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Urban Mobility

• A Mobility Overview • Freeing Jakarta from Gridlock • Solutions in Surabaya • Strategies for Bogor's Angkot

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Australia Indonesia Partnership
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Editor's Message

This issue of ***Prakarsa*** has the theme "urban mobility". For many readers – especially those who fight Jakarta traffic on a daily basis – it would be easy to assume that this edition must be primarily about congestion in the nation's capital.

That assumption would be incorrect. "Urban mobility" is not synonymous with "congestion relief" and Jakarta is not the only city in Indonesia that faces mobility challenges. As Peter Midgley describes in "An Introduction to Urban Mobility" (page 3), urban planners have learned by experience that a single-minded focus on reducing congestion has a tendency to lead to unwanted outcomes: build more roads, and more private vehicles will quickly fill them up. Instead, the key is to ask: "How can we efficiently move people and goods, and do it in a way that is affordable, comfortable, and environmentally friendly?" Answers must be sought from a broad cross-section of stakeholders.

Different cities in Indonesia are at different stages of addressing improvements to urban mobility. Jakarta is the premier example of what can happen when economic growth leads to surging demand for high-quality transport, but a coordinated strategy for public transit does not keep pace. Danang Parikesit's article, "Freeing Jakarta From Gridlock" (page 9), explores how Jakarta has come to its current unhappy state, and makes the point that strong political commitment will be essential if solutions are to be found.

Other cities may not yet be as severely challenged as Jakarta, but they need strong political commitment too. "The Surabaya Story: Problems and Solutions for Improving Urban Mobility" by William Vincent (page 17) examines the conditions in Surabaya today and makes the point that a comprehensive strategy that addresses the region is critical. In "Solving Bogor's 'Angkot Problem'" (page 21), David Overington describes how the City of Bogor has made strides in addressing the problems created by an excess of angkot, but it will take concerted effort by the city and district together to implement long-term solutions that will be truly effective.

The examples of Jakarta, Surabaya, and Bogor make interesting and relevant reading, but for the country of Indonesia they are only the beginning. Indonesia has around 20 other cities with populations in excess of half a million. Many of them have not yet motorised to the same extent. This is an enormous opportunity. If these cities each resolve to develop comprehensive long-term plans for urban mobility, they can avert problems before they become out of control. The results will be both better quality of life for citizens and improved economic growth. • CSW

Infrastructure by the Numbers

1500 motorcycles;

500 automobiles

The number of motor vehicles being added to Jakarta's roads every day.

40%

The percent of time that cars in Jakarta are actually moving during their journeys.

24%

The average load factor for public transportation in Yogyakarta. Higher average figures correspond greater efficiency and reduced congestion.

60%

Contribution of the transport sector to carbon dioxide emissions in urban areas of Indonesia.

5

The number of Indonesian cities (besides Jakarta) that will suffer total gridlock sometime between 2015 and 2025 if no effective urban mobility policy is implemented. The cities are Bandung, Makassar, Medan, Surabaya, and Semarang.

320

Number of the 1642 buses impounded in Jakarta for traffic violations in 2010 that were not roadworthy, according to Jakarta's City Transportation Agency.

An Introduction to Urban Mobility

Cities around the world face similar struggles with traffic congestion and vehicular pollution. Past attempts to solve the problem have only made it worse, but newer approaches offer ideas that may have relevance to Indonesia. • By Peter Midgley

Cities around the world are concerned with the flow of goods and people. This scene shows Paris traffic as seen from the Arc de Triomphe.
Courtesy of BrokenSphere on Wikimedia

For many years, urban transport planners have attempted to reduce congestion. Many transport studies from past years begin with language that reads, “Congestion is on the increase and here are steps to reduce it.” In most cases, such studies recommend overcoming congestion by improving conditions for vehicles, particularly motorised ones such as trucks, buses and private cars. Authors of these studies believed the solution was simple: build the roads necessary to meet demand.

But something went wrong. The roads that were built stimulated even more growth in car ownership and usage. The results were ever-increasing congestion, economic inefficiencies, pollution, and other forms of environmental degradation. Clearly this approach has not worked. But what is the alternative?

As a senior Indonesian transport expert recently observed, “We have to stop trying to reduce congestion; we have to start improving mobility.” He is right. Times are changing, and many cities throughout the world are now focusing on improving mobility, with impressive results. Singapore is a shining example of what can be achieved by concentrating less on building roads and concentrating more on changing the way people use roads, as well as providing a first class and affordable public transport system.

Many cities in Europe, Brazil, Colombia and India are now developing mobility strategies and implementing measures designed to improve mobility for all citizens, not just those travelling by private car. The city of Guangzhou is leading the way in China, and mobility improvement

measures implemented in New York enabled the city to win the Sustainable Cities award in 2010 (something that would have been inconceivable even five years ago).

What Is "Urban Mobility"?

Improving urban mobility means focusing on the movement of people and goods rather than the movement of vehicles. The objective is to create a highly efficient, flexible, responsive, safe, and affordable urban mobility system with the least amount of traffic, travel, and effort while ensuring environmental sustainability. This means giving priority to public transport, pedestrians, non-motorised vehicles, and vehicles transporting goods. It means providing attractive and efficient public transport services and reducing the demand for motorised travel by car or motorcycle. It also means making the best possible use of existing roads and transport services before investing in new ones.

Improving mobility is less about engineering and more about changing behaviour. It therefore has a very important social dimension and involves many stakeholders who normally would not work together to "reduce congestion" because that is regarded as strictly a transportation issue. Improving mobility starts with public participation, consultation, focus group discussions, consensus building, and cooperation among different stakeholders.

Key Points

Historically, urban transport planners were focused on reducing congestion. Often they recommended building new roads and improving conditions for motorised vehicles. This stimulated further growth in car usage, resulting in greater economic and environmental problems. It is now understood that the focus should be on improved mobility, changing the way people use roads, and offering attractive public transport options. Improving mobility is less about engineering and more about changing behaviour. It therefore has a very important social dimension and involves many stakeholders who normally would not work together. The objective is to create a highly efficient, flexible, responsive, safe, and affordable urban mobility system with the least amount of traffic, travel, and effort while ensuring environmental sustainability. This means giving priority to public transport, pedestrians, non-motorised vehicles, and vehicles transporting goods. Across the globe, cities in Europe, Brazil, Colombia, and India are developing effective urban mobility policies that lead to benefits such as reductions in congestion, noise, pollution, energy consumption, travel time, and traffic accidents; while improving the quality and accessibility of public transport, increasing available public spaces, and contributing to citizen health and well-being. Indonesia can adopt best practice from these examples to develop its own effective urban mobility strategies.

Improving urban mobility is more about outcomes than outputs. For example, rather than measuring the number of additional kilometres of footpaths provided, it is more important to consider the use of these footpaths and whether they improve accessibility, safety, health, and similar concerns.

Improving mobility is more about working together than writing reports. It involves people in the fields of transport, environment, economic and social development, city and town planning, employment, and housing sitting down together and joining forces with social organisations and businesses to develop comprehensive approaches towards improving urban mobility. It is inclusive rather than exclusive and involves all sections of society.

Learning From Others

An important ingredient in sustainable mobility planning is the willingness of cities to try out new ideas and learn from each other. From around the world, there are many successes to consider. Most cities that have implemented sustainable urban mobility plans and measures report the following results:

A focus on safe, comfortable and affordable public transit is an important part of an effective urban mobility policy. Here, passengers queue for public transit in Curitiba, Brazil. *Courtesy of Adam Jones (adamjones.freeservers.com)*

- Decrease in traffic jams and congestion
- Diminished noise, atmospheric contamination, contribution to the greenhouse effect, and accidents
- Lower energy consumption
- Reduction in average travel times
- Improvement of public transport services
- More public spaces available
- General improvement in accessibility, including for the disabled
- Reduction of external costs
- Increased health among inhabitants due to less contamination and increased bicycling and walking
- Increased quality of the urban environment and quality of life for citizens

With these results in mind, it can be helpful for policy-makers and stakeholders in Indonesia to observe how urban mobility strategies are unfolding in other countries and regions. Although a comprehensive review is beyond the scope of this article, here are a few highlights that illustrate some of the national-level approaches that can be used to support and encourage city-level improvements in mobility.

Europe

The European Commission's first urban mobility initiatives, which relied heavily on public participation under the "Citizens' Network", date back to 1995 and 1998. Since 2002, through its CIVITAS initiative, which encouraged cities in different countries to work together, the European Union made available € 180 million (about Rp 2.2 trillion) to cities across Europe to implement and evaluate a wide range of innovative measures to promote sustainable urban mobility.[1]

As a result of this initiative and a six-month intensive consultation process, the European Commission adopted the Green Paper *Towards a new culture for urban mobility* in 2007. This opened an even broader debate on urban mobility and enabled the European Commission to

adopt an Action Plan on urban mobility in 2009. The Action Plan comprises 20 measures to improve urban mobility throughout Europe by 2012 with € 8 billion (over Rp 97 trillion) in available funding. Among other steps, the action plan seeks voluntary commitments from public transport providers related to passenger rights; supports research on lower and zero-emission vehicles; and creates links between policies on urban mobility, health, and disability. It also includes public awareness campaigns and a travel information initiative, as well as guidance on urban freight distribution and intelligent transport systems. Further, it promotes harmonised statistics and information sharing within and beyond the border of the European Union.[2]

Intelligent transport systems

Intelligent transport systems use information and communications technology to develop systems to manage the use and flow of vehicles, load sizes, and route selection with the goal of improving safety, reducing vehicle wear, minimising transportation times, and cutting fuel consumption.

Brazil

The first draft National Policy on Sustainable Urban Mobility was published in 2004. It was approved in 2007 and comprises 29 directives and nine guiding principles to improve urban mobility. It requires each city with over 500,000 inhabitants to produce an urban mobility plan.[3] In addition, the Ministry of Cities has developed an urban mobility program to allocate resources to metropolitan areas and cities that have established urban mobility plans. Funds are channelled through the Federal Savings Bank ("Caixa Econômica Federal") to state governments who are responsible for the management of metropolitan areas in Brazil. Counterpart funding is required from the state governments. The ministry of cities is responsible for the appraisal and selection of proposals submitted by the states. The Federal Savings Bank, acting on behalf of the Ministry of Cities, is responsible for disbursements of funds, supervision of project implementation and the monitoring and evaluation of the results. The Ministry of Cities has published guidelines for developing urban mobility plans and for submitting proposals.

France

The French National Urban Mobility Policy aims at coordinating the initiatives of the different agencies concerned with public transport, roads, parking, and urban planning in collaboration with the commercial sector and the general public. The objective is to ensure mobility and access for all, while protecting the environment by encouraging the use of alternatives to the car that use less fuel and cause less pollution – such as public transport, walking, and the bicycle.[4]

Each city in France is required to have an urban mobility plan that is compatible with national sustainable development objectives. Each plan defines the travel policy to be followed to improve urban mobility in the context of safety, health, social cohesion and urban development, parking, goods deliveries, fares, etc. and it is reviewed every five years. Cities that adopt an urban travel plan are allowed to impose a *Versement Transport*, which allows them to collect public transport fees from companies.

To date 50 cities, representing three-quarters of towns and cities with more than 100,000 inhabitants in France, have approved urban mobility plans. In addition, almost as many smaller towns have started a voluntary urban mobility plan process.[5]

India

The objective of the National Urban Transport Policy (NUTP) for India is to ensure safe, affordable, quick, comfortable, reliable, and sustainable access for the growing number of city residents to jobs, education, and recreation. The national policy stresses the importance of public consultation. In addition, it emphasises the need to learn by doing through pilot projects.[6] Under the NUTP, cities are required to have comprehensive mobility plans and they receive financial assistance (up to 80 percent of total costs) from the central government for preparing them. These plans are designed to focus on improving the mobility of people rather than vehicles. Accordingly, they give priority to pedestrians, non-motorised transport, public transport (all modes), intermediate public transport (informal and paratransit), and the development of integrated land use plans. They include short, medium, and long term measures to improve mobility in a sustainable manner, reduce travel demand, and develop networks for public transport as well as non-motorised transport.

> ***Paratransit***
> Paratransit is an alternative mode of flexible passenger transportation, often using mini-buses, that does not follow fixed routes or schedules.

Funding is assured through the centrally funded Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and is already being applied in 63 cities across India. In addition, and as a result of establishing the NUTP, the Ministry of Urban Development has been able to apply to the Global Environmental Facility for a grant of US$ 25 million (about Rp 223 billion) along with up to US$ 200 million (Rp 1.78 trillion) co-financing from the World Bank, to assist in the development of sustainable urban mobility solutions. Counterpart funds amounting to US$ 150 million (Rp 1.34 trillion) are being provided by the central government, state governments, and implementing agencies at the city level. The project is being implemented in 10 cities and demonstration projects have already commenced in five of them.

The Future in Indonesia

Although a policy framework and associated legislation has yet to be established in Indonesia for the types of activities outlined above, current legislation and regulations allow for beginning programs to improve urban mobility. As an example, the Indonesia Infrastructure Initiative (IndII) is currently working with the city of Surabaya to develop urban mobility guidelines and to support the city's desire to improve facilities for pedestrians and non-motorised transport as well as improve the public transport system, safety, and area traffic control. Focus group discussions on how to improve mobility in the city have been initiated with key stakeholders and further public consultations are planned. Through a process of progressive engagement, IndII is

ready to support pilot projects to assess how best to improve mobility in Surabaya as well as in other cities throughout Indonesia. These measures will not only improve mobility but will also overcome infrastructure bottlenecks by making better use of existing infrastructure facilities. (For more on the subject of mobility in Surabaya, see "The Surabaya Story" on page 17 of this issue.)

With its mega-city capital of Jakarta and growing urban populations in other cities, Indonesia faces huge problems and opportunities in improving mobility. Great strides can be made when governments at all levels give priority to public transport, goods vehicles, pedestrians, and non-motorised vehicles; provide attractive, affordable, and efficient public transport services and reduce the demand for car/motorcycle travel; and make better use of existing roads and services before investing in new ones. The issue is not only a government concern – improving mobility involves public participation, consultation, focus group discussions, consensus building, and cooperation among different stakeholders. ■

NOTES:

The following references are available online at the global Transport Knowledge Partnership (gTKP) website, www.gtkp.com:

1. Promoting sustainable urban mobility with CIVITAS

2. Towards a new culture for urban mobility: Green Paper and Action Plan (EU)

3. The implementation of Brazil's Sustainable Urban Mobility Policy

4. Urban transport in France

5. Urban mobility plans and accessibility

6. National Urban Transport Policy (India)

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Freeing Jakarta From Gridlock

Greater Jakarta's transportation system has been subject to many forces over the last decade. Strong political commitment is needed for the government to meet the demand for urban mobility. • By Danang Parikesit

For the growing number of Jakarta residents who can afford them, motorcycles often offer a faster and more convenient way to travel than public transport.
Courtesy of tbSmith on flickr

Moving people and goods in Jakarta is a nightmare. Every day, many commuters experience journeys longer than 120 minutes (considered an international threshold for bearable travel time). The congestion not only distresses travellers, but also creates an inefficient economy, reduces safety on roads, and produces pollution with both local and global environmental consequences. Jakarta has become one of the 10 most expensive capital cities in Asia (www.citymayors.com, 2011). The increasing cost of urban logistics has reduced Jakarta's competitiveness in attracting investment and has caused the national economy to suffer.

What has brought the transportation system of Jakarta and Jabodetabek (the Greater Jakarta area encompassing Jakarta, Bogor, Depok, Tangerang, and Bekasi) to this unhappy state? The situation is well documented in both academic literature and the popular press. In 2010, more than 100 media reports and articles about Jakarta's worsening congestion helped create national awareness on the decline in Jakarta and Jabodetabek's transport quality. National and international scientific journals have examined the decaying services from various perspectives, contrasting the situation in Jakarta with other Asian cities that have reduced congestion by increasing reliance on public transport (Morichi et al, 2011).

Jakarta in Perspective

Historically and for the foreseeable future, Jakarta and its surrounding areas are of critical importance to Indonesia. Jabodetabek's share of the Indonesian economy is enormous, reaching nearly 30 percent of the country's wealth pie. Although many Indonesian cities such as Surabaya, Makassar, Bandung, and Medan are catching up in terms of economic growth, their shares of GDP are still far below Jabodetabek.

Figure 1 shows how the city of Jakarta's contribution to GDP has changed over the last two decades. Between 1990 and 1995, Jakarta's share fell as suburbanisation increased and industries, especially manufacturing, relocated to surrounding districts and cities. Since 1995, Jakarta's share has been on an upward trend thanks to the growth of the service and financial sectors. The growth in these sectors creates an increased demand for a higher quality of urban travel.

Key Points

Jakarta's congestion is reducing its quality of life and competitiveness. Growth in Jakarta's financial and services sectors, increased wealth, growing population, and a relatively unchanged capacity in the public transport system have all led to more and more citizens using motorcycles and private cars. Meanwhile Jakarta's social boundaries continue to stretch, with a predicted population of 40 million by 2025. With today's average travel speed at peak times a mere 13-15 km/hour, the challenge of moving people and goods in the future is monumental.

If Jakarta is to improve the use of public transport as cities such as Seoul, Taipei, and Bangkok have done, strong political commitment, long-term financial support, and effective coordination are needed. The Office of the Vice President, through the Presidential Working Unit for Supervision and Management of Development (UKP4) is developing a conceptual framework to make this possible. Important components include: changing the focus from congestion relief to mobility management; varied stakeholder involvement; a fresh look at the role of and connections between all aspects of transportation infrastructure; and investment in "first and last mile" infrastructure, taxi stands, and paratransit. A well-timed, step-wise approach such as used in Singapore, with adequate financing, consistent law enforcement, competent regulators, and capable operators will contribute to improved mobility, as will successful demonstration efforts and the establishment of a Jabodetabek Transport Authority.

Rapid economic growth over the past 20 years has stretched Jakarta's social boundary to the entire Jabodetabek region, creating a megapolitan area with 27.5 million inhabitants. Figure 2 demonstrates the estimate of the Directorate General of Spatial Planning of the Ministry of Public Works on the likely sprawl by 2025 if there are minimal policy interventions. Greater Jakarta will continue to grow, reaching a population of 40 million. Moving people during peak travel hours, especially given the limited public transport capacity, will be a monumental challenge. The future situation is almost unimaginable, given that today's average travel speed at peak times is 13–15 km/hour. In comparison, urban travel speed in Japanese cities is 20 km/hour and in cities of the United Kingdom it is 40 km/hour (Ishida, 2010).

Figure 1: Jakarta's Share of Indonesia's Gross Domestic Product

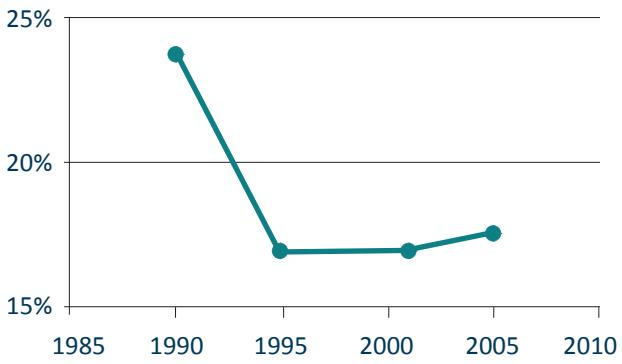
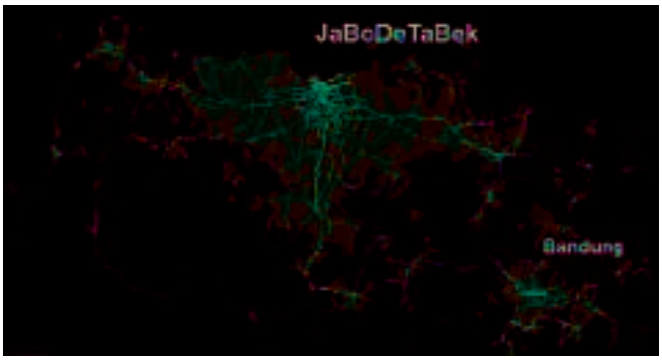


Figure 2: Projected Population Density of Greater Jakarta in 2025.
Red areas are projected to be 90% urban by 2025.



Source: MTI, 2010, taken from DG Spatial Planning MiPW, 2010

A Rapid Decline in Use of Public Transport

Recent reports show that the people in Jakarta have expenditures four times greater than the national average (Resosudarmo, 2010). Over the past decade, average income has increased (Coordinating Ministry of Economic Affairs (CMEA), 2011). In other words, the citizens of Jakarta are becoming richer and are willing to spend more money for their daily needs. Yet during this same time, the capacity of the public transport system has remained relatively unchanged despite the introduction of the TransJakarta Busway in 2004. Throughout Jakarta and Jabodetabek, bus routes have not been restructured or expanded and the frequency of operation has not increased. Urban commuter rail services operated by PT Kereta Commuter Jabodetabek continue to deteriorate, contributing to the worsening of overall public transport quality, while reform of the railway sector based on the Railway Law of 2007 remains unfinished.

> ***Megapolitan area***
> A megapolitan area is an urban metropolis with a large and growing population. According to one definition, a megapolitan area is any area with projected population in excess of 10 million by the year 2040.

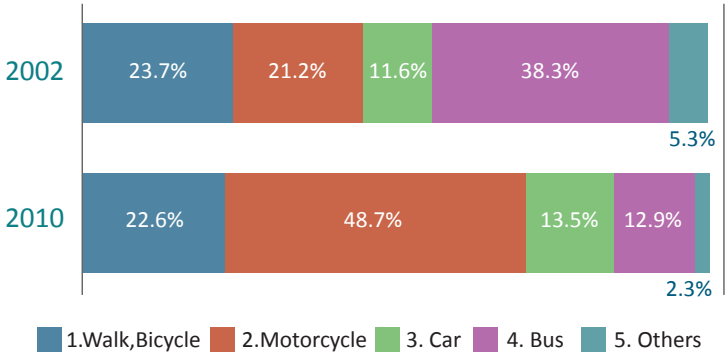
Population growth, higher incomes, and a move toward the service and financial sectors inevitably lead to increased demand for a higher quality and quantity of transport. Combine this with stagnant public transport service facilities, and the results are predictable – both the share of public transport and average travel speed will decline.

Figure 3 tells a sobering story. In 2002, various public transport modes (bus and other) constituted 43.6 percent of mode share. If walking and bicycling are removed from the equation and only motorised transport is considered, the share of public transport in 2002 was 57.14 percent, which is relatively high compared to international norms (Morichi et al, 2011). (Outliers include Hong Kong and Manila, where public transport has more than 70 percent of mode share.)

> ***Mode share***
> Mode share is similar to market share. The term is used by transport specialists to describe what portion of all transport activity is done through a particular mode, such as trains, automobiles, etc.

Using the historical data available on trends from 1985 to 2000, transportation specialists – including the Indonesia Transportation Society – would expect that, absent any intervention, the share of public transport in Jakarta would decrease by about 1 percent annually (Parikesit, 2008, 2010a, 2010b). Using such a "rule of thumb", the projected public transport share in 2010 would be 40–45 percent.

Figure 3: Mode share for Greater Jakarta 2002 and 2010



3.Car includes Taxi and Bajaj
5.Others include Railway and Ojek
Sources: CMEA, 2011 taken from SITRAMP (2002) and preliminary figures of JUTPI Commuter Survey (2010)

The actual figures are therefore surprising. In 2010, although the data are still preliminary, the JUTPI survey (Jabodetabek Urban Transport Policy Integration, a JICA-supported technical cooperation) found that the current public transport share is 15.2 percent, or 17.9 percent if only motorised transport is considered. That translates into an annual decline of over 3.1 percent. This is certainly a freefall. In the absence of alternatives, most travellers are now relying on motorcycles and some are using their cars to provide door-to-door transport services (Susilo et al, 2007, Parikesit, 2010c). Every year, motorcycle manufacturers report record sales.

The size of the share of public transport has significant implications for the nature of public policy to address urban mobility. For cities that already have a high level of public transport use, the challenge is simply to maintain it, ensuring that transport users do not switch to motorcycles or cars. For cities like Jakarta where public transport use is low – 30 percent or less – the task is far more difficult. Progressive political commitments and high levels of public investment are required to give private transport users an incentive to switch to public transport.

The Need for Political Commitment

When other emerging East Asian cities such as Seoul, Taipei, and Bangkok have been able to improve their use of public transport significantly, why have there not been similar developments in Jakarta? There are certainly many explanations for the advancement of those cities (Morichi et al, 2011). The availability of high quality technical data, information, and appropriate plans and technical designs are all factors. However, empirical studies have

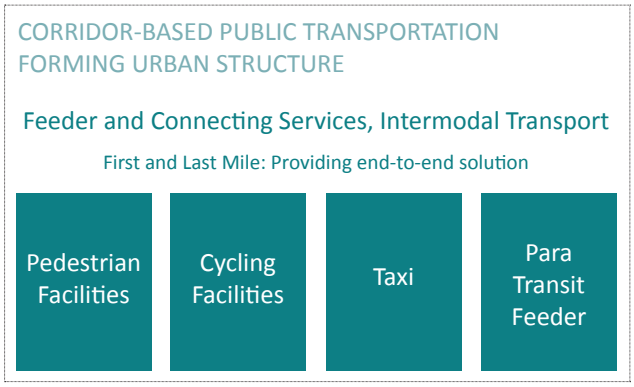
demonstrated that a strong political commitment translated into long-term financial support and an effective coordination mechanism is crucial. Without it, progress will be hampered.

Realising that the provincial government of Jakarta alone cannot resolve and alleviate congestion, the national government has taken an initial key step to address Jakarta's transportation issues. The Office of the Vice President, through UKP4 (the Presidential Working Unit for Supervision and Management of Development), has played a critical role in developing a conceptual framework and implementation strategies to devise a tool for horizontal, vertical, and diagonal coordination and integration of existing policies and plans. Principles underlying this effort are outlined and discussed in the next paragraphs.

The focus must change from "relieving congestion" to "urban mobility management". This will draw in more stakeholders and create synergy. Congestion is exacerbated when planners lack understanding of how urban transport works. Two or three decades ago, questions such as: *Buses or motorcycles? Roads or rail? Walking or bicycling?* framed the discussion, but these questions are less relevant today and can create unproductive debates. By focusing on "what causes congestion?" or "how do we relieve congestion?" people can be sidetracked from the original goal of safe, efficient, and equitable travel.

As is demonstrated by the increasing number of urban mobility projects (Feng, 2010 and Ishida, 2010), the global trend toward seamless travel requires a fresh outlook on the role of, and connections between, every aspect of transportation infrastructure and services. For example, promoting feeder buses requires that roads are well connected to form a network, and well maintained to ensure continuous services. Busways, Mass Rapid Transit, and Commuter Rail all require intermodal transfer (see Figure 4).

Figure 4: Mobility Management Concept



(Source: MTI, 2010, adapted from Feng, 2010)

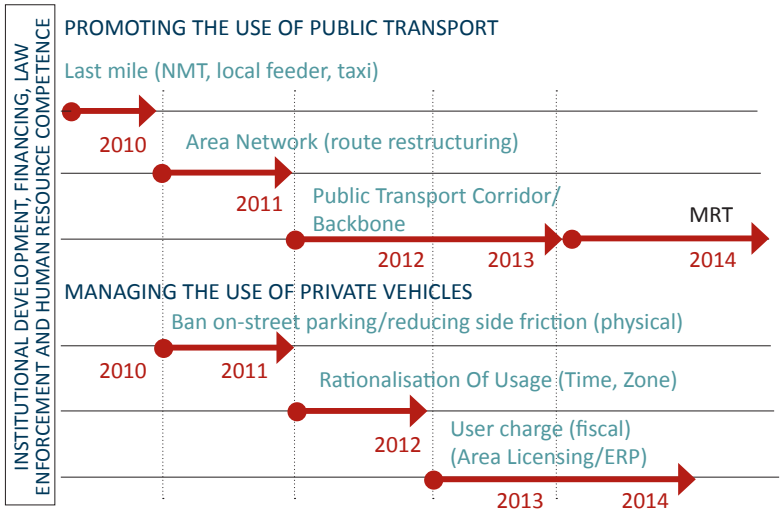
The government should also invest in "first and last mile" infrastructure such as pedestrian and cycling facilities, taxi stands nearby public transport shelters, and should allow some room for paratransit to ensure that public transport services are accessible for travellers. In fact, the government should start investing in the first and last mile projects before starting to allocate their public funds for other activities.

First and last mile

"First and last mile" is how urban planners refer to the problem of conveying travellers at the very start and very end of their journeys. A comfortable and affordable bus service may be rejected in favour of commuting by private car, if the closest bus stop is a mile from home and a mile from the office.

Appropriate timing and sequencing are essential. Many cities are successful simply because the steps they take are consistent. Singapore is perhaps the most extreme example of this consistency. Urban planning and urban transportation plans for Singapore were developed in the mid 1960s with the assistance of the UNDP. Since then, the Singapore government has implemented programs and projects suggested by those plans in a well defined sequence. They follow a basic rule: Managing the use of private vehicles should come *after* the provision of public transport services has been established. Indonesia could use the same principles to draft a sequenced list of activities. Institutional and financial support, an appropriate financing schedule, consistent law enforcement, competent regulators, and capable operators should serve as a foundation for implementing plans and projects (see Figure 5).

Figure 5: Conceptual Implementation Framework With Appropriate Sequence and Timing



(source: MTI, 2010)

Demonstration efforts with two corridors offer a foundation for further success. Demonstrating that an option is feasible is a good strategy for building stakeholder acceptance and enhancing the likelihood that future implementation will succeed. UKP4 has selected two corridors to challenge various stakeholders to work together and achieve an agreed travel time performance. Improvement along these corridors – Depok-Ragunan-Dukuh Atas and Serpong-Lebak Bulus-Dukuh Atas – requires coordination among three levels of government. It also calls for active involvement of the police department to monitor and alleviate local congestion along the showcase corridors. The demonstrations need to be completed in 2011 in order to demonstrate quick wins to the public. They can then be replicated in other corridors and will buttress government resolve in pursuing the overall objectives of the Transportation Master Plan.

A cornerstone for success is the establishment of the Jabodetabek Transport Authority. One of the important milestones of the UKP4 implementation framework is the establishment of Jabodetabek Transport Authority. JUTPI is expected to provide a recommendation on the institutional set up of the Authority (CMEA, 2011). It will be a new institution, mitigating implementation risks by dealing on multiple levels with multiple agencies, multiple stakeholders, and multiple issues. Currently, risk is taken independently by various agencies, public and private, at different government levels, without a risk-sharing mechanism. By pooling fiscal and implementation risks, the authority will be able to mitigate risk, request national government budget support, and create a risk-based platform for prioritising implementation. With risk pooling and risk transfer mechanisms, an implementation framework can be designed as a single investment package, making it a cost-effective program. The new authority will also allow stringent monitoring of activities and their impacts. It will most likely be created as a centrally managed Public Service Agency, or *Badan Layanan Umum*, but it can evolve into a for-profit company in the future. ■

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The Surabaya Story: Problems and Solutions for Improving Urban Mobility

Faced with the same problems plaguing many Indonesian cities, Surabaya shows potential to achieve greater urban mobility and quality of life • By William Vincent

Bicyclists enjoying the car-free morning on Jalan Darmo Raya.
Courtesy of William Vincent

With roughly 7 million inhabitants in the metropolitan region, Surabaya is Indonesia's second largest city and the commercial centre of East Java. It is characterised by a large trade and commercial centre, a thriving and growing port, and expanding suburban areas outside of the city limits.

Like many developing cities, Surabaya is experiencing rapid growth in private motor vehicles. In 2005, there were approximately 1.5 million vehicles, of which 1.1 million were motorcycles and 0.26 million were private cars. By 2009, the number of motorcycles had grown nearly three-fold, to 2.98 million, and the number of private cars had doubled, to 0.52 million.

The growth in private motor vehicles is creating significant challenges for the city. Traffic congestion can be severe at all times of the day. During peak hours, much of the city centre is congested, with the greatest vehicle flows operating in a north-south direction. The problem is exacerbated by conflicts among the wide range of uses on the roads, including motorised vehicles, *becak* (pedicabs), handcarts, and pedestrians.

The growth in motorcycles is creating particular challenges. Motorcycles are inexpensive and can be purchased on credit. They create extensive noise and contribute substantially to regional air pollution. Law enforcement is poor or non-existent in many places, resulting in motorcycles operating on the sides of roads and on sidewalks. During rainstorms, motorcyclists frequently

park in bus shelters, rendering the shelters inaccessible to bus passengers.

Motorcycles also create safety problems. They weave in and out of traffic and frequently operate between lanes. It is not uncommon to see entire families riding on a single motorcycle, usually with the children not wearing helmets or other protective equipment. Informal interviews and media reports suggest that there are a significant number of injuries and deaths associated with motorcycle use.

As motor vehicle use and traffic congestion increase, measures that could reduce the impact of this growth, such as public transport and demand management, are limited or non-existent. Most public transport services are provided by a fleet of more than 5,000 privately-owned microbuses, known as angkot. The angkot operate on fixed routes and pick up and drop off passengers at almost any location along these routes. Service quality is highly variable, with many old and poorly maintained vehicles.

Surabaya also has a small fleet of state-owned and operated public buses. These buses operate primarily in north-south corridors and, like the angkot, vary widely in quality.

Key Points

Indonesia's second largest city Surabaya is experiencing increasing congestion. Motorcycles in particular are contributing to noise and air pollution and are operated in an illegal and unsafe manner. Measures that could improve the situation, such as public transport and demand management, are limited. Microbuses and a small fleet of public buses vary widely in the quality of services they offer.

The city is making progress in dealing with these challenges, particularly through pedestrian improvements such as sidewalks and zebra-striped crossings. Plans are underway for a network of bicycle lanes, feasibility studies for Bus Rapid Transit (BRT) corridors are complete, and commuter rail service will be enhanced.

Significant political commitment will be needed to move forward, starting with the development of a comprehensive urban mobility strategy that addresses the region as a whole. The strategy should focus on the movement of people and goods; give priority to public transport, pedestrians, and non-motorised vehicles; and improve the link between land use and transportation planning. A network of affordable, accessible, and high quality BRT is a promising option. Complementary measures such as expanding non-motorised and pedestrian facilities and parking management are also worth considering.

The city has already experienced some successes, for example with a "car-free" Sunday morning, suggesting that the potential exists to achieve a vision of improved mobility and quality of life in Surabaya.

Signs of Progress

Although Surabaya faces many urban mobility challenges, the city has been making progress in recent years, most notably regarding pedestrian improvements. The city centre contains new, high quality sidewalks as well as raised pedestrian crossings with zebra stripes at many intersections.

The mayor has made expansion of pedestrian improvements a high priority. Surabaya is also planning a network of bicycle lanes and engineering design on these lanes may be completed in 2011. Feasibility studies on several Bus Rapid Transit (BRT) corridors have been completed, and the national government is planning to enhance existing commuter rail service.

Although these plans are steps in the right direction, making substantial and lasting progress toward more sustainable and environmentally friendly transportation will take significant commitment and leadership. The starting point should be the development of a comprehensive urban mobility strategy.

Typical traffic conditions on Jalan A. Yani in Surabaya.
Courtesy of William Vincent

The strategy should address the needs of the region as a whole, not just the city of Surabaya. Less than half of the regional population lives within the city limits, resulting in much of Surabaya's traffic being generated outside of the city, such as by commuters living in Sidoarjo.

The strategy also should focus upon the movement of people and goods, rather than adopt the more traditional approach of focusing upon the movement of vehicles. Among other things, this means making more efficient use of existing infrastructure, such as by giving priority to public transport, pedestrians, and non-motorised vehicles, and improving the connection between land use and transportation planning. Much of the planning to date appears to have focussed on the movement of vehicles, resulting in a relatively robust but congested road network and relatively poor facilities for public transportation, non-motorised vehicles, and pedestrians.

Finally, the strategy should be developed through a strong stakeholder and public participation process. Shifting the planning focus from the movement of vehicles to the movement of people is a fundamental change in thinking and approach. Building consensus and support among stakeholders and the public is essential to achieving this shift.

Once completed, the strategy will provide the vision for urban mobility in the region, establishing a framework under which specific programs and activities can be developed and implemented. One promising program would be to build upon existing feasibility studies by implementing a network of BRT services, providing an attractive alternative to private vehicle travel.

To be successful, a BRT in Surabaya likely would require a number of key characteristics, including:

- Private sector operations with public sector oversight
- High quality standards
- Frequent, reliable service
- Low fares

• Dedicated lanes with strong enforcement to prevent motorcycles and other unauthorised vehicles from using the lanes

• A network to provide service to a large portion of the city centre

• Feeder services and park and ride lots to encourage people not to ride their motorcycles all the way into the city

• Participation by, and support from, key stakeholders, such as angkot owners and operators

To optimise the success of a BRT network, Surabaya also should consider complementary measures. These could include expanding non-motorised and pedestrian facilities (consistent with current plans in the city), parking management, road pricing, congestion charging, traffic management, and traffic calming.

Surabaya already has experienced great success in some of these areas, at least in a limited way. Every Sunday morning, the city hosts a "car-free" morning on Jalan Darmo Raya. For roughly four hours, this six-lane, major arterial road is cleared of all traffic and barricades are established on side roads. In effect, the road is transformed into an urban park, and people appear by the thousands to play soccer, ride bicycles, and to enjoy a brief respite from the otherwise constant drone of motorcycles, cars, and angkot.

The success of the car-free morning is proof that Surabaya can successfully manage traffic and that the people of Surabaya will respond positively to transportation measures that improve quality of life. The challenge for Surabaya is to articulate a broader vision of sustainable transport, to develop programs to achieve that vision, and to build the support necessary to implement those programs. ■

About the author:

William Vincent is the Deputy Executive Director and General Counsel of Breakthrough Technologies Institute. He has more than 20 years experience in executive and professional positions in Washington, including public policy, media relations, program development and management, and legal counsel. He served in the U.S. Department of Transportation during the Clinton Administration, overseeing the development and implementation of several transportation safety programs, as well as the Department's research and technology programs. Among other things, he was responsible for reauthorisation of several titles of the nation's transportation legislation ("TEA-21") as well as the Pipeline Safety Reauthorization Act, and he helped manage communications following several major transportation disasters. He received a number of awards for his service, including the Secretary's Team Award and the Administrator's Award for Excellence. More recently, Vincent has been developing and managing programs to promote alternative energy and sustainable transportation. He is a frequent author and presenter on a range of topics, including urban mobility, Bus Rapid Transit (BRT), the relationship between land use and urban transportation, and hydrogen and fuel cells for both stationary and transportation applications.

Solving Bogor's "Angkot Problem"

An oversupply of angkot has created congestion and safety problems in Bogor, but effective solutions are being adopted • By David Overington

Bogor city angkot (the green vehicles) are everywhere. *Andre Susanto*

Angkot are by far the dominant mode of public transport in Bogor, a city of approximately 1 million located about 50 km south of Jakarta. More than 8,000 angkot vehicles are licensed to carry passengers in the city. These 10–12 seat minivans can be seen almost everywhere, operating on fixed routes at very high frequencies, stopping to let passengers on and off wherever they want. The high frequencies mean that passenger wait times are low. The high route densities mean that passengers can usually easily complete the first and last legs of their journey on foot. And the services operate without any public sector funding or subsidies.

From this brief description, angkot sound like the ideal public transport system: one that many modern Western cities might at first glance be keen to adopt. However, the angkot system is facing serious problems and is contributing to serious urban transport problems within Bogor.

Angkot operators and city residents are both feeling the negative effects of the current system. For operators, the single biggest problem is declining patronage and declining passenger revenues, which undermine the financial viability of the industry. This situation is due to a combination of several factors, including public dissatisfaction with angkot travel conditions and growing competition from motorcycles, which more and more people are able to purchase thanks to increasing access to low cost financing. Because of their low roof and door height, angkot are not easy to board or disembark from and they are not overly comfortable to travel in, particularly on hot days in crowded conditions. And they are relatively slow – especially compared to travel by private motorcycle.

The current angkot situation is a problem for city residents as well. There are two facets to this problem. First is the sheer number of angkot vehicles (see Table 1), often with low load factors, taking up limited road space.

Table 1: Angkot Licensed to Operate in Bogor City (2002 – 2010)

	Angkot			Total
Year	City	District	Other	
2002	2,460	6,976	1,987	11,423
2003	3,506	4,827	1,987	10,320
2004	3,506	4,827	1,987	10,320
2005	3,506	4,827	1,987	10,320
2006	3,506	4,827	1,987	10,320
2007	3,506	4,827	1,987	10,320
2008	3,425	4,827	1,987	10,239
2009	3,425	4,827	1,987	10,239
2010	3,413	4,644	1,879	9,936

Source: Bogor City records

Second, the competitive driving practices adopted by angkot drivers to maximise patronage and revenues create congestion and safety problems. On many occasions, angkot drivers deliberately drive as slowly as possible, hanging back as far as possible from any competing angkot ahead, to

Key Points

Ten-to-twelve-seat minivans called *angkot* dominate public transport in Bogor. Angkot operate on fixed routes at high frequencies that minimise wait times. They stop wherever passengers want and operate without public subsidies. This may sound ideal, but angkot operators face declining patronage and revenues. The best driving strategies for maximising short-term revenue – lagging to pick up more passengers, then racing to the next pick-up point – contribute to congestion. Dissatisfied passengers increasingly opt to travel by motorcycle instead, further adding to congestion.

In 2009 Bogor introduced a shift system to address this problem. Only the "A" or the "B" shift operates at one time, halving the number of angkot on the road. Driver revenue is unchanged as they take in twice the fares but work half as often. The increase in wait time for passengers is negligible because the original number of angkot was so high. On routes where a two-shift system results in load factors that are too high, a three-shift system is used and two of the three are on the road at the same time.

The shift system operates successfully on 11 of the city's 23 routes. The other 12 routes are shared by city angkot and angkot licensed by the district. If city angkot use the shift system but district angkot do not, revenues will shift toward district angkot. For the system to be fair, there must be an agreement involving both the city and the district.

Additional initiatives that can relieve congestion include using a smaller number of larger buses. Another strategy is to construct a bus terminal that brings traffic from outlying areas to that point, after which passengers transfer to city buses. These strategies that reduce the number of vehicles on the road achieve greater mobility for citizens.

allow the maximum possible number of passengers to accumulate after the angkot ahead has already passed by. (See "A Day in the Life of an Angkot Driver" on page 29). This of course holds up other motorists (and competing angkot), to the annoyance of all. It is also very frustrating for passengers already on board, who simply want to get to their destination as fast as possible. An angkot behind the one that is hanging back has two choices – to adopt the same tactic, driving even more slowly, or to drive as fast as possible in an attempt to pass.

> ***Load factor***
> The load factor is a measure of the extent to which the capacity of a commercial transport vehicle is being used. A full angkot has a high load factor, but an angkot that is nearly empty has a low one.

It is also not uncommon to see angkot stopped at intersections or double-parked – in either case obstructing traffic flows – as their drivers wait for passengers. As exasperating as all this may be, these are rational behaviours for drivers who are trying to maximise patronage and revenue over the short run.

Introducing a Shift System

Mindful of these issues, the Bogor City Angkot Association and the Bogor City Government have been working together to identify and implement a range of measures to improve the situation. In 2009, a shift system was introduced. Under this system, an equal number of angkot vehicles on a given route are assigned to an "A" or a "B" shift, and on some routes to a "C" shift as well. Where the A and B shift system is implemented, only the A shift vehicles operate on certain days and only the B shift vehicles operate on the other days. This results in several improvements: the number of angkot competing on that route at any time is halved, and less competitive driving practices can be employed. In addition, the fares taken in per shift are doubled, but with each driver and vehicle combination doing only half as many shifts, total takings remain unchanged.

For passengers, the service frequencies are halved, but the frequencies were already so high – as many as three to four services per minute – that the frequency reduction is almost unnoticeable and any patronage loss due to reduced frequencies will be imperceptible.

Where an A, B and C shift system is adopted, two of the three shifts are permitted to operate at any given time. This three-shift system has been implemented on routes where load factors would be too high if a simple two-shift system were implemented.

To date the shift system has been introduced on 11 of the city's 23 angkot routes. It has reduced the number of angkot operating in the city on any given day by almost 700 vehicles, equating to an 8 percent reduction. This can be regarded as a significant achievement, having a positive impact on urban traffic conditions (fewer angkot, with less competitive driving practices), no loss of income to the angkot drivers (who typically double their income while working, but only work half as much), and with almost zero adverse impact for waiting passengers and hence almost zero adverse impact on overall patronage or revenue.

Clearly for this shift system to work in a fair and equitable manner, all angkot on a given route need to observe the rules. If any angkot were to continue to operate as previously, then they would skew the patronage and revenue yields in their favour, to the detriment of the other angkot operators.

This is an issue that will need to be addressed before the shift system can be rolled out on any of the remaining 12 city angkot routes, since these routes are also served by district angkot. As can be seen in Table 1, of the more than 8,000 angkot that are licensed to operate in Bogor City, over 4,600 – more than half – are district angkot. These operate outside the city boundary, carrying passengers between the outlying provincial areas and Bogor City. Because they are licensed by the district government, they are outside the jurisdiction of either Bogor City or the Bogor City Angkot Association. Simply introducing the shift system to the city angkot whilst leaving the district angkot service levels unchanged would transfer a portion of customers and revenues from the city angkot drivers to district angkot drivers. Clearly a mutually agreed arrangement would be required between all of the city and all of the district stakeholders before the shift system could begin to be introduced on the remaining 12 city angkot routes.

There are also a number of other known initiatives that might also contribute to the reduction in the number of angkot operating in Bogor City. These include:

• The Governor's InterCity Transport Decree, which says that all intercity public transport services should use larger buses instead of 10-12 seat minibuses. If larger buses replaced minibuses on a (for example) 1:2 basis, then the number of intercity vehicles would be halved.

• Development of the Proposed Ciawi Bus Terminal. This terminal would be at the border between the city and the province. The city and district governments have already agreed that once the terminal is constructed, all district buses will terminate at this point. Passengers carrying on to Bogor City would transfer. If the buses they transfer to have a higher capacity, then a smaller number of those buses will be needed.

Clearly much has been done already to address the angkot-related problems in Bogor. And more can be done. The real test of success will not be simply a reduction in the number of angkot or other public transport vehicles on the streets, but whether improved urban mobility is achieved. ■

About the author:
David Overington is a consultant with over 25 years experience in the urban transport bus, rail, and ferry sectors. This experience includes working within the public sector, General Manager of an urban transport business, and for the past almost 20 years as a consultant providing transport-related advice to the public and private sectors, both domestically (Australia) and internationally.

David has played a senior role in transport projects in a range of countries, including U.A.E, Kuwait, China, India, Indonesia, Turkey, Australia, and New Zealand. Projects have spanned the public transport, urban transport, rail, and highway sub-sectors of the overall transport sector.

A Day in the Life of an Angkot Driver

As told to Andre Susanto

My route is from Baranang-siang bus station to Bubulak, about a 30km route. And no, I can't tell you how long it takes me each trip. Sometimes as fast as 40 minutes, and sometimes almost two hours. While it does depend on traffic, most of the time I make that decision. In this, I am my own boss. If the angkot isn't full yet, it will take more money in gasoline to make the trip. So I have to make sure that somewhere along the route, it gets full at least once. That's why you see drivers stop and just wait for the fare. We yell out our destinations and people come aboard and choose one. When we get impatient or full, we drive on. Sometimes I pay that woman over there Rp 2000 to yell for me and get passengers to come on my angkot.

The angkot I drive is a Suzuki Carry 1.0. It has about 40bhp [brake horsepower] and it averages about 7–8km per litre of fuel. While this is my baby, my bread winner, and I wash it every night, it is not mine. I rent it every day for Rp 100,000. The owner has several, and if I don't bring him that amount every day he can take my baby back and give it to another driver. It really is my baby as I am responsible for any and all damage that happens to her.

Each day I never know how many hours I have to work, and I don't get overtime. I have to make above Rp 100,000/day and that doesn't include gasoline, which costs about Rp 25,000–Rp 35,000/route.

If you get on my angkot, you'll find that it's clean and well maintained. Except for the broken headlights that I haven't got the money to fix. Oh, and the missing gas cap. It's a good thing it doesn't rain very much in Bogor as I haven't replaced the windshield wiper. But other than that, I've got a body kit to make her look lowered, cool purple lights outside and a blue dome light inside.

When you get off my angkot, you get the privilege of paying me Rp 2000. The price is the same whether it's for a short 10-meter hop in the rain or for going home to Bubulak from the Baranangsiang bus station.

HONK, HONK. Darn that “sexy” angkot! He stops anywhere just to slow me down. I’ll show him! No, I’m not a pervert who thinks that angkot are sexy. But the one that I just passed is identified by a sticker on the back that says “sexy”. The sticker lets everyone know that the “sexy” angkot are owned by the same person. That owner is so pushy about his drivers, and he runs two shifts on the angkot. Every two drivers share the same angkot and their shift is 12 hours long.

So now that we’re almost to Bubulak, and you’ve been with me since Baranangsiang, you can see that on this route I’ve only earned Rp 8000 so far. Luckily we’re full right now so by the time I reach Bubulak, I’ll earn at least another Rp 24,000. So far we’ve driven about 30 minutes. So this run will take about 1.5 hours by the time I get back to Baranangsiang again. If I’m lucky I’ll make Rp 50,000 on this run and after paying for the gasoline, I’ll net about Rp 20,000. That’s about average. I go home when I get tired or once I make over Rp 150,000 after taking money out for gasoline. Sometimes that takes about 12 hours or more of driving. I’m lucky that I get to have the car for the whole day. Some of these guys are on 12-hour shifts and share the car with another.

When it is raining, I can make more because many more people are willing to get on the angkot for their short trips. Then there are other times where if I break even on the gasoline I’ll be lucky.

HONK HONK HONK. Darn those other angkot! They’re always scheming to slow down others behind them so they’ll get the next fare. Stupid angkot drivers! Err...I mean except me of course. Look, that one is stopped and waiting in the middle of the intersection!

Well, here’s your stop. We’re at Bubulak station, I’m turning around. You what? You’re going to go back to Baranangsiang? Crazy...that’ll be another Rp 2000! ■

A note from the writer: *This story is a composite of conversations with two angkot drivers in Bogor. I have used the figure Rp 100,000 as the daily amount the driver must pay the owner, but the actual figure can vary. The second driver I spoke with must pay Rp 130,000.*

Letters to Prakarsa

DON'T FORGET DRAINAGE

To the editor: Congratulations on a good edition [January 2011, "Road Development"], and especially on the progress being made in the Directorate General of Highways on a Medium Term Economic Framework (MTEF) and Performance Based Contracts. Not at all detracting from the value of the material presented, may I add a couple of minor comments?

1. While MTEF is taking some time to be introduced, one of the main problems, especially at the regional level, is the mistaken belief that multi-year contracts are to be avoided. If governments would declare specific contracts as needing to be multi-year at the same time as they present their budgets to their local house of representatives (DPRD), they could more easily get approval for them. In fact, if maintenance periods were to be taken seriously, then it could be appropriate to require that all construction contracts be multi-year.

2. The issue of poor road drainage was raised only in passing once in the reports, yet there are few roads anywhere in Indonesia that drain properly. Your report on local roads does mention the need to change mindsets. Since 1999, Surabaya has slowly been adopting proper road drainage, building larger drains and proper gutters, and realigning roads, originally under the excellent guidance of Ibu Anggraini of ITS. In my work as a generalist speaking to non-technical people, I have been using the following simple set of principles to guide good design of local roads that I call "dry road dry drain policy", which describes the Surabaya approach in the following way:

A. Water quickly runs off roads and into drains, and after the rain the road is dry. This requires that roads be properly graded, and gutters rather than holes in curbs be used to link roads to drains.

B. Water slowly runs out of drains into canals, until all the water flows into the canals. This requires drains to be large, so they can hold as much water as needed to delay the flow into the canal, but still prevent water from stagnating.

Owen Podger

PT Osana International

Editor's response: *We are grateful to Owen Podger on two counts. First, for pointing out that, although it was not covered in our January 2011 issue, drainage is indeed a major issue and its importance is worth emphasising. The AusAID funded Eastern Indonesia National Roads Improvement Project, for example, increased crossfall (the gradient of a road perpendicular to the center line) on roads to 3 percent to achieve the goal Mr. Podger \describes: getting the roads dry as quickly as possible.*

Second, we appreciate the opportunity to point out that letters to Prakarsa are always welcome, and readers should feel free to submit their letters for publication in response to any material that appears in our pages, using the e-mail address <prakarsa@indii.co.id>. \We reserve the right to edit for brevity and clarity.

The Expert View

The Question: "Do you think it is possible to solve the traffic problem in Jakarta? What do you think policy makers should do to try to improve it?"

Prof. Dr. Ir. Sutanto Soehodho, M.Eng
Deputy Governor of Jakarta for Industry, Trade, and Transport

"In principle we should not lose hope. The congestion problem must be solved, though it requires time and funds (for physical, social, and other costs). To solve the problem, there are three major pillars for improvement.

First, in regard to road infrastructure, Jakarta has road ratio of around 6.3 percent [the road ratio is an index of road length compared to the roads required based on population and area]. This is small compared with the ideal numbers in other big cities of the world. In Singapore, for example, the road ratio is above 12 percent. But enlarging roads is not an easy task, because it can conflict with other concerns, such as the policy of the city to provide more green, open areas, and the limited availability of city space. Because of this there is no other way to proceed except by building more elevated roads.

Second is public transport. A recent survey shows that more than 20 million trips are made in Jakarta every single day, and many people prefer to use private transport because public transport is lacking in terms of both quality and quantity. In this situation the role of private operators, and support from the central government, are critical. The central government is key to implementing a public transport program such as bus rapid transit.

Third, because developing road infrastructure and public transportation requires substantial time and money, in the meantime we can implement a transport demand management system. For example we can regulate school opening hours to help overcome congestion and ensure that police discipline vehicles that stop any place along the road and impede traffic flow. Transport demand management can be carried out along with other traffic measures, among them Electronic Road Pricing or limiting the use of motorcycles.

These three pillars are included in Jakarta's Pola Transportasi Makro [PTM, the Macro Transport Pattern] to be implemented by whoever is governor. Consistent implementation of the PTM offers hope for the people of Jakarta to extricate themselves from the problem of gridlock."

Adriansyah, MM
General Secretary of Organda (the Association of Land Transportation Operators)

"Yes, I am convinced that Jakarta can be freed from the problem of congestion, as long as all parties have the same commitment to solving it. The problem is mostly caused by a growth of the vehicles that is not balanced with the availability of road infrastructure. The main solution to the problem is for decision-makers to revitalise public transport by providing facilities that are safe, comfortable, and affordable. This will give people now using private transportation a reason to switch. The government as the provider of infrastructure should strive to develop

facilities and services for public transport. In addition, it is very important to involve the government in restricting cost by providing subsidies to providers of public transport vehicles and service operators or facilitating investment.

Last but not least, there must be synergy between public transport operators and the government as regulator. These three solutions have been implemented successfully in other countries. At present, the government has the will to strive for a good transport system, but it does not yet have maximum impact, because there is not coordination across sectors. For example, the congestion in Jakarta is related to the transport policies in Jakarta's outlying cities (Bogor, Depok, Tangerang, and Bekasi). Therefore coordinated policies need to be developed to handle the problem."

Outcomes:
Road Safety Engineering Section Achieves Sustainability

In November 2009, the Indonesia Infrastructure Initiative assisted the Directorate General of Highways (DGH) to form a new unit responsible for road safety engineering. This was an important step forward, but the original unit was ad-hoc and dependent on financing from outside donors, leaving its long-term sustainability in question. Now, thanks to the demonstrated effectiveness of the new unit (which has run workshops through Indonesia that have led to the identification and improvement of "blackspots" where many accidents occur), the Government of Indonesia has issued regulations to make the unit a formal part of the Ministry of Public Works (MPW). Two regulations – MPW regulation 08/PRT/2010 on the Organisation and Management of MPW, and DGH Judgement Letter 02/KPTS/Db/2011 on the exemption and appointment of Echelon IV Officials – establish the Road Safety Engineering Section as an entity that is formally charged with strengthening road safety knowledge at all governmental levels so that officials can propose and implement better road infrastructure. The main function of this section is to prepare norms, standards, procedures, and road safety audit programs, as well as to set minimum safety requirements for road engineering.

In Our Next Issue: Urban Sanitation

Environmental conditions in many of Indonesia's rapidly growing urban areas – with respect to both wastewater and solid waste – are unsatisfactory. Untreated wastewater fouls wells and causes drains to act as open sewers. Solid wastes block drains, providing breeding sites for disease-spreading insects and contributing to environmental degradation. These problems pose grave health risks. Without wastewater management systems, it is hard to reduce infant mortality and morbidity in poor areas. And without appropriate solid waste management systems, it is hard to make progress on enhanced waste sorting and community involvement in recycling.

Much is being done to address these problems. The Government of Indonesia's Sanitation Hibah, supported by Australia's Water and Sanitation Initiative, is making strides to improve urban wastewater management through output-based grants. Individual cities are working to develop sanitation master plans and develop institutional frameworks – including utilising agencies such as Badan Layanan Umum Daerah (autonomous service agencies owned by local governments). The Indonesia Infrastructure Initiative is assisting in these efforts, and also offering Infrastructure Enhancement Grants to encourage sanitation improvements. The July, 2011 issue of ***Prakarsa*** will examine how these initiatives contribute to improving Indonesia's urban sanitation.