

Philippines

South Luzon Expressway Construction Project (I)

Report Date: January 2003

Field Survey: October - December 2002

1. Project Profile and Japan's ODA Loan



Location map



South Luzon Expressway (Sto. Tomas-Lipa Section)

1.1 Background

The government of the Philippines (GOP) has designated Batangas Province, the region covered by this project and one of the provinces in the CALABARZON (the five adjacent provinces of **CA**vite, **LA**guna, **BA**atangas, **R**izal, and **QUE**ZON, on the outskirts of Metro Manila), as an area where industrial development is to be aggressively promoted via the introduction of private sector capital, and the project to develop Batangas Port, which is located near the end of the target road section, was gradually being translated into reality using yen loan funding (Batangas Port Development Project (E/S) (PH-P91). The South Luzon Expressway, which parallels the existing National Route 1 and runs 42km south from Metro Manila (to Calamba in Laguna Province), had been opened as a transport corridor between Metro Manila and the CALABARZON. Aside from the South Luzon Expressway, there was a paved national highway between Metro Manila and Batangas, but it was already severely congested and not in a state that could easily accommodate newly generated increases in transport demand on the back of the aforementioned development plan. Accordingly, this project to extend the South Luzon Highway as far as Batangas was necessary to meet increased transport demand.

1.2 Objectives

In extending the existing South Luzon Highway (42km between Metro Manila and Calamba) as far as the city of Batangas, the objectives of this project were to contribute to that city's industrial development plans, which were focused on the development of its port, and to increase the flow of passenger and freight traffic between Metro Manila and the regions adjacent to it.

1.3 Project Scope

The main components of this project were as follows:

- (1) Construction of a four-lane, fully access controlled expressway between Sto. Tomas and Lipa (20.9km) in the Luzon Island.
- (2) Construction of interchanges at Sto. Tomas and Lipa to link both ends of the above section with the existing road.

- (3) Consulting services relating to the Sto. Tomas-Lipa section, including a review of the detailed design, an environmental impact assessment, studies of toll road schemes, and studies of toll road maintenance methods.

Japan's ODA loan covered 70% of total project costs (the entire foreign currency portion and part of the local currency portion). Specifically, the yen loan was used to procure necessary equipment and services for the civil engineering and construction work for (1) and (2) above and to finance the consulting services listed under (3).

1.4 Borrower/Executing Agency

Government of Republic of the Philippines /Department of Public Works and Highways (DPWH)

1.5 Outline of Loan Agreement

Loan Amount	4,238 million yen
Loan Disbursed Amount	3,669 million yen
Exchange of Notes	October 1989
Loan Agreement	February 1990
Terms and Conditions	
-Interest Rate	2.7%
-Repayment Period (Grace Period)	30 years (10 years)
-Procurement	General untied
Final Disbursement Date	May 2000

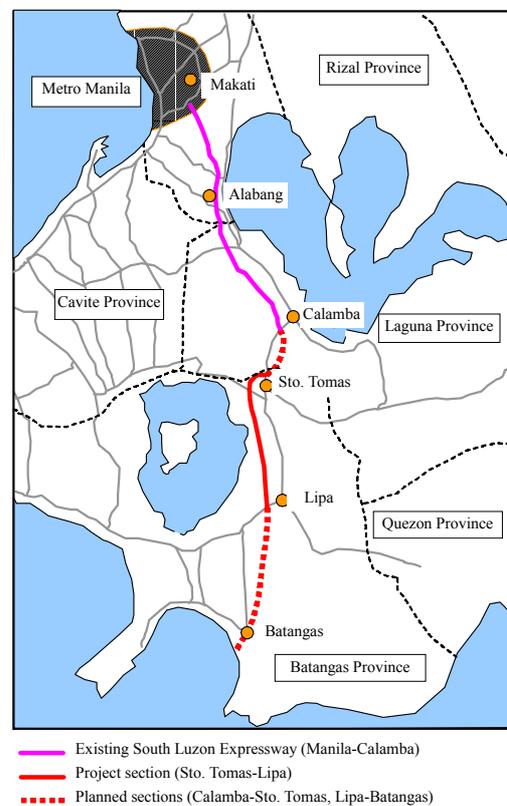
2. Results and Evaluation

2.1 Relevance

At appraisal, the stated targets of the road sector development plan for the mid-term national development plan period (1987-1992) were (1) to increase road density to 0.52km/km² by 1992, and maintain the 3.02km/1000 people level, (2) to increase the ratio of all-weather roads to 60%, and (3) to increase the ratio of paved national roads to 55%. A total of PHP 44,728 million of public funds was earmarked for the six-year period, which was equivalent to 17.4% of the infrastructure development budget and 70.7% of the transport sector investment budget under the same plan. This project was planned as an important component of the national development plan.

The GOP is promoting development in the CALABARZON, and there has been a marked shift from Calamba in Laguna Province, with its high concentration of existing industrial estates near the southern districts of Metro Manila, towards development of the more southerly cities of Sto. Tomas and Lipa in Batangas Province, with increased efforts being made to attract industrial estates and preferential measures being beefed up, thus the significance of the

Figure 1-1: Project site map



project link between Sto. Tomas and Lipa has increased in recent years.

The basic concept of infrastructure development during the current mid-term national development plan period (2001-2004) is to promote private sector participation (PSP) projects like BOT (build-operate-transfer), with public funds to be concentrated on the regional infrastructure that is less economically viable, in the hope of generating direct effects on poverty reduction. The principal targets for the road sector are (1) to increase the paved ratio of main trunk roads (16,799km) to 90% by 2004, (2) to increase the paved ratio of secondary national roads (13,079km) to 65% by 2004, (3) to render 95% of bridges (276,878m) durable by 2004 (incl. improvements to 16,612m, new construction of 35, 494m), (4) the priority development of national roads in regions with low road densities and paving ratios, (5) the development of key roads in Mindanao and other underdeveloped regions, (6) the development of 271km of key expressways including the North Luzon Expressway (widening of the existing road) and the South Luzon Expressway (the Lipa-Batangas extension), (7) the development of access roads to the tourist destinations of Manila, Cebu, and Davao, and (8) strategic road development in conflict-torn areas to promote peace and stability. The extension of the South Luzon Expressway (Lipa-Batangas section), which relates to this project, was also highlighted as a priority issue.

Incidentally, the South Luzon Expressway construction project initially incorporated the entire length of the target section between Calamba and Batangas. Since the Philippines National Construction Corporation (PNCC) had already been granted the franchise rights to the Calamba-Sto. Tomas section by the GOP and was planning its construction, the GOP applied to Japan to provide support for the extension to the outstanding 42 kilometer section between Sto. Tomas and Batangas. However, in view of the need for detailed studies of the consistency of the Lipa-Batangas section with and access from it to the Batangas Port Development Project, as well as of how to connect the section with major roads, the section was shelved pending the results of the detailed design, with this project, the 16th ODA loan, principally covering the construction of the Sto. Tomas-Lipa section and the remaining section to be undertaken during Phase 2.

Nevertheless, as is detailed in section 2.2.2, the implementation schedule was severely delayed, and in view of the GOP's desire for the Phase 2 section (Lipa-Batangas) to be constructed under its own BOT scheme, the scope of this project only ultimately included the construction of the Sto. Tomas-Lipa section.

In the end, the construction of the Calamba-Sto. Tomas section, which was scheduled to be undertaken by PNCC, never got underway due to the troubled finances of PNCC. Moreover, the government BOT section between Lipa and Batangas has been held up by problems with land acquisition and fund raising. The GOP is currently focused on expediting the construction of these two outstanding sections as a priority issue, and the DPHW reports that they hope to make an early start on both sections in cooperation with the provincial government of Batangas. At the present time, the DPHW is busy making final adjustments between the Batangas government, the private sector corporation that is to have the key role in the BOT project, and the financing institution, targeting a 2004 completion date for the Calamba-Sto. Tomas section, and 2005 for the Lipa-Batangas section.

Once these sections are complete the entire stretch of the South Luzon Expressway from Manila to Batangas can be opened to traffic and it is anticipated that the corridor, together with the project section, will come to play a key role in the development of the region's economy. There are plans to link Batangas Port, which is being developed via the yen loan funded "Batangas Port Development Project (Phase II) (1998-2005)" as an alternative/supplement to the Port of Manila, with the South Luzon Expressway, thereby enabling this project to contribute to greater efficiency in domestic distribution.

As is evidenced above, it is considered that this project has remained highly necessary. However,

in view of the fact that since the entire route is not yet open it is not currently generating the initially envisaged effects, it is concluded that consideration should have been given to measures to prevent the effects of the section supported by the Japan Bank of International Cooperation (JBIC) from being retarded during the initial stages of planning by, for example, making the start of construction on outstanding sections to be undertaken by the GOP a condition for providing the loan.

2.2 Efficiency

2.2.1 Project Scope

Aside from extending the length of the section from 20.90km to 22.16km and the additional construction of two more interchanges (2→4), there were no major revisions to project scope. The upgrading of the designs for the 7.9km Calamba-Sto. Tomas section and the 5.0km Batangas access road was undertaken as part of the consulting services in addition to the review of the feasibility study (F/S), the detailed design, and studies of toll road schemes.

2.2.2 Implementation Schedule

The implementation schedule was planned to cover 60 months from February 1990 (consultant selection) through January 1995 (completion of execution management), but the project actually took 128 months (February 1990-June 2000)¹ and was completed approximately five years behind schedule. The primary reason for the delay was that land acquisition procedures required seven years to complete. The protracted land acquisition procedures are attributed to the following factors. (1) The Bureau of Internal Revenue did not initially have land price valuation regulations to be applied when acquiring land, and although land prices were evaluated by the local government's valuation committee, there was opposition from residents and land owners who considered the prices to be too low². (2) A number of cases led to legal battles. (3) The transfer of utilities (water/electricity) in the areas targeted for land acquisition was time consuming. These hold ups in land acquisition also engendered delays in the bidding procedures and the implementation of both construction work and consulting services, the outcome of which was a total of three extensions to the final disbursement date³.

2.2.3 Project Cost

Total project costs were planned at JPY 6,050 million (ODA loan portion: JPY4,238m), but actually reached JPY 8,884 million (ODA loan portion: JPY 3,669m). The primary reason for the substantial cost overrun was the rise in land acquisition costs, expenditure for which was approximately 7.8 times higher than planned. The increase in foreign currency denominated costs (construction/civil engineering costs) due to exchange rate fluctuations was also contributory.

2.2.4 Implementation Schedule

The construction of the Sto. Tomas-Lipa section was implemented in four separate packages, however, since the contractor commissioned to undertake packages 1A (Sto. Tomas-Sambat: 4.59km)

1 Since the executing agency had already employed a consultant when the L/A was concluded, GOP-side construction was commenced in May 1989, with the entire implementation period thus extending 135 months through June 2000.

2 In 1999, the GOP passed an ordinance stipulating that government organizations should add a premium of 10% to the price, as valued by the Bureau of Internal Revenue, of private land to be acquired for the purpose of implementing a public infrastructure project. The procedures for acquiring land from the government were further complicated as the result of a Republic Act and its enforcement and regulation promulgated in 2000.

3 The first extension was caused by land acquisition negotiations delaying the start of construction. The second came about after negotiations with the owner of a partially un-acquired land area ended acrimoniously rendering it necessary to settle the dispute through time-consuming court proceedings, which delayed construction. In the third instance, the Asian currency led to the bankruptcy of the contractor and after the courts had made the decision on the final amount to be awarded in compensation for the un-acquired land, the landowner refused to consent to the transfer rendering it necessary to undertake eviction negotiations.

and 1B (Sambat-San Pedro: 4.78km) ran into financial difficulties and was producing shoddy work, the executing agency (DPWH) changed the contractor midway through the project. This leads to the question as to whether the financial status, etc., of the corporations was properly vetted by the executing agency when it was soliciting for bids.

A number of problems were also noted in connection with the quality controls undertaken during project implementation vis-à-vis the work of the contractor. The operation and maintenance of the project sections were transferred to Star Infrastructure Development Corporation (Star IDC), a private company, by DPWH on August 1, 2001, immediately after their completion, however, a number of defects were discovered on part of the road, and Star IDC was thus required to carry out rehabilitation work to poor quality overlay and some sections of hard shoulder during the first year of its concession. It was also required to redo a section of drainage ditching.

In view of the above circumstances, it is clear that the executing agency should have made regular checks of the quality of workmanship of other projects implemented by the contractor and that greater weighting should have been afforded to this matter at appraisal. It is also believed that the executing agency should have undertaken a thorough investigation of the financial status and caliber of the corporations that entered bids for the project during the bidding process.

Ordinarily, a one year period after completion is provided for maintenance under the terms of the contract between DPWH and the contractor, which requires that the contractor undertake the rehabilitation of any defects found during that period, and the final transfer is made from the contractor to the owner, i.e. DPWH, once any problems have been resolved. However, in the case of this project, Star IDC had already started operating the road before the final transfer from the contractor to DPWH had taken place⁴. Star IDC has invoiced DPWH for the maintenance costs incurred during 2001-2002 and DPWH and the contractor are currently in the midst of the concluding discussions regarding the final transfer of the road.

2.3 Effectiveness

2.3.1 Traffic Volumes

The project sections were opened to traffic in August 2001. Average daily traffic volumes in 2001 (the 5 months from May-December) and 2002 (the 10 months from January-October) were 492 and 524, respectively, representing 5.2% and 5.6% of the respective targets planned for the two years.

Table 2-1: Average Daily Traffic Volumes & Target Achievement Rates

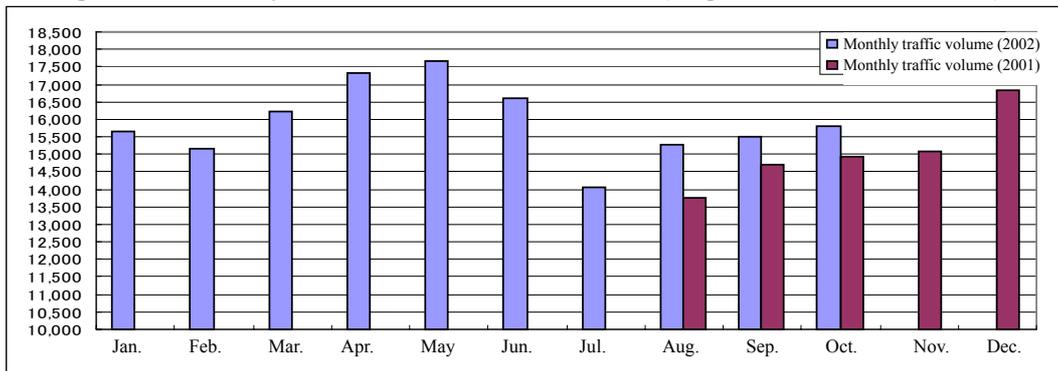
	2001 (Aug.-Dec.)	2002 (Jan.-Oct.)
Annual traffic volume (vehicles)	75,309	159,250
Average daily traffic volume (vehicles/day)		
a) Target	9,406	9,406
b) Actual	492	524
c) Achievement rate	5.2%	5.6%

Source: Data supplied by Star IDC and questionnaire responses.

Note: Planned values were sourced from the traffic forecasts made by JBIC at appraisal. However, these forecasts were based on the entire South Luzon Expressway being open to traffic.

⁴ In the hearing with DPWH and Star IDC it was revealed that Star IDC started operating the road without waiting for the proper completion procedures to be undertaken because it was eager to make up for the time lost due to implementation delays.

Figure 2-1: Monthly Fluctuations in Traffic Volumes (August 2001 – October 2002)

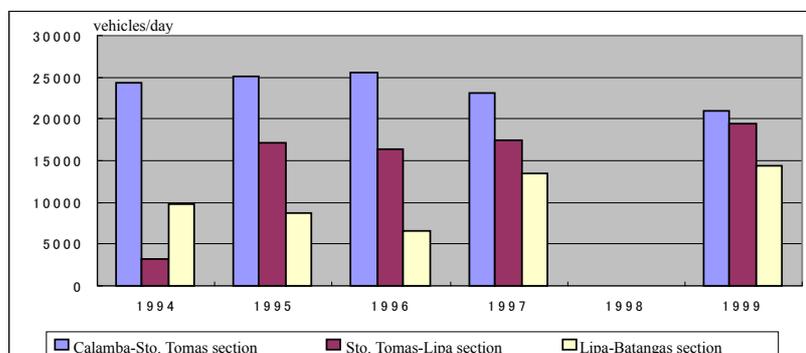


Source: Data supplied by STAR IDC.

This project was comprised of one section of the South Luzon Expressway between Metro Manila and Batangas, and since the Calamba-Sto. Tomas and Lipa-Batangas sections are currently incomplete the number of road users is limited and the volume of traffic lower as compared to on other expressways. Moreover, the low achievement rates are an inevitable consequence of the fact that the target figures shown in Table 2-1 were the forecasts assumed at appraisal on the basis of the entire South Luzon Expressway being open to traffic. However, even with the above conditions factored in, an achievement rate of around 5% for 2001 and 2002 means that the majority of the initially anticipated project effects are not yet being generated.

On the other hand, traffic volume data for the existing national road during 1994-99, evidence that there has been little overall growth in traffic on the route. Although traffic on the Sto. Tomas-Lipa and Lipa-Batangas sections of the national road are on the increase, the reverse is true on the Calamba-Sto. Tomas section. There is no marked deviation between these and the planned figures. Since it has not been possible to obtain any data on traffic volumes since the project was completed in 2001, the exact figures are unknown; nonetheless, it seems unlikely that there was any dramatic growth in traffic on the national roads in the project region during 2001-2002. Hypothetically speaking, if traffic on an open road has increased beyond expectations and congestion has worsened on the route, this will have the effect of promoting the use of the expressway as an alternative route (traffic will flow from the non-tolled road onto the expressway). In contrast, if there is little traffic on the open road and no congestion, there will be little incentive for traffic to flow onto the expressway. In the case of this project, there is not believed to have been any major change in the overall volume of traffic on the existing national road and the direct correlation between this and traffic on the project expressway is unclear.

Figure 2-2: Traffic Volumes on Existing National Roads



Source: Data acquired from ex-post evaluation / results assumptions and researched by office staff
 Note: No data available for traffic volumes in 1998, 2000, or 2001

For reference, the tolls on the section of the expressway between Sto. Tomas and Lipa are as shown in Table 2-2.

Table 2-2: Tolls on the Project Road (Sto. Tomas-Lipa Section) (PHP)

Section	[Class 1] Passenger cars Jeepney	[Class 2] Buses Small/medium GV	[Class 3] HGV	Per capita GDP (2001)
Sto. Tomas				\$926
Sambat	4	8	12	
Bulihan	4	8	12	
Lipa	8	16	24	
Total	16	32	48	

Sources: (1) STAR IDC questionnaire responses.

(2) World Bank Statistics.

Note: The average exchange rate for 2001 was listed as PHP 1 = JPY 2.38 in IMF International Financial Statistics.

There are manifold reasons why the project is generating few effects, for example, delayed progress in regional development plans, an economic slowdown, overly-optimistic forecasts at appraisal, and so forth and it will be necessary for a detailed study to be undertaken in this respect, nevertheless, the following are cited as conceivable reasons, impressions garnered from the results of interviews with the developers and tenants of industrial estates in the region that were conducted via a case study during the present survey.

- Companies have been slow to move into the industrial estates, with only a third of the areas for sale in those covered by this survey having been sold, etc. Although there has been progress in industrial development, mainly of industrial estates, as compared to before project implementation, the pace has been slow. This is believed to be a reflection of the downturn in the Philippine economy as a whole.
- Road users perceive few merits in only using the expressway between Sto. Tomas and Lipa in terms of its cost-effectiveness. In short, even if there are time-saving effects they are not sufficiently attractive to get road users to pay a toll and transfer onto the expressway from an open road (national road). There are safety issues at stake at night and few incentives for drivers to make active use of the expressway. For road users, transport to Manila has strategic significance and thus the development of the Calamba-Sto. Tomas section, which is subject to chronic congestion, takes precedence over the Sto. Tomas-Lipa section.

There is still considerable scope for improvement in the percentage of users on the project section, and expectations are being pinned on the future opening of all sections of the expressway.

2.3.2 Reductions in Travel Time

Before this project was initiated, the only route between Sto. Tomas and Lipa was an open road and the journey took between 45-60 minutes. The construction of the expressway section linking these two areas has realized a reduction of a third to a quarter over this time, with it now being possible to make the journey in 15 minutes.

2.3.3 Recalculation of Economic Internal Rate of Return (EIRR)

At appraisal, the EIRR of this project was calculated to be 69.2%. However, since only around 5% of the appraisal forecasts for traffic volumes have been achieved, the EIRR value is currently negative.

(Assumptions)

Benefits: Travel cost savings, fixed cost savings, time savings

Costs: Civil engineering work, consulting services, land acquisition

Project life: 20 years from project completion

2.4 Impact

2.4.1 Case Study

To ascertain the impact of the project on the area in which it was undertaken interview surveys were conducted, in the form of a case study, with the developers of four industrial estates located in the corridor region and nine tenant companies.

Table 2-3: Industrial Estates and Tenant Companies Targeted by the Survey

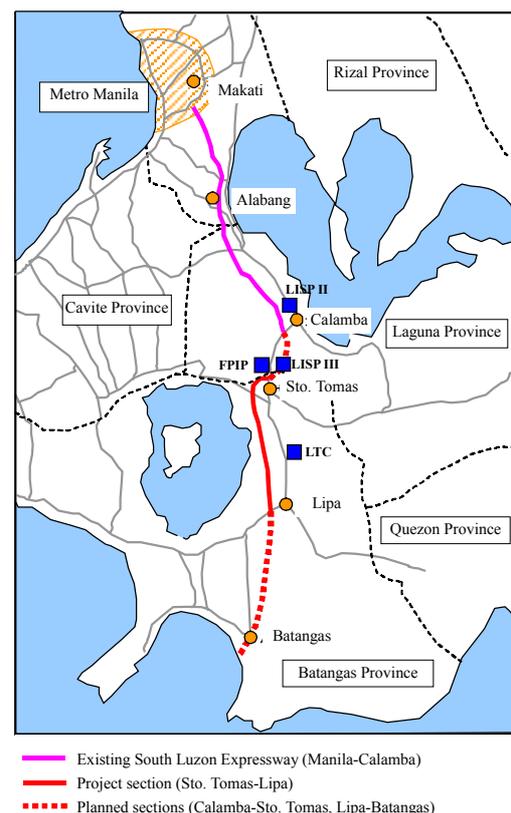
Name of Industrial Estate/Tenant Company	Location	Industry classification	Remarks
1. Lima Technology Center (LTC)	Lipa and Malvar, Batangas	Developer	Japanese-affiliated trading house
(a) Hitachi Cable Philippines	As above	Automobile wiring/electrical components	Japanese-affiliate
(b) EPSON Precision (Philippines), Inc.	As above	Ink jet printers	Japanese-affiliate
(c) JIDECO Manufacturing Philippines, Inc.	As above	Auto motors	Japanese-affiliate
2. First Philippine Industrial Park (FPIP)	Sto. Tomas and Tanauan, Batangas	Developer	Japanese-affiliated trading house
(a) Microtel Inn and Suites (Microtel) of USA	As above	Hotel	US-affiliate
(b) SB Flex Philippine, Inc.	As above	Flexible circuit boards	Japanese-affiliate
(c) Komyo Philippine Logistic Service Corp.	As above	Steel cases for auto parts	Japanese-affiliate
3. Light Industry and Science Park of the Philippines II (LISP II)	Calamba, Laguna	Developer	Japanese-affiliated trading house
(a) Tohritsu Technology Asia Laguna, Inc.	As above	Plastic goods molding	Japanese-affiliate
(b) Matex International Inc.	As above	Small, lightweight planet gears	Japanese-affiliate
(c) Precision Spring Manila, Inc.	As above	Precision springs	Japanese-affiliate
4. Light Industry and Science Park of the Philippines III (LISP III) =under construction=	Sto. Tomas, Batangas	Developer	Japanese-affiliated trading house

Case Study Results

(1) Industrial Estate Developers

This project (incl. its plans) was cited as one of the key factors underpinning the decision to develop all the industrial estates. Accessibility, and particularly proximity to an expressway, is one of the basic criteria for selecting a site for industrial estate development. In fact, both the First Philippine Industrial Park (FPIP) and the Light Industry and Science Park of the Philippines III (LISP III) have been constructed in the immediate vicinity of expressway interchanges. Lima Technology Center (LTC) has its eyes set firmly on the opening of the as yet incomplete sections of expressway and is planning to build an interchange providing exclusive access to the industrial estate. Meanwhile, the Batangas Port Development Project, which is currently in progress, was also cited as a key factor

Figure 2-3: Location of industrial estates covered by the survey



influencing location choice, and developers have high expectations of the port as an alternative to the severely congested Port of Manila for the distribution of goods for import/export.

- The project has had the following benefits on the industrial estates covered by the survey. (1) It has realized journey time-savings between the industrial estates and the current distribution base at Manila, Alabang, home to many of the managers of the tenant companies, and Manila airport, etc. (2) It has improved access to the existing South Luzon Expressway (Manila-Calamba section). (3) It is highly convenient for tenant companies with customers in neighboring industrial estates, in that the distances between them are short. (4) The completion of the pending Lipa-Batangas section will provide a convenient link to Batangas Port.
- By contrast, there were two developers who expressed dissatisfaction with the condition of the pavement, maintenance of shoulders and roadway lighting. Again, all the developers are eager to see work commence on the outstanding sections and are particularly keen for priority to be given to completion of the Calamba-Sto. Tomas section.

(2) Tenant Companies

- Seven of the nine tenant companies interviewed responded that the existence of the project (incl. its plans) influenced their decision on industrial estate selection. Aside from locational conditions, the entry or relocation of business partners or affiliates to the Philippines, connections with the developers, and so forth were also key factors in the decision to move into a particular industrial estate. This is closely linked to the fact that the industrial estates covered by the survey and the majority of the tenant companies interviewed are Japanese-affiliated firms. The development of industrial estates by Japanese-affiliated trading houses is a flourishing business in the Philippines, and their creditworthiness, the tie-ups, group relationships and partnerships that exist between the developers and the tenant companies, as well as the punctilious services offered to tenant companies (for example, consultation on Philippine labor issues, support in setting up and the various application procedures, liaison with local governments, support for coordination/collaboration between tenant companies, etc.) are believed to be crucial factors in the decision to move in.
- Again, all the tenant companies were aware of the Batangas Port Development Project, with six of the nine acknowledging that their decision to move into Batangas Province was swayed by this factor. All the companies predominantly use the routes to the Port of Manila or Ninoy Aquino Airport for distribution, however, the completion of the Batangas Port Project will bring less traffic congestion than on the Manila Port route, shorter distances and expedited customs clearance, and many companies are exploring the change to the Batangas Port route.
- The tenant companies cite (1) reductions in the time needed to transport goods and services via the expressway and links to increased business opportunities, (2) improved access to client companies in the South Luzon area, (3) locational advantages, (4) the reliability of industrial estate developers and the support systems they provide, and (5) the favorable nature of facilities and infrastructure within the industrial estates, as being the benefits to moving into an industrial estate in the area serviced by the project.

- The project facility is used more frequently by the tenants of the LTC (Lipa) industrial estate than by those of the FPIP (Sto. Tomas) and the LISP II (Calamba). This is attributed to the fact that since Manila is currently the center for freight and human traffic movement, tenants located in Sto. Tomas and Calamba have limited opportunity to travel to Lipa or Batangas at the present time. However, given that weather conditions, etc., have frequently forced the closure of the only other road between Sto. Tomas and Lipa, the project road is judged to have played a significant role as an alternative route at such times.
- On the other hand, the following problems were cited. (1) The lack of roadway lighting, (2) the fact that the Calamba-Sto. Tomas and the Lipa-Batangas sections are not yet open to traffic, (3) the lack of nighttime patrols for emergencies and crime prevention, (4) the narrowness of interchange access roads and anxieties about crime prevention, and (5) the high cost of the tolls.

(3) Conclusion

- This project influenced the site selection process of four industrial estate developers and nine tenant companies during the decision to invest in the area.
- The Lima Technology Center (LTC) and its tenants are frequent users of the project facility and have received direct benefits from it. The industrial estates located north of Sto. Tomas and their tenants use the road more frequently for personal reasons, for example, local government business, leisure and so on, and overall use frequency is low, thus they have not received as many direct benefits from the facility and its impact has been limited.
- Nevertheless, all the industrial estates and tenant companies are anticipating that the opening of the entire South Luzon Expressway, resulting from the completion of the Calamba-Sto. Tomas and Lipa-Batangas sections, will contribute to promoting regional development in the corridor.

2.4.2 Environmental Impacts

Traffic on the project facility is limited at this time, moreover, the section has only been open for a short time, and according to Star IDC, although they have not been monitoring air pollution and noise, neither have they received any specific reports of problems due to noise or exhaust gas pollution from the surrounding regions to date.

2.4.3 Impacts on Local Residents

The decision on the route of the project section was not only made on the basis of technical and cost perspectives, but also with a view to minimizing any impact on local residents, however, it was necessary to relocate the residents of 126 households. Problems with the amount of compensation to be awarded in respect of the land led to litigation, and after the court had decided the final amount there were landowners who refused to consent to the land transfer and the executing agency chose to settle the eviction negotiations via exceptionally peaceful discussions, which resulted in hold ups in the land acquisition process. Furthermore, time was needed to relocate the utilities (water/electricity) in the area scheduled for acquisition. Nevertheless, the residents ultimately acquiesced to the final acquisition price handed down by the courts and the utilities were moved, thus the issues were resolved.

The expressway cut through a barangay⁵ on the section between the Sambat interchange and the San Pedro interchange dividing it in two. Accordingly, an overpass was constructed at the request of the barangay so as to allow residents to travel freely back and forth between the two divided communities. In addition, a tunnel with drainage ditching was built under the expressway on the Sto. Tomas-Sambat interchange section since it straddles an area used for the transit of domestic livestock and agricultural machinery and would afford drainage functions, and various efforts were made to mitigate any negative impact of the project on the lives of local residents. Meanwhile, Star IDC has outsourced part of the maintenance work to a local barangay organization and is thereby contributing to employment creation and income increases within the community.

2.5 Sustainability

2.5.1 Organizational Capability

After the completion of the project, Star Infrastructure Development Corporation (Star IDC), a private sector corporation, obtained the operating rights for the Sto. Tomas-Lipa section of the South Luzon Expressway through a concessionary contract from the GOP and is collecting the tolls and executing operation and maintenance tasks on the section. Actual operations are charged to Star Tollway Corporation (STC), a subsidiary of Star IDC, and the section was opened under the Star Tollway name in August 2001.

STC has 211 full-time employees, 40 of whom are assigned to the administrative office in Lipa. The Lipa administrative office is primarily involved in on-site operations including maintenance, toll collection, security and patrols.

2.5.2 Technical Capability

Routine maintenance undertaken by STC primarily consists of trimming vegetation along the shoulder and the center strip four times a year, but 60% of this work is directly managed by STC, whilst the remaining 40% has been outsourced via a contract with a local barangay as the work on this section is difficult to do by machine. However, the quarterly weeding is not keeping pace with the vegetation, which grows rapidly due to the fertility of the land in the area. To counteract this, STC is receiving support from the Ford Motor Company Conservation and Environmental Grants Program and is planning to plant acacia bushes (4,400 in total) at 10-meter intervals along the road (this will have the effect of suppressing the growth of bottom grass on the hard shoulder).

In addition, the operation and maintenance of the project section was transferred from DPWH to STC on August 1, 2001, however, since defects in the pavement were found on one section STC has rehabilitated sections of overlay and hard shoulder where the need was particularly urgent. It has already resurfaced 2 kilometers of pavement, rehabilitated 12,000m² of hard shoulder and rebuilt a section of drainage ditching. STC is also putting up fencing along the road, a job that was not included in the initial plans for this project.

2.5.3 Financial Status

Since no data on operation and maintenance financing was provided it has not been possible to assess the financial status of STC.

2.5.4 Future Moves for the Project

As was evidenced by the results of the case study, the absence of any road lighting on the Sto. Tomas-Lipa section has led to concerns regarding the safety of traveling the route at night and the risk

⁵ A barangay is the smallest of the administrative districts (local government) in the Philippines and represents a settlement of between 50-100 households.

of crime. However, STC is aware of the problem and has been pressuring the local government to install street lights in the barangays located alongside the expressway as a possible means of providing indirect lighting for the expressway.

A private oil company is currently applying to open service stations on the section and it is slated to receive the go-ahead in the near future. This will serve to illuminate the expressway in the vicinity of the service stations and is expected to result in an increase in nighttime road users.

Star IDC is planning to build the Lipa-Batangas section of the expressway under a BOT scheme with the cooperation of the Batangas government, and is currently making the final adjustments with DPWH, the Batangas government and the financing institution, with the aim of getting work underway in April 2003. The completion of the Lipa-Batangas section will mean that Star IDC is responsible for the operation, maintenance and tolling of this and the Sto. Tomas-Lipa section. Furthermore, the Batangas government considers that the Calamba-Sto. Tomas section should be constructed as a BOT project, and is busy with plans to promote the project as a joint venture (JV) in a tie-up with a developer under funding from the Development Bank of the Philippines (DBP).

3. Feedback

3.1 Lessons Learned

- **The problems and risks associated with land acquisition to be undertaken for a project need to be analyzed at the preliminary assessment stage and in-depth plans formulated in respect of this process.**

In the Philippines, there are numerous cases in which hold ups in land acquisition procedures have delayed the implementation of a project as a whole, and it is imperative that particular attention be afforded to this issue during planning and appraisal. On this project, opposition from residents and landowners dissatisfied with the land valuations conducted by the local government led to court proceedings, with the result that more time than planned was necessary for land acquisition. Again, the need to obtain the cooperation of related organizations meant that the relocation of water mains and electric utilities required more time than expected. It is therefore considered necessary to investigate/confirm these risks more carefully during the initial planning stages and appraisal of a project.

- **In cases where the generation of project effects is contingent upon external conditions, the matter should be properly vetted in advance and the details of the project be assessed on the basis of the potential for effects to be generated.**

The original effects and benefits of this project will be generated with the opening of the entire section between Calamba and Batangas and this process has been hampered by the delays in the development of sections not covered by Japan's ODA loan (the implementation of the Calamba-Sto. Tomas section by the PNCC). The plans for other sections of the expressway and their feasibility should have been properly verified at appraisal and studies undertaken so as to ensure that the effects from the project section would be realized as planned.

- **In partially modifying the design of the project to reflect the opinions of affected residents, this project is evaluated as being an example of concern for residents being incorporated into infrastructure development.**

As stated in section 2.4.3 “Impacts on Local Residents”, concern for the residents who were to be affected by the project were incorporated, in that the design of the project was partially modified to include construction of an overpass in response to requests from residents in a community that was to be bisected by the expressway, thereby enabling them to cross the road in safety. Moreover, some of the maintenance work has been outsourced to the local community since project completion, which has served to generate employment and improve incomes. These efforts are seen as an example of concern for residents being incorporated into an infrastructure development project.

3.2 Recommendations

(To JBIC)

- **The progress on outstanding sections of the expressway that the GOP is planning to construct must be carefully monitored, and the status of effects realization be tracked.**

As stated in this report, since the GOP is planning to expedite the start of work on the Calamba-Sto. Tomas and Lipa-Batangas sections under BOT schemes, successive checks should be made on their progress and, from a perspective of project effectiveness, it is hoped that once the sections are completed an additional study will be undertaken so as to ascertain whether the initially planned effects of this project are being achieved.

Comparison of Original and Actual Scope

Item	Plan	Actual
<p>1. Project scope</p> <p>(1) Construction of 4-lane, fully access controlled expressway</p> <p>(2) Interchange construction</p> <p>(3) Consulting services a) F/S review for Sto. Tomas-Batangas section, detailed design, examination of toll road scheme, etc. b) Execution management for construction of Sto. Tomas-Lipa section</p>	<p>Section: Sto. Tomas-Lipa Total length: 20.90km</p> <p>2 locations - Sto. Tomas - Lipa</p> <p>Total: 823 M/M</p>	<p>As left Total length: 22.16km (1A) Sto. Tomas-Sambat: 4.59km (1B) Sambat-Sao Pedro: 4.78km (1C) San Pedro-Pusil: 7.50km (1D) Pusil-Lipa: 5.29km</p> <p>4 locations - Sto. Tomas - Sambat - Bulihan - Lipa</p> <p>Total: 1,099 M/M</p> <p>In addition to a) and b) at left, the designs for the 7.9km Calamba – Sto. Tomas section and the 5.0km Batangas access road were upgraded.</p>
<p>2. Implementation Schedule</p> <p>(1) Consultant selection (2) Review of detailed design (3) Land acquisition (4) Tender preparations (5) Loan agreement (6) Civil engineering works (7) Execution management</p> <p>Total execution period</p>	<p>Feb. 1990 – Jan. 1991 Feb. 1991 – Nov. 1991 Mar. 1991 – Feb. 1992 May 1991 – Apr. 1992 Jun. 1992 Aug. 1992 – Jan. 1995 Aug. 1992 – Jan. 1995</p> <p>Feb. 1990 – Jan. 1995 (60 months)</p>	<p>May 1989 – Mar. 1991 Dec. 1991 – Nov. 1992 Jan. 1992 – Dec. 1999 Aug. 1992 – Jun. 1995 Dec. 1992 – Jun. 1995 Mar. 1993 – Jun. 2000 Dec. 1992 – Jun. 2000</p> <p>May 1989 – Jun. 2000 (135 months)</p> <p>* The L/A was concluded in February 1990, however, the executing agency had already undertaken consultant selection in anticipation of the signing.</p>
<p>③ Project Cost</p> <p>Foreign currency Local currency</p> <p>Total ODA loan portion Exchange rate</p>	<p>2,638 million yen 3,412 million yen (550 million peso) 6,050 million yen 4,238 million yen 1 peso = 6.2 yen (1989)</p>	<p>4,052 million yen 4,832 million yen (1,208 million peso) 8,884 million yen 3,669 million yen 1 peso = 4.0 yen (Average for 1990 – 2000)</p>

Third Party Evaluator's Opinion on South Luzon Expressway Construction Project (I)

Dr. Olegario G. Villoria, Jr.
Consultant
Trans Core ITS, Inc.

Relevance

There is no doubt that this project (Phase I: Sto. Tomas-Lipa section) plays a key role in achieving the overall goals of Philippines' national development plan and principal targets of the road sector. The project is also in line with the government strategy of promoting private sector participation in infrastructure development. It is unfortunate though that the Calamba-Sto. Tomas section was not completed in concert with Phase I. Lipa City has experienced dramatic economic growth over the last ten years and an expressway connection with Metro-Manila would have further strengthened such growth. Nevertheless, the completion of Phase I have benefited road users that travel between Sto. Tomas and Lipa City by providing an alternate route to the existing National Route 1. There were no other similar projects in the area. The design and scope of the project are consistent with the purpose of the project.

When the Lipa-Batangas (Phase 2) and Calamba-Sto. Tomas sections are completed, the entire corridor will spur economic growth in the CALABARZON Region. It will also alleviate congestion at the ports of Manila and the roads leading to these ports. The costs of transporting goods between the industrial estates in Cavite, Laguna and Batangas and the domestic markets in the Visayas and Mindanao will be significantly reduced particularly when the Batangas Port Development Projects are also completed. The fully extended South Luzon Expressway and enhanced Batangas port capacity operations will enable faster and more cost effective domestic and passenger/goods movement. Hence, this project is a very important component of the Philippine government's vision for CALABARZON and the domestic markets in the Visayas and Mindanao regions.

Impacts

Although the traffic forecast for the initial years of operations did not materialize, it does not imply that the project did not achieve its objectives. Due to the unforeseen economic downturn and delays in the completion of other sections of the expressway, the actual traffic was lower than expected. However, for a project of this scale, success cannot be fully measured in a very short-term period of two years. Once the other related elements of this project are completed, I expect that the goals of this project will be fully met. The factors that hinder the achievement of project objectives include: (a) the prolonged downturn of the overall economy; (b) uncertainty in the completion schedule of the Calamba-Sto. Tomas section; (c) rising cost of acquiring right-of-way particularly within the city centers of Lipa and Batangas; and, (d) institutional and legal constraints related to the implementation of BOT projects.

The environmental impacts of this project in terms of air pollution and noise are not expected to be of great concern because the facility is designed to expressway standards and the alignment is generally away from residential communities.

The number of displaced households was relatively small considering a project of this scale. The positive impacts (e.g., reduced travel time and greater accessibility) of this project on the residential communities far outweighed the negative impacts.

One unintended effect of this project is the considerable amount of agricultural land that was converted to infrastructure use. This will have a detrimental effect on long-term food supply.

This project afforded the stakeholders with valuable lessons on project implementation that will serve to improve the application of current laws and

regulations related to BOT projects.