



1. Project Data:		Date Posted : 08/07/2001	
PROJ ID: P003518		Appraisal	Actual
Project Name: Guangdong Prov. Transport	Project Costs (US\$M)	645.55	1000.48
Country: China	Loan/Credit (US\$M)	240	240
Sector(s): Board: TR - Roads and highways (99%), Sub-national government administration (1%)	Cofinancing (US\$M)		
L/C Number: L3530			
	Board Approval (FY)		93
Partners involved :	Closing Date	06/30/1999	06/30/2000
Prepared by :	Reviewed by :	Group Manager :	Group:
Robert C. Varley	Ronald S. Parker	Alain A. Barbu	OEDST

2. Project Objectives and Components

a. Objectives
The objectives were to:

1. Relieve congestion in two major traffic corridors in the South Coast province of Guangdong .
2. Improve other national and provincial roads carrying substantial volumes of traffic .
3. Promote the transfer of highway technology through training and the provision of equipment .
4. Further develop institutional capability in highway design, planning and prioritization .
5. Support reforms of the highway financing system .

b. Components
Total project costs of \$1,038 million comprised:

1. **Foshan-Kaiping Highway (31.8%).**
2. **Longgang-Tanxi Highway (41.0%).**
3. **Road Improvement Program or RIP (11.5%).**
4. **Road Safety Pilot Program (.05%).**
5. **Supervision of Construction (1.8%).**
6. **Equipment (1.1%).**
7. **Staff Training /Technical Assistance (.3%)**
8. **Land Acquisition and Resettlement (8.6%)**
9. **Price Contingencies (3.7%).**

c. Comments on Project Cost, Financing and Dates
There was a cost overrun of 31% (measured in \$) most of which was accounted for by contract variations for the civil works. The project was extended for one year for the electrical and mechanical equipment component to be completed.

3. Achievement of Relevant Objectives:
In terms of the achievement of the direct objectives the project was satisfactory - congestion was relieved and higher volumes of traffic handled. Traffic on the highways rose from 27 to 67% of the total for the corridor between 1996 and 1999. Institutional capabilities for planning and investment were developed through introduction of a road data base, pavement and bridge management systems . More development work is required to integrate the new systems at both provincial and city level for programming maintenance expenditure . The project highway finance study led indirectly to a major innovation of the project : the introduction by Guangdong Province of a form of private-sector financing which securitized the revenues of one of the project highways through share issues . By component:

1. **Construction of high grade highways** - both highways were opened on time in December 1996 and handle greatly increased traffic, make transport of local goods easier and have enhanced living standards . Construction quality was a problem in earlier years but eventually improved . The electrical and mechanical equipment contracts were delayed and the loan closing extended by one year to June 30, 2000. The delays had no substantive adverse effect and tolls were collected using temporary toll collection facilities . The Environmental

Impact Assessment recommended mitigation measures, all of which were carried out and SEPA (State Environmental Protection Agency) conducted and approved final acceptance of environmental works .

2. **RIP** - 1260 kms were completed by the end of 1997 and quality has been good . The roads have been constructed with proper drainage and pedestrian crossing facilities . The supervision missions have noted that extensive planting along highways has had a striking and environmentally pleasing effect . On some roads the reduction in dust pollution has been so great that some farmers have reported 30% yield increases.
3. **The road safety pilot program** - had some impact although progress was slower than expected due to shortage of local funds and generally a lack of commitment from the Highway Administration Bureau . Activities to remedy black spots were particularly effective and since their completion no accidents have been reported in any of these locations.
4. **Supervision of construction** - quality control was a constant struggle . Training on the job for this component was not only a significant means of technology transfer but an essential measure for effective quality control . Despite pressures to open the highway early, quality was maintained and this component was satisfactory .
5. **Equipment** - this component was satisfactory .
6. **Training** - this was completed satisfactorily and the number trained overseas exceeded appraisal estimates, while those trained domestically were somewhat fewer than planned, the training was for longer periods .
7. **Land acquisition and resettlement** were implemented according to RAPs and completed by February 1999. The only real problem, seemingly beyond the control of the province, is illegal construction close to the highway .

Project benefits in terms of saved vehicle operating costs, reduced traffic congestion on existing routes and enhanced road safety have been achieved . Overall the EIRR for the total project was 17.7% compared to 30% at appraisal. The lower return is due to a combination of higher than projected increases in traffic and much higher costs (economic cost of construction, expressed in 1999 Constant Yuan, was over 179% greater than estimated at appraisal.)

A comprehensive financial analysis of the two revenue earning entities (provincially controlled companies) showed that despite rigidly regulated toll rates the highway companies will be financially viable . The RIP components are toll free but the maintenance expenditures on these roads represent less than .6% of the total maintenance expenditure of the Communications Department (GPCD).

4. Significant Outcomes/Impacts:

1. The project has been a major contribution to the future development of the expressway and highway system in a province at the cutting edge of China's export-led development strategy . In spite of delays in land acquisition and damages suffered from a typhoon, both expressways were completed on time .
2. As a first-time implementing agency for Bank projects, the GPCD gained extensive and valuable experience with competitive bidding of contracts (which has been integrated into all new construction and major maintenance work.)
3. The Bank's requirement for competitive selection of civil works contractors improved quality, cost control, timeliness and reduced opportunities for fraud and corruption .
4. The Chinese authorities have found that, through the securitization of existing highway assets they are able to raise large sums of new capital from foreign and domestic investors . Over \$110 million was raised by share issues without any liability to sovereign or sub-sovereign agencies for the repayments, since the funds were leveraged by future traffic streams . Bank support for the construction of securitized assets was a very positive element in investors' interest in Guangdong Province Expressway Development Company's (GPED) shares.

5. Significant Shortcomings (including non-compliance with safeguard policies):

1. Some of the increase in costs could have been avoided if more attention had been paid to soil settlement problems which had been identified as a risk at appraisal . Detailed soil investigations in the difficult sections would have been effective in securing the most cost-effective design and suitable construction methods .
2. The process for obtaining internal clearances for bidding documents and evaluation reports was slow due to cumbersome internal process involving both provincial and central government agencies .
3. The Resettlement Action Plans (RAP) for the RIP were not as thorough as those for the two highways and compensation rates were low . Overall however the improvements have had more than compensating benefits for communities and individuals.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome :	Satisfactory	Satisfactory	
Institutional Dev .:	Substantial	Substantial	
Sustainability :	Highly Likely	Highly Likely	
Bank Performance :	Satisfactory	Satisfactory	
Borrower Perf .:	Satisfactory	Satisfactory	
Quality of ICR :		Satisfactory	

NOTE: ICR rating values flagged with '*' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

1. The level of project preparation and due diligence normally required by the Bank provides a needed level of security to commercial financial institutions and investors who otherwise would look to an established policy framework, which at present is still in its formative stages . The exposure to private investor requirements was also a strong incentive to the GPED to strengthen management and comply with strict financial standards .
2. An option to consider in future are bond issues securitized by existing assets and priced at a rate and term which may be preferable to the volatility characterizing most equity markets .
3. People living in the corridors expressed appreciation of the Bank's poverty targeted projects . More involvement in construction and rehabilitation of lower class roads would directly help alleviate poverty and should be encouraged in the Bank's future lending program .
4. Bank procurement, with its extensive procedural management links, imposes high "hidden costs" and is a concern to the project Owner .

8. Assessment Recommended? Yes No

Why? The project could be clustered with several other Bank road projects in other provinces . China is an under-audited country (for transport) and the Bank's China highway projects seem to have gone very well, with possible lessons for other borrowers .

9. Comments on Quality of ICR:

Satisfactory . The economic and financial analyses are exemplary .