81,884 man days or 3412 manmonths of unskilled employment has been generated since January, 2014 under the two ongoing contractors and out of these 62% are local labor and out of local labour 35% are women.

35. **Key Agreed Actions**
   - NRDA to identify the exact location of the footpath between the railway station, including a layout of parking area in front of the Railway Station – April 16, 2016
   - DIMTS to submit final version of BRT Service Plan – April 22, 2016
   - Lea Associates to present Final Regional Mobility Plan in Delhi – May 1, 2016
   - NRDA to prepare a preliminary design for the area south of the BRT railway station terminal, to serve traffic and pedestrians – May 15, 2016
   - NRDA to define an itemized schedule and dated action plan to complete the works at and near the Railway Station BRT terminal – May 31, 2016
   - NRDA to design pedestrian crossing on GE Road, near the Old secretariat – May 31, 2016
   - NRDA to define an itemized schedule and dated action plan to complete the works at and near the Old Secretariat BRT terminal – May 31, 2016
   - NRDA to send review of access roads and circulation plan around the Old Secretariat terminal – May 31, 2016
   - NRDA to prepare layout plans to serve pedestrian movement to the drop-off and pick-up points at Gadhi Chowk – May 31, 2016.
   - NRDA to prepare the designs to establish BRT stop at Telibhanda – May 31, 2016.
   - Submit monthly progress report contract wise – Continuous
   - Completion of BRT civil works – June 30
   - Completion of NMT civil works–July 31, 2016
   - Submit Action taken report on construction issues identified – May 15
   - Complete procurement of bus operator – July 31
   - Submit revised BRT Lite Implementation Schedule – April 30, 2016
   - Review and Finalize Fare Implementation Schedule – April 30, 2016
   - Development of Communications & Outreach Plan for BRT Lite – Aug 1
   - Complete social impact assessment and mitigation for Old Secretariat site – May 15, 2016
   - Complete outstanding environment issues highlighted – April 30, 2016
Annex 5

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 through audiocon in Delhi on April 11, 2016.

**BRT Corridor**

2. **BRTS corridor**: The 12 km corridor runs from Niranjanpur 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 are 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.

5. **ITS Component.** Two bids were received and opened on Feb 2, 2015. The bids were found technically non responsive and the decision to proceed with rebidding was taken. Based on the feedback received it was determined that the inclusion of fare collection within the scope of the ITS vendor during the operation phase was increasing the risk perception and responsible for the poor response and also the non-responsiveness of the bidders. Accordingly, AICTSL took the decision to drop the fare collection requirement from the bid scope and continue with only AFCS and AVL/ PIS systems along with an operation phase covering system maintenance and operation. The bid documents were issued in December 2015 and the procurement process was proposed to be completed by April 2016. However, since the prebid meeting of January 28, 2016, AICTSL has not been able to finalize and issue clarifications and amendments to queries received. The mission expressed strong delays at the continuing delays in completing the procurement. The delays in procurement would lead to spillover delays in implementation and operationalization of the ITS, this could jeopardize the funding available from MoUD which has an outer timeline of 31 March 2017.

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. This is another reason for AICTSL to complete the procurement of the ITS system at the earliest.
7. **Technical Assistance Activities.** The Mission reviewed the status of the proposed TA activities.
(i) Preparation of BRT Accessibility Plan, including pedestrian access: EoI evaluation under review.
(ii) Monitoring & Evaluation Study. Consultants on board.
(iii) Preparation of a business plan for AICTSL. TER has been prepared and submitted to PMU for review.

8. **Key Agreed Actions:**

- Issue pre-bid responses and addenda for ITS/ Finalise award – April 30/ June 30
INDIA: GEF-World Bank-UNDP: Sustainable Urban Transport Program (SUTP)

Mysore

1. A World Bank mission held discussions through videoconferencing with Mr. Ramamurthy, DC, MCTD, KSRTC, the ITS team including MCTD officials, their consultants and vendors in Bangalore on April 11, 2016 to discuss the project’s progress. Also present in the meeting were representatives from PMU and PMC. On 5-7 April, 2016, a Bank expert visited Mysore to review the project.

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. KSRTC has issued the ‘certificate of operational acceptance’ to the ITS vendor effective Oct 1. The system is now in full operational phase, meaning that all contractual SLAs are fully applicable. The vendor has a three-year AMC for the ITS system, effective from 1st October 2015. The vendor has a full-time team in Mysore. This consists of cover at the Control Centre to maintain the server and communications platform and to assist the KSRTC on various dispatching tasks; and 24-hour technical cover at each of the four MCTD depots.

4. KSRTC continues to make good progress in enhancing its utilisation of the ITS system and the data it generates. Three aspects were highlighted: (i) Depot Managers now use the MIS reports as a primary management tool, following up on identified issues of service deviation and of poor driving performance. As a result, schedule adherence has improved, fuel consumption has improved, and there has been a reduction in brake liner usage. (ii) All schedules have been revised based on the ITS data to better align the running times. This has improved productivity, resulting in 1% additional effective kilometres with 2% less buses. (iii) Locations prone to bus bunching are identified by the system, and the worst locations are targeted. The schedules for all routes at these locations are analysed and adjusted. There was been a significant reduction in the incidents of bus bunching.

5. As agreed in the previous mission, KSRTC organised an ‘appathon’ in Mysore in February 2016, which was well attended and received favourable press coverage. Consequently, a team of students at one of the city’s engineering colleges has developed an app to provide a wide range of passenger information, including ETA. This is currently under test and, subject to approval, will be launched and available to download in May 2016.

6. KSRTC presented on the performance of the system. Key SLAs are not being met in relation to VMUs. It was noted that there was a growing backlog of maintenance issues that were not being resolved in a timely fashion. Buses operate for several days with defective VMUs being resolved, and the rate of non-tracking VMUs is now about 7%. As identified in many previous missions, the core problem centres on the power supply unit of vendor’s equipment, and specifically its inability to provide sufficient protection against the occasional power surges and spikes that are experienced on buses. This is compounded by the unit design, which locates the
fuse internally to the unit and mounted on the power card itself. KSRTC has developed and deployed fleet-wide a baseplate solution to allow power supply units to be quickly removed and replaced. This should have solved the problem, but now vendor does not have sufficient spare units to replace defective units.

7. The Mission identified that there are two separate problems, which need to be resolved in parallel. First, there needs to be an adequate supply of spares so that a defective unit can always be replaced and functionality restored. If this is achieved, the backlog would be cleared and the SLAs achieved. Second, a permanent solution is required to give complete electrical protection to the power supply unit and all downstream devices including the VMU. It was advised that vendor has already devised and verified a suitable modification, but has not yet placed the orders for the parts to deploy it.

8. Vendor agreed to: (i) by 12th April, advise on how it would address the shortage of spares and bring the SLAs back into compliance; and (ii) by 22nd April, advise on how it would deploy the permanent electrical solution and deploy the necessary modification.

9. KSRTC team informed the Mission that approval has been received from Mysore Corporation for 70 bus shelter locations and associated electrical connections. This will allow the redeployment of the 37 PIS boards that have been inactive due to the legacy issue of unpaid electricity bills. It is hoped to complete redeployment by end-June.

10. KSRTC advised that the pre-bid meeting for driving simulator procurement had been held. Two bids were subsequently received and commercial bids would be opened on April 12th. The evaluation report will produced in two months, following completion of all necessary processes.

11. KSRTC advised that the process is ongoing for procurement of the further M&E work and the communications and outreach activity. The EOI evaluation phase for communications activity is close to completion. A committee has been formed for evaluation and to prepare the RFP.

**Comprehensive Service Operations Analysis Study.**

12. As this study is a landmark study conducted by KSRTC, the Mission proposed to have a detailed discussion around the findings of the study and how these could be taken forward by KSRTC. As many of the aspects involved in service design of an urban service differ from those of a long distance service, it would be useful to have a more in depth discussion with KSRTC so they can start to document and implement some of the recommendations emerging out of this important study. It was agreed that a discussion cum workshop would be organised could be combined with the Knowledge Workshop on ITS proposed in Mysore on 30-31 May 2016.

**Key Agreed Actions:**

- TCS to advise short-term solution for spares – April 12th
- TCS to advise medium-term solution for power protection – April 22nd
- Complete driving simulator procurement – June 30th
- Complete technical evaluation of Communications Consultants – June 30
- Complete extension of scope of M&E Consultants – May 31
- Finalise Hackathon Results – May 2016
1. The Mission met with Ms. V. Manjula, Commissioner DULT, officials of DULT and Mysore City Corporation, the finalized PMC and their team and the vendor in Bangalore on April 20, 2016, through videoconferencing to review the Mysore Bike Sharing Project.

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 Commissioner 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 is Rs. 205.23 million for the six year period. A Rs. 3 crore corpus has been created for supporting the operations and maintenance phase and transferred to a jointly held account by DULT and MCC. The PMC for the project, PWC cum VBSoft, hired by DULT came on board in Feb 2016 to support the project.

3. Mssrs. Green Wheel, that have been hired on a design, supply, install and operate model, signed the contract in January 2016, and are presently in the implementation phase. The mission was informed that station topographic surveys have been ongoing and completed for all locations except 4-5. During the review phase it has been decided to make changes to 23 stations of the earlier 52, which includes changing 19 locations and expanding the docking capacity at 4 high traffic locations. It was felt that maintaining stations in far flung areas such Infosys campus or Seringapatnam maybe less useful than operating a denser network within the city. In roughly 4-5 locations owing to absence of adequate space/ obstruction of the footpath, it has been proposed to have the docking stations on the road in locations currently being used for 2 wheeler parking by MCC. The prototypes for bicycles and docking stations have been shared and under review of PMC and the Project Monitoring Committee. It has been decided to go for standard bicycles in the city areas and for geared cycles for use on Chamunda Hills. Once approvals to prototypes is received it is expected to take roughly a month to manufacture and deliver the cycles and docking stations, therefore if the approval is received by month end early May the deliveries could be made by early June when the installations could begin. According, to the current implementation schedule the Trial Runs would begin by 23 June and the PBS would be operational by 7 July 2016. The PBS service is being named ‘Trin-Trin’, a website has already been created and a marketing and promotion plan is being developed. The following were the key aspects were highlighted during the discussions:

- The Bank team noted the changes to the station locations and requested confirmation that there were no safeguards impacts on account of these and a copy of the photographs to be shared with the Bank.
- The unusual design being adopted for docking bicycles in on street parking locations was discussed at length and several suggestions offered for improving safety and security including the docking of bicycles at an angle and creating a cut into the footpath to accommodate part length of the bicycles. DULT, their PMC and the vendors agreed to review these suggestions and revert shortly. It was also shared that the current design had been discussed and concurred by MCC and the Traffic Police.
- The issue of integrated ticketing and smart card between KSRTC and PBS was discussed at length especially in the context of the bus service not having a smart card offering at
the moment, the flux in technology and standard protocols for common mobility card still under development. The vendor clarified that integration options involving a clearing house and EMV functionality would come at a cost. It was agreed that DULT would hold discussions with KSRTC on the matter and accordingly finalise their strategy for smart cards.

- It was felt that a well-articulated and agreed Acceptance Testing Plan needed to be in place for the system acceptance to take place, and adequate time provisioned for the same in the implementation plan. DULT agreed to revert with such as plan for the review of PMU and the Bank.

- The implementation schedule was found to be somewhat ambitious and the mission urged the PMC to review and revert with a more realistic plan which also budgeted sufficient time for acceptance testing.

- It was pointed out that the promotional campaign would be an important element preceding the launch of the service. However, it would be important to time it well. It should not be the case that promotions start too early and then there are long delays in the launch of the service. DULT agreed to review the situation and make sure that the promotions were well timed.

4. **Key agreed actions included:**
   - Submit revised station locations along with photographs – April 30
   - Finalise on street docking option design
   - Submit acceptance test plan – April 30
   - Submit revised implementation Plan – May 15
   - Entrustment of statutory audit of PIU of MCC to the state AG – Immediate
Annex 7

Financial Management

1. **Budget & Expenditure**: The budgetary requirement for FY 16-17 have been submitted by all PIA’s to their department for inclusion in state budget. The project stands extended with revised closing date of the project as Mar 31 2018.

2. **Disbursement profile**: As on April 18th 2015, the disbursement profile (including advances) stood at 44.67% against IBRD and 53.42% against GEF financing. Overall position is stated below and the PIU wise disbursement position is summarized below.

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<tr>
<th>IBRD status of Disbursement</th>
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<td>Financing source</td>
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3. **IUFRs**: We have received all IUFRs covering the period through February 2016 and they have been processed.

4. **External Audit**: For PCMC, the statutory audit report covers only the Bank-funded portion of the project. It was suggested that for the non-Bank portion, majorly funded by JNNURM, the report would be certified by the private CA firm.

   In the case of Mysore City Corporation, it was agreed that entrustment for carrying the audit would be done to State AG.

5. **Internal Auditors**: The mission was informed that the internal auditors are in place and the audit for entire one year i.e FY 14-15 will be undertaken by them. It was agreed that the latest audit report would be submitted to the Bank by May 31, 2016.

6. **Key Actions**

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<th>Actions</th>
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<th>By When</th>
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<td>Entrustment of statutory audit of PIU of MCC to the state AG</td>
<td>MCC</td>
<td>July 31 2016</td>
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<td>2.</td>
<td>Internal audit reports for FY 14-15</td>
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<td>May 31, 2016</td>
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### PIA’s wise disbursement profile USD/Mn

#### IBRD- PIU wise disbursement

<table>
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<tr>
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#### GEF- PIU wise disbursement

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