

**UNITED NATIONS ENVIRONMENT PROGRAMME  
GLOBAL ENVIRONMENT FACILITY  
PROJECT DOCUMENT  
SECTION 1 - PROJECT IDENTIFICATION**

- 1.1 Sub-Programme Title:** Climate Change OP 11: Transport
- 1.2 Project Title:** Bus Rapid Transit and Pedestrian Improvements in Jakarta
- 1.3 Project Number:** IMIS: GFL / 2328 – 2723 - xxxx  
PMS: GF/ 4010 – 06 - xx
- 1.4 Geographical Scope:** Indonesia
- 1.5 Implementation:** Institute for Transportation & Development Policy (ITDP)  
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Web:www.itdp.org
- National Executing Agencies:  
DKI Jakarta Government, Yogyakarta Provincial and Municipal Governments, Palembang Municipal Government, Batam Municipal Government, Makassar Municipal Government
- 1.6 Duration of the Project:** 60 months  
Commencing: January 2007  
Completion: December 2011

**1.7 Cost of the Project:**

<u>Cost to the GEF Trust Fund:</u>	US\$	%
Project	5,812,000	
PDF-B	348,300	
<b>Subtotal GEF</b>	<b>6,160,300</b>	<b>3.20</b>

<u>Co-financing (Project):</u>			
	<u>In-kind</u>	<u>Cash</u>	<u>Total</u>
<b>Executing Agency</b>			
ITDP	-	104,000	<b>104,000</b>
<b>Government</b>			
Jakarta	210,000	187,661,000	<b>187,871,000</b>
<b>Sub-total Co-financing:</b>			<b>187,975,000</b>
			<b>96.80</b>
<b>Total Project Cost</b>			<b>194,135,300</b>
			<b>100.00</b>

**1.8 Project Summary:**

New developments in the urban transport sector in Indonesia promise to counter the trend of increasing greenhouse gas emissions in this sector. Jakarta's nascent bus rapid transit (BRT) system has begun to re-allocate scarce road space in the center of the city to efficient public transportation and has already resulted in a shift of trips from private motor vehicles. Jakarta and other Indonesia cities also have begun to improve pedestrian facilities to increase the number of walking trips, important to the development of public transport. The Institute for Transportation and Development Policy and its partners, which have thus far provided

technical support for the Jakarta BRT, seek to develop a longer-term technical support system to help bring bus rapid transit and pedestrian improvements in Indonesia up to international state-of-the-art.

The overall objective of this project is to maximize effectiveness of the Jakarta BRT and use it as a catalyst for urban transport reform in Jakarta and other key Indonesian cities. Jakarta is at a crossroads: over the next few years: the city will either construct a premier bus rapid transit system, providing large transport and environmental benefits to its populace and a beacon for other cities in the country and region, or it will implement a system with problems and shortcomings that result in mediocre performance, ultimately cutting short its expansion or even precipitating its removal (the first corridor is, in fact, designed with easily removable lane separators, so that the road space can be given back to cars if need be). Such a failure would damage the entire concept of BRT in Asia and diminish the promise for development of other systems in the region. Thus the first eight (of nine) specific objectives in this project focus on ensuring the success of this system, through its optimized implementation and expansion from its current single corridor to a full system of 14 corridors, covering most of the city, over the next five years. Objective 9 focuses on dissemination activities, in particular assisting other Indonesian cities in establishing sustainable transport programs and transferring knowledge and other achievements gained in the Jakarta aspects of the project.

Apart from bus rapid transit, the project will explicitly support the development of non-motorized transportation systems and infrastructure, transit oriented development and transportation demand management to reduce use of private motor vehicles. Improvements in these areas will provide critical complements to BRT development, and together form the tools to achieve a long-term, sustainable shift to less greenhouse gas emitting forms of transportation.

### **Signatures**

**For ITDP,**

**For UNEP**

\_\_\_\_\_  
Walter Hook  
Executive Director  
Management

Date: \_\_\_\_\_

\_\_\_\_\_  
David G. Hastie, Chief  
Budget and Financial  
Service, UNON.

Date: \_\_\_\_\_

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## SECTION 2 - BACKGROUND AND PROJECT CONTRIBUTION TO OVERALL SUB-PROGRAMME IMPLEMENTATION

### BACKGROUND AND CONTEXT

1. The transport sector is consistently one of the fastest growing emitters of GHGs and perhaps the most recalcitrant sector in terms of reducing emissions.<sup>1</sup> Jakarta, Indonesia is currently making important strides to address these problems with BRT, traffic demand management, and non-motorized transport improvements.

2. Jakarta, the capital of Indonesia, has a population over 8.3 million, and the greater Jakarta region is roughly double that. The age structure of the population of the Jakarta metropolitan area is shown in Table 1. DKI Jakarta covers an area of 650 square kilometers with an average population density of 130 inhabitants per hectare. The Jakarta metropolitan area now includes 5600 square kilometers, with an average population density of 27 inhabitants per hectare. Household income for the Jakarta metropolitan area averages US\$150/month.<sup>2</sup>

**Table 1. Age structure of the population of the Jakarta metropolitan area.**

Age Group	Male	Female	Total
05 - 09	10.1%	9.8%	10.0%
10 - 14	10.9%	10.6%	10.7%
15 - 19	10.4%	10.7%	10.5%
20 - 24	10.1%	11.7%	10.9%
25 - 29	9.8%	12.3%	11.1%
30 - 34	10.3%	10.8%	10.5%
35 - 39	9.1%	9.5%	9.3%
40 - 44	8.2%	7.9%	8.0%
45 - 49	6.7%	6.2%	6.4%
50 - 54	5.7%	4.3%	5.0%
55 - 59	3.4%	2.5%	2.9%
60 - 64	2.8%	1.8%	2.3%
65 - 69	1.3%	0.9%	1.1%
70 and more	1.3%	0.9%	1.1%
Total	100.0%	100.0%	100.0%

3. Jakarta's 16 million daily trips generate some of the worst air pollution in the world, with NO<sub>x</sub>, TSP, and CO emissions regularly in violation of WHO standards. According to the World Bank's URBAIR study, ambient concentrations of several pollutants routinely exceed statutory limits. Concentrations of sulphur dioxide and nitrogen oxides can be 50% above allowable limits, and particulate matter (PM) can be three times higher. Lead remains a problem, although leaded gasoline has now been phased out. Recent inventory estimates indicate that vehicle emissions account for about half of airborne particulates, 75% of NO<sub>x</sub>, and 90% of hydrocarbons<sup>3</sup> Research conducted in 1999, using dose-response functions developed by WHO, showed that health costs from particulate (PM10) pollution alone were at least US\$270 million per year.<sup>4</sup>

4. The number of private cars in Jakarta has doubled roughly every 10 years, reaching more than 4 million private vehicles in 2001. Motorcycle registrations have grown even more rapidly, doubling in Jakarta in the past two years. While bus mode share is currently at around 50% of total trips, it is declining rapidly. The vehicle fleet composition is shown in Table 2.

**Table 2. Motor Vehicle Fleet Composition of Registered Vehicles in DKI Jakarta(1994 – 2004)<sup>5</sup>**

Year	Cars	Freight	Buses	Motorcycles	Total
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<sup>1</sup> Drawing courtesy of Yayasan Pelangi Indonesia

<sup>2</sup> The Study on the Integrated Transport Master Plan for JABODETABEK - Technical Report

<sup>3</sup> Shah, JJ and T Nagpal (eds). URBAIR Urban Air Quality Management Strategy in Asia: Jakarta Report. World Bank Technical Paper No. 379. World Bank, Washington, DC. 1997

<sup>4</sup> Riauaty, D, and R. Heuberger. Economic and Health Impacts of Air Pollution in Jakarta. Presented in the International Conference on Sustainable Transport and Clean Air. Jakarta, 29-31 May 2000.

<sup>5</sup> From Data Polda Metro Jaya, 9 March 2005, as reported in *Kompas*, 30 June 2005

		<b>Vehicles</b>			
1994	680.794	247.377	239.901	1.083.853	2.251.925
1995	752.326	267.489	253.078	1.206.041	2.478.934
1996	845.559	287.606	253.278	1.345.027	2.731.470
1997	947.213	320.157	253.689	1.502.457	3.023.516
1998	952.362	319.301	253.718	1.527.906	3.053.287
1999	965.058	320.438	253.574	1.543.609	3.082.679
2000	1.052.802	334.013	253.593	1.619.576	3.259.984
2001	1.130.496	347.443	253.648	1.745.844	3.477.431
2002	1.196.060	366.393	254.594	1.941.923	3.758.970
2003	1.269.553	383.590	254.869	2.202.637	4.110.649
2004	1.361.239	399.691	255.307	2.534.480	4.550.717

5. Jakarta's traffic congestion is estimated to cost as much as US\$330 million for vehicle operating costs and US\$280 million for travel time every year. Without a change from current trends by 2020, congestion costs would reach US\$ 7.8 billion annually<sup>6</sup>.

6. With a very limited number of major arterials – and the expansion of this road network a significant threat to land for low income housing – BRT, traffic demand management, and improvements for non-motorized travel, are the only hope for Jakarta. This view is echoed by the GEF STAP, based on extensive research, which concluded that the only proven mechanism for reversing the growth in vehicle kilometers traveled and the resulting increase in greenhouse gas and other emissions is to implement extensive Bus Rapid Transit systems, coupled with simultaneous traffic demand management measures and improvements in non-motorized transport facilities.

7. Right now, the Governor of Jakarta is one of the very few municipal leaders in Asia – and the only one in a developing economy – that has proven his political will to tackle these problems. Political will, according to most project analysts, is the most important predictor of project success. Governor Sutiyoso opened Asia's first 12.9 km Curitiba-style BRT system in January of 2004, expanded the three-in-one (carpooling) traffic demand management scheme, and significantly improved sidewalks along Jl. Thamrin, shifting many short trips to walking trips. Each of these measures successfully reduced car travel, and shifted some daily transit trips from private motor vehicles to transit and non-motorized modes.

8. Jakarta's transportation demand management (TDM) scheme, the "three-in-one" regulation, requires a minimum 3 person occupancy for any private car operated in the mixed traffic lanes along BRT corridor 1 during peak hours. The scheme has operated for many years, and while it is effective, it has also led to wide-spread circumvention of the intent by creating a market for school-age children to serve as passengers-for-hire. The intensive level of enforcement needed to prevent this negative side-effect is not usually available.

9. While Jakarta's new BRT system and three-in-one demand management systems are historic breakthroughs – and the Governor's political will undeniable – the future of these critical measures is far from assured.

10. The decentralization of authority and budgets following the end of the Suharto-era has meant local governments, including DKI Jakarta, have been struggling to handle the suddenly increased workload. The Governor quite literally forced the BRT project through using agencies with no experience in conducting such a project. Jakarta implemented their first BRT corridor in only 8 months time, making it the fastest known implementation of any full BRT in the world. However, in the process, some technical mistakes were narrowly avoided, and others were made and need to be corrected.

11. Intervention from ITPD and Indonesian NGO partners helped to bring about public support for the BRT despite the shortcomings, while technical support helped to fix some design shortcomings.

<sup>6</sup> Pacific Consultants International, Almec Corp. The Study on Integrated Transportation Master Plan for Jabodetabek (phase 2). Interim Report (II) Main report, Sept 2003.

Without early information on BRT being brought to Jakarta, the busway would have been in the curb lane, for instance, and the enclosed bus stops would have only been about 10 square meters in size. Other advice was not able to be incorporated in time during the system's rapid implementation.

12. As a result, Corridor 1 was built with a design capacity that can only handle about 6000 passengers per direction at the peak. With proper operation and minor infrastructure changes, the capacity could readily be doubled to 12,000; adding overtaking lanes at stations would allow the capacity to reach 35,000. Already, this poor design is being used by powerful lobbying interests to argue for the replacement of the BRT system with far more expensive technologies (monorail, metro).

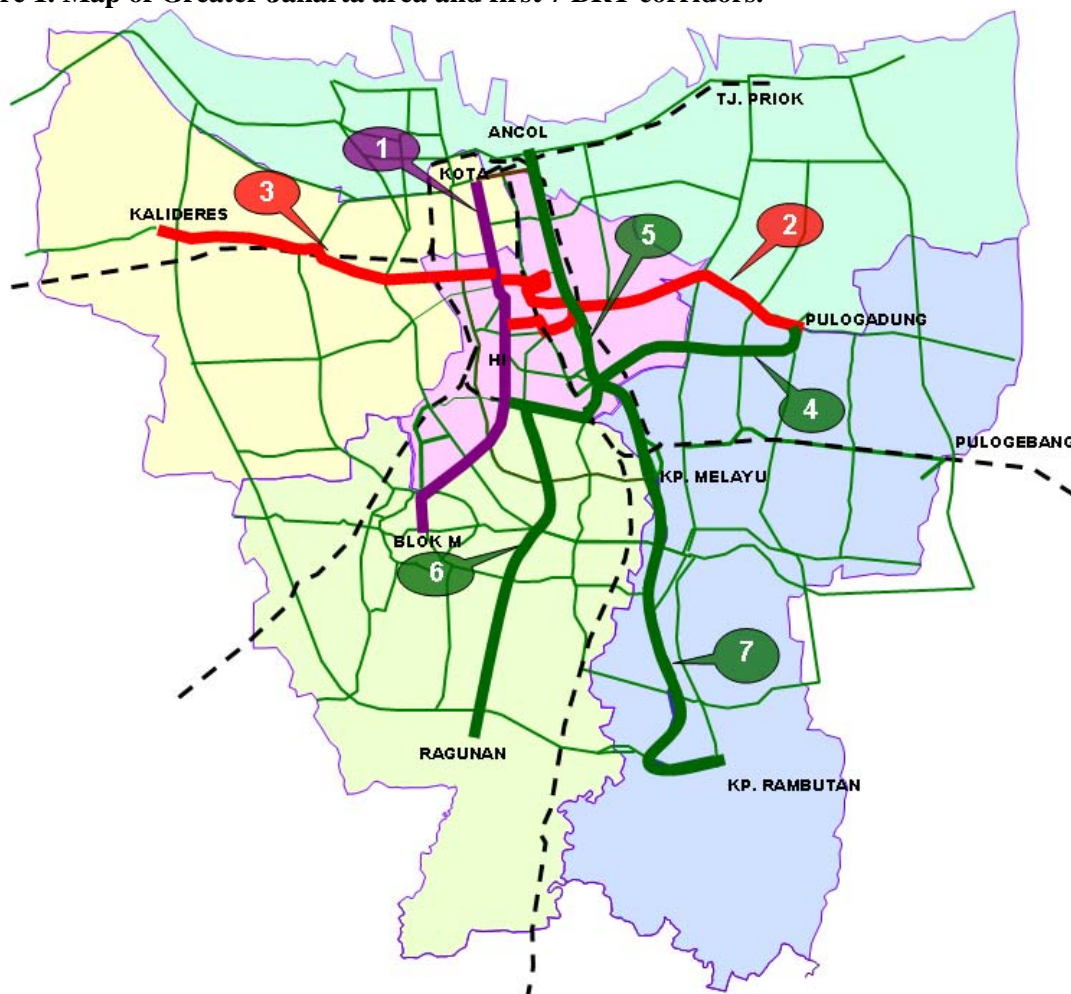
13. Due to inefficiencies in its design and operation, the Jakarta BRT system is essentially at its maximum capacity already. This capacity is much lower than the normal potential of BRT systems. Increasing the capacity of the first corridor is essential.

14. Some additional capacity can be obtained by simple operating procedure changes that are essentially free. The steps needed to expand capacity sufficiently for future demand are more complicated, requiring an increase in the number of doors on all buses and stations in the first corridor, and eventual construction of overtaking lanes at stations. In the longer-term, the success of the BRT will depend on complex demand estimations and routing decisions aimed at maximizing the demand to reach the efficient operation and low fares that will ensure long-term success of the system.

15. Public transportation demand estimates used in this document draw from extensive surveys conducted in 2004 in a partnership between ITDP, DKI Jakarta and the University of Indonesia Center for Transportation Studies. The resulting EMME/2 public transportation demand model is based on 65,000 on-board transit origin destination surveys, traffic counts, bus occupancy surveys, and speed surveys at 65 points throughout the city, along with data previously collected under the JICA SITRAMP study. The data and model will be more fully developed and refined during the project.

16. While Jakarta already has a nascent BRT system, and therefore could be viewed as being on the right track, in fact this BRT system's success is far from certain. International visitors from a dozen countries, while appreciating the project's success, have also been quick to point out the system's failures. Furthermore, technical reviews of the Bogotá TransMilenio project have pointed out that it was not BRT alone that resulted in the significant reductions in greenhouse gas emissions, but rather the combination of BRT with TDM and NMT improvements. Accompanying land use changes, best exemplified in Curitiba, are also critical to long term success.

**Figure 1. Map of Greater Jakarta area and first 7 BRT corridors.**



17. For Jakarta to become the model to other cities that we all hope it will, it is critical that its current problems are fixed. Furthermore, due to the investment already made in developing the Jakarta busway, the marginal cost of improving this system to obtain further greenhouse gas emission reduction benefits is far lower than for new start-up systems where greenhouse gas emission impacts are more speculative (largely because the prospect that BRT will actually be implemented is still uncertain).

18. However, DKI Jakarta has no international technical support just as Corridors 2 and 3 have opened, and Corridor 1 is straining to meet current passenger loads. While Jakarta could contract international experts directly, the high cost of international experts relative to domestic experts prevents these budgets from being approved by the parliament, despite the fact that local consultants have no BRT experience.

19. Jakarta is at a crossroads: over the next few years the city will either construct a premier bus rapid transit system, providing large transport and environmental benefits to its populace and a beacon for other cities in the country and region, or it will continue to implement a system with problems and shortcomings that result in mediocre performance, ultimately cutting short its expansion or even precipitating its removal (the first corridor is, in fact, designed with easily removable lane separators, so that the road space can be given back to cars with minimal cost or time delay). Such a failure would damage the entire concept of BRT in Asia and diminish the promise for development of other systems in the region.

**Figure 2. The one-door BRT system used on Corridors 1-3 is one factor limiting system capacity, causing overcrowding and a deteriorating quality of service.**



20. The Governor of Jakarta continues to push strongly for expansion of the BRT corridor, but the public is already frustrated about overcrowding on Corridors 1-3. Prior to the completion of his

term in July of 2007, it is reasonable to expect 3 more BRT corridors will begin operation. Without the GEF project, failure to make the modest investments needed to triple the capacity of Corridor 1 will lead to severe overcrowding even at passenger flows of only 4000 persons per hour per direction (pphpd).

21. Failure to correct intersection designs and reroute existing bus services will severely congest mixed traffic lanes in new corridors, undermining political support for implementing future corridors. Customer frustration with poor design and low quality service will lead to a rising clamor to replace the system with a metro, not understanding the simple technical measures that are needed to correct the system's design flaws.

22. Under this baseline scenario, the Jakarta public, frustrated by overcrowding on the BRT, will clamor for the removal of the dedicated lanes and the system would slowly disintegrate. Public hopes would again turn to a metro system which would likely take over 10 years to construct and would consume all of DKI Jakarta's resources that otherwise would have gone towards expanding the BRT system. Thus the baseline reflects a long period of inactivity followed by the possible development of a metro at very high cost (this hypothetical scenario is well supported by history, as it is precisely the course of events for the 15 years prior to the BRT's implementation).

23. The result would be worsening congestion and urban blight in North Jakarta and a hastening of the process of suburban sprawl. Even if a metro system were built, the lack of a functional bus feeder system, and financial infeasibility of extending the metro beyond 1 line, would keep the vast majority of Jakarta's residents from enjoying the benefits of the metro system. The effectiveness of such a system on shifting people from private motor vehicles would be minimal.

24. Public understanding of the value of the BRT as a more efficient use of road space will remain limited; there will thus be little chance of public acceptance of road pricing measures. Pedestrian trips to the system will be marginally better due to improved facilities along the corridor, but street crossings will remain inconvenient and/or dangerous. Many people will continue to take taxis even for very short trips along the corridor.

25. Ideally, if BRT is able to reverse the current loss of public transport modal share, Corridor 1 could be upgraded to a metro if and when demand rises to a level that cannot be easily accommodated by BRT. While we do not foresee this happening any time soon, first completing a network of BRT lines integrated with any metro plans would dramatically increase the financial feasibility of upgrading to a metro eventually.

#### **Other Cities**

26. Because of the level and scope of its BRT, Jakarta is the primary focus for activities under this proposal. During the PDF-B phase, surveys of other cities indicate an interest in replicating Jakarta's pedestrian improvements and BRT system. Although full analysis is not yet available on all cities, the cities that have been involved in the project process are Batam, Makassar, Palembang, Semarang, Surabaya and Yogyakarta (see map, Figure 3).



**Figure 3. Map of Indonesia showing Jakarta and the other cities currently included in the project process.<sup>7</sup>**



27. These cities will be targeted to play a particularly active role in terms of the dissemination and outreach project components, and to the extent possible, planning for sustainable transport development in these cities will be actively pursued during this project (as described below under objective 9). These cities are briefly described below.

#### ***Yogyakarta***

28. Yogyakarta, the ancient capital, is much smaller than Jakarta but an important Indonesian city. It is a tourism and university city, visited by millions of people each year. With short average travel distances and narrow streets, it is ideal for non-motorized forms of transport such as by becak (a traditional Indonesian-style tricycle rickshaw), cycling and walking. Congestion is primarily focused along its main market street – Malioboro Avenue. Much of the congestion and pollution comes from explosive growth in motorcycles, particularly among university students. Yogyakarta is well positioned to show Indonesians the important benefits of investing in NMT infrastructure and providing mobility with fewer motors.

29. Two political forces in Yogyakarta are already working to reduce dependence on private motorized vehicles in the central area – the Sultan, who is both the royal/spiritual leader and Provincial Governor; and the Mayor. Both are working together to protect non-motorized forms of transport and to transform Malioboro Avenue itself into a pedestrian-only zone.

30. To date, Yogyakarta has pedestrianized one access road, rerouted traffic feeding onto Malioboro Road, constructed raised crosswalks, and initiated pedestrianization in the less complicated southern end of Malioboro Rd as a show of determination to the private informal parking commercial groups that are opposing the plan. Intran has proven particularly proficient at communicating with and understanding the needs of these sectors, and initiating a dialog between them and the government in these regards. This project will provide additional technical assistance to help Yogyakarta further pedestrianize this

<sup>7</sup> Google Earth.

area, as well as support the continued use of becaks (bicycle pedicabs) and help introduce a new, modern design.

31. While travel by becak generates no pollution and creates income for low income families, the traditional vehicle, weighing over 100kg, with inefficient transmission and low maneuverability, is outmoded, difficult to operate, and rapidly losing market share to motorcycle taxis. To reduce the exploitative element of becak operation, while preserving this traditional sector of society that is a symbol of Yogyakarta – a particular interest of the Sultan – a team composed of ITDP, Instran, Gadjah Mada University, private manufacturers, and the Yogyakarta government has already modernized the becak design.

### ***Palembang***

32. Palembang is a city of 1.3 million in the south of the island of Sumatra. Traffic problems are becoming widespread, with motor vehicles increasing at an annual rate of 8% during the last 5 years. The majority of public transportation vehicles are currently small paratransit vehicles which are in oversupply and in strong competition for passengers. Vehicle condition and service quality are very poor. The city has several wider roads that could be suitable for BRT development.

33. During scoping meetings conducted during the PDF-B phase, the project team learned that Palembang has already constructed a 50,000 m<sup>2</sup> pedestrian and NMT priority area in the city. They are interested in expanding the connectivity of the area. There is currently little public information about the area and no connectivity for pedestrians to other areas, or even to parking.

34. Palembang has also implemented bus-only lane marking, and they have an interest in BRT. Palembang is one of the cities receiving some support for BRT from the Indonesian Ministry of Transportation and Communications. Two officials from Palembang came to Jakarta at their own expense to attend one of the BRT public workshops conducted under the PDF-B. Unlike Jakarta, the oversupply of public transport vehicles in Palembang would require some vehicles to be removed if a BRT is implemented.

### ***Batam***

35. Batam, an area of rapid development on an Indonesian island near to Singapore, has been experiencing very rapid growth in private motor vehicles. Cars are primarily 10-year old models arriving from Singapore, which bans vehicles over 10-years old. No attention was paid to public transportation in the development of the area, and a combination of shared-taxis and motorcycles purchased on credit have filled the gap. Motorcycle registrations have been increasing at over 30% per annum.

36. To help address the public transport problem, the National Ministry of Transportation implemented a “bus pilot project” in 2005 with new buses and improved stops with a 20-minute headway. The system requires ongoing subsidy. However, there is support from the local business community for further developing this system. Under the current system, the city is paying for bus services on a per-km basis to the private sector, a key step toward implementing effective BRT. While one route was opened in July 2005, and another is being planned, few elements of BRT have been implemented.. The city plans to have 7 routes in operation by 2010. While the ridership is low, it has increased by 350% since the system opened, indicating the potential for future impact.

### ***Makassar***

37. Makassar, on the island of Sulawesi, is Indonesia’s third largest city with a population of 1.2 million. Makassar has poor quality public transport and increasing congestion; motorcycle registrations have doubled in the past 2 years.

38. The city plans to begin a study of the feasibility of BRT in 2006 with possible implementation of a pilot system in 2008. Meanwhile they have been improving pedestrian facilities.

### ***Baseline Scenario for Other Cities***

39. The baseline scenario for other cities is that political complexities primarily related to dealing with the informal parking market will postpone implementation of pedestrian areas and facilities, resulting in the continued escalation of private motor vehicle use, particularly motorcycles. BRT will remain at the discussion stage, although improvements in normal bus service will occur in Batam. Pedestrian and NMT trips will remain at current low levels or continue to decrease.

## **PROGRAMMING CONTEXT**

### **Project Team**

40. During development of the PDF-B, the project drew upon existing long-term relationships to form a “Project Team” which has conducted the PDF-B activities and is responsible for gathering the information presented here. Individual reports of team members were included in Annex E in the final project brief, available upon request. The Project Team consists of the following members:

- a) DKI Jakarta Government – including the Departments of Transportation, Public Works, Planning, Parks, Land Use Planning, Environment and Museums & Culture.
- b) The Centre for Transportation Studies at Gadjah Mada University (PUSTRAL)
- c) The Indonesian Institute for Transportation Studies (Instran)
- d) Yayasan Pelangi Indonesia (Pelangi)
- e) The Institute for Transportation & Development Policy (ITDP)
- f) A team of international consultants with experience in Bogotá, Sao Paulo and Mexico City BRT systems. This team includes Pedro Szasz, Paulo Custodio, Joao Carlos Scatena and Remi Jeanneret from Brazil; Ulises Navarro from Venezuela, and other consultants for pedestrian, demand management, and specialized topics.
- g) Yogyakarta Municipal and Provincial Governments – including the Departments of Transportation, Public Works, Planning, Tourism, and Environment
- h) NOTE: Municipal governments in Batam, Makassar, Palembang, Semarang and Surabaya also participated in the proposal development, as documented in previous Annex E, but project teams for these cities are still being formed.

41. Over the last 5-years, ITDP has focused on developing a team approach between ITDP staff, international experts, Indonesian NGOs (especially Yayasan Pelangi Indonesia and Instran), private sector stakeholders, and the DKI Jakarta government. That work is now reaching fruition. This is revealed superficially by the letters of support for working under this proposal. However, the effectiveness of this partnership is better revealed by the physical and operational changes that have been made to Jakarta’s BRT system in the past months. A significant example of this is the Harmoni Central Busway Station, the main transfer point between corridors 1, 2, and 3. This is the first Jakarta BRT station designed with multiple bays and an overtaking lane.

42. In Yogyakarta, ITDP and both the municipal and local governments have been working together for over 3 years on a variety of projects to improve pedestrian, non-motorized, and public transportation, as well as transportation demand management. The Center for Transportation Studies (PUSTRAL) at Gadjah-Mada University, along with the Indonesian NGO, Instran, have been an integral part of this team from the beginning.

43. During the PDF-B project, the same team of PUSTRAL and Instran conducted outreach activities to Palembang, Batam, Makassar, and Surabaya, Indonesia. An outreach mission to Semarang is planned in the near future.

44. The project will have 5 ITDP staff stationed at office space within DKI Jakarta. These staff will actively manage this project and monitor all technical and financial aspects, while maintaining a team approach with the DKI Jakarta government, local NGO’s and private sector stakeholders. All 5 ITDP staff will be local hires.

### **National Communications**

45. The project activities are consistent with Indonesia’s first National Communication, which specifically mentions goals in the transport sector including:

- i) Promote use of public transportation by increasing the capacity and comfort of the public transportation system in Indonesia.
- j) Road pricing & area traffic control system (ATCS) for regularly congested areas which will allow road users to realize the value of that public good.

46. The third item for transport mentioned is for use of cleaner fuels, which is compatible with Jakarta's desire to use CNG for the BRT buses.

47. The Indonesia National Communication also notes that the transport sector has the highest rate of growth for all uses of energy in Indonesia. It specifically refers to the national "blue sky" program focused on reducing air pollution in cities like Jakarta.

### **Sectoral Development Plans**

48. Decentralization of tax revenues following the end of the Suharto regime in the late 1990s have meant increased revenues available at the municipal level and a sudden burst of activities at this level. Budgets are controlled by the city councils or, in the case of Jakarta's special district, by the provincial-level parliament.

49. A total of 14 BRT corridors are identified in the Jakarta Transportation Master Plan which was approved by the Governor in 2002. Jakarta implemented the first phase of bus rapid transit in January, 2004. The next two corridors opened in January 2006, though at only partial capacity. The next 4 corridors are scheduled for construction during 2006. Other than some technical advice provided with support from US AID, the government has paid for all costs of planning, constructing and operating the BRT system out of their own budget.

50. In the other cities, we found relevant activities underway and a strong interest in working together within the context of the GEF project. The rapid execution of the PDF-B phase prevented more detailed agreements being developed with these cities. However, they have submitted letters of support and agreements will be developed during the initial stages of the FSP.

### **GEF Programming Context**

51. The capacity of BRT to simultaneously address multiple local developmental objectives while significantly reducing GHG emissions makes it highly consistent with the GEF criteria under OP11.

52. In March 2002, the GEF's Scientific and Technical Advisory Panel (STAP) met in Nairobi, Kenya to review progress to date in addressing transport-related emissions and to discuss strategies for more effectively addressing this issue. BRT was identified as a low-cost option that has shown to attract more customers to public transport usage, and thus mitigate dramatic mode shifts to private vehicles. BRT makes use of a full range of emission reducing effects, including greater mode share for public transit, more fuel efficient operations and vehicles, and reduced distances traveled. Following the GEF STAP meeting March 2002, the World Bank in April 2003 announced a revised approach to GEF funding in a paper entitled, "Climate Change and Urban Transport: Priorities for the World Bank" (available for download at [www.itdp.org](http://www.itdp.org)). Four new priority areas are outlined (pg 6), all of which are consistent with this project's emphasis on BRT and associated non-motorized transport and demand management instruments:

53. "The Global Environment Facility's Operational Program on Sustainable Transport (OP11) presents opportunities and challenges for developing countries and the World Bank to address the climate change impacts of the transport sector. The purpose of this paper is to help identify interventions within the urban transport sector that are both consistent with the national priorities of developing countries and with the GEF's climate change objectives. The analysis begins with a review of the World Bank's urban transport strategy (2002), reflecting a concerted effort to identify priorities for the sector within developing countries. These priorities are then compared with the emerging global environmental objectives of the GEF's OP11. This analysis reveals the following areas of overlap:

- k) Promotion of low-cost public transport modes, such as bus rapid transit;
- l) Non-motorized transport, including bikeways and pedestrian walkways;
- m) Transport and urban planning to facilitate efficient and low-GHG modes of transportation;
- n) Traffic demand management measures that favor or enable public transport and NMT."

54. The project objectives directly contribute to increased sustainable transport by encouraging modal shift from private motorized vehicles to public transport. Increasing the operational efficiency of

Jakarta's BRT will increase the speed and capacity of the system, both of which are currently reducing potential ridership.

55. Improvements in pedestrian design directly contribute to public transit ridership by reducing incentives for excessive use of private motorized vehicles in conditions that are currently extremely hostile to pedestrians.

56. ITDP is currently co-executing a BRT Toolkit Project under the sponsorship of UNEP GEF. Developing an effective bus rapid transit system is an issue for many cities. UNEP serves as the Implementing Agency for a GEF medium-sized project executed by ITDP and the International Energy Agency (IEA). The project is developing a bus rapid transit planning toolkit for developing new BRT systems.

57. The Jakarta BRT has been a key example informing development of the toolkit at ITDP. It provides the only living laboratory for full-scale BRT in a developing country in Asia, and as such has been instrumental in the development of the toolkit. In turn, this project will fully utilize the outputs from the BRT toolkit project in its work with Jakarta and Yogyakarta, as well as outreach to other cities in Indonesia and Asia.

58. The City of Surabaya is also working on GEF activities in the transport sectors. Under the auspices of the World Bank, Surabaya received PDF Block A funds to develop a medium size GEF. The PDF-A was initially developed by GTZ's Surabaya Urban Transport Project, to which ITDP was a sub-contractor. The PDF-A was executed by one of ITDP's Yogyakarta partners, PUSTRAL. The PDF-A has been completed, and a medium-sized proposal to improve non-motorized facilities has been prepared and submitted by PUSTRAL. PUSTRAL and ITDP have been working together on various projects since before the year 2000, but ITDP chose not to stay involved with Surabaya due to concerns about political will there. ITDP and PUSTRAL will communicate regularly about the progress of the work in Surabaya and remain alert for opportunities for synergy between the two projects, such as sharing lessons learned, and multi-city workshop and training opportunities.

59. Though not a GEF activity, the World Bank has an ongoing project encouraging the Private Provision of Infrastructure. This project is being coordinated by Mr. Bambang Susantono, who also coordinated the Independent Advisory Committee for ITDP's work under the US AID cooperative agreement. During the PDF-B, Jakarta agreed to apply for funding under this program to receive financial and legal support for establishing a new legal basis for TransJakarta (supporting Objective 4) and for developing a public private partnership for transit oriented re-development around the planned Plaza Fatahillah pedestrian area (supporting Objective 8).

60. At the moment, no other World Bank or Asian Development Bank (ADB) projects in the transport sector are being undertaken in either Jakarta or the other cities included in this proposal. A past ADB project attempted to assist with CNG infrastructure in Jakarta, but was not successful due to difficulties in coordinating through the national government. At the moment, the requirements for both these banks to provide assistance through the national government is hampering their more direct involvement in the newly empowered local governments of Indonesia.

#### **UNEP Programming Context**

61. This project will be designed within the framework provided by the UNEP GEF Action Plan on Complementarity for UNEP GEF project interventions. It will be aligned with the overall strategy for UNEP GEF project design making use of UNEP's comparative advantages and expertise. Taking into consideration UNEP's intervention principles, it will be aligned with:

- o) Development and demonstration of tools and methodologies for improving environmental management;
- p) Strengthening the enabling environment so that countries can more effectively implement measures consistent with the UNFCCC.

62. The project will also share information with, and to the extent warranted, link with existing UNEP transport programs such as the Clean Fuels and Vehicles Partnership. It will also draw on other

UNEP GEF projects, namely "Reducing GHG Emissions with Bus Rapid Transit" (Tanzania and Colombia MSP), and make use of the BRT planning guide from that project.

63. The Jakarta Project Team (ITDP, DKI Jakarta, and the Indonesian NGOs) have indicated their preference for working with UNEP as the implementing agency of this project. With the new GEF personnel recently hired at UNEP, the Project Team feels UNEP has the necessary technical capacity to oversee the project. The complexity of the problems in urban transport requires clear understanding of the issues in order to judge the implications of alternative courses of action as the project proceeds. Other than UNEP, the World Bank also has this expertise; however the Governor of Jakarta is clearly and specifically not receptive to World Bank involvement. The UNDP office in Indonesia has no involvement in transportation issues, and though approached, has expressed no interest. As a result, UNEP has been identified as the preferred agency to implement this proposal, given their on-going GEF project efforts with ITDP in other countries (Tanzania and Colombia, the BRT planning guide) and their technical expertise on the development of BRT/NMT systems.

64. The Executive Director of UNEP has given authorization to establish the UNEP/DGEF Country Coordination Office in Jakarta, within the mandate given under the UNDP-UNEP MoU (January 2005) on collaboration at country and global level, as well as the UNEP Bali Strategic Plan on technology support and capacity building at national level. The project will make optimal use of the UNEP DGEF Country Liaison Officer based at the UNDP office in Jakarta to provide opportunities for direct oversight and involvement in the project, including on financial and administrative matters. The international executing agency, government of Jakarta, and cooperating NGOs will be instructed to provide liaison and full cooperation with this local UNEP staff member, increasing the ability to provide local verification over and above the reports and communications made to UNEP headquarters. The UNEP DGEF Country Liaison Officer will also be able to attend national based Steering Committee meetings.

65. Similar to this project, ITDP staff were also stationed locally for the ITDP-led UNEP project in Dar and Cartagena, and the arrangement is working well. To date there has been excellent monitoring, reporting and oversight on that project.

66. It should also be noted that UNEP is not new to managing single country projects, and to date has successfully conducted 33 such GEF projects (across all focal areas). As always, full UNEP procedures for reporting and financial management will be applied as they have in these other projects, and are for each individual country in regional projects.

#### **RATIONALE AND OBJECTIVES**

67. The project addresses the key root cause of urban transport un-sustainability: a dysfunctional transport pricing structure which *de facto* subsidizes private motor vehicle use by undervaluing scarce public space. Faced with increasing congestion, cities have attempted to increase roads, allocating more space for private motor vehicles. A tragic result has been induced traffic demand, as the low marginal cost of operating a private vehicle leads to choices resulting in increased trip distances.

68. The too common result of the road-building cycle is the return of congestion. However, sprawling low-density land-use results in significantly higher energy use than before. The steadily increasing energy use in the transportation sector is likely the single largest threat to long-term reductions in GHG emissions on a global level. The sprawl and returning congestion cycle continue as public transportation steadily declines (see Figure 4).

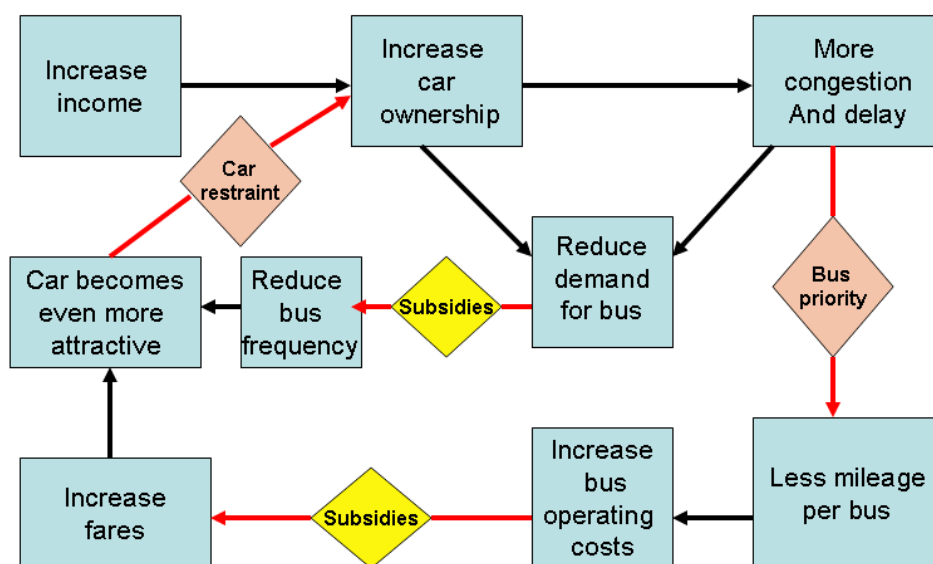
69. In Figure 4, Ortuzar & Willumsen identify 4 points where intervention will break the cycle. Because subsidies have questionable sustainability in developing economies, this project focuses on car restraints (TDM) and bus priority (BRT). Pedestrian and non-motorized enhancements further complement the viability of BRT in Jakarta.

70. This project addresses a fundamental cause of the transportation sector's steadily increasing energy use – increasing allocation of public space to private cars in the form of unrestricted roads – by reallocating road space exclusively to public transit. Bus rapid transit (BRT) makes this reallocation possible with a system that delivers maximum capacity to carry passengers per meter of road width at a much lower cost than rail alternatives. Once BRT is providing an incentive for travel by public transit,

there is an immediate demand for the improvement of pedestrian facilities, and an opportunity to improve non-motorized transportation facilities. Once these more energy efficient alternatives are in place, the potential opens for application of transportation demand management measures to shift the balance further away from private motor vehicle travel.

71. Indonesia is the first developing country in Asia to implement BRT. In doing this, the city of Jakarta demonstrated it had the single most important ingredient necessary for implementing BRT – political will. Capitalizing on Jakarta’s introduction of BRT service, the project will increase the effectiveness of BRT, resulting in both improved efficiency and an increase in the perceived value of the service by the public. This will improve the system’s chances for expansion, both in Jakarta and in other cities in the region who see Jakarta as an example.

**Figure 4. The Cycle of Increasing Car Ownership and Declining Bus Service, with possible interventions<sup>8</sup>**



72. By increasing the Jakarta BRT’s capacity, speed, and the area of population served, Jakarta can dramatically expand the modal shift impacts from already impressive numbers. Achieving such an improvement is not trivial. The Jakarta BRT system was built in record-fast time at record-low cost. As such, it stretches the limits of BRT. The current first corridor has demand well over its unusually low capacity. A primary underlying cause of the system’s difficulties comes from the very rapid implementation and low budget, which allowed for only minimal development of local BRT design and operating capacity.

73. Jakarta has also been actively engaged in improving pedestrian facilities along the BRT corridors, and is also strongly considering the implementation of road pricing TDM measures to replace the three-in-one (carpooling) system as a means to reduce use of private motor vehicles.

<sup>8</sup> Taken from Ortuzar, J.D. and L.G. Willumsen. Modelling transport. John Wiley & Sons. Third Edition. 2001. Figure 1.3.



## **OBJECTIVES**

74. The overall purpose of the project is to address the local capacity shortcomings primarily through extensive assessment, technical assistance and training programs. This program is aided by two key factors:

- q) The presence of a functioning BRT and the resulting urgency to learn how to improve and optimize it, and
- a) The popularity, despite its shortcomings, of the BRT system with the public.

75. This project will build on these two factors, seeking to improve the performance of the Jakarta BRT system. This will result in further modal shift in Jakarta, and an improved public image for further expansion of BRT – both in Jakarta and in those cities now being influenced by the Jakarta BRT system's initial success.

76. The Jakarta BRT system's performance will be increased by providing technical assistance and training to help optimize routing, infrastructure and traffic design, operations and public information. Then analysis and training will focus on rerouting the remaining public transit system to better complement the BRT. TDM measures will be promoted for Jakarta's central area to provide additional incentive to shift from private motorized vehicles to BRT, and pedestrian and NMT facilities and zones will be used to help promote land use change near the BRT corridors.

77. In the outreach and dissemination to other cities, the objective will be to make maximum use of the example provided by Jakarta to catalyze changes in the transport sector. This has already begun with financing from the National Ministry of Transportation to help spread the example of Jakarta's BRT to other major cities in Indonesia. In addition to the spread of BRT, activities undertaken during the PDF-B identified that pedestrian improvements and pedestrian-only areas are also concepts with broader appeal.

## **PROJECT ACTIVITIES/COMPONENTS AND EXPECTED RESULTS**

78. This section describes the main project components by objective and activity. It summarizes the outputs, expected outcomes, baseline and project cases, and milestones. It provides a detailed description of the primary activities to be implemented by the Project Team.

79. An overall emphasis of project activities is on assessment and training designed to build understanding and technical capacity both within the project team and with outside stakeholders. During PDF-B scoping meetings, training was identified as the primary need by the Transportation Department – the key agency for Jakarta's BRT implementation. As this department is the most experienced member of the Project Team, this recommendation has been given extra weight.

80. In Jakarta, the Project Team will assess technical needs and arrange for appropriate experts to work directly with the city government employees responsible for the design and operation of the BRT. Through previous work funded by USAID and under the PDF-B, some of the leading BRT experts in the world already have familiarity with DKI Jakarta's BRT system. They will provide analysis and experience gathered from other, more experienced, BRT operations in the world. The expert's recommendations will be reviewed and responded to by the Project Team. Emphasis will be in providing training to the appropriate staff of all Project Team members to allow the adaptation of improvements to Jakarta's specific situation.

81. The technical experts will be drawn largely from the most successful BRT systems in Latin America. BRT systems in developed countries bear little resemblance to the systems in developing countries, and south-south partnerships have proven more effective at the technical and political level.

82. Additional experts also will analyze, recommend options and provide training for enhancing BRT ridership through improvement of pedestrian facilities, land use redevelopment of the area around the north end of the current busway (the historic city), bicycle facilities such as paths and secure parking around BRT stations throughout the city, and through traffic demand management.

83. The initial options and recommendations will be provided in direct discussions with the Project Team, and the same information will then be provided in a written report to the government and other



stakeholders. A formal process will be established for acceptance and review of the technical reports. However, the technical options themselves are just the first step. The emphasis of the project will be on training to build local capacity to critically evaluate and utilize the information in the expert reports. The training will be followed by workshops to help socialize the concepts where necessary, and to seek public input into design ideas and other improvements.

84. The long relationships and the track record of success in Jakarta should aid the ability of the Project Team to work on TDM and NMT improvements in the TransJakarta corridors – both those that have already been constructed and those that have yet to be implemented. Further, the existing working relationship provides a basis to begin work on an innovative new link with transit-oriented urban revitalization.

#### **ACTIVITIES / COMPONENTS**

85. The components of this project are organized into two main goals with 9 objectives. Because of the significance of the Jakarta BRT, the second goal is partially dependent on successful implementation of the first goal. Each activity planned is designed to best complement the efforts of Jakarta and provide funding for tasks which Jakarta – for reasons that may be logical or illogical – is not able to do under a baseline scenario. A primary limitation is the refusal of the Jakarta parliament, which approves all budgets, to approve significant amounts for international experts or training. Since there is no indigenous capacity to build and operate BRT in Indonesia, international experts and “study tours” are needed to build this local capacity.

86. Table 3 summarizes the Activities according to Goal and Objective. It also lists the immediate product deliverables from each activity and the desired result for each objective.

**Table 3. Goals, Objectives, Activities, Deliverables and Expected Results**

Activities	Deliverable Products	Result
Goal A: Improve Performance of the Jakarta BRT		
Objective 1: Develop BRT Corridors 4-14		
Additional surveys and public transport modeling	Model outputs	Routes for corridors 7-14 are located so as to maximize potential for long-term demand at lowest system cost.
Trainings: transportation model operation, routing BRT in other cities, routing BRT in Jakarta,	Training evaluation reports	
Workshops to develop modifications and alternatives, review options with stakeholders and report	Draft Report for Consultation, stakeholder meeting minutes, final report	
Implementation of design	Detailed Design Plans	
Monitoring and Evaluation	M&E Report	
Objective 2: Optimize Fare System for Corridors 1-14		
Transportation model demand outputs and verification surveys	Model output and survey reports	Station design for corridors will better match passenger demand, improving customer experience. Jakarta will be able to negotiate more favorable payment contracts to bus operators; reduced costs allow lower fares, increasing ridership.
Trainings: Using a transportation model for demand estimates and design; service, fare and transfer options in other BRT systems; options for Jakarta's situation.	Training evaluation reports	
Workshops: Develop modifications and alternatives; review options with stakeholders; report recommendations	Draft Report for Consultation; stakeholder meeting minutes; Recommendation report	
Renegotiate contract Operators	Negotiated Contracts	
Monitoring and Evaluation	M&E Report	
Objective 3: Improve Intersection Performance for BRT		
Review Existing Data	Staff memo	Improvement of BRT flow at critical intersections results in higher BRT average speed.
Perform Additional Counts as Needed	Completed survey forms	
Trainings: Intersection design options in other BRT systems; options for Jakarta	Training evaluation report	
Workshops: Develop modifications and alternatives, review options with stakeholders, report recommendations	Draft Report for Consultation; Stakeholder meeting minutes; Recommendation Report	
Implement Designs	Detailed Design Plans	
Monitoring and Evaluation	M&E Report	
Objective 4: Optimize Busway Operation		
Review Existing Maintenance and Operating Procedures	Staff memo	Improved operation of BRT reduces travel time for passengers. Reduced travel time relative to other modes will lead to increased ridership on BRT and less use of more energy
Surveys: Station-to-station O-D, headway, average speed, on-board O-D	Survey report	
Trainings: Scheduling and maintenance programming, BRT operations in other cities, options for Jakarta,	Training evaluation report	

Activities	Deliverable Products	Result
Workshops: Develop modifications and alternatives, review options with stakeholders, report recommendations	Draft Report for Consultation; Stakeholder meeting minutes; Recommendation Report	intensive modes.
Software programming	Software program & outputs	
Monitoring and Evaluation	M&E Report	
Goal B: Utilize BRT to build image of public transport and improve pedestrian, TDM, NMT, and land use options		
Objective 5: Improve public information on BRT & public transport		
Annual surveys of BRT passengers	Survey Reports	Improved information about how to use the BRT, and the benefits to Jakarta of the BRT, results in more favorable image and better public support for BRT.
Annual focus group studies for BRT passengers and non-passengers	Focus Group Reports	
Training: Public relations and education; Route information systems; BRT Public Relations in other cities	Training evaluation	
Workshops: Annual TransJakarta Review; NGO and civil society quarterly	Workshop reports	
Parliamentary briefing on Jakarta and other BRT systems	Briefing minutes	
TransJakarta Educational Outreach Coordinator; media placement and promotion	Position hired; bi-annual reports; media placements	
Monitoring and Evaluation	M&E Report	
Objective 6: Rationalize Non-BRT Bus Routes		
Identify geographic areas needing additional surveys	Expert report	Improve routing of non-BRT buses increases overall passenger load level, and maximizes use of BRT for trunk service
Survey: itineraries, O-D, Frequency, Occupancy, Velocity	Completed survey forms	
Expand public transportation demand model	Model outputs	
Analyze private operator business model	Expert report	
Training: Private operators, media, Transportation Department - alternatives in other cities	Training Evaluation	
Workshops: Private operators, public, informal sector	Stakeholder meeting minutes	
Implementation	New bus route regulations	
Monitoring and Evaluation	M&E Report	
Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use		
Analysis of JICA household data	Expert Report	Congestion pricing scheme implemented in central Jakarta.
New surveys, data entry and model calibration	Model calibration outputs	
Trainings: Demand management in Singapore and London, options for Jakarta; public relations	Training evaluation	
Workshops: Technical & Stakeholder Review of Options	Workshop reports	
Implementation	Detailed Design Plans	
Monitoring and Evaluation	M&E Report	

Activities	Deliverable Products	Result
Objective 8: Improve Pedestrian and NMT Facilities in Center and Along Corridors		
Model traffic impacts of pedestrian area plans	Model outputs	Pedestrian area implemented near Kota station and at 1 other location near the BRT. Pedestrian improvements continue near all BRT stations. 10 BRT stations have secure bicycle parking facilities.
Evaluate parking reform options	Expert report	
Surveys: Pedestrian and NMT movements, BRT passengers, Facility inventory	Survey report	
Training: Pedestrian and NMT design concepts; pedestrian flow modeling; Survey evaluation; Pedestrian areas in other cities	Training evaluation	
Preparation of design alternatives	Design alternatives	
Workshops: School trips, Kota redevelopment; Design options	Workshop reports	
Pedestrian area design	Detailed Designs	
Monitoring and Evaluation	M&E Report	
Objective 9: Dissemination and Outreach to Other Cities		
Surveys of Pedestrian, bicycle, becak movements	Survey report	10 km of pedestrian way improvements. 10 km of bike routes. Traffic cell or other NMT priority implemented at 1 university.
Training: BRT in Jakarta, evaluating options	Training evaluation	
Trainings: School trips; Traffic cell implementation; Public outreach and education	Training evaluation	
Workshops: Review BRT and public transport improvement options with stakeholders	Stakeholder meeting minutes	
Workshops: School trips, university NMT prioritization	Workshop reports	
NMT promotional efforts	Promotional materials and distribution reports	
Monitoring and Evaluation	M&E Report	

### Goal A: Improve Performance of the Jakarta BRT

87. The demand on TransJakarta is currently constrained by its limited capacity. Corridor 1 to 3 have already opened. Some significant shortcomings appear in these corridors, such as single door station and bus designs, limited planning or detailed design for pedestrian access, traffic conflicts, overcrowding and other temporary and long-term problems. However, many improvements can be made at modest cost once the options and benefits are clearly understood. For example, an additional door can be added to the BRT buses, and the TransJakarta stations have been constructed in a way that allows their modification without having to rebuild.

88. Initial recommendations of how to increase the capacity have been completed under the US AID project and the PDF-B phase, but these will require an extensive effort to bring them to implementation. Many of the recommendations require additional budget outlays, e.g., for adding a second door to the bus stations, that require parliamentary approval. An educational and training effort will be made on several fronts – government departments, the media, NGO's, and the general public – in order to achieve the implementation of the needed expansion. Our work so far has taught us that making technical recommendations is relatively easy compared to the institutional obstacles which must be overcome to get them implemented.

89. ITDP, DKI Jakarta and the University of Indonesia Center for Transportation Studies created a traffic model to estimate demand in all future corridors. The resulting demand analysis is needed by DKI Jakarta both to negotiate a good deal with bus operators under the contracting of operations, and to optimize the routes for the additional corridors. If Jakarta pays too much for the operating contracts, the fares will be needlessly high, losing passengers and the related reduction in greenhouse gas emissions.

**Figure 5. Conceptual map of the 14 planned Jakarta BRT Corridors.**



90. Initial operations of the first 3 corridors restrict routes to be wholly within only 1 corridor. However, the public transport demand model indicates that substantial time and cost savings can be realized by allowing multi-corridor routes that eliminate the need for all passengers to transfer. Changing the way BRT routes are perceived by the managing agency and optimizing their configuration can save tens of thousands of needless transfers, reducing bottlenecks at the transfer stations. The reduced travel time and increased convenience will attract additional passengers from private motor vehicles, increasing the cost effectiveness of the BRT while reducing GHG emissions.

91. A maintenance regime for buses is needed that will directly improve engine performance and reduce greenhouse gas emissions. Technology and training improvements for CNG fueling systems will be analyzed.

92. Each objective includes a Monitoring & Evaluation component which provides both expert and Project Team review of the effectiveness of implementation. This process will be used to identify obstacles to full implementation and an action plan to overcome these.

*Objective 1: Develop BRT Corridors 4-14*

93. Jakarta has developed the first 3 BRT corridors and, as a baseline scenario, will complete at least 3 more. However, overall system capacity will remain low and overcrowding will reduce the quality of service to the level of existing buses. Under this objective planning and implementation of the BRT will be improved to optimize routing and design of the system to meet the capacity requirements predicted by the public transport demand model.

Baseline Scenario	Project
6 BRT corridors implemented by year 2. Sub-optimal implementation means a significant % of public transit users find standard routes more convenient. BRT lanes removed by year 5	All 14 routes completed within 5 years. Routes optimized to achieve maximum demand.

94. Detailed activities under this objective first focus on improving the public transportation demand model, then on providing extensive training and workshop opportunities for integrating the model results into the BRT corridor plans. The following summarizes the detailed activities undertaken for this objective:

- b) Additional surveys and public transport modeling – This will improve the public transport demand model developed by the Project Team with US AID funding. It provides the basis for identifying the best routes for capturing existing public transit demand. This optimizes the service, reducing operating costs per passenger served while capturing as many passengers as possible. It maximizes the long-term sustainability of the BRT.
- c) Trainings: Transportation model operation & results – Extensive time will be spent in various levels of training to improve the understanding of the model and acceptance of the results. Training will vary from one-one-one sessions between experts and Project Team members, to 2-week short-courses conducted for Project Team members and key stakeholders.
- d) Trainings: Routing considerations in other BRT systems – Project Team members will be taken to other cities with BRT systems to learn how routing decisions have been made.
- e) Trainings: Routing considerations in Jakarta – International experts will also spend time in Jakarta relaying lessons learned from other BRT cities.
- f) Workshops: Develop modifications and alternatives – Following the training sessions, a series of smaller workshops will be held with the Project Team and key stakeholders to consider the implications of the model results for developing modifications to the BRT system.
- g) Workshops: Review Options with Stakeholders – A series of larger workshops for a broad set of stakeholders will be conducted to help socialize the modifications to the BRT system, and take input for adapting these.
- h) Workshops: Report Options and Recommendations – A final set of workshops will review the results of the stakeholder workshops with the Project Team and key stakeholders, such as the Jakarta Parliament.
- i) Option selection and detailed design – Technical support will be provided during the detailed design phase.
- j) Monitoring and Evaluation – see Monitoring & Evaluation section for details

95. The milestones for Objective 1 are:

- Jakarta BRT Corridors 4-7 Implemented in Year 1
- Jakarta BRT Corridors 8-11 Implemented in Year 2
- Jakarta BRT Corridors 11-14 Implemented in Year 3

*Objective 2: Optimize Fare System for Corridors 1-14*

96. This objective seeks to address the considerable threat now occurring to the Jakarta BRT because of underdevelopment of several aspects of the fare system. In the baseline scenario the fares system and management will continue as currently implemented; fare leakage is anticipated to increase as are operator costs. The project will seek to integrate the fare system and implement controls, as well as introduce competitive bidding practices such as those now practiced at the TransMilenio BRT in Bogotá.

Baseline Scenario	Project
Non-integrated fare system with inadequate controls results in fare leakage and continued use of non-competitive bids for BRT operation	Integrated fare system with controls stops fare leakage. Competitive contracting implemented for BRT bus operation, reducing costs

97. This objective includes activities to better verify estimated demand in order to allow for more competitive negotiations with BRT bus operators and lower prices. It will also assess the types of fare structure that will result in the best operation of the system for maximizing the number of passengers, and hence GHG emission reductions. In addition, the objective will address inadequacies in fare system operation, contracting and fiscal control.

- k) Transportation model demand outputs and verification surveys – Most of the refinement for the demand model will already have been completed under Objective 1. This activity adds some surveys to better estimate price sensitivity of BRT passengers and potential passengers.
- l) Trainings: Using a transportation model for demand estimates and design – These trainings will build on the trainings in objective 1, but with further emphasis on how pricing and fare structure affects system demand.
- m) Trainings: Service, fare and transfer options in other BRT systems – Project Team members will be taken to other cities with BRT systems to learn directly how fare systems are structure and how they operate.
- n) Trainings: Service, fare and transfer options in Jakarta – International experts will conduct training sessions on evaluating the various options available and appropriate in Jakarta.
- o) Workshops: Develop modifications and alternatives – Following the training sessions, a series of smaller workshops will be held with the Project Team and key stakeholders to consider the implications of contract negotiation and fare system options.
- p) Workshops: Review Options with Stakeholders – A series of larger workshops for a broad set of stakeholders will be conducted to help socialize the fare options, and take input for adapting these.
- q) Workshops: Report Options and Recommendations – A final set of workshops will review the results of the stakeholder workshops with the Project Team and key stakeholders, such as the Jakarta Parliament.
- r) Renegotiate contract with Operators – technical and legal support provided to the Project Team
- s) Monitoring and Evaluation – see Monitoring & Evaluation section for details

98. The milestones for Objective 2 are:

- TransJakarta become legal entity able to control fare revenue in Year 2
- Fare system control mechanisms implemented in Year 3
- Competitive tender for fare system and bus operations implemented in Year 4

*Objective 3: Improve Intersection Performance for BRT*

99. Technical evaluation during the PDF-B revealed that conflicts at intersections are now one of the primary capacity limitations of the Jakarta BRT system. This represents an extremely critical aspect for the Jakarta BRT, as priority over mixed traffic is the heart of what allows the Jakarta BRT to capture passengers who would otherwise be using private motor vehicles. Figure 6 illustrates one of the examples where BRT buses are needlessly held up at a key intersection because the BRT lane priority is not being enforced.



100. Under the baseline scenario, intersection conflicts would continue to increase, slowing BRT service speeds, increasing costs, and reducing the public image of the BRT. The project would focus on finding solutions to intersection conflicts and implementing them.

Baseline Scenario	Project
Intersections continue to cause conflicts that increase with system expansion, slowing average BRT speed to 18 km/hr	Intersection conflicts reduced to acceptable levels. BRT average speed increases to 25km/hr

101. Activities under this objective include:

**Figure 6. The Hotel Indonesia roundabout – enforcement of BRT priority by traffic police has become ineffective, a symptom of the much larger problems facing the BRT at intersections**



- t) Review Existing Data – detailed traffic analysis at each intersection is required to develop alternatives. The project will first analyze the usability of data from a JICA household survey conducted in 2000.
- u) Perform Additional Counts as Needed - Specific traffic counts of volumes and turning-movements at critical intersections will be made as needed.
- v) Conceive Alternatives – International experts will prepare an initial set of recommendations for discussion and analysis.
- w) Trainings: Intersection design options in other BRT systems – Project Team members will be taken to see how other cities have handled traffic conflicts at intersections.
- x) Trainings: Intersection design options in Jakarta – Intensive training of Project Team members in various intersection design options specific to the Jakarta BRT.
- y) Workshops: Develop modifications and alternatives – Following the training sessions, a series of smaller workshops will be held with the Project Team and key stakeholders to consider the implications of various intersection designs
- z) Workshops: Review Options with Stakeholders – A series of larger workshops for a broad set of stakeholders will be conducted to help socialize the intersection options and better explain the need for prioritizing the BRT as a solution to Jakarta's traffic congestion. Input will be solicited.
  - Workshops: Report Options and Recommendations – A final set of workshops will review the results of the stakeholder workshops with the Project Team and key stakeholders, such as the Jakarta Parliament.
  - Option selection and detailed design – Technical support will be provided during the detailed design phase.
  - Monitoring and Evaluation – see Monitoring & Evaluation section for details

102. The milestones for Objective 3 are:

- Intersection reforms implemented in Year 4 and Year 5

#### *Objective 4: Optimize Busway Operation*

103. Current design of the Jakarta BRT limits capacity to very low levels for a BRT system – about ¼ of what might be expected. Problems occur primarily because of a 1-door bus and station design which slows boarding and alighting (increasing bus dwell times at stations). Additional operational aspects include failure to keep optimal spacing between buses, which leads to



overcrowding and inefficient use of resources. Under the baseline scenario, these problems are expected to continue.

Baseline Scenario	Project
BRT buses bunch during operation. 1-door bus and station design slow boarding/alighting. Crowded conditions limit passengers.	Operation optimized to maximize service to passengers and reduce waiting and transfer times.

104. The project seeks to improve the operation of the Jakarta BRT within the available infrastructure to ensure the best passenger service while lowering operating costs and fuel usage. Activities include the maintenance and scheduling procedures for the BRT buses. There will also be operational control procedures implemented to avoid problems such as bunching (convoying) of buses. This allows maintaining a standard headway (time between buses). Activities include:

- Review Existing Maintenance and Operating Procedures – Assistance provided under the PDF-B phase included working with TransJakarta on programming their scheduling and maintenance program. Under this project, we would conduct a more thorough review of existing operation and maintenance procedures. This would include review of CNG fuel handling for the BRT buses now using CNG fuels, with the aim to minimize CNG fuel lost during refueling.
- Station-to-station O-D surveys – the Project Team would implement a regular system of surveys to record the origin and destination stations of BRT passengers. The data will be used to develop operational alternatives to improve BRT service and lower operating costs.
- Headway and average speed surveys - the Project Team would also implement a regular system of surveys to monitor headway and average speed. This will serve both to help develop control mechanisms and to inform the Monitoring and Evaluation process.
- Design Alternatives and Run Model – An operations model will be developed to guide development of control options.
- Trainings: Repetitive survey and data collection – Project Team members will be trained on the most efficient way of conducting the repetitive surveys needed for this objective.
- Trainings: Scheduling and maintenance programming – This activity completes the training on programming and using the scheduling and maintenance program developed by the Project Team with US AID support and further refined during the PDF-B phase.
- Trainings: BRT operations in other cities – Project Team members will travel to other cities to learn about operation control mechanisms and implementation.
- Trainings: Options for BRT operations in Jakarta – Intensive training of Project Team members in operational principles, techniques and applications specific to the Jakarta BRT.
- Workshops: Develop modifications and alternatives – Following the training sessions, a series of smaller workshops will be held with the Project Team and key stakeholders to consider the implications of various operational changes
- Workshops: Review Options with Stakeholders – One public workshop will be held each year during the first 3 years to communicate and seek input on the operational changes that affect service quality, i.e., headway and routing changes. Smaller discussions will occur in the final 2 years as needed.
- Workshops: Report Options and Recommendations – A final set of workshops will review the recommendations for operational changes.
- Revised Operational Procedures – support for implementation of operational changes as needed.
- Monitoring and Evaluation – see Monitoring & Evaluation section for details

105. The milestones for Objective 4 are:

- Operation reforms implemented in Years 2, 3 4 and 5

## **Goal B: Utilize BRT to build image of public transport and improve pedestrian, TDM, NMT, and land use options**

106. The current three-in-one (carpooling) scheme along BRT corridor 1 demonstrates the political will of Jakarta's government to manage transport demand. Road-pricing provides a more effective method for managing demand and for shifting trips to public transportation. The project will provide training for city staff on the options available, site visits to functioning systems in

Singapore and/or London, media training and public workshops to improve socialization of the idea.

107. The project will seek to assist the ongoing efforts of the Jakarta Parks Department to improve pedestrian facilities along the BRT corridors. In particular, efforts will be made to show the importance of pedestrian facilities precisely where conflicts with motorized traffic are most intense. Thus far, the Parks Department has had limited success in improving pedestrian facilities in this critical areas.

108. The Project Team will work with a private partnership in North Jakarta around the Kota Railway station, the northern terminal of the TransJakarta BRT system. There is a public private partnership fund managed by the Coordinating Ministry with funds from the World Bank, and the Coordinating Ministry has agreed to support the revitalization of the historical center of Jakarta, and adjacent Chinatown (Glodok) which was badly damaged during the rioting of 1998. However, DKI Jakarta has never put together a project like this before, and they have asked for help to put this project together.

109. This revitalization project will encompass significant pedestrian facilities, but also put together the institutional mechanisms to implement coordinated public private partnerships in transit oriented urban revitalization at the north end of Corridor 1. The project will utilize a pragmatic, organic approach focused on identifying strategic locations and opportunities for new “anchor” developments within the framework of BRT and pedestrian infrastructure development. We will work with the city to use these anchors to focus planning efforts on master plans for smaller, manageable areas within the redevelopment zone. During the PDF-B phase, the Project Team developed new alliances with stakeholders specifically interested in revitalizing the historic center of Jakarta. Focus will be on small-scale, incremental steps taken within an overall guiding framework, avoiding the corruption and stalemate that frequently occur with concentration of development planning authority.

*Objective 5: Improve public perception of BRT*

110. Discussions during the PDF-B phase highlighted the importance of public perception for the ultimate success of the busway. International investors pushing monorail and mass transit compete for public attention; promises of huge outside investments in these systems divert politicians from paying attention to the BRT. The very rapid implementation of the Jakarta BRT system – 2 new corridors were implemented during the PDF-B phase – has produced large passenger inconveniences and degraded the quality of service.

111. While public perception is hard to measure, this objective will include the more tangible aspect of developing a public transit information system. In the baseline scenario, information on best routes would continue to be limited. The project, in the course of improving public perception of BRT in general, would also implement a specific information system to provide point-to-point optimal public transport routing information for passengers.

Baseline Scenario	Project
No source of information on best route for point-to-point service by public transport.	Web and SMS based routing information system available to potential passengers.

112. This objective would seek to keep the BRT dream alive in Jakarta so as to maintain critical public support for the system improvements contained in Goal A.

- Annual surveys of BRT passengers – interview surveys would monitor the quality of service experience of BRT passengers as well as other important data such as connecting modes, alternative mode, and preferences for system improvement.
- Information System Development, website for evaluation display – an information system capable of providing routes and service information for going by public transit between any 2 points in Jakarta, this system will simultaneously improve the image of public transit, increase ridership, and identify origin-destination pairs with inadequate transit service (to inform activities under Objective 6: Rationalize Non-BRT Bus Routes).

- Annual focus group studies for BRT passengers and non-passengers – This continues focus group research implemented during the PDF-B phase which reveal in more detail the concerns and interest of BRT passengers and non-passengers. The information will inform the public relations and education program, as well as activities under other objectives.
- Trainings: Public relations and education – international experts will provide one-on-one and classroom training for selected Project Team members in public relations and education/information systems.
- Trainings: BRT public relations efforts in other cities – Project Team members will travel to other cities which have more developed public relations systems for their BRT to learn why and how such activities contribute to the BRT's operation.
- Trainings: Media visits to BRT in other cities – the project will also pay to have key media figures visit BRT systems in other cities so as to inform their editorials concerned Jakarta's BRT and other transportation system topics. This proved to be key in early acceptance of BRT corridor 1.
- Workshops: Annual TransJakarta Review Workshop – a large stakeholder workshop will be convened during which data on the previous years performance of the BRT system will be presented and public input will be solicited.
- Workshops: NGO and civil society stakeholders workgroups – These smaller workshops will focus more on identifying key problems, solutions and misunderstandings about the BRT.
- Workshops: Parliamentary briefings on Jakarta and other BRT systems – regular formal and informal briefings will be provided to Commission D of the Jakarta parliament, and other key politicians as requested. The briefings will focus on providing clear information on the performance of the Jakarta BRT, and comparisons of institutional and operational arrangements of BRT in other cities.
- Media placement and promotion – a full-time staff person will work to provide information on BRT and other transportation issues to the media and seek placement of articles and advertisements promoting the Jakarta busway. Promotional materials will also be developed and distributed by the project office.
- Monitoring and Evaluation

113. Activities under this objective will be implemented continuously throughout the project.

114. The milestone for Objective 5 is:

- Public transit routing information system implemented in Year 4

#### *Objective 6: Rationalize Non-BRT Bus Routes*

115. As the Jakarta BRT expands an increasing number of existing buses are being removed from the BRT corridor. This is desirable because: 1) the BRT can move the same passengers more quickly and efficiently, 2) removing the buses improves (at least temporarily) the flow of mixed traffic, and 3) the buses are needed in other parts of Jakarta because of a general undersupply of public transportation in the city.

116. In the baseline scenario, bus services would continue to be issued licenses without regard to the new BRT routes, keeping the usability of these buses as feeders to the BRT at a minimal level. The project would seek to rationalize all routes to maximize their usability as BRT feeders.

Baseline Scenario	Project
5% of BRT passengers from bus feeder services and 20% from PVM feeder	50% of BRT passengers from bus feeder service; 32% of which are new passengers and 32% shifted from PMV feeder

117. Optimizing the redistribution of buses in Jakarta poses a significant challenge for the Project Team. Route licenses are poorly controlled, frequently associated with corrupt practices, and create significant resistance to prospects to reform. However, the potential to increase modal shift to public transportation by rationalizing the non-BRT buses is significant.

118. Activities include:

- Identify geographic areas needing additional surveys – This will add to the existing public transportation demand model, focusing more on areas away from the BRT corridors.

- Survey: itineraries, O-D, Frequency, Occupancy, Velocity – This will update surveys conducted previously to improve the demand model
- Expand public transportation demand model – This will update the public transport demand model itself, making it ready to utilize in route optimizing exercises.
- Analyze private operator business model – Intense negotiations will be required with the private operators in order to implement this objective. An international expert will help the project team to fully understand the business of operating a bus in Jakarta.
- Trainings: Private operators - alternatives in other cities – Selected private operators will be taken to tour other cities that have achieved a successful symbiosis of BRT and non-BRT bus systems.
- Trainings: Media - public transport issues – 4-hour training sessions will be conducted in Jakarta to improve the understanding of the media about the bus system and issues concerning rationalizing the bus service.
- Trainings: Transportation Department - modeling and route selection – International experts will conduct a series of short-courses to the Project Team’s capacity to use the public transport demand model to rationalize non-BRT bus routes.
- Trainings: Transportation Department - alternatives in other cities – A limited number of Project Team members will be taken to other cities to learn about their process for allocating non-BRT bus routes, overcoming private operator objections, corruption, etc.
- Workshops: Private operators – An extensive amount of time will be spent in workshops of various sizes with private operators as a forum for gaining common ground on reforms to be implemented in the non-BRT bus routes.
- Workshops: Public – The public will be advised of activities and discussion underway, presented with information on possible changes to public transport service, and asked for their input.
- Workshops: Informal sector – The significance of the informal sector (vendors, illegal transit providers, and illegal “tax” collectors) will be addressed by conducting workshops which both advise and seek to reach viable solutions.
- Selection of Option and Implementation – the project will support this as necessary, though it is anticipated that most action will be done as normal Transportation Department activities.
- Monitoring and Evaluation

119. The milestone for Objective 6 is:

- New, rationalized, bus routes established in Jakarta in Year 5

*Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use*

120. TDM measures make private motor vehicle usage more expensive, encouraging use of more environment-friendly modes. Jakarta’s current three-in-one (carpooling) measure presents a sub-optimal solution, since alternative routes are very limited, and paying for use of congested roads is not an option. While TDM has been actively considered in Jakarta for over a decade, the baseline scenario is that TDM implementation would continue to be delayed indefinitely. The project would work to provide the social and technical processes to achieve implementation.

Baseline Scenario	Project
three-in-one (carpooling) system continues to operate	TDM measure implemented so that cost of PMV use is greater than BRT fare

121. This objective presents some technical challenges, although these are minor compared with the need to gain public acceptance of any TDM measure, i.e., an increase in the cost of operating a private motorized vehicle in Jakarta.

122. To analyze optimal implementation, the transport model must be made to be multi-modal. The current model includes only public transportation, whereas private trips will have to be added to allow estimation of modal shift under various TDM scenarios.

- Analysis of JICA household data – A significant savings in additional surveys can be made if the JICA household survey data proves to be usable. Initial analysis of this data showed it to be

questionable, probably resulting from unorthodox techniques used in collecting the data (primarily from distributing the surveys to be filled out individually, instead of using a trained interviewer). The JICA data may still prove useful, but this requires extensive analysis of over 1.2 million entries. We were unable to conduct this analysis during the PDF-B phase.

- New surveys, data entry and model calibration – Depending on the usability of the JICA data, a limited or more extensive set of surveys will be required to realize a multi-modal transport demand model suitable for TDM estimation.
- Trainings: Demand management in Singapore and London – Selected Project Team members and key stakeholders will travel to Singapore and London to learn about the implementation of electronic road pricing measures in those cities.
- Trainings: Demand management options for Jakarta – An international expert will conduct a variety of trainings for team members and selected stakeholders in Jakarta on TDM options.
- Trainings: Public relations and education – An international expert will work with the Project Team on developing education materials and approaches to help increase public support for TDM implementation.
- Workshops: Review Options with Stakeholders – A series of small workshops for various sets of stakeholders will be conducted to help socialize the modifications to the BRT system, and take input for adapting these and identifying the most suitable options.
- Workshops: Technical / stakeholder body review – A combined body of technical experts and stakeholders will review the input from the stakeholder workshops and develop a set of recommendations.
- Workshops: Stakeholder body Report of Options and Recommendations – Large public workshops will be held to review the results of the initial stakeholder and technical development of the TDM measures. A detailed mechanism will be established and used to follow-up on participant's concerns and respond to each one.
- Selection of Option and Implementation – Technical support will be provided during the detailed design phase.
- Monitoring and Evaluation – see Monitoring & Evaluation section for details

123. The milestone for Objective 7 is:

- Road pricing TDM scheme implemented in Jakarta in Year 5

*Objective 8: Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors*

124. Jakarta has been steadily improving sidewalks along the BRT corridors, though at a rate far slower than expansion of the BRT system. In the baseline scenario, this rate would continue, meaning that most BRT passengers face inconvenient BRT connections by walking or bicycle. The project would improve pedestrian and NMT facilities along all BRT corridors, as well as seek NMT facilities such as secure bicycle parking at BRT stations. Importantly, the project would also catalyze transit oriented development projects in areas of the city now connected by the BRT.

Baseline Scenario	Project
Poor pedestrian facilities throughout Jakarta; Inconvenient pedestrian NMT connecting trip to BRT forces increased use of private car and tax	Convenient NMT and pedestrian trips increases overall use of BRT and NMT connecting modes

125. Activities under this objective would seek to improve and expand the existing project's effort to provide high-quality pedestrian facilities along the BRT corridors. In addition, it would support efforts in the old Jakarta area, near the Kota BRT terminal, to develop pedestrian zones and redevelopment of the historic and commercial areas.

- Model traffic impacts of pedestrian area plans – Initial estimation of traffic impact for the Plaza Fatahillah pedestrian zone was conducted in the PDF-B phase. A more detailed model would be developed to help plan changes in traffic patterns needed to improve pedestrian access.
- Evaluate parking reform options – Changes in parking regulations can significantly affect pedestrian vs. motorized trips. Some parking is needed to support the pedestrian zone, while the zone and public transport access provided by the BRT should encourage continuing trips that do not utilize the motor vehicle.



- Surveys of Pedestrian and NMT movements – Desire lines for pedestrian movements will be surveyed to aid design of critical connecting links.
- Survey of TransJakarta passengers – Existing BRT passengers will be surveyed to determine the facilities that would be most likely to attract them to a nearby pedestrian zone.
- Pedestrian and NMT facility inventory – Initial surveys of conditions for pedestrians along BRT corridors 2 & 3 were conducted during the PDF-B. A more detailed inventory will be combined with origin-destination data to identify priority areas for pedestrian and NMT facility improvements.
- Trainings: Development of pedestrian and NMT design concepts – An international expert will provide short-course training for Project Team members.
- Trainings: Evaluation of model outputs of pedestrian flow at each station – Short course and one-on-one training for utilizing the existing public transport demand model to estimate passenger flows.
- Trainings: Evaluation of survey results – An international expert will work one-on-one and provide half-day seminars to introduce techniques for evaluating the pedestrian, parking, BRT passenger preference and traffic surveys.
- Trainings: Pedestrian areas in other cities – Selected Team Members will participate in study tours to key cities that have implemented successful pedestrian areas.
- Trainings: Preparation of design alternatives – An international expert will work one-on-one with Project Team members on techniques for developing and reviewing pedestrian area designs.
- Workshops: School stakeholders – Stakeholders already developed under a safe-routes-to-school program for 2 schools near the BRT will participate in designing improved pedestrian and NMT facilities to connect their school with the BRT.
- Workshops: Kota redevelopment stakeholders – A series of workshops will be conducted with stakeholders in the old city (Kota) area of Jakarta identified during the PDF-B phase. Attention will focus on achieving commitment to a public private partnership for redeveloping the area with an orientation toward pedestrian and public transportation.
- Workshops: Feedback on design options – Design options for the pedestrian area will be provided for comment to the general public and key stakeholders.
- Pedestrian area design – technical assistance will be provided as needed.
- Monitoring and Evaluation

126. The milestones for Objective 8 are:

- Plaza Fatahillah pedestrian area implemented near Jakarta “Kota” BRT station in Year 2
- Secure bike parking areas established at 4 BRT stations in Year 3
- Redevelopment plans agreed to for Plaza Fatahillah as transit oriented development in Year 4
- Pedestrian improvements achieved within 200 meters of all BRT stations in Year 5

*Objective 9: Dissemination and Outreach to Other Cities*

127. Initial outreach has begun and some Indonesian cities are now considering following Jakarta’s lead to implement a BRT system. However, technical assistance to these cities is extremely limited. As a baseline scenario, no net public transport improvement is achieved in these cities. The project would provide training, socialization and technical support to implement a BRT, pedestrian zone or NMT facility in cities around Indonesia, but especially in the four cities identified during the pdfb phase as having shown the most interest (as discussed on page 13-14) and probably having the best chances to make rapid progress.

Baseline Scenario	Project
No public transport , pedestrian or NMT improvement	Improvements implemented in 1 of target cities

128. In short, this objective will use Jakarta’s example will be used to stimulate replication efforts and explore alternatives suited to Indonesia’s other major cities through the following activities:

- Surveys of Pedestrian, bicycle, becak movements – the project will assist local consultants to conduct relevant traffic/stakeholder/planning surveys to assess opportunities for improvements.

- Trainings: BRT in Jakarta – delegations from the four cities will be brought to /Jakarta to learn about the BRT system, its structure and operation.
- Workshops: Develop modifications and alternatives for BRT system – local consultants will further develop the options with local stakeholders.
- Trainings: School trips – The project team will conduct initial trainings with schools, administrators, parents, police and other stakeholders on how to encourage NMT trips by students.
- Trainings: Pedestrian and NMT facilities in other countries – A limited number of stakeholders will tour pedestrian and NMT facilities in Jakarta.
- Trainings: Traffic cell implementation in neighborhoods and campuses – An international expert will present examples and recommendations for use of traffic cells to encourage pedestrian and NMT travel.
- Trainings: Public outreach and education – the project team will conduct trainings for local stakeholders in public participation techniques.
- Workshops: School Trips – Stakeholder workshops will provide input for specific infrastructure changes recommended to improve student walking and NMT use in getting to school.
- Workshops: Universities transport prioritization – Workshop with university students, teachers and administrators will seek to build support for reforms which encourage walking and bicycle use.
- Distribute promotional materials – Educational materials will promote NMT school trips, increased bicycling and walking on campuses, and other activities under this objective.
- Monitoring and Evaluation

129. The milestone for Objective 9 is:

- Achieve fully developed plans for a BRT system, pedestrian zone, and/or NMT facility in at least 2 other cities by Year 4. In some cases, e.g. Yogyakarta, pilot or even full-scale implementation may be possible during this time frame given the strong commitment and extensive co-funding being provided locally. However it will not be possible for the project to ensure that implementation occurs so no firm commitment to this is made.

#### **EXPECTED GHG IMPACTS AND OTHER RESULTS**

GEF funds will be used to improve the decisions, and the capacity to make these decisions, so that the implementation of BRT, NMT and TDM measures are more successful in their ability to limit growth of annual km traveled in private motorized vehicles. The centerpiece of this effort is the Jakarta BRT, which provides an anchor for the other measures. The expected results for the Jakarta BRT are based on the baseline and project case assumptions shown in Table 4.

**Table 4. Assumptions Used for Baseline Scenario and Project Case for the Jakarta BRT**

<b>Topic</b>	<b>Baseline Case</b>	<b>Project Case</b>
Public Transportation	Public transportation provided by privately operated buses and paratransit; 6 BRT corridors constructed but lanes returned to mixed traffic by 2011, making system ineffective	15 full, high-capacity BRT Corridors Implemented with reserved lanes
Government Planning for Public Transportation	After implementation of 6 corridors, focus returns to rail projects because of potential traffic conflicts. Financial infeasibility of rail means projects are not implemented.	Plans emerge to expand beyond 15 corridors. Non-BRT routes changed to optimize feeder service to BRT
BRT Passengers	0	BRT corridors carry 2 million passengers daily
BRT Service Level	Service quality initially high but decreases to that of normal buses.	System operates so as to provide high-level service to an increasing number of passengers

Public Transport Passenger Mode share	Maintains modal share for a few years, then returns to steady decline, losing 1% of mode share annually	Mode share increases by 1% annually
Land Use	Low density sprawl development continues	BRT effective at increasing density around corridors and reducing urban sprawl
Private Motor Vehicles	Private car kms increase by 3% annually; motorcycle km by 4% annually	Private car kms increase by 2% annually; motorcycle km by 2% annually
Private Motor Vehicle Infrastructure	More elevated tollways are constructed, but congestion returns. Ridership decreases as priority for BRT is given to mixed traffic, reducing BRT efficiency	Increasing priority given to BRT at expense of mixed traffic, system capacity steadily increases to meet demand
Public Attitude	Public transport continues to be viewed as cause of pollution and traffic congestion. By 2011, public sentiment forces removal of reserved lane for BRT.	15 BRT corridors operate with plans for expanding. High public support for BRT.
Public Transit Subsidy	BRT requires continuing subsidy of \$3m annually, then finally turned over to private sector and allowed to deteriorate further.	BRT operates without subsidy
Public Transit Investment	\$20 m lost in subsidy for monorail construction, never completed. \$200m spent on BRT corridors 1-6 wasted when reserved lane removed.	\$500m spent on BRT corridors 1-15

130. Annex D in the final project brief (available upon request) showed the detailed assumptions and data used to estimate GHG emissions impact of the project. These estimates focus on CO2 emission reductions based on two key factors: modal shift to BRT or NMT travel, and the share coming from “private motor vehicles” – primarily automobiles and motorcycles. The total GHG emission reductions from the project are shown in Table 5.

**Table 5. GHG Emission Reduction Estimates for the Project**

<b>CO2eq metric kilotonnes of GHG</b>	<b>Annual (kt CO2eq)</b>	<b>5-year (kt CO2eq)</b>	<b>20-year (kt CO2eq)</b>
<b>Jakarta</b>			
Objective 1: Develop BRT Corridors 4-14	264	1,318	5,273
Objective 2: Optimize Fare System for Corridors 1-14	46	231	923
Objective 3: Improve Intersection Performance for BRT	52	260	1,038
Objective 4: Optimize Busway Operation	64	321	1,284
Objective 5: Improve public perception of BRT	42	210	841
Objective 6: Rationalize Non-BRT Bus Routes	121	607	2,429
Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use	913	4,567	18,268
Objective 8: Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors	39	195	781
Objective 9: Dissemination and Outreach to Other Cities	15	75	300
<b>Total</b>	<b>1,556</b>	<b>7,784</b>	<b>31,137</b>

131. The project will provide a further reduction in GHG emissions from the public transport sector. Some efficiency gains will occur from the BRT system’s use of new buses, which contrast sharply with most of the other buses in use in the city. The improved public transit opportunities provided by the BRT will mean an increase in demand for other public transit trips, i.e., as connecting modes. The BRT project, by displacing regular public transit vehicles from the BRT corridors, will also make an increased supply of vehicles available to meet this demand. Objective 6 directly addresses maximizing this benefit; it will result in a significant increase in the efficiency of public transit throughout Jakarta.



132. Ideally, an overall increase in public transport demand could provide an opportunity to require more modern and efficient vehicles be used in order to receive a license. This aspect of the project's impact is complex. It was not possible to estimate this impact during the PDF-B stage. Measuring the GHG impact will be part of the monitoring and evaluation process for all objectives.

133. The direct impact benefits from this project are all joint benefits; all components of the project simultaneously reduce both local pollutants and GHG emissions through encouraging transport modal shift.

### **Life-Cycle GHG Impacts**

134. Table 5 provides a conservative estimate of GHG impacts in that it does not currently include the upstream GHG impacts of fuel use, i.e., exploration and transportation. Some upstream increases in GHG emissions (leakages) occur initially from the impacts of construction of BRT and pedestrian facilities. These result from the energy needed for the production of the concrete and steel used in the construction of BRT bus stops, bus lanes, and pedestrian facilities. The short-time frame of the PDF-B phase did not allow estimation of these impacts. While measurable, the impacts are minor compared to the energy saving impacts of mode shift toward the BRT. Further, the construction impacts are likely offset by roughly an order of magnitude from the indirect impact of long-term reduction of demand for road space for mixed-traffic, and the attendant reduction in upstream emissions associated with supplying those materials.

135. Unlike most cities in Latin America where BRT has been developed, Jakarta has an undersupply of public transportation. Public transit vehicles that are displaced by the BRT can be placed in service in other parts of the city. Therefore, we anticipate no adverse GHG impacts from decommissioning of buses; in fact additional reductions may occur from re-allocation of existing buses.

### **Indirect Impacts**

136. The potential indirect impacts of project activities are substantial and produce reduced GHG emissions from the transport sector in Indonesia. The increased modal share of public transport demonstrated by the Jakarta BRT reduces resource flows into the transport sector by reducing the rate wear and tear, and thus repair or replacement, of private motor vehicles. In addition, some reduced ownership of motor vehicles can be expected among those in the population whose daily transport needs can be all or partially met by BRT. This should reduce demand for second and third vehicles in a household.

137. In a longer-term perspective, BRT can be expected to change land development patterns. This would result in an increase in land value and thus density of use in the proximity of BRT stations. Jakarta's first corridor is built along an already densely-developed corridor. After 2-years of operation, it has stimulated interest in redeveloping the old city near the north terminal of the busway. Increased use of the area has already been reported, for example, the new fashion among Chinese businessmen who work on the Sudirman-Thamrin business corridor to take the BRT to Pancoran for morning noodles. Because of the severe congestion at Glodok which the BRT now bypasses, the trip by BRT takes roughly half as long as the previous trip by private vehicle.

138. The potential for BRT to reshape development in Jakarta, and other cities that experience an extreme level of congestion, may be significantly higher than might be expected for a BRT or metro project in the US or Europe. The intensity of the congestion in Jakarta is illustrated by average peak hour traffic speeds of 10km/hr. BRT now provides travel times that are both substantially lower and more predictable than what was possible by any other mode of transportation in Jakarta.

139. The effect on land development of comfortable transportation that is able to bypass congestion can begin to be seen in Bangkok – a city with roughly comparable traffic congestion to Jakarta. While we are not aware of any scientific studies of the effect of Bangkok's skytrain, after 6 years of operation, casual observation of the number of private buildings which have built direct

connections to stations reveals the impact of the system. This is perhaps best shown by the opening in 2005 of the Paragon shopping center directly connected to the main skytrain transfer terminal. The new mall, Bangkok's largest, replaced a luxury hotel which no longer generated enough income to meet the potential for the location – a potential made suddenly larger because of skytrain access.

140. By providing a fast, reliable means to get through Jakarta's traffic, the BRT will likely encourage denser residential development and lead to a reduction in the sprawl that has occurred in Jakarta. This produces indirect impacts on a wide variety of areas, including:

- a) Decreased energy used in construction of utilities (electric, water, sewer)
- b) Decreased energy lost in transmission of utilities (electricity, water) due to shorter distances
- c) A reduction or reversal in the trend for increasing ownership of private motorized vehicles and, more importantly, in the km traveled in these vehicles
- d) Long-term sustainability of the public transport sector because of a solid base of potential passengers near the primary corridors
- e) Opportunities to reclaim public space from mixed traffic roadways to provide walking and NMT connections to public transport
- f) Transit oriented developments that further reduce the need for, and desirability of, motorized travel

141. The scope and significance of the indirect impacts prevented their reliable estimation during the PDF-B phase. Developing better estimation methods will be part of the project and specifically considered in the Monitoring and Evaluation process, which will include development and calibration of an indicators tracking and GHG calculation model for Jakarta. For now, as a rough estimate, we predict indirect impacts at about 5 times the size of direct impacts, but given the uncertainty we do not include these in Table 5.

## **RISKS AND SUSTAINABILITY**

142. Jakarta's BRT provides sustainability on five distinct levels – urban, social, environmental, institutional and financial. On the level of urban sustainability, the BRT has introduced to Jakarta an immediately more sustainable form of transport, and a path toward a much more sustainable transport system for the city. This has provided an alternative to the heavily congested streets which reduce the function of the city on all levels. An ideal complement to the BRT in Jakarta is to implement a form of congestion charging which would provide added incentives for car users to use the BRT during rush hour. Jakarta has been interested in a road pricing system (traffic demand management, or TDM) and has specifically requested assistance in developing it.

143. Jakarta's BRT increases the social equity, and thus social sustainability, of the city by raising the standard of transport available to the poorer members of society and, critically, reclaiming some of the road space from the wealthiest members in their cars and allocating it to a much more efficient and equitable use. The very poorest members of society – those too poor to afford bus fare – also have benefited from the system through the improvement of pedestrian facilities. The emphasis on the BRT focused attention on the inadequacy of Jakarta's sidewalks and pedestrian crossings and has led to reforms, under the leadership of the Parks Department (which has responsibility for sidewalks). The city plans to expand this effort by improving pedestrian facilities through the zone around the northern terminal of the BRT.

144. On an environmental level, the shifting of daily trips from private motor vehicles to BRT means increased environmental sustainability through reduced energy consumption and reduced emissions. By prioritizing public transportation and removing it from congestion, long-term global environmental benefits are assured. As a side-effect of the changing of trips from private motor vehicles to public transit, the Jakarta system is also reducing local emissions.

145. Institutionally, development of the BRT has required the creation of new institutional capacity in the city government. Initially a busway team was formed to coordinate, and then TransJakarta was initiated as an operating agency with limited power, subsequently upgraded to a

public corporation with increased authority. The institutional sustainability requires continued support as all areas of Indonesia's government are struggling to emerge from corrupt practices.

146. The Jakarta BRT – unlike any other mass transit system being considered in Jakarta – has already clearly demonstrated its financial sustainability. Although experts predicted the BRT system will need to cover at least 25km before being able to cover operating costs with fare revenues, TransJakarta began to practically cover operating costs with only 13km of line operating, within 6-months of the start of operations. BRT's provide the benefit of reducing bus operating costs, increasing the financial sustainability of public transit.

### ***Risks***

147. The Jakarta BRT system is subject to several risks. The chief risk comes from political and public acceptance. The project has gone forward primarily on the determination of the Governor and his staff. This has relied more on speed of implementation than on quality of design. For this reason, capacity is limited and expansion of capacity risks revealing the original faults in the design, opening up opportunity for political opposition.

148. Countering this risk requires: 1) expanding the system capacity and performance to reach a greater portion of the public, and 2) increasing the knowledge of the public about the benefits and performance of the system.

149. The expansion of Jakarta's BRT both improves public support and benefits each of the sustainability aspects identified here – urban, social, environmental, institutional, and financial. As the system increases in length, the number of people able to use the system increases; the increase in the number of potential origin and destination pairs on the system means that the number of trips increases at a rate much higher than the rate of addition of linear kms of route. As more trips shift to the BRT, the system becomes more effective in reducing emissions and providing an environmentally sustainable transportation option, and the benefits of social equity reach an expanding percentage of the population. The potential for financial sustainability also increases with the increasing pool of potential riders, although this depends on effectively routing the system where there is sufficient demand. Simple addition of km of BRT line does not in itself guarantee financial sustainability, and poor choices in this area will decrease financial sustainability.

150. The standard for BRT systems is to require government investment only for initial design and infrastructure construction. Operations should be fully paid out of fare revenue. As the system expands into areas that still have high public transit demand, a financial surplus could occur which will allow either increasing amenities, reducing the fare, or expanding further into areas with lower demand but high social needs.

151. The primary risk facing implementation of project measures in Jakarta is public and political acceptance of the measures. Currently, the Jakarta Parliament is authorizing substantially less funds than requested for the operation of the Jakarta BRT, keeping some of the fare revenues in the general fund. The unique solution to a variety of problems – air pollution, congestion, massive subsidy for rail alternatives – has not yet been clearly understood in the public forum. Steps have been taken to reduce this risk. Jakarta established a legally recognized Transportation Council with members appointed from among experts, NGO and representatives of civil society as well as relevant government agencies. This body is directly involved in overseeing transport decisions, and can help provide oversight and ensure transparency of the DKI Jakarta decision making processes. However, substantial more effort will have to be made during the project to increase the flow of information and encourage more transparency.

### ***Other Cities***

152. The projects in other cities have the potential to increase the urban, social, and environmental sustainability of the city, and to be both institutionally and financially sustainable.

153. In Yogyakarta, the institutional capacity building in the government has been increasing over the past years as it learns to better handle the informal sector activities of street vendors and

parking attendants. The government has already involved residential and commercial stakeholders in ongoing discussions. The success of the pedestrian area in itself should generate sufficient political support provided institutional handling of the informal sector continues to improve.

154. Financially, the pedestrian and NMT aspects of the project will require continued maintenance outlays that are well within the capacity of the city government to provide. Given the prominence of the street – both for tourism and symbolically as the spiritual link from the Sultan’s palace to Mount Merapi – there is little risk that maintenance will not be provided.

155. The pedestrian projects contribute to urban sustainability by improving the tourism draw of the cities. Social sustainability is improved by the improvement of transport modes – walking and bicycling – most used by the poor. Environmental sustainability is improved through modal shift to pollution free modes and the reduction of short motorcycle trips and other private motor vehicle trips.

156. The risks in other cities are that pedestrian areas will not provide the right balance of access and restriction to motor vehicles. Too much restriction could limit the area’s commercial and tourism success. Too little restriction could leave motor vehicles dominant, reducing the tourism attraction as well as social and environmental sustainability improvements.

157. A significant risk also occurs from the informal sectors now in charge of parking in nearly all Indonesian cities. The local political power of this sector requires that its needs be addressed for any of the project aspects (BRT, NMT or TDM) to go forward.

## **STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS**

### **STAKEHOLDER PARTICIPATION**

158. The project team has succeeded in its considerable efforts to develop a large group of interested stakeholders from many sectors. Stakeholder outreach has been a concerted part of the project since inception. This project will continue to utilize media events, press conferences, press releases, media workshops, and media editorials to reach out to the general public. Pelangi, PUSTRAL and Intran have been key instigators of these efforts, but the government agencies have been actively involved in outreach themselves. Large public events, such as Car Free Day activities, have been conducted in Jakarta to provide information to the general public and recruit volunteers. The project features extensive workshops for key stakeholder groups as part of all of the objectives. These will include large public forums, as well as smaller meetings and discussions to encourage two-way dialogue and airing of concerns.

159. There are multiple workshops and media activities included in all activities that aim to continue and strengthen existing stakeholder involvement. Stakeholder involvement is already at an unprecedented high level for a transportation project in Indonesia, which after all is still in a transition process away from a dictatorship. Because of the rapid turnaround of the PDF-B, not all documents of the workshops and meetings which occurred were able to be included in the Project Brief.

160. The following list provides the current scope of stakeholder involvement from which the project will build:

#### **Government**

DKI Jakarta Executive Branch – Governor Sutiyoso, Vice-Governor Fauzi, Secretary Ritola  
DKI Jakarta Parliament – especially Commission D (Infrastructure)  
Busway Team  
B.P. TransJakarta  
Transportation Department  
Public Works Department  
Planning Department  
Parks Department  
Traffic police  
Ministry of Education

Schools near BRT corridors

**NGO**

Pelangi

Instran

ASPENA – public transit users association

MEB (Clean Air Coalition)

MTI – Professional Transport Association of Indonesia

Swisscontact

YLKI (Consumer Advocates)

**Private Sector**

Bus operators

ORGANDA – private transport association

Pamintory consultants

Visi Anak Bangsa (public relations)

Ernst & Young (busway management consultants)

**Other**

University of Indonesia Centre for Transportation Studies

Media – print and broadcast

Parents of schoolchildren; especially those near BRT corridor

***Other Intended Beneficiaries***

161. In addition to the stakeholders identified above, the project will benefit the general public by providing more effective and attractive transport options in both cities, as well as reducing local air pollution. The poor – and especially vulnerable groups including the elderly, physically challenged, and children – will benefit from increased convenience and reduced exposure to accidents from improved pedestrian, NMT and public transit facilities.

**Stakeholder Involvement Activities to Date**

162. The following list highlights the history of key activities related to the project in Jakarta. Most of the activities undertaken in 2006 for the PDF-B have full reports available in the previous Annex E, available upon request.

***2000-2005***

- g) June 2000: ITDP and Swisscontact initiate a conference on air quality and transport in Jakarta; Jakarta decides to phase out leaded gasoline, leading the nation, and agrees to explore bus priority measures. A side-meeting of the Sustainable Transportation Network for Asia and the Pacific (SUSTRAN) assembly votes to relocate the SUSTRAN secretariat to Pelangi in Jakarta.
- h) November 2001: ITDP sponsors a visit of Former Bogotá Mayor Enrique Penalosa to Indonesia; he gives a presentation to Jakarta Vice-Governor Budihardjo. Pelangi arranges a press and NGO conference during Penalosa's visit.
- i) March 2002: Based on information and recommendations from the Vice-Governor, Governor Sutiyoso decides to pursue BRT for Jakarta; initial decisions are made to use the central corridor in the city and have a center-lane design.
- j) April 2002: Governor Sutiyoso requests technical support from ITDP for developing the BRT
- k) October 2002: With funding from US AID, ITDP hires local staff; Jakarta government agrees to provide office space for ITDP staff in the agency developing the BRT (initially at the transport agency, and later at the "busway team" office)
- l) November 2002: A series of visits by BRT technical experts from Latin America begins; expert visits continue until May 2005
- m) January 2003: ITDP, working with Pelangi, sponsors seminars in Bogotá and Quito for 24 Jakarta government, NGO and media participants. Government participants came at own expense.
- n) April 2003: ITDP hosts Governor Sutiyoso in Bogotá along with over 15 government staff and members of the business community. All travel at their own expense. A delegation of 8 government staff and bus company operators also visit Quito.

- o) May 2003: Governor Sutiyoso forms a Busway Team including ITDP as technical advisor.
- p) June 2003 – June 2005: ITDP sends a series of technical experts to analyze and provide recommendations on BRT design and operation.
- q) December 2003: ITDP issues a technical report summarizing BRT technical recommendations for Corridor 1.
- r) January 15, 2004: Jakarta launches its first BRT Corridor
- s) February 1, 2004: BRT begins fare operation
- t) February, 2004: JICA conducts survey revealing that 25% of passengers formerly used car, motorcycle, taxi or bajaj for the same trip
- u) March, 2004; Governor Sutiyoso sets up the Transport Council to make urban transportation decisions more accountable to civil society.
- v) July, 2004: BRT fare revenues begin to cover operating expenses
- w) August, 2005: ITDP issues recommendations for expanding BRT system; final report under US AID project sponsorship
- x) August 30, 2005: Meeting with GEF Focal Point, Jakarta Government, public transport association and NGOs to discuss GEF proposal.
- y) December 18, 2005: Meeting with TransJakarta on immediate and long-term needs for BRT operation
- z) December 21, 2005: Second meeting of Jakarta GEF Steering Committee

#### *2006 PDF-B Stakeholder Involvement Activities*

- January 4: First meeting of Yogyakarta GEF Coordination Committee
- January 5: Scoping meeting with Jakarta Transportation Department
- January 5: Scoping meeting with Jakarta Parks Department
- January 6: Scoping meeting with Jakarta Department of Public Works, Transport Infrastructure Section
- January 5 & 6: Meetings with private sector associations interested in creation of pedestrian zone at Plaza Fatahillah and redevelopment of area near Kota BRT station
- January 11: Second GEF Coordination committee meeting in Yogyakarta
- January 12-13: Focus Group Discussions held with Jakarta public transport passengers to explore opinions about BRT
- January 18: Workshop conducted with the Jakarta Transport Council on the BRT system
- January 20: Scoping meeting with Jakarta Environment Agency
- February 1: Scoping meeting with Palembang government
- February 2: Scoping meeting with Batam government
- February 3: Scoping meeting with Jakarta Land Use Planning Agency
- February 10: Scoping meeting with Makassar government
- February 12-14: Interview survey of TransJakarta BRT passengers to assess quality of service and modal shift
- February 16-17: Jakarta station-to-station O-D survey conducted
- February 21: Public forum focusing on NMT in Jakarta “Bike to Work” campaign
- February 22: Public workshop and discussion on evaluation of Jakarta BRT
- February 24: Third GEF Coordination Committee meeting in Yogyakarta
- February 28: Scoping meeting with Jakarta Department of Culture and Museums re: plans for Plaza Fatahillah pedestrian area
- March 2: Scoping meetings with Jakarta City Secretary and Undersecretary for Infrastructure
- March 3: Jakarta GEF Coordination meeting chaired by Vice-Governor

#### **IMPLEMENTATION ARRANGEMENTS**

163. The Implementing Agency for the project will be the United Nations Environment Programme (UNEP). In this capacity, UNEP will have overall responsibility for the implementation of the project, project oversight, and co-ordination with other GEF projects. In addition, UNEP will be responsible for reporting the carbon emissions reductions resulting from project activities to national registries and/or international inventories.

164. The lead executing agency for the project will be ITDP, working in close association with the city of Jakarta and a number of local and international NGOs. Funds will be provided to Indonesian NGO's with experience and interest in the transport sector to support their involvement in the project. ITDP is in the process of signing various MOUs to clarify the purpose, objectives, tasks, mechanisms and financial relationship with each partner.

165. ITDP will employ five locally-hired project staff: a Project Director, Technical Assistants, Research Coordinator and a Training Coordinator. The Jakarta government will provide two administrative staff persons and office space at a location most appropriate for the tasks required (this will be either at the Transportation or Planning agency). This office will be responsible for all local coordination and arrangements for expert visits, development and implementation of training programs and workshop, as well as for administering contracts with local consultants and NGOs.

166. In the other cities, the project will build upon the work accomplished during the PDF-B to build an appropriate team with the governments and our existing partners at PUSTRAL and Intran. Both partners have clearly established relationships with government and community stakeholders. In the event, the government would benefit from receiving GEF project monies directly, an independent advisory committee will be established to monitor and approve disbursements.

167. The project shall report and be accountable to the ***Project Steering Committee (PSC)*** which shall convene every six (6) months. The functions of the PSC are to:

- Provide direction and guidance to the Project
- Monitor and supervise implementation of the Project
- Endorse adaptations to the Project components during the Project execution
- Evaluate the performance and impacts of the Project
- Approve Progress, Midterm and Terminal Reports of the Project

168. The PSC shall be composed of the following full and voting members:

- The Governor of Jakarta who shall be the Chair of the PSC
- A representative from UNEP-GEF
- One representatives from each Jakarta Government agency involved in the project
- 3 representatives from Indonesian NGOs
- The Asia Regional Director for ITDP

169. The PSC may invite observers to its regular meetings (e.g. Experts involved in the Project implementation, representatives from other cities) who may be invited to speak or report on certain aspects of the Project.

170. At least initially, the National Government is not included in the PSC due to the governance structure of the country and planning structure for the Jakarta BRT. Following decentralization of government since the fall of Suharto, the National Government has a greatly diminished role in Jakarta's transport. However, the National Government will be involved in various aspects – for example they are now actively disseminating information about Jakarta's BRT to other Indonesia cities, and this project will build on that work (Objective 9).

171. Reporting to the PSC is the ***Project Management Unit (PMU)***, the function of which is to:

- Provide technical and operational guidance to the Programme
- Coordinate expert assistance, training and workshop programs
- Implement data gathering (surveys)
- Monitor and evaluate the progress of the activities and approve quarterly planning of activities

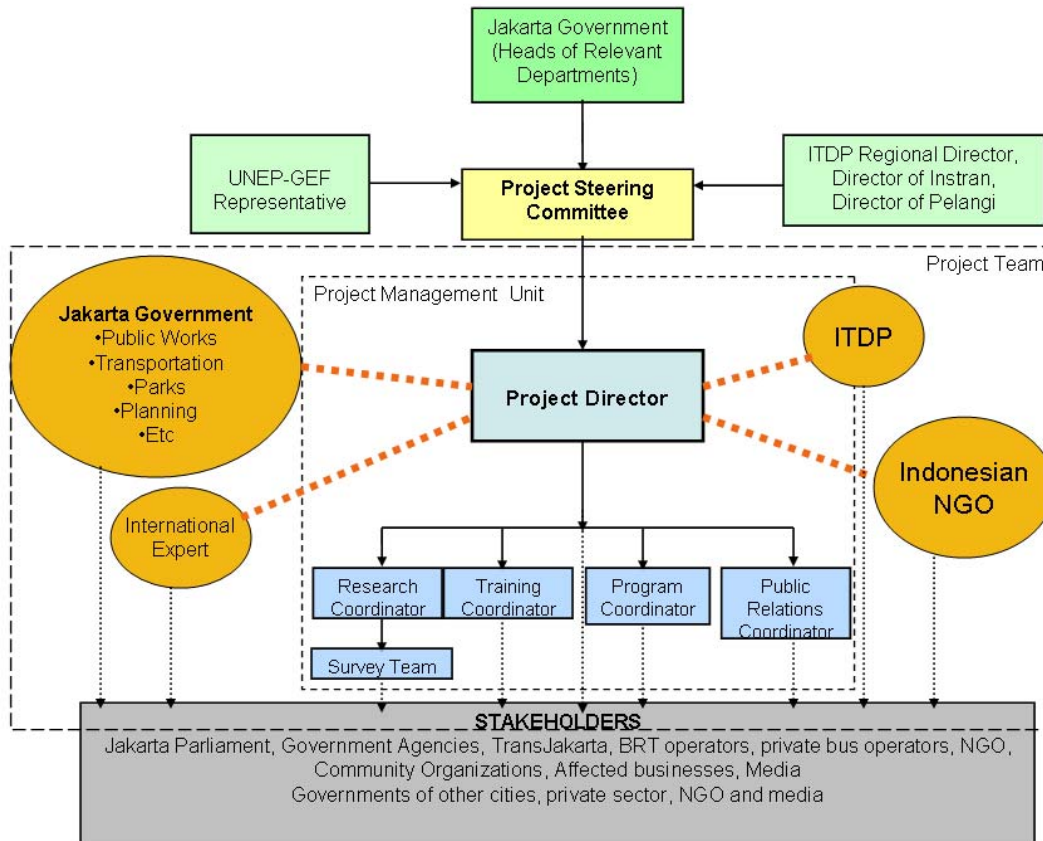
172. The PMU shall consist of the following full-time local staff:

- Project Director
- Program Coordinator
- Training Coordinator
- Research Coordinator

- Public Relations Coordinator
- Administrative Staff

173. Figure 7 shows the project management structure indicating the Project Steering Committee, Project Team, and Project Management Unit.

**Figure 7. Project management Structure**



### Legal and Regulatory Framework

174. DKI Jakarta is a special administrative zone with the same status as a provincial government. Within it are five municipalities, North Jakarta, South Jakarta, East Jakarta, West Jakarta, and Central Jakarta. The Governor of DKI Jakarta is by far the most powerful, with the municipal mayors having only nominal powers. Since the decentralization of government powers, DKI Jakarta has had most of the financial and regulatory powers pertaining to urban public transit in the Jakarta region. Jakarta's BRT is operated by TransJakarta, a publicly-controlled private corporation under the legal control of the Jakarta government as authorized by the Jakarta regional parliament. Regulation of bus routes is controlled by the Department of Transportation of the DKI Jakarta government (DisHub). Private consortiums – PT Jet for Corridor 1 and PT TransBatavia for corridors 2 and 3 – operate the BRT buses under contract to TransJakarta.

175. Budgets for infrastructure construction are provided by the Jakarta regional parliament. Fare revenues and operations are nominally controlled by TransJakarta

### INCREMENTAL COSTS AND PROJECT FINANCE

176. This project is designed to remove barriers from, and provide technical assistance toward creating a sustainable transport system in Jakarta and other Indonesian cities. The costs of the proposed GEF project (alternative case) are larger than the city's baseline project. The support of the GEF and co-financing partners is the incremental cost of the project in which the GEF has a



minority share. It is unlikely that the project activities would take place in a successful manner in the absence of the GEF support.

177. The project's overall cost is 204.9 million US\$. As shown in the table below, the incremental activities will be funded from different sources, of which GEF is requested to finance 6.584 million US\$.

178. Table 6 shows project financing by source. A detailed description of the cash and in-kind financing follows the table.

**Table 6. Project Co-Financing**

Project Co-Financing (US\$ millions)	Jakarta Government		ITDP	GEF
	Cash	In-Kind	Cash	Cash
<b>Jakarta</b>				
Objective 1: Develop BRT Corridors 4-14	72.211	0.060	0.016	0.606
Objective 2: Optimize Fare System for Corridors 1-14	45.132	0.038	0.016	0.826
Objective 3: Improve Intersection Performance for BRT	30.690	0.026	0.016	0.524
Objective 4: Optimize Busway Operation	32.495	0.027	0.017	0.693
Objective 5: Improve public perception of BRT	0.256	0.010		0.890
Objective 6: Rationalize Non-BRT Bus Routes	0.500	0.010		0.867
Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use	5.000	0.020		0.667
Objective 8: Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors	1.378	0.020		0.489
Objective 9: Dissemination and Outreach to Other Cities			0.039	0.250
<b>Total</b>	<b>187.662</b>	<b>0.211</b>	<b>0.104</b>	<b>5.812</b>

#### CASH

179. Cash financing consists of budgeted amounts by the Jakarta government for contracted services to build project infrastructure. These costs are primarily for construction of the BRT, with other expenditures for construction of related pedestrian facilities. The National Government is currently spending substantial funds to help disseminate the Jakarta BRT concept to other cities. The figure here is an estimation of their expenditures for this activity and is currently in the process of being verified.

180. The Jakarta government built the first BRT corridor at its own expense and without financial assistance of any kind. Jakarta's tax revenues are more than sufficient to cover the cost of BRT system construction (approximately \$0.5-1 million per km).

181. During the PDF-B phase, additional information was gathered on budget expenditures and reflected here. Future Jakarta budgets beyond 2006 are uncertain, so the resources available for project activities provided here are estimates, developed in cooperation with the DKI Jakarta Department of Planning, and reflecting their commitment to the full project.

182. We have used a very conservative method to estimate co-financing. Budgets are approved annually by the parliament between October and December for expenditure during the next calendar year. Budgets beyond 2006 will be approved after work under this project has begun. For this reason, budget figures for the 5-year life of the project are the actual 2006 Jakarta 1-year budget multiplied by 2 (instead of 5). Actual 2006 budget allocations for Jakarta are shown in Table 7. Since this represents only 3 of 14 planned BRT corridors, we feel this estimate is extremely conservative.

183. Cash contributions from the Jakarta government for Objectives 6 and 7 are not budgeted in 2006; the figures in the table are therefore only rough estimates of the expected budget authorization for 2007. Table 7. Jakarta 2006 Budget Expenditures

Department Name	Activities	Budget - Rupiah	Budget - US\$
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		(million)	(million)
Transportation Agency	Construction of Busway corridors 4, 5, 6, 7	396,793	44.09
Public Work Agency	Construction of Busway corridors 4, 5, 6, 7	415,580	46.18
Park Agency	Arranging parks and trees on busway corridor 4, 5, 6, 7	5,902	0.66
Orderliness Agency	Relocating street vendors and illegal dwellers on busway corridor 4, 5, 6, 7	2,000	0.22
Public Light & Road Facilities Agency	Relocating and arranging street light and road facilities on busway corridor 4, 5, 6, 7	16,725	1.86
City Land Use Planning Agency	Getting the details of busway corridors and the land use planning for corridor 7, 8	300	0.03
ASP Bureau (Administration Bureau for City Facilities)	Coordinating the activity implementation on busway corridor 4, 5, 6, 7	150	0.02
Central Jakarta Mayor	Coordinating busway orderliness in Central Jakarta	150	0.02
North Jakarta Mayor	Coordinating busway orderliness in North Jakarta	250	0.03
West Jakarta Mayor	Coordinating busway orderliness in West Jakarta	100	0.01
South Jakarta Mayor	Coordinating busway orderliness in South Jakarta	150	0.02
East Jakarta Mayor	Coordinating busway orderliness in East Jakarta	350	0.04
BP TransJakarta	BP TransJakarta operation (transfer procurement)	172,000	19.11
	<b>TOTAL</b>	<b>1,010,450</b>	<b>112.27</b>

184. In addition to the expenditures by the governments, ITDP has been granted funds from the Blue Moon Foundation to assist Jakarta with BRT. Half of the total amount of \$65,205 will be spent during the FSP.

185. Additional cash contributions will probably also be added to the project. The limited time available for performing the PDF-B has prevented making final arrangements and estimating amounts. This information should be known by June 2006. As an example, during the PDF-B phase initial discussions were held with Swisscontact in Jakarta to determine potential linkage of programs to support public transport and pedestrian areas. Assistance may also be available from a World Bank funded program for public-private partnerships to provide legal and financial assistance directly applicable to attaining portions of Objectives 4 and 8.

#### IN-KIND

186. In-kind co-financing will come from Jakarta in terms of providing office space for ITDP project staff. All governments also provide in-kind financing in the form of allocated staff time and administrative support services. Conservative estimates of this contribution have been made and included in the project budget.

187. The detailed GEF budget for each project objective and activity is shown in Table 8. This budget utilizes the concepts of "Trainings" and "Workshops" to generally categorize the sub-activities (as described in more detail in the objectives/activities section, above). These terms refer to the general type of approach. Trainings will take multiple forms from one-on-one to large classroom as well as technical visits to other cities; the primary emphasis of training is on capacity building. Workshops take multiple forms from small group discussions and focus groups, to large conferences with formal presentations; the primary emphasis is on participation. ITDP has 4-years of experience working with Jakarta on the BRT, and these methods – generally categorized as "trainings" and "workshops" – have been the most effective methods of getting international expert

opinion considered by the municipality, which is the final decision-maker. The vast majority of this expert opinion is from south-based experts drawing on south-based experience.

**Table 8. GEF Expenditure Budget Detail (US \$ thousands)**

Activity Detail	Outputs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Objective 1: Develop BRT Corridors 4-14</b>							<b>606.0</b>
Additional surveys and public transport modeling	Model outputs	23.6	112.5	13.0	98.7	0.0	247.7
Trainings: Transportation model operation & results	Training evaluation report	1.3	5.7	12.9	9.3	0.5	29.6
Trainings: Routing considerations in other BRT systems	Training evaluation report	47.5	51.8	11.4	13.3	1.4	125.4
Trainings: Routing considerations in Jakarta	Training evaluation report	1.3	3.7	8.6	10.9	0.9	25.4
Workshops: Develop modifications and alternatives	Draft Report for Consultation	5.6	8.5	4.8	5.8	1.4	26.0
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	5.3	8.5	4.8	5.4	0.6	24.5
Workshops: Report Options and Recommendations	Final Report	5.2	8.5	4.8	5.4	0.6	24.5
Option selection and detailed design	Detailed Design Plans	0.8	13.4	2.4	16.6	2.6	35.9
Monitoring and Evaluation	M&E Report	10.7	12.7	14.1	14.0	15.5	67.0
<b>Objective 2: Optimize Fare System for Corridors 1-14</b>							<b>826.0</b>
Transportation model demand outputs and verification surveys	Model output and survey reports	82.8	55.7	3.6	67.2	3.9	213.2
Trainings: Using a transportation model for demand estimates and design	Training evaluation report	17.7	6.9	2.7	9.9	3.0	40.2
Trainings: Service, fare and transfer options in other BRT systems	Training evaluation report	107.2	102.6	100.9	10.4	1.9	323.0
Trainings: Service, fare and transfer options in Jakarta	Training evaluation report	11.8	12.3	0.4	15.3	0.4	40.1
Workshops: Develop modifications and alternatives	Draft Report for Consultation	9.1	9.5	7.1	6.2	3.8	35.7
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	9.1	9.5	7.1	10.5	3.8	40.0
Workshops: Report Options and Recommendations	Final Report	9.1	9.5	7.1	10.5	3.8	40.0
Renegotiate contract with Operators	Negotiated Contracts	8.0	2.5	6.8	2.4	5.2	25.0
Monitoring and Evaluation	M&E Report	12.3	12.0	14.9	13.8	15.8	68.8
<b>Objective 3: Improve Intersection Performance for BRT</b>							<b>523.9</b>
Review Existing Data	Staff memo	7.8	6.7	3.9	7.9	4.3	30.6
Perform Additional Counts as Needed	Completed survey forms	17.1	17.9	5.0	21.9	6.1	68.0
Conceive Alternatives	Draft Report for Consultation	15.8	15.9	10.8	20.3	10.7	73.5

Activity Detail	Outputs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Trainings: Intersection design options in other BRT systems	Training evaluation report	41.7	5.1	36.9	6.5	40.7	130.9
Trainings: Intersection design options in Jakarta	Training evaluation report	4.5	3.9	2.5	4.8	2.7	18.3
Workshops: Develop modifications and alternatives	Draft Report for Consultation	5.4	5.4	4.5	6.6	5.6	27.5
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	10.5	10.9	4.5	12.6	5.6	44.0
Workshops: Report Options and Recommendations	Final Report	5.4	5.4	4.5	6.6	5.6	27.5
Option selection and detailed design	Detailed Design Plans	12.0	13.4	0.0	17.0	0.0	42.4
Monitoring and Evaluation	M&E Report	10.7	11.0	12.8	12.2	14.6	61.3
<b>Objective 4: Optimize Busway Operation</b>							<b>692.7</b>
Review Existing Maintenance and Operating Procedures	Staff memo	17.4	9.0	9.7	6.7	5.7	48.5
Station-to-station O-D surveys	Survey report	2.0	2.3	2.8	3.7	5.4	16.3
Headway and average speed surveys	Survey report	4.9	5.4	6.7	6.7	9.3	32.9
Design Alternatives and Run Model	Operational Alternatives	23.9	15.8	35.9	27.7	44.2	147.4
Trainings: Repetitive survey and data collection	Expert report	7.4	5.1	5.7	3.5	3.1	24.8
Trainings: Scheduling and maintenance programming	Training evaluation report	0.5	0.4	0.4	0.5	0.5	2.3
Trainings: BRT operations in other cities	Training evaluation report	26.3	6.7	24.6	4.9	25.8	88.3
Trainings: Options for BRT operations in Jakarta	Training evaluation report	6.2	4.6	2.5	2.6	2.8	18.7
Workshops: Develop modifications and alternatives	Draft Report for Consultation	15.4	18.6	28.6	21.7	45.1	129.5
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	12.2	9.6	14.4	8.3	18.2	62.7
Workshops: Report Options and Recommendations	Final Report: Operational Schedule	1.5	1.9	1.7	0.3	0.4	5.7
Revised Operational Procedures	Software program & outputs	30.6	7.5	6.9	4.9	3.7	53.6
Monitoring and Evaluation	M&E Report	11.4	11.4	12.8	12.7	13.5	61.9
<b>Objective 5: Improve public perception of BRT</b>							<b>889.7</b>
Annual surveys of BRT passengers	Survey Reports	16.1	14.5	18.6	16.7	24.0	89.8
Information System Development, website for evaluation display	Website	51.4	61.8	52.7	4.0	3.4	173.4
Annual focus group studies for BRT passengers and non-passengers	Focus Group Reports	15.9	16.6	23.4	20.8	28.9	105.6

Activity Detail	Outputs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Trainings: Public relations and education	Training evaluation	11.1	4.9	6.3	5.7	8.0	36.0
Trainings: BRT public relations efforts in other cities	Training evaluation	32.7	2.8	36.1	3.5	39.7	114.8
Trainings: Media visits to BRT in other cities	Training evaluation	32.9	34.4	36.1	37.9	3.4	144.6
Workshops: Annual TransJakarta Review Workshop	Workshop report	8.7	7.6	9.3	8.5	15.0	49.0
Workshops: NGO and civil society stakeholders workgroups	Stakeholder meeting minutes	0.7	0.7	1.0	0.8	1.1	4.4
Workshops: Parliamentary briefings on Jakarta and other BRT systems	Briefing minutes	1.6	1.7	1.6	1.4	1.5	7.9
Media placement and promotion	Media placements	5.1	40.0	19.3	17.5	24.9	106.8
Monitoring and Evaluation	M&E Report	11.0	10.3	11.6	11.8	12.7	57.5
<b>Objective 6: Rationalize Non-BRT Bus Routes</b>							<b>867.2</b>
Identify geographic areas needing additional surveys	Expert report	12.2	9.8	9.6	9.5	9.0	50.2
Survey: itineraries, O-D, Frequency, Occupancy, Velocity	Completed survey forms	9.8	9.0	14.6	14.8	18.1	66.3
Expand public transportation demand model	Model outputs	20.0	23.2	19.6	17.6	23.3	103.8
Analyze private operator business model	Expert report	22.8	16.3	11.1	9.7	14.4	74.4
Trainings: Private operators - alternatives in other cities	Training Evaluation	38.5	32.3	40.5	35.1	1.7	148.1
Trainings: Media - public transport issues	Training Evaluation	20.7	4.9	22.8	6.5	7.7	62.6
Trainings: Transportation Department - modeling and route selection	Training Evaluation	7.3	18.8	0.3	12.0	0.5	38.7
Trainings: Transportation Department - alternatives in other cities	Training Evaluation	3.4	31.8	0.3	35.9	0.5	71.8
Workshops: Private operators	Stakeholder meeting minutes	1.7	11.3	17.8	12.2	11.5	54.6
Workshops: Public	Stakeholder meeting minutes	1.7	11.3	16.5	12.2	12.9	54.7
Workshops: Informal sector	Stakeholder meeting minutes	1.7	12.5	16.5	10.9	11.5	53.1
Selection of Option and Implementation	New bus route regulations	0.0	9.3	6.3	5.3	2.9	23.7
Monitoring and Evaluation	M&E Report	11.5	13.4	13.1	13.7	13.5	65.2
<b>Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use</b>							<b>667.2</b>
Analysis of JICA household data	Expert Report	20.1	25.7	0.0	0.0	0.0	45.7
New surveys, data entry and model calibration	Model calibration outputs	8.8	106.9	18.9	16.2	23.3	174.2
Trainings: Demand management in Singapore and	Training evaluation	46.1	39.8	0.6	53.0	0.6	140.0

Activity Detail	Outputs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
London							
Trainings: Demand management options for Jakarta	Training evaluation	1.5	6.3	8.5	8.3	11.5	36.1
Trainings: Public relations and education	Training evaluation	1.7	1.8	0.3	1.6	0.6	6.0
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	1.5	8.4	10.9	10.8	13.9	45.6
Workshops: Technical / stakeholder body review	Workshop report	7.3	15.5	10.4	9.3	11.5	54.0
Workshops: Stakeholder body Report of Options and Recommendations	Final Report	1.5	6.9	7.5	7.7	10.0	33.6
Selection of Option and Implementation	Detailed Design Plans	4.0	17.7	11.6	11.6	15.4	60.3
Monitoring and Evaluation	M&E Report	10.5	11.4	13.2	15.4	21.2	71.7
<b>Objective 8: Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors</b>							<b>489.0</b>
Model traffic impacts of pedestrian area plans	Model outputs	6.5	6.8	0.0	9.0	0.0	22.3
Evaluate parking reform options	Expert report	9.2	9.6	0.0	7.8	9.9	36.5
Surveys of Pedestrian and NMT movements	Survey report	8.5	7.4	4.2	4.9	0.0	25.0
Survey of TransJakarta passengers	Survey report	6.1	6.4	4.3	7.7	5.3	29.8
Pedestrian and NMT facility inventory	Survey report	9.4	9.9	8.8	12.4	9.7	50.2
Trainings: Development of pedestrian and NMT design concepts	Training evaluation	12.6	7.5	4.6	6.9	5.7	37.3
Trainings: Evaluation of model outputs of pedestrian flow at each station	Training evaluation	4.4	4.2	0.2	5.3	0.2	14.3
Trainings: Evaluation of survey results	Training evaluation	4.1	4.2	0.2	5.3	0.3	14.0
Trainings: Pedestrian areas in other cities	Training evaluation	51.4	5.9	19.0	2.5	2.7	81.6
Trainings: Preparation of design alternatives	Design alternatives	4.1	4.2	0.2	5.3	0.3	14.0
Workshops: School stakeholders	Workshop reports	8.2	8.6	9.1	11.0	10.0	46.9
Workshops: Kota redevelopment stakeholders	Workshop reports	5.3	5.6	4.5	6.7	0.4	22.5
Workshops: Feedback on design options	Workshop reports	2.3	2.1	4.5	6.7	0.9	16.4
Pedestrian area design	Detailed Designs	4.3	4.1	0.1	5.1	0.1	13.7
Monitoring and Evaluation	M&E Report	11.0	11.6	13.3	13.8	14.7	64.3
Other Cities							
<b>Objective 9: Public Transit and BRT</b>							<b>249.9</b>
Trainings: BRT in Jakarta	Training evaluation	12.3	13.6	14.9	15.1	16.9	72.8
Trainings: Evaluating local bus priority options	Training evaluation	1.6	2.6	3.8	2.3	4.6	15.0
Workshops: Review Options with Stakeholders	Stakeholder meeting minutes	4.8	2.1	7.7	2.3	3.4	20.3
Surveys of Pedestrian, bicycle, becak movements	Survey report	9.3	3.7	10.5	1.8	9.4	34.6



Activity Detail	Outputs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Trainings: School trips	Training evaluation	7.5	1.4	10.4	1.7	11.5	32.5
Trainings: Traffic cell implementation in neighborhoods and campuses	Training evaluation	0.5	1.2	4.4	5.2	5.4	16.7
Trainings: Public outreach and education	Training evaluation	0.5	0.1	4.3	4.1	5.4	14.4
Workshops: School trips and prioritizing NMT at universities	Workshop reports	3.7	0.8	5.1	0.9	7.1	17.6
Distribute promotional materials	Promotional materials and distribution reports	1.1	1.7	0.5	1.9	3.1	8.3
Monitoring and Evaluation	M&E Report	1.6	2.4	4.5	2.7	6.5	17.7
<b>Total</b>		<b>1,291</b>	<b>1,407</b>	<b>1,092</b>	<b>1,153</b>	<b>870</b>	<b>5,812</b>

## MONITORING, EVALUATION AND DISSEMINATION

188. Detailed monitoring and evaluation procedures will be finalized during the first 6-months of the project utilizing input from the Project Team. The procedures will be reviewed and approved by the Project Steering Committee (PSC) at its first biannual meeting. This section provides a description of the monitoring and evaluation mechanisms which will be subject to review and refinement by the PSC. The goal of the Monitoring and Evaluation process will be to maximize transparency of the project operation, and integrate feedback from stakeholders into the project implementation.

189. Built into the project's operations are activity deliverables and reporting mechanisms that allow regular monitoring of the different aspects of the project implementation. Project monitoring and evaluation activities are detailed in Table 9.

190. The project will implement a financial management system to provide financial management and reporting, with the ability for monitoring and control of expenditures. The system will be designed to produce regular project spending and budget information in a transparent and auditable form. This system will be audited annually by an independent auditor.

**Table 9. Project Monitoring and Evaluation Activities**

Activity	Frequency /Timing	Aspects to be monitored & evaluated/Description	Output	In-charge of activity	Review & Approval
<b>Regular Written Reports</b>					
Mission reports	After each mission	Relevant aspects of the mission (according to defined template)	Report	ITDP, Experts	PSC
Quarterly progress report	Quarterly	Quarterly accomplishments; Financial report; Work plan for the next quarter	Report	PMU	UNEP
Annual progress report	Yearly	Annual accomplishments; End of year financial report; next year's work plan and budget	Report	PMU, ITDP	UNEP
Final report	After 5 years	Project accomplishments; Project expenses and financial report; records and evidences of all outputs; lessons learned and recommendations for future actions	Report	PMU, ITDP	UNEP
<b>Other Activities</b>					
Expert Recommendations	Variable, 1-2 per year	Recommendations for project implementation	Expert Report	ITDP	PSC*
PSC meetings	Every 6 months	Discuss policy and strategic matters of the Project and provide direction & guidance to the Project. Endorse adaptations to the Project components during the Project execution, evaluate the performance and impacts of the Project, and approve Progress Reports	Minutes	PSC	UNEP
External audit	Annual	Auditing of accounts and financial management; use of international accounting standards	Audit Report	Auditing Agency	PSC, UNEP
Mid-term Evaluation	After 2.5 years	Review of progress on execution & achievement of project outcomes as specified in the Project Document; fine-tuning of work plans for the second half of the project; improving project approaches and optimizing implementation arrangements; recommendation on adaptive measures; extensive and transparent consultation with all key stakeholder	Evaluation Findings Report	PMU, PSC	UNEP

		groups			
Mid-term External Review	After 2.5 years	External review of GHG impacts of project; mid-term evaluation findings	Review Report	External Reviewer	PSC
Terminal Evaluation	After 5 years	Achievements, outcomes & impacts compared to baseline; lessons learned and recommendations for future actions; evaluation according to GEF Project Review Criteria	Evaluation Findings Report	PMU, PSC	UNEP
Terminal External Review	After 5 years	External review of GHG impacts of project; terminal evaluation findings	Review Report	External Reviewer	PSC

Notes:

ITDP = Institute for Transportation & Development Policy

PMU = Project Management Unit

PSC = Project Steering Committee

UNEP = UNEP GEF program

\* a committee of the PSC will be formed to accept and respond to expert recommendations

191. Each project objective includes a budgeted monitoring and evaluation component as shown in Table 10.

**Table 10. Monitoring and Evaluation Budgets by Objective**

<b>Jakarta</b>	<b>Budget (US\$ thousands)</b>
Objective 1: Develop BRT Corridors 4-14	67.0
Objective 2: Optimize Fare System for Corridors 1-14	68.8
Objective 3: Improve Intersection Performance for BRT	61.3
Objective 4: Optimize Busway Operation	61.9
Objective 5: Improve public perception of BRT	57.5
Objective 6: Rationalize Non-BRT Bus Routes	57.5
Objective 7: Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use	57.5
Objective 8: Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors	57.5
Objective 9: Dissemination and Outreach to Other Cities	17.7
<b>Total</b>	<b>506.7</b>

192. The Project Steering Committee (PSC) will conduct formal monitoring and evaluation during its biannual meetings (the PSC includes the UNEP DGEF Country Liaison Officer based at the UNDP office in Jakarta). In addition, quarterly reports will be used to assess project outputs and other criteria established by the PSC. The Logical Framework matrix in Annex B in the final project brief (available upon request) specifies monitoring criteria available for each objective.

193. The PSC will also conduct an annual high-level review, chaired by the Governor of Jakarta, to assess all monitoring criteria for the project and evaluate implementation of the Jakarta BRT, pedestrian and NMT improvements, and the TDM system.

194. Initial discussions with MTI, the professional transport society of Indonesia, indicate that they would agree to form a committee to independently review the reports of the PSC. This group would then provide feedback on inconsistencies in the methodology, or aspects of the project that the task force may be neglecting to consider.

195. Monitoring of project goals will be assisted by a technical assessment process utilizing the transportation demand model developed for guiding project recommendations. Figure 8 shows a flow chart of the technical process used to develop the multi-modal transportation demand model which will be used to provide both recommendations for design of project components, and GHG impacts of the project.

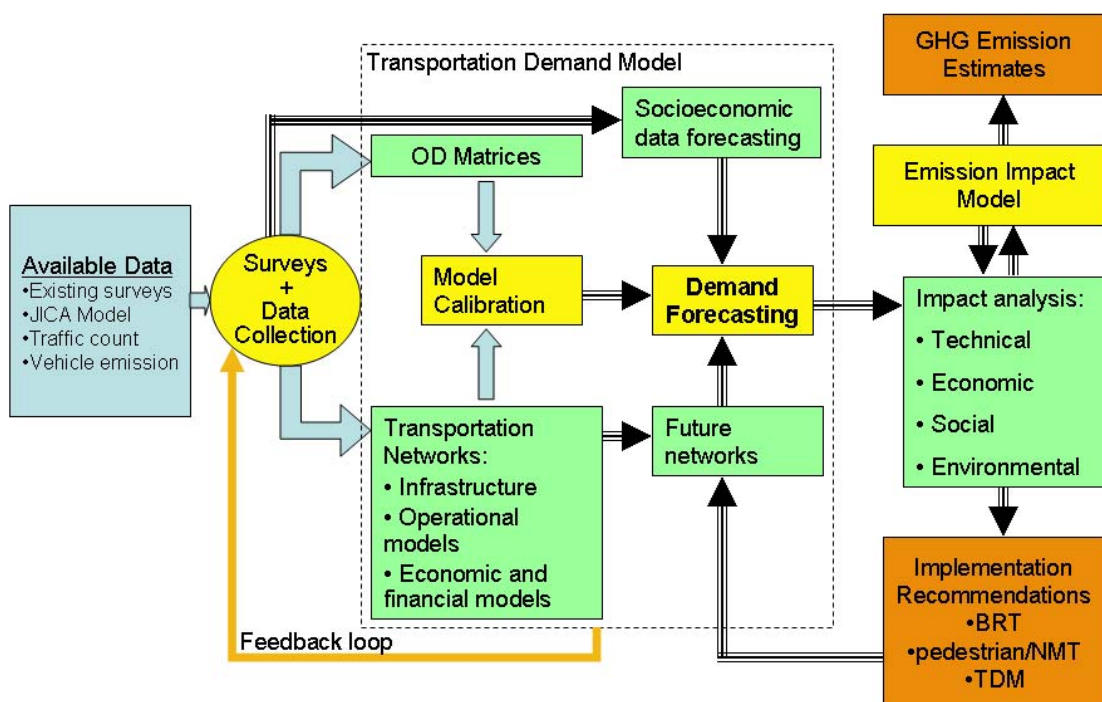
196. An emissions model will utilize outputs from the transport model to estimate GHG emissions for the project as it progresses. Information from the emission model will help guide formulation of recommendations.

197. The modeling process will be supported by continual surveys, which will be used to steadily improve the model. The existing public transportation demand model will provide the initial basis for this process. This model will be more fully developed and calibrated during the first year of the project and used, for example, to help with the final route selection and design work for corridors 4-14.

198. The model will assess modal shift utilizing data from intercept surveys of BRT, pedestrian and NMT passengers in conjunction with traffic surveys. Data from other organizations involved with clean air activities in Indonesia – specifically Swisscontact and Mitri Emisi Bersi – will be integrated in order to regularly improve vehicle emission calculations.

199. In Jakarta, exact counts of BRT passenger numbers are available from TransJakarta. Surveys will be conducted to determine the previous mode used by BRT passengers. In addition, the number of regular buses removed from the BRT corridors will be monitored to show emission reductions from passenger shift from older, more polluting buses to the BRT. Periodic reports of fuel consumption of BRT buses will be used to calculate exact GHG emissions of the BRT system.

**Figure 8. Flow-chart of transportation and GHG modeling process**



200. Achievements over baseline can be shown by:

- Corridor 1-3 ridership levels are now at maximum capacity; increases in the capacities of Corridors 1-3 will come from the project.
- Capacities of Corridor 4 and 11 can be estimated based on current design; increases in Corridor 4 - 11 capacities will come from the project.
- Regular surveys of busway passengers will be used to determine the quality of their experience; using the same survey questions over time will allow comparison of qualitative response trends.

201. The monitoring indicators, data types, and data sources for evaluation of the Jakarta BRT are shown in Table 11.

**Table 11. Indicators, data required, and data sources for monitoring and evaluation of the Jakarta BRT**

Indicator	Data	Source
BRT energy consumption	Fuel Consumption by type of fuel, number of vehicles in operation by fuel type, vehicle km per day by vehicle fuel type,	TransJakarta data and operators
Passenger km	Boardings, Average Trip Distance	TransJakarta gate entry counts; O-D surveys; O-D station-to-station surveys; later implementation of exit card readers and electronic data
Modal Shift	Connecting mode used, previous or alternate mode would use in absence of BRT, affect of BRT on choice of work, school or residence location	Interview surveys, focus groups
Quality of Service	Average speed BRT, non-BRT public transit; comfort, etc.	Frequency & velocity surveys; interview surveys
Mixed Traffic <sup>1</sup> Impacts	Average speed of private motor vehicles (including freight)	Velocity surveys (expected to receive from other sources, e.g., JICA)
Land Use Changes	Average Trip Distance, Number of trips/day	Roadside intercept surveys
Impact on other Public Transit	Public transit load factor	Visual occupancy surveys
Energy Consumption (non BRT)	Average Fuel Consumption by fuel type, Vehicle fleet in operation by type of vehicle and fuel type	National figures, car manufacturers, independent lab test results

<sup>1</sup>Note: Mixed Traffic includes non-BRT public transit, private cars & motorcycles, taxis, freight, NMT)

202. For pedestrian areas, the number of short trips – primarily by motorcycle – in the area will be determined by vehicle counts and origin-destination surveys. Reductions in emissions for short trips will be calculated using average emission values of the vehicles.

203. In addition to the above monitoring and evaluation procedures, an outside evaluation will be conducted two times during the project – after 2.5 years and at the project conclusion.

### Dissemination

204. Activities undertaken during the PDF-B phase identified that the Jakarta BRT system has already generated substantial interest in public transportation reform in other Indonesian cities. As a consequence of the demonstrated potential to catalyze change, dissemination activities are included as Objective 9.

205. GEF funds will be used to build upon and expand on the existing activities of Indonesia's central government. The Ministry of Transportation & Communications has taken a role in promoting the BRT concept in selected cities.

206. Outreach and dissemination will occur through publications, documents, web sites and workshops. In particular, the ITDP-led efforts to develop a BRT planning guide under a separate UNEP GEF project (Tanzania/Colombia BRT project) will continue in this project and the BRT planning guide will both inform these projects and benefit from the new learning experiences the project provides. Regular updates to the BRT planning guide will be reflective of this on-going process of experience and learning.

207. Jakarta has already become a beacon for BRT in Asia. Delegations have visited the initial Jakarta BRT corridor from several countries in the 18-months that it has been in operation. Cities within Indonesia have also become interested in BRT as a result of seeing and hearing about Jakarta's system. Outreach to

other key cities in Indonesia will be included in the project. The cities which have sent delegations to Jakarta include:

- Dhaka, Bangladesh
- Seoul, Korea
- Ahmedabad, India
- Delhi, India
- Makassar, Indonesia
- Bandung, Indonesia
- Surabaya, Indonesia

208. A lack of funding for fully documenting the Jakarta BRT project development and researching its performance have limited the dissemination of accurate information. This project will include documenting the process, researching the performance of the system, and preparing a variety of materials for different stakeholders in Indonesia and throughout Asia. The project will work with other groups, such as MTI, the Clean Air Initiative, SUSTAN, and the Eastern Asia Society for Transportation Studies (EASTS) to disseminate this documentation around the many other medium size and larger Indonesian cities as well as throughout the broader region. Representatives from cities in other Asian countries are already making the trip to Jakarta to see how the development of its BRT system is progressing, and using this information to make their own decisions regarding whether and how to undertake BRT.

209. Outreach trips to cities in Asia developing BRT – Guangzhou, Delhi, Ahmedabad, Manila, Hanoi, and others – will present information on Jakarta’s BRT as well as the BRT Toolkit being developed by ITDP as part of a separated UNEP GEF project. The project will explore possibilities for disseminating information and project replication through cooperation with existing organizations, such as the Association of Southeast Asian Nations (ASEAN). Project staff will provide information and tours on the Jakarta BRT to delegations from other cities and countries.

210. TransJakarta already utilizes the BRT as an educational tool. They publish a regular newsletter on the BRT, and conduct special tours for school children and other groups. They also maintain websites in English and Indonesian providing information on Jakarta’s BRT. The project will capitalize on the living laboratory presented by the Jakarta BRT to hold workshops and training sessions which point out the advantages of BRT for Jakarta’s future.

211. Yogyakarta will host the Asia Better Air Quality (BAQ) meeting sponsored by the Clean Air Initiative in September 2006. This will bring representatives from throughout Asia to Yogyakarta to see first hand the implementation and plans. The Project Team is already arranging to provide modernized becak service to conference participants free of charge. A similar program was very successful at introducing the concept of modern NMT to Asian leaders when done for the BAQ conference in Agra in 2004, utilizing modernized rickshaws also developed by ITDP.

## **SECTION 3 - WORKPLAN AND TIMETABLE, BUDGET, FOLLOW-UP**

### **3.1 Workplan and Timetable**

A detailed Work-Plan is provided in Annex L.

### **3.2 Budget**

A detailed budget in UNEP format is presented in Annex N. This budget is based upon the GEF approved budget provided in the Full-size Project Brief

### **3.3 Follow-up**

Following completion of the project, Jakarta will have an extensive BRT network with improved operations and infrastructure. The system will be supported by pedestrian and NMT facilities and the city should have an initial road pricing system to further enhance modal shift. Jakarta would then present an ideal learning location for spreading these concepts to other cities.

A logical follow-up would be to build on the training relationships established during this project to develop a Center of Excellence for urban transportation, likely in conjunction with universities from Jakarta and outside Indonesia. Jakarta would become a living laboratory to complement short-courses and other forms of trainings. The Center would provide participants with the opportunity to explore the challenges and opportunities of BRT systems, pedestrian and non-motorized facilities, and transportation demand management.

## **SECTION 4 - INSTITUTIONAL FRAMEWORK AND EVALUATION**

### **4.1 Institutional Framework**

ITDP will be responsible for the implementation of the project in accordance with the objectives and activities outlined in Section 2 of this document. UNEP as the GEF Implementing Agency will be responsible for overall project supervision to ensure consistency with GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP and GEF-funded activities. The UNEP/DGEF Co-ordination will monitor implementation of the activities undertaken during the execution of the project and will be responsible for clearance and transmission of financial and progress reports to the Global Environment Facility. UNEP retains responsibility for review and approval of the substantive and technical reports produced in accordance with the schedule of work.

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## **4.2 Evaluation**

UNEP will organize independent evaluations at mid-term and completion of the project to measure the degree to which the objectives of the project have been achieved.

## **SECTION 5 - MONITORING AND REPORTING**

### **5.1 Management Reports**

#### **5.1.1 Progress Reports**

Within 30 days of the end of reporting period, ITDP will submit to UNEP/DGEF Coordination, using the format given in Annex F, Half-yearly Progress Reports as at 30 June and 31 December.

#### **5.1.2 Terminal Reports**

Within 60 days of the completion of the project, ITDP will submit to UNEP/DGEF Coordination a Terminal Report detailing the activities taken under the project, lessons learned and any recommendations to improve the efficiency of similar activities in the future, using the format provided in Annex I.

#### **5.1.3 Substantive Reports**

At the appropriate time, ITDP will submit to UNEP three copies in draft of any substantive project report(s) and, at the same time, inform UNEP of its plans for publication of that text. Within 30 days of receipt, UNEP will give ITDP substantive clearance of the manuscript, indicating any suggestions for change and such wording (recognition, disclaimer, etc.) as it would wish to see figure in the preliminary pages or in the introductory texts. It will equally consider the publishing proposal of ITDP and will make comments thereon as advisable.

It may request ITDP to consider a joint imprint basis. Should ITDP be solely responsible for publishing arrangements, UNEP will nevertheless receive 10 free copies of the published work in each of the agreed languages, for its own purposes.

### **5.2 Financial Reports**

(i) Details of expenditures will be reported on an activity by activity basis, in line with project budget codes as set out in the project document, as at 31 March, 30 June, 30 September and 31 December using the format given in Annex H. All expenditure accounts will be dispatched to UNEP within 30 days of the end of the Three-month period to which they refer, certified by a duly authorized official of ITDP.

(ii) In addition, the total expenditures incurred during the year ending 31 December, certified by a duly authorised official, should be reported in an opinion by a recognised firm of public accountants, and should be dispatched to UNEP within 180 days, i.e. 30 June. In particular, the auditors should be asked to report whether, in their opinion:

- ◆ Proper books of account have been maintained;
- ◆ All project expenditures are supported by vouchers and adequate documentation;
- ◆ Expenditures have been incurred in accordance with the objectives outlined in the project document.
- ◆ The expenditure reports provide a true and fair view of the financial condition and performance of the project

(iii) Within 180 days of the completion of the project, ITDP will supply UNEP with a final statement of account in the format as for the quarterly expenditure statements duly signed by authorised official of ITDP and certified by recognised firm of public accountants.

If requested, ITDP shall facilitate an audit by the United Nations Board of Auditors and/or the Audit Service of the accounts of the project.

(iv) Any portion of cash advances remaining unspent or uncommitted by ITDP on completion of the project will be reimbursed to UNEP within one month of the presentation of the final statement of accounts. In the event that there is any delay in such disbursement, ITDP will be financially responsible for any adverse movement in the exchange rates.

(v) Within 30 days of the reporting period, ITDP shall submit to UNEP GEF Coordination, annual co-financing report for the project using the format provided in Annex M showing:

- ◆ Amount of co-financing realized compared to the amount of co-financing committed to at the time of project approval, and
- ◆ Reporting by source and by type:
  - ◆ Sources include the agency's own co-financing, government co-finance (counterpart commitments), and contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector, and beneficiaries.
  - ◆ Types of co-finance. Cash includes grants, loans, credits and equity investments. In-kind resources are required to be:
    - ◆ dedicated uniquely to the GEF project,
    - ◆ valued as the lesser of the cost and the market value of the required inputs they provide for the project, and
    - ◆ monitored with documentation available for any evaluation or project audit.

### **5.3 Terms and Conditions**

#### **5.3.1 Non-Expendable Equipment**

ITDP will maintain records of non-expendable equipment (items costing US\$1500 or more as well as items of attraction such as pocket calculators, cameras, computers, printers, etc.) purchased with UNEP funds (or with Trust Funds or Counter funds administered by UNEP) and will submit, using format in Annex J, an inventory of such equipment to UNEP, once a year, indicating description, serial no., date of purchase, original cost, present condition, location of each item attached to the progress report submitted on 31 December. Within 60 days of completion of the project, ITDP will submit to UNEP a final inventory of all non-expendable equipment purchased under this project indicating description, serial number, original cost, present condition, location and a proposal for the disposal of the said equipment. Non-expendable equipment purchased with funds administered by UNEP remains the property of UNEP until its disposal is authorised by UNEP, in consultation with ITDP. ITDP shall be responsible for any loss or damage to equipment purchased with UNEP administered funds. The proceeds from the sale of equipment, (duly authorised by UNEP) shall be credited to the accounts of UNEP, or of the appropriate trust fund or counterpart funds. A duly authorised official of ITDP should physically verify the inventory.

#### **5.3.2 Responsibility for Cost Overruns**

Any cost overruns (expenditures in excess of the amount in each budget sub-line) shall be met by the organisation responsible for authorising the expenditure, unless written agreement has been received in advance from UNEP. In cases where UNEP has indicated its agreement to a cost overrun in a budget sub-line to another, or to increase the total cost to UNEP, a revision to the project document amending the budget will be issued by UNEP.

#### **5.3.3 Cash Advance Requirements**

Initial cash advance of US\$ 500,000 will be made upon signature of the project document by both parties and will cover expenditures expected to be incurred by ITDP during the first six months of the project implementation. Subsequent advances are to be made quarterly, subject to:

- (i) Confirmation by ITDP, at least two weeks before the payment is due, that the expected rate of expenditure and actual cash position necessitate the payment, including a reasonable amount to cover "lead time" for the next remittance; and
- (ii) The presentation of
  - ◆ A satisfactory financial report showing expenditures incurred for the past quarter, under each project activity.
  - ◆ Timely and satisfactory reports on project implementation

Requests for subsequent cash advances should be made using the standard format provided in Annex G.

#### **5.3.4 Claims by Third Parties against UNEP**

ITDP shall be responsible for dealing with any claims which may be brought by third parties against UNEP and its staff, and shall hold UNEP and its staff non-liaible in case of any claims or liabilities resulting from operations carried out by ITDP or other project partners under this project document, except where it is agreed

by ITDP and UNEP that such claims or liabilities arise from gross negligence or willful misconduct of the staff of UNEP.

#### **5.3.5 Amendments**

The Parties to this project document shall approve any modification or change to this project document in writing.

#### **5.3.6 United Nations Security Council Resolution on the fight against terrorism**

The United Nations Security Council Resolution 1373 of 28 September 2001 on the fight against terrorism shall be adhered to by the Executing Agency, failure to which shall, without prejudice to other legal actions, lead to the immediate cancellation of the project.

Note: Annexes A to E from the approved project brief, listed below, have been removed from this project document but are available upon request)

ANNEX A. INCREMENTAL COST AND BENEFITS TABLE

ANNEX B. LOGICAL FRAMEWORK

ANNEX C. STAP REVIEW

ANNEX C2: RESPONSE TO STAP REVIEW

ANNEX D: GHG IMPACT CALCULATIONS

ANNEX E: STAKEHOLDER PROCESS USED FOR DEVELOPMENT OF PROJECT BRIEF

**ANNEX F: FORMAT FOR BIENNIAL PROGRESS REPORT TO UNEP**  
**as at 30 June and 31 December**  
**(Please attach a current inventory of outputs/Services when submitting this report)**

**1. Background Information**

1.1 Project Number:

1.2 Project Title:

1.3 Division/Unit:

1.4 Coordinating Agency or Supporting Organization (if relevant):

1.5 Reporting period (the six months covered by this report):

1.6 Relevant UNEP Programme of Work (2002-2003) Subprogramme No:

1.7 Staffing Details of Cooperating Agency/ Supporting Organization (Applies to personnel / experts/ consultants paid by the project budget):

Functional Title	Nationality	Object of Expenditure (1101, 1102, 1201, 1301 etc..)

Sub-Contracts (if relevant):

Name and Address of the Sub-Contractee	Object of expenditure (2101, 2201, 2301 etc..)

**2. Project Status**

2.1 Information on the delivery of outputs/services

	Output/Service (as listed in the approved project document)	Status (Complete/ Ongoing)	Description of work undertaken during the reporting period	Description of problems encountered; Issues that need to be addressed; Decisions/Actions to be taken
1.				
2.				
3.				

2.2 If the project is not on track, provide reasons and details of remedial action to be taken:

3. Discussion acknowledgment (To be completed by UNEP)

<b>Project Coordinator's General Comments/Observations</b>	<b>First Supervising Officer's General Comments</b>
Name: _____ Date: _____ Signature: _____ _____	Name: _____ Date: _____ Signature: _____ _____



**ANNEX F ATTACHMENT TO HALF-YEARLY PROGRESS REPORT: FORMAT FOR INVENTORY OF OUTPUTS/SERVICES**

**a) Meetings**

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# of Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

**List of Meeting Participants**

No.	Name of the Participant	Nationality

**b) Printed Materials**

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Yes/No	Attached
1.								
2.								
3.								

c) Technical Information / Public Information

No	Description	Date
1.		
2.		
3.		

d) Technical Cooperation

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							

e) Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)

No	Description	Date
1.		
2.		
3.		

Note 4

Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)

Note 5

Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)

Note 6

Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)

## ANNEX G: CASH ADVANCE STATEMENT

Statement of cash advance as at .....  
And cash requirements for the six-months of .....

Name of cooperating agency/ Supporting organization .....  
Project No. ....  
Project title .....

### I. Cash statement

1. Opening cash balance as at ..... US\$ .....

2. Add: cash advances received:

Date	Amount
.....	.....
.....	.....
.....	.....
.....	.....

3. Total cash advanced to date US\$ .....

4. Less: total cumulative expenditures incurred US\$ (.....)

5. Closing cash balance as at ..... US\$ .....

### II. Cash requirements forecast

6. Estimated disbursements for six-months ending<sup>9</sup> ..... US\$ .....

7. Less: closing cash balance (see item 5, above) US\$ (.....)

8. Total cash requirements for the six-months ..... US\$ .....

Prepared by ..... Request approved by .....  
Duly authorized official of cooperating agency/ supporting organization

<sup>9</sup> A cash request should be supported by a detailed itemized breakdown of estimated expenditures using the same budget lines as per the approved budget in UNEP format, Annex N.

# ANNEX H: FORMAT OF QUARTERLY PROJECT EXPENDITURE ACCOUNTS FOR SUPPORTING ORGANISATION

Quarterly project statement of allocation (budget), expenditure and balance (Expressed in US\$) covering the period

..... to .....

Project No. .... Supporting Organization .....

Project title: .....

Project commencing: ..... Project ending: .....  
(date) (date)

Object of expenditure by UNEP budget code		Project budget allocation for year.....		Expenditure incurred				Unspent balance of budget allocation for year .....	
				for the quarter .....		Cumulative expenditures this year .....			
		m/m (1)	Amount (2)	m/m (3)	Amount (4)	m/m (5)	Amount (6)	m/m (7)	Amount (2)-(6)
1101	Executive Director (2.5 w/m)								
1102	Asia Regional Director (7.5w/m)								
1103	BRT Technical Director (5 w/m)								
1104	Project Director (60 w/m)								
1105	Program Coordinator (60 w/m)								
1106	Training Coordinator (60 w/m)								
1107	Research Coordinator (60 w/m)								
	Jakarta Government Management Staff Time								
1108	Communications Director – NY								
1151	Financial Assistant – Indonesia								
1152	Administrative Assistant – NY								
1201	Bus Rapid Transit Design								
1202	Modeler								
1203	Public Transit Operations								
1204	Traffic Infrastructure								
1205	Transportation Demand Management								
1206	Pedestrian Design								
1207	Consultant Travel								
1601	Staff Travel								
2201	Environmental NGO participation								
2202	Transportation NGO participation								
2203	Other Transportation NGO participation								
2204	Other NGO Participation								
2205	NGO Interview Surveys								
2206	Survey Team								
2301	Transportation System Surveyors								

2302	Focus Group Consultant -- annual focus groups with BRT passengers (Activity 5)								
2303	Web Site Development and maintenance (Activity 5)								
2304	Busway station construction								
2305	Busway road infrastructure construction								
2306	Public affairs work for new busway corridors								
2307	Improving lighting and other infrastructure related to busways								
3201	Activity 1 - Practicum Trainings: Surveying and public transport modeling								
3202	Activity 1 - Trainings: Transportation model operation, routing considerations								
3203	Activity 1 - Study Tours: Routing considerations in other BRT systems								
3204	Activity 2 - Practicum Trainings: Transportation model demand outputs and verification surveys								
3205	Activity 2 - Trainings: Using a transportation model for demand estimates and design; Service, fare & transfer options								
3206	Activity 2 - Study Tours: Service, fare and transfer options in other BRT systems								
3207	Activity 3 - Practicum Trainings: Intersection data collection								
3208	Activity 3 - Trainings: Intersection design alternatives								
3209	Activity 3 - Study Tours: Intersection design options in other cities								
3210	Activity 4 - Practicum Trainings: Bus operation surveys								
3211	Activity 4 - Trainings: Data collection, Bus operation Alternatives and modelling, maintenance programming								
3212	Activity 4 - Study Tours: BRT operations in other cities								
3213	Activity 5 - Trainings: Public relations and education								
3214	Activity 5 - Study Tours: BRT public relations efforts in other cities; Media visits to BRT in other cities								
3215	Activity 6 - Practicum Trainings: Expand public transportation demand model; private operator business models								
3216	Activity 6 - Trainings: modeling and route selection; public transport issues (media)								

3217	Activity 6 - Study Tours: Private operator alternatives; route selection alternatives							
3218	Activity 7 - Practicum Trainings: Analysis of household trip data; surveys, modeling							
3219	Activity 7 - Trainings: Demand management options for Jakarta; Public relations and education							
3220	Activity 7 - Study Tours: Demand management in Singapore and London							
3221	Activity 8 - Practicum Trainings: Modeling traffic impacts of pedestrian areas; Surveys; Parking Reform							
3222	Activity 8 - Trainings: Evaluation of Pedestrian Flow; Pedestrian and NMT design concepts; Design alternatives							
3223	Activity 8 - Study Tours: Pedestrian areas in other cities							
3224	Activity 9 - Practicum Trainings: Surveying Pedestrian, bicycle, becak movements							
3225	Activity 9 - Trainings: School trips; Traffic cell implementation; Public outreach and education							
3226	Activity 9 - Study Tours: BRT in Jakarta, evaluating options							
4101	Office supplies							
4102	Computer Software							
4201	Computers							
4202	Office Machines							
4203	Other Equipment							
4301	Office maintenance							
4302	Office Rental							
5101	Operation and maintenance of equip.							
5201	Training materials							
5202	Translation							
5203	Media Placements							
5204	Brochures, pamphlets & displays							
5301	Communications							
5501	Consultant and Modeling Fees							
5502	Monitoring & Evaluation Travel							
<b>99 GRAND TOTAL</b>								

Signed: \_\_\_\_\_  
Duly authorized official of supporting organization

**NB: The expenditure should be reported in line with the specific object of expenditures as per project budget**

## ANNEX I: TERMINAL REPORT FORMAT

### ***1. Background Information***

**1.1 Project Number**

**1.2 Project Title**

**1.3 UNEP Division/Unit**

**1.4 Implementing Organization**

### ***2. Project Implementation Details***

**2.2 Project Activities** (*Describe the activities actually undertaken under the project, giving reasons why some activities were not undertaken, if any*)

**2.3 Project Outputs** (*Compare the outputs generated with the ones listed in the project document*)

**2.4 Use of Outputs** (*State the use made of the outputs*)

**2.5 Degree of achievement of the objectives/results** (*On the basis of facts obtained during the follow-up phase, describe how the project document outputs and their use were or were not instrumental in realizing the objectives / results of the project*)

**2.6 Determine the degree to which project contributes to the advancement of women in Environmental Management and describe gender sensitive activities carried out by the project.**

**2.7 Describe how the project has assisted the partner in sustained activities after project completion.**

### ***3. Conclusions***

**3.1 Lessons Learned** (*Enumerate the lessons learned during the project's execution. Concentrate on the management of the project, including the principal factors which determined success or failure in meeting the objectives set down in the project document*)

**3.2 Recommendations** (*Make recommendations to (a) Improve the effect and impact of similar projects in the future and (b) Indicate what further action might be needed to meet the project objectives / results*)

### ***4. Attachments***

**4.1 Attach an inventory of all non-expendable equipment (value over US\$ 1,500) purchased under this project indicating Date of Purchase, Description, Serial Number, Quantity, Cost, Location and Present Condition, together with your proposal for the disposal of the said equipment**

**4.2 Attach a final Inventory of all Outputs/Services produced through this project**



**ANNEX I ATTACHMENT TO TERMINAL REPORT: FORMAT FOR INVENTORY OF OUTPUTS/SERVICES**

**a) Meetings**

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# of Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

**List of Meeting Participants**

No.	Name of the Participant	Nationality

**b) Printed Materials**

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Attached Yes/No

**c) Technical Information / Public Information**

No	Description	Date
1.		
2.		
3.		

**d) Technical Cooperation**

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							

**e) Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)**

No	Description	Date
1.		
2.		
3.		

**NOTE 4: MEETING TYPES (INTER-GOVERNMENTAL MEETING, EXPERT GROUP MEETING, TRAINING WORKSHOP/SEMINAR, OTHER)**

**NOTE 5: MATERIAL TYPES (REPORT TO INTER-GOVERNMENTAL MEETING, TECHNICAL PUBLICATION, TECHNICAL REPORT, OTHER)**

**NOTE 6: TECHNICAL COOPERATION TYPE (GRANTS AND FELLOWSHIPS, ADVISORY SERVICES, STAFF MISSION, OTHERS)**

**ANNEX J: INVENTORY OF NON-EXPENDABLE EQUIPMENT PURCHASED AGAINST UNEP PROJECTS<sup>10</sup>**  
**UNIT VALUE US\$1,500 AND ABOVE AND ITEMS OF ATTRACTION**

As at \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Project Title \_\_\_\_\_  
 Executing Agency: \_\_\_\_\_  
 Internal/SO/CA (UNEP use only) \_\_\_\_\_  
 FPMO (UNEP) use only) \_\_\_\_\_

Description	Serial No.	Date of Purchase	Original Price (US\$)	Purchased / Imported from (Name of Country)	Present Condition	Location	Remarks/recommendation for disposal

The physical verification of the items was done by:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_

## ANNEX K: LIST OF ABBREVIATIONS AND ACRONYMS

ASEAN	Association of Southeast Asian Nations
Average speed	the overall speed of a public transit system which includes both stopping and running time between 2 points
BAQ	Better Air Quality Conference
Becak	Indonesian tricycle rickshaw (non-motorized)
BRT	bus rapid transit
CAI	Clean Air Initiative
CNG	compressed natural gas
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
DisHub	Jakarta Transportation Department (Dinas Perhubungan)
EASTS	Eastern Asia Society for Transportation Studies
GEF	Global Environment Facility
GHG	greenhouse gases
GTZ	German government agency for international assistance
Headway	the distance between buses, measured as time
Instran	Indonesian Institute for Transportation Studies (NGO)
ITDP	Institute for Transportation and Development Policy
Km	kilometer
MOU	memorandum of understanding
MSP	Medium-Sized Project
MTI	Professional Transportation Society of Indonesia
NGO	non-government organization
NMT	non-motorized transportation
NO <sub>x</sub>	nitrogen oxides
O-D	origin-destination
PDF-B	project development fund, level B
Pelangi	Indonesian NGO working on environment, including transport
PM	particulate matter
PM <sub>10</sub>	particulate matter with a diameter of 10 microns or less
PMV	private motorized vehicle (car, motorcycle, taxi, bajaj)
Pphpd	persons per hour per direction
PMU	Project Management Unit
PSC	Project Steering Committee
PUSTRAL	Centre for Transportation Research, Gadjah Mada University, Yogyakarta
STAP	Scientific and Technical Advisory Panel
SUSTRAN	Sustainable Transportation Network for Asia & the Pacific
TDM	traffic demand management
TransJakarta	Agency which runs the Jakarta BRT
TSP	total suspended particulates
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

## ANNEX L: PROJECT WORKPLAN

Project Start Date: 1 January 2007

Project End Date: 30 December 2011

Quarter End Dates: 31 December, 31 March, 30 June, 30 September

Colored squares (Key at end) represent quarters with significant activities occurring.

	Year 1				Year 2				Year 3				Year 4				Year 5			
Goal / Objective / Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Goal A: Improve Performance of the Jakarta BRT</b>																				
<b>Objective 1: Develop BRT Corridors 4-14</b>			A					B						C						
Practicum Trainings: Surveying and public transport modeling																				
Trainings: Transportation model operation, routing considerations																				
Study Tours: Routing considerations in other BRT systems																				
Workshops: Develop alternatives																				
Workshops: Review and report Options; Review implementation																				
<b>Objective 2: Optimize Fare System for Corridors 1-14</b>					D			E						F						
Practicum Trainings: Transportation model demand outputs and verification surveys																				
Trainings: Using a transportation model for demand estimates and design; Service, fare & transfer options																				
Study Tours: Service, fare and transfer options in other BRT systems																				
Workshops: Develop alternatives																				
Workshops: Review and report Options; Review implementation																				
Bus operator contract renegotiation																				
<b>Objective 3: Improve Intersection Performance for BRT</b>																			G	
Practicum Trainings: Intersection data collection																				
Trainings: Intersection design alternatives																				
Study Tours: Intersection design options in other cities																				
Workshops: Develop alternatives																				
Workshops: Review and report Options; Review implementation																				

Goal / Objective / Activity	Year 1				Year 2				Year 3				Year 4				Year 5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Intersection flow Improvements implemented in selected corridors																				
<b>Objective 4: Optimize Busway Operation</b>																	H			
Practicum Trainings: Bus operation surveys																				
Trainings: Data collection, Bus operation Alternatives and modeling, maintenance programming																				
Study Tours: BRT operations in other cities																				
Workshops: Develop alternatives																				
Workshops: Review and report Options; Review implementation																				
BRT Operational Procedures Revised																				
<b>Objective 5: Improve public perception of BRT</b>																	I			
Trainings: Public relations for BRT systems																				
Study Tours: Public relations for BRT systems in other cities																				
Annual surveys, focus groups, and BRT public review workshops																				
Public workshops and discussions, including decision-makers																				
Media Placements																				
Routing Information System																				
<b>Goal B: Utilize BRT to Improve Public Transport, Pedestrian/NMT, and Land Use</b>																				
<b>Objective 6: Rationalize Non-BRT Bus Routes</b>																				J
Practicum Trainings: Expand public transportation demand model; private operator business models																				
Trainings: modeling and route selection; public transport issues (media)																				
Study Tours: Private operator alternatives; route selection alternatives																				
Workshops: public and informal sector																				
Private Bus Operators: Study, Dialog, Workshops and Routing Changes																				

Goal / Objective / Activity	Year 1				Year 2				Year 3				Year 4				Year 5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Objective 7:</b> Evaluate and Implement Transport Demand Management Measures to Reduce Private Motor Vehicle Use																				K
Practicum Trainings: Analysis of household trip data; surveys, modeling																				
Trainings: Demand management options for Jakarta; Public relations and education																				
Study Tours: Demand management in Singapore and London																				
Socialization and Implementation of TDM																				
<b>Objective 8:</b> Improve Pedestrian, NMT Facilities and Land Use in Center and Along Corridors																				
Practicum Trainings: Modeling traffic impacts of pedestrian areas; Surveys; Parking Reform																				
Trainings: Evaluation of Pedestrian Flow; Pedestrian and NMT design concepts; Design alternatives																				
Study Tours: Pedestrian areas in other cities																				
Workshops: schools, Kota area, NMT activists																				
Pedestrian or NMT improvements implemented																				
<b>Objective 9:</b> Dissemination and Outreach to Other Cities																				
Practicum Trainings: Surveying Pedestrian, bicycle, becak movements																				
Trainings: School trips; Traffic cell implementation; Public outreach and education																				
Study Tours: BRT in Jakarta, evaluating options; NMT in Jakarta																				
University and School Workshops; promotional material distribution																				
Implementation Plans completed																				

Activity Key

Assessment

Technical Assistance & Training	
Socialization	
Implementation	

#### *Milestones*

- A Jakarta BRT Corridors 4-7 Implemented
- B Jakarta BRT Corridors 8-11 Implemented
- C Jakarta BRT Corridors 11-14 Implemented
- D TransJakarta become legal entity able to control fare revenue
- E Fare system control mechanisms implemented
- F Competitive tender for fare system and bus operations implemented
- G Incremental intersection reforms implemented in time frames indicated
- H Incremental operation reforms implemented in time frames indicated
- I Public transit routing information system implemented
- J New, rationalized, bus routes established in Jakarta
- K Road pricing scheme implemented in Jakarta
- L Plaza Fatahillah pedestrian area implemented near Jakarta “Kota” BRT station
- M Secure bike parking areas established at 4 BRT stations
- N Redevelopment plans agreed to for Plaza Fatahillah as transit oriented development
- O Pedestrian improvements achieved within 200 meters of all BRT stations
- P BRT system, pedestrian zone, or NMT improvement planned in 2 other cities

**Monitoring & Evaluation** is included as an integral part of each activity; in addition there will be a mid-term review in year 3; and a final review in year 5.



**Annex M: BUDGET in UNEP Format - Cofinancing and GEF funds**

		GEF funding	COFINANCING			
			Jakarta - Cash	Jakarta - In-kind	ITDP - Cash	Total
		US\$	US\$	US\$	US\$	US\$
<b>10</b>	<b>PROJECT PERSONNEL COMPONENT</b>					
<b>1100</b>	<b>Project Personnel w/m</b>					
	(Show title/grade)					
1101	Executive Director (2.5 w/m)	19,400				0
1102	Asia Regional Director (7.5 w/m)	56,900				0
1103	BRT Technical Director (5 w/m)	17,900				0
1104	Project Director (60 w/m)	104,200				0
1105	Program Coordinator (60 w/m)	36,700				0
1106	Training Coordinator (60 w/m)	36,700				0
1107	Research Coordinator (60 w/m)	31,100				0
1108	Jakarta Gov't Management Staff Time			132,000		132,000
1199	Total	302,900	0	132,000	0	132,000
<b>1200</b>	<b>Consultants w/m</b>					
	(Give description of activity/service)					
1201	Bus Rapid Transit Design	31,400			16,000	16,000
1202	Modeler	44,100			6,000	6,000
1203	Public Transit Operations	28,000			28,000	28,000
1204	Traffic Infrastructure	25,500			26,000	26,000
1205	Transportation Demand Management	16,400				0
1206	Pedestrian Design	15,100				0
1207	Consultant Travel	72,500			28,000	28,000
1299	Total	233,000	0	0	104,000	104,000
<b>1300</b>	<b>Administrative support w/m</b>					
	(Show title/grade)					
1301	Financial Assistant - Indonesia	57,800				0
1302	Office Assistants			18,000		18,000
1303	Communications Director - NY	27,300				0
1304	Administrative Assistant - NY	43,400				0
1399	Total	128,500	0	18,000	0	18,000
<b>1400</b>	<b>Volunteers w/m</b>					
1499	Total					0
<b>1600</b>	<b>Travel on official business (above staff)</b>					
1601	Staff Travel	58,500				0
1699	Total	58,500	0	0	0	0
<b>1999</b>	<b>Component Total</b>	<b>722,900</b>	<b>0</b>	<b>150,000</b>	<b>104,000</b>	<b>254,000</b>
<b>20</b>	<b>SUB-CONTRACT COMPONENT</b>					
<b>2100</b>	<b>Sub-contracts (MoU's/LA's for UN cooperating agencies)</b>					
2199	Total					0
<b>2200</b>	<b>Sub-contracts (MoU's/LA's for non-profit supporting organizations)</b>					
2201	Environmental NGO participation	132,600				0
2202	Transportation NGO participation	132,600				0
2203	Other Transportation NGO participation	66,400				0
2204	Other NGO Participation	33,000				0
2205	NGO Interview Surveys	108,400				0
2206	Survey Team	201,800				0
2299	Total	674,800	0	0	0	0
<b>2300</b>	<b>Sub-contracts (commercial purposes)</b>					
2301	Transportation System Surveyors	33,000				0
2302	Focus Group Consultant -- annual focus groups with BRT passengers (Activity 5)	22,100				0
2303	Web Site Development and maintenance (Activity 5)	99,400				0
2304	Busway station construction	0	90,264,000			90,264,000
2305	Busway road infrastructure construction	0	90,263,000			90,263,000
2306	Public affairs work for new busway corridors	0	5,756,000			5,756,000
2307	Improving lighting and other infrastructure related to busways	0	1,378,000			1,378,000
2399	Total	154,500	187,661,000	0	0	187,661,000
<b>2999</b>	<b>Component Total</b>	<b>829,300</b>	<b>187,661,000</b>	<b>0</b>	<b>0</b>	<b>187,661,000</b>
<b>30</b>	<b>TRAINING COMPONENT</b>					
<b>3100</b>	<b>Fellowships (total stipend/fees, travel costs, etc)</b>					
3199	Total					0
<b>3200</b>	<b>Group training (study tours, field trips, workshops, seminars, etc) (give title)</b>					
3201	Activity 1 - Practicum Trainings: Surveying and public transport modeling	218,200				0
3202	Activity 1 - Trainings: Transportation model operation, routing considerations	41,000				0
3203	Activity 1 - Study Tours: Routing considerations in other BRT systems	100,200				0
3204	Activity 2 - Practicum Trainings: Transportation model demand outputs and verification surveys	177,000				0
3205	Activity 2 - Trainings: Using a transportation model for demand estimates and design; Service, fare & transfer options	61,800				0
3206	Activity 2 - Study Tours: Service, fare and transfer options in other BRT systems	254,500				0
3207	Activity 3 - Practicum Trainings: Intersection data collection	164,200				0
3208	Activity 3 - Trainings: Intersection design alternatives	14,000				0
3209	Activity 3 - Study Tours: Intersection design options in other cities	98,200				0
3210	Activity 4 - Practicum Trainings: Bus operation surveys	201,100				0
3211	Activity 4 - Trainings: Data collection, Bus operation Alternatives and modelling, maintenance programming	39,400				0
3212	Activity 4 - Study Tours: BRT operations in other cities	73,300				0
3213	Activity 5 - Trainings: Public relations and education	35,900				0
3214	Activity 5 - Study Tours: BRT public relations efforts in other cities; Media visits to BRT in other cities	266,800				0
3215	Activity 6 - Practicum Trainings: Expand public transportation demand model; private operator business models	224,500				0
3216	Activity 6 - Trainings: modeling and route selection; public transport issues (media)	79,300				0
3217	Activity 6 - Study Tours: Private operator alternatives; route selection alternatives	174,600				0
3218	Activity 7 - Practicum Trainings: Analysis of household trip data; surveys, modeling	189,600				0

	UNEP BUDGET LINE/OBJECT OF EXPENDITURE	GEF funding	COFINANCING			
		US\$	Jakarta - Cash US\$	Jakarta - In- kind US\$	ITDP - Cash US\$	Total US\$
	3219 Activity 7 - Trainings: Demand management options for Jakarta; Public relations and education	36,300				0
	3220 Activity 7 - Study Tours: Demand management in Singapore and London	119,100				0
	3221 Activity 8 - Practicum Trainings: Modeling traffic impacts of pedestrian areas; Surveys; Parking Reform	127,400				0
	3222 Activity 8 - Trainings: Evaluation of Pedestrian Flow; Pedestrian and NMT design concepts; Design alternatives	62,800				0
	3223 Activity 8 - Study Tours: Pedestrian areas in other cities	64,300				0
	3224 Activity 9 - Practicum Trainings: Surveying Pedestrian, bicycle, becak movements	33,000				0
	3225 Activity 9 - Trainings: School trips; Traffic cell implementation; Public outreach and education	60,300				0
	3226 Activity 9 - Study Tours: BRT in Jakarta, evaluating options	56,400				0
	3299 Total	2,973,200	0	0	0	0
	3300 Meetings/conferences (give title)					0
	3301 Project Steering Committee (bi-annual)	4,500				0
	3302 Project Overview Conferences	27,000				0
	3303 Project Activity Workshops	775,300				0
	3399 Total	806,800				0
	3999 Component Total	3,780,000	0	0	0	0
40	EQUIPMENT & PREMISES COMPONENT					0
	4100 Expendable equipment (items under (\$1,500 each, for example)					0
	4101 Office supplies	4,500				0
	4102 Computer Software	8,800				0
	4199 Total	13,300	0	0	0	0
	4200 Non-expendable equipment (computers, office equip, etc)					0
	4201 Computers	17,600				0
	4202 Office Machines	1,600				0
	4203 Other Equipment	4,500				0
	4299 Total	23,700	0	0	0	0
	4300 Premises (office rent, maintenance of premises, etc)					0
	4301 Office maintenance	4,500				0
	4302 Office Rental	0		60,000		60,000
	4399 Total	4,500	0	60,000	0	60,000
	4999 Component Total	41,500	0	60,000	0	60,000
50	MISCELLANEOUS COMPONENT					0
	5100 Operation and maintenance of equip. (example shown below)					0
	5101 Operation and maintenance of equip.	4,500				0
	5199 Total	4,500	0	0	0	0
	5200 Reporting costs (publications, maps, newsletters, printing, etc)					0
	5201 Training materials	131,300				0
	5202 Translation	33,000				0
	5203 Media Placements	106,800				0
	5204 Brochures, pamphlets & displays	55,300				0
	5299 Total	326,400	0	0	0	0
	5300 Sundry (communications, postage, freight, clearance charges, etc)					0
	5301 Communications	13,500				0
	5399 Total	13,500	0	0	0	0
	5400 Hospitality and entertainment					0
	5499 Total					0
	5500 Evaluation (consultants fees/travel/ DSA, admin support, etc. internal projects)					0
	5501 Consultant and Modeling Fees	57,900				0
	5502 Monitoring & Evaluation Travel	36,000				0
	5599 Total	93,900	0	0	0	0
	5999 Component Total	438,300	0	0	0	0
	TOTAL	5,812,000	187,661,000	210,000	104,000	187,975,000

**Annex N: BUDGET in UNEP Format - GEF funds**

		EXPENDITURE BY PROJECT COMPONENT/ACTIVITY *										EXPENDITURE BY YEAR					
		1	2	3	4	5	6	7	8	9	Total	2007	2008	2009	2010	2011	Total
UNEP BUDGET LINE/OBJECT OF EXPENDITURE		US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$
<b>10</b>	<b>PROJECT PERSONNEL COMPONENT</b>																
<b>1100</b>	<b>Project Personnel w/m</b>																
	(Show title/grade)																
1101	Executive Director (2.5 w/m)	1,900	2,500	1,800	2,500	3,100	2,900	2,200	1,700	800	19,400	3,500	3,700	3,900	4,100	4,200	19,400
1102	Asia Regional Director (7.5 w/m)	5,500	7,500	5,200	7,400	8,800	8,600	6,500	4,800	2,600	56,900	10,200	10,800	11,500	11,900	12,500	56,900
1103	BRT Technical Director (5 w/m)	1,800	2,400	1,600	2,200	2,800	2,700	2,100	1,500	800	17,900	3,400	3,300	3,600	3,700	3,900	17,900
1104	Project Director (60 w/m)	10,200	14,100	9,500	13,200	16,200	15,600	11,900	8,700	4,800	104,200	20,800	21,000	20,800	20,700	20,900	104,200
1105	Program Coordinator (60 w/m)	3,700	5,300	3,600	4,800	5,900	5,800	4,400	3,200	0	36,700	7,400	7,300	7,200	7,400	7,400	36,700
1106	Training Coordinator (60 w/m)	3,700	5,300	3,600	4,800	5,900	5,800	4,400	3,200	0	36,700	7,400	7,300	7,200	7,400	7,400	36,700
1107	Research Coordinator (60 w/m)	3,200	4,300	3,100	4,100	5,100	5,000	3,700	2,600	0	31,100	6,200	6,100	6,200	6,300	6,300	31,100
1108	Communications Director - NY	2,700	3,500	2,600	3,500	4,200	4,100	3,100	2,300	1,300	27,300	5,000	5,200	5,400	5,700	6,000	27,300
1151	Financial Assistant - Indonesia	5,600	7,600	5,300	7,400	9,000	8,700	6,600	4,900	2,700	57,800	10,500	11,000	11,600	12,000	12,700	57,800
1152	Administrative Assistant - NY	4,200	5,700	4,100	5,500	6,700	6,500	4,900	3,700	2,100	43,400	7,800	8,300	8,600	9,000	9,700	43,400
1199	<b>Total</b>	<b>42,500</b>	<b>58,200</b>	<b>40,400</b>	<b>55,400</b>	<b>67,700</b>	<b>65,700</b>	<b>49,800</b>	<b>36,600</b>	<b>15,100</b>	<b>431,400</b>	<b>82,200</b>	<b>84,000</b>	<b>86,000</b>	<b>88,200</b>	<b>91,000</b>	<b>431,400</b>
<b>1200</b>	<b>Consultants w/m</b>																
	(Give description of activity/service)																
1201	Bus Rapid Transit Design	7500	6400	1200	1200	2800	7600	0	300	4400	31,400	6,500	8,200	5,300	7,500	3,900	31,400
1202	Modeler	8700	8100	0	3900	1800	12400	7600	300	1300	44,100	9,100	13,200	7,400	9,400	5,000	44,100
1203	Public Transit Operations	0	5,700	4,000	10,100	1,600	6,600	0	0	0	28,000	6,000	7,100	5,100	5,900	3,900	28,000
1204	Traffic Infrastructure	4,800	4,100	11,000	2,500	2,200	0	0	300	600	25,500	4,800	6,800	3,800	7,900	2,200	25,500
1205	Transportation Demand Management	0	0	0	0	1,100	1,500	13,800	0	0	16,400	2,500	5,300	2,500	2,900	3,200	16,400
1206	Pedestrian Design	1,700	2,700	0	0	1,700	0	0	9,000	0	15,100	4,500	4,000	1,000	5,000	600	15,100
1207	Consultant Travel	10,100	12,000	6,200	9,100	4,700	12,900	9,900	4,500	3,100	72,500	14,700	20,600	11,600	16,900	8,700	72,500
1299	<b>Total</b>	<b>32,800</b>	<b>39,000</b>	<b>22,400</b>	<b>26,800</b>	<b>15,900</b>	<b>41,000</b>	<b>31,300</b>	<b>14,400</b>	<b>9,400</b>	<b>233,000</b>	<b>48,100</b>	<b>65,200</b>	<b>36,700</b>	<b>55,500</b>	<b>27,500</b>	<b>233,000</b>
<b>1300</b>	<b>Administrative support w/m (Note 1)</b>																
	(Show title/grade)																
1301	Financial Assistant - Indonesia																
1304	Administrative Assistant - NY																
1399	<b>Total</b>																
<b>1600</b>	<b>Travel on official business (above staff)</b>																
1601	Staff Travel	6500	6500	6500	6500	6500	6500	6500	6500	6500	58,500	10,800	10,800	11,700	12,600	12,600	58,500
1699	<b>Total</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>6,500</b>	<b>58,500</b>	<b>10,800</b>	<b>10,800</b>	<b>11,700</b>	<b>12,600</b>	<b>12,600</b>	<b>58,500</b>
1999	<b>Component Total</b>	<b>81,800</b>	<b>103,700</b>	<b>69,300</b>	<b>88,700</b>	<b>90,100</b>	<b>113,200</b>	<b>87,600</b>	<b>57,500</b>	<b>31,000</b>	<b>722,900</b>	<b>141,100</b>	<b>160,000</b>	<b>134,400</b>	<b>156,300</b>	<b>131,100</b>	<b>722,900</b>
<b>20</b>	<b>SUB-CONTRACT COMPONENT</b>																
<b>2200</b>	<b>Sub-contracts (MoU's/LA's for non-profit supporting organizations)</b>																
2201	Environmental NGO participation	13,400	18,100	12,800	17,900	22,000	21,100	15,800	11,500	0	132,600	23,900	25,100	26,500	27,800	29,300	132,600
2202	Transportation NGO participation	12,900	17,500	12,200	17,000	20,800	20,000	15,000	11,000	6,200	132,600	24,000	25,100	26,600	27,700	29,200	132,600
2203	Other Transportation NGO participation	6,400	8,800	6,100	8,600	10,200	10,000	7,600	5,500	3,200	66,400	12,000	12,700	13,200	14,000	14,500	66,400
2204	Other NGO Participation	3,300	4,600	3,200	4,400	5,500	5,200	3,900	2,900	0	33,000	6,000	6,100	6,700	6,800	7,400	33,000
2205	NGO Interview Surveys	9,000	9,200	13,200	9,100	12,800	13,300	11,600	26,500	3,700	108,400	19,300	22,200	22,000	22,700	22,200	108,400
2206	Survey Team	20,400	27,600	19,600	27,300	33,400	32,000	24,000	17,500	0	201,800	36,500	38,300	40,300	42,300	44,400	201,800
2299	<b>Total</b>	<b>65,400</b>	<b>85,800</b>	<b>67,100</b>	<b>84,300</b>	<b>104,700</b>	<b>101,600</b>	<b>77,900</b>	<b>74,900</b>	<b>13,100</b>	<b>674,800</b>	<b>121,700</b>	<b>129,500</b>	<b>135,300</b>	<b>141,300</b>	<b>147,000</b>	<b>674,800</b>
<b>2300</b>	<b>Sub-contracts (commercial purposes)</b>																
2301	Transportation System Surveyors	3,700	4,200	2,900	6,000	3,900	4,600	3,900	1,600	2,200	33,000	6,500	9,300	5,300	7,500	4,400	33,000
2302	Focus Group Consultant -- annual focus groups w	0	0	0	0	22,100	0	0	0	0	22,100	4,000	4,200	4,400	4,600	4,900	22,100
2303	Web Site Development and maintenance (Activity	0	0	0	0	99,400	0	0	0	0	99,400	18,000	18,900	19,800	20,800	21,900	99,400
2399	<b>Total</b>	<b>3,700</b>	<b>4,200</b>	<b>2,900</b>	<b>6,000</b>	<b>125,400</b>	<b>4,600</b>	<b>3,900</b>	<b>1,600</b>	<b>2,200</b>	<b>154,500</b>	<b>28,500</b>	<b>32,400</b>	<b>29,500</b>	<b>32,900</b>	<b>31,200</b>	<b>154,500</b>
2999	<b>Component Total</b>	<b>69,100</b>	<b>90,000</b>	<b>70,000</b>	<b>90,300</b>	<b>230,100</b>	<b>106,200</b>	<b>81,800</b>	<b>76,500</b>	<b>15,300</b>	<b>829,300</b>	<b>150,200</b>	<b>161,900</b>	<b>164,800</b>	<b>174,200</b>	<b>178,200</b>	<b>829,300</b>
<b>30</b>	<b>TRAINING COMPONENT</b>																
<b>3200</b>	<b>Group training (study tours, field trips, workshops, seminars, etc) (give title)</b>																
3201	Activity 1 - Practicum Trainings: Surveying and	218200	0	0	0	0	0	0	0	0	218,200	20,100	99,900	10,500	84,400	3,300	218,200
3202	Activity 1 - Trainings: Transportation model oper	41000	0	0	0	0	0	0	0	0	41,000	2,100	7,600	14,700	14,800	1,800	41,000
3203	Activity 1 - Study Tours: Routing considerations	100200	0	0	0	0	0	0	0	0	100,200	39,200	41,700	7,800	9,700	1,800	100,200
3204	Activity 2 - Practicum Trainings: Transportation	0	177000	0	0	0	0	0	0	0	177,000	67,700	46,500	8,200	48,000	6,600	177,000
3205	Activity 2 - Trainings: Using a transportation mod	0	61800	0	0	0	0	0	0	0	61,800	23,000	15,500	2,400	18,400	2,500	61,800
3206	Activity 2 - Study Tours: Service, fare and transfe	0	254500	0	0	0	0	0	0	0	254,500	83,400	82,800	79,300	7,600	1,400	254,500
3207	Activity 3 - Practicum Trainings: Intersection dat	0	0	164200	0	0	0	0	0	0	164,200	41,300	43,400	14,900	49,800	14,800	164,200

UNEP BUDGET LINE/OBJECT OF EXPENDITURE	EXPENDITURE BY PROJECT COMPONENT/ACTIVITY *										EXPENDITURE BY YEAR					
	1	2	3	4	5	6	7	8	9	Total	2007	2008	2009	2010	2011	Total
	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$
3208 Activity 3 - Trainings: Intersection design alterna	0	0	14000	0	0	0	0	0	0	14,000	3,500	3,100	1,900	3,600	1,900	14,000
3209 Activity 3 - Study Tours: Intersection design opti	0	0	98200	0	0	0	0	0	0	98,200	32,700	4,100	28,000	4,800	28,600	98,200
3210 Activity 4 - Practicum Trainings: Bus operation s	0	0	0	201100	0	0	0	0	0	201,100	47,800	28,700	43,700	36,300	44,600	201,100
3211 Activity 4 - Trainings: Data collection, Bus operat	0	0	0	39400	0	0	0	0	0	39,400	14,000	8,900	6,800	5,300	4,400	39,400
3212 Activity 4 - Study Tours: BRT operations in other	0	0	0	73300	0	0	0	0	0	73,300	26,100	5,900	19,500	4,000	17,800	73,300
3213 Activity 5 - Trainings: Public relations and educat	0	0	0	0	35900	0	0	0	0	35,900	13,500	7,400	7,100	3,500	4,400	35,900
3214 Activity 5 - Study Tours: BRT public relations eff	0	0	0	0	266800	0	0	0	0	266,800	79,700	55,900	81,900	25,600	23,700	266,800
3215 Activity 6 - Practicum Trainings: Expand public t	0	0	0	0	0	224500	0	0	0	224,500	50,600	49,000	42,200	40,000	42,700	224,500
3216 Activity 6 - Trainings: modeling and route selecti	0	0	0	0	0	79300	0	0	0	79,300	21,900	19,900	17,800	14,300	5,400	79,300
3217 Activity 6 - Study Tours: Private operator alternat	0	0	0	0	0	174600	0	0	0	174,600	32,700	53,900	31,400	55,100	1,500	174,600
3218 Activity 7 - Practicum Trainings: Analysis of hou	0	0	0	0	0	0	189600	0	0	189,600	23,800	114,200	16,700	15,100	19,800	189,600
3219 Activity 7 - Trainings: Demand management opti	0	0	0	0	0	0	36300	0	0	36,300	2,600	7,000	7,800	8,600	10,300	36,300
3220 Activity 7 - Study Tours: Demand management in	0	0	0	0	0	0	119100	0	0	119,100	38,000	34,300	500	45,800	500	119,100
3221 Activity 8 - Practicum Trainings: Modeling traffic	0	0	0	0	0	0	0	127400	0	127,400	31,700	33,200	13,400	32,500	16,600	127,400
3222 Activity 8 - Trainings: Evaluation of Pedestrian H	0	0	0	0	0	0	0	62800	0	62,800	20,100	16,600	4,000	17,800	4,300	62,800
3223 Activity 8 - Study Tours: Pedestrian areas in other	0	0	0	0	0	0	0	64300	0	64,300	41,000	4,900	14,700	1,900	1,800	64,300
3224 Activity 9 - Practicum Trainings: Surveying Pede	0	0	0	0	0	0	0	0	33000	33,000	8,200	4,100	8,500	3,000	9,200	33,000
3225 Activity 9 - Trainings: School trips; Traffic cell in	0	0	0	0	0	0	0	0	60300	60,300	8,000	4,000	17,600	10,900	19,800	60,300
3226 Activity 9 - Study Tours: BRT in Jakarta, evaluat	0	0	0	0	0	0	0	0	56400	56,400	9,700	10,300	11,500	12,400	12,500	56,400
3299 Total	359,400	493,300	276,400	313,800	302,700	478,400	345,000	254,500	149,700	2,973,200	782,400	802,800	512,800	573,200	302,000	2,973,200
3300 Meetings/conferences (give title)																
3301 Project Steering Committee (bi-annual)	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
3302 Project Overview Conferences	3000	3000	3000	3000	3000	3000	3000	3000	3000	27,000	8,100	0	9,000	0	9,900	27,000
3303 Project Activity Workshops	59200	89100	75400	159400	58200	123700	114500	66700	29100	775,300	125,300	174,300	174,200	155,400	146,100	775,300
3399 Total	62,700	92,600	78,900	162,900	61,700	127,200	118,000	70,200	32,600	806,800	134,300	175,200	184,100	156,300	156,900	806,800
3999 Component Total	422,100	585,900	355,300	476,700	364,400	605,600	463,000	324,700	182,300	3,780,000	916,700	978,000	696,900	729,500	458,900	3,780,000
40 EQUIPMENT & PREMISES COMPONENT																
4100 Expendable equipment (items under (\$1,500 each, for example)																
4101 Office supplies	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
4102 Computer Software	1100	1100	1100	1100	1100	1100	1100	1100	0	8,800	5,600	0	0	3,200	0	8,800
4199 Total	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	500	13,300	6,500	900	900	4,100	900	13,300
4200 Non-expendable equipment (computers, office equip, etc)																
4201 Computers	2200	2200	2200	2200	2200	2200	2200	2200	0	17,600	11,200	0	0	6,400	0	17,600
4202 Office Machines	200	200	200	200	200	200	200	200	0	1,600	800	0	0	800	0	1,600
4203 Other Equipment	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
4299 Total	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	500	23,700	12,900	900	900	8,100	900	23,700
4300 Premises (office rent, maintenance of premises, etc)																
4301 Office maintenance	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
4399 Total	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
4999 Component Total	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	1,500	41,500	20,300	2,700	2,700	13,100	2,700	41,500
50 MISCELLANEOUS COMPONENT																
5100 Operation and maintenance of equip. (example shown below)																
5101 Operation and maintenance of equip.	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
5199 Total	500	500	500	500	500	500	500	500	500	4,500	900	900	900	900	900	4,500
5200 Reporting costs (publications, maps, newsletters, printing, etc)																
5201 Training materials	13600	18200	11900	15900	20200	19700	15100	10900	5800	131,300	26,600	30,500	24,800	27,600	21,800	131,300
5202 Translation	3300	4700	3000	3900	5100	5000	3800	2800	1400	33,000	6,700	7,600	6,300	7,000	5,400	33,000
5203 Media Placements	0	0	0	0	106800	0	0	0	0	106,800	5,100	40,000	19,300	17,500	24,900	106,800
5204 Brochures, pamphlets & displays	0	0	0	0	55300	0	0	0	0	55,300	10,000	10,500	11,000	11,600	12,200	55,300
5299 Total	16,900	22,900	14,900	19,800	187,400	24,700	18,900	13,700	7,200	326,400	48,400	88,600	61,400	63,700	64,300	326,400
5300 Sundry (communications, postage, freight, clearance charges, etc)																
5301 Communications	1500	1500	1500	1500	1500	1500	1500	1500	1500	13,500	2,700	2,700	2,700	2,700	2,700	13,500
5399 Total	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	13,500	2,700	2,700	2,700	2,700	2,700	13,500
5500 Evaluation (consultants fees/travel/ DSA, admin support, etc. internal projects)																
5501 Consultant and Modeling Fees	4500	7000	4400	7000	7000	7000	7000	7000	7000	57,900	7,300	8,100	16,200	8,100	18,200	57,900
5502 Monitoring & Evaluation Trave	4000	4000	4000	4000	4000	4000	4000	4000	4000	36,000	3,600	3,600	11,700	4,500	12,600	36,000
5599 Total	8,500	11,000	8,400	11,000	11,000	11,000	11,000	11,000	11,000	93,900	10,900	11,700	27,900	12,600	30,800	93,900
5999 Component Total	27,400	35,900	25,300	32,800	200,400	37,700	31,900	26,700	20,200	438,300	62,900	103,900	92,900	79,900	98,700	438,300
TOTAL	605,400	820,500	524,900	693,500	890,000	867,700	669,300	490,400	250,300	5,812,000	1,291,200	1,406,500	1,091,700	1,153,000	869,600	5,812,000

Note 1: Due to inherent IMIS problems, budget lines under 1300 category have been moved to 1100 category