

Appendix 21 Capacity Building Project Sheets

Table 21.1 Summary of Capacity Building Projects (1/2)

ID#	Title	Implementing Agency	Short Project Description
Bus-3	Strengthening of NTC on Transport Planning and Operations/Management	NTC	The training would include (i) Develop Regulatory System for Concessioning; (ii) Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis; (iii) Develop Information System; (iv) Develop Costing and Pricing System; (v) Develop Clear Understanding of Concessioning; (vi) Develop Understanding of Route Network Design; and (vii) Create Service Level Improvements
Bus-4	Strengthening of SLTB on Operations/Management	SLTB	The training would include (i) Develop Strategy (Short, Medium, and Long-Term) Strategy; (ii) Develop Marketing Plan; (iii) Develop Costing System; (iv) Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis; (v) Develop Crew and Vehicle Assignment and Maintenance Methodology/Skills; (vi) Develop Clear Understanding of Concessioning; (vii) Develop Human Resources Management; and (viii) Modernize Crew Training
Bus-5	Develop a Training Center at WPRPTA and Undertake Strengthening of WPRPTA, Private Bus Owners/Operators, and Crew	WPRPTA	The training would include (i) Develop Human Resources Management; (ii) Develop Clear Understanding of Concessioning; (iii) Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis; (iv) Develop Information System; (v) Develop Marketing Plan; (vi) Incorporate Intermodalism, including Intermodal Centers; and (vii) Develop Understanding of Route Network Design; (viii) Create Service Level Improvements; (ix) Strengthen Private Owners and Operators; and (x) Strengthen Private Crews
Rail-3	Strengthening of SLR on Management and Operations and Development of a Strategic Business Unit to Implement Pilot Projects	SLR	The training would include (i) Develop a Costing System; (ii) Create Operational Improvements ; (iii) Improve Use of Intermodal Centers ; (iv) Develop Maintenance Plan for Rehabilitated Rail; (v) Improve Data Collection and Analysis Skills and Develop an Information System; and (vi) Develop Human Resources Management. Develop a Strategic Business Unit with the purpose of implementing the knowledge gained in the training, specifically drafting new legal framework, identifying pilot projects for progressive policies, developing marketing campaign(s), etc.

A21-2

Table 21.2 Summary of Short List Projects (2/2)

ID#	Title	Implementing Agency	Short Project Description
3W-1	Strengthen the WPRPTA to Implement and Strengthen the Three-Wheeler Services Bureau and Outline Three-Wheeler Regulations	WPRPTA	This project will focus on assisting WPRPTA in forming a task force to implement and strengthen the Three-Wheeler Services Bureau under WPRPTA. If a new regulation is needed, support to create a viable regulation would be provided. Capacity Building topics would include (i) Develop Marketing System; (ii) Develop Regulatory System; (iii) Develop General Management Knowledge; (iv) Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis; (v) Develop Information System; and (vi) Develop Driving Training System.
Road-48	Capacity Development for Colombo Municipal Council's (CMC) Drainage Maintenance	CMC	Improve CMC's capacity in drainage maintenance in order to minimize flooding that result in traffic jams
Road-54	Capacity Development for Land Acquisition of Road Projects	RDA	The study team proposes to provide equipment for daily use and a training program for land acquisition process improvement. The project includes sending several experts to an awareness development program as well as budget for training.
Road-55	Capacity Development for Road Design and Maintenance Coordination	RDA	The purpose of this project is to develop urban road standard design and provide technical assistance for maintenance coordination
Env-1	Institutional Strengthening to Increase Capacity of Vehicle Inspection, Roadside Inspection, Emission Inspection, and Monitoring	CMT, Police, RDA, CPC, CEA	The purpose of this project is to provide equipment and increase capacity of personnel at CMT, CPC, CEA, and Traffic Police in terms of vehicle, roadside, emissions, and noise inspection, as well as monitoring.
TM-17	Capacity Building of CMC and RDA - Traffic Management and Safety	CMC	Strengthen the capacity of CMC and RDA in traffic management and safety by increasing manpower, conducting training and providing necessary facilities
TM-19	Capacity Building of Traffic Police	Traffic Police	The project will establish a Police Driver Training School, where police drivers will be trained on driving rules and manner. Once the training program is established, general drivers will be invited. Frequent violators of traffic regulation and those who have caused severe traffic accident will also be trained.

Project Code:	Bus-3
Project Name:	Strengthening of NTC on Transport Planning and Operations/Management
Project Description:	<p>As has been indicated in each previous study, it is necessary to continue to increase the knowledge capacity of NTC. Knowledge capacity means ensuring that groups of people are educated on certain topics, not just 1 or 2 individuals, to insure that knowledge is retained within the organization, even if some people leave. Using an approach of both sending topical experts to an organization for an extensive period of time and tying capacity building to other projects in order to have concrete objectives, the following topics are proposed for capacity building:</p> <ul style="list-style-type: none"> • Develop Regulatory System for Concessioning As indicated in Bus-1, the current regulatory system does not support concessioning. This part of capacity building would work to build a system that is supportive of concessioning. In the process, the Specialists would also increase knowledge of creating regulations as a whole. • Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis As both Bus-1 and Bus-2 require surveys, increasing the capacity of identifying data needs, creating surveys, and analyzing the results will be necessary. • Develop Information System Having time series data helps improve planning abilities, as the data is readily available, not simply an estimate of what bureaucrats think is the current state. Additionally, currently, there is data, but it is rarely computerized and stored for general use. Having access to this information will clarify if/when changes should occur and will assist in creating a quantitative case for changes, which should help to deflect the external interference. This ties to Bus-1 and Bus-2. • Develop Costing and Pricing System As the main organization for the island-wide bus sector, it is necessary that costing and pricing of bus transport is clearly understood and documented. This will tie to Bus-1, when the full concessioning is rolled out. • Develop Clear Understanding of Concessioning Implementing concessions is a fundamental step in improving the public transport system in Colombo. As indicated in Bus-1, there is a clear lack of understanding with regards to concessions, both from a strategic perspective, as well as an implementation perspective. This part of capacity building would initially hold general meetings to explain the strategic benefits of concessioning, as well as work with NTC to lay the groundwork necessary for concessioning. This ties to Bus-1. • Develop Understanding of Route Network Design As part of Bus-1, the route network is expected to be rationalized. Although urban bus routes are the responsibility of WPRPTA, capacity is limited and NTC will be expected to assist. Therefore, a clear understanding of Route Network Design, including the software used, will be the focused of this training. This ties to Bus-1. • Create Service Level Improvements (i.e. Timetables) In reference to the development to timetables in Bus-2, further assistance will be given to increase the intermodal focus of timetable development, as currently, timetables are developed individually, without consideration of other modes or other bus routes. <p>Private bus operator representatives should also be included where possible so that they can understand the current issues, viable future directions of the bus sector, and what they can do to work towards the improvements.</p> <p>The State Enterprise Management Agency (SEMA) could be utilized where possible, especially with regards to general management knowledge and integration of private sector practices into the public sector.</p>

Project Code:	Bus-3																																										
Anticipated Tasks:	<ul style="list-style-type: none"> Identify training topics Identify training course attendees (i.e. not individuals, but levels, backgrounds) Develop training materials Implement training courses Conduct train-the-trainer so that there are knowledgeable in-house individuals who can conduct the training. Create repetitive training schedule for new hires (every 6 months?), as well as training schedule for current employees to update skills Develop secondment program 																																										
Anticipated Timeframe:	1 year																																										
Linked Projects:	Technical Assistance for Concessioning Methodology and Implementing Pilot Project to Increase Intermodal and Intramodal Coordination by Timetable Creation, Implementation, and Enforcement																																										
Benefits:	<ul style="list-style-type: none"> Capacity building tied to other projects Goal/objective focused Long-term nature extends likelihood of success Improve professional regulation of the bus industry Increase understanding of strategy behind and implementation of concessioning Increase quantitative skills for data collection and analysis Develop understanding of transport planning, including timetabling and route network design Enhanced capacity to withstand regulatory interference 																																										
Impacts:	Social Impact?	Low	Environmental Impact? Low																																								
Construction Impacts:	None																																										
Implementation Risks:	<ul style="list-style-type: none"> Limited long-term sustainability of capacity building Lack of interest in capacity building by some bureaucrats and officials 																																										
Implementation Agency:	NTC <div style="text-align: center; border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Strengthening of National Transport Commission on Transport Planning and Operations/Management</p> <pre> graph TD MoRT[MoRT] --- NTC[NTC] NTC --- Consultants[Consultants] subgraph Consulted [Other Entities to Be Consulted] PBO[Private Bus Owners/Operators] SLTB[SLTB] WPRPTA[WPRPTA] TP[Traffic Police] end Consulted -.- NTC </pre> </div> <p>Notes: ——— Control/Partnership - - - Consultation</p>																																										
Anticipated Costs:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Consultancy Service</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 30%; text-align: right;">US \$1,466,400</td> </tr> <tr> <td>Details</td> <td>Man months</td> <td>Position</td> <td></td> </tr> <tr> <td>International</td> <td>42 months</td> <td>Bus Operations Specialist (International)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Transport Economist (International)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Route Network Specialist</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Concessioning Specialist</td> <td></td> </tr> <tr> <td>Domestic</td> <td>26 months</td> <td>Database Designer</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Management Specialist (Domestic)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Regulatory Specialist (Domestic)</td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td style="text-align: right;">\$1,466,400</td> </tr> </table>			Consultancy Service			US \$1,466,400	Details	Man months	Position		International	42 months	Bus Operations Specialist (International)				Transport Economist (International)				Route Network Specialist				Concessioning Specialist		Domestic	26 months	Database Designer				Management Specialist (Domestic)				Regulatory Specialist (Domestic)		Total			\$1,466,400
Consultancy Service			US \$1,466,400																																								
Details	Man months	Position																																									
International	42 months	Bus Operations Specialist (International)																																									
		Transport Economist (International)																																									
		Route Network Specialist																																									
		Concessioning Specialist																																									
Domestic	26 months	Database Designer																																									
		Management Specialist (Domestic)																																									
		Regulatory Specialist (Domestic)																																									
Total			\$1,466,400																																								

Project Code:		Bus-3																				
Implementation Schedule:	No.	Item	Responsible Organization	Year 1																		
		1	Identify purpose of training. Topics include:	NTC Consultants	■																	
		Develop Regulatory System for Concessioning																				
		Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis																				
		Develop Information System																				
		Develop Costing and Pricing System																				
		Develop Clear Understanding of Concessioning																				
		Develop Understanding of Route Network Design																				
		Develop Timetabling System																				
	2	Conduct needs assessment	Consultants	■	■																	
	3	Develop methodology for training	Consultants																			
	4	Develop training curriculum and materials	Consultants		■	■																
	5	Conduct training	Consultants			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Project Code:	Bus-4
Project Name:	Strengthening of SLTB on Operations/Management
Project Description:	<p>As has been indicated in each previous study, it is necessary to continue to increase the knowledge capacity of SLTB. Knowledge capacity means ensuring that groups of people are educated on certain topics, not just 1 or 2 individuals, to insure that knowledge is retained within the organization, even if some people leave. Using an approach of both sending topical experts to an organization for an extensive period of time and tying capacity building to other projects in order to have concrete objectives, the following topics are proposed for capacity building:</p> <ul style="list-style-type: none"> • Develop Strategy (Short, Medium, and Long-Term) Strategy Although perhaps too large to handle completely through capacity building, SLTB needs to clarify and work towards implementing a clear strategy for improving their services and standing in the sector. This is especially relevant with the implementation of concessioning, competition for the route will be the standard, as well as creating exclusive routes (as opposed to shared routes). • Develop Marketing Plan Along with a strategy, a marketing plan should be created to advertise changes to SLTB and let riders know what they can expect. Marketing could also be used to discuss potential changes with politicians and other decision-makers. • Develop Costing System Although in its preamble, the SLTB Act #27 (2005) requires cost effective transport services; however, the government appears to have created a policy that SLTB does not need to implement fare increases. Therefore, it is necessary to develop a clear method of costing operations and assets in order to ensure that SLTB receives sufficient government subsidies (since costs are not recovered at the farebox) to ensure safe and effective operations, while also performing necessary maintenance. • Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis As both Bus-1 and Bus-2 require surveys, increasing the capacity of identifying data needs, creating surveys, and analyzing the results will be necessary. • Develop Crew and Vehicle Assignment and Maintenance Methodology/Skills To make the organization more efficient, a more standardized methodology for crew and vehicle assignment, as well as vehicle maintenance should be created and implemented. • Develop Clear Understanding of Concessioning Implementing concessions is a fundamental step in improving the public transport system in Colombo. As indicated in Bus-1, there is a clear lack of understanding with regards to concessions, both from a strategic perspective, as well as an implementation perspective. This part of capacity building would help SLTB to plan their strategy, with concessioning as the policy framework. This could also help them assess routes which they are likely to be able to provide service on (i.e. reduce the number that they are spread thinly on and target specific routes.) This ties to Bus-1. • Develop Human Resources Management This topic does not tie to any particular project, but serves to increase the ability to manage staff at SLTB. The State Enterprise Management Agency (SEMA) could be utilized where possible, especially with regards to general management, human resources, and marketing. • Modernize Crew Training Crew training is outdated (i.e. being taught the use of hand signals) and SLTB has requested assistance in modernizing the crew training topics and documents. <p>SLTB is already considering upgrading their crew training facility at Angulana (outside Moratuwa) and shifting the crew training to Kalutara. SLTB is in the process of hiring a Training Manager to oversee the training facilities and courses.</p>

Project Code:	Bus-4			
Anticipated Tasks:	<ul style="list-style-type: none"> Identify training topics Identify training course attendees (i.e. not individuals, but levels, backgrounds) Develop training materials Conduct train-the-trainer so that there are knowledgeable in-house individuals who can conduct the training. Give training courses Create repetitive training schedule for new hires (every 6 months?), as well as training schedule for current employees to update skills 			
Anticipated Timeframe:	1 year			
Linked Projects:	Technical Assistance for Franchising Methodology and Implementing Pilot Project Project to Increase Intermodal and Intramodal Coordination by Timetable Creation, Implementation, and Enforcement			
Benefits:	<ul style="list-style-type: none"> Capacity building tied to other projects Goal/objective focused Build capacity of professional management of SLTB bus operations Clarify strategy of organization Develop marketing and customer-centric skills Long-term nature extends likelihood of success Improve SLTB levels of service Increase understanding of strategy behind and implementation of concessioning Increase understanding of operational costs Increase asset and resource utilization through better understanding of bus and crew scheduling Increase likelihood of demand responsive bus services Increase crew knowledge of current driving skills 			
Impacts:	Social Impact?	Low	Environmental Impact?	Low
Construction Impacts:	None			
Implementation Risks:	<ul style="list-style-type: none"> Limited long-term sustainability of capacity building Lack of interest in capacity building by some bureaucrats and officials 			
Implementation Agency:	SLTB <p>Notes: ——— Control/Partnership - - - Consultation</p>			
Anticipated Costs:	Consultancy Service			US \$1,937,000
	Details	Man months	Position	
		44 months	Bus Maintenance Specialist Transport Policy Specialist Concessioning Specialist Transport Economist (International)	
	Domestic	30 months	Bus Operations Specialist (Domestic) Database Designer/Analyst (Domestic) Management Specialist (Domestic)	
	Total			\$1,937,000

Project Code:		Bus-4																					
Implementation Schedule:	No.	Item	Responsible Organization	Year 1																			
	1	Identify purpose of training. Topics include:	SLTB Consultants	■																			
		Develop Strategy (Short, Medium, and Long-Term) Strategy																					
		Developing Marketing Plan																					
		Develop Costing System																					
		Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis																					
		Develop Crew and Vehicle Assignment and Maintenance Methodology/Skills																					
		Develop Clear Understanding of Concessioning																					
		Develop Human Resources Management																					
		Modernize Crew Training																					
	2	Conduct needs assessment	Consultants	■	■																		
	3	Develop methodology for training	Consultants	■	■																		
	4	Develop training curriculum and materials	Consultants	■	■	■																	
5	Conduct training	Consultants	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

Project Code:	Bus-5
Project Name:	Develop a Training Center at Western Province Road Passenger Transport Authority and Undertake Strengthening of WPRPTA (Transport Planning and Operations/Management), Private Bus Owners/Operators (Operations/Management), and Crew (Discipline, Road Rules, Operations)
Project Description:	<p>As has been indicated in each previous study, it is necessary to continue to increase the knowledge capacity of WPRPTA. Knowledge capacity means ensuring that groups of people are educated on certain topics, not just 1 or 2 individuals, to insure that knowledge is retained within the organization, even if some people leave. Using an approach of both sending topical experts to an organization for an extensive period of time and tying capacity building to other projects in order to have concrete objectives, the following topics are proposed for capacity building.</p> <p>WPRPTA has put forth a proposal to develop a training center to train bus crews, such as what is done at SLTB. Only bus crews that passed the training could then be eligible to be drivers/conductors on private buses operating in WP. The Study Team believes that this training center should be expanded to include training facilities for WPRPTA staff and private bus owners/operators.</p> <p><u>Strengthening of WPRPTA Staff</u></p> <ul style="list-style-type: none"> • Develop Human Resources Management This topic does not tie to any particular project, but serves to increase the ability to manage staff at WPRPTA. • Develop Clear Understanding of Concessioning Implementing concessions is a fundamental step in improving the public transport system in Colombo. As indicated in Bus-1, there is a clear lack of understanding with regards to concessions, both from a strategic perspective, as well as an implementation perspective. This part of capacity building would initially hold general meetings to explain the strategic benefits of concessioning, as well as work with WPRPTA to lay the groundwork necessary for concessioning. This ties to Bus-1. • Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis As both Bus-1 and Bus-2 require surveys, increasing the capacity of identifying data needs, creating surveys, and analyzing the results will be necessary. • Develop Information System Having time series data helps improve planning abilities, as the data is readily available, not simply an estimate of what bureaucrats think is the current state. Additionally, currently, there is data, but it is rarely computerized and stored for general use. Having access to this information will clarify if/when changes should occur and will assist in creating a quantitative case for changes, which should help to deflect the external interference. This ties to Bus-1 and Bus-2. • Develop Marketing Plan Along with a strategy, a marketing plan should be created to advertise changes to the provision of bus services in WP. Marketing could also be used to discuss potential changes with politicians and other decision-makers. • Incorporate Intermodalism, including Intermodal Centers (once developed) Incorporating intermodalism is critical to providing a complete public transport system. As intermodal centers are on the High Priority List, it is necessary for WPRPTA to work with UDA to insure that the facilities provide for all modes. This includes insuring enough bus parking facilities (for operating and stand-by buses), waiting areas, and providing timetables and passenger information. This ties to Intermodal Center Development (Road-49 and Road-50), as well as Bus-2. • Develop Understanding of Route Network Design As part of Bus-1, the route network is expected to be rationalized. Although urban bus routes are the responsibility of WPRPTA, capacity is limited and NTC will be expected to assist. Therefore, a clear understanding of Route Network Design, including the software used, will be the focus of this training. This ties to Bus-1.

Project Code:	Bus-5		
	<ul style="list-style-type: none"> • Create Service Level Improvements (i.e. Timetables) <p>In reference to the development to timetables in Bus-2, further assistance will be given to increase the intermodal focus of timetable development, as currently, timetables are developed individually, without consideration of other modes or other bus routes.</p> <p><u>Strengthening of Private Bus Owners/Operators</u> Training sessions and general workshops should be provided during the specialists tenures that focus on the benefits of concessioning, route rationalization, and timetabling, as well as the basic methodology behind it (to demonstrate transparency). Additional assistance can be provided in corporatization during concessioning. This relates strongly to Bus-1 and Bus-2.</p> <p><u>Strengthening of Private Bus Crews</u> NTC is currently undertaking a 2-day training program for private crews. WPRPTA would like to improve on that to provide longer training sessions, as well as create a database system to record who has successfully completed the training course(s), as this will be necessary for concessioning.</p>		
Anticipated Tasks:	<ul style="list-style-type: none"> • Select and obtain the premises for the Crew Training School (WPRPTA has selected a site at the Malabe Bus Station, which is owned by WPRPTA) • Recruit crew trainers (permanent or part time, or on assignment) • Assign staff to operate the training school • Identify training topics • Identify training course attendees (i.e. not individuals, but levels, backgrounds) • Develop training materials • Purchase training equipment (i.e. 2 buses for hands on training for drivers/conductors) • Market training activities to private bus owners/operators and private bus crew • Give training courses • Create database of crews, owners/operators, and WPRPTA staff to record classes successfully completed. 		
Anticipated Timeframe:	1 year		
Linked Projects:	<p>Technical Assistance for Concessioning Methodology and Implementing Pilot Project to Increase Intermodal and Intramodal Coordination by Timetable Creation, Implementation, and Enforcement</p> <p>Strengthening of National Transport Commission on Transport Planning and Operations/Management</p>		
Benefits:	<ul style="list-style-type: none"> • Capacity building tied to other projects • Goal/objective focused • Long-term nature extends likelihood of success • (WPRPTA) Increase the likelihood of professional regulation of bus operations in the province • (WPRPTA) Provide broader management outlook • (WPRPTA) Develop marketing and customer-centric focus • (WPRPTA) Increase quantitative skills • (WPRPTA) Increase understanding of strategy behind and implementation of concessioning • (WPRPTA) Develop understanding of transport planning, including timetabling and route network design • (WPRPTA) Enhanced capacity to withstand regulatory interference • (Owners and crew) Potential for higher level of service and more professional management • (Owners) Improve operator knowledge and understanding of the sector and how it works • (Owners) Improve operator knowledge of what they can do to facilitate improvements to their bottom line and the provision of service, perhaps leading to less buses on the road and lower congestion • (Owners) Availability of a pool of trained crew • (Crew) Better discipline and driving ability, leading to less accidents and increased safety of passengers • (Crew) Increased satisfaction of employment by crew members as, with the certification, they may be treated better by passengers • (Passengers) Higher level of satisfaction with public transport services 		
Impacts:	Social Impact?	None	Environmental Impact? None

Project Code:	Bus-5																																																			
Construction Impacts:	None																																																			
Implementation Risks:	<ul style="list-style-type: none"> • (WPRPTA) Disinterest of management and lack of political will to put this together and continue its implementation • (Owners and Crew) Lack of incentives and requirement to pay to attend training could result in low attendance • (Owners and Crew) Opposition to training due to individual nature of industry and the loss of crew for 2 weeks during training • (Owners and Crew) Unclear knowledge of audience (i.e. education level and previous knowledge) may make training more difficult 																																																			
Implementation Agency:	<p>WPRPTA</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">Project to Develop a Training Center at Western Province Road Passenger Transport Authority</p> <pre> graph TD WPRPTA --- WP_MoT[WP MoT] WPRPTA --- MoPCLG[MoPCLG] WPRPTA --- Consultants[Consultants] WPRPTA -.- NTC[NTC] WPRPTA -.- Traffic_Police[Traffic Police] WPRPTA -.- Private_Bus[Private Bus Owners/Operators] </pre> <p>Notes: ——— Control/Partnership - - - Consultation</p> </div>																																																			
Anticipated Costs:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><i>Strengthening WPRPTA Staff</i></td> <td style="text-align: right;">\$1,513,200</td> </tr> <tr> <td>Bus Operations Specialist (International)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Bus Operations Specialist (Domestic)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Concessioning Specialist (International)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Database Designer (Domestic)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Management Specialist (Domestic)</td> <td style="text-align: center;">8</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Human Resource Specialist (Domestic)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Transport Economist (International)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Route Network Specialist (International)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td colspan="3">No extra costs, as classes and meetings should be given while the above specialists are in Sri Lanka</td> </tr> <tr> <td colspan="2"><i>Strengthening of Private Bus Crews</i></td> <td style="text-align: right;">\$218,060</td> </tr> <tr> <td>Lease Bus (2)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Training Specialist (International)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Trainer (2)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Fuel (2)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Lecturer (2)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Program Total</td> <td></td> <td style="text-align: right;">\$1,731,260</td> </tr> </table>	<i>Strengthening WPRPTA Staff</i>		\$1,513,200	Bus Operations Specialist (International)	12	Month	Bus Operations Specialist (Domestic)	12	Month	Concessioning Specialist (International)	12	Month	Database Designer (Domestic)	12	Month	Management Specialist (Domestic)	8	Month	Human Resource Specialist (Domestic)	6	Month	Transport Economist (International)	6	Month	Route Network Specialist (International)	12	Month	No extra costs, as classes and meetings should be given while the above specialists are in Sri Lanka			<i>Strengthening of Private Bus Crews</i>		\$218,060	Lease Bus (2)	12	Month	Training Specialist (International)	6	Month	Trainer (2)	12	Month	Fuel (2)	12	Month	Lecturer (2)	12	Month	Program Total		\$1,731,260
<i>Strengthening WPRPTA Staff</i>		\$1,513,200																																																		
Bus Operations Specialist (International)	12	Month																																																		
Bus Operations Specialist (Domestic)	12	Month																																																		
Concessioning Specialist (International)	12	Month																																																		
Database Designer (Domestic)	12	Month																																																		
Management Specialist (Domestic)	8	Month																																																		
Human Resource Specialist (Domestic)	6	Month																																																		
Transport Economist (International)	6	Month																																																		
Route Network Specialist (International)	12	Month																																																		
No extra costs, as classes and meetings should be given while the above specialists are in Sri Lanka																																																				
<i>Strengthening of Private Bus Crews</i>		\$218,060																																																		
Lease Bus (2)	12	Month																																																		
Training Specialist (International)	6	Month																																																		
Trainer (2)	12	Month																																																		
Fuel (2)	12	Month																																																		
Lecturer (2)	12	Month																																																		
Program Total		\$1,731,260																																																		

Project Code:		Bus-5																						
Implementation Schedule:	No.	Item	Responsible Organization	Year 1																				
		1	Identify purpose of training. Topics include:	WPRPTA Consultants	■																			
		Develop Human Resources Management																						
		Develop Clear Understanding of Concessioning																						
		Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis																						
		Develop Information System																						
		Develop Marketing Plan																						
		Incorporate Intermodalism, including Intermodal Centers (once developed)																						
		Develop Understanding of Route Network Design																						
		Create Service Level Improvements (i.e. Timetables)																						
		Strengthening of Private Bus Owners/Operators																						
		Strengthening of Private Bus Crews																						
		2	Conduct needs assessment	Consultants	■	■																		
		3	Develop methodology for training	Consultants	■																			
		4	Develop training curriculum and materials	Consultants	■	■																		
		5	Conduct training	Consultants	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Project Code:	Rail-3
Project Name:	Strengthening of Sri Lank Railways on Management and Operations and Development of Strategic Business Unit
Project Description:	<p>As has been indicated in each previous study, it is necessary to continue to increase the knowledge capacity of SLR. Knowledge capacity means ensuring that groups of people are educated on certain topics, not just 1 or 2 individuals, to insure that knowledge is retained within the organization, even if some people leave. Using an approach of both sending topical experts to an organization for an extensive period of time and tying capacity building to other projects in order to have concrete objectives, the following topics are proposed for capacity building:</p> <ul style="list-style-type: none"> • Develop Costing System: As the government appears to have created a policy that SLR will keep fares low as a social good, it is necessary to develop a clear method of costing operations and assets in order to ensure that SLR receives sufficient government subsidies (since costs are not recovered at the farebox) to ensure safe and effective operations, while also performing necessary maintenance. This is connected to Rail-1 and Rail-2, as well as Bus-2. • Create Operational Improvements (i.e. Timetables) With the purchase of 15 additional diesel multiple units (DMUs), to be delivered within the next 3 years, SLR will be better equipped to maximize the capacity of the railway. In order to do this, timetables should be updated to take this into account. Additionally, with the development of the Intermodal Centers, the timetables should be developed with these centers in mind. This ties into Bus-2, as well as Intermodal Center Development (Road-49 and Road-50) • Improve Use of Intermodal Centers (once developed) As these centers are on the High Priority List, it is necessary for SLR to engage with UDA to improve the overall station facilities to make way for intermodal centers. This includes improving frontage areas to allow for bus stops, increasing waiting areas, providing timetables and passenger information. This ties to Intermodal Center Development (Road-49 and Road-50), as well as Bus-2. • Develop Maintenance Plan for Rehabilitated Rail (Rail-1 and Rail-2) In conjunction with the investment in rehabilitation of rail siding, facilities, signaling, and communications, international consultants will work with SLR to develop a clear maintenance plan, schedule, and estimate of costs (to be used above in the costing system) to ensure that the assets usable life is maximized. This ties to Rail-1 and Rail-2. • Improve Data Collection and Analysis Skills and Develop an Information System Data collection and analysis is critical to insuring the efficient running of SLR. Currently, there is substantial data, but it is rarely computerized and stored for general use. Additionally, there is low capacity for analyzing the data to make a case for additional improvements or changes to the system. This would tie into Bus-2 and Road-49 and Road-50 to improve intermodal coordination, although it would be used to generally improve the state of SLR. • Develop Human Resources Management This topic does not tie to any particular project, but serves to increase the ability to manage staff of SLR, including trade unions. Trade union representatives should also be included where possible so that they can understand the current issues, viable future directions of SLR, and what the unions can do to assist the transformation. The State Enterprise Management Agency (SEMA) could be utilized where possible, especially with regards to general management knowledge and integration of private sector practices into the public sector. A Strategic Business Unit should be created with the purpose of implementing the knowledge gained in the training, specifically drafting new legal framework, identifying pilot projects for progressive policies, developing marketing campaign(s), etc. Training of SLR management should also include utilizing other national railways, specifically

Project Code:	Rail-3				
	those in nearby countries such as India. Sending management to training courses at the Indian Railway Staff College (RITES), which has classes for non-Indian railway professionals, would be beneficial to learn other methods and broaden the outlook of SLR management. The most recent schedule can be found here (http://itec.nic.in/finalmea.pdf). Classes include management development courses, courses for various engineers (mechanical, civil, electrical, and signaling and telecommunications), as well as commercial management and train operations and management. It is recommended that SLR senior officials be sent for either the Management Development Program (5 weeks), Advanced Management Program (5 weeks), Commercial Management (9 weeks), or the Train Operations and Management (14 weeks) courses.				
Anticipated Tasks:	<ul style="list-style-type: none"> • Identify management team and structure for training center • Identify training topics • Identify training course attendees (i.e. not individuals, but levels, backgrounds) • Develop training materials • Give training courses • Conduct train-the-trainer so that there are knowledgeable in-house individuals who can conduct the training. • Create repetitive training schedule for new hires (every 6 months?), as well as training schedule for current employees to update skills • Develop Strategic Business Unit and schedule of tasks for implementation • Create a sustainable training program with Indian Railways, both through training at their Railway College, as well as by working closely for 1-3 months in India with a counterpart 				
Anticipated Timeframe:	1 year				
Linked Projects:	Technical Assistance to Develop Long-Term Strategic Plan and Framework for SLR Project to Increase Intermodal and Intramodal Coordination between Bus Sector and SLR Rehabilitation of Rail Siding, Signaling, and Communications Systems of SLR				
Benefits:	<ul style="list-style-type: none"> • Result in a better understanding of rail operation and maintenance costs • Maintenance plan to insure the lifetime of the assets being rehabilitated • Development of information system(s) to enable data processing and analysis • Stronger, more informed management 				
Impacts:	<table border="1"> <tr> <td>Social Impact?</td> <td>Low</td> <td>Environmental Impact?</td> <td>Low</td> </tr> </table>	Social Impact?	Low	Environmental Impact?	Low
Social Impact?	Low	Environmental Impact?	Low		
Construction Impacts:	None				
Implementation Risks:	<ul style="list-style-type: none"> • If upper management is not engaged and supportive of capacity building, it will be unlikely that the training will have an impact • Limited availability of SLR funds for setting up a sustainable training system • Limited number of qualified individuals to train • Difficulty in working with trade unions 				
Implementation Agency:	<p>SLR</p> <div style="text-align: center;"> <pre> graph TD MoRT[MoRT] --- SLR[SLR] SLR --- Consultants[Consultants/Contractor] </pre> <p>Institutional Strengthening of Sri Lanka Railways</p> <p>MoRT</p> <p>SLR</p> <p>Consultants/ Contractor</p> <p>Notes: Control/Partnership Consultation</p> </div>				

Project Code:	Rail-3																																																																																																																						
Anticipated Costs:	<i>Training</i>			\$2,527,200																																																																																																																			
	Rail Management Specialist (Domestic)	12	months																																																																																																																				
	Rail Financial Specialist (International)	12	months																																																																																																																				
	Rail Financial Specialist (Domestic)	12	months																																																																																																																				
	Information Specialist (with rail experience) (International)	12	months																																																																																																																				
	HR Specialist (experience in unions) (International)	12	months																																																																																																																				
	HR Specialist (experience in unions) (Domestic)	12	months																																																																																																																				
	Rail Maintenance Specialist (International)	12	months																																																																																																																				
	Rail Maintenance Specialist (Domestic)	12	months																																																																																																																				
	Rail Operations Specialist (International) (intermodal, timetables, surveys)	12	months																																																																																																																				
	Rail Planning Specialist	12	months																																																																																																																				
	<i>Strategic Business Unit</i>			\$1,357,200																																																																																																																			
	Project Director (Domestic)	12	months																																																																																																																				
	Institutional Specialist (International)	12	months																																																																																																																				
	Institutional Specialist (Domestic)	12	months																																																																																																																				
	Legal and Regulatory Specialist (International)	12	months																																																																																																																				
	Legal and Regulatory Specialist (Domestic)	12	months																																																																																																																				
	Rail Planning Specialist (International)	12	months																																																																																																																				
	Rail Planning Specialist (Domestic)	12	months																																																																																																																				
	<i>Overseas Training</i>			\$128,700																																																																																																																			
Class in Management Development Program (assuming 5 week class)	4	People																																																																																																																					
Attendance Costs (assuming 5 week class)	4	People																																																																																																																					
Class in Train Operations and Management (assuming 14 week class)	4	People																																																																																																																					
Attendance Costs (assuming 14 week class)	4	People																																																																																																																					
Program Total			\$4,013,100																																																																																																																				
Implementation Schedule:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 45%;">Item</th> <th style="width: 15%;">Responsible Organization</th> <th style="width: 15%;">Year 1</th> <th style="width: 15%;">Year 2</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;"><i>Internal Training</i></td> </tr> <tr> <td>1</td> <td>Identify purpose of training. Topics include:</td> <td>SLR Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td></td> <td>Develop Costing System</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Create Operational Improvements (i.e. Timetables)</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Improve Use of Intermodal Centers (once developed)</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Development of Maintenance Plan for Rehabilitated Rail (Rail-1 and Rail-2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Development of Information System</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Development of Human Resources Management</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Conduct needs assessment</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>3</td> <td>Develop methodology for training</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>4</td> <td>Develop training curriculum and materials</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>5</td> <td>Conduct training</td> <td>Consultants</td> <td style="background-color: #92d050;">████████████████████</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: center;"><i>Overseas Training</i></td> </tr> <tr> <td>8</td> <td>Research training offerings at Indian Railways</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td style="background-color: #92d050;">█</td> </tr> <tr> <td>9</td> <td>Identify individuals for training classes</td> <td>SLR</td> <td style="background-color: #92d050;">█</td> <td style="background-color: #92d050;">█</td> </tr> <tr> <td>10</td> <td>Work with Indian Railways to organize a repetitive course where SLR management works closely with IR</td> <td>SLR</td> <td style="background-color: #92d050;">████████</td> <td style="background-color: #92d050;">████████</td> </tr> <tr> <td></td> <td>management in India to share experiences</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td style="background-color: #92d050;">█</td> </tr> <tr> <td colspan="5" style="text-align: center;"><i>Strategic Business Unit</i></td> </tr> <tr> <td>1</td> <td>Develop internal documentation to develop SBU</td> <td>SLR Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>2</td> <td>Identify goals and timeline of SBU</td> <td>Consultants</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>3</td> <td>Appoint SLR management to SBU</td> <td>SLR</td> <td style="background-color: #92d050;">█</td> <td></td> </tr> <tr> <td>4</td> <td>Develop and Implement Pilot Projects</td> <td>SLR</td> <td style="background-color: #92d050;">████████████████████</td> <td></td> </tr> </tbody> </table>				No.	Item	Responsible Organization	Year 1	Year 2	<i>Internal Training</i>					1	Identify purpose of training. Topics include:	SLR Consultants	█			Develop Costing System					Create Operational Improvements (i.e. Timetables)					Improve Use of Intermodal Centers (once developed)					Development of Maintenance Plan for Rehabilitated Rail (Rail-1 and Rail-2)					Development of Information System					Development of Human Resources Management				2	Conduct needs assessment	Consultants	█		3	Develop methodology for training	Consultants	█		4	Develop training curriculum and materials	Consultants	█		5	Conduct training	Consultants	████████████████████		<i>Overseas Training</i>					8	Research training offerings at Indian Railways	Consultants	█	█	9	Identify individuals for training classes	SLR	█	█	10	Work with Indian Railways to organize a repetitive course where SLR management works closely with IR	SLR	████████	████████		management in India to share experiences	Consultants	█	█	<i>Strategic Business Unit</i>					1	Develop internal documentation to develop SBU	SLR Consultants	█		2	Identify goals and timeline of SBU	Consultants	█		3	Appoint SLR management to SBU	SLR	█		4	Develop and Implement Pilot Projects	SLR	████████████████████	
No.	Item	Responsible Organization	Year 1	Year 2																																																																																																																			
<i>Internal Training</i>																																																																																																																							
1	Identify purpose of training. Topics include:	SLR Consultants	█																																																																																																																				
	Develop Costing System																																																																																																																						
	Create Operational Improvements (i.e. Timetables)																																																																																																																						
	Improve Use of Intermodal Centers (once developed)																																																																																																																						
	Development of Maintenance Plan for Rehabilitated Rail (Rail-1 and Rail-2)																																																																																																																						
	Development of Information System																																																																																																																						
	Development of Human Resources Management																																																																																																																						
2	Conduct needs assessment	Consultants	█																																																																																																																				
3	Develop methodology for training	Consultants	█																																																																																																																				
4	Develop training curriculum and materials	Consultants	█																																																																																																																				
5	Conduct training	Consultants	████████████████████																																																																																																																				
<i>Overseas Training</i>																																																																																																																							
8	Research training offerings at Indian Railways	Consultants	█	█																																																																																																																			
9	Identify individuals for training classes	SLR	█	█																																																																																																																			
10	Work with Indian Railways to organize a repetitive course where SLR management works closely with IR	SLR	████████	████████																																																																																																																			
	management in India to share experiences	Consultants	█	█																																																																																																																			
<i>Strategic Business Unit</i>																																																																																																																							
1	Develop internal documentation to develop SBU	SLR Consultants	█																																																																																																																				
2	Identify goals and timeline of SBU	Consultants	█																																																																																																																				
3	Appoint SLR management to SBU	SLR	█																																																																																																																				
4	Develop and Implement Pilot Projects	SLR	████████████████████																																																																																																																				

Project Code:	3W-1
Project Name:	Strengthen the WPRPTA to Implement and Strengthen the Three-Wheeler Services Bureau and Outline Three-Wheeler Regulations
Project Description:	<p>This project will focus on assisting WPRPTA in forming a task force to implement and strengthen the Three-Wheeler Services Bureau under WPRPTA, which was created under the passed, but not implemented, Three-Wheeler Act (2002). Alternatively, if it becomes clear that the Three-Wheeler Act in its current form cannot be implemented due to strong opposition, or lack of enforcement from the Traffic Police, the task force should be tasked with drafting a new law in such a form that is passable and implementable – either by WPC or at the national level.</p> <p>As has been indicated in each previous study, it is necessary to continue to increase the knowledge capacity of WPRPTA. Knowledge capacity means ensuring that groups of people are educated on certain topics, not just 1 or 2 individuals, to insure that knowledge is retained within the organization, even if some people leave. Using an approach of both sending topical experts to an organization for an extensive period of time and tying capacity building to other projects in order to have concrete objectives, the following topics are proposed for capacity building:</p> <ul style="list-style-type: none"> • Develop Marketing System A marketing plan should be created to advertise changes to the provision of 3W services in WP. Marketing could also be used to discuss potential changes with politicians and other decision-makers. It should also be targeted at 3W drivers such that they understand what the changes are (to minimize the misunderstandings that forced the original act to be suspended). • Develop Regulatory System (only necessary if current act needs to be re-written) Depending on if new regulation is needed, a system may have to be created to support regulating 3W. In the process, the Specialists would also increase knowledge of creating regulations as a whole. • Develop General Management Knowledge As this entity will be starting from scratch, it would be worthwhile to provide general management training to the new staff members. The State Enterprise Management Agency (SEMA) could be utilized where possible, especially with regards to general management, human resources, and marketing. • Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis As this project requires some simple surveys, instead of outsourcing to a university, it would be beneficial to increase the capacity of identifying data needs, create surveys, and analyze the results. • Develop Information System Having time series data helps improve planning abilities, as the data is readily available, not simply an estimate of what bureaucrats think is the current state. Additionally, currently, there is data, but it is rarely computerized and stored for general use. Having access to this information will clarify if/when changes should occur and will assist in creating a quantitative case for changes, which should help to deflect the external interference. This ties to Bus-1 and Bus-2. • Develop Driving Training System Unsafe driving is common among 3W drivers, owing somewhat to illiteracy which precludes them from passing the written drivers test. As part of the new 3W organization, training should be provided, with in-vehicle practice, to improve driving skills. Depending on the outcome of regulating the school van drivers, they can also be included in the driver training courses to educate them on road rules (or separate school van only classes can be created).

Project Code:	3W-1			
Anticipated Tasks:	<ul style="list-style-type: none"> • Hold open meetings with three-wheeler drivers, associations, owners, and citizens to understand concerns, interests, and risks of regulating three-wheelers (This will help decide if a new law is necessary or if the current Three-Wheeler Act can be implemented as is.) • Draft new legislation (if necessary) • Market legislation to drivers, owners, and passengers to clarify the purposes of the act and the directives/capacity of the authority • Identify and appoint staff members for authority • Identify purpose of training. Topics listed above • Conduct needs assessment • Develop methodology for training. • Develop training curriculum and materials • Conduct training 			
Anticipated Timeframe:	1-2 years (depending on if new legislation is necessary)			
Linked Projects:	None			
Benefits:	<ul style="list-style-type: none"> • Regulate three wheelers, which are currently almost entirely unregulated • Increase quantity control of three wheelers in operation • Require better driving standards via more disciplined drivers • Increase attention on three wheeler issues • Improve welfare of three wheeler industry 			
Impacts:	Social Impact?	Low, although it is possible that some three-wheeler drivers may become unemployed or employment as a three-wheeler driver may not be as easy as it is now	Environmental Impact?	Low
Construction Impacts:	Low – depending on where/how many three-wheeler stands are constructed			
Implementation Risks:	<ul style="list-style-type: none"> • Lack of political will-the WP Council passed the Three-Wheeler Act in 2002, but it was not implemented due to court cases. • Policy inconsistencies • If not marketed well, possibility of implementation is quite low 			
Implementation Agency:	<p>WPRPTA</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">Strengthening of WPRPTA to Implement and Strengthen Three-Wheeler Services Bureau</p> <pre> graph TD WP_MoT[WP MoT] --- MoPCLG[MoPCLG] WP_MoT --- WPRPTA[WPRPTA] WPRPTA --- Consultants[Consultants] GoSL[GoSL Entities to Be Consulted - Department of Motor Traffic - Traffic Police] -.- WPRPTA Other[Other Entities to Be Consulted - Three-Wheeler Owners/ Drivers] -.- WPRPTA </pre> </div> <p>Notes: ——— Control/Partnership - - - Consultation</p>			

Project Code:	3W-1																																																																			
Anticipated Costs:	<i>Consulting Services</i>		\$696,800																																																																	
	Management Specialist (Domestic)	12	Month																																																																	
	Management Specialist (International)	12	Month																																																																	
	Transport Specialist (Domestic)	12	Month																																																																	
	Regulatory Specialist (Domestic)	5	Month																																																																	
	Regulatory Specialist (International)	5	Month																																																																	
	Database Designer (Domestic)	8	Month																																																																	
	<i>Other Costs</i>		\$16,900																																																																	
	Survey	2	Survey																																																																	
	Computer, Database Software	1	Unit																																																																	
	<i>Strengthening of Private Bus Crews</i>		\$211,883																																																																	
	Purchase Three-Wheeler (2)	2	Vehicle																																																																	
	Training Specialist (International)	6	Month																																																																	
	Trainer (2)	12	Month																																																																	
	Fuel (2)	12	Month																																																																	
Lecturer (2)	12	Month																																																																		
Program Total		\$925,583																																																																		
Implementation Schedule:	<table border="1"> <thead> <tr> <th>No.</th> <th>Item</th> <th>Responsible Organization</th> <th>Year 1</th> <th>Year 2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Hold open meetings with three-wheeler drivers, associations, owners, politicians, and citizens to understand concerns, interests, and risks.</td> <td>WPRPTA Consultants</td> <td>■</td> <td></td> </tr> <tr> <td colspan="5"><i>If new regulation needed</i></td> </tr> <tr> <td>2</td> <td>Assist WPRPTA in drafting new legislation</td> <td>WPRPTA Consultants</td> <td>■</td> <td></td> </tr> <tr> <td>3</td> <td>Pass and gazette new legislation</td> <td>WPC</td> <td></td> <td>■</td> </tr> <tr> <td>4</td> <td>Market legislation to drivers, owners, and passengers to clarify the purposes of the act and the directives/capacity of the authority</td> <td>WPRPTA Consultants</td> <td>■</td> <td></td> </tr> <tr> <td colspan="5"><i>If new regulation not needed or after legislation passed</i></td> </tr> <tr> <td>5</td> <td>Identify and appoint staff members for organization (this can start earlier if new regulation not needed)</td> <td>WPRPTA</td> <td>■</td> <td></td> </tr> <tr> <td>6</td> <td>Identify purpose of training. Topics include: Develop Marketing Plan Develop General Management Knowledge Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis Develop Information System Develop Driving Training System</td> <td>WPRPTA Consultants</td> <td>■</td> <td></td> </tr> <tr> <td>7</td> <td>Conduct needs assessment</td> <td>Consultants</td> <td>■</td> <td></td> </tr> <tr> <td>8</td> <td>Develop methodology for training</td> <td>Consultants</td> <td>■</td> <td></td> </tr> <tr> <td>9</td> <td>Develop training curriculum and materials</td> <td>Consultants</td> <td>■</td> <td></td> </tr> <tr> <td>10</td> <td>Conduct training</td> <td>Consultants</td> <td>■</td> <td>■</td> </tr> </tbody> </table>			No.	Item	Responsible Organization	Year 1	Year 2	1	Hold open meetings with three-wheeler drivers, associations, owners, politicians, and citizens to understand concerns, interests, and risks.	WPRPTA Consultants	■		<i>If new regulation needed</i>					2	Assist WPRPTA in drafting new legislation	WPRPTA Consultants	■		3	Pass and gazette new legislation	WPC		■	4	Market legislation to drivers, owners, and passengers to clarify the purposes of the act and the directives/capacity of the authority	WPRPTA Consultants	■		<i>If new regulation not needed or after legislation passed</i>					5	Identify and appoint staff members for organization (this can start earlier if new regulation not needed)	WPRPTA	■		6	Identify purpose of training. Topics include: Develop Marketing Plan Develop General Management Knowledge Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis Develop Information System Develop Driving Training System	WPRPTA Consultants	■		7	Conduct needs assessment	Consultants	■		8	Develop methodology for training	Consultants	■		9	Develop training curriculum and materials	Consultants	■		10	Conduct training	Consultants	■	■
No.	Item	Responsible Organization	Year 1	Year 2																																																																
1	Hold open meetings with three-wheeler drivers, associations, owners, politicians, and citizens to understand concerns, interests, and risks.	WPRPTA Consultants	■																																																																	
<i>If new regulation needed</i>																																																																				
2	Assist WPRPTA in drafting new legislation	WPRPTA Consultants	■																																																																	
3	Pass and gazette new legislation	WPC		■																																																																
4	Market legislation to drivers, owners, and passengers to clarify the purposes of the act and the directives/capacity of the authority	WPRPTA Consultants	■																																																																	
<i>If new regulation not needed or after legislation passed</i>																																																																				
5	Identify and appoint staff members for organization (this can start earlier if new regulation not needed)	WPRPTA	■																																																																	
6	Identify purpose of training. Topics include: Develop Marketing Plan Develop General Management Knowledge Develop Analytical/Quantitative Skills in form of Surveys and Data Analysis Develop Information System Develop Driving Training System	WPRPTA Consultants	■																																																																	
7	Conduct needs assessment	Consultants	■																																																																	
8	Develop methodology for training	Consultants	■																																																																	
9	Develop training curriculum and materials	Consultants	■																																																																	
10	Conduct training	Consultants	■	■																																																																

Project Code:	Road 48		
Project Name:	Capacity Development for Colombo Municipal Council's (CMC) Drainage and Road Maintenance		
Project Description:	This project aims to improve CMC's capacity in drainage and road surface maintenance in order to secure the free flow and minimize flooding that result in traffic jams. This is especially severe in the rainy season when major intersections are closed for long periods of time due to flooding. The main reason for flooding is a lack of surface maintenance and insufficient drainage capacity. Secondary factors include an increase in paved area and a lack of a master plan (i.e., the CMC master plan for drainage has not been updated since the 1970s).		
Anticipated Tasks:	<p>This project will be divided into three stages:</p> <p>Study and planning: Conduct a comprehensive needs assessment for road and drainage maintenance. Note that the CMC has already identified several intersections experiencing frequent flooding. These experts will also prepare an action program for capacity development, routine maintenance work, and training.</p> <p>Implementation and evaluation: Provide equipment to improve the efficiency of routine and urgent maintenance, which will be used to carry out action programs to improve major intersections with low draining capacity. Monitor and evaluate the execution of these action programs.</p> <p>Master plan preparation: Prepare terms of reference for a drainage master plan and coordinate its initial implementation.</p>		
Anticipated Timeframe:	Project to be completed in three years.		
Linked Projects:	Intersection improvement.		
Benefits:	Reduction in urban travel time. Reduction in traffic accidents.		
Impacts:	Social Impact?	None	Environmental Impact? None
Construction Impacts:	Minor disturbance to traffic during construction.		
Implementation Risks:	Coordination with UDA (Urban Development Authority).		
Implementation Agency:	CMC (Drainage Department) with technical assistance provided by donor agency. <div style="text-align: center; border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> graph TD CMC[CMC] --- Drainage[Drainage Dept.] CMC --- Engineering[Engineering Dept.] Drainage -.-> Consultants[Consultants] Engineering -.-> Consultants </pre> </div>		
Anticipated Costs:	International experts for drainage planning (14 MM), drainage maintenance (12 MM), and design of training program (12 MM): Local consultants for coordinating training program (24MM), drainage maintenance (12 MM): Cost for maintenance equipment: Asphalt Laying equipment 3.048 million USD Precast Production Unit 0.371 million USD Work Equipment 0.583 million USD Road Maintenance Unit 2.376 million USD Cost for improvements:		0.950 million USD 0.108 million USD 6.370 million USD 0.100 million USD
	Total project cost:		7.528 million USD (771 million LKR)

Project Code:	Road 48																																																																	
Implementation Schedule:	<p>The project can start immediately if funding is available (2007 to 2009) and would entail the following:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="13">Project Implementation Schedule</th> </tr> <tr> <th></th> <th colspan="3">Year 1</th> <th colspan="3">Year 2</th> <th colspan="3">Year 3</th> <th colspan="3">Year 4</th> </tr> </thead> <tbody> <tr> <td>Study tour & Equipment provision</td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Training</td> <td></td> <td></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td></td> </tr> <tr> <td>Initial work for master plan</td> <td></td> <td></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td style="background-color: #c8e6c9;"></td> <td></td> <td></td> </tr> </tbody> </table>	Project Implementation Schedule														Year 1			Year 2			Year 3			Year 4			Study tour & Equipment provision													Training													Initial work for master plan												
Project Implementation Schedule																																																																		
	Year 1			Year 2			Year 3			Year 4																																																								
Study tour & Equipment provision																																																																		
Training																																																																		
Initial work for master plan																																																																		

Project Code:	Road 54															
Project Name:	Capacity Development for Land Acquisition of Road Projects															
Project Description:	<p>One major difficulty in road development is the lack of capacity for land acquisition. The Study Team proposes a capacity development program in order to stimulate all projects under this study. RDA's Land Division (Acquisition and Resettlement) Department was established 1986 with eight officers. It now has 40 persons, with the interest to hire another 12 officers with ADB assistance. However, there is no plan to expand the resources to enhance their daily work.</p> <p>The recent increase of land acquisition is due to increases in ADB funding for infrastructure projects. Additionally, the compensation program has become complicated. Since this study proposes projects in developed areas, the process is even longer. The study team proposes to provide equipment for daily use and a training program for land acquisition process improvement. The project includes sending several experts to an awareness development program as well as budget for training.</p>															
Anticipated Tasks:	<p>This project will be divided into three stages:</p> <ol style="list-style-type: none"> Promotion of effective land acquisition: Land acquisition methodologies will be considered from both a domestic and international context via study tours, teleconferences, and seminars. Process improvement: The awareness program contents should be improved under supervision of the experts. Implementation: The experts evaluate the program with improved process. 															
Anticipated Timeframe:	Two years.															
Linked Projects:	All RDA road development work.															
Benefits:	Improvement in effectiveness of RDA administrative process															
Impacts:	Social Impact?	None	Environmental Impact?	None												
Construction Impacts:	None.															
Implementation Risks:	(Preferable condition) Acceptance of earmarked road fund promotion by the GOSL.															
Implementation Agency:	<p>RDA, Land Division</p> <pre> graph TD MoH[MoH] --- RDA[RDA / Land Division] RDA -.-> Consultants[Consultants] MoH -.-> Consultants </pre> <p>Notes: ——— Control - - - Consultation</p>															
Anticipated Costs:	<table> <tr> <td>Cost for Trainees for Land Acquisition, Environment, Social Affairs, Awareness improvement (each for 0.5 MM; 2MM in Total):</td> <td>0.050 million USD</td> </tr> <tr> <td>Cost for program coordination and evaluation (international consultant: 1.0MM, and local consultant 2.0 MM):</td> <td>0.030 million USD</td> </tr> <tr> <td>Equipment (2 Laptop PCs, 2 Vehicles, 3 PCs, 2 Photocopy machine, 3 Digital Cameras) (if import tax will exempted):</td> <td>0.075 million USD</td> </tr> <tr> <td>Promotion work and process integration:</td> <td>0.010 million USD</td> </tr> <tr> <td>Study tour:</td> <td>0.020 million USD</td> </tr> <tr> <td>Total project cost:</td> <td>0.185 million USD (18.8 million LKR)</td> </tr> </table>				Cost for Trainees for Land Acquisition, Environment, Social Affairs, Awareness improvement (each for 0.5 MM; 2MM in Total):	0.050 million USD	Cost for program coordination and evaluation (international consultant: 1.0MM, and local consultant 2.0 MM):	0.030 million USD	Equipment (2 Laptop PCs, 2 Vehicles, 3 PCs, 2 Photocopy machine, 3 Digital Cameras) (if import tax will exempted):	0.075 million USD	Promotion work and process integration:	0.010 million USD	Study tour:	0.020 million USD	Total project cost:	0.185 million USD (18.8 million LKR)
Cost for Trainees for Land Acquisition, Environment, Social Affairs, Awareness improvement (each for 0.5 MM; 2MM in Total):	0.050 million USD															
Cost for program coordination and evaluation (international consultant: 1.0MM, and local consultant 2.0 MM):	0.030 million USD															
Equipment (2 Laptop PCs, 2 Vehicles, 3 PCs, 2 Photocopy machine, 3 Digital Cameras) (if import tax will exempted):	0.075 million USD															
Promotion work and process integration:	0.010 million USD															
Study tour:	0.020 million USD															
Total project cost:	0.185 million USD (18.8 million LKR)															

Project Code:	Road 54																																																																																																																								
Implementation Schedule:	<p>The project can start immediately if fund is available (2007-09)</p> <ul style="list-style-type: none"> • Study/Training tour + equipment provision: 2 months • Training: 4 months <p>Implementation and evaluation: 15 months</p> <table border="1"> <thead> <tr> <th colspan="24">Project Implementation Schedule</th> </tr> <tr> <th></th> <th colspan="12">Year 1</th> <th colspan="11">Year 2</th> </tr> </thead> <tbody> <tr> <td>Study tour & Equipment provision</td> <td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Training</td> <td></td><td></td><td>■</td><td>■</td><td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Implementation & Evaluation</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td></td><td></td> </tr> </tbody> </table>	Project Implementation Schedule																									Year 1												Year 2											Study tour & Equipment provision	■	■																						Training			■	■	■	■																		Implementation & Evaluation								■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Project Implementation Schedule																																																																																																																									
	Year 1												Year 2																																																																																																												
Study tour & Equipment provision	■	■																																																																																																																							
Training			■	■	■	■																																																																																																																			
Implementation & Evaluation								■	■	■	■	■	■	■	■	■	■	■	■	■	■																																																																																																				

Project Code:	Road 55				
Project Name:	Capacity Development for Road Design and Maintenance Coordination				
Project Description:	<p>In Sri Lanka, there is a lack of standards for urban road design and therefore, the standard design for intercity roads is applied. The result is that functions that are important for urban streets, including vehicle-pedestrian separation, pedestrian traffic flow, space for street furniture, etc. are not taken into account sufficiently. This results in insufficient pedestrian facilities, poor accessibility to public transport, inadequate urban landscaping, lack of barrier-free facilities, and poor coordination between utilities and street design. The purpose of this project is to develop urban road standard designs taking these and other relevant urban factors into account.</p> <p>Additionally, this capacity building project will provide technical assistance for maintenance coordination, which will help to coordinate both technical and institutional issues on maintenance work, on road site with maintenance utility companies, and road administrators in CMR. CMC and RDA are the focus of this project. This TA contains (i) meeting coordination, (ii) study tour for other countries, (iii) studies on technical coordination applicable to CMR situation, and (iv) pilot project implementation for maintenance work.</p>				
Anticipated Tasks:	<p>This project will be divided into three stages;</p> <ol style="list-style-type: none"> Needs assessment: Determine needs of design standard for urban roads and coordination between road maintenance and utility companies via a participatory approach. Preparation of measures: A study to be implemented with the assistance of local consultants on urban road design and road maintenance/utility coordination will be carried out and will include study tours. Pilot project: A pilot project implementing the new urban road design and road utility coordination method will be carried out. 				
Anticipated Timeframe:	Two years.				
Linked Projects:	All of road improvement and maintenance work in CMR area.				
Benefits:	<ul style="list-style-type: none"> Reduction in travel time in urban and suburban areas Improvement in effectiveness of RDA administrative process 				
Impacts:	<table border="1"> <tr> <td>Social Impact?</td> <td>None</td> <td>Environmental Impact?</td> <td>None</td> </tr> </table>	Social Impact?	None	Environmental Impact?	None
Social Impact?	None	Environmental Impact?	None		
Construction Impacts:	Minor disturbance to traffic during construction				
Implementation Risks:	<ul style="list-style-type: none"> Coordination with utility companies Acceptance of urban road design standard by Ministry of Highways 				
Implementation Agency:	<p>Lead Agencies: RDA and CMC. Supporting Agencies: Sri Lanka Telecom, Electricity Board, Water Supply Companies, other Utility Companies.</p> <div style="border: 2px solid black; padding: 10px; margin-top: 10px;"> <pre> graph TD MoH[MoH] --- RDA[RDA / CMC] RDA --- Consultants[Consultants] RDA -.-> Other[Other Entities to Be Consulted] subgraph Other [Other Entities to Be Consulted] direction TB SP[Service Providers] UC[Utility Companies] EB[Electricity Board] WS[Water Supply] TP[Traffic Police] LA[Local Authorities] end </pre> <p>The diagram illustrates the project's organizational structure. At the top is the Ministry of Highways (MoH), which has a solid line (Control) connecting to the Road Design and Maintenance Coordination (RDA/CMC) unit. The RDA/CMC unit is connected to Consultants by a solid line (Control). A dashed line (Consultation) connects the RDA/CMC unit to a large box labeled 'Other Entities to Be Consulted'. This box contains several entities: Service Providers, Utility Companies, Electricity Board, Water Supply, Traffic Police, and Local Authorities.</p> </div> <p>Notes: ——— Control - - - Consultation</p>				

Project Code:	Env-1		
Project Name:	Institutional Strengthening to Increase Capacity of Vehicle Inspection, Roadside Inspection, Emission Inspection, and Monitoring		
Project Description:	<p>This project has four components:</p> <p><u>Vehicle Inspection:</u> Increase capacity of personnel and provide equipment at the Commissioner of Motor Traffic (CMT) and the Traffic Police to improve the vehicle inspection system in order to reduce pollution from vehicle emission. This is necessary to improve the existing vehicle inspection programs which require inspections three inspections: (i) used vehicles tested at the port of entry; (ii) mandatory annual certificate or license issued for the vehicles by the Department of Motor Traffic based on the physical and operational condition of the vehicle; and (iii) roadside inspection by the police. The legal framework needed to implement these programs has already been established, but the equipment and the trained personnel required to carry out the inspections are inadequate.</p> <p><u>Roadside Inspections focused on Fuel Adulteration:</u> Increase capacity of personnel and provide equipment to conduct roadside inspections of fuel to control the adulteration of fuel. The equipment should be provided to the Ceylon Petroleum Corporation (CPC) and CEA and their staff should be trained.</p> <p><u>Emission and Noise Inspections:</u> Increase capacity of personnel and provide equipment to increase the emission and noise testing capabilities at CEA and the CMT.</p> <p><u>Monitoring:</u> Increase capacity of personnel and provide equipment to improve transport operational monitoring by CEA, RDA, Traffic Police, and CMT.</p>		
Anticipated Tasks:	<p><u>Vehicle inspection system</u></p> <ul style="list-style-type: none"> • Procure required equipment for vehicle inspection for CMT and Police • Train staff of CMT and police to do proper vehicle inspection <p><u>Roadside inspection of fuel</u></p> <ul style="list-style-type: none"> • Procure required equipment for testing of fuel for adulteration by CPC and CEA • Train staff of CPC and CEA to do proper testing of fuel for adulteration. <p><u>Emission and noise testing</u></p> <ul style="list-style-type: none"> • Procure required equipment for testing of vehicle emissions by CEA and CMT • Train staff of CEA and CMT to do proper testing of vehicle emissions <p><u>Transport operational monitoring</u></p> <ul style="list-style-type: none"> • Procure required equipment for monitoring of proper vehicle operations by Traffic Police and CMT • Train staff of Police and CMT to do proper monitoring of vehicle operations. 		
Anticipated Timeframe:	6 months		
Linked Projects:	None		
Benefits:	There are extensive long-term benefits with regards to building the capacity of these organizations, as they will then be able to continue the monitoring vehicle emissions in the future.		
Impacts:	Social Impact?	None	Environmental Impact? None
Construction Impacts:	None		
Implementation Risks:	None		

Project Code:	Env-1																																																																																																																																																																																																																																																																																																																	
Implementation Agency:	<div style="text-align: center;"> </div> <p>Notes: ——— Control/Partnership - - - - Consultation</p>																																																																																																																																																																																																																																																																																																																	
Anticipated Costs:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">Quantity</th> <th style="width: 10%; text-align: center;">Unit</th> </tr> </thead> <tbody> <tr> <td>Inspection Equipment</td> <td style="text-align: center;">5</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Monitoring Equipment</td> <td></td> <td></td> </tr> <tr> <td> Emission</td> <td style="text-align: center;">3</td> <td style="text-align: center;">set</td> </tr> <tr> <td> Noise</td> <td style="text-align: center;">20</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Education Materials</td> <td style="text-align: center;">20</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Environmental Specialist (Domestic)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Environmental Specialist (International)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Managing Specialist (Domestic)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">Month</td> </tr> <tr> <td>Total</td> <td></td> <td style="text-align: right;">\$709,800</td> </tr> </tbody> </table>				Quantity	Unit	Inspection Equipment	5	set	Monitoring Equipment			Emission	3	set	Noise	20	set	Education Materials	20	set	Environmental Specialist (Domestic)	6	Month	Environmental Specialist (International)	6	Month	Managing Specialist (Domestic)	6	Month	Total		\$709,800																																																																																																																																																																																																																																																																																	
	Quantity	Unit																																																																																																																																																																																																																																																																																																																
Inspection Equipment	5	set																																																																																																																																																																																																																																																																																																																
Monitoring Equipment																																																																																																																																																																																																																																																																																																																		
Emission	3	set																																																																																																																																																																																																																																																																																																																
Noise	20	set																																																																																																																																																																																																																																																																																																																
Education Materials	20	set																																																																																																																																																																																																																																																																																																																
Environmental Specialist (Domestic)	6	Month																																																																																																																																																																																																																																																																																																																
Environmental Specialist (International)	6	Month																																																																																																																																																																																																																																																																																																																
Managing Specialist (Domestic)	6	Month																																																																																																																																																																																																																																																																																																																
Total		\$709,800																																																																																																																																																																																																																																																																																																																
Implementation Schedule:	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="3">Environmental Capacity Building</th> <th colspan="12">Year 1</th> </tr> <tr> <th>No.</th> <th>Item</th> <th>Responsible Organization</th> <th colspan="12"></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Identify purpose of training. Topics include:</td> <td>Consultants</td> <td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Vehicle inspection system</td> <td>CMT, Police, Consultants</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Roadside inspection of fuel</td> <td>CEA,CPC, Consultants</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Emission and noise testing</td> <td>CEA, CMT, Consultants</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Transport operational monitoring</td> <td>Traffic Police, CMT Consultants</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2</td> <td>Conduct Needs Assessment</td> <td>Consultants</td> <td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3</td> <td>Develop methodology for training</td> <td>Consultants</td> <td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>4</td> <td>Develop training curriculum and materials</td> <td>Consultants</td> <td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5</td> <td>Conduct training</td> <td>Consultants</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Vehicle inspection system</td> <td></td> <td></td><td></td><td></td><td></td><td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Roadside inspection of fuel</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Emission and noise testing</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td> Transport operational monitoring</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>■</td><td>■</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>			Environmental Capacity Building			Year 1												No.	Item	Responsible Organization													1	Identify purpose of training. Topics include:	Consultants	■																			Vehicle inspection system	CMT, Police, Consultants																				Roadside inspection of fuel	CEA,CPC, Consultants																				Emission and noise testing	CEA, CMT, Consultants																				Transport operational monitoring	Traffic Police, CMT Consultants																			2	Conduct Needs Assessment	Consultants	■																		3	Develop methodology for training	Consultants	■	■																	4	Develop training curriculum and materials	Consultants	■	■																	5	Conduct training	Consultants																				Vehicle inspection system						■	■														Roadside inspection of fuel							■	■													Emission and noise testing								■	■												Transport operational monitoring									■	■									
Environmental Capacity Building			Year 1																																																																																																																																																																																																																																																																																																															
No.	Item	Responsible Organization																																																																																																																																																																																																																																																																																																																
1	Identify purpose of training. Topics include:	Consultants	■																																																																																																																																																																																																																																																																																																															
	Vehicle inspection system	CMT, Police, Consultants																																																																																																																																																																																																																																																																																																																
	Roadside inspection of fuel	CEA,CPC, Consultants																																																																																																																																																																																																																																																																																																																
	Emission and noise testing	CEA, CMT, Consultants																																																																																																																																																																																																																																																																																																																
	Transport operational monitoring	Traffic Police, CMT Consultants																																																																																																																																																																																																																																																																																																																
2	Conduct Needs Assessment	Consultants	■																																																																																																																																																																																																																																																																																																															
3	Develop methodology for training	Consultants	■	■																																																																																																																																																																																																																																																																																																														
4	Develop training curriculum and materials	Consultants	■	■																																																																																																																																																																																																																																																																																																														
5	Conduct training	Consultants																																																																																																																																																																																																																																																																																																																
	Vehicle inspection system						■	■																																																																																																																																																																																																																																																																																																										
	Roadside inspection of fuel							■	■																																																																																																																																																																																																																																																																																																									
	Emission and noise testing								■	■																																																																																																																																																																																																																																																																																																								
	Transport operational monitoring									■	■																																																																																																																																																																																																																																																																																																							

Project Code:	TM-17																																																																								
Project Name:	Capacity Building of CMC and RDA																																																																								
Project Description:	Traffic Design and Road Safety Department of CMC plays a key role in the traffic management and safety in Colombo. The current resources are very limited in terms of manpower, facilities, and budget. CMC will not be able to implement ATC system with the existing organization. Even without ATC system project, strengthening the agency is an urgent issue. Likewise, RDA is responsible for operation and traffic management of roads under its jurisdiction. The project will, increase manpower (CMC), conduct training and provide necessary facilities for these agencies. Manuals and standard specifications for equipment and devices used in traffic management will be developed jointly with CMC, RDA and other relevant agencies.																																																																								
Anticipated Tasks:	<p>The project will undertake the following tasks:</p> <ul style="list-style-type: none"> • Recruitment of traffic engineers (CMC) • Development of training program • Training on traffic management and related subjects • Purchase of necessary number of PC with traffic engineering software • Creating and updating GIS and database systems related to traffic management • Development of standard specifications for traffic control devices 																																																																								
Anticipated Timeframe:	The whole project is expected to take one year.																																																																								
Linked Projects:	<ul style="list-style-type: none"> • All projects, for which CMC and RDA are implementing agency • Area Traffic Control System Project 																																																																								
Benefits:	<ul style="list-style-type: none"> • More efficient and effective traffic management and road safety administration • Standardization of traffic management facility design 																																																																								
Impacts:	Social Impact?	None	Environmental Impact? None																																																																						
Construction Impacts:	None																																																																								
Implementation Risks:	<ul style="list-style-type: none"> • Lack of understanding and cooperation by top level officials • Delay in establishing Traffic Control Center • Coordination and cooperation between CMC and RDA with regard to training program, design standards and standards specifications 																																																																								
Implementation Agency:	CMC and RDA																																																																								
Anticipated Costs:	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2"><i>Facilities</i></td> <td style="text-align: right;">\$54,000</td> </tr> <tr> <td>Personal computer</td> <td style="text-align: center;">12</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Traffic engineering software</td> <td style="text-align: center;">2</td> <td style="text-align: center;">set</td> </tr> <tr> <td>GIS software</td> <td style="text-align: center;">2</td> <td style="text-align: center;">set</td> </tr> <tr> <td colspan="2"><i>Technical assistance</i></td> <td style="text-align: right;">\$322,400</td> </tr> <tr> <td>Traffic engineer (international)</td> <td style="text-align: center;">8</td> <td style="text-align: center;">mm</td> </tr> <tr> <td>Traffic engineer (local)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">mm</td> </tr> <tr> <td>GIS specialist (local)</td> <td style="text-align: center;">4</td> <td style="text-align: center;">mm</td> </tr> <tr> <td colspan="2">Total package cost</td> <td style="text-align: right;">\$376,400</td> </tr> </table>			<i>Facilities</i>		\$54,000	Personal computer	12	set	Traffic engineering software	2	set	GIS software	2	set	<i>Technical assistance</i>		\$322,400	Traffic engineer (international)	8	mm	Traffic engineer (local)	12	mm	GIS specialist (local)	4	mm	Total package cost		\$376,400																																											
<i>Facilities</i>		\$54,000																																																																							
Personal computer	12	set																																																																							
Traffic engineering software	2	set																																																																							
GIS software	2	set																																																																							
<i>Technical assistance</i>		\$322,400																																																																							
Traffic engineer (international)	8	mm																																																																							
Traffic engineer (local)	12	mm																																																																							
GIS specialist (local)	4	mm																																																																							
Total package cost		\$376,400																																																																							
Implementation Schedule:	<p>The major works of the project will be carried out as shown below. Development of signal design standards and standard specifications will be carried out concurrently with training.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Items</th> <th colspan="12">Year 1</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Identification of training need</td> <td style="background-color: #92d050;"></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2</td> <td>Purchase of equipment/software</td> <td></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3</td> <td>Training program development</td> <td></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>4</td> <td>Training</td> <td></td> <td></td> <td></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> <td style="background-color: #92d050;"></td> </tr> </tbody> </table>			No.	Items	Year 1												1	Identification of training need													2	Purchase of equipment/software													3	Training program development													4	Training												
No.	Items	Year 1																																																																							
1	Identification of training need																																																																								
2	Purchase of equipment/software																																																																								
3	Training program development																																																																								
4	Training																																																																								

Project Code:	TM-19																																																																																																																																																																																								
Project Name:	Capacity Building of Traffic Police																																																																																																																																																																																								
Project Description:	The project will establish a Police Driver Training School, where police drivers will be trained on driving rules and manner. Once the training program is established, general drivers will be invited. Frequent violators of traffic regulation and those who have caused severe traffic accident will also be trained.																																																																																																																																																																																								
Anticipated Tasks:	<p>The project will undertake the following tasks:</p> <ul style="list-style-type: none"> • Establish Police Driving Training School • Train police drivers • Train general drivers 																																																																																																																																																																																								
Anticipated Timeframe:	Establishing the driver training school should take 1.5 years. The training will be developed in parallel and the whole project should take two years.																																																																																																																																																																																								
Linked Projects:	None																																																																																																																																																																																								
Benefits:	Improvement of driving skills of police Improvement of operations of police cars Decrease in number of traffic accident																																																																																																																																																																																								
Impacts:	Social Impact?	None	Environmental Impact? None																																																																																																																																																																																						
Construction Impacts:	None																																																																																																																																																																																								
Implementation Risks:	Lack of understanding and cooperation by top level officials																																																																																																																																																																																								
Implementation Agency:	Traffic Police																																																																																																																																																																																								
Anticipated Costs:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><i>Facilities</i></td> <td style="text-align: right;">\$799,200</td> </tr> <tr> <td>Driving practice course</td> <td style="text-align: center;">1</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Driving simulator - passenger car</td> <td style="text-align: center;">1</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Driving simulator - motorcycle</td> <td style="text-align: center;">1</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Training materials</td> <td style="text-align: center;">1</td> <td style="text-align: center;">set</td> </tr> <tr> <td>Office & class room building</td> <td style="text-align: center;">1</td> <td style="text-align: center;">set</td> </tr> <tr> <td colspan="2"><i>Technical assistance</i></td> <td style="text-align: right;">\$218,400</td> </tr> <tr> <td>Driving instructor (Int'l)</td> <td style="text-align: center;">4</td> <td style="text-align: center;">mm</td> </tr> <tr> <td>Traffic guidance specialist (int'l)</td> <td style="text-align: center;">2</td> <td style="text-align: center;">mm</td> </tr> <tr> <td>Traffic safety specialist (local)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">mm</td> </tr> <tr> <td colspan="2">Total package cost</td> <td style="text-align: right;">\$1,017,600</td> </tr> </table>			<i>Facilities</i>		\$799,200	Driving practice course	1	set	Driving simulator - passenger car	1	set	Driving simulator - motorcycle	1	set	Training materials	1	set	Office & class room building	1	set	<i>Technical assistance</i>		\$218,400	Driving instructor (Int'l)	4	mm	Traffic guidance specialist (int'l)	2	mm	Traffic safety specialist (local)	6	mm	Total package cost		\$1,017,600																																																																																																																																																					
<i>Facilities</i>		\$799,200																																																																																																																																																																																							
Driving practice course	1	set																																																																																																																																																																																							
Driving simulator - passenger car	1	set																																																																																																																																																																																							
Driving simulator - motorcycle	1	set																																																																																																																																																																																							
Training materials	1	set																																																																																																																																																																																							
Office & class room building	1	set																																																																																																																																																																																							
<i>Technical assistance</i>		\$218,400																																																																																																																																																																																							
Driving instructor (Int'l)	4	mm																																																																																																																																																																																							
Traffic guidance specialist (int'l)	2	mm																																																																																																																																																																																							
Traffic safety specialist (local)	6	mm																																																																																																																																																																																							
Total package cost		\$1,017,600																																																																																																																																																																																							
Implementation Schedule:	<p>The major works of the project will take the schedule shown below. Purchase of equipment and facilities will be arranged in parallel to other works.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>No.</th> <th>Items</th> <th colspan="12">Year1</th> <th colspan="12">Year 2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Establishment of Training School</td> <td colspan="12">█</td> <td colspan="12"></td> </tr> <tr> <td>2</td> <td>Design of Training School</td> <td colspan="12">█</td> <td colspan="12"></td> </tr> <tr> <td>3</td> <td>Construction of site and building</td> <td colspan="12">█</td> <td colspan="12"></td> </tr> <tr> <td>4</td> <td>Purchase of equipment/software</td> <td colspan="12">█</td> <td colspan="12"></td> </tr> <tr> <td>5</td> <td>Training program development</td> <td colspan="12"></td> <td colspan="12">█</td> </tr> <tr> <td>6</td> <td>Training</td> <td colspan="12"></td> <td colspan="12">█</td> </tr> </tbody> </table>			No.	Items	Year1												Year 2												1	Establishment of Training School	█																								2	Design of Training School	█																								3	Construction of site and building	█																								4	Purchase of equipment/software	█																								5	Training program development													█												6	Training													█											
No.	Items	Year1												Year 2																																																																																																																																																																											
1	Establishment of Training School	█																																																																																																																																																																																							
2	Design of Training School	█																																																																																																																																																																																							
3	Construction of site and building	█																																																																																																																																																																																							
4	Purchase of equipment/software	█																																																																																																																																																																																							
5	Training program development													█																																																																																																																																																																											
6	Training													█																																																																																																																																																																											

Appendix 22 Additional Resources for Franchising and Concessioneing Urban Bus Routes

A.22.1 Introduction

There is a range of competition and regulations that can be implemented to improve public transport services. The competition can essentially be reduced to competition for the market and competition in the market. Colombo buses operate completely within the latter – that is, competition for services occurs on the roadway, not prior to operating the service. There is no competition to obtain a bus route permit, only competition between different operators on the road. This type of competition results in maximizing individual profits, but also results in reducing safety and level of service for riders. The challenge facing Colombo is how to move beyond competition in the market to increase the level of bus services to the public.

Below are definitions of franchising and concessioneing, showing the differences, although they are often used interchangeably. In the bus sector, they both have defined terms of operation (3-5 years) and the government has defined and contracted specific rights and obligations to a company. Franchising results in a franchisee being granted the exclusive right to provide a service, usually as result of competitive bidding, based on a number of parameters (fares, quantity, and quality) set by an authority. When the fare is not sustainable, the authority may subsidize the franchisee. Franchises can either be area or route franchises (explained below). A concessione is also the exclusive right to provide a service and while the authority can impose some conditions such as fares and requirements, they take no financial responsibility for the provision of services (i.e. no subsidy). The operator is able to operate freely within the confines of general conditions.¹ The key difference between franchises and concessione is “in a franchise the authority is in the lead in specifying the broad public transport product and is prepared to incur the costs of doing so, while in a concessione the authority imposes a few basic requirements and has no financial responsibility.”²

Concessione and franchises can be implemented on an area basis, which is a group of routes within one area concessione together, or a route basis, in which each route is concessione individually. In a concessione, the operator can pay the government for the right to operate the concessione, while retaining farebox revenues (defined as net cost) or the government pays the operator for the services provided based on the agreement, while collecting farebox revenues (defined as gross cost). The former is more likely in Colombo given the lack of a credible ticketing and fare recovery system. Also, as shown in Table A22.1 below, net cost contracts are more prevalent, mainly because it requires less government administration and management (i.e. with regards to fare collection and distribution of revenues), as well as being similar to the current system of private operators.³ Gross cost systems require significant government infrastructure and administrative capacity in order to implement revenue-clearing systems to gather and distribute revenues.

¹ United Kingdom Department for International Development (DfID), Review of Urban Transport Competition, May 2000.

² United Kingdom Department for International Development (DfID), Review of Urban Transport Competition, May 2000.

³ Ken Gwilliam, Bus Franchising in Developing Countries: Some Recent World Bank Experience

As outlined in Chapter 14, in the discussion of the risks with regards to concessioneing, Ken Gwilliam outlines what he calls the 10 Commandments for Regulatory Reform in Developing Countries:⁴

- Political commitment to the reform is essential;
- A proper legal foundation is necessary;
- A strong local institutional foundation is required;
- Design of the franchising system must realistically reflect social objectives;
- Fares control must be consistent with financial viability of franchisees;
- The administrative agency must be expert and trustworthy;
- Industry restructuring must be provided for;
- Sub-contracting should be strictly limited;
- Vested interest of public enterprises must be confronted; and
- Good monitoring and enforcement is essential.

A.22.2 Case Study Cities

Table A22.1 provides information on cities that have implemented various forms of privatization and franchising.

**Table A22.1 Privatization and Franchising of Urban Bus Services
in Developing Countries**

	Studies undertaken	Planning to adopt	Modifying existing schemes	Adopted or modified
System not specified	Russian cities			
Net cost area or system based	Bangkok, Thailand Mauritius	Lahore Kuwait		Kingston, Jamaica Bahrain Kuala Lumpur, Malaysia
Net cost route based	Hanoi, Vietnam Dhaka, Bangladesh Surabaya, Indonesia Denpasar, Indonesia Bandung, Indonesia Lagos, Nigeria		Sao Paulo Belo Horizonte Sri Lanka	Bishkek, Kyrgyz Uzbekistan Kazakhstan Rostov, Russia Santiago, Chile (1993) South African cities
Gross cost route based		Recife Hanoi	Budapest, Hungary	Bogota, Colombia Curitiba, Brazil
Gross cost area or system based			Santiago, Chile (2005)	
Privatization	Bahrain	Mauritius Kuwait		

Source: Ken Gwilliam, Bus Franchising in Developing Countries: Some Recent World Bank Experience

Case studies and lessons learned from franchising in Bishkek (Kyrgyz Republic), Bangkok (Thailand), and Santiago (Chile) can be found in *Bus Franchising in Developing Countries: Some Recent World Bank Experience*.

⁴ Ken Gwilliam, Bus Franchising in Developing Countries: Some Recent World Bank Experience

Many countries that have implemented successful bus rapid transit systems have also been successful at rationalizing the route network and implementing regulatory reform in the bus sector. These cities include Curitiba (Brazil), Bogota (Colombia), and Quito (Ecuador), to name a few.

A.22.3 Additional Documents and Resources

United Kingdom Department for International Development (DfID), *Review of Urban Transport Competition*, May 2000.

http://www.worldbank.org/transport/utsr/background_papers/uk_competition_bayliss.pdf

Gwilliam, Ken and the Institute for Transport Studies, University of Leeds, UK, *Bus Franchising in Developing Countries: Some Recent World Bank Experience*, February 2005.
http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/bus_franch_gwilliam.pdf

L. Nicola Shaw, Kenneth M. Gwilliam, and Louis S. Thompson, *Concessions in Transport*, World Bank, Transport, Water, Urban Development, November 1996.
http://worldbank.org/transport/publicat/twu_27.pdf

Michael Klein and Philip Gray, *Competition in Network Industries - Where and How to Introduce It*, The Public Policy for the Private Sector Newsletter, World Bank, January 1997.
<http://rru.worldbank.org/Documents/PublicPolicyJournal/104klein.pdf>

Richard Meakin, *Bus Regulation and Planning – Bus Sector Reform*, A Training Course, for Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), November 2004.
<http://sutp.org/download/resourcesd.php> (You must register, for free, to access this document. On the site it is titled *Urban Transport Institutions*)

Chris Zegras, *Private Sector Participation in Urban Transport Infrastructure Provision*, for Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), January 2004.
<http://sutp.org/download/resourcesd.php> (You must register, for free, to access this document.) (This document discusses concessions, although with regards to infrastructure.)

World Bank, *Regulatory Requirements for Service Franchising Arrangements*.
http://www.worldbank.org/transport/pol_econ/frm_docs/rf_7b.doc

Asian Development Bank, Wilbur Smith, and RDC, *Passenger Transport Services Improvement Project (Interim Report)*, Submitted to the Ministry of Transport, Highways, and Civil Aviation, 1 March 2004.

Appendix 23 Basic CEA Environmental Information Questionnaire

APPLICATION NO	



CENTRAL ENVIRONMENTAL AUTHORITY

BASIC INFORMATION QUESTIONNAIRE

(Essential information to determine the environmental approval requirement of projects)

1. Name of the Project:

2. Name of the Developer:

(Company/firm/individual).....

Postal Address:.....

Phone No: Fax No:

Contact person

Name

Designation:

Phone No: Fax No:.....

3. Brief description of the project (Use a separate sheet)

Attach copy (ies) of pre-feasibility / feasibility study report (s) if available

4. Scale / magnitude of the project: (i.e. For a road project: Length of the trace; Tourist hotel:

No. of rooms; Agriculture project: Extent of land, solid waste management projects:
capacity per/day etc.)

5. Main objective(s) of the project:

6. Investment and Funding sources:

7. Location of the Project

i Pradeshiya Sabha:

ii Divisional Secretariat:.....

- iii District
- iv Provincial Council

Provide a location map indicating the project site, access to the site, surrounding development and infrastructure within 500 m of the site (1:50000 scale).

8. Extent of the project area (in ha):
9. Does the project wholly or partly fall within any of the following areas?

Area	Yes	No	Unaware
100m from the boundaries of or within any area declared under the National Heritage Wilderness Act No 4 of 1988			
100m from the boundaries of or within any area declared under the Forest Ordinance (Chapter 451)			
Coastal zone as defined in the Coast Conservation Act No 57 of 1981			
Any eroding area declared under the Soil Conservation Act (Chapter 450)			
Any Flood Area declared under the Flood Protection Ordinance (Chapter 449)			
Any flood protection area declared under the Sri Lanka Land Reclamation and Development Corporation Act 15 of 1968 as amended by Act No 52 of 1982			
60 meters from the bank of a public stream as defined in the Crown Lands Ordinance (Chapter 454) and having width of more than 25 meters at any point of its course			
Any reservations beyond the full supply level of a reservoir			
Any archaeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188).			
Any area declared under the Botanic Gardens Ordinance (Chapter 446).			
Within 100 meters from the boundaries of, or within, any area declared as a Sanctuary under the Fauna and Flora Protection Ordinance (Chapter 469)			
100 meters from the high flood level contour of or within, a public lake as defined in the Crown Lands Ordinance (Chapter 454) including those declared under section 71 of the said Ordinance			
Within a distance of one mile of the boundary of a National Reserve declared under the Fauna and Flora Protection Ordinance			

10. Present ownership of the project site:

State	Private	Other-specify

If state owned, please submit a letter of consent of the release of land from the relevant state agency

11. Present land use: (Please tick the relevant cage/s)

Land use Type		Land use Type	
Paddy		Marsh / Mangrove	
Tea		Scrub / Forest	
Rubber		Grassland / Chena	
Coconut		Built-up area	
Other Plantations / Garden		Other (pl. specify)	

12. Does the site /project require any

	Yes	No	If yes give the extent (in ha)
Reclamation of land, wetlands			
Clearing of forest			
Felling of trees			

13. Does the project envisage any resettlement

Yes	No	If yes, give the number of families to be resettled

14. Does the project envisage laying of pipelines

Yes	No	If yes, give the length of the pipeline (km)

15. Does the project involve any tunneling activities

Yes	No

16. Proposed timing and schedule including phased development:

17. Applicable laws, regulations, standards and requirements covering the proposed project:

18. Clearances / permits obtained or should be obtained from relevant state agencies and / or local authorities. (Attach required copies of the same)

The above information is accurate and true to the best of my knowledge. I am aware that this information will be utilized in decision-making by the relevant state authorities.

.....
Date

.....
Signature of Applicant

FOR OFFICE USE ONLY

1. Date of receipt of the application:

2. A site inspection done,
If yes,
Date of the inspection:
Name(s) of the officer(s):
Inspection fee
Amount: Rs..... Date of payment:.....
Receipt No:
Special comments regarding significant environmental concerns (Based on site inspection):

3. Require approval under part IVC of NEA?
(i.e. Need to go through the EIA / IEE process)

Yes	No

4. If need to go through the EIA process appropriate PAA:
.....

5. Other Remarks:

Appendix 24 Project Location of Bus Stop Facility Improvement

Bus stop facility improvement project will be carried out along corridors outside of Colombo and, within Colombo along streets, which carry large number of bus. The tentative corridors and streets are listed in Table A24.1 and shown in Figure A24.1. Note that the figure shows only part of the project locations for suburban corridors.

Table A24.1: Bus Stop Facility Improvement Project Locations

	Road	Section		Distance
Suburban corridors				
1	Galle Road (A2)	Dahiwala	Panadura	19
2	Negombo (A3)	Kelani River	Negombo	30
3	Sri Jayewardenepura	Rajagiriya	Malabe (OCH)	10
	Subtotal			68
Urban streets				
1	Chittampalam Gardiner			0.5
2	Kew Kumaran Ratnam			0.5
3	Union Place			1.4
4	Galle Road	Kollupitiya	Dehiwala	5.5
5	Maradana			2.6
6	Reid Ave.			1.0
7	Bauddhaloka Mawatha			0.6
8	Havelock/Maya			2.8
9	Sri Jayewardenepura	Baseline	Rajagiriya	2.1
10	Suri Sumanatissa			1.0
11	Prince of Wales			1.3
	Subtotal			19.3
	Total			87.3

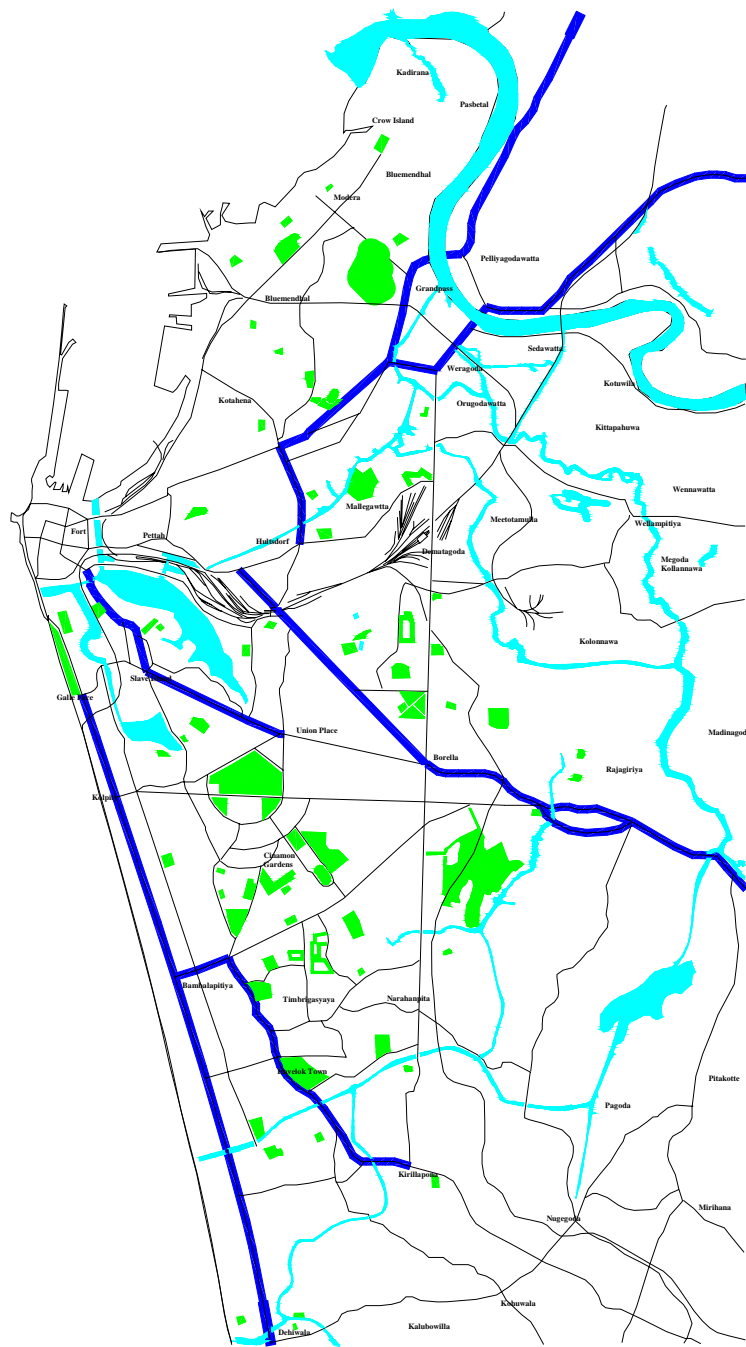


Figure A24.1: Bus Stop Facility Improvement Project Locations

Appendix 25 Bus Rapid Transit System Concept for Colombo

A25.1 Introduction

(1) What is Bus Rapid Transit?

The term bus rapid transit (BRT) has become synonymous with high capacity bus services that are created to provide a higher level of quality and capacity vis-à-vis regular buses. There are many versions of BRT in existence worldwide, which indicates that there is not one hard and fast type of BRT. The concept was first developed in Latin America in the 1970s and has become a very popular mode of transport due to increases in passenger convenience and efficiency, limited stops, and aesthetically pleasing buses, stations, and other related elements. It has been implemented in a number of cities, including Curitiba (Brazil), Quito (Ecuador), Bogota (Colombia), Hamburg (Germany), Seattle, Boston, and Los Angeles (United States), Ottawa (Canada), Brisbane (Australia), Jakarta (Indonesia), and Nagoya (Japan).

BRT includes some, although not always all, of the following:

- High frequency services;
- Use of valuable city space for public transport;
- Dedicated or grade separated right-of-way;
- Integrated terminals that concentrate passenger demand;
- Rationalization of bus network into trunk and feeder routes;
- Longer distances between stations;
- Bus signal preference or preemption;
- High capacity vehicles (i.e. higher than regular bus services);
- Clean, comfortable vehicles;
- Private sector investment and professional management;
- Electronic ticketing; and
- Off-bus fare collection.

BRT Facilities and Route Types

Integrated Terminals or Interchanges: Integrated terminals permit the rationalization of the entire bus system to allow transport services to quickly and accurately adjust to real demand on each part of the bus network. The frequency and regularity of bus services on each route serving the integrated terminals may increase considerably, particularly within urban centers with the highest concentration of riders. The consolidation of center-bound trips at integrated terminals can significantly improve the flow of buses in the central area, while reducing the inconveniences often associated with boarding, alighting, and waiting for buses.

Through optimizing the use of the vehicles, both in terms of capacity and efficient scheduling, the overall costs of providing transport can be reduced, and likewise the total fleet capital investment required. The concentration of various routes at integrated terminals can further permit the implementation of a coordinated user information system whereby public transport passengers, both everyday riders and those (such as tourists) who are new to or unfamiliar with the system, may be able to easily and accurately plan their trips. Finally, the concentration and consolidation of passenger activity at Integrated Terminals strongly encourages the consolidation of commercial sub-centers at these locations.

Trunk Routes: Trunk routes in an integrated urban transport system share several common characteristics. First, they operate at high frequencies (normally less than 6 minutes) along the main transport corridors of the city, connecting them with the integrated terminals. Second, the trunk routes feature enhanced traffic signaling, geometric and/or bus priority measures, and stations at intervals compatible with increased operating speeds. Lastly, the vehicles used on these routes must be high capacity to comfortably carry the consolidated traffic loads that will transfer to the trunk routes at the integrated terminals. This normally requires the use of articulated units and enhanced passenger boarding. There are three slightly different types of trunk routes:

- Direct trunk routes: follow a course leading generally in a direct path between integrated terminals;
- Circular trunk routes: follow a course between integrated terminals, but they serve outlying corridors, without entering the central business district;
- Radial trunk routes: serve important transport and commercial corridors that lie outside a main busway.

Feeder Routes: Bus routes that feed the integrated terminals are conventional routes that serve the remainder of the city and the periphery. At the integrated terminals, feeder route passengers are able access to the entire integrated urban transport system, without paying another fare. Feeder routes use conventional buses at intervals selected to both minimize passenger waiting times and passenger crowding.

(2) Benefits

Increased Efficiency and Reduced Travel Time: BRT is an efficient public transport system as it moves large volumes of people quickly at lower costs when compared to metros and light rail. High capacity buses, often articulated or bi-articulated, are the norm, which carry upwards of 160 passengers per bus. The payment system is such that payment is made prior to boarding the buses, as is done on rail systems, which reduces dwell time and enables more passengers to board quickly. As BRT tends to operate in dedicated lanes or at a minimum receives priority status on the roadway, they travel faster than traditional buses.

Potential for Lower Emissions: As BRT systems do not idle in traffic, the emission of greenhouse gases is potentially lower.

Low Capital Investment: In comparison with LRT or other rail transit, the capital costs of BRT are significantly less.

Introduction of New Technology: Because BRT is a full integrated system that places priority on public transport, not simply a new bus in the regular travel lanes. It provides a new level of service that can be used to jump-start a new focus on and service level of public transport. With the new system, it is common to incorporate new technologies that are difficult to implement on regular bus services such as (i) integrated fares with smart cards; (ii) signal priority/synchronization; and (iii) real time passenger information and global positioning system control of vehicles.

Favor Lower-Income Groups: Most urban road projects tend to favor higher-income car owners. In developing cities public transport normally has a captive or potential demand of low-income passengers who benefit directly from investments in bus systems.

(3) Opposition

There are typical complaints and objections to BRT implementation, which should be addressed as part of the planning process. Some common objections and possible responses to the use of central or right lanes are as follows:

Increased Traffic: In some cases the traffic flow will actually improve, as bus units will no longer be stopping on the street blocking traffic. Conflicts are eliminated and pedestrians will be able to cross the road more easily.

Passenger Safety Concerns: All passengers on conventional buses already cross the road at some point during their trip. At the stations, passengers will have better protection as adequate signaling, islands, or overpasses will be provided.

Unattractive “Wall of Buses”: Maximum headways are about 1 minute per direction. Modern busways result in reducing bus flows and emissions and they can even present a much calmer and more attractive environment. This is achieved by the use of the higher standard engines used by high-capacity vehicles, running at optimum speeds and the removal of an excess supply of old buses stuck in traffic jams.

Negative Impact on Commerce along Busway: Commercial value and rents have actually improved on the corridors in Curitiba and Bogotá. This is not the case when large numbers of units are operating as an open system.

Long Pedestrian Access: Most subway systems accept that passengers will walk 500m to the station and 800m in the city center. A map showing the proposed coverage and the population benefited (from census or O/D data) is a useful tool. It is important to stress that there are no bus stops on the trunk system, only mass transit stations.

Exclusionary: All systems expand over time as the city expands. Major demand can be met in future phases by adding new feeder routes or even new corridors. Building a high-capacity BRT mass transport system is an on-going process.

A25.2 Proposal for Colombo¹

The following is a proposal for BRT corridors. The exact alignment has yet to be determined, although the proposal below does provide recommendations as to a possible alignment. The overall proposal is as shown in Figure A25.1 below.

¹ The Study Team’s proposal takes into account the UDA proposal, but expands on it to increase demand



Figure A25.1 Proposed BRT Route and Stop Locations

(1) Demand

Although demand depends on accessibility, convenience, cost, comfort, frequency, fares, and competition from other routes, the Study Team has estimated potential demand for new transit on major corridors in the CMR:

Table A25.1 Summary of Potential Demand for BRT on Major CMR Corridors

Corridor	Passengers/ day	Summary	Mode Share	Maximum Demand for new route (passengers/day)	Minimum Demand for new route (passengers/day)
Coastal Route	330,000	high car ownership	65% public	150,000	35,000
Kotte	250,000	high car ownership	<50% public	100,000	20,000

Source: This Study

International experience in bus rapid transit shows that the Coastal and Kotte corridors are within the range for viable passenger demand (30,000-200,000 passengers/day for both directions on the highest demand stretch). This would require peak headway for articulated vehicles of between one and five minutes. Further demand analysis is not necessary at this stage since the costs of BRT operations are almost linear in relation to demand, so as long as operations stay within the range and demand is supported with feeder routes or integration with other modes, exact demand is not essential.

(2) Corridors

Dehiwala North Along Marine Drive

On the Coastal Route, any proposed BRT route must use Marine Drive and the Coastal Line right-of-way, due to constraints along Galle Road. A 7 meter concrete busway could occupy the space next to the railway tracks so as to avoid encroachment (Figure A25.2). Along much of Marine Drive, there appears to be sufficient width for a bidirectional busway with space for an improved sidewalk. Another advantage of Marine Drive is that passengers will only have to cross one bus lane to reach the access ramps at the southern end of the stations. At interchanges with railway stations, the pedestrian walkway could be extended with a drop down to the BRT station and the street.



Figure A25.2 The Marine Drive BRT Busway

Galle Road/Duplication Road Binary Couplet

At the northern end of Marine Drive, vehicles would shift to physically separated bus lanes on a Galle/Duplication Road Binary Couplet. A one-way couplet was tried previously and failed (although it was only attempted for one day); however, it remains the only option in which the two roads can be transformed into an arterial with four lanes per direction, eliminating conflicting flows, and allowing a bus lane to operate. The couplet is shown below based on the current configuration of Marine Drive; however, if Marine Drive can be extended, then the BRT lanes could start where the road section on Duplication Road provides four lanes (3.5m, 2.85m, 2.85m, 2.85m).



Figure A25.3 BRT Route Transferring from Marine Drive to Binary Couplet

Gyratory System at Dharmapala Road

A principal bottleneck is the end of Galle Road. Below is a proposed one-way system that solves both incorporating the busway into the general traffic stream of Galle Road and the transition from a two-way to a one-way corridor.



Figure A25.4 Gyratory System at Dharmapala Road

Slave Island

After 760 meters of mixed traffic on Galle Road, it could be possible to use part of the Coastal Line right-of-way for the busway (Figure A25.5). It seems that a 7 meter busway could be fitted into this zone, with a station close to Galle Rd. However, if this is not possible then the busway could operate one-way. The possible station areas are indicated in red.



Figure A25.5 Slave Island Buslanes

Beira Lake

The corridor continues north along Beira Lake with option A (Figure A25.6) using the rail right-of-way, which would require resettlement and land acquisition and option B following the water. If Option B is served by a one-way N-S access road the blighted areas could be redeveloped. A cycle-path and landscaping should be incorporated into the project design.



Figure A25.6 Beira Lake Busway, Options A (orange) and B (red)

Option C, shown below in orange, would require a rail/canal overpass. The lake bicycle path could be continued with a new access road as part of the site/area development, including the BRT station. The road crossings would be at-grade with traffic signals. Option D could then follow the rail right-of-way past the Buddha Statue, under the viaduct, making use of the existing, unused tunnel, as shown in red. This would require removing the existing rail platform and reclaiming parts of the rail right-of-way incorporated into the surrounding gardens, although only about three meters. The station area – together with the new railway platform could then be created in the current blighted zone, as shown in green. These alignments may create short sections that do not permit bidirectional traffic, but provided that sufficient width can be found for the stations and there is full visibility, this should not pose a problem.



Figure A25.7 Access to the Station Area, Options C (orange) and D (red)

Connection with Fort Railway Station and Pettah Bus Stands

The busway will cross the railway at the standard height, although short stretches of the busway can handle grades of 10%, which could be designed as part of the bridgeworks needed. After the Lotus Road Station, the next stations would link the BRT line with both the Fort Railway Station and the main Pettah Bus Stands. These are set at about 400 and 550m respectively.



Figure A25.8 The Railway and Bus/BRT Stations

Express Section from Fort/Pettah to Maradana

The alignment could then continue without stops for about a kilometer linking Fort/Pettah with Maradana.



Figure A25.9 The Express Section

Maradana Railway Station and On to Baseline Road

A short section of highway could be used, with a roundabout linking the road to the busway and a crossing at Maradana Road to the station.



Figure A25.10 Road/Rail Link

The original WRMP plan included Dematagoda Railway Station in the corridor, but if this is to occur, hundreds of extra kilometers per day would be added to the trunk route. Once BRT is on Baseline Road, the corridor could be extended to include Dematagoda.

The density in this area makes finding an ideal route extremely difficult. Traveling between Baseline Road and Maradana, Figure A25.11 shows one possible alignment in red that follows the Kelani Valley Line right-of-way. This leads to a BRT lane on Baseline Road using the center lanes.



Figure A25.11 Link from Maradana Station to Baseline Road

Other options could be to widen Maradana Road to six lanes, using the two center lanes for BRT, although this would require the retrofitting of five stations. Baseline Road is one of the few corridors in Colombo with three lanes in each direction, which makes it highly feasible for BRT. This would require minimizing cross traffic and turning flows and widening the median.

Baseline Road to Battaramulla

As previously proposed by UDA, a new road could be constructed, including the busway, through an area which has not yet been built up. It would follow the canal edge as shown below in orange. The red line is the existing encroached KV Line.



Figure A25.12 KV Rail-line and Canal Alignments



Figure A25.13 Junction of Alignments on KV Rail-line

The rail right-of-way on the KV Line is 22 meters and as it is single tracked, there should be a 7 meters of right-of-way available on the southwest side. However, encroachment along the line is quite high, so this may not be the case. Just below J.M. Perera Road, there is a vacant area that

has been invaded, but could be used as a road link between this road and Sri Jayewardenepura Road.

Sri Jayewardenepura Road and Kotte

If coming directly from Baseline Road, this section of Jayewardenepura has six lanes, allowing the BRT to use the center lanes. Or, a new binary couplet could be formed, with ample points for turning, allowing the BRT to use the right lane, forming stations at the key points along the corridor.



Figure A25.14 Kotte Binary 1



Figure A25.15 Kotte Binary 2

This Binary Couplet then rejoins Jayewardenepura Road, making use of the canal bank, as originally proposed by UDA, extending to the Kotte/Battaramulla terminal at Talangama Depot.

(3) Stations

Stations should be spaced every 450-600 meters with platforms at a height of 90 centimeters for easy access and central boarding. Using TransJakarta as an example, stations are about 3 meters in depth and have a fairly simple structural design. Note that the busway has already been built in concrete and a pedestrian overpass was required for safe access.



Figure A25.16 Station Under Construction in Jakarta

Areas within about 500 meters of a station or route are considered to be within normal walking distance for a BRT system. As can be seen, most of the major corridors on the Coastal corridor are covered (using Marine Drive and the Binary Couplets), which shows that Colombo is well suited for BRT and that there is potential demand, assuming the conditions and fares are viable.



Figure A25.17 Proposed BRT System Catchment Areas

(4) Integrated Terminals

Interchange facilities should be reviewed to gauge interaction with the city land use plan and future growth. New housing areas can be served by extending a new feeder route; not by creating a new route or extending a trunk route. In Colombo, the existing road network and the proposed Interim Report projects suggest that terminals or interchanges should be located at the Battaramulla bus depot and near the end of Marine Drive at Dehiwala. This would link the inter-district routes using the existing or planned East-West connections and feeder routes to extend the total coverage of the system. The size of the interchange will vary, but it is expected that with several high density corridors, at least seven hectares will be needed for each terminal.

At Battaramulla, the ideal location for an interchange is the Talangama bus depot, shown in Figure A25.18. It has 20 hectares of available space, which would ideally be set between two one-way roads. In Dehiwela, three possible terminal sites were identified in Figure A25.19.

- Site 1 is partly unoccupied, but would require some resettlement. Road access for both feeder and inter-district routes can be incorporated into the design and the site offers about thirty hectares for the interchange and redevelopment.
- Site 2 is the most obvious choice as it connects to the railway station and has good road access. However, the rail station and BRT station need not be physically linked. The main disadvantage of this site is that it is only six hectares and is a highly valued public asset.
- Site 3 is closer to the city center and would require a shorter extension of Marine Drive in order to become operational. Road access is good and right turns can be accommodated. The main interdistrict routes would use the same roads as in the other options. The site offers about twelve hectares with the possibility of real estate development.



Figure A25.18 Kotte/Battaramulla Interchange Site (Talangama Depot)



Figure A25.19 The Site Options for Coastal BRT Corridor



Figure A25.20 Site 1 Coastal Trunk Route Interchange



Figure A25.21 Site 2 Coastal Trunk Route Interchange



Figure A25.22 Site 3 Coastal Trunk Route Interchange

(5) Institutional and Financial Models

There are several models that could be applied to Colombo. Most High-Capacity BRT Systems operate as public-private partnership (PPP) projects, in which infrastructure, or even the units themselves, are supplied by the public sector and the system is operated by the private sector under a concession. In Jakarta, for example, the operating company was formed from the existing private bus and taxi companies and a state-owned enterprise (SoE). In Bogotá, the new trunk route operating units were formed by major financial groups, with a minority of shares reserved for local operators. The feeder services were contracted with local owner-drivers on a paid per km basis.

(6) Potential Cost

Literature on High-Capacity BRT describes in detail the relative costs of BRT and Light-Rail /Metro systems. The sources indicate that BRT is about 5-10% of the cost of rail-based systems and that unit capital costs for other BRT systems were as follows: Bogotá (US\$5m), Curitiba (US\$2m) and Quito (US\$5m) and TransJakarta (US\$1m).²

Colombo's proposed BRT System (Phase 1) is about 20 kilometers in length, although a route has not been decided. Some sections would be very inexpensive, such as on Baseline Road and Marine Drive, while others could be very expensive due to resettlement, such as near the lake or on any rail or canal right-of-way. Based on unit costs, it is expected that construction would cost

² The TransJakarta Busway Project, Technical Review, ITDP, Institute for Transport and Development Policy, December 2003.

about USD 38 million with another USD 3 million for resettlement and contingencies. The fleet would cost an additional USD 9-10 million assuming two minute headways (60 units). This indicates a capital cost of about US\$2m/km.

Table A25.2 BRT Phase 1 Potential Implementation Cost (2006 prices)

Item	Unit cost US\$000	Units	Cost US\$000
<i>Southern Corridors:</i>			
Concrete Busway	150/m ²	140000	21.000
Junctions/traffic management including traffic separator			12.000
<i>Stations</i>	24	32	768
<i>Terminals:</i>			
Dehiwala			2000
Battaramulla			2000
<i>Sub Total</i>			37.768
<i>Resettlement @ 12%</i>			4,532
<i>Engineering @ 5%</i>			1,888
<i>Contingencies and supervision @ 10%</i>			3.777
<i>Total Construction (southern corridors)</i>			41.551
<i>Fleet (Private Sector)</i>	160	60	9.600

Source: This Study

Table A25.3 Professionals Needed for Feasibility Study

Professional Specialization	Min. Years of Experience
Team Leader (International)	15 years, of which 5 in leading positions
BRT Design Specialist (International)	Desirable 15 years, including at least 2 BRT systems
Highway Engineer (Local)	10 years
Traffic Engineer /Road Safety (International)	10 years
Bus Operations (International)	10 years
Bus Management (Local)	10 years
Public Relations (Local)	10 years
Drainage (Local)	10 years
Transport Economist (International)	10 years
Environmental (Local)	10 years
Resettlement (Local)	10 years
Legal Issues (Local)	10 years

Source: This Study

A25.3 Process for a Feasibility Study and Functional Design

(1) Feasibility Study

A feasibility study would expand on the above conceptual study and include more detailed travel demand studies, pre-design of the corridors, terminals, and other infrastructure, approach to addressing the administrative and legal issues, cost estimates, and basic environmental and cost-benefit analyses.

If origin/destination data is available, it will be the main input needed to estimate and forecast the travel demand. Alternatively, corridor demand can be roughly estimated from available

traffic counts. The inherent flexibility of bus transit systems and the direct link between travel demand and operating costs permits a wide margin of adjustment.

Table A25.4 Feasibility Study Process and Data

Urban development	<ul style="list-style-type: none"> • Corridor location and their importance in the urban context; • Determination of the area of influence of the corridors; • Characteristics of the population and land use in this area of influence; • Characteristics of the business activity and intensity in the area of influence; • Urban development plans and programs, including zoning, building incentives, and other transit-oriented land use policies; • Review of previous transport studies; and • Existing and proposed pedestrian-friendly and other non-motorized travel facilities (i.e., bikeways).
Road Infrastructure (along homogeneous sections)	<ul style="list-style-type: none"> • Length of the road (existing or proposed busway); • Section geometry: number and width of lanes and sidewalks; • Physical state of the pavement; • Traffic circulation; • Localization of traffic lights and their phases; • Inventory of vertical signs; • Inventory of horizontal signs; • Bus stops and infrastructure; and • Geometry of intersections.
Traffic and pedestrians (corridor and workday)	<ul style="list-style-type: none"> • Traffic flows and composition on the proposed BRT corridors; • Traffic flows and composition on main and secondary roads that influence the proposed BRT corridors; • Flows and composition at conflicting intersections; • Bicycle flows; • Pedestrian flows; • Journey times and respective traffic speed for different origins and destinations along the proposed BRT corridors during peak and off-peak periods; and • Identification of major delays (congestion levels) and bottlenecks on the main roads.
Traffic Accidents	Accidents within the corridors' areas of influence over the past three years
Characterization of the transit supply services	<ul style="list-style-type: none"> • Route lengths, frequency/headway at each critical stretch the route, by direction and in peak and off-peak periods; • Routes span of service; • Number of daily trips; • Route journey times (peak and off-peak) from terminal to terminal; • Major delays and bottlenecks, indicating location, times and causes; • Average stopped times at terminals; • Average dwell times at stops; and • Average passenger waiting times at stops.
Fleet	<ul style="list-style-type: none"> • Number of vehicles in operation on each route, classified by type and nominal capacity; • Average age of the fleet; and • General description of the seat layouts, number, and door width, internal circulation, wheelchair loading, ticket collecting mechanism, handrails, type of propulsion, noise (internal and external) and emissions levels, etc.

Institutional Arrangements	<ul style="list-style-type: none"> • Association type; • Administrative structure; • Legal instruments; • Operational structure; • Participation by type of service and vehicle in the total corridor demand; • Coverage (by route or area); • Fare collection and distribution; • Operational costs; • Maintenance costs.
Characterization of transit demand	<ul style="list-style-type: none"> • Daily demand per route; • Daily demand on each section of the corridor and estimate of the annual demand; • Demand per route in the peak and off-peak periods; • Average distance and trip time for each user type (by gender if a regional issue); • Average walking distance for each user type; • Turnover indexes per route; • Transfers (if more than two units are needed to make the trip or if a major transfer facility is involved); • Areas of trip origins on the corridor; • Areas of trip destinations on the corridor; • Desire lines on the corridor; • Distribution of trip purpose per route.
Public Opinion Survey	<ul style="list-style-type: none"> • Total passenger demand (workday) on each corridor • Socio-economic information on each corridor • Perception of general quality of service, waiting times, physical state of the vehicles and treatment by drivers
Emission Levels	
Travel demand modeling	<ul style="list-style-type: none"> • Model the base year • Calibrate and validate using survey data • Rationalizing existing route network should be taken into consideration
Micro-simulation	<ul style="list-style-type: none"> • Evaluate the performance of mixed-use lanes if an exclusive busway is designed • Simulate the mitigation of negative impacts

Source: Study Team

(2) Functional Design

From the feasibility study, the functional design can be created. This design should show how all routes on the corridor will connect to other transit modes and also include the following information:

Table A25.5 Functional Design Process and Data

Service and Operating Parameter Determination	<ul style="list-style-type: none"> • Service type: Ordinary, express, feeder, and convoy; • Route type: trunk, feeder, conventional, complementary, etc.; • Vehicle types; • Journey cycle times of the routes; • Operational speed; and • Method of payment.
-----------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Operational Item Description	<ul style="list-style-type: none"> • Method to calculate maximum and minimum frequencies, journey cycle times per route, operational speed, and nominal capacity of the vehicles; • Analysis of the peak and off-peak periods; and • Level of service offered to the users during different periods of the day.
Itinerary Design	<ul style="list-style-type: none"> • BRT Station spacing for the new bus transit routes. Bus stop spacing has a substantial impact on the performance of operations, affecting both access time and line-haul time, and therefore the demand for the service; • Location (near side, far side, or mid block and over the median or in the curbside).
Localization of transfer stations and terminals	
Integrated Transfer Station or Terminal Design	<ul style="list-style-type: none"> • Internal circulation of vehicles; • Passenger circulation; • Flows entering and leaving the station or terminal; • Points of control of vehicles and users; • Connection points with other modes; • Accessibility for special needs (disabled, etc.); and • Park N' Ride facilities (bicycles and private vehicles)
Vehicle Specification	<ul style="list-style-type: none"> • Chassis type and nominal capacity; • Transmission (automatic on trunk routes and all busways); • Suspension (air suspension is preferable and obligatory on all busways with at-floor loading in order to maintain the exact height of the unit in relation to the concrete pavement); • Specification of environmental contamination with reference to EPA or similar standards; • Number of doors, width and location; • Type and dimensions of seats; • Corridors circulation; • Disposition and height of handrails; • Special access mechanisms; • Fare collection mechanism (if used); and • Useful (working) life of the vehicle.
Detailed Public Presentation	<ul style="list-style-type: none"> • Architects' perspective drawings and digital animation; • Maps that are easy to understand; and • Benefits and costs outlined

Source: Study Team

A25.4 Regulatory Considerations

(1) General Public Transport Regulations

There are many convoluted and overlapping regulations regarding public transport in Colombo. To implement such a new system that requires professional private sector management and exclusive operation, a streamlining of regulations are necessary, which should include:

- Legal declaration that urban passenger transport is a public service, with characteristics of continuity, regularity, obligations, and uniformity;
- Limitations and prohibitions observed in the exercise of the activity;
- Regulating norms of anti-trust competition and rules destined to prevent unfair practices;
- Rights and obligations of the parts concerned;

- Procedures for implementation;
- Norms on the technical quality of the services (could be in individual contracts);
- Principles that govern the system of fares;
- Norms referred to the aims and powers of the regulatory body; and
- Norms that govern the procedures and the jurisdictional control (for example, public hearing), sanctions in case of breach of any contractual clauses or violation of the regulatory norms.

(2) Regulations for Private Sector Involvement

The fare levels that can reasonably be charged for public transport in developing countries are far too low to sustain high, short-term capital investment, specifically over the normal time period of a transport concession. Hence it is necessary that infrastructure costs of a major mass transport project should be met by the public sector, leaving the private sector to operate the system. As funds are lacking in Colombo, as in most developing country cities, most are looking to international agencies to invest in the infrastructure (busways, terminals, road paving), thereby allowing the city to spread this financial cost over a longer timeframe. Another advantage of this model is that some agencies recognize the private investment in high-capacity, specially adapted vehicles as local counterpart funds, again minimizing the overall public financial burden. As these units can also be financed over several years, the initial local capital outlay for a modern bus system can be quite small when compared to the total cost.

From an operating standpoint, the government continues to see transport as a basic service and it is wary of turning this over to the private sector, as the experiences (and current operations) of the private sector are far from positive. Alternatively, looking the current public sector provision of public transport (SLTB and SLR), there are numerous problems: overstaffing, lack of investment, political pressure to keep fares below a sustainable level, cannibalization of vehicles, etc. While removing the public sector from conventional bus operations may prove politically difficult, the development of a BRT system could provide the push needed to implement a new operating scheme.

Before involving the private sector, relevant officials (government and lending agencies) must evaluate the proposal and outline what is expected of the private sector. This would include:

- The amount of private sector investment;
- How the public and private linkage would work; and
- The individual characteristics of the project in terms of regulations and contractual rights and obligations.

Regulations surrounding the involvement of the private sector would have to be developed that eliminate external influences and address the following:

- Successful administration of the system;
- Appropriate inspection of the execution of contractual clauses;
- Full observance of the rules and conditions regarding safety/security imposed on the operator;
- Means of guaranteeing the quality of services to the passengers; and
- Equal distribution of inherent risks as a condition for sustainability, including risks involved, scale of costs, and incentives/penalties.

Risks

There are many risks associated with public transport operation including:

- Lack of revenue due to the fall in passenger demand;
- Over-projected future demand;
- Significant increase in operating costs, insurance costs or uninsured damages;
- Inactivity of the state;
- Growth of unfair competition (informal transport);
- Unauthorized vehicles using the busway with the complacency of the State;
- Need for investment in new technologies that were not foreseen at the beginning of the concession;
- Political risks due to a change in government or in their policies;
- Abrupt alterations in the exchange rate;
- Inflation;
- Change in the prevailing tax regime;
- New regulation or legal challenges to the operations;
- Acts of violence or force

Keeping risks low can help guarantee accessibility to low-income groups by enabling low fares, which helps to guarantee the maximum use of public investment in infrastructure. Risks are sometimes partly undertaken by the state, including explicit contractual clauses on economic or political guarantees to the private operator, covering legislation, fiscal, or even the exchange rate. In Brazil, for example, the laws governing concessions already offer a guarantee on financial and economic sustainability. Another mechanism to minimize private sector risk is to offer public land or construction to the private concessionaire, such as office space, garage and maintenance areas, thus reducing their initial exposure. This was done in Bogotá.

(3) Regulatory Body

In the case of the BRT system, while the government may not operate the system, they are still charged with regulatory oversight of the private sector operator. Clearly this needs to be implemented with minimal political interference and an adequate level of technical knowledge capacity. The purpose of such a body is to:

- Assure the conditions of safety and quality of the services;
- Correct any distortions or undesirable behavior of the operators in time, through the application of appropriate penalties; or, if necessary;
- Rescind the concessions, re-conferring to new operators, thus guaranteeing the continuity of the services.

A25.5 Institutional Considerations

The institutional questions required to transform, modernize, and rationalize urban transport systems are complex. Adequate regulation, investment, and financing have to be dealt with and governments must possess an exact understanding of the implications of the institutional questions, which will have an important role in the success of the project.

Operationally, some common problems are:

- Excessive offer of services in open competition;
- Excessive amount of operators in direct competition;
- Increasing tendency towards the miniaturization of the fleet;
- Excessive number of routes without any articulation among them;
- Routes mainly converge in downtown, leaving aside other areas with little or no coverage at all; and
- Buses are trapped in the congestion without any specific infrastructure that allows the service to run smoothly according to the scale of the city.

Organizationally, the common issues are:

- Little or no control of services;
- Non existence of articulation between the services;
- The awarding of routes does not respond to a structured process or technical planning; and
- The different modes (buses, vans, etc.) respond to separated or nonexistent administrative institutions legally established, creating a totally broken and chaotic organization.

(1) Inclusion of Existing Operators

Internationally, many new systems have offered some form of priority to the current public transport operators to minimize their resistances to future changes from the BRT System. This also helps to reduce social and labor impacts.

Many traditional operators perceive any change as a threat that should be stopped. Many of the problems, defects and negative aspects surrounding the sector and local operators have to do with the insecurity, lack of minimum care for the passengers and the predatory nature of the services. On the other hand, the new operator system should not held hostage by the interests of a single group such as the current bus operators. Therefore, it is necessary that new strategies address the advantages that can be gained by both the operators and the community such that a new system is perceived more as a positive than a negative. A possible Plan of Action, to be developed during the Feasibility Study could examine:

Creation of an Advisory Group

This group would offer permanent advice on matters regarding organizations, accounts, and legal and technical questions related to the demands of the tender process.

Development of Public Outreach and Marketing Campaign

This includes a clear understandable presentation of the project to the transport sector as well as the press and the public, which would involve a summary of passenger and operators benefits, including:

Passenger Benefits: (i) improvement in the quality of travel – reduction of travel time, increase in comfort, improved vehicles, and safer waiting areas; (ii) improved safety as on-route competition is eliminated; and (iii) rationalization of frequencies, better regularity of services and better spatial distribution.

Operator Benefits: (i) reduction in the costs due to economies of scale; (ii) rationalization of routes and resources; (iii) reduction of operational costs due to less accidents; (iv) control over

the fare-box and improved revenue flows; (v) capitalization of the company; a real increase in value; and (vi) access to new and more efficient forms of financing.

Programmed Meetings and Seminars

Representatives of the transport operators should meet to discuss the following:

- Technical characteristics of the project;
- Exchange ideas regarding adaptations managers should make to guarantee the participation of local companies in the restructuring of the system of transport;
- Schedules to carry out the necessary changes in the legal and financial nature of the companies;
- Approaches to form consortia or transitory companies that can adapt to the requirements of the tender process.

Visits to Other Systems

This step is always important and allows the transport industry to have direct contact with the operators of modern systems. As well as the TransJakarta, several BRT systems are being planned or built in Asian cities, such as Hanoi, Shanghai, Beijing, Shenzhen, etc. If possible, a short trip could be made to Latin America as well.

A25.6 Case Study Cities

Below is a list of cities that have implemented BRT. As not all BRT systems are the same, it is worthwhile for UDA to explore the wide variety of options and systems before deciding on the best option for Colombo.

Table A25.6 List of Cities with Bus Rapid Transit

Continent	Country	City
North America	Canada	Calgary, Alberta Calgary Transit
		Halifax, Nova Scotia Metro Transit MetroLink
		Mississauga, Ontario Mississauga Transit
		Montreal, Quebec STM BRT R-BUS 505 Pie-IX
		Ottawa, Ontario OC Transpo Transitway
		Vancouver, British Columbia 97 B-Line, 98 B-Line and 99 B-Line
		Waterloo Region, Ontario iXpress (Grand River Transit)
		York Region, Ontario Viva
		Mexico
		Mexico City, Federal District Metrobús
	United States	Albuquerque, New Mexico Rapid Ride
		Boston, Massachusetts MBTA Silver Line (currently 2 independent segments with a total of 4 branches)
		Cleveland, Ohio Euclid Corridor
		Denver, Colorado Downtown Express (I-25 HOV)
Eugene, Oregon Emerald Express (EmX) [5] Currently Under Construction, to be completed late 2006.		
	Las Vegas, Nevada Metropolitan Area Express (MAX)	

Continent	Country	City
North America	United States	Los Angeles, California El Monte Busway
		Los Angeles, California LACMTA Orange Line; Metro Orange Line external link
		Los Angeles, California Harbor Freeway Transitway
		Los Angeles, California Metro Rapid system
		Miami, Florida South Miami-Dade Busway
		Minneapolis-St. Paul, Minnesota University of Minnesota transit
		Minneapolis-St. Paul, Minnesota Metro Transit
		Oakland, California AC Transit 72R Rapid Bus
		Orlando, Florida Lynx Lymmo
		Phoenix, Arizona City of Phoenix BRT
		Pittsburgh, Pennsylvania PATransit EBA/WBA lines
		Providence, Rhode Island East Side Bus Tunnel
		San Jose, California: Santa Clara Valley Transportation Authority
		Seattle, Washington: Metro Bus Tunnel
South America	Colombia	Bogotá: TransMilenio
	Brazil	Curitiba: Curitiba Rede Integrada de Transporte
		Florianópolis: SIT (Sistema Integrado de Transporte)
	Ecuador	Quito: Trolebús and Ecovia
	Chile	Santiago: Transantiago (Under implementation)
	Venezuela	Barquisimeto: (Under construction) Transbarca
Mérida: (Under construction) Trolmerida		
Peru	Lima has an informal busway in the middle of the Paseo de la República Expressway; however, liberalization of routes in the 1990s brought several routes operating on it at the same time.	
Asia	China	Beijing: BRT on the Nan Zhongzhouxian (South Central Axis Line) launched at the end of December 2004
		Hangzhou: BRT route B1 which started operation on April 22, 2006
	Indonesia	Jakarta: TransJakarta
	Japan	Nagoya: Nagoya Guideway Bus (Yutreet Line)
	Taiwan	Taipei: MRT on Nanking East Road
Australasia/ Oceania	Australia	Adelaide: O-Bahn Busway
		Brisbane: South-East, Inner-Northern, Northern, Eastern and Boggo Road Busways
		Perth: Kwinana Freeway bus lanes (under conversion to rail), Causeway (East Perth-Victoria Park), Beaufort Street Inglewood.
	Sydney: Liverpool-Parramatta T-way and M2 Bus Corridor	
New Zealand	Auckland: Northern Busway	
Europe	France	Nantes: TAN
	UK	Crawley: Fastway
	The Netherlands	Eindhoven: Phileas BRT
		Schiphol: Zuidtangent

Source: http://en.wikipedia.org/wiki/Bus_rapid_transit#List_of_Bus_Rapid_Transit_Systems

A25.7 Additional Information

Additional information on implementing bus rapid transit systems can be found in the following documents and websites:

- World Bank, “Innovative Solutions for Public Transport: Curitiba, Brazil,”
http://www.worldbank.org/transport/urbtrans/pub_tr/curitiba_summary.pdf
- Bus Rapid Transit Policy Center: <http://www.gobrt.org/>
- Transportation Research Board, Transit Cooperative Research Program, “Volume I: Case Studies for BRT,” http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_90v1.pdf
- Transportation Research Board, “Characteristics of Bus Rapid Transit for Decision-Making,” <http://www.fta.dot.gov/documents/CBRT-DecisionMaking.pdf>
- TransMilenio Home Page,
http://www.transmilenio.gov.co/transmilenio/home_english.htm
- World Bank Publications and Useful Links on Bus Rapid Transit,
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTTRANSPORT/EXTURBANTRANSPORT/0,,contentMDK:20247053~menuPK:1393723~pagePK:148956~piPK:216618~theSitePK:341449,00.html>

Appendix 26 List of Tasks by Organization

A26.1 Introduction

This appendix provides a summary of the tasks required of individual organization by high priority project. These correspond to the tasks outlined in the project sheets which are found in Appendices 20 and 21.

A26.2 Organizational Tasks

(1) Ministry of Railways and Transport

Table A26.1 Ministry of Railways and Transport Tasks

Project	Task	Partner
Inst-1	Acceptance by JICA Study Steering Committee	MoH
	Discussions with Ministers of MoRT, MoH, and Chief Minister of WPC	MoH
	Discussions with the Treasury	MoH
	Discussions with the Prime Minister	MoH
	Joint Cabinet Memorandum	MoH
	WPC Involvement	MoH
	PCUT Appointments	MoH

(2) Ministry of Highways

Table A26.2 Ministry of Highways Tasks

Project	Task	Partner
Inst-1	Acceptance by JICA Study Steering Committee	MoRT
	Discussions with Ministers of MoRT, MoH, and Chief Minister of WPC	MoRT
	Discussions with the Treasury	MoRT
	Discussions with the Prime Minister	MoRT
	Joint Cabinet Memorandum	MoRT
	WPC Involvement	MoRT
	PCUT Appointments	MoRT

(3) National Transport Commission

Table A26.3 National Transport Commission Tasks

Project	Task	Partner
Bus-1	Market/explain concessioning to politicians and public	WPC
	Modify NTC Amendment	
	Discuss concessioning with pilot route association	WPRPTA Consultant
	Select pilot routes	WPRPTA
	Sign concession with route association	WPRPTA
	Monitor concession	WPRPTA
	Modify tendering documents	WPRPTA
	Re-tender using competitive bidding	WPRPTA
	Develop and gazette methodology for route rationalization	WPRPTA Consultant

Project	Task	Partner
	Conduct bus passenger journey study	Consultants
	Readjust route network to create trunk/feeder routes	WPRPTA Consultant
	Develop and gazette service levels	WPRPTA Consultant
	Develop the tender documents	Consultants
	Tender routes	WPRPTA
	Monitor concessions	WPRPTA
	Re-tender after tendering period	WPRPTA
Bus-3	Identify training Purpose	Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants
PT-1	Develop vehicle and driver regulations for school/office transport	Consultants
	Discuss regulations with decision makers	
	Outline strategy to implement and gazette regulations	Consultants
	Develop and implement monitoring system	Consultants
	Undertake marketing campaign	Consultants
	Check and license all drivers	
	Review status of NTC implementation of big school buses	Consultants
	Conduct demand survey to identify best routes for bus services	Consultants
	Identify service requirements	Consultants
	Review tender documents, modify if necessary	Consultants
	Tender school routes to operators	
	Market school routes to schools and parents	Consultants
	Monitor services	
TM-11	Review previous studies	Consultants
	Organize and conduct stakeholder workshop	Consultants
	Prepare TOR	Consultants
	Conduct study	Consultants
	Analyze study findings	Consultants
	Organize seminar on findings	Consultants
	Discuss and obtain consensus with MoRT and MoE	Consultants

(4) Sri Lanka Transport Board

Table A26.4 Sri Lanka Transport Board Tasks

Project	Task	Partner
Bus-4	Identify Training Purpose	Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants

(5) Western Province Road Passenger Transport Authority

Table A26.5 Western Province Road Passenger Transport Authority Tasks

Project	Task	Partner
Bus-2	Identify groups of routes to be timetabled	Consultants
	Conduct route surveys on each route	Consultants
	Conduct a loading survey on each route during peak and off-peak periods	Consultants
	Identify software package and train users	Consultants
	Create coordinated timetables	SLTB, SLR Consultants
	Develop implementation/rollout plan	SLTB, SLR Consultants
	Develop enforcement plan	SLTB, SLR Consultants
	Develop methodology to review/modify timetables	SLTB, SLR Consultants
Bus-5	Identify Training Purpose	Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants
PT-1	Hold open meetings	Consultants
	Draft new three-wheeler legislation	Consultants
	Market legislation to drivers, owners, and passengers	Consultants
	Identify and appoint staff members to new three-wheeler bureau	Consultants
	Identify Training Purpose	Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants

(6) Sri Lanka Railways

Table A26.6 Sri Lanka Railways Tasks

Project	Task	Partner
Rail-1	Update feasibility study	Consultants
	Implementation program and proposal	
	Project preparation/procure contractor/undertake detailed design	
	Track improvement	Contractor
	Traffic control system	Contractor
	Communications system	Contractor
	Suburban station enhancements	Contractor
Rail-2 (Signaling System)	Update feasibility study	
	Implementation program and proposal	
	Project preparation/procure contractor/undertake detailed design	
	Construction of components	Contractor
	Delivery and installation of wayside equipment	Contractor
	Delivery and installation of centralized traffic control (CTC) and interlocking	Contractor
	Installation of CTC at control center	Contractor
	Commissioning	Contractor
	Hand over to SLR	Contractor
Test and commission CTC		

Project	Task	Partner
Rail-2 (Rehab of Telecom System)	Update feasibility study	
	Implementation program and proposal	
	Project preparation/procure contractor/undertake detailed design	
	Construction of components	Contractor
	Delivery and installation of fiber cables	Contractor
	Delivery and installation of SDH and radio equipment	Contractor
	Installation of dispatch equipment at control centers	Contractor
	Commission SDH system	Contractor
	Hand over to SLR	Contractor
	Install local cables to sub stations, base station equipment, and train radios	Contractor
Rail-3	Test and commission radio system	Contractor
	Identify training Purpose	Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants
	Research training opportunities at Indian Railways	Consultants
	Identify individuals for training classes	
	Work with Indian Railways to design repetitive training course at Indian Railway College	Consultants
	Develop internal documents to develop strategic business unit (SBU)	Consultants
	Identify goals and timeline of SBU	Consultants
Appoint SLR management to SBU		
Develop and implement pilot projects		

(7) Urban Development Authority

Table A26.7 Urban Development Authority Tasks

Project	Task	Partner
BRT-1	Contract signing	
	Inception report	Consultants
	Review existing studies	Consultants
	Draft feasibility study and concept and functional design	Consultants
	Appraisal mission	Consultants
	Final feasibility study	Consultants
	Approval	
Road-49	Feasibility study	Consultants
	Detailed design	Consultants
	Pre-contract assistance	Consultants
	Construction	Contractor
Road-50	Feasibility study	Consultants
	Detailed design	Consultants
	Pre-contract assistance	Consultants
	Construction	Contractor

(8) Road Development Authority

Table A26.8 Road Development Authority Tasks

Project	Task	Partner
Bus-8	Survey bus stop conditions	SLTB WPRPTA Consultants
	Design facilities	SLTB WPRPTA Consultants
	Prepare bus stop information	SLTB WPRPTA Consultants
	Procure and install facilities	SLTB WPRPTA Consultants
Road-1	Pre-Contract (Package-3)	
	Construction (Package-3)	Contractor
	Detailed design	Consultants
	Pre-Contract (Package-1 and 2)	
	Construction (Package-1 and 2)	Contractor
Road-6 (Baseline Road Extension Phase 3)	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
	Procure Contractor	
Road-6 (Fly-over)	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
Road-7	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
Road-10	Detailed design	Consultants
	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
Road-14	Procure consultants	
	Detailed design	Consultants
	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
Road-15	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
	Procure Contractor	
	Construction supervision	Contractor
Road-16	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants

Project	Task	Partner
Road-17	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
Road-18	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
Road-20	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
Road-21	Procure Contractor	
	Construction supervision	Contractor
	Land acquisition	
	Negotiate loan agreement	
	Procure consultants	
	Detailed design	Consultants
Road-26	Procure Contractor	
	Construction supervision	Contractor
	Feasibility Study	Consultants
	Detailed design	Consultants
	Pre-contract assistance	Consultants
	Land acquisition	
Road-33	Construction	Contractor
	Detailed design	Consultants
	Review design	
	Amend design	Consultants
	Pre-contract assistance	Consultants
	Land acquisition	
Road-43	Construction	Contractor
	Feasibility Study	Consultants
	Basic design	Consultants
	Detailed design	Consultants
	Pre-contract assistance	Consultants
	Construction	Contractor
Road-54	Study tour and equipment procurement	Consultants
	Training	Consultants
	Initial work for master plan	Consultants
Road-55	Needs Assessment	CMC Consultants
	Measure preparation	CMC Consultants
	Pilot projects	CMC Consultants
	Evaluation	CMC Consultants
TM-1	Detailed design	Consultants
	Contractor selection	
	Construction	Contractor

Project	Task	Partner
TM-2	Site survey	Traffic Police, CMC, Consultants
	Detailed design	Traffic Police, CMC, Consultants
	Contractor selection	
	Construction	Contractor
TM-3	Signal hardware survey	CMC, Consultants
	Replacement part list	CMC
	Replacement/repair	CMC, Consultants
	Intersection volume count	CMC, Consultants
	Phase/timing design	CMC, Consultants
	Timing installation	CMC
TM-6	Corridor survey	CMC, Consultants
	Detailed design	CMC, Consultants
	Contractor selection	CMC
	Construction	CMC, Contractor
TM-14	Safety audit	NCRS, CMC, Consultants
	Design improvement	NCRS, CMC, Consultants
TM-18	Identify Training Needs	Consultants
	Purchase equipment and software	Consultants
	Develop training programs	Consultants
	Conduct training	Consultants

(9) Western Province Road Development Authority

Table A26.9 Western Province Road Development Authority Tasks

Project	Task	Partner
Road-WP1	Pre-Contract Assistance	Consultants
	Construction	Contractor
Road-WP2	Pre-Contract Assistance	Consultants
	Construction	Contractor
Road-WP4	Pre-Contract Assistance	Consultants
	Construction	Contractor
Road-WP5	Pre-Contract Assistance	Consultants
	Construction	Contractor

(10) Colombo Municipal Council

Table A26.10 Colombo Municipal Council Tasks

Project	Task	Partner
TM-1	Detailed design	Consultants
	Contractor selection	
	Construction	Contractor
TM-2	Site survey	Traffic Police, RDA, Consultants
	Detailed design	Traffic Police, RDA, Consultants
	Contractor selection	
	Construction	Contractor
TM-3	Signal hardware survey	RDA, Consultants
	Replacement part list	RDA
	Replacement/repair	RDA, Consultants
	Intersection volume count	RDA, Consultants
	Phase/timing design	RDA, Consultants
	Timing installation	RDA

Project	Task	Partner
TM-6	Corridor survey	RDA, Consultants
	Detailed design	RDA, Consultants
	Contractor selection	RDA
	Construction	RDA, Consultants
TM-14	Safety audit	NCRS, RDA, Consultants
	Design improvement	NCRS, RDA, Consultants
TM-15	Develop campaign programs	CMC
TM-17	Identify Training Needs	Consultants
	Purchase equipment and software	Consultants
	Develop training programs	Consultants
	Conduct training	Consultants
Road-48	Study tour and equipment procurement	Consultants
	Training	Consultants
	Initial work for master plan	Consultants
Road-55	Needs Assessment	RDA Consultants
	Measure preparation	RDA Consultants
	Pilot projects	RDA Consultants
	Evaluation	RDA Consultants

(11) Traffic Police

Table A26.11 Traffic Police Tasks

Project	Task	Partner
Env-1	Identify training purpose	CMT, CPC, CEA, Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants
TM-2	Site survey	CMC, RDA, Consultants
	Detailed design	CMC, RDA, Consultants
	Contractor selection	
	Construction	Contractor
TM-14	Accident data analysis	Traffic Police, Consultants
TM-19	Establish training school	Consultants
	Design training school	Consultants
	Construct training school	Consultants
	Purchase equipment and software	Consultants
	Develop training programs	Consultants
	Conduct training	Consultants

(12) National Council for Road Safety

Table A26.12 National Council for Road Safety Tasks

Project	Task	Partner
TM-13	Identify issues	Consultants
	Develop education program	Consultants
	Monitor program's execution	Consultants
	Project review	Consultants
TM-14	Accident data analysis	Traffic Police, Consultants
	Safety audit	CMC, RDA, Consultants
	Design improvement	CMC, RDA, Consultants

Project	Task	Partner
	Select contractor	
	Construction	Contractor
TM-15	Identify issues	Consultants
	Develop campaign programs	CMC
	Campaign and monitor	Consultants
	Campaign review	Consultants

(13) Commission of Motor Traffic

Table A26.13 Commission of Motor Traffic Tasks

Project	Task	Partner
Env-1	Identify training purpose	Traffic Police, CPC, CEA, Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants

(14) Central Environmental Authority

Table A26.14 Central Environmental Authority Tasks

Project	Task	Partner
Env-1	Identify training purpose	Traffic Police, CPC, CMT, Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants

(15) Ceylon Petroleum Corporation

Table A26.15 Ceylon Petroleum Corporation Tasks

Project	Task	Partner
Env-1	Identify training purpose	Traffic Police, CMT, CEA, Consultants
	Conduct training needs assessment	Consultants
	Develop training methodology	Consultants
	Develop training curriculum and materials	Consultants
	Conduct training	Consultants