Pre-Feasibility Study in
Urban Transport, Surabaya, Indonesia

February 2013
Executive Summary
A. Objective

1. The City has the vision to modernize the public transport system by introducing a north south tram network and an east west monorail line. These will form the backbone of a new modern and viable system which will then be supported by a complementary citywide network of modern bus services. This complementary network will bring the demand from the greater urban area to this new mass transit network.

2. Mass transit, by definition implies a mass demand for transit. In Surabaya, this mass demand does not yet exist. Even worse, what little demand exists is falling. The current biskota and angkot systems are dying. For a mass transit investor, a stronger demand for public transport is required.

3. The objective of this PFS is to prepare a Medium Term Infrastructure Investment Program (MTIIP) with a prioritized investment to help inject life back into the existing public transport system. This will provide the mass demand required for mass transit and in doing so, help generate the interest required from tram and monorail proponents to design, fund and operate the future mass transport. It will also bring substantial benefits to those urban poor who are forced to rely on the ever declining standards of the existing public transport services.

B. Creating Mass Demand for Public Transport

4. The task of reversing a declining demand to a growing demand for public transport requires the fundamental task of gaining public confidence that the services will be convenient, reliable, safe, and competitive with the private mode they are currently using. Once this occurs, mass demand can start to become a reality.

5. The Buy the Service strategy is the first step in generating this public confidence. By assuming that the financial risk for the system will be born by PemKot, operators can concentrate on service to the public instead of waiting for additional passengers (ngetem) and upsetting all existing passengers. This is the start of generating the mass demand required for the mass transit network.

6. The second step is the network infrastructure required to demonstrate to the future tram and monorail investor that Pemkot is both serious and capable of generating the mass demand required. This PFS provides the staged investment program necessary to increase passenger demand and allow the City to demonstrate its capacity to deliver improvements to the sector, for the benefit of the future tram and monorail systems. GPS based bus priority at key congestion points, quality fleet, modern ticketing, park and ride sites and modern depot facilities and system management systems will all ensure a transformation to generate the mass demand required.

7. Together these two actions will create a growing market for public transport. Pemkot will be viewed as being able to generate mass demand and this will ignite the interest of tram and monorail investors. The City can then realize its Vision for Mass Transit. Without this change in demand, no tram or monorail investor will be interested.

C. Buy the Service

8. This is a necessary initiative to rebuild demand for public transport. The Pilot trunk bus feeder will be the first to be contracted by Pemkot and will be the litmus test where the public enjoys the new experience. This PFS has provided Pemkot with the necessary advice
and the list of tasks required to be followed in order to successfully implement this Pilot project.

9. The six trunk bus routes and a network of supporting micro bus routes from nine terminals have been endorsed by DisHub as the future network. These are all planned to be included in the Buy the Service program. This PFS has provided Pemkot with the necessary contracting and system management advice to allow it to proceed to implementation.

10. Despite this, the CDIA team is concerned at the capacity of Pemkot to proceed to successful implementation of Buy the Service. For it to be successful, a management structure that involves the establishment of a Badan Layanan Umum (BLU) needs to be in place – even for the Pilot project. A Project Champion will also be required to support DisHub regarding the contract development and project implementation. In particular, and given the size of the financial transactions involved, there is also a need to provide additional support for DisHub by an Independent Verifier in the area of transparency. This is described in the following diagram.

11. The key reason for this structure is to manage the flow of funds in a transparent manner. It will help demonstrate to future tram and monorail bidders that Pemkot is capable of managing complex transactions. Failure in this regard could result in interest from KPK. The structure is as follows:
D. Investment Staging

12. The reform of the existing biskota and angkot sectors into a modern and well-conceived network in support of the tram and monorail modes cannot happen overnight. It will require a focused and committed Pemkot with a plan that is achievable, from a budgeting, infrastructure implementation and contracting/operational perspective. Accordingly, the MTIIP has four phases.

**Preliminary Phase: 2013**

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<td>1.</td>
<td>Finalise all immediate tasks as per Figure 8.1.</td>
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<td>2.</td>
<td>Agree on koperasi, buy the service rates, mutual obligations and draft the service contracts for signing.</td>
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<td>3.</td>
<td>Implement infrastructure upgrade for Pilot feeder-bus route.</td>
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<td>4.</td>
<td>Implement system-wide infrastructure items for Pilot Route operation – fleet (8 units), ticketing, depot facility. Upgrade existing Intelligent Transport System Centre to accommodate the Pilot Route monitoring requirements.</td>
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<td>5.</td>
<td>Commence “buy the service” contracts for Pilot feeder-bus operation. DisHub and Bappeko to manage and monitor.</td>
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<td>6.</td>
<td>Prepare expression of interest documentation for Tram and Monorail projects and issue to the market.</td>
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13. **Capital Cost:** The capital cost for items 1, 2, 3 and 4 of this preliminary stage has been estimated at Rp 25,413 million (US$2.62 million). It is premature to estimate the costs for item 6 in this PFS.

14. **Buy the Service Cost:** Item 5 may cost up to Rp3.8 bill (US$ 0.4 mil) during the first year of operation. This cost will reduce when Trunk Bus 1 and 4 become operational (in Phase 2) and more passengers use the services.
Preliminary Phase – Pilot Trunk Feeder Route

Phase 1: 2014-2015:

1. Infrastructure upgrade for Trunk Bus Corridors Purple 3 and Green 2, including land acquisition for park and ride sites.

2. Upgrade of angkot routes to micro bus routes servicing Perak, Bratang, Menanggal, KedungCowek, Kenjeran and DukuhKupang terminals.

3. System-wide infrastructure – fleet, ticketing, depots, land acquisition. Add to the Intelligent Transport System Centre to accommodate Trunk Route 2, 3 and supporting micro bus routes as required, land acquisition.

4. Commence “buy the service” contract for trunk-bus services and supporting micro bus services.

5. Review Tram and Monorail EOI responses and shortlist. Prepare RFP documentation and issue to shortlisted bidders.

6. Select preferred bidder and commence project implementation.

15. Capital Cost: The capital cost for items 1, 2 and 3 of this Phase 1 has been estimated at Rp 1,055,934 million (US$108.8 million).

16. Buy the Service Cost: Item 4 may cost up to Rp52.49 billion (US$ 5.41 million) in the first year based on early estimates of demand. This cost will decline as more passengers begin to use the services and the impact of the tram and monorail systems are felt. With a rapid buildup of demand, the second year could see a cost recovery rise to 35%. Were this to occur, the cost of buy the service would fall to Rp 47.39 billion (USD 4.88 million).

17. It is premature to provide an estimate of costs for items 5 and 6 in this PFS.
Phase 1 Trunk Routes and Micro Bus Network

1. Infrastructure upgrade for Trunk Bus Corridors Red 4 and Yellow 1.
2. Upgrade of angkot routes servicing Manukan, Benowo and Keputih terminals.
3. Continue with system-wide infrastructure – fleet, ticketing, depots, additional monitoring systems, land acquisition.
4. Commence “buy the service” contract for trunk-bus services.
5. Tram and Monorail commissioning, final testing and commencement of services.

18. **Capital Cost:** The capital cost for items 1, 2 and 3 of this Phase 1 has been estimated at Rp 903,872 million (US$93.2 million).

19. **Buy the Service Cost:** It is premature to estimate the cost for item 4. However if a cost recovery of approximately 35% is assumed (improving on Phase 1), then the cost during the first year could be Rp19.47 billion (US$2.0 million). With the impact of the tram and monorail, this cost recovery could easily rise to 55%. If this were to occur, the annual cost would fall to Rp15.5 billion (US$1.6 million).

20. It is premature to estimate the cost for item 5 in this PFS.
Phase 2: Trunk Route and Micro Bus Network (including tram and monorail reference)

Phase 2: 2016 - 2017

Phase 3: 2018-2019

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<td>1</td>
<td>Infrastructure upgrades for Trunk Bus Corridors Orange 6 and Blue 5.</td>
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<tr>
<td>2</td>
<td>Continue with system-wide infrastructure as required – fleet, ticketing, depots, final expenditure on the Intelligent Transport System Centre, land acquisition.</td>
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<tr>
<td>3</td>
<td>Commence “buy the service” contract for trunk-bus services.</td>
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21. **Capital Cost**: The capital cost for items 1 and 2 has been estimated at Rp 63.206 billion (US$ 6.5 million)

22. **Buy the Service Cost**: It is premature to estimate the cost for item 3. However if a cost recovery of approximately 45% is assumed (improving on Phase 2), then the cost during the first year could be Rp5.2 billion (US$0.53). In time and with cost recovery rising to (say) 75% with the impact of the tram and monorail in the first year of operation, the annual cost would fall to Rp2.4 billion (US$0.24 million).
E. Financial and Economic Assessment

23. The preliminary and first phase of the task of developing the mass demand for the tram and monorail are collectively likely to require a subsidy until the demand grows sufficiently to cover all operating costs. Based on the limited data available for this PFS, the combined likely cost recovery of the Pilot Route, the Trunk Bus Routes and the micro bus routes in the first year of operation has been calculated at 28%. This is likely to improve as the public becomes more familiar with the services and the benefits they have to offer. No forecast trend of the rise in cost recovery has been made in this PFS.

F. Economic Assessment

24. The preliminary and first phase of the task of developing the mass demand for the tram and monorail have collectively been estimated to return a BCR of 1.1 at a discount rate of 10% over a 15 year assessment period. The project returns an EIRR of 11.1%. The total Present Value of Benefits over a 15 year time period has been calculated at Rp 1,226,650 million. On an annualized basis, discounted benefits of Rp 81,766 million can be anticipated during the 15 year assessment period.

G. Social Assessment

25. The project has been estimated to provide a direct benefit to some 304,160 or nearly 82% of the urban poor living in the Kecamatans served by or abutting these new services. This represents approximately 74% or the entire urban poor living in Surabaya.
H. Environmental Assessment

26. The project is capable of generating a saving of up to 1,025 tons of CO2 emissions annually.

I. Next Steps

27. The next steps required to build the mass demand for the arrival of the tram and monorail are listed below. Below is a list of 12 tasks which need to be completed satisfactorily within the next 4 months. This will see the Pilot Project commence and will signal the start of the new era for the sector.