

- To attract needed resources for environmental improvement, a careful design of programs, projects and their components should aim to involve the public, private sector and international funding agencies. Private financing of projects should occur within a sound, overall framework for the provision of transport infrastructure.

## Institutional, legal and implementation issues

Transport planning has multiple objectives that usually include improvements to transport efficiency and safety ahead of air quality improvements. Legislation covering air quality, transport and vehicles is very complex. At times it will be difficult to reconcile competing objectives, even if there is a political will to do so. The organizational structure of many cities does not clearly allocate responsibilities for functions, and many agencies have low technical capacity, with the result that they often work at cross-purposes.

The optimal institutional arrangement for transport planning and air quality management would involve an agency with an integrated transport responsibility. Singapore and Hong Kong, China have such integrated, empowered transport agencies, but few other cities do. Most Asian cities, for the time being, will need to rely on existing agencies and their current division of responsibilities. Regardless, involvement of all stakeholders early in the transport planning process is essential to bring about ownership for successful implementation.

Shared responsibilities for a task rarely result in effective implementation, without strong leadership and effective coordination. Hence, in this environment, effective planning and implementation must be designed to appeal to the interests of each agency in the institutional arrangement. Implementation, therefore, has the best chance of success where project components are designed to be implemented by a single agency.

Locally-empowered, technically-competent agencies with their own adequate financial resources are best equipped to provide effective urban management and deal with Asia's urban transport and environmental problems. In many Asian cities, existing laws and regulations often require clarification of the technical aspects and responsibilities.

Setting targets for air quality and travel reduction to guide the formulation of transport plans and aid the monitoring of implementation has a useful role in plan preparation and monitoring processes. The United States has achieved great benefits where transport planning is mandated to meet air quality objectives in order to gain access to federal investment funding. There is, however, a practical impediment to achieving the full potential of this integrated approach. In comprehensive air quality planning processes, assessing the costs and benefits of transport planning measures is substantially more complex than assessing many other kinds of interventions normally considered by air quality planners (e.g., stationary source interventions or the use of particular technologies in transportation).

Increases in the number and skill of transport and air quality professionals of all types are required. Comprehensive training programs are also required, backed up by appropriate funding and involving university-accredited programs as well as in-service training for government staff, consultants and other relevant professionals. Transport professionals rarely have the opportunity to work closely with air quality and health professionals, especially the latter. Closer cooperation between these professionals will lead to better analysis and understanding, and a sounder basis for moving forward.

The general guidelines in addressing the institutional, legal, and implementation issues are:

- Local champions for the adoption of appropriate coordinating mechanisms should be found. The aim is to provide strong leadership and coordination of improvement programs, through an integrated portfolio of transport responsibilities. Project components should be carefully designed,

and include early and meaningful stakeholder involvement to create agency ownership of projects.

- An appropriate legal framework is needed to provide the basis for action. All inconsistent laws and regulations should be revoked.
- Better integration between transport planning and air quality planning by locally-empowered agencies is essential. The formulation of air quality objectives to assist in the transport planning process is valuable. Ideally, transport plans should be mandated to meet these air quality objectives, and funding for the implementation of transport plans should be made contingent upon this. The usefulness of such mechanisms in Asian cities should be explored.
- Improved methodologies to assess the costs and benefits of transport planning interventions on air quality should be developed for use by transport and air quality professionals.
- Programs should be adopted to strengthen the skills of transport planners, and air quality and health professionals working in local and central government agencies, the private sector, and nongovernment organizations.

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## Promotion, awareness, education

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NGOs and research institutes play valuable roles in highlighting issues, conducting independent analysis, and advocating possible solutions to policymakers and implementing agencies. An open media and supporting legislation which gives the pub-