

## Sustainable Urban Transport Approach Reducing Congestion and Pollution in Surabaya<sup>1</sup>

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### 01. Background

Motor vehicle ownership is growing faster than population, with growth continuing to accelerate in Surabaya even during the height of the economic crisis. The average distance traveled per vehicle is also increasing in Surabaya. This growth puts enormous pressures on the urban transport system. Traffic congestion is intensifying. Travel speeds are decreasing. The environment is deteriorating. Public transport's share is falling.

However, number of public transport, buses and microbuses, are decreasing. Due to economic crisis, public transport (buses, micro buses and "angkots") in Surabaya is facing difficult problems. Transport operators cannot maintain their vehicles appropriately, and in some cases some vehicles are not operated to avoid financial losses.

*The transport sector is responsible for 25 per cent of global CO<sub>2</sub> emissions from fossil fuel use, and this share is growing. Of all energy-using activities, transport is the area where governments find it hardest to find politically feasible policies that can mitigate greenhouse gas emissions.<sup>3</sup>*

While overall CO<sub>2</sub> emissions of many developed countries have been stabilised. CO<sub>2</sub> emissions from the transport sector in developing countries will increase rapidly with economic growth and increasing motorisation.

Climate change is projected to have a far worse impact in developing than in developed countries, but CO<sub>2</sub> mitigation, as a result of inefficient transportation, has a negative connotation in many developing countries.

Averting increasing contributions of transport emissions requires an integrated package of reforms. In Surabaya as in all developing cities, the question is how to get such policies implemented. Surabaya approach is to focus on short to mid-term measures which are low cost and "win-win", with the highest impact on CO<sub>2</sub> mitigation and at the same time leading to local economic, social, and environmental improvements in the form of reduced congestion & air pollution, and a more liveable, efficient,

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<sup>1</sup> Presented in **Regional Workshop: Transport Planning, Demand Management and Air Quality**, 26-27 February 2002, Manila Philippines.

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<sup>3</sup> OECD Working Paper No. 13, "Innovation in Transport Behavior and Technology", 1997.

democratic and prosperous city. As the World Bank UTSR (2001, draft) argues, "The suggested key both to link GHG mitigation to policy initiatives to goals that are perceived to be of immediate relevance and to try to uncouple, or at least "flex" the link between economic growth and GHG emissions from the transport sector"

## **02. Surabaya: A Typical Developing City**

Surabaya, which is the second largest Indonesian city, constitutes as a major commercial, industrial and administrative center. The capital of East Java is Surabaya with a population of about 3 million (2000). Surabaya is also the gravitation center of a regional urban system formed by the regions of Gresik, Bangkalan, Sidoarjo, Lamongan and Mojokerto with a population exceeding 8 million.

Surabaya has been decided as a natural nuclear driving system for the development of East Indonesia. The city serves as the gateway to East Indonesia and has a major role for industry, business, maritime activities and education. Surabaya becomes a major port for transportation to Eastern Indonesia. Goods for Eastern Indonesia mostly distributed from Surabaya.

In Asia Pacific region, Surabaya is also as a major city competing with other cities such as Manila, Hongkong, Ho Chi Min, Bangkok, Kuala Lumpur, and Singapore. Surabaya is in an "international-ribbon" development in the region. Direct trading from Surabaya to such cities is increasing as well as the other way around.

As a center for economic activities, the transportation and number vehicles are growing very fast. A transport study emphasized the growth of vehicles particularly motorcycles. Number of vehicles (2001) consists of 180,000 cars, 640,000 motorcycles, 300 large buses, 5,000 minibuses and 60,000 trucks (large and small).

*Rapid increases in car and motorcycle ownership in Surabaya over recent years [are] creating serious and widespread traffic congestion. In the future, if no action is taken, conditions will deteriorate still further. It is estimated that a journey to work that takes thirty minutes now, will take up to one hour by the year 2010.<sup>4</sup>*

(a) Advantages of Surabaya in terms of developing sustainable solutions:

- ❑ Congestion and pollution are rapidly approaching critical levels. Morbidity from air pollution is severe.
- ❑ As a large city, lessons learned and standard procedures developed can later be transferred to other cities.
- ❑ Many major studies in Surabaya have been conducted, resulting in a good knowledge base of surveys, information, and studies.
- ❑ Solutions will be highly visible.
- ❑ **Scale of transport problems.**

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<sup>4</sup> Surabaya Integrated Transport Network Planning Report No. B3, "Traffic Demand Management", 1998.

### 03. Ideas and Principles

- a. **Access;** The City should be designed for people. It should be at least as convenient to live in a city without a personal motor vehicle as with one.
- b. **Equity;** Highest priority should go to public transport, walking and non-motorised vehicles that are accessible to almost everyone and have low impacts.
- c. **Pollution prevention;** The City should take necessary measures to protect the citizens and humanity from pollution.
- d. **Health and safety;** Safety is a preeminent concern affecting the viability of non-motorized transport.
- e. **Public participation and transparency;** It is important that it will be given adequate and appropriate support, including information about the issues involved, as well as the benefits and costs of the array of potential alternatives.
- f. **Integrated planning;** Transportation decision makers have a responsibility to pursue more integrated approaches to planning.
- g. **Economy and low cost;** Users of cars and motorcycles should be charged for the full economic, environmental and social costs of their transportation.

### 04. Sustainable Urban Transport: A City Vision

A transport model for a city can be developed depends on the vision of the city. What type of city is needed to fulfill the expectation of the citizen. The type of city depends on how the citizens want to live in the city. This has to do with culture, ideological convictions. Transport model can provide either good facilities or dangerous facilities for people life.

There is a choice to ban car use during peak hours, forcing rich and poor to ride together as equals in public transit or on bicycles. Another choice is a green city with more pedestrian than motor vehicle space. It depends on the people to choose. Planners and engineers have obligation to follow citizens needs.

The more civilized city is not one with highways, but one accessible everywhere to a child on a tricycle."



We want our children can freely,  
safely move and enjoy their life.

The girl is in danger. She has to walk lying to the tree to give space to the car.



The issue of urban transport is not technical but political. Get cars off the streets is technically simple. A city can have crisscrossed by pedestrian avenues, abundant parks and plazas, with at least as much space for people as for vehicles. Most of the cities have rather chosen otherwise. For long time cities have been developed much more for cars mobility than for children's happiness. A city shouldn't be designed only for productivity or for cars mobility, but for human happiness. In every detail a city should show respect and care for children and for human dignity and quality of life.



### *Surabaya Car Free Day 2001*

People need to walk, not in order to survive, but to be happy. Pedestrian streets and ample sidewalks make a more humane city. The pedestrian and sidewalks also make a city more democratic, as public spaces such as wide sidewalks and parks can help integrate wealthy and poor neighborhoods, and provide venues of recreation for urban poor.

## **05. Work with partners and stakeholders**

A policy for sustainable transport system should be adopted by the local people. Measures should also be designed for rapid implementation by the local administration, with limited reliance on foreign help. The implementation should be based on a 'least cost principle', which means that measures with the lowest cost still meeting the requirement for mobility.

Implementation is only likely if the policy is supported by the major stakeholders. The approach in Surabaya focuses on finding the key stakeholders who are interested and concerned, and supporting and working with them. With a small team it is possible to generate awareness at all levels.

The city government and the city council are in touch with the concerns and aspirations of local people. The government and the people are responsible for transport failure and polluted air. In addition, the governments determine transport policy in key areas, especially as regional autonomy is implemented.

### **(b)**

Cooperate with other organisations, such as GTZ, ICLEI, Asia-Urbs, Umweltbundesamt, Swisscontact, World Bank, IEA, World Business Council for Sustainable Development (WBCSD), others. The GEF have also expressed initial support for the approach in Surabaya to reducing CHG emissions.

Working Groups were formed in each key subject area to bring the main stakeholders together on a regular basis. The working groups develop and redefine proposals and implementation schedules and are expected to assist implementation and monitoring results. Where working groups are not formed, major stakeholders are regularly brought to discuss major development and agree courses of action.

The working groups are:

- ❑ Public Transport
- ❑ Non-motorized Transport
- ❑ Inspection and Maintenance
- ❑ CNG
- ❑ Economic Instruments
- ❑ Public Awareness Campaign

## 06. Solutions being developed

### a. Public transport

*Immediately implement the public transport improvement pilot route project in a comprehensive manner according to the implementation schedule which has already been agreed to namely with a new licensing system (quality licensing), a tender process, infrastructure improvements and bus priority on Ahmad Yani Street, along with implementing coordination & cooperation with Sidoarjo and East Java Road Traffic Office.<sup>5</sup>*

(c)

**(d) Comprehensive demonstration route project commenced. It is to include:**

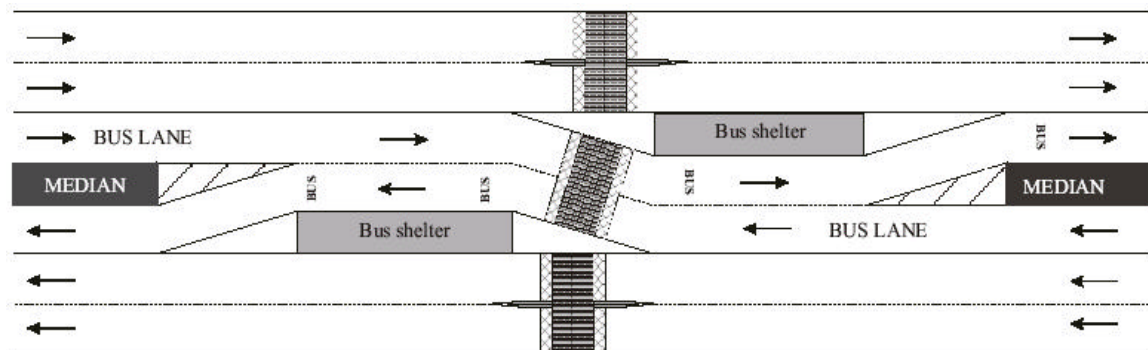
- ❑ Policy & political commitment, including a draft public transport policy statement and agreed schedule for implementation
- ❑ Institutional strengthening, including: training & recruitment; initiation of the public transport planning cycle; Institutional reform; Advice to operators
- ❑ Route licensing reform: a new franchise system based on service quality criteria
- ❑ Physical improvements, including bus stops, pedestrian facilities, terminals, and bus priority in congested areas.
- ❑ Competitive tender of the demonstration route

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<sup>5</sup> Letter of instruction of the Mayor of Surabaya dated 8 March 2001, to the Head of the City Road Traffic Office. The same letter also ordered implementation of NMT improvements and CNG priority.

(e)

A concept for applying of median bus lane has been prepared for *Ahmad Yani* Street.



Basic concept of a with-flow median bus lane along *Ahmad Yani* Street. The total cost of implementation of a 5.5 km bus lane, including 6 bus shelter platforms and various signaling improvements and lane width modifications, is less than US\$150,000.

Initial reactions to the proposal in July 2001 were strongly positive from the City Government Road Traffic Office, mixed but generally positive from the print media, and strongly negative from car owners calling in to radio talk back shows.

#### Non-motorized transport (NMT)

- Survey program & problem identification.
- Major study on transport in Surabaya
- Detailed proposed improvements. Identify & refine improvements, in intensive consultation with stakeholders.
- Produce detailed diagrams and costing of proposed interventions according to the city government top priority areas.
- Generate political support & secure funding.

#### b. Technical measures

(f) CNG

- Feasibility study with 3 minibuses conducted in 1999-2000, showing strong economic viability of CNG use in minibuses in Surabaya
- Intensive socialization

- Develop political support.
  - Detailed action plans in key areas.
  - Strong stakeholder commitment, but remains a lack of certainty on pricing.
- (g) Driver training; **Several training have been executed**
- (h) Air quality management; **Ambient air quality monitoring is in progress Surabaya has 5 monitoring stations and 5 public displays started 2001.**
- (i) Clean technologies; **Usage of clean technologies will be promoted particularly for public transportation.**
- (j) Inspection & maintenance; **A working plan being prepared including Local Act to support the implementation of IM in Surabaya.**
- c. **Economic instruments & TDM**
- (k) Medium Term
- Parking policy;
  - Surcharge on gasoline funds to be used to fund CNG investments, and retrofits of government vehicles.
- (l) Long Term
- Transport and environment trust fund. Sources of funds from fees & surcharges, licensing, etc.
  - Reform of annual vehicle taxation system, to reverse the current approach to high taxes on new vehicles, low taxes on old, heavily polluting vehicles.
  - Area licensing scheme;
  - Congestion pricing mechanisms.

Trying to solve traffic problems building new roads is like trying to put out a fire with gasoline. Faster roads soon generate new development around them and thus their own traffic jams. But in the process they push suburban development farther, lowering average population densities.

To avoid traffic congestion is to severely restrict car usage. If car usage is not restricted, traffic jams will happen regularly and political pressures from the wealthier classes to build more and bigger roads will become unbearable.

**d. Institutional reform; public participation**

**(m) Public awareness campaign**

- ❑ Involve all sectors of the community, companies, and policy makers in campaign planning, Working Group.
- ❑ Determine themes and objectives, messages, phases, priority targets
- ❑ Plan in detail closer to each activity.
- ❑ All activities based on prior assessment of cost effectiveness in reaching priority target groups. Ensure partners contribute to cost of every activity.
- ❑ Involve campaign manager in many project activities.



**Fresh ! My Surabaya.**

## **5. Cooperation Cities**

Local governments have considerable power to influence transportation sector emissions through land use, infrastructure, parking, transportation demand management and other areas. The Sustainable Transportation Program works to assist local governments to reduce vehicle miles traveled (VMT) and transportation-related GHG emissions. The Program works to encourage leadership and innovation in local government transportation management and to spur the development of model transportation alternatives, which diversify travel options while reducing excessive automobile use.

## **07 Closing Remarks**

- a. It is necessary to focus on measures which are low cost and “win-win”, and have the highest impact on CO<sub>2</sub> mitigation at the same time leading to local economic, social, and environmental improvements.
- b. Surabaya sustainable urban transport approach is interesting (low cost, win-win, comprehensive and participatory) not only for developing city government but for the international community. Strong interest has been shown from ICLEI, GTZ, World Bank, IEA, Asia-Urbs, WBCSD, Umweltbundesamt, GEF, & others in the integrated approach.

- c. International discussion: not yet successful with CO<sub>2</sub> reductions from transport, especially in developing cities.
- d. Major progress in the last two years has been made in terms of awareness-raising, involvement of stakeholders and sustainable transport technical policy formulation in Surabaya. Policy commitments in key areas have been made, and included in the City Government 5-Year Development Program 2002-2006. However, solutions being developed in Surabaya are generally still at an early stage of implementation. In some areas, such as inspection & maintenance, major steps have not yet been taken toward implementation by the City Government.
- e. Continuing support is needed for further refining and developing policy initiatives, helping ensure that action plans and stated policies are adhered to, encouraging and supporting local stakeholders with implementation, monitoring the results, adjusting programs accordingly, and expanding implementation on a city-wide scale. There is also a need for continuing support in sharpening the approach and disseminating experience. Results should be monitored, and made available to other cities.
- f. Dense, developing cities share many similar urban transport challenges, and successful approaches will have a high replication potential in other cities. Much can also be learned from successes and failures in Europe and North America.
- g. Cooperation cities programs, including international and regional seminars & workshops, staff exchanges and visits, and technical assistance, can play an important role in all these areas; from developing awareness, consulting with stakeholders and developing solutions and policies, through to implementation, monitoring of results, and—not least—dissemination of experiences and best practices to other developing cities.

- h. The success achieved in developing sustainable transport approaches as a way of reducing transport emissions in Surabaya is a direct result of the real interest and concern of officials, the media, and others in this area. Issues of sustainable urban transport and the real and achievable possibility of a brighter future.