



PROJECT EXECUTIVE SUMMARY
REQUEST FOR Council Work Program Inclusion
UNDER THE GEF Trust Fund

GEFSEC PROJECT ID: 2609
IA/ExA PROJECT ID: P090335
COUNTRY: People's Republic of China
PROJECT TITLE: China GEF World Bank Urban Transport Partnership Program
GEF IA/ExA: World Bank
OTHER PROJECT EXECUTING AGENCY(IES):
DURATION: 3 years
GEF FOCAL AREA: Climate Change
GEF STRATEGIC OBJECTIVES: CC-7
GEF OPERATIONAL PROGRAM: OP11
PIPELINE ENTRY DATE: November 2005
EXPECTED STARTING DATE: January 2008
EXPECTED CEO ENDORSEMENT: October 2007
IA/ExA FEE:

FINANCING PLAN (\$)		
	PPG	Project*
GEF Total		21,000,000
Co-financing	(provide details in Section b: Co-financing)	
GEF IA/ExA		203,000,000
Government		382,750,000
Others		
Co-financing Total		585,750,000
Total		606,750,000
Financing for Associated Activities If Any:		

** For multi-focal projects, indicate agreed split between focal area allocations

FOR JOINT PARTNERSHIP**		
GEF PROJECT/COMPONENT (\$)		
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)

*** Projects that are jointly implemented by more than one IA or ExA

CONTRIBUTION TO KEY INDICATORS IDENTIFIED IN THE FOCAL AREA STRATEGIES:

Adoption and implementation of a national urban transport strategy, transformation of markets in at least 35 Chinese cities (10 project and 25 non-project), and reduction in forecast CO₂ emissions by an estimated 9 to 22 MT over 20 years.

Approved on behalf of the World Bank. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for work program inclusion.

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Date: March 23, 2007

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1. PROJECT SUMMARY

a) PROJECT RATIONALE, OBJECTIVES, OUTCOMES/OUTPUTS, AND ACTIVITIES.

Project Rationale

Greenhouse gas (GHG) emissions from China's urban transport sector are rising very fast, because of explosive growth in car ownership and use. Motorization is also causing severe urban road congestion and worsening urban air quality. As China's national and municipal leaders recognize, a nation-wide paradigm shift in city transport and land use strategies to promote public transport is urgently required. This project will achieve that paradigm shift.

China's urban transport sector is a large, alarmingly fast-growing source of GHG emissions and a major cause of urban air pollution. China already is the world's second largest emitter of greenhouse gases (GHG) and will soon become the largest. Transport is the fastest-growing source of emissions, thanks to moderate success in controlling emissions from industrial and energy sources. The most powerful driver of the fast growth in transport CO₂ emissions is rapid motorization, particularly in China's urban areas. The International Energy Agency estimates that CO₂ emissions from China's light-duty transport fleet will rise from 65 MT in 2005 to nearly 300 MT in 2020, an increase of 290 percent. Most of this growth will be from urban transport. Explosive motorization is also causing severe urban traffic congestion and worsening urban air pollution.

Today, municipal leaders are under pressure to deliver sustainable solutions to these urban transport challenges. For the past 20 years, most cities' response to rapid population, income and car ownership growth has been to invest massively in roads. Through these investments – averaging US\$100 billion per year – cities have developed road networks that are orders of magnitude superior to those of two decades ago. But now the realization has dawned, at both national and city levels, that this is not a sustainable urban development strategy.

Promoting public transport networks can address these local, national and global concerns. National-level policy makers recognize the need for a paradigm shift in urban growth and transport plans, and have begun articulating the need for it. For example, the State Council (Opinion #46 in October 2005), the Ministry of Construction, as well as the highest levels of Chinese leadership, have urged cities to give priority to public transport through official documents and public announcements. If vigorously and effectively promoted, a national pro urban public transport development strategy would slow the growth in transport GHG emissions, improve urban air quality and provide better transport services for the 90% of urban dwellers who don't own a car. In so doing, it would also voluntarily slow motorization.

However, the national government's efforts to translate its sustainable urban transport vision into concrete action at the city level are stymied by structural and institutional barriers. The barriers, as identified in a recent World Bank urban transport study, are a traditionally limited national role and lack of incentives, outdated urban planning processes, limited public accountability, and weak urban transport institutions at the city level.¹ Unlike most developed and many developing economies, national and provincial authorities in China do not play a significant role in urban transport planning, financing, or management. Under the country's decentralized governance structure, primary responsibility for dealing with urban transport

¹ World Bank: Building Institutions for Sustainable Urban Transport in China. EASTR Working Paper No. 4
Zhi Liu and Graham Smith, January 2006

rests with municipal governments. Consequently, a new strategic national urban transport initiative, complemented by progressive city demonstrations, is needed to break the impasse.

This proposed China–GEF–World Bank Urban Transport Partnership Program (CUTPP) will achieve this paradigm shift. The proposed project will overcome the key barriers at the national level to achieving this paradigm shift by (i) developing and promoting a National Sustainable Urban Transport Strategy and detailed planning guidelines, (ii) disseminating good sustainable urban transport development practice, (iii) developing a large cadre of sustainable urban transport specialists by improving training quality and availability, and (iv) promoting progressive urban transport research. At the local level, it will catalyze, through advocacy, planning support and investment incentives, at least 14 high-profile city sustainable urban transport demonstration sub-projects, at least 4 of which will be World Bank co-financed. These sub-projects will illustrate successful pro-public transport investments and strategies and trigger replication by at least 25 cities. Furthermore, the project will promote intensive catalytic interaction between local and national transport officials, as it has already done through competitive selection of the pilot demonstration cities.

The World Bank is ideally positioned and uniquely suited to support this process. The World Bank has extensive experience – both in China and around the world – with the development of institutional mechanisms and policies for sustainable urban transport plans, pro-public transport solutions, particularly development of Bus Rapid Transit (BRT) systems, integration of non-motorized modes into transport systems, and demand management approaches. Additionally, the Bank has a long and productive working relationship with the relevant authorities in China, at both the national and local levels, on urban transport issues. It has provided over US\$1 billion in loans for ten urban transport operations, including the Liaoning Medium Cities Infrastructure Project, the Urumqi Urban Transport Project and the Guangzhou Urban Transport Project, all of which will co-finance some of the pro-public transport activities proposed in this operation. Two more World Bank urban transport investment projects currently under preparation, including a proposed Xian Urban Transport Project, would also co-finance new pro-public transport initiatives catalyzed by this project.

Project Outcomes

A paradigm shift in China's urban transport and land-use policies, plans and investments towards the promotion of public and non-motorized transport modes which are less energy intensive and polluting than those fostered by current urban land-use and urban transport strategies and planning systems.

Significantly lower urban transport GHG emissions from China's cities than the business-as-usual scenario.

Project Outputs

The outputs of the project that would collectively achieve these outcomes are:

- ***National Sustainable Urban Transport Development Strategy.*** A comprehensive national strategy for promoting sustainable urban transport development. The strategy would address objectives, technical design, financing, roles and responsibilities, incentives, and implementation and enforcement mechanisms.

- *Urban Transport Planning Guidelines for Municipalities.* A series of technical manuals, guidelines and standards that would provide guidance for planners in Chinese municipalities on how to develop sustainable City and region-specific urban transport and land use plans, policies and investments that promote sustainable transport. This will include a review of planning and design standards.
- *Recommendations for Urban Transport Legislation.* Recommendations for the substance of a legislation that would institutionalize procedures, policies and guidelines for sustainable urban transport investments.
- *Institutional arrangements for promoting sustainable urban transport in China.* The development of institutional mechanisms to integrate and coordinate urban sustainable transport decisions between governmental entities at different levels.
- *Trained experts and increased technical capacity.* Technical-capacity building of local decision-makers and city planners that focuses on a holistic approach to sustainable transport development in China's context of rapid development.
- *Dissemination and public awareness-raising tools.* These will include training programs, conference presentations and other dissemination activities, such as videos and audio-visual aids that provide guidance on sustainable transport issues to local decision-makers, planners and the public nation-wide.
- *Fifteen large-scale sustainable urban transport demonstration projects, featuring four key initiatives:* (1) Bus Rapid Transit programs. (2) Integration of public transport with non-motorized transport and other modes. (3) Coordination of transport and land development using the Transit Oriented Development (TOD) model. (4) Transport demand management. These demonstration projects have been selected for implementation in 14 cities and one province, based on criteria including innovation, city-driven-ness, and replication potential.

Project Design

Component 1: Strategy development and capacity building at the national level (Total financing: USD32.00 million; GEF co-financing: USD7.00 million)

Task 1A. National Urban Transport Strategy. (Total financing: USD 1.5 million; GEF co-financing: USD 1.00 million)

1. Objectives: Create a nationally-accepted strategic framework for promoting sustainable urban transport and land use policies and investments, and effectively consult on, disseminate, and implement that framework.

2. Activities:

- Organize guided dialogues (high-level conferences and workshops) among national and local policy makers and stakeholders to solicit inputs and provide updates on the emerging comprehensive strategic framework.
- Develop a comprehensive national strategic framework for urban transport that includes
 - Reform of organizational structures
 - Action plan to promote the development and use of public transport
 - Action plan to promote better integration of land-use and transport planning

- Appropriate vehicle and fuel strategies for urban areas
- Identification of appropriate financial mechanisms, implementation, compliance, and administrative mechanisms
- Identify and prepare key legislative changes that may be necessary to harmonize current institutions with the identified urban transport framework

3. Outputs:

- National urban strategy, submitted for approval and adoption by the Steering Committee.
- Proposed amendments to legislation and/or regulations needed in order to implement comprehensive framework, submitted for approval and adoption by Project Steering Committee.

Task 1B. Training and Capacity Building Efforts at the National Level (Total financing: USD 24.9 million. GEF co-financing: USD 3 million)

1. Objectives: Facilitate national government training and strengthening of local capabilities and institutions to plan, operate, manage, maintain, and evaluate the performance and effectiveness of sustainable transport measures. It seeks to build capacity in the national government's ability to both generate and impart knowledge on sustainable urban transport practice in China.

2. Activities:

- Develop a set of appropriate manuals, guidelines and standards for cities in China to foster planning for sustainable urban transport
- Develop and implement a multi-year program of sustainable urban transport technical training, including, where appropriate, web-based training tools, as well as courses, workshops, charettes, and on-site learning opportunities
- Develop more in-depth university courses on environmentally sustainable urban transport for adoption by Chinese graduate programs in urban planning or transport
- Develop and initiate an appropriate and sound knowledge base that tracks appropriate information for characterizing and measuring sustainable urban transport, as well as identify institutional and finance mechanisms to ensure ongoing and timely replenishment of knowledge

3. Outputs

- Sustainable urban transport planning standards, guidelines and manuals for municipal planners adopted and published in hard copy or on the web
- The knowledge created in these standards, guidelines and manuals incorporated in all Project designs and 12th 5 year plan masterplan updates in (i) the demonstration cities, (ii) the other cities participating in urban transport projects with the World Bank (Fuzhou, Shijazhuang, Taiyuan) and cities working with other project partners on urban transport.
- Appropriate set of training tools and activities developed and performed, as well as mechanisms identified to allow ongoing development of future products, and attendance/participation in this program beyond the life of the GEF project
- University courses developed and made available to graduate programs
- Knowledge base developed, and information gathered for at least three years from cities participating in the proposed program

- Knowledge base update plan developed, and resources to enact it identified.

Task 1C. Dissemination and Awareness-Raising Activities (Total financing: USD 4.04 million; GEF co-financing: USD 2.00 million)

1. Objective: This task has two principal objectives. First, it aims to disseminate the particular knowledge and experience gained in the project for the purpose of facilitating replication and ongoing adoption of sustainable urban transport practices. Second, it aims to raise awareness of environmental, social, and economic sustainability in urban transport among governmental decision makers, technical and professional staff, and the general public.

2. Activities:

- Establish a web-based, sustainable urban transport information dissemination platform with interfaces appropriate to different target audiences, such as technical and professional staff, teachers and students, researchers, and the general public, as well as a mechanism to track both usage of the site and effectiveness of the site with different user groups.
- Develop and implement sustainable urban transport public awareness “brands” and campaigns, targeting particularly influential market segments (e.g. local officials, housing developers, teachers and students, employers, etc.), as well as the general public. Evaluate the immediate effectiveness of the marketing campaign, and develop recommendations for refinements / future steps.

3. Outputs:

- Web-based platform for information dissemination, combined with report on first two years’ use and effectiveness of the platform.
- One or more marketing campaigns, delivered, and evaluated.

Task 1D. Monitoring and Evaluation (Total financing: USD 1.56 million. GEF co-financing: USD 1.00 million.)

1. Objective: Monitoring the effectiveness of the pilot projects to ensure that the expected project outputs actually achieve their expected results, and to ensure that these results contribute to meeting the global environmental objective, is crucial. The objective of this task – and the reason that it is included under the National component – is to ensure that results monitoring occur in a comparable framework across all the cities in the pilot project, as well as to maximize the exposure of local staff to the appropriate evaluation framework.

2. Activities:

- Develop appropriate set of results or performance indicators for each type of Pilot project activity (e.g BRT, public transport integration, TOD, demand management, etc.), as well as methodologies for their derivation
- Develop guidelines to standardize data gathering, manipulation, and reporting processes for deriving indicators
- Provide guidance to staff in local implementation units on programming the collection of information sufficient to construct performance indicators, including on developing baseline indicators before the project starts
- Track and monitor pilot project output and resource use

- Evaluate project outcomes after project is completed, by comparison of ongoing monitoring results with baseline
- Conduct workshops and conferences as appropriate

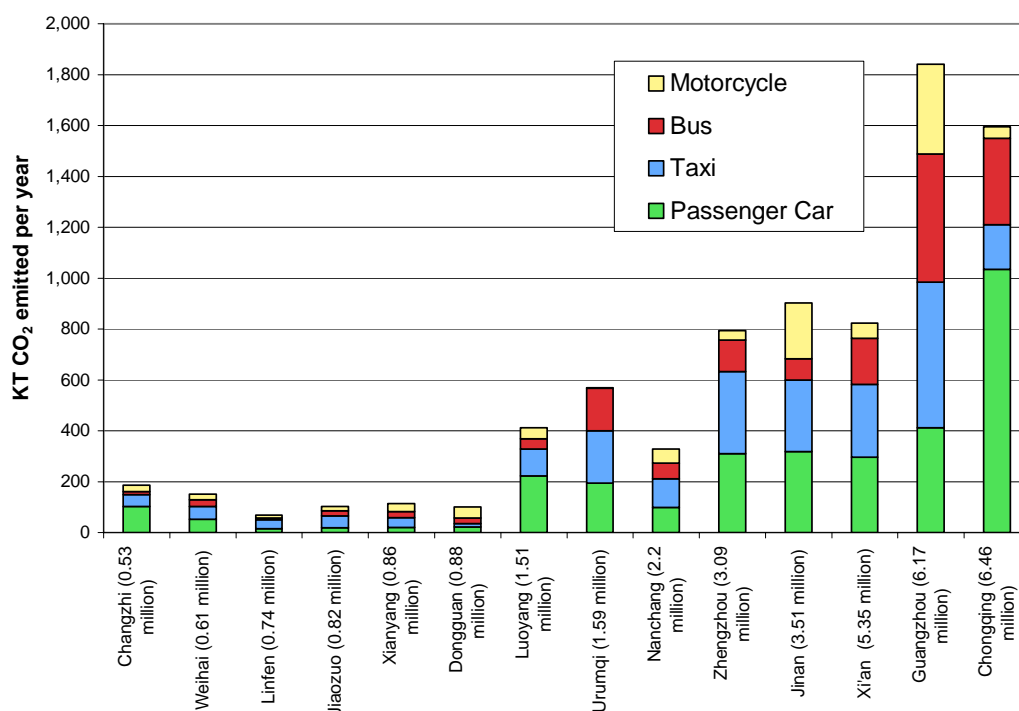
Component 2: Pilot Demonstration Projects in 14 Cities and 1 Province (Total financing: USD572.75 million; GEF co-financing: USD13.00 million)

Fourteen cities and 1 province have been selected through an extensive competitive process, initiated and driven by the national government, to host demonstration projects. (Details of the selection process are shown in Annex 20 of the Project Brief). GEF co-financing would cover technical assistance for the design of the pilot projects, while co-finance from the cities and, in some cases, the World Bank, would cover civil works. The demonstrations will comprise (details in Annex 4 of the Brief):

1. Development of Bus Rapid Transit (BRT) systems in Chongqing, Dongguan (Guangdong), Luoyang, Zhengzhou (both Henan), Jinan, Weihai (both Shandong), Xian (Shaanxi), and Urumqi (Xinjiang);
2. Development of strategic plans to provide priority to public transport, leading to enhanced public transport service, integrated with non –motorized modes in Changzhi, Linfen (both Shanxi), Jiaozuo (Henan), Xianyang (Shaanxi), Nanchang (Jiangxi), and the cities of Benxi, Fushun, Jinzhou, Liaoyang, and Panjin in Liaoning;
3. Development of a short-term low cost action plan to increase ridership on Chongqing’s urban rail line that has been under operation since 2005.
4. Development of demand management measures in Guangzhou (Guangdong), Jinan (Shandong) and Xian (Shaanxi); and
5. Transit-oriented development in the Binjiang and Chaoyang districts of Nanchang in Jiangxi.

The World Bank’s estimate of CO2 emissions from the passenger transport sector in the 14 pilot project cities, based on information sent to the project team, is shown in the following Figure. The cities are arranged in order of population.

2006 Transport CO₂ Emissions by City and Mode



Source: World Bank, based on data provided by project cities. Activity and population underlying these calculations are for city administrative boundaries, not metropolitan regions.

Component 3: Project Management (Total financing: USD2 million; GEF co-financing: USD1.00 million)

This component will support the PMO at the national level to implement the national component as well as support and supervise the pilot cities component.

b) KEY INDICATORS, ASSUMPTIONS, AND RISKS (FROM LOGFRAME)

The key indicators are

- At least 25 cities over 500,000 population that did not participate in the project's environmentally sustainable urban transport demonstration implement urban transport investment development plans that more actively promote public and non-motorized transport.
- Forecast transport CO₂ emissions in the cities that commit to implement more sustainable transport plans developed under the project are lower than their "business-as-usual" forecasts.

Critical Risks and assumptions are presented in the attached table

Potential Risks	Proposed Mitigation Measures	Risk Rating with Mitigation
To Project Objectives		
Revised strategy will not be adopted and implemented	Use of a Project Steering Committee made up of representatives from all relevant agencies from across the national government mitigates this risk. Focus on other national-level activities in addition to strategy development also reduces performance risk.	M
Investments needed to obtain CO2 benefits of GEF co-financed activities in demonstration cities will not materialize	Selection mechanism (track record) and process (internal commitment to Steering Committee) reduces this risk. Also, cities are looking for ‘GEF demonstration city’ title. Title and designation will be withheld until investments successfully implemented. Also, Bank co-financing 4 of the demonstrations. All other cities are looking for Bank loans.	M
To Project Component Results		
Several small demonstration city projects – project management will be a serious issue	Project includes small but important stand-alone project management component. The Project Office has been active during preparation and done an admirable job managing city proposal development process	M
Several small demonstration city projects – quality control will be an issue	PMO will be supported by a monitoring and supervision consultancy that will play a vital role providing technical input, review, oversight, and evaluation of city demonstrations. This will be a significant value-added element of GEF Project.	M
Several small demonstration city projects – Bank supervision and control	Additional supervision budget will be requested from GEF and Bank. Demonstrations associated with Bank urban transport Projects (Xian, Liaoning, Urumqi and Guangzhou) will be primarily managed by task team managing Bank-financed project	M
FM/Procurement risk at the city level	Most of the cities have experience with some Bank projects. Mitigation measures for the rest will be designed at appraisal based on detailed FM/procurement assessment	M
Overall Risk Rating		M

Note: High Risk – H, Substantial Risk – S, Modest Risk – M, Low or Negligible Risk – N.

COUNTRY OWNERSHIP

This project and program proposal has been developed by a task force consisting of representatives from numerous Chinese institutions, including the Ministry of Construction, the State Environmental Protection Agency, the Ministry of Land Resources and the Ministry of Public Security, and that was coordinated by the National Development and Reform Commission.

c) COUNTRY ELIGIBILITY

China signed the United Nations Framework Convention for Climate Change in 1992. The Chinese Government has included climate change as a consideration in their framework for national sustainable development. In this context, they have also adopted active and integrated measures, such as promoting enhanced energy efficiency and implementing improved motorized vehicle emissions standards. Meanwhile, the Chinese Government is also formulating a national strategy on climate change that

will emphasize the need for a major national program to reduce transport-related GHG emissions.

d) COUNTRY DRIVENNESS

Implementation arrangements. The Project has been prepared by and will be implemented by Chinese authorities. China's Ministry of Finance (MOF), the GEF Focal Point for China, is fully responsible for executing and coordinating the project in China.

The Project has been prepared under the guidance of a Project Steering Committee led by MoF that includes members from the MOF, NDRC, Ministry of Construction (MoCn), Ministry of Land and Resources (MLR), Ministry of Public Security (MPS), State Environmental Protection Agency (SEPA), and China Association of Mayors. The Steering Committee will play a key role in ensuring high-level inter-agency coordination and guiding project implementation.

MoF is supported by a Project Office is led by chief of the MOF's International Department and supported by a Project Office staffed by adequate technical staff. The Office will be responsible for daily project management and liaison, task programming, training activities, and promotional activities. Partnerships are being negotiated with Universities that would participate in the academic elements of the training program and Institutes that would house and maintain the capacity building tools developed in the project. The project has also set up a Project Expert Panel, which includes experts recommended by the NDRC, MoCn, MLR, MPS, SEPA and China Association of Mayors. This Panel will provide advice on project design and project studies and review technical reports. Every Project City has set up implementation arrangements led by City leadership (Mayors) and including all relevant city agencies.

Project Design. The project is designed to support the Chinese National Government's efforts to support public transport priority as articulated in various announcements by national agencies including the State Council and the Ministry of Construction. In addition, the National Guidelines of the 11th Five-Year Plan (2006-2010), pay special emphasis on resolving urban transport issues and conserving energy based on public transport. The Plan specifies a directive target of 20% reduction in energy intensity per unit GDP.

The project and program reflect that fact that China has adopted Sustainable Development as a national strategy, as has been explicitly noted in "Sustainable Development Outline of China in the 21st Century." Many of the policies and measures related to the implementation of this sustainable development goal are consistent with climate-friendly policy. Specifically, in recent years, China has promulgated several initiatives, laws and regulations that are designed to promote sustainable transport including:

- China is an active user of the Clean Development Mechanism (CDM) to promote climate-friendly development using market-based initiatives.

- China phased out leaded gasoline between 1997 and 1998. China has also launched a Clean Air program in 2001 aimed at reducing air pollution in cities, focusing on two sources: motor vehicles and industrial coal boilers. This program was led by the Ministry of Science and Technology supported by NDRC, SEPA, MOC and other appropriate ministries. The motor-vehicle elements of this initiative included promotion of LPG and CNG vehicles, adoption of electric injection vehicles and tailpipe-emission reduction technology, and development of electric vehicles.
- Environmental laws including Environmental Protection law, Energy Conservation law, Clean Production law, and the Atmospheric Pollution Prevention and Control law.

2. PROGRAM AND POLICY CONFORMITY

a) FIT TO GEF FOCAL AREA STRATEGIC OBJECTIVES AND OPERATIONAL PROGRAM

The overall program is consistent with the programmatic goals of GEF Operation Policy 11 and the GEF Strategic Priority in Climate Change focal area (CC-7), including that the project: (a) is country-driven and supports governments' efforts to promote sustainable development; (b) strives to leverage other funds; and (c) demonstrates cost-effectiveness of different measures to reduce GHG emissions associated with transport. This project is consistent with the objectives of the Global Environment Facility Operational Program 11 on "Promotion of Environmentally Sustainable Transport", and is consistent with the GEF climate change strategic priority related to Sustainable Transport is defined in the GEF Business Plan for FY x. Specifically, the project would support studies and pilot interventions (a) to integrate urban land-use and transport planning; (b) induce sustainable transport policies, and programs in Chinese cities that contribute to a long-term modal shift to more efficient modes of transport; (c) for targeted research for environmental assessment (both local and global) of transport and land-use measures; (d) to pursue political dialogue engaging different actors dealing with transport, land-use, and environment matters at all levels of government; (e) to foster a common approach to sustainable transport, articulating land-use planning, and air quality policies; and (v) to create a network of Chinese cities to allow sharing of regional experiences, enhance the analytical tools available at the institutional level, and make them available to all interested cities.

b) SUSTAINABILITY (INCLUDING FINANCIAL SUSTAINABILITY)

The project design addresses key concerns about the sustainability China's urban transport systems raised in earlier Bank analytical work. Specifically:

- GEF's support for a national level coordination and review mechanism would address a key structural impediment to effective national-level guidance to promote and institutionalize sustainable urban transport policies in the recent past; i.e. the absence of any oversight structure to balance decentralization of urban transport investment and management in China.
- The formal planning guidelines on urban transport will significantly influence the manner in which cities address urban transport issues. Cities do attempt to respond to formal recommendations (such as those made by the Ministry of Construction on promoting public transport priority), but in many cases this guidance is not

detailed enough at the operational level to facilitate effective implementation. The planning guidelines that will be developed under the project will fill this crucial gap and thus make for more sustainable urban transport planning and management. Most of the guidelines created will be issued under the authority of the Ministry of Construction. The Steering Committee has indicated that some of the guidelines will be issued by the Steering Committee together.

- The capacity building program will support the development of training programs and tools that will support long-term capacity building. Academic curriculum development will be housed at the partner universities. The training programs and technical manuals will be housed at the partner Transport Institutes at the national and local levels. NDRC has expressed an interested set up an ‘green transport’ institute concurrently with this Project that would take ownership and responsibility for the maintenance of the capacity building products of CUTPP. Additionally, two existing institutes, the Institute for Comprehensive Transport under NDRC and a new Public Transport Institute set up in Jinan have also expressed interest in these materials.

The demonstration projects provide the basis for a high-impact demonstration program. The GEF co-financing addresses a key technical risk; in the absence of the GEF, many of these projects would have been implemented without adequate technical input, review or oversight. The project cities have already demonstrated a high level of political will that illustrates their commitment to implementation. Mayors of ten of the fourteen cities met with the Bank mission (nine in Beijing and one on-site) as part of a review prior to this submission to express their commitment to project implementation. This unprecedented official expression of commitment, a result of the selection mechanism (that identified cities with an interest and track record in promoting public transport) and process (the ownership and oversight provided by the national level agencies) is a clear indication that there is high likelihood that the GEF co-financing will produce impacts, regardless of the financing sources for eventual investments. In the cases where the Bank is formally involved in a follow-on investment – apart from the four cases already identified, virtually all the demonstration cities expressed an interest in a follow-on Bank loan focused on public transport investments – that involvement will further support implementation.

c) REPLICABILITY

Replicability and demonstration effects are fundamental to the manner in which innovations are mainstreamed in China. The Steering Committee structured the pilot project selection process accordingly. Proposals were solicited from nine provinces distributed geographically throughout the country, precisely to enhance the demonstrative nature of the projects: three in the East (Liaoning, Shandong and Guangdong), three in middle China (Jiangxi, Henan and Shanxi) and three in the West (Shaanxi, Chongqing and Xinjiang). In addition, the cities were asked in their proposals to reflect upon and identify the particular demonstration potential of their proposed projects. Their responses were a key component of the selection criteria. The final outcome is a set of cities that mirror the mix of size and regional characteristics found throughout Chinese cities, and a set of projects whose demonstrative effects have been incorporated into their very conceptualization.

- Guangzhou and Chongqing are two of China's biggest cities, with expanding rail systems in operation, needing to consider integration between bus and rail, and needing to consider the role of demand management to supplement their extensive public transport development efforts. Successful strategies in these cities will have immediate implications for the mega-cities of Beijing, Shanghai, Shenzhen and Tianjin.
- Guangzhou and Dongguan also represent the two models common for the rapidly growing cities of the south and the coast. Guangzhou has always been an important urban center, but is now dealing with very rapid growth in size, population and motorization. Dongguan is representative of a phenomenon increasingly prevalent in the Pearl River and Yangtze Delta; of traditionally rural areas that have urbanized recently in a relatively low-density (for China) sprawled development reminiscent of the New Jersey suburbs of New York and Philadelphia.
- Jinan, Zhengzhou, Xian and Urumqi reflect a balance of medium to large cities (urban populations of between 2.5 and 3.5 million) from the east, center and western part of the country that are rapidly growing industrial cities with future ambitions for rail, but ideal for near-term applications of BRT. Xian's prominence as a cultural tourist destination and its spatial layout, particularly the Ming-era walls that frame the historical city, make it a particularly attractive site for a congestion pricing demonstration.
- Luoyang, Weihai and Nanchang are representative of the slightly smaller, but significant cities (between about 1 million to 2 million) which need to proactively prepare for near-term growth. Weihai is a coastal tourist destination, Nanchang a city with southern characteristics described by Newsweek magazine as one of the 10 most dynamic cities worldwide, and Luoyang a typical industrial city in the heartland. These cities are in a position to put in place high-quality transit priority, including a BRT-like line in the main corridor to drive future growth. Nanchang (along with Xian), the biggest and fastest growing of these cities, has also put forward a proposal for re-developing a brownfield industrial and a peri-urban district using the principles of transit-oriented development. This project, in particular has tremendous replication potential across almost all medium-sized and large cities in China.
- Changzhi, Linfen, Jiaozuo, Xianyang as well as the project cities in Liaoning present a good mix of the variety of cities in China with a population between 500 thousand and a million. According to United Nations statistics, there are 290 cities of this size in China², that is, cities that are generally too small to receive focused donor attention, yet nevertheless are important in terms of future urbanization and GHG emissions pressures. It is critical to develop good models and demonstrations of basic improvements in public transport and non-motorized modes for cities of this size.

Chinese cities are continuously learning from successful ideas and initiatives elsewhere in the country and cities that reflect successful demonstrations (and their

² From UN urbanization and density statistics, at <http://unstats.un.org/unsd/demographic/sconcerns/densurb/default.htm>

leaders) see an increase in profile, prestige and stature. Indeed, the cities made clear, in some cases explicitly, that the title of ‘GEF-sustainable transport demonstration city’ was as important to them as the GEF co-financing and the technical expertise that the Bank-GEF association bring to the city.

The Project design reinforces this inherent proclivity towards replicability. The dissemination sub-component includes a series of workshops where the demonstration cities experience will be shared, discussed, analyzed and evaluated. The replication plan also includes immediate application of the products of Component 1 (such as guidelines, manuals and standards) into the project development and masterplan updates for the 12th 5 year plan (due in 2010) for the demonstration cities, all the cities that work with the Bank in the urban transport sector and with the cities working with Central Government partner institutes (whose senior members sit on the technical group supporting the Steering Committee).

d) STAKEHOLDER INVOLVEMENT

CUTPP design incorporates important innovations in the business-as-usual practice with respect to stakeholder participation in China’s urban transport sector. The project supports several innovative features (details in Annex 18 of the Brief):

- **Public participation in the demonstration city projects.** The city demonstrations have been designed to build on successful experiences of extensive, independently conducted, structured public participation processes in the Bank financed projects in Liaoning and Xian (under preparation), which have materially influenced project conceptualization and design, and are being used to monitor implementation. Such public participation is not currently common Chinese practice, and CUTPP provides an important multi-city demonstration of for such activities.
- **Government to government interactions in program design.** A key focus of the national component of the project is to increase the level of coordination (especially across national government agencies) and transparency in government interactions in the urban transport sector. Though much remains to be done, the design stage has produced significant accomplishments. The coordination between different agencies on the Steering Committee has been unprecedented and sets the stage for a more effective, coordinated national government role in the sector. In addition to national government agencies, the China Association of Mayors (representing municipal governments) and the demonstration cities have been actively consulted during preparation. Additionally, the transparency in the project city demonstration process, that has balanced regional priorities with a substantive focus on identifying cities and city leaders with a track record and interest in promoting public transport, is also unusual in the Chinese context.
- **Large-scale planned dissemination and awareness-raising activities.** The project design includes a significant dissemination and awareness raising component which targets government officials at different levels as well as the general public.

In addition, CUTPP supports and enhances the role of non-governmental partners, including multilateral organizations and civil society organizations in the sector both at the National and City level (see partnership section below).

e) MONITORING AND EVALUATION

The Ministry of Finance, Project Office, and pilot city governments will regularly collect the data required for monitoring and evaluation of outputs, outcomes and results. The PMO will be supported by a technical team that will focus on monitoring and evaluation as one of their primary tasks. This monitoring and evaluation function has been identified as a separate line item within Component 1 (Task 1D), with a specific budget allocation.

3. **FINANCING** (for all tables, expand or narrow table lines as necessary)

a) **PROJECT COSTS**

Project Components/Outcomes	Co-financing (\$)	GEF (\$)	Total (\$)
1. National Strategy Development and Capacity Building	25 million	7 million	32 million
2. Pilot City Demonstration Projects	559.75 million	13 million	572.75 m
4.			
5. Project management budget/cost*	1 million	1 million	2 million
Total project costs	585.75 million	21 million	606.75 million

* This item is an aggregate cost of project management; breakdown of this aggregate amount should be presented in the table b) below.

b) **PROJECT MANAGEMENT BUDGET/COST³**

Component	Estimated staff-weeks	GEF(\$)	Other sources (\$)	Project total (\$)
Locally recruited personnel*	1368	0.4 million	0.3 million	0.7 million
Internationally recruited consultants*	134	0.2 million	0.2 million	0.4 million
Office facilities, equipment, vehicles and communications	0	0.25 million	0.3 million	0.55 million
Travel		0.0 million	0.25 million	0.25 million
Miscellaneous		0.05 million	0.05 million	0.1 million
Total		1 million	1 million	2 million

* Local and international consultants in this table are those who are hired for functions related to the management of project. For those consultants who are hired to do a special task, they would be referred to as consultants providing technical assistance. For these consultants, please provide details of their services in c) below:

c) **CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

Component	Estimated staffweeks	GEF(\$)	Other sources (\$)	Project total (\$)
Personnel	5568	0.33 million	0.44 million	0.77 million
Local consultants	12644	5.90 million	0.39 million	6.29 million
International consultants	2088	5.25 million	0	5.25 million
Total	20300	11.48 million	0.83 million	12.31 million

d) **CO-FINANCING SOURCES⁴** (expand the table line items as necessary)

³ For all consultants hired to manage project or provide technical assistance, please attach a description in terms of their staff weeks, roles and functions in the project, and their position titles in the organization, such as project officer, supervisor, assistants or secretaries.

⁴ [Refer to the paper on Cofinancing, GEF/C.206/Rev. 1](#)

Co-financing Sources				
Name of co-financier (source)	Classification	Type	Amount (\$)	Status*
Government of China	Nat'l Gov't	in kind and in cash	6m	Confirmed w/ Leter of Commitment
City Governments of 14 demonstration cities	Local Gov't	In cash	356.75m	Confirmed w/ Leter of Commitment
City governments of 14 cities plus 11 cities interacting with World Bank, and partner institutes	Local Govtt	In cash and kind	20m	Money spent on project and masterplan development
World Bank	Impl. Agency	in cash	203 m	Loans under implementation and preparation
Sub-total co-financing			585.75 million	

* Reflect the status of discussion with co-financiers. If there are any letters with expressions of interest or commitment, please attach them.

Details of Financing provided for Component 2

Cities	WB	Municipal Government		Total
	co-financing	co-financing	leveraged financing	
Liaoning Province	76.5	64.75		141.25
Xi'an	81.5	80		161.5
Urumqi	40	10		50
Guangzhou	5	8		13
Changzhi			3	3
Dongguan			9	9
Xianyang			3	3
Zhengzhou			10	10
Jiaozuo			3	3
Luoyang			5	5
Nanchang			30	30
Linfen			4	4
Chongqing			90	90
Weihai			7	7
Jinan			30	30
<i>Subtotal</i>	203	162.75	194	559.75

Notes:

1. These costs are programmed city investments in local projects associated with GEF project phase one (2-3 years)

- implementation for promoting sustainable transport and reducing greenhouse gas emissions.
2. Under the guidance of the GEF project, further investment by the cities is expected in the future.

The co-financing for Component 1 consists of co-financing promised by the Ministry of Finance on behalf of the National Government (US\$5 million), as well as co-financing resources spent by local governments to update their master-plans and develop project designs. The manuals, guidelines and standards developed as part of Component 1B will directly feed into the regular master-plan updates and project development designs undertaken by cities all across China. This impact will be monitored and guided by project partners in all the demonstration cities and with other cities the Bank and the project partners are working with on urban transport projects. The co-financing reported (US\$20 million) is a conservative calculation of the resources spent by these 30 cities (14 project cities, 5 project cities in Liaoning, 3 other cities where the Bank is actively working on urban transport and 8 cities that the partner central government institutes are working with) on their master-plan updates. This calculation is conservative – since, the institutionalization of sustainable transport principles into detailed support will produce immediate benefits all across the country in the form of better plans and projects.

Other co-financing will be provided by the (i) University partners that spend resources in supporting the development and implementation of new curricula for academic training; and (ii) Institutes under NDRC and elsewhere that use spend resources to support the development and implementation of training courses for practitioners and decision-makers, and (iii) Institute under NDRC to maintain and update the web-based knowledge base created by Component 1B. The amount of co-financing that will be provided in these forms is substantial and will be quantified and confirmed prior to CEO endorsement.

4. INSTITUTIONAL COORDINATION AND SUPPORT

a) CORE COMMITMENTS AND LINKAGES

The project is designed to support the Chinese National Government's efforts to support public transport priority as articulated in various announcements by national agencies including the State Council and the Ministry of Construction. In addition, the National Guidelines of the 11th Five-Year Plan (2006-2010), pay special emphasis on resolving urban transport issues and conserving energy based on public transport. The Plan specifies a directive target of 20 percent reduction in energy intensity per unit GDP.

This Project is a key element of the Bank's near-term operational strategy for the urban transport sector in China, as articulated in an analytical report published in 2006. The report identifies the critical role of this Project in providing a platform for (i) an enhanced policy dialogue with national government; (ii) supporting initiatives at the national level to provide guidance to the cities; and (iii) developing a Strategic Framework for future lending operations.

The project is also consistent with the 2006-10 Country Partnership Strategy (approved by the Board on May 23, 2006), which is built upon five thematic pillars of which three are directly relevant to the proposed project (Pillar 2: Reducing poverty, inequality, social exclusion, Pillar 3: Managing resource scarcity and environmental challenges, and Pillar 5: Improving public and market institutions). Specific CPS objectives to which the proposed project contributes are: building the capacities of the poor (Pillar 2), by improving accessibility;

facilitating the migration of surplus rural labor to the urban areas (Pillar 2), by improving the absorption capacity of urban transport systems; building a resource-efficient society (Pillar 3), by facilitating high levels of accessibility with lower energy needs; observing international environmental conventions (Pillar 3); and rationalizing intergovernmental fiscal relations (Pillar 5), by facilitating dialog on urban transport at the national level.

The overall program is consistent with the programmatic goals of GEF Operation Policy 11 and the GEF Strategic Priority in Climate Change focal area (CC-6), including that the project: (a) is country-driven and supports governments' efforts to promote sustainable development; (b) strives to leverage other funds; and (c) demonstrates cost-effectiveness of different measures to reduce GHG emissions associated with transport.

b) CONSULTATION, COORDINATION AND COLLABORATION BETWEEN IAS, AND IAS AND ExAs, IF APPROPRIATE.

Discussions had been initiated during preparation with UNEP, which was active and interested in this program. In light of GEF's revised vision for different agencies, UNEP decided not to participate. Discussions are ongoing with GTZ to establish a partnership that leverages their strong base in training related activities in China.

Coordination is also ongoing with the Energy Foundation, a civil society organization that is active in the urban transport sector in China. The Energy Foundation has financed and remains active in many of the Project cities including Xian, Chongqing and Jinan. Their efforts have been closely coordinated with the preparations of demonstration city proposals in Chongqing and Jinan and in Xian their efforts are closely integrated with the preparation of the Bank-financed project. They are also supporting elements of the National Program, specifically supporting elements of Ministry of Construction's campaign to promote public transport priority.

Coordination is also ongoing with ITDP, a US-based international civil society organization that is active in urban transport in China. ITDP is active in supporting the development of a BRT system in the demonstration city of Guangzhou. They have expressed an interest in supporting one of the Project cities to implement their BRT systems. They are also supporting the Ministry of Construction's campaign to promote public transport priority.

Finally, the PMO has also initiated discussions with the multilateral Clean-Air initiative Asia (CAI Asia) [a city based information gathering and advocacy non-governmental organization supported by the Asian Development Bank] under the auspices of the CAI-Asia led SUMA initiative (Sustainable Urban Mobility in Asia) that includes GTZ, ITDP and EMBARQ, a civil society based organization working in the urban transport sector that has been active in China in the recent past.

c) PROJECT IMPLEMENTATION ARRANGEMENT

China's Ministry of Finance (MOF), the GEF Focal Point for China, will be fully responsible for executing and coordinating the project in China. The World Bank will serve as the designated Implementation Agency for GEF for the Project.

Details of the implementation arrangements for the national component have been presented in 'Country Drivenness' above. Liaoning Province and each of the 14 Pilot Demonstration Cities have set up adequate implementation arrangements as detailed in Annex 6 of the Brief.

ANNEX A: INCREMENTAL COST ANALYSIS

Overall approach

The proposed project seeks to effect a paradigm shift in the way that urban transport and land-use policies, measures and investment plans are developed and implemented in China, in order to preserve and enhance accessibility, while facilitating and encouraging mobility choices that are less energy intensive than those fostered by current urban land-use planning and transport systems in China.

This project is consistent with the objectives of the Global Environment Facility Operational Program 11 on “Promotion of Environmentally Sustainable Transport”, and is consistent with the GEF climate change strategic priority related to Sustainable Transport is defined in the GEF Business Plan for FY 2007. Specifically, the project would support studies and pilot interventions (a) to integrate urban land-use and transport planning; (b) induce sustainable transport policies, and programs in Chinese cities that contribute to a long-term modal shift to more efficient modes of transport; (c) for targeted research for environmental assessment (both local and global) of transport and land-use measures; (d) to pursue political dialogue engaging different actors dealing with transport, land-use, and environment matters at all levels of government; (e) to foster a common approach to sustainable transport, articulating land-use planning, and air quality policies; and (v) to create a network of Chinese cities to allow sharing of regional experiences, enhance the analytical tools available at the institutional level, and make them available to all interested cities.

The project has two key components: a national component and a demonstration cities component. Both are critical for effecting a paradigm shift from reactive to proactive transport and land-use planning. The former is intended to facilitate an appropriate national enabling environment, while the latter intends to implant catalytic examples in a variety of Chinese cities throughout the country.

Baseline scenario

The baseline scenario assumes that governments at both the national and local levels will need to address conditions that will increasingly be perceived as a “crisis” – worsening congestion, lost productivity in urban areas, and loss of access for marginalized populations. Indeed, the perception of a crisis with these characteristics is already fairly common in large cities such as Beijing and Shanghai; in the baseline scenario, such a characterization will increasingly apply to secondary and medium sized cities as well.

At the **national level**, response to the urban transport problems would be piecemeal and ineffectual.

- *Continued decentralization with limited influence of the Central Government.* The existing trend of governmental decentralization in transport investment decision-making and funding will continue. Individual cities will be left fully responsible for urban transport investments, with little effective oversight from Central Government. Development of a national framework would languish, and there would be no mechanism to translate the statements of support the national government has made toward public transport into concrete actions. Nor would there be a national program of technical

assistance or financing to cities that wanted to implement more sustainable transport practices.

- *Very little effort and coordination across Central Government agencies.* While individual central government agencies may engage in oversight of particular high profile issues, no unified, coordinated national effort on urban transport, in a manner that comprehensively influences GHG emissions, will be undertaken. The decentralized approach to policy implementation discussed above will leave the national government without the legal and strategic framework to guide or oversee investments from a technical perspective. Rather, particular agencies would focus on particular aspects of urban transport symptoms – the State Environmental Agency would address air quality, the Public Security agency would concern itself with safety, the NDRC with oil security, and perhaps the Ministry of Land Resources might be concerned with the rate of land consumption at the urban fringe – but any solutions thus identified would likely not have any intentional or consistent impact on GHG emissions. The effectiveness of any efforts that might otherwise emerge from such a system to reduce fuel use would both be hampered lack of coordination across different governmental entities and confounded by parallel measures that intentionally or otherwise would increase private car use.

At the **local level**, efforts to address urban transport policy would continue to occur in a reactive mode – that is, in response to observed levels of congestion and deteriorating air quality. These efforts may meet with some modest successes in the short-run, but their long-run effectiveness or sustainability would be questionable.

- *New road construction and low-density suburban development will continue to drive urban transport trends.* Cities would continue to make investment decisions driven primarily by a growth and competitiveness agenda and as in the past two decades, most cities would continue to focus on building new roads and grow outward creating sprawl. As has been the experience the world over, this new road construction will inevitably be outpaced by increased demand for auto use, and congestion would increase. A few cities, in a crisis mode (as Beijing and Shanghai are presently doing), may begin to prioritize public transport development, but too little and too late. International experience has shown that once a pattern of land-use and personal transport use has been established, it is difficult to undo.
- *Effectiveness of attempts to coordinate land-use and transport planning would be hindered* by the lack of adequate regional institutional frameworks combined with financial incentives for cities to consume rural land at the urban periphery. Public transport ridership is particularly vulnerable in the face of low-density suburban developments: international experience has shown that it is very difficult for public transport to provide a competitive alternative for dispersed suburban trips, once tripmakers have access to personal modes of transport.
- *Investments in road safety and traffic management would occur, but without an emphasis on facilitating public transport and non-motorized vehicle and pedestrian movements.* As a result, non-motorized modes would continue to decline, ultimately getting completely marginalized.
- *Capital investment in public transport may focus on ‘metro’ development*, though it will be constrained by the availability of finance. In the absence of good demonstrations

illustrating the value of lower-cost high-impact transit investments such as Bus Rapid Transit systems, any capital investment on public transport would be constrained. As a result, existing public transport would further lose competitiveness. Buses would be slowed down by congestion, which would also adversely impact the economics of bus operations (slower buses leading to lower ridership and revenues but higher operating costs for the same level of service leading to a negative spiral).

- *Demonstration city projects may continue, with higher technical risk and less replication potential.* It is likely that even without GEF co-financing, many of the selected demonstration cities will implement some variation of their planned projects. This is particularly the case in Liaoning, Urumqi, Guangzhou and Xian, where the Bank is already directly involved in financing projects. In the small cities which have planned integrated transit/NMT improvements, in the absence of the GEF projects, it is likely that the cities will implement some ad-hoc measures, with limited impact and little demonstration potential. In the case of Nanchang where a transit-oriented development component is planned, the discussions during preparation have already increased the scope of design considerations the city officials are considering. In the absence of GEF financing, the city will likely go ahead with ToD plans, but will likely not get the benefits of international experience and expertise on the issue. The implemented plans may have some impact, but will not get the range of review, oversight and expertise that GEF financing will provide. The same is true for the different bus priority and BRT schemes, the tendency will be to implement them quickly and to focus on only the infrastructure. The international experience reinforces the importance of a systems approach to effectively design high quality BRTs. Without GEF, it is likely that many of the BRT's would yield not much more than a busway – with some impact but less than a high quality BRT provides. In summary, the proposals are innovative, very much on the cutting edge of Chinese (and in some cases international) practice, and in the absence of GEF co-financing, there would be significant technical risk that the projects would not be designed or implemented in a manner that maximizes their local and global benefits.
- *Cities will continue to develop masterplans and projects in the same manner as before.* Despite the Central Government's urging cities to develop plans and projects that provide priority to public transport, it is likely that in the baseline, cities will continue to produce plans and projects that are essentially similar to what they are currently doing. In the absence of appropriate detailed guidance in the form of updated standards, detailed guidelines and manuals, the plans and projects will not reflect the Chinese National Government's stated focus of promoting public transport.

Box 1. Component 1, baseline and GEF scenarios, by Task

This Box maps the above points onto the tasks of the national component.

Task 1A. Development of a National Urban Transport Strategy

Baseline Activities. In the baseline, there will be no comprehensive, integrated, sustainable urban transport strategy at the national level. Although there is growing awareness of the need to review the appropriate role of different levels of government and civil society in urban transport planning, in the baseline, it is likely that unsustainable current practices and activities will continue. As at present, cities will focus on building more roads, planning and programming of investments will remain an exclusively local preserve, different national agencies will work in an uncoordinated fashion, often at odds with each other, and national strategy of different ministries will diverge on issues such as auto industry, oil, finance, and land acquisition.

Some corrective actions have been taken. On June 25, 2004, China's Premier Wen Jiabao gave supportive comment and instruction on the "Report on Giving Priority to Develop Urban Public Transport" delivered by the Ministry of Construction (MoCn). On September 23, 2005, the State Council transmitted "Opinion on Giving Priority to Develop Urban Public Transport" jointly delivered by MoCn, NDRC, MOST, MPS, MOF and MLR. On December 1st, 2006, the MoCn together with the NDRC, MOF, MOLSS (Ministry of Labor and Social Security), issued the "Opinion on Several Economic Policies of Giving Priority to Develop Urban Public Transport".

These recent actions are encouraging, but rare and not nearly enough. They are sporadic and non-integrated. There continues to be a lack of concerted national program to systematically formulate a comprehensive set of urban transport development strategy meeting sustainability goals. Even though individual ministries, departments, and sectors each within their administrative boundaries are taking finite steps to improve the urban environment, their independent benefits are insignificant and the progress for change is slow. It is clear that there still is a lack of integrated strategy for the development of urban transport policies and regulations.

To speed up the process and develop a set of national strategy on environmentally sustainable urban transport, incremental activities and resources are urgently required to mitigate the rising negative impacts of urban transport development on the local and global environment.

Baseline Cost. No baseline cost programmed.

Task 1B. Training and Capacity Building Efforts at the National Level

Baseline Activities. The Ministry of Construction (MoCn) is responsible for technical issues relating to urban transport. However, its role in the baseline is limited by budget, responsibility and capacity. The Ministry presently issues guidelines, but most of them are on issues related to physical standards. In the Baseline, domestic capacity issues and resources constraints will limit MoCn's activities to technical standards for physical design. For planning, the MoCn will continue its present practice of suggesting aggregate goals without providing guidelines on implementation.

A limited number of planning guidelines have been in existence but their contents and requirements are outdated and do not match the current demand of urban transport sustainable development in China. They also lag far behind advanced international standards.

The baseline status of those planning guidelines included in the project scope of this sub-component activity are listed below:

- Code for Planning and Design of Urban Road Transport:
Existing, issued in 1995 and not amended since, to be amended and renamed to Code for Planning and Design of Urban Transport.
- Code for Urban Road Design:
Existing, issued in 1991 and not amended since, to be amended.
- Code for Planning and Design of Urban Road Crossing:
New, being developed, with partial funding from MoCn.
- Technical Standards for Evaluation of Construction Project Traffic Impacts:
New, being developed, with partial funding from MoCn.
- Code for Planning and Design of Urban Parking Facility:
New, being developed, with partial funding from MoCn.
- Code for Planning and Design of Urban Public Transport:
New, to be developed.
- Code for Planning and Design of Urban Rail Transport:
New, to be developed.
- Code for Planning and Design of Urban Passenger Transport Interchange Station and Plaza Area:
New, to be developed.
- Code for Planning and Design of Bicycle System:
New, to be developed.
- Code for Planning and Design of Pedestrian System:
New, to be developed.
- Technical Guidelines for Urban Transport Planning:
New, to be developed.
- Technical Guidelines for Urban Public Transport Planning:
New, to be developed.
- Measures for Urban Transport Planning Evaluation Procedure and Review:
New, to be developed.
- Measures for Qualification Authentication and Administration of Registered Transport Engineers:
New, to be developed.

In the baseline, capacity building training activities to address urban transport issues would increase across the country, but with a focus on techniques, models, and intelligent transport system technologies. Training activities are a part of the annual plans of the ministries and commissions of the State, including the MoCn, MOF, NDRC, MOST, MOE and their subordinate departments. However, these training activities are typically not organized with an overall program or extended scope. There is a lack of monitoring

and evaluation associated with these activities. Their target audience is also limited.

The annual conferences held in recent years by professional societies and universities had technical sessions related to sustainable transport. These include those organized by the Urban Planning Society of China, China Association of Mayors, China Communications & Transportation Association, China Highway and Transportation Society, China Railway Society, China Urban Public Transport Association, Urban Public Transport Society of China Civil Engineering Society, Tongji University, etc. It is expected that related sessions will continue to be a part of these annual activities in the near future.

As China has a large number of cities in different sizes and geographic locations, the gap in training fund and activities is rather big. Additional funding and technical assistance will not conflict with the routine projects of ministries and commissions. On the contrary, it can further expand the capabilities of the training audience.

At the city level, cities will continue to develop masterplan updates and projects much as they have in the past, without real changes that would prioritize public transport.

Baseline Cost. Baseline cost for developing new urban transport planning guidelines is estimated at US\$60,000. The cost for sponsoring sustainable urban transport training activities during the duration of the proposed GEF project is estimated at US\$1,000,000. Cities will also incur costs in the baseline of updating their masterplans and developing projects. While this cost for cities across the country will be very high (hundreds of millions), a conservative calculation of this cost for the cities that the Bank and project agencies are working with is US\$20 million.

Task 1C. Dissemination and awareness raising activities

Baseline Activities. The urban transport database of each city, if available, is kept by either the city's planning or transport department, the local planning institute, or the city's transport consultant. These databases are not available for general access. There is no comprehensive consolidated multi-city database on urban transport in existence in China.

Information on urban transport of each city is generally available only to the city's planning and transport departments, the local planning institute, and the city's planning and transport consultants. Very limited information is available for general access. There is no comprehensive information dissemination platform on sustainable urban transport in existence in China.

Even in the absence of the proposed GEF project, the urban transport and urban planning professions in China would continue to improve public awareness of sustainable urban transport.

In particular, to promote sustainable development of urban transport, the MoCn has initiated the nationwide activities of "China Public Transport Week" (CPTW) and "Car Free Day". The practice will widely promote the goals and significances of giving priority to public transport, urging the municipal governments to enhance the construction of public transport

and to encourage the public into using mass transit.

On November 27, 2006, the MoCn invited cities nationwide to participate in the practice of the CPTW. Beginning in 2007, September 16~22 is designated as “Public Transport Week”, and September 22 as “Car Free Day” in each year. By the end of 2006, agreements from 103 cities have been submitted to participate in the practice of CPTW and “Car Free Day”. They promise to publicize the practice, and improve virtually public transport.

To encourage cities nationwide to active participate in the meaningful practice, cooperation with news media such as televisions, broadcastings, websites, publications and magazines should be conducted to strengthen publicity on the practice. Furthermore, during the preparatory period, grassroots activists for the practice should be trained in individual cities to achieve the aimed purpose.

In accordance with the Construction Ministry’s vision, each year’s CPTW should include the implementation of a new practical measure, such as increasing mass transit lines, improving mass transit network, improving transit facilities (reserved lines for mass transit, bicycle lanes, sidewalk, parking lots for public buses and bicycles, etc.), improving the conditions of transit centers of mass transit, and implementing transport demand management.

However, funding and resources are limited to realized all these activities envisioned as well as support the 100+ participating cities on an annual basis.

Baseline Cost. Baseline cost for sponsoring public awareness campaigns on sustainable urban transport during the duration of the proposed GEF project is estimated at US\$1,500,000.

Activity 1D: Monitoring and Evaluation

Baseline Activities. In the absence of the proposed GEF project, this activity would not be undertaken.

Baseline Cost. No baseline cost programmed.

GEF scenario

The GEF scenario aims to shift the paradigm of how governments at the national and local levels approach urban transport policy, in order to move from a reactive to a proactive mode that is better able to incorporate global climate and other long-term strategic concerns.

At the **national level**, the GEF scenario is expected to lead to:

- *Changes in the manner urban transport investments are planned, programmed and financed to reflect global and local sustainability concerns.* A national sustainable urban transport strategy and set of implementing policies, regulations and laws would be prepared that would provide incentives to cities to manage travel demand without increasing GHG emissions, promote public transport and the use of non-motorized transport and reduce (eliminate) current incentives to over-consume land, and favor auto-centered investments.
- *Coordinated action and incorporation of global climate-change concerns in the policy dialogue.* As discussed earlier policy initiatives currently are almost exclusively driven by single issue local and domestic concerns. Coordination across agencies, and the incorporation of global climate-change concerns could lead to fundamentally different (and more desirable) outcomes. For example, consider the development of fuel and vehicle policy. As already discussed, current policy is driven by a balance of local air quality concerns and broader economic concerns (the auto industry is considered a ‘pillar’ industry driving economic development). Coordination of efforts on oil security, local environment, over-consumption of agricultural land will yield comprehensive solutions consistent with global climate concerns.
- *Development of more effective mechanisms to facilitate government oversight of urban transport investments to ensure that local actions are consistent with national priorities.* For example, if national agencies can complement their regulatory authority with financing and other incentives, it would aid their ability to promote local policies that address global and national concerns. Similarly, coordination of local government efforts at the local level is needed to manage peri-urban development and to ensure that it is transit friendly. Provincial governments can also play a critical role as a link between local and national government in ensuring sustainable planning if a clear role for them can be defined.
- *Development of masterplans, project designs, policies and plans at the local level that effectively promote public transport.* Once detailed guidelines, manuals and standards are available to local cities, cities will be able to incorporate the knowledge developed in that material to produce plans and projects that effectively promote public transport and non-motorized transport.

At the **local level**, the GEF scenario will lead to:

- *Successful demonstration projects.* All the demonstration city projects, would maximize both their GHG emissions reduction potential and their demonstration effect. The GEF intervention – which facilitates (i) the introduction of international experts that bring international experience and good practice to bear; (ii) a technical

support and review process; (iii) a stronger emphasis on public consultation that the cities would otherwise have undertaken; (iv) a stronger emphasis on acknowledging and dealing with institutional hurdles to successful implementation than the cities would otherwise have made; and (v) a stronger emphasis on structured monitoring and evaluation – significantly lowers the technical risk associated with project success.

- *Leading to replication.* As a result of the successful demonstrations, and the dissemination and awareness-raising activities, the true benefits of the CUTPP are expected to be in the form of replication. Indeed, the demonstration cities component has been designed to maximize through the replication it triggers. The replication would be expected to lead to more cities adopting proactive approaches to urban transport policy, based on integrated sustainable visions rather than solving or heading off perceived single-dimension problems such as congestion or air quality. As a result, emphasis will shift from road capacity toward system management, from stand-alone transport solutions toward integrated transport and land-use development in a growth management framework, from delay for motorists to the overall experience of people in the city, and from mobility to accessibility. In particular, relatively low-cost, bus-based, integrated public transport solutions would gain national prominence and become a standardized pillar of cities' efforts to improve public transport function, rather than the exception, as a result of the high-visibility pilot projects.
- *Enhanced strategic focus for future Bank role in financing urban transport in China.* It is worth noting that just the project preparation phase of CUTPP has already transformed and elevated the Bank's intervention in the sector. That process has provided a platform for dialogue with all relevant national agencies and key municipal governments. It has provided an opportunity for close coordination with many different divisions of NDRC, the agency ultimately responsible for the strategic direction of the Bank portfolio in China. As a result of extensive discussions during preparations, key officials in NDRC have signaled their desire to shift the focus of the Bank intervention in the sector primarily towards support for public transport. Further, the demonstration cities (and others interested in replication) provide a pipeline of future public-transport oriented investment projects that would support this strategic objective.

Global Benefits Analysis

Incremental benefits and costs are shown in matrix form on the following page. Included in the table are quantified direct CO₂ emissions reductions from the pilot city programs. The methodology for this quantification is presented in the next section.

The global environmental benefits of the **national component** are substantial but difficult to quantify. The Bank's previous analysis has suggested that current institutions and the incentives they reflect is the biggest barrier to the development of sustainable urban transport systems in cities today. The national component, and in particular the strategy is the first concerted effort by National Agencies to systematically reexamine the role of the national government in urban transport in light of the experience internationally and China's national interest in the manner in which city's are structured and operated. The Chinese experience with the development of the expressway system, as well as the international experience suggests that the national government can play an important role in facilitating a broad-based

inclusive and systematic process which is not completely overtaken by local leadership's short-term interest in high profile visible investments. A shift to a more fiscally, socially and environmentally prudent *process* would be expected to have an impact on the most carbon unfriendly 'big infrastructure'; ring roads, bridges often built before the demand justifies them, but instrumental in spurring development that is inherently auto-centric. If the strategy were to lead to the adoption of financial mechanisms to support public transport oriented high impact demonstrations (such as the Federal Transit Administration's 'New Starts' program in the United States or India's Jawaharlal Nehru Urban Renewal Mission) then the carbon benefits would be compounded and significant.

In addition the national Ministry of Construction (the line ministry in charge of urban transport issues) is starting to put into place a national campaign to 'promote public transport.' Much of the national component has been designed to support this campaign with actions to (i) supplement the high-quality policy guidance provided by the Ministry with more detailed guidelines that would facilitate the development of more effective facilities and systems; and (ii) training, capacity building and awareness raising activities that support and disseminate best practices and help establish a public transport oriented culture.

In the case of the **demonstration city projects**, only direct emission saving from specific project concepts being proposed for GEF co-financing have been quantified. These benefits, while substantial, are minor relative to the total GHG emission savings expected from CUTPP. Indeed, the demonstration cities component has been designed to maximize emissions avoided through replication. The selection process has enhanced this effect; being selected as a 'demonstration city' associated with this project – by a combination of national agencies led by Ministry of Finance, Ministry of Construction and the National Development and Reform Commission – has created visibility in China to participants that is at least as important as the co-financing GEF is providing. In a workshop in Beijing held prior to this submission, 152 officials from the demonstration cities, including nine Mayors, came to discuss the city proposals with the national agencies and the Bank. The GEF co-financing alone does not explain this strong level of political interest and financial commitment. These officials emphasized their interest and suitability in being chosen for demonstration status in their presentations and discussions during the workshop, aware of the strong tradition in China for cities to learn from their peers. If replicated among China's roughly 450 other cities with over 500,000 inhabitants, the resulting CO₂ emissions avoided could be measured in Gigatonnes, not Megatonnes.

The dynamics of mode shift to public transport. Even in the project cities, the short-term (calculated) carbon impacts of successful project implementation are small compared to the *potential* for future savings. The mode share of private automobiles in Chinese cities today is minor, in most cases less than five percent; in the project cities the highest share is 15 percent in Guangzhou. The share of all motorized trips (which includes taxis) is significantly higher, about 20 percent in Guangzhou. The evidence from both ex-ante estimates and ex-poste evaluations suggest that at present the trips attracted to public transport are diverted from taxis and in some cases bicycles. The estimates of GHG emission savings made here are based on these data, assuming that only about 20 percent of the trips on improved public transport are diverted from motorized modes. This assumption is conservative.

The experiences of Western Europe, Japan, Singapore, and Taiwan suggest that if indeed a culture of public transport can be created, where high quality public transport is put in place

so that high urban densities can continue to be supported, then even as incomes rise and even as motorization becomes possible for a wider element of the population, it is possible to persuade people to own less cars, or at least to use them less. The difference between auto ownership rates in the US and Europe is decreasing, but there remains a significant difference in auto *use* rates. The vision proposal is to support the demonstration cities, and eventually other Chinese cities to start putting into place a culture of using public transport, a culture of providing priority to public transport, and a high quality public transport infrastructure supported by an environment favorable to bicycles and pedestrians and auto restraints at present. It would be reasonable to expect that as incomes rise, cities will then be in a position to nurture a sustainable approach that continues to promote alternatives to motorized transport and limits the use and ownership of autos.

Select data on the project cities are shown in the next table. Incremental costs and benefits are shown in the second table.

City	Population in city center (m)	GRP/Capita (2006 US\$)	Motorization Rate (cars per 1000 persons)	BRT/bus priority	Integrated transit/NMT priority	Demand management	ToD	GEF contribution US\$ million	Estimated 20 yr GHG emissions avoided (Megatonnes)
Changzhi	0.5	\$7,115	71		Y			\$05-0.75	50
Weihai	0.6	N/A	76	Y				\$0.75	992
Linfen	0.7	\$7,908	78		Y			\$0.5-0.75	60
Jiaozuo	0.8	\$8,968	29		Y			\$0.60	**
Xianyang	0.9	N/A	12		Y			\$0.50	912
Dongguan	0.9	\$22,271	52	Y				\$0.75	830
Luoyang	1.6	N/A	49	Y				\$0.60	**
Urumqi	1.6	\$11,567	57	Y			Y	\$0.7-1.00	409
Nanchang	2.2	\$14,541	31	Y			Y	\$1.00	**
Zhengzhou	3.1	\$14,801	69	Y				\$0.80	1,215
Jinan	3.5	\$18,540	57	Y		Y		\$1.0-1.8	1,610
Xi'an	5.4	\$12,846	28	Y		Y	Y	\$2.00	566
Guangzhou	6.2	\$17,536	46			Y		\$0.75	4
Chongqing	6.5	\$10,325	29	Y				\$1.00	2,146
Liaoning Province	4.6							\$0.75	**
Benxi	1.0	\$9,626	2.60%		Y				
Fushun	1.4	\$8,560	1.00%		Y				
Liaoyang	0.7	\$8,186	0.70%		Y				
Jinzhou	0.9	\$5,641	2.20%		Y				
Panjin	0.6	\$12,569	2.10%		Y				

	Baseline	GEF alternative	Increment
Global Environmental Benefit	Growth rate of GHG emissions from urban transport unknown, because trends and behavior poorly monitored, but likely to be steep	Forecasts of growth rate of GHG emissions from urban transport in Chinese cities possible, as is ongoing monitoring of those emissions, because of improved awareness of importance of information to make those forecasts. Forecast CO2 emissions from BRT interventions reduced by 8.7 MT, from the other interventions by .1 MT over 20 years, in the cities where they are implemented. Reductions from the national component or demonstration effects are not quantified.	Cities implement transport investments and plans that produce lower GHG emissions
Domestic Benefits	Transport and land-use decisions are made reactively in response to perceived crisis conditions in congestion, air quality deterioration, energy security, and accessibility loss for households with no car access	Cities make transport investments and plans that effectively promote public transport and non-motorized transport. Paradigm shift among transport and land-use decision-makers and officials in China, whereby urban transport and land-use policies and investment plans are determined proactively, and favor public and non-motorized transport over the private car.	Demonstration cities and others implement transport investments and plans that promote public transport and non-motorized transport. Creation of legal, technical, and financial mechanisms at national level to foster proactive urban transport planning, plus catalytic technical assistance to cities to help program proactive policies, measures, and investments
Costs	Baseline (US\$millions)	GEF alternative (US\$millions)	Increment (US\$millions)
Component 1. National level			
A. Strategic and Legal Framework Development	1.00	2.00	1.00
B. Technical Training and Capacity Building	21.60	24.40	2.80
C. Dissemination and Awareness Raising	1.50	4.04	2.54
D. Monitoring and Evaluation of Pilot Cities	0.00	1.56	1.56

Component 2. City pilot demonstration projects	450.25	572.75	122.50
Component 3. Project management	0.00	2.00	2.00
TOTAL	475.25	606.75	131.50

Methodology

This section presents the methodology and assumptions used in the estimation of GHG emissions avoided from the project. GHG reduction at a given point in time is understood as the difference between what emissions are forecast to be without the project, minus those forecast with the project, as shown in (1).

$$\Delta G = G_E - G_C \quad (1)$$

Where:

ΔG = change in greenhouse gas emissions associated with the project

G_E = greenhouse gas emissions from the evaluation scenario (e.g. with interventions)

G_C = greenhouse gas emissions from the counterfactual scenario (e.g. business-as-usual)
and

E and C are alternative occurrences for the same point in time.

The total emissions avoided for the project is simply $\sum \Delta G$ for all time periods in the analysis (in this case, 20 years.)

The methodology for estimating GHG emissions for each scenario at each point in time is based on the ASIF identity developed by Shipper, et. al (2000). The structure of this identity is given as follows:

$$G = A \sum_m \sum_f S_m I_{mf} F_f \quad (2)$$

where:

G = total greenhouse gas emissions from transport in study area;

A = activity (e.g. passenger kilometers, ton kilometers);

S_m = share of activity occurring on mode m ;

I_{mf} = energy intensity of activity unit occurring in mode m vehicle using fuel f (e.g. fuel consumed per passenger kilometer); and

F_f = net carbon⁵ content of fuel f (e.g. net carbon content per unit of fuel consumed).

The “I” term is further defined as:

$$I_{mf} = \sum_v \frac{E_v}{O_v} * \frac{VKT_v}{\sum_v VKT} \quad (3)$$

where:

E_v = energy intensity of vehicle v (e.g. fuel consumed per vehicle kilometer);

O_v = average vehicle occupancy per vehicle kilometer occurring in vehicle v ; and

VKT_v = vehicle kilometers traveled by vehicle v .

⁵ For simplicity, this analysis does not include methane or nitrous oxide.

BRT analysis

For the estimation of CO₂ emissions avoided from the BRT interventions in nine of the project cities, the following assumptions were applied to the ASIF framework presented above. These assumptions were based on international research and observation where possible.

1. Ridership on BRT at maturity. Ridership on the BRT is assumed to be primarily dependent on corridor length and population densities in the area of influence of the BRT lines, rather than the size of the metropolitan area or income distribution of the city. Limited evidence of international experience seems to bear this assumption out. The table below shows ridership from various BRT operations in Latin America and Asia.

City	No. busways corridors	Daily ridership (thousands)	Avg daily ridership per corridor (thousands)
Bogotá (phase I)	4	770	193
Quito	3	368	123
Curitiba	6	532	89
Sao-Paulo	3	274	91
San Mateus Jabaquara	1	207	207
Pereira	2	150	75
Mexico	2	250	125
Jakarta	1	130	130
Beijing	1	100	100
Hanoi*	2	245	123

* projected

These ridership results are notably stable across the regions with significant variations in densities, incomes and motorization levels. The performance of Jakarta and Beijing, which are new services which have not yet attained their full ridership potential, are similar to those of the Latin American cities that have been operating in a steady state. In most cases, the demonstration cities have higher densities, lower incomes and lower levels of motorization than the cities in the Table above. It is reasonable to expect that the BRTs will operate with a ridership of about 120,000 trip per day per corridor by 2010. It is assumed that ridership will grow over a 10 year period to 175,000 trips a day (this is consistent with the estimates made in Hanoi where a Bank and GEF co-financed BRT system is close to implementation):

The above ridership numbers apply to corridors that are at least 10 kilometers in length. Shorter corridors are assumed to have less potential to attract ridership, so average daily ridership is reduced in proportionally.

2. Composition of BRT ridership. Most of the ridership on the BRTs will be diverted from people who would otherwise make trips on other modes. Of particular interest are trips that are diverted from other motorized modes such as motorcycles, taxis and private automobiles. Evidence regarding such mode switching behavior of riders in BRT systems is available from Hanoi (20%), Jakarta (about 20%) and Bogotá (9%). The relative contribution of motorcycles is assumed to decline after several years – reflecting a growing trend in China to restrict their

use in urban areas – while the relative contribution of cars begins slowly and then increases exponentially after year 10, reflecting the likelihood that initially, BRT ridership will draw from other modes, but its presence will have a deterring effect for car use in later years.

4. *Calculating vehicle kilometers of travel avoided on alternative modes.* For motorcycles, private cars, and conventional buses, passenger kilometers of travel (PKT) avoided were calculated by multiplying the number of trips diverted by an average distance per trip. Based on available data (from Hanoi and Beijing) and urban spatial theory, this average distance per trip is assumed to be two-thirds of the corridor length leading to main employment centers. Vehicle kilometers of travel (VKT) avoided were calculated by dividing PKT by average vehicle occupancy for the mode. Occupancies used were as follows:

Mode	Average occupancy	Source
Conventional bus	25	IEA-SMP 2004
Motorcycle	1.5	China Energy Research Institute
Private car	1.82	IEA-SMP 2004

For taxis, it was assumed that VKT was avoided by a lowering in the overall number of taxis supplied in the long term.

6. Carbon dioxide emissions avoided

CO₂ emissions avoided are calculated by multiplying vkt avoided, by mode, with modal emissions factors. Emissions factors used assume that taxis, conventional buses, and BRT buses are all diesel based, and that motorcycles and private cars use gasoline. The following emissions factors are used in the analysis:

Mode	Emissions factor (g CO ₂ /vkm)
Taxi	268.1
Conventional bus	680.0
Motorcycle	42.2
Passenger car	276.0
Bus Rapid Transit	612.0

7. BRT analysis results

The analysis forecasts that direct emissions reductions from the projects contemplated in the nine cities undertaking BRT work in connection with the proposed GEF-financed project would be about 8.7 megatonnes of CO₂ emissions over the 20 year analysis period than the forecast emissions under the baseline. Sources of these emissions reductions are shown in Table A9.6.

Mode	10 ⁹ VKT reduced	10 ⁶ Tonnes CO ₂ reduced
Motorcycle	0.8	0.0
Conventional bus	1.2	0.8
Passenger car	251.2	6.9
Taxi	44.2	1.2
BRT	(0.9)	(0.3)
Total	296.5	8.7

City	Total CO ₂ avoided (Megatonnes)
Chongqing	2.15
Dongguan	0.83
Ji'nan	1.61
Urumqi	0.41
Weihai	0.99
Xi'an	0.57
Xianyang	0.91
Zhengzhou	1.22
Total	8.68

Integrated measures to provide transit priority and improve NMT access

Five of the project cities as well as the project cities in Liaoning (see table) are planning bus priority schemes that combine on-street priority with signalization and other associated traffic engineering measures focused on improving transit performance. The cities are also proposing integrated actions to promote non-motorized and pedestrian facility enhancement and integration as part of their plans.

As with the estimation of GHG reductions from BRT interventions, the estimate of GHG reductions from enhancements to service level of public transport is VKT-driven; the methodology seeks to estimate reductions in car, taxi, and motorcycle VKT possible from such improvements.

In cities with limited public transport service, such enhancements – which improve both the quality and level of service – can have significant impacts on ridership, and consequently, magnitude of use of other modes. In Hanoi, addition of new buses, redesign of route structure, and increases in service has led to a ten-fold increase in ridership in 5 years, from 15 million a year in 2001 to over 180 million a year in 2006. In China, recent evidence of the impact of such actions is available from Shijazhuang (Hebei province) Tianjin and Jinan (one of the demonstration cities). In Shijazhuang bus priority schemes have been successfully introduced as part of a Bank-financed project and resulted in a twenty percent increases in ridership. In Tianjin, improvements in service levels and quality results in an 66 percent increase in public transport mode share, from 14 percent in 2004 to 21 percent in 2006. In Jinan, an addition of buses, vehicle miles and improvements in service have resulted in sustained ridership increases of 7 percent a year for the last four years. Such basic improvements may have significant carbon implications, since these trips are drawn largely from other modes, primarily taxis and motorcycles.

Measures to enhance public transport integration can produce many small effects, including increasing travel speeds, reliability, reducing wait time, reducing the variability of wait time, improving passenger comfort or the image of the transport system, or reducing overall point to point trip time. For the purpose of this analysis, it is not possible to analyze all potential

sources of travelers' experienced enhancements. Additionally, the cities in Liaoning Province are excluded from the analysis, because data were not available.

For the purposes of this estimate, the impact of these steps on GHG emissions is made assuming:

- These actions will have a ridership impact equal to two-thirds of the ridership impact in Jinan, i.e. 5 percent annually for the period 2008 to 2020;
- Baseline bus mode share would decline by two percent per year, baseline motorcycle mode share would decline to 0 after 7 years (to reflect a trend to restrict motorcycle use in urban areas),
- Proportion of car trips diverted would be extremely modest (10% in year 20);
- Trip lengths are equal to reported average trip lengths for each city and remain constant over the period.

The integration of non-motorized modes with measures to increase public transport performance can have a significant additional impact. Research in the Americas and Europe has repeatedly shown that quality of access to and from public transport is critical to attracting choice riders who might otherwise be taking private, motorized modes. Moreover, the ability to make non-motorized trips conveniently is an important consideration for household decisions to forego or delay owning a car, which, in turn, influences their choices regarding public transport. Measuring, let alone predicting, the direct impact of such factors on long-term modal shift is difficult; for the moment, therefore, such impacts are not included in the quantitative totals in this analysis.

Integrated public transport results.

The analysis conducted for three of the 8 cities undertaking this work (other cities include the five project cities in Liaoning province and Jiaozuo in Henan province) forecasts that direct emissions avoided reductions from the projects contemplated in the three cities undertaking work in connection with the proposed GEF-financed project for which data is available to carry out the analysis would be about 0.3 megatonnes of CO₂ emissions over the 20 year analysis period. Sources of these emissions reductions are shown in the Table below:

City	Total CO ₂ avoided (Megatonnes)
Changzhi	0.05
Linfen	0.06
Xianyang	0.02
Total	0.13

Transport demand management

Guangzhou, Jinan, and Xian have all proposed including transport demand management actions under Component 2. These include measures such as parking restrictions, parking charges, and congestion pricing.

Congestion pricing is a well understood and high profile example of demand management, which also facilitates an analytically tractable estimate of GHG impacts. The experiences of Singapore, London, and Stockholm provide some evidence of what can be expected from congestion pricing schemes. In Singapore, when an Areawide Licensing Scheme was first implemented in 1975, peak hour vehicle traffic dropped 44 percent, and the car component of that traffic was down 73 percent. A congestion charge in central London instituted in 2003 resulted in a more modest 20 percent reduction for the charge period, once traffic returned to equilibrium – about six weeks after the start of the program (Evans, et. al 2004). Experience in Stockholm was similar, with peak-hour trips falling by 14.6 percent. (Prudhomme and Kopp 2006).

However, implementing congestion pricing is a difficult and complex. Strong political will is needed, and significant amounts of investment are needed in order to produce widely acceptable, fair and well-functioning systems. While, the demonstration cities (and ultimately other cities) may indeed decide to embrace congestion pricing schemes, it is important to note that there exist a variety of other, some politically easier, schemes that have the same incentives, of rendering automobile *use* more expensive.

Increasing **taxes on fuel**, when possible at the local level, can effectively have similar impacts as a congestion charge. High fuel taxes in Western European countries such as UK, France, Spain, and Italy, have been used to explain much lower fuel usage (smaller cars, driven less distances) in the cities of these countries when compared to the cities of the US with roughly comparable incomes. **Parking management** is another tool that increases the cost of driving by increasing the costs of parking or restricting parking altogether. Commercial parking costs in the centers of cities like Manhattan, in themselves serve as a de facto congestion charge. Other cities, like London and Boston, followed a conscious policy of not allowing provision for parking in the city center, as a deliberate attempt to discourage auto traffic and promote a public transport centered downtown. Albert and Mahalel (2006) found in a study that parking price had a impact similar to congestion pricing, (albeit with a third lower elasticity).

There are a variety of other policies cities could use, many of which have different kinds of impacts that are difficult to analytically predict. Cities such as Singapore and Shanghai have implemented restrictions on **automobile ownership**, restricting the number of automobile titles issued in the city annually. This certainly reduces automobile ownership (Shanghai has an automobile ownership rate significantly lower than Beijing, though both cities have similar income levels). However, the experience of Singapore suggests that automobiles once purchased in such a regime are sometimes used even more intensively than they would be otherwise. Cities such as Tokyo (and less effectively Hanoi) have used **parking availability to restrict ownership**. Proof of a legal (and expensive) parking spot is a pre-requisite to being allowed to register a car in the dense residential districts of these cities. Mexico city imposed **command and control** restrictions, limiting cars with certain license plate numbers to downtown only on some days (differentiating between odd and even). Though even such schemes undoubtedly reduce emissions somewhat, they create perverse incentives (to keep

old cars to one can own two cars, create a black market for license plates) that confound any benefits.

In summary, there are a range of different demand management schemes that cities can implement. The impacts that such measures can have on overall vehicle use and consequent CO₂ emissions will depend on the design of the particular programs, and the manner in which the city-specific plans play out in the context of rapidly rising motorization rates in the city (see Table below for current motorization rates). Congestion and parking pricing, while only a sample of the available choices, provide an analytically tractable framework to estimate CO₂ emission impacts.

The analysis carried out assuming that the implemented demand management schemes will have the same impact as a congestion management scheme that will deter 15 percent of total daily trips by car and motorcycle. These trips are converted to vehicle kilometers traveled based on the following average vehicle trip distances (about 5 km) calculated based on data provided by the cities.

City	Motorization rate (cars/1000)	Total CO ₂ avoided (Kilotonnes)
Guangzhou	38	3.57
Jinan	33	0.58
Xian	20	1.30
Total		5.45

Note: Baseline mode shares were estimated from base-year mode shares, with the assumptions that public transport, walking, and cycling mode shares would decline by 2% per year. Taxi, motorcycle, and private car would gain mode share in proportion to their relative mode share in the base year. Thus, the 15% trip reduction because of the transport demand management measures is assessed relative to the baseline.

Transit Oriented Development

The city of Nanchang has put forward an innovative proposal to use GEF co-financing to produce transit-oriented development for two sections of the city. The Binjiang area is currently an industrial area which is being converted into a residential community of 50,000 – the polluting industry and a powerplant have been/are being moved. The Chaogang area is currently peri-urban with a mixture of some low density residential population and small industry. This area is being urbanized with a planned residential based mix of 40,000.

GEF co-financing will support the development of physical plans, urban design, policies and guidelines that:

- The quality of (and as needed measures to improve) bus connections between the redevelopment district and the city center.
- The development of the road network inside the district that focus on transit priority (such as Curitiba style roads that focus development about corridors with a bus-only road at its center) and NMT priority (development of a thick grid of secondary roads to facilitate pedestrian and cyclist trips).

- A urban development plan that focuses land development about major bus-stops and ensures that a majority of residents live within walking distance to a good bus connection;
- Detailed urban design guidelines (and as appropriate regulations) that ensure that buildings, sidewalks and transit infrastructure is designed to maximize the competitive advantage of bus over competing modes. Singapore's experience with respect to avoiding parking lots about buildings (which make private transport much more attractive than walking to the bus), providing for awnings that protect people walking on the sidewalk from the sun and rain, and integrating stations with commercial developments are particularly significant in this regard.
- Urban development plans that facilitate shorter, walking and cycling trips by providing schools (and safe cycling and pedestrian accessibility to schools), shopping and recreational facilities conveniently in the district.

The most visible case studies are those of Hong Kong and Singapore where transit-oriented development has been at the core of a multi-pronged strategy to provide priority to public transport. Despite first-world income levels, 90 percent of work trips in Hong Kong and x percent in Singapore are made on public transport (ref). On the other hand, cities such as Toronto and Paris, well known for high quality public transport in the city center have developed auto-centered suburbs where public transport has only a marginal role. In the US, sections of Northern Virginia represent a high profile success story for ToD. In Ballston thousands of new jobs have been added in the period 1980 to 2005 without appreciable increases in traffic. The use of single vehicle for commuting is about half of what it is for the region (40 percent versus 70 percent). While there is widespread agreements that such ToD measures can have dramatic impacts on private motorized travel, getting accurate estimates of such an impact remains challenging. The success of a ToD depends on a combination of factors: high level planning, detailed urban design, larger trends in employment and population in the region and in many cases luck.

Two sources of systematic analytical work are available. An analysis of the potential for carbon-benefits from land-use changes in Santiago-de-Chile (Zegras, 2006) finds the possibility for 67 percent lower emissions from implementing all elements of a ToD concept. The analysis found that just adapting school location policy to minimize motorized travel would reduce GHG emissions by 12 percent. A report assessing the US experience found (TCRP, 102) that up to twenty to forty percent savings in VMT can be achieved even in the US setting.

The Nanchang context offers an opportunity akin only to Hong Kong and Singapore – to design a system right at first go, rather than make marginal changes to a system already built out (as in most of the US) or retrofit a transit-oriented plan (as assessed in Santiago). The available evidence suggests that the potential is significant – but difficult to quantify. For the purposes of CUTPP, it was decided to focus measurement efforts relating to this sub-component in a forward-looking manner. This sub-component will be subject (more so than the rest of the demonstrations) to a focused evaluation effort. Discussions are ongoing with Professor Chris Zegras at MIT on this issue.

ANNEX B: PROJECT LOGICAL FRAMEWORK

Results Framework		
China/GEF/World Bank Urban Transport Partnership Program		
Project Development Objective	Outcome Indicators	Use of Outcome Information
<p>Achieve a paradigm shift in China's urban transport and land-use policies and investments toward the promotion of public and non-motorized transport, modes that are less energy intensive and polluting than those fostered by current urban land-use planning and transport systems in China.</p> <p>Global Environment Objective Slow the forecast growth of urban transport GHG emissions in China's cities.</p>	<p>At least 25 cities over 500,000 population that did not participate in the project's environmentally sustainable urban transport demonstration implement urban transport investment development plans that more actively promote public and non-motorized transport.</p> <p>GEO outcome indicator Forecast transport CO₂ emissions in the demonstration cities that implement more sustainable transport plans developed under the project are lower than their "business-as-usual" forecasts.</p>	<p>Gauge the extent to which the central government priorities have been effectively translated into impacts on the ground.</p> <p>Serve as a benchmark against which the actual CO₂ and environmental performance of the implemented estimates can be gauged.</p>
Intermediate Results per Component	Results Indicators for Each Component	Use of Intermediate Results Monitoring
<p>Urban transport policy-makers in central government effectively promote (with policies, guidelines, other technical and financial assistance) investments and strategies promoting public transport and non-motorized transport.</p>	<p>A national sustainable urban transport framework and associated technical guidelines are issued and used in 30 cities – including the demonstration cities.</p> <p>A national sustainable urban transport training curriculum is prepared, tested and delivered. A national sustainable urban transport knowledge system is established.</p>	<p>Ensure effectiveness of technical guidelines and any financial mechanisms created as a result of activities of national component.</p> <p>Ensure that basic information for establishment of baselines and benchmarks is available for future projects.</p>

<p>At least 10 demonstration cities implement investments, and transport policies that promote public and non-motorized transport.</p>	<p>At least 8 cities implement transport development programs that include: 1) BRT development; and 2) integration of public and non-motorized transport facilities.</p> <p>At least 1 city introduces automobile demand management.</p> <p>At least 1 city implements a transit-oriented land use development plan.</p>	<p>Gauge the effectiveness of the public transport-oriented activities in Component 2 in ensuring follow-on actions.</p> <p>Gauge the effectiveness of the demand management activities in Component 2 in ensuring follow-on actions.</p> <p>Gauge the effectiveness of the transit-oriented development activities in Component 2 in ensuring follow-on actions.</p>
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Arrangements for results monitoring

Project Outcome Indicators	Baseline	Target Values			Data Collection and Reporting		
		Project			Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
		YR1	YR2	YR3			
(1-1) At least 25 cities that did not participate in the demonstration program implement urban transport investments and plans that promote public and non-motorized transport	Zero	None	None	25 cities with 500,000 inhabitants or more approach the sustainable and public transport institutes being established around the knowledge collection efforts of this project for guidance.	Establish baseline within 6 months of project initiation. Update at year 3	Written and/or telephone surveys of municipalities	PMO
(1-2) Forecast transport CO ₂ equivalent emissions over 10 years in the cities participating in the demonstration projects of Component 2 are at least 1 megaton lower than their “business-as-usual” forecasts.	Not yet available	Methodology and indicators for baseline and scenario forecasts developed	Business-as-usual forecast over 10 years available	With-pilot-intervention-forecast over 10 years available; at least 1 MT CO ₂ equivalent lower than BAU forecast.	Establish baseline forecast within 12 months; pilot intervention scenario in Year 3	Raw information provided by project pilot cities to PMO based on pertinent research and statistical reports.	Pilot project cities provide raw information based on research, statistical reports, and standard traffic data collection methods, as appropriate; indicators developed and derived by PMO

Intermediate Outcome Indicators	Baseline	YR1	YR2	YR3	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
(1A) A national sustainable urban transport framework and associated technical guidelines are issued.	Non-existent	National framework drafted	National framework adopted		Annual progress reports	Status of programmed task	PMO
(1B) A national sustainable urban transport training curriculum is prepared, tested and delivered.	Non-existent	Training courses developed	At least 1 set of municipal planning guidelines adopted	At least 3 training courses offered with participation of at least 20 different cities each	Annual progress reports	Website statistics; telephone surveys	PMO
(1C) A national sustainable urban transport knowledge system is established.	Non-existent	Training courses developed	At least 1 training course offered with participation of at least 20 different cities	Pilot exercise evaluated; legal framework for establishing reporting requirements created	Annual progress reports	Status of programmed task	PMO
(1D) At least 30 cities use the updated technical guidelines, manuals and standards in designing 12 th 5 year plan masterplan updates, other plans and transport projects	Non-existent			Interviews and assessments carried out by PMO, and Bank team to evaluate if guidelines, manuals and standards have been reflected in city plans	Annual progress reports	Status of programmed task	PMO, Bank and partners (Energy Foundation, CAI-Asia and SUMA partners).

(2A) At least 8 cities implement transport development programs that include: 1) BRT development; and/or 2) integration of public and non-motorized transport facilities.	3 cities -- with WB projects -- have already committed	5 additional cities start implementing investments by year 3			Annual progress reports	Monitoring of status of pilot cities	PMO
(2B) At least 1 city introduce automobile demand management.	Non-existent		At least 1 city commits to transportation demand management measures to be pursued and hold public consultations	1 city starts implementing at least 1 transportation demand management measure by year 3	Annual progress reports	Monitoring of status of pilot cities	PMO
(2C) At least 1 city commit to introducing transit-oriented land use development.	Non-existent		At least 1 city adopts recommendations of transport/land-use coordination measures	1 city starts implementing a plan to improve coordination of transport and land-use by year 3	Annual progress reports	Monitoring of status of pilot cities	PMO

ANNEX C: RESPONSE TO PROJECT REVIEWS

- a) Convention Secretariat comments and IA/ExA response
- b) STAP expert review and IA/ExA response
- c) GEF Secretariat and other Agencies' comments and IA/ExA response

China Urban Transport Partnership Project (CUTPP)	
GEF- STAP Review	
Client: WB/EASTR; TTL: Shomik Mehndiratta	Date: March 22, 2007
Reviewer: Dr. V. Setty Pendakur Pacific Policy and Planning Associates Vancouver, BC, Canada 604-263-3576 pendakur@interchange.ubc.ca	

1. Executive Summary

- A. The following is a GEF-STAP Review of the China Urban Transport Partnership Project (CUTPP), currently under preparation by EASTR/World Bank. The review was guided by the Generic Terms of Reference (GTOR) available from the ENEP-STAP Secretariat, guidelines derived from various GEF documents listed in paragraph 2 below and the specific TOR provided by the TTL of the project on March 13, 2007.
- B. The task team and the TTL readily provided all the requested documents. The TTL was available for consultations and clarifications throughout the review period. The documents provided by the Bank and reviewed are listed in paragraph 3 below.
- C. Paragraph 6 below details the review of CUTPP in the context of GEF goals, objectives, operational strategies and operational programs. The most recent documentation, regarding the GEF Operational Program #11: Promoting Environmentally Sustainable Transport, was used as a primary guide for the review.
- D. *As a result of this STAP Review of CUTPP, the requested GEF funding is recommended for approval, subject to the conditions and suggestions detailed in paragraph 15 below.*

2. GEF-STAP Review Guidelines

This review is guided by and derived from the following documents:

- A. Operational Strategy of GEF, available from GEF, March 15, 2007;
- B. Relations with the Conventions, GEF/C.12/12-1998, available from GEF, March 15, 2007;
- C. GEF, Operational Program # 11: Promoting Environmentally Sustainable Transport, Available from GEF, March 15, 2007;
- D. GEF, Elements of A GEF Operational Program on Transport, GEF/C.12/14/Rev.1, March 14, 2007;

- E. Public Involvement in GEF-Financed Projects, available from GEF, March 14, 2007;
- F. GEF Business Plan for FY 2005-2007, from GEF, March 14, 2007;
- G. Climate change strategic priority related to sustainable urban transport; from GEF, March 16, 2007;
- H. Generic Terms of Reference (GTOR) for the technical review of projects proposals, issued by UNEP on March 13, 2006;
- I. Focal Area Specific Annotations (FASA) to the GTOR of the STAP Roster Review, available from GEF, March 15, 2007; and the
- J. Terms of Reference (TOR) provided by the TTL of CUTPP, emailed on March 13, 2007;

3. Documents Reviewed

The following documents, provided by the Task Team of CUTPP, were reviewed as part of this STAP Review:

- A. CUTPP: Project Concept Note (PCN), February 01, 2007;
- B. CUTPP Mission to China, Aide Memoir, February 5-14, 2007;
- C. CUTPP: GEF Project Brief, Draft, March 13, 2007; and
- D. CUTPP: GEF Project Brief, Executive Summary, Draft, March 13, 2007.

4. Consultations with the Task Team

During the review period, the reviewer had the opportunity to consult with the TTL, Mr. Shomik Mehndiratta regarding the details of the GEF components of the project and to obtain additional information and documents as required. The reviewer is grateful to the TTL for all discussions, explanations and additional documentation provided on request.

5. Project in Brief

Briefly, the CUTPP consists of six primary components as follows (**GEF: 21.0 million USD**):

- A. **Component 1A; Development of National Urban Transport Policies and Strategies** (with cities as partners) for sustainable urban transport planning and investment, institutional strengthening and reform, and developing a legal framework for implementation of sustainable urban transport policies at the national level (GEF: 1.0 million USD);
- B. **Component 1B; Technical Training and Capacity Building Program** enabling the achievement of objectives stated in above paragraph 5A above (GEF: 3.0 million USD);
- C. **Component 1C; Stakeholder Participation, Dissemination and Awareness Raising Program** (GEF 2.0 million USD);
- D. **Component 1D; Monitoring and Evaluation of Demonstration Projects**, with a focus on replication (GEF: 1.0 million USD);
- E. **Component 2; Technical Assistance to Demonstration Projects in 14 cities and Liaoning Province** (GEF: 13.0 million USD):
 - i. **Component 2A-1:** Technical assistance to the 14 cities, for a variety of measures including BRT, Bus Priority, TDM, Transit Oriented Land Development some of which are financed by the cities themselves and some are jointly financed with WB loans and domestic funding, aimed at Modal Shifts towards public transport and non-motorized transport- NMT; (GEF: 12.35 million USD);

ii. **Component 2A-2::** Technical Assistance to Liaoning Province (GEF: 0.75 million USD)

- Component 2-A-2-1: For Consolidating Public Participation Methods for Urban Transport Investments to mainstream PP process into city wide annual activities in the 5 cities of the on-going WB financed project; and
- Component 2A-2-2: Technical Assistance to Liaoning province to develop capacity to Scale Up of Public Transport Improvements (including enterprise reform towards competitive franchising and effective provision of on-street bus priority) and enhancing pedestrian and cyclist enhancements in cities province-wide; (GEF: 0.75 million USD ; and

F. **Component 3; Project Management** (GEF: 1.0 million USD).

G. **GEF Total: 21.0 million.**

6. Project Design vis-à-vis GEF Strategic Goals and Operational Programs

- A. The primary objective of the proposed project is to assist China to develop and implement strategies for sustainable urban transport planning, and to develop an institutional and legal framework for planning and implementing sustainable urban transport systems. It also includes a technical training and capacity building program, to achieve paradigm shifts from intensive investments in road infrastructure to encouraging modal shifts to the environment-friendly modes: public transport and NMT. It also aims to assist 14 cities and one province in developing long term strategies for sustainable transport. This planning and policy exercise is supplemented by a series of demonstration projects, emphasizing public transport and sustainable transport policies, in 14 cities together with proposals for technical training and capacity building.
- B. These components of the project are consistent with Elements of GEF Operational Program on Transport, paragraphs 9 and 10 (GEF activities are designed to support national policies that provide adequate incentives for the development paths that are sound from a global environmental perspective (reduction of GHG). The project design is also consistent with GEF Operational Program # 11: Promoting Environmentally Sustainable Transport, paragraph 11.10 requiring the scope of the proposed programs emphasize and promote modal shifts to more efficient and less polluting measures and non-motorized transport and eligible activities for GEF Funding as in paragraph 11 (Integrated strategic urban land use and transportation planning, training, capacity building and technical assistance, demonstration projects and dissemination).
- C. The project's overall structure is technically sound and comprehensive in its approach to developing sustainable transport policies, plans and programs.
- D. The project, as proposed, is consistent with GEF Operational Program #11: Promoting Environmentally Sustainable Transport (June 21, 2001) and comprehensively covers the priority areas detailed in the Elements of a GEF Operational Program on Transport (GEF/C.12/14/Rev.1/March 14, 2006). It is also consistent with GEF Strategic Priorities regarding climate change and sustainable transport (GEF Business Plan for FY 2005-07, GEF/C.21/9). More specifically, this project proposes to address the issue of modal shifts to environment friendly transport modes through an emphasis on BRT, non-

motorized transport (pedestrian and bicycling infrastructure) and TDM in its demonstration projects.

7. Client Ownership (Country-driven) of the Project

- A.** The Project Brief indicates clearly that client ownership is very strong and the project components are country driven at all levels of participation. The project has been prepared by and will be implemented by the Ministry of Finance (MOF), which is also concurrently the GEF Focal Point for China. MOF is also fully responsible for executing and coordination project preparation and implementation. The coordination mechanism already set up during the preparation stage, is a Project Steering Committee (Chaired by MOF) and includes senior officials from all the involved ministries: National Development and Reform Commission (NDRC), Ministry of Construction (MoCn) who are responsible for urban planning and urban construction in China, Ministry of Lands and Resources (MLR), Ministry of Public Security who are responsible for traffic management, traffic safety and traffic law enforcement, State Environmental Protection Agency (SEPA) who are responsible global environmental quality concerns and the China Association of Mayors CAM). MOF has already set up a Project Expert Panel, with representation from all the participating ministries. Furthermore, all of the participating cities have set up implementation committees led by the city leadership (mayors). Project Brief also indicates that the mayors of all the 14 participating cities have attended meetings at MOF, reflecting a strong commitment at the local level.
- B.** It is not clear what level of commitment has been made and what coordination mechanisms have been organized at Liaoning provincial level (paragraph 5E ii, above). This needs to be further clarified to assure that the province is committed strongly carrying through the project proposals for consolidating the gains made on public participation from the Liaoning Medium Cities Infrastructure Project, to the level of provincial application. It is also not clear as to how and by what means they plan to scale up public transport investments. Also, their proposed strategies need to be described and clarified.
- C.** With respect to the demonstration projects in 14 cities (paragraph 5E i above), there is a very high level of commitment as indicated by their willingness to commit fairly large investments for these pilot projects.
- D.** *It is concluded that the project has very strong client commitment both to the project's short-term goals and to the underlying long term concepts (paradigm shift) to merit GEF support, at the national level. However, it is necessary and important to describe and clarify the client ownership and institutional arrangements regarding Liaoning province, as stated above.*

***Response to 7D.** Liaoning's commitment is very strong. Liaoning is an unusual case where the Bank is working with both city and Provincial government in this sector (usually interaction is directly at the city level). Though the Provincial department does not borrow (loans are on-lent to Municipalities), it facilitates project management and leads the dialog with the Bank. The interest in the issues covered in the design have come from the highest levels of the Liaoning Provincial Construction Commission (Vice Director), the agency in charge of the Bank-financed project and of public transport for the Province. Substantive interest from a provincial government is a rare and important opportunity. See more details below in response to 8.*

8. Component 2A-2: Technical Assistance to Liaoning Province: Institutional Issues:

The GEF grant request is in two parts as follows and is included in Components 2A-2, described in paragraph 5 above: Technical Assistance to the Demonstration Projects (GEF: 0.75 million USD):

- i. Component 2A-2-1: To provide a template for the 5 project cities (Benxi, Fushun, Liaoyang, Jinzhou and Panjin of the on-going WB project) to mainstream the public participation process (PPP) into city-wide annual activities, developing standardized guidelines for and evaluation of PPP; and
 - ii. Component 2A-2-2: To support the provincial government to conduct a review of activities related to the improvement of public transport services, to ensure the safety of NMT users in the 5 project cities and to develop capacity to scale up public transport and NMT improvements in the cities province-wide.
- A. These overall objectives are highly consistent with GEF Strategic Goals, Operational Program #11 on Sustainable Transport and GEF Business Plan for 2005-2007. The GEF grant would enhance the effectiveness of the on-going project considerably in scaling up public transport services and emphasizing enhancing the NMT investments and NMT use.
 - B. It is not clear as to which department or agency will be the anchor point and will have the responsibility for the GEF project. For example, item in paragraph 8A i above (Component 2A-2-1), can be done by the agency which now has the responsibility for coordinating on-going WB project. However, the item in paragraph 8A ii above (Component 2A-2-2) will require a provincial department or agency which actually has the authority and can take further actions to scale up public transport and NMT investments and use. *These issues regarding ownership, institutional arrangements, project coordination and project execution should be clarified and strengthened.*
 - C. *It is not clear as to why another provincial agency should be involved in developing standard templates for PPP and for organizing city-wide annual PP activities. There is already a coordinating agency for the project (Liaoning Urban Construction and Renewal Project Office- LUCRPO), who are familiar with the on-going WB financed project details. Why get another agency to coordinate this effort? The rationale for selecting the province, instead of LUCRPO, should be explained and further justified.*
 - D. It is not indicated in the project documents, as to which department or agency of Liaoning province will be the anchor point for achieving the “scaling up of public transport investments, services and integrating them with NMT investments and use. *It is necessary to get the appropriate department or agency to be the owners of this effort. Suggested agencies are Liaoning Provincial Development and Reform Commission (LPDRC) or Liaoning Construction Department or Commission. However, it is important to get an agency which is responsible for public transport investments and regulation in Liaoning.*
 - E. The experience of Liaoning in scaling up of public transport investment and services, and NMT investments and use, could be of significant importance to the GEF project as a whole, in terms of potential replication in Chinese cities. *It is therefore, very strongly recommended that Liaoning (the anchor agency or*

department) be looped into the institutional coordination system organized by MOF at the national level. The points of success and challenge from the Liaoning experience can then be incorporated into national policy development.

Response to 8B+C. The Liaoning Urban Construction and Renewal Project Office (LUCRPO), the Project Management arm of the Liaoning Provincial Construction Commission who is implementing the Bank financed LMCIP is actually a provincial body. LUCRPO will also implement the GEF project on behalf of the Liaoning Provincial Construction Commission. There is no new body involved. The implementation and coordination of the GEF project will be completely integrated with those for LMCIP. The Brief has been updated to reflect that.

Response to 8D. The Liaoning Provincial Construction Commission is in charge of approving transport masterplans and public transport plans of Liaoning cities. The component design responds directly to requests from LUCRPO and Liaoning Provincial Construction Commission for help in institutionalizing the public participation and to support the province to systematically address bus enterprise reform.

Response to 8E. This is a good point and is well taken. It would be useful and valuable to learn from and look to replicate the Liaoning experience with other Provinces. We will discuss this suggestion with the PMO and the Steering Committee and figure out modalities for implementation.

9. Component 1C: Stakeholder Participation, Dissemination and Awareness Raising Activities (GEF: 2.0 million USD)

- A.** The GEF Project Brief states that this task has two primary objectives and it details several activities to support the achievement of these two objectives:
- i.* First is to disseminate the particular knowledge and experience gained in all components of the project, for the purpose of facilitating knowledge transfer to those potential replication cities and through an on-going adoption of best practices.
 - ii.* The second objective is to raise awareness of sustainable transport ideas and options among governmental decision makers, technical staff and the general public.
- B.** *It is highly recommended that the project communications strategy includes a close liaison with and makes use of highly popular regional discussion groups such as SUSTRAN Network which was, initially started by the UNDP and ITDP. SUSTRAN attracts a very large group of transport professionals from Asia in particular and globally in general. There are other global networks on sustainable transport which should also be considered in developing web based communications strategies.*
- C.** *It is recommended that electronic information links be established with leadership agencies such as the China Association of mayors as well as professional associations such as the China Association of Urban Planners. In this regard the Association of the Deans of engineering faculties of the Universities in China becomes important links.*
- D.** *Stakeholder participation, involvement and inputs are integral to GEF operational programs on sustainable transport. The project design and sought-after goals are supportive of and consistent with the operational goals of GEF for the sustainable*

transport. It is concluded that this component is structured to satisfy the GEF requirements.

Response to 9B. The point is well taken. The PMO and the cities will be encouraged to join and contribute on SUSTAN and other such groups. We will also ask them to consider creating their own, Chinese language listserve – perhaps in conjunction with CAI-Asia China Chapter

Response to 9C. China Association of Mayors is a member of the Project Steering committee and an integral stakeholder of the Project from its inception. The advice regarding dialog with professional associations and universities is well taken. Such dialog has started but will be enhanced during implementation.

10. Component 1B: Technical Training and Capacity Building (GEF: 3.0 million USD)

- A.** Because of historical factors, the planning and implementation regarding urban transport is fragmented, distributed among several agencies and therefore, is not coordinated effectively. Institutional capacity regarding comprehensive planning for sustainable urban transport is lacking and it is essential that coordinating mechanisms are instituted and the institutional capacity to think and act in terms of sustainable transport is bumped up substantially. The project proposes to tackle these very complex institutional issues by a series of well defined modules.
- B.** This includes several modules which are inter-related: to develop and implement a multi-year program of technical staff training directly related to sustainable urban transport, to develop, through university partnerships, post-graduate level courses in planning for sustainable urban transport and to set up electronic and web based systems for easy knowledge transfer. As these institutional systems are entrenched (both in government and in educational institutions) and are very resistant to change even in a fast changing economy like China, the project designers are to be commended for their proposals.
- C.** *The proposed program is consistent with the long term strategies of GEF and supportive of the operational program #11 on sustainable transport. Where site visits and study tours are planned, it is recommended that selected cities include Jakarta, Kunming and Beijing (because of recent BRT developments), Singapore (as the world leader in transport demand management and modal integration) and Seoul (for the most recent bold and innovative steps to shift away from MVs).*
- D.** *Subject to above comments and required clarifications, the GEF grant to this component is recommended for approval.*

Response to 10C. The point is well taken and will be passed on to the PMU.

11. Partnerships

- A.** The project documents indicate that discussions are on-going to establish partnerships with GTZ, Energy Foundation and the Institute for Transportation and Development Policy (ITDP). Partnership, with the universities, is also mentioned with regard to long-term training goals. *Establishing partnerships and leveraging GEF investments is totally consistent with GEF Operational Strategies, GEF Operational Program #11 and the Convention of the Parties on Climate Change COP). This effort should have high priority and should be encouraged.*

- B. GTZ is involved in training programs related to sustainable urban transport in China now and is expected to continue for the near future. Energy Foundation has been involved in several cities of China with regard to BRT and bus priority, including currently with Beijing BRT. ITDP was involved in the development of BRT systems in Kunming and now in Guangzhou. These two global civil society organizations are very important parts of the global movement toward sustainable transport and encouraging investments in and the use of NMT in many cities of the world.
- C. In terms of long term technical training and scaling up the transport professions towards sustainable transport, Chinese universities play a very crucial and important role. Any effort to move them from engineering and modeling based transport planning to sustainability based transport planning should be encouraged. The Task team is urged to seek close cooperation with the deans of the faculties of engineering and urban planning; some of these universities are Beijing University of Technology, Northern Jiaotong University in Beijing, Xian Transportation University, South East University in Nanjing, Tongji University in Shanghai and Qinghua University in Beijing.

Response to 11A and B. GTZ has sent a letter of support to the Bank for the Project. The Bank and GTZ are working together already on a number of initiatives in China on training. CUTPP provides an integrated platform to institutionalize and scale up these efforts.

Response to 11C. We agree. The role of Chinese universities will be significant to make this project a success. Faculty from South East University in Nanjing are on the technical committee. Interaction has been ongoing with faculty at Tsinghua and Tongji (the professors are excited by the project and feel they can contribute to its success significantly. They are interested in participating in the project as potential consultants. For this reason it was decided not to involve them as members of the technical expert group – which would have created conflicts of interest). Before CEO endorsement, the PMO will try to obtain MoUs with 2 or 3 universities who will partner in the academic training/capacity building initiatives.

12. Component 2-1: Technical Assistance to Demonstration Projects in 14 cities

- A. The cities were selected in an interestingly competitive process initiated and driven by the national government. *There is very strong evidence of ownership by the cities and the national government. The GEF grant request is for 13.0 million USD for technical assistance to enhance the quality of the output of the demonstration projects where as the 14 cities collectively, are investing 356.75 million USD themselves in these demonstration projects.*
- B. The demonstration projects vary but they focus on overall sustainability, public transport and planning. BRT systems are envisaged for Chongqing, Dongguan (Guangdong), Luoyang, Zhengzhou (Henan), Jian, Weihai (Shandong), Xian (Shaanxi and Urumqi (Xinjiang). It is proposed to develop strategic plans for public transport priority integrated with NMT in Changzhi, Linfen (Shanxi), Jianzuo (Henan), Xianyang (Shaanxi), Nanchang (Jiangxi), Benxi, Fushun, Jinzhou, Liaoyang and Panjin (Liaoning).
- C. Chongqing will also try to develop a short term, low-cost plan to increase the ridership in the urban rail line which has been operating since 2005. TDM

measures will also be developed in Guangzhou, Jinan and Xian. Also it is proposed to develop strategic plans for transit oriented development in selected districts of Nanchang and Xian.

- D. The proposed demonstration projects are very important and are consistent with GEF Strategies and goals. Public acceptance, professional and bureaucratic acceptance, and changing the mind set will be the most important outputs. While the project documents make it clear as to how the information would be disseminated in the demonstration cities, it is not clear as to how this wealth of information would be integrated into the technical training and capacity building as well as its easy availability for other cities for replication. While there is a tendency to consider this information as proprietary (by the government agencies) and confidential, easy replication can only be achieved by easy access to information. These aspects should be further clarified.*
- E. Subject to above comments, the demonstration project component is recommended for approval by GEF.*

Response to 12D. We completely agree. Ensuring that all the knowledge generated by the Project will be properly disseminated and distributed is integral to achieve Project objectives. Much of the technical material will be developed in the form of standards, guidelines and regulations which will be officially issued, either by the Ministry of Construction, or the Steering Committee and made available to the public. Draft versions of the material will be discussed at conferences and be available publicly on the internet for comment. ICT, the institute under NDRC (which also plans to create a 'Green Transport Center' based on the CUTPP platform) and a new public transport center set up by one of the project cities (Jinan) have agreed to maintain and deliver other materials (training materials, web-based tools) and make them available for the public. The academic training and curriculum enhancements will be managed by the University partners and made available to other universities.

13. Component 1D: Results Framework Monitoring and Evaluation, Replicability and Added Value Beyond the Project (GEF: 1.0 million USD)

- A. The unique feature of this proposal is that it seeks clear and understandable objectives for paradigm shifts. The main outcome expected is that the 25 cities (who did not participate in the demonstration projects of this project) come forward and demonstrate an interest and willingness to prepare urban transport plans for cities, consistent with sustainability, public transport priority and extensive use of NMT, and move away from current practices. The secondary objective is that out of these 25 cities, at least 12 cities implement the plans as suggested above and thus able to slow down CO2 emissions compared to the "business as usual" forecasts. The results framework system proposed in Annex 3 of the GEF Project Brief could be used as a model for other country projects. The project designers should be commended for this clarity.
- B. These objectives are consistent with GEF Operational Strategies, Operational Program #11 on Sustainable Transport and GEF Business plan for 2005-2007. The grant for this component is recommended for GEF approval.*

14. Identification of Global Environmental Benefits

- A. Global environmental benefits have been identified and listed in Annex 15 and the accompanying benefit tables. The GEF Scenario based benefits shown in Annex

15, Table A15.1 total 606.75 million USD. These are appreciably high benefits for the GEF investment of 21 million USD.

- B. *The methodology used for computing the incremental benefits, because of GEF interventions, is technically sound and reflects acceptable parameters.*
- C. *More importantly, the unique approach of this project is the emphasis on modal shifts to environment friendly modes such as public transport and NMT. In addition, the project aims to achieve the laudable goal of inducing 12-25 cities to adapt sustainable urban transport policies. These non-computable benefits are of immense long range value in shaping the urban futures in China.*

15. Recommendations

- A. **Component 1A; Development of National Urban Transport Policies and Strategies (GEF: 1.0 m USD):** Details of this component are discussed in paragraphs 7 and 8. It is recommended that this be approved, subject to clarification regarding institutional arrangements and linkages, and details to be provided in revised project documents, as discussed in paragraphs 7, 8, and 11.
- B. **Component 1B; Technical Training and Capacity Building Program (GEF: 3.0 million USD):** It is recommended that this be approved, subject to comments and recommendations made in paragraph 10.
- C. **Component 1C; Stakeholder Participation, Dissemination and Awareness Raising Program (GEF: 2.0 million USD):** It is recommended that this be approved, subject to comments and recommendations made in paragraph 9.
- D. **Component 1D; Monitoring and Evaluation of Demonstration Projects:** It is recommended that this be approved.
- E. **Component 2; Technical Assistance to Demonstration Projects in 14 Cities and Liaoning Province (GEF: 13.1 million USD):** It is recommended that technical assistance to the 14 cities be approved, subject to comments made in paragraph 7, 8, 11 and 12. It is further recommended that technical assistance to Liaoning Province be approved, subject comments and recommendations made in paragraph 8.
- F. **Component 3; Project management (GEF: 1.0 million USD):** It is recommended that this be approved.

Response to 15. All the responses and clarifications have been made in paragraphs 7, 8, 9, 10, 11 and 12 above.

Shomik Mehndiratta

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