

12 CONCLUSION AND RECOMMENDATIONS

12.1 Conclusion

- Chengdu City is the center of the South-Western Region of China having a population of about 10 million. The central government is presently shifting the development target from the coastal region to the inland region. The Study Area is the central part of the City and is expected to play a key role in accelerating the achievement of this policy goal. For this purpose, the current transport system of Chengdu needs to be upgraded to support varied social and economic activities.
- The current road system of Chengdu is relatively well developed. Its theoretical capacity is enough to accommodate the traffic volume of the present level, and, with the completion of road projects proposed in the existing plans, will be sufficient even for the forecasted traffic volume in 2010. However, there still remain a number of problems hindering the full use of existing road space. These are, among others, existence of bottleneck sections in built-up area, insufficient intersection management, too many traffic accidents and poor traffic discipline.
- The present public transport system of Chengdu is dominated by bus (excluding taxi which is considered a semi-private mode of transport). There is no major problem in relation to bus operation at present. Most of major roads are covered by bus service and the service is more or less satisfactory during working hours with a relatively low fare level. Its modal share, however, is still low at 10% in 2000, and there are a considerable percentage of bicycle and car users who would shift to bus use if its service level is improved considerably.

The largest problem in relation to bus operation is rather administrative or managerial. Bus industry in Chengdu is dominated by a state-owned company, and its group (including affiliated bus companies) has been producing a huge financial loss every year. The City has to cover the deficit by providing subsidy from its general budget. In the light of the current policies of the central government promoting deregulation and the recent movements of some advanced cities in China towards privatization of public transport, it is the time for Chengdu to take the next steps.

- In the long run, the Chengdu public transport system will focus on the subway network. By 2030, the subway network will be completed. The period from 2000 to 2030 will be a transition period to develop a public transport system consisting mainly of railways and buses. Buses will become the main public transport for a certain period and then will provide some auxiliary services. It is projected that only the subway's Line 1 will be completed before 2010, so the main component of the public transport is still buses until 2010. In formulating the plans to improve public transport by 2010, however, the subway network should be taken into account. In

order to enhance the bus service in Chengdu to encourage the use of public transport (favorable also for subway), the busway system is very effective. It is a combination of segregated bus exclusive lanes and priority lanes using the existing Right-of-Way of major urban roads. Although various construction works are needed, it does not require a large-scale investment for constructing new infrastructure. This busway network, however, should be supported by a series of measures including bus terminal/stop improvement, modification of bus routes, upgrading/improvement of major intersections, segregation of bicycle and pedestrian flows and implementation of other traffic management schemes.

- By implementing these plans, the future traffic situation will be remarkably improved; the modal share of bus will increase from the present 10.2% to 27.4% in 2010, the travel speed of bus from 12.0 km/h to 16.9 km/h and the average volume/capacity ratio of roads will decrease from 0.43 to 0.25. If no measures are taken, the improvement of traffic situation is quite marginal only due to the completion of existing road development projects.

12.2 Recommendations

- The projects proposed in the Master Plan should be implemented according to the implementation schedule. They are 4 Primary Busway Projects (segregated bus exclusive lanes), 7 Secondary Busway Projects (segregated bus priority lanes), 3 Auxiliary Bus Facilities Projects (7 intercity bus terminals, 10 intra-city bus transfer points and 230 bus stops), 4 Traffic Control System Projects (intersection improvement, bicycle lane development, etc.) and 5 Policies and Management System Projects.

The total cost of the projects accounts for RM 1,196 million, of which RMB 599 million or 50% of the total is for the Primary Busway Project. The Secondary Busway Project shares RMB 285 million or 24% of the total. The rest is for Auxiliary Bus Facilities Project and Traffic Control System Project. No cost was assumed for Policies and Management System Project.

The internal rate of return of the Master Plan reaches 25.5%, far exceeding the economic discount rate (12%). Thus, the Master Plan is judged to be highly feasible economically. The net present value is estimated at about RMB 2,000 million, which is about double of the investment amount. As per sensitivity tests, this high feasibility is very rigid, not affected much by cost increase or benefit decrease. By project, all the proposed projects are economically feasible, showing an internal rate of return over 12%. The economic returns of the East-west busway and the Wuhouci Lu – Beizhan Lu busway are especially high.

In addition, no major negative impact is foreseen on the environment.

- For the privatization of bus operation, the following steps should be taken:
 - (1) Reorganize and reduce the size of Chengdu Public Transportation Company and create a Funds Administration Company.
 - (2) The Funds Administration Company, a stock company, will be listed on the stock market, in order to provide an efficient management supervised by stockholders.
 - (3) Privatize affiliated transport companies.
 - (4) Reorganize affiliated companies into stock companies. The said Fund Administration Company should be the initial stockholder only. Private funds will be introduced later on.
- In addition, it is proposed that a single traffic administrative body be responsible for traffic management in Chengdu. This setup will integrate management of city traffic including public bus (inter-city and intra-city), taxi and subway systems.
- Regarding the two key projects analyzed by the feasibility studies, the following recommendations are made:

East-West Primary Busway Project

Segregated bus exclusive lanes should be developed on Shudu Road within the Second Ring Road. This project aims to make a maximum use of the existing Right-of-Way without reducing the traffic capacity for other vehicles only by rearranging the cross-section. In parallel to this, other supportive measures including grade separation of major intersections, improvement of bicycle/pedestrian facilities should be taken. The total cost is estimated at RMB 146 million. The effect of the Project is large in improving traffic flows. The Project is highly feasible economically with an EIRR of 49%. The project also contributes to improve environment, while no major negative impact is foreseen. It is strongly recommended to implement this project as early as possible.

It is desirable for the City to approve the Project and start design work in 2001, to arrange finance and bidding and start construction in 2002, and to complete construction within 2003. As this project is conducted within the existing Right-of-Way, the private sector should not be involved. It should be financed by the general budget of the City and the construction would be conducted by the Primary Road Control Department of the City. Operation and management of the busway should be taken care of by the Public Utilities Bureau of the City. In addition, the busway should be free of charge.

Chengdu Bus Privatization Project

Although the business of city bus operation has been already privatized partially in 2000 (the Yunxing Company), the remaining part should be also privatized in a few years. This is needed in light of policy directions of the central government of China as well as to improve bus services in terms of quality and quantity and to reduce the financial burden of the City.

However, it is difficult to privatize the bus business remaining in the public sector (the Chengdu Public Transportation Company and its affiliated Bus Company No. 1, No. 4 and No. 5) under the current financial condition. It is required to introduce a private capital corresponding to 150% or more of the owned fixed assets to materialize the privatization. Prior to this, however, a certain level of profitability, satisfactory for the private capital, must be secured. Although this becomes possible in the long run due to the increase of bus traffic demand, it is almost impossible for a private capital to raise a profit in the short term taking into account the necessary replacement and increase of bus fleet. Thus some incentive measures should be adopted for at least 5 years, such as tax exemption/reduction, subsidy for bus units and public assistance for surplus manpower. During this transition period, the privatized company should strengthen its financial base towards a complete financial independence by 2010.

The headquarters of the Chengdu Public Transportation Company should be reorganized as a stock holding company for the Yunxing Company and the new companies to be privatized, and it will be responsible as a public organization in monitoring and supervision of bus operation, planning and approval of bus routes, etc.