



Performance Evaluation Report

Reference Number: PPE: LAO-2010-81
Project Number: 33432
Loan Number: 1834-LAO(SF)
December 2010

Lao People's Democratic Republic: Vientiane Urban Infrastructure and Services Project

Independent Evaluation Department

Asian Development Bank

CURRENCY EQUIVALENTS

Lao PDR

Currency Unit – kip (KN)

		Appraisal (1 May 2001)	Project Completion (31 August 2007)	Independent Evaluation (14 August 2010)
KN1.00	=	\$0.00011	\$0.0001	\$0.00012
\$1.00	=	KN8,830	KN9,560	KN8,235

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
DBST	–	double bituminous surface treatment
DPWT	–	Department of Public Works and Transport
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
IED	–	Independent Evaluation Department
IEM	–	independent evaluation mission
JICA	–	Japan International Cooperation Agency
Lao PDR	–	Lao People’s Democratic Republic
LWU	–	Lao Women’s Union
MPWT	–	Ministry of Public Works and Transport
NUSSIP	–	National Urban Sector Strategy and Investment Program
O&M	–	operation and maintenance
PACSA	–	Public Administration and Civil Service Authority
PCR	–	project completion report
PMU	–	project management unit
PPA	–	Participatory Poverty Assessment
PPER	–	project performance evaluation report
RRP	–	report and recommendation of the President
SDR	–	special drawing rights
TA	–	technical assistance
UDAA	–	urban development and administration authority
VOC	–	vehicle operating cost
VUDAA	–	Vientiane Urban Development Administration Authority

WEIGHTS AND MEASURES

ha	–	hectare
km	–	kilometer
m	–	meter
m ²	–	square meter
vpd	–	vehicle per day

NOTES

- (i) The fiscal year (FY) of the Government of the Lao People's Democratic Republic is from 1 October to 30 September. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2000 ends on 30 September 2000.
- (ii) In this report, "\$" refers to US dollars.
- (iii) For an explanation of rating descriptions used in ADB evaluation reports, see ADB. 2006. *Guidelines for Preparing Performance Evaluation Reports for Public Sector Operations*. Manila.

Key Words

asian development bank, adb, roads, drainage, decentralization, governance, reform, solid waste management, urban, urban infrastructure, urban policy and institutional reform agenda, vientiane, vientiane infrastructure, village area improvement, lao infrastructure

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The guidelines formally adopted by the Independent Evaluation Department (IED) on avoiding conflict of interest in its independent evaluations were observed in the preparation of this report. Ian V. Green, Minavanh Pholsena, and Pipong Phimpachanch were the consultants. To the knowledge of the management of IED, there were no conflicts of interest of the persons preparing, reviewing, or approving this report.

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BASIC DATA

Loan 1834-LAO(SF): Vientiane Urban Infrastructure and Services Project

Project Preparation/Institution Building

TA No.	TA Name	Type	Person-Months	Amount (\$'000)	Approval Date
3333	Vientiane Urban Infrastructure and Services Project	PPTA	40	600.00	10 Dec 1999

Key Project Data (\$ million)	As per ADB Loan Documents	
	Expected	Actual
Total Project Cost	37.00	43.67
Foreign Exchange Cost	20.03	25.21
Local Currency Cost	16.97	18.46
ADB Loan Amount/Utilization	25.00	28.86
(SDR million)	20.02	19.70
ADB Loan Amount/Cancellation		0.54
(SDR million)		0.32

Key Dates	Expected	Actual
	Fact-Finding	
Appraisal		18 Apr–1 May 2001
Loan Negotiations		25–27 Jul 2001
Board Approval		23 Aug 2001
Loan Agreement		28 Sep 2001
Loan Effectiveness	27 Dec 2001	18 Jan 2002
First Disbursement		18 Mar 2002
Project Completion	Jun 2006	Aug 2007
Loan Closing	28 Feb 2007	2 Apr 2008
Months (effectiveness to completion)	53	67

Financial and Economic Rates of Return (%)

Item	Financial Internal Rate of Return			Economic Internal Rate of Return		
	Appraisal	PCR	PPER	Appraisal	PCR	PPER
Solid Waste Management	28.50	31.63	3.6	nc	nc	nc
Construction and Upgrading of Road P3	nc	nc	nc	27.90	42.21	21.8
Upgrading of Road Thong Sang Nang	nc	nc	nc	26.50	40.13	28.2
Upgrading of Roads 1 and 1A	nc	nc	nc	36.60	54.98	nc
Upgrading of Road Dong Na Sok	nc	nc	nc	17.30	27.42	25.7
Drainage and Riverbank Protection	nc	nc	nc	31.10	33.78	27.7

Borrower Lao People's Democratic Republic

Executing Agency Vientiane Prefecture

Mission Data

Mission Type	No. of Missions	No. of Person-Days
Fact-finding	1	69
Appraisal	1	32
Project administration		
Inception	1	10
Consultative mission	1	3
Review	18	162
Environmental safeguard review	1	7
Resettlement review	3	25
Project completion	1	24
Independent evaluation	1	22

ADB = Asian Development Bank, PCR = project completion report, PPER = project performance evaluation report, nc = not calculated, TA = technical assistance.

Source: Independent evaluation mission.

EXECUTIVE SUMMARY

The urban sector in the Lao People's Democratic Republic (Lao PDR) is at a nascent stage. Improving this sector has become critical to national development, just as increased urbanization also led to a call for enhanced urban management through decentralization. More recently, Vientiane, the country's capital and premiere urban center, has grown to an estimated 0.75 million people in 2010 with an administrative area of 3,920 square kilometers. At loan approval, the Vientiane Urban Infrastructure and Services Project was seen to further improve the city's urban environment while supporting government reforms for effective and responsive urban management to sustain its investments. Together with a grant from the Agence Française de Développement, the Asian Development Bank (ADB) provided a \$25-million concessionary loan to finance the project.

Expected results. ADB has been the leading development partner in the Lao PDR urban sector. Its approach, which covered Vientiane, secondary provincial districts, and small district towns, and included urban reform, has been comprehensive and ambitious. In this context, the project was ADB's second integrated urban development project in Vientiane and the third of four such projects in the country. This multisector assistance addressed critical missing links of primary and secondary roads and drainage and provided hardware for improved solid waste management and traffic management (component A). For grassroots participation in urban management, the project featured a demand-driven social program to improve community infrastructure and services (component B). Finally, to further decentralize urban governance in Vientiane, a capacity-building program (7% of total cost) was built in to accelerate transformation of the Vientiane Urban Development Administration Authority (VUDAA) into an autonomous agency capable of managing, financing, and delivering urban services (component C). The scope of component C was linked to a government-agreed urban policy and institutional reform agenda, which was being pursued through a lengthy process, across several ADB projects, and aimed at institutionalizing and strengthening urban development authorities.

Component A. The citywide infrastructure and services component was *partly relevant, highly effective, efficient, and likely* to be sustainable. Its relevance for the national investment program and its design and formulation was high. However, the relevance was weakened because the project's vision of administrative decentralization to sustain the project-related urban infrastructure and services was not realized. VUDAA still functions as an engineering department of Vientiane Prefecture, and its evolving relationship with the Department of Public Works and Transport (DPWT) merits attention. Some key VUDAA functions may be transferred to DPWT, and, in the near future, DPWT may yet assume overall responsibility for urban services provision. The Ministry of Public Works and Transport (MPWT) deems this to be appropriate, as DPWT is more adequately funded.

The project exceeded its two major output targets for improved citywide roads and drainage. Together with the first ADB-financed urban development project in Vientiane, the project provided continuity and a critical mass of interventions within the city. Road investments were *efficient* with a sample of three citywide roads yielding economic rates of return of above 20%. Motor vehicle traffic here ranged from 18,700 to 22,900 vehicles per day. Another five of the 13 citywide roads have similarly high rates of 17,700 to 34,100 vehicles per day and are likely to yield good returns. The remaining roads were to provide all-weather access to communities situated far from the city center. While these roads may likely have low returns, since only beneficiary communities tend to use them, they have potential for unquantified positive benefits to the urban environment, economy, and social conditions at the village level as determined from the results of component B. Finally, the drainage component was *highly efficient*, based on a reestimated economic return of around 28%.

Generally, both road and drainage facilities are in good condition and are considered *likely* to be sustainable, because institutional arrangements do exist to ensure service delivery (i.e., through MPWT). Vientiane's strategic role as the national capital, a regional economic center, and a key tourist destination would also justify resources and priority in the order of funding, even if delayed. While the original aim of financial self-sufficiency was overambitious and improbable to attain, there is still room for improved revenue collection to institutionalize an adequate level of maintenance. The underlying issue for the project is that there has been insufficient buy-in to the organizational arrangements for the collection of revenues. While progress has been made to raise VUDAA's share of internally generated revenues, these do not fully cover the cost of services. Despite increasing demand for urban services, budget-sourced revenues have fallen since FY2006–2007 due to reduced funding from the provincial government, even as Road Fund revenues from MPWT have remained constant. On the upside, a recent sector assistance program evaluation by the Independent Evaluation Department on the Lao PDR transport sector concluded that the road maintenance fund was improving. This augurs well for increased maintenance allocations to roads with higher demand. Meanwhile, VUDAA's solid waste unit will continue to contend with a fragile financial position while serving an expanding clientele.

Component B. The village area improvement component was *highly relevant, effective, and efficient*, although *less likely* to be sustainable. Its high relevance is evident in its replication across the country, in particular, by both project and nonproject villages in Vientiane. Component B was effective in its use of a demand-driven community approach by taking advantage of community participation and an applied gender-balance concept. However, despite evidence of small business stimulation, the project did not resolve the continuing lack of stable sources of employment and of credit access by poor households in its areas of influence. A sample of component B subprojects also suffered from poor road design and construction quality, and uneven compliance by villages in terms of their maintenance responsibilities. While component B roads and drainage are confined to beneficiary communities, there is a synergy of benefits when taken together with associated project-financed citywide roads. But compared with their citywide counterparts, village road sustainability is *less likely*. Village responsiveness seems mixed. Uneven compliance on routine maintenance indicates that strong ownership and appreciation of subproject benefits (which mobilize community support) may waver in the future. Long-term village responsiveness will then be driven by (i) a continuity of supportive, grassroots leadership; (ii) the availability of village resources; (iii) the nature of pavement intervention; and (iv) proactive engagement by VUDAA with community-based organizations to address pressing problems and ensure their compliance with maintenance responsibilities.

Component C. The decentralized urban governance initiative was *partly relevant, ineffective, inefficient, and unlikely* to be sustainable. As designed and implemented, the policy reforms were conceptually a parallel activity rather than an activity driver. It has become partly relevant due to deficiencies in upstream project preparation. Notably, a basic flaw with its implementation was the assumption that the legal reforms would be fully achieved early in the loan period and that the framework for all the other reform would therefore be in place. The Law on Local Administration did not provide what was necessary for the reform agenda to be implemented. Furthermore, not all key stakeholders appear to have endorsed decentralization or municipalization of urban management. The reform process needed to be flexible, and this was not consistent with being tied to the loan. The project was then left with ambitious or unrealistic targets (including a 100% target for financial self-sufficiency for VUDAA) that failed to take into account that it would take time for the government to decide on and address institutional, political, and economic imperatives. In hindsight, this activity could have been dealt in other ways (i.e., separate intervention, parallel technical assistance), including long-term, less

intensive policy dialogue. Notably, the project and various ADB urban projects that build toward the common reform agenda goal have not been adequately linked.

The intervention was *ineffective*, since achievements relative to the reform agenda have been far from expectations. Four loan covenants on decentralized urban governance reform were not met. These effectively deterred the project from achieving its stated outcome of improved urban management in Vientiane with an autonomous, well-functioning, and financially sufficient VUDAA. In the absence of substantive progress relative to efforts extended, this component was *inefficient*. Likewise, it is *unlikely* to be sustainable, as questions on the institutional sustainability of VUDAA remain. For now, the stalled urban reforms do not inhibit delivery of basic urban services in Vientiane, because institutional arrangements, like MPWT support to VUDAA, ensure their delivery. The key risk here is moving forward the decentralization process and enhancing the quality of urban management.

Overall assessment. Given that its strategic objectives of improved quality of life, urban productivity, and economic growth were met, the project was *successful*. While economic conditions and social problems still ranked among top household concerns, priority concerns had shifted away from flooding, inadequate drainage, and poor access roads to the need for better solid waste services, water supply, and traffic management. Meanwhile, the structure and content of various ADB interventions in the urban sector helped conceptualize a sector approach in the Lao PDR including its role in Vientiane. For the project, this effort at value addition for the future met a key setback when a strong VUDAA organization did not take hold.

The project was *partly relevant* due to emergent issues that take away from its vision of sustainable decentralized urban management in Vientiane. On the upside, its multisector approach to resolve multiple and interlinking socioeconomic problems was appropriate and readily implementable, given the matching functions of MPWT and VUDAA's relative weakness. The delivery of infrastructure components was *highly effective*. Both components A and B (93% of total cost) were *successful*. They either met or exceeded appraisal targets for infrastructure and service delivery. By improving urban infrastructure and services in the city, the project achieved its main outcome of improved urban environment, public health, and access to basic services. In contrast, the institutional part was *unsuccessful*, as parallel reforms on urban governance to sustain project assets failed to take root. The institutional impact on VUDAA was *moderate* at best. As a vehicle for urban infrastructure improvement and change in urban governance, the project is rated *effective*.

The project was *efficient* due to the achievements of its physical infrastructure outputs. In addition, the multisector approach enhanced the efficiency of fund use by addressing several distinct and urgent subsector problems of traffic, flooding, and waterlogging in Vientiane. On the downside, implementation performance was still marked by cost overruns (i.e., higher unit costs) and delays (i.e., additional works added). The project is assessed as *likely* to be sustainable due to its component A, which accounts for the majority of investments. To the extent that project facilities were of satisfactory quality and situated in the national capital, prospects for acceptable maintenance allocations look promising. At the same time, it is not clear whether the government has the resources to vigorously pursue investments in physical infrastructure, particularly the village area improvement program. Efforts to move reforms for decentralized urban management in Vientiane have stalled, and the future of VUDAA is unclear.

Moving forward. Overall, ADB and borrower performance were *satisfactory*. But, ADB performance was marked by design weaknesses in the implementation of the reform agenda. ADB could also have done better to follow up on the reforms, despite post-project completion constraints, by finding ways to promote the reform process with the borrower. Discussions with

the government indicate that there is an understanding of what revisions are needed to sharpen the local administration law to make it a more effective tool in decentralizing urban management. But past experience here suggests that the central government needs to recognize and accept its redefined role in a decentralized system. Indeed, the ambitious goal of decentralized urban management will perhaps involve a much longer process covering several urban sector and governance projects.

Issues. The role of VUDAA in a municipal administration will be considered by the Public Administration and Civil Service Authority, under the Prime Minister's Office, in association with the functions of DPWT. In the future, VUDAA's role may be less than anticipated, with the central government (and DPWT) playing an increasingly larger role. Meanwhile, VUDAA's continued financial dependence on MPWT entails possible crowding out of funds for other priority roads (i.e., rural roads). This can be avoided with better fiscal solutions as VUDAA is able to raise more revenues. Other issues for the future are (i) the deteriorating water quality at the That Luang Marsh in the absence of a wastewater treatment plant in Vientiane; (ii) the need for an integrated and systematic response to development pressures from increased urbanization (i.e., solid waste collection, road congestion, wastewater pollution, clean air, etc.); and (iii) the continuing need for capacity-building support of sustainable urban development and management (i.e., decentralized urban management).

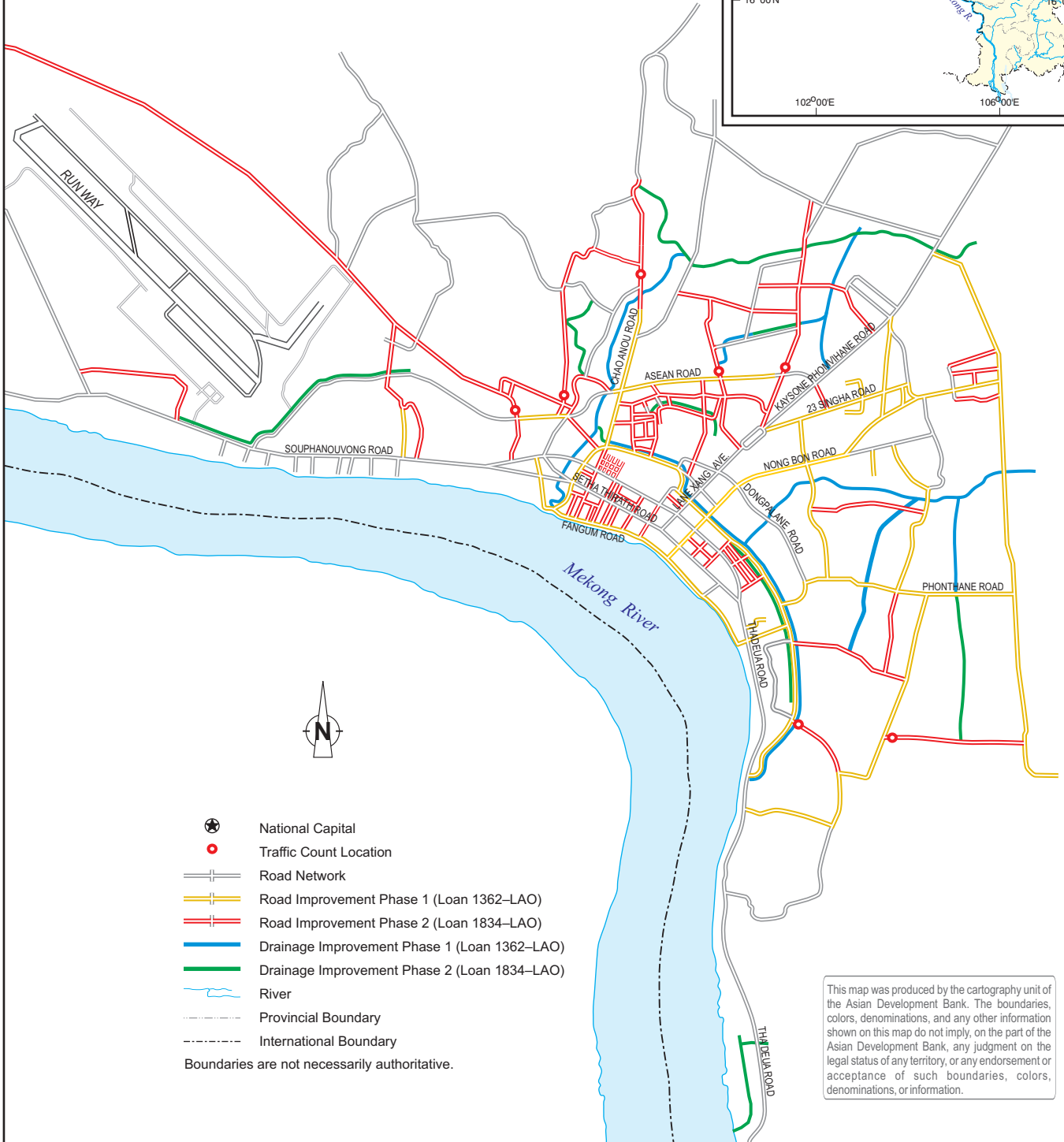
Lessons. Lessons learned from the project experience are that (i) implementing urban institutional reform is complex, (ii) the difficult process of decentralization will benefit from a systematic sectorwide approach to change, (iii) a balanced approach to urban land use ensures success, (iv) a demand-driven community approach facilitates better implementation, and (v) clear horizontal and vertical roles and responsibilities for urban sector agencies are important in a multisector approach.

Follow-up actions. Given the increasing prominence of the urban sector in the country, in particular in Vientiane, follow-up actions to sustain decentralized urban management are identified for consideration by the Southeast Asia Department in the context of its next country partnership strategy. These are:

- (i) Support revisions to the Law on Local Administration and operationalization of the National Urban Sector Strategy and Investment Program 2020 (para. 97), and
- (ii) Develop and implement a strategic sector program based on the implementation of the revised Law on Local Administration and the National Urban Sector Strategy and Investment Program 2020 (para. 98).

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LAO PEOPLE'S DEMOCRATIC REPUBLIC
VIENTIANE URBAN INFRASTRUCTURE AND SERVICES PROJECT
 (as implemented)



I. INTRODUCTION

A. Evaluation Purpose and Process

1. The Vientiane Urban Infrastructure and Services Project¹ was the second loan project of the Asian Development Bank (ADB) in the urban areas of Vientiane, the capital city of the Lao People's Democratic Republic (Lao PDR). At the time of loan approval, substantial deficiencies in basic infrastructure and services remained after the first ADB-assisted Vientiane Integrated Urban Development Project.² These deficiencies continued to constrain sustained growth of the city and enhanced quality of life for urban residents, especially the poor.³ The project was thus expected to further improve the urban environment in Vientiane, while reinforcing government reform for effective and responsive urban management.

2. The project was selected by the Independent Evaluation Department (IED) for postevaluation in 2010, which is expected to contribute to two broader evaluations: (i) the country assistance program evaluation for the Lao PDR (as an input into an urban sector assessment), and (ii) an analysis of the multisector approach for a forthcoming special evaluation study. The preparation of this project performance evaluation report (PPER), 3 years after its completion in August 2007, has allowed sufficient time for development results from the citywide infrastructural and environmental improvements and village area improvement to become visible. Likewise, the PPER provides an opportunity to review the unfinished institutional and urban policy reform supported by the project. The PPER, which follows IED guidelines,⁴ also makes use of updated traffic data and a rapid socioeconomic assessment of beneficiaries. A copy of the draft PPER was shared with the Southeast Asia Department of ADB and the borrower, and their comments incorporated, where relevant.⁵

3. The project completion report (PCR), which was finalized in July 2008, rated the project as *successful*, being *relevant*, *effective*, *efficient*, and *likely* to be sustainable.⁶ IED prepared a validation report on the PCR in 2009.⁷

B. Expected Results

4. **Impact and outcome.** The expected long-term impact of the project was to improve the quality of life of the urban residents, especially the poor, and enhance urban productivity and economic growth in the Vientiane urban area. Its expected immediate outcomes were

¹ ADB. 2001. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Lao PDR for the Vientiane Urban Infrastructure and Services Project*. Manila.

² ADB. 1995. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Lao PDR for the Vientiane Integrated Urban Development Project*. Manila. The project completion report rated the Vientiane Integrated Urban Development Project as *successful*, being *highly relevant*, *effective*, *efficient*, and *likely* to be sustainable.

³ (i) The poor condition of secondary and tertiary infrastructure constrains the full potential of and benefits from recent improvements in primary infrastructure and services; (ii) inadequate infrastructure and services at the community level adversely impact the poor, many of whom live in low-lying areas prone to flooding; (iii) the existing urban institutional framework and nascent urban management are still evolving as part of the ongoing reform for decentralization (footnote 1).

⁴ ADB. 2006. *Guidelines for Preparing Performance Evaluation Reports for Public Sector Operations*. Manila.

⁵ A copy of the draft PPER dated 30 September 2010 was forwarded to the Vientiane Urban Development Administration Authority with a request for comments to be provided by 14 October 2010. Despite an extension and subsequent follow-up, no comments were received.

⁶ ADB. 2008. *Completion Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila.

⁷ ADB. 2009. *Validation Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila. The validation report prepared by IED generally agreed with PCR assessments, except for the effectiveness criterion. It also reported PCR quality to be *highly satisfactory*, being candid, thorough, and detailed, with adequate documentation of results. This evaluation, however, found documentation of key assumptions on high economic and financial rates of returns inadequate (i.e., road roughness, traffic, drainage catchment area, etc.).

(i) improved urban environment and public health, and increased access to basic services (through improved quality of urban infrastructure and delivery of services, particularly to the poor); and (ii) improved urban management in Vientiane and implementation of appropriate policy reform measures (resulting in an autonomous, well-functioning, and financially sufficient urban administration in Vientiane). A reconstructed design and monitoring framework is in Appendix 1.

5. **Expected outputs.** The project combined outputs from three components. Component A on citywide infrastructural and environmental improvements comprised primary and secondary roads and drainage, efficiency improvements in solid waste management, traffic management and safety, and institutional infrastructure and maintenance improvements. Component B on village area improvements was to adopt a demand-led and participatory approach.⁸ The project incorporated a social strategy to ensure active participation of the urban communities in project implementation and effective targeting of the poor and vulnerable. Component C was to provide capacity building and project implementation support. It involved comprehensive capacity-building assistance to undertake an urban policy and institutional reform agenda to enhance the planning, operation and maintenance (O&M), revenue mobilization, and financial management capabilities of the Vientiane Urban Development Administration Authority (VUDAA, Appendix 2).

II. DESIGN AND IMPLEMENTATION

A. Formulation

6. Being ADB's second integrated urban development project in Vientiane, the project was built on lessons from past experience with the Vientiane Integrated Urban Development Project. It was formulated using a feasibility study prepared under an ADB technical assistance (TA).⁹ Lessons from the implementation of other ADB projects in the country were taken into account during project preparation, especially regarding the need to strengthen the institutional and financial capacity of VUDAA.

7. The design of the project was a follow-up to the Vientiane Integrated Urban Development Project, intended to provide the critical missing links of primary and secondary roads and drainage. Its components were selected based on an integrated or multi-subsector approach (and the third of four integrated urban development projects in the Lao PDR). The independent evaluation mission (IEM) noted that this allowed (i) opportunities for synergies in benefits, including links between the village area improvement roads and citywide roads, and between the village area improvement roads and solid waste service provision; and (ii) timely action to address such urgent problems as flooding in Vientiane.

8. While responsive to the needs of Vientiane, the multi-subsector project was relatively complex and demanding (para. 5).¹⁰ The project could have done better if it had ensured better project design, ownership, and support through (i) wider consultation with stakeholders; (ii) a better understanding of the local government structure and assessment of their capacities (i.e., raise revenues) and constraints; (iii) a more thorough assessment of urban service provision models, taking into account local capacity, political will, and recurring costs; and (iv) a careful assessment of environmental, social, and resettlement impacts. There were not enough resources for critical upstream project preparation. A deeper analysis would have enabled a better assessment of the timing, resource requirements, and political will for institutional and

⁸ Local administration is at the central, provincial, district, and village level.

⁹ ADB. 1999. *Technical Assistance to the Lao PDR for the Vientiane Urban Infrastructure and Services*. Manila (TA 3333-LAO, for \$600,000, approved on 10 December).

¹⁰ The Board of Directors, Management Review Committee, and Staff Review Committee all expressed concerns with the implementability of the reform agenda.

policy reform. Although the intent of the project was to provide accessible, affordable, and reliable urban services fully supported by all stakeholders involved, the institutional and associated policy reform to achieve this goal (along with the implied transformation of VUDAA into a municipality) were not sufficiently emphasized.

B. Rationale

9. As described in the report and recommendation of the President (RRP), the rationale for the project acknowledged that the limited financial resources, inadequate institutional capacities and human resources, and lack of a clear legal framework for local urban governance were inhibiting sustainable urban development and management in Vientiane. The RRP also noted that further infrastructure investments were needed after the preceding ADB intervention to optimize the benefits of earlier investments. These were consistent with on-the-ground conditions at the time of approval.

10. To address these conditions, the project defined its objectives as (i) providing infrastructure and services that would maximize the utility of the existing infrastructure, thereby closing gaps in secondary- and tertiary-level infrastructure and services; and (ii) supporting decentralization and urban governance reforms, especially those that would result in an autonomous, well-functioning, and self-sufficient urban local government capable of planning, managing, and financing sustainable urban services. The project's formulation comprised several remarkable design features including (i) an integrated or multi-subsector approach to optimize benefits; (ii) a grassroots-level village area improvement program anchored on a demand-led approach; and (iii) a long-term goal and process of decentralization, which include establishing financially sustainable municipalities (i.e., sound financial management and appropriate methods of cost recovery for long-term viability, and capacity-building support for decentralization through strengthening the institutional capacity of VUDAA and of village communities with inadequate experience and capacity to play an effective role in project planning and implementation).

C. Cost, Financing, and Executing Arrangements

11. A comparison of actual project costs with those estimated at appraisal is in Appendix 3. The actual cost of the project was \$43.7 million, or 18.1% above the appraisal estimate of \$37 million. Specifically, the road and drainage works under component A increased by \$9 million, while the village area improvement program was higher by \$1.3 million. Total costs of roads and drainage works were \$27.6 million, or 48.4% higher than estimated at appraisal. This was due to increases in both the length and the unit cost of the road and drainage works (Table 1). The enlarged allocation for the village area improvement program accommodated additional works.

Table 1: Outputs and Costs: Planned and Actual

Item	Physical Targets (unit)			Costs (\$ million)			
	Appraisal (A)	Completion (B)	Ratio (%, B/A)	Appraisal (A)	Completion (B)	Ratio (%, B/A)	
Total road length (km)	35.8	44.5	124.30	Road cost	11.90	18.40	154.62
Subprojects (number)	13.0	17.0		Cost per km	0.33	0.41	124.40
Resurfaced/upgraded (km)	33.7	35.2	104.45				
New (km)	2.1	9.3	442.86				
Total drainage length (km)	14.0	16.1	115.00	Drainage cost	6.70	9.20	137.31
Subprojects (number)	4.0	4.0		Cost per km	0.48	0.57	119.39
Primary (km)	5.8	6.6	113.79				
Secondary (km)	8.2	9.5	115.85				
VAI (villages covered)	50.0	50.0		VAI cost	4.10	5.40	131.71

km = kilometer, Lao PDR = Lao People's Democratic Republic, VAI = village area improvement.

Source: Asian Development Bank. 2008. *Completion Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila.

12. These increases in civil works, consultant budget (due to added design and supervision works), and village area improvement program (due to additional works) were sufficiently covered by currency gains, loan savings, and contingencies (PCR, para. 20). The project fortuitously benefited from the (i) appreciation of the special drawing rights (SDR) relative to the US dollar, and (ii) depreciation of the kip (KN) against the dollar during its implementation. The appreciation of the SDR created savings of about \$4.0 million, which financed four additional component A contracts.

13. Four cost components accounted for around 90% of project costs. These included investments in urban roads (actual of \$18.4 million vs. estimate of \$11.9 million) and drainage improvements (actual of \$9.2 million vs. estimate of \$6.7 million) under component A, which accounted for about 63% of total costs. Component B accounted for 12% of costs and absorbed some \$5.4 million against an estimated \$4.8 million; the bulk of this was spent on community infrastructure. Implementation support under component C received \$6.7 million (or 15% of total cost), with more than half expended on project management unit (PMU) support. Capacity building absorbed \$2.9 million, or slightly more than the appraisal estimate.

14. The actual amount of ADB loan financing was \$28.9 million (SDR19.7 million equivalent) as compared with \$25.0 million (SDR20.02 million) at approval. The borrower's contribution of \$9.5 million, or 21.7% of project financing, was also higher than the appraisal target of \$7.6 million, or 20.5% of total financing.¹¹ The balance of \$5.4 million was funded by a parallel grant from the Agence Française de Développement (AFD) for the capacity-building subcomponent (financed jointly with ADB) and the traffic management and road safety component.

15. Vientiane Prefecture was the executing agency for the project. A project steering committee, chaired by the vice-governor-cum-VUDAA president, was established to oversee its implementation and ensure interagency cooperation and the realization of an institutional reform agenda (PCR, para. 23). Meanwhile, VUDAA, the implementing agency for the project, was made responsible for the planning and implementation of urban infrastructure and village area improvement through a PMU. The PMU director was assisted by two deputies for infrastructure improvement and capacity building. For the village area improvement program, village area improvement committees established in each subproject village served as focal points for planning, implementation, and O&M for component B. These arrangements went unchanged during the implementation period and seemed to satisfactorily meet project-level requirements for infrastructure improvement.

16. The physical infrastructure components were managed realistically. The executing agency ensured that VUDAA and associated line agencies and government ministries (with which VUDAA's mandate overlapped, in some cases, namely the Ministry of Public Works and Transport [MPWT] and its Department of Public Works and Transport [DPWT]) contributed to implementation. The institutional development component (including the reform agenda and its related loan covenants) was oriented toward strengthening VUDAA (para. 26). The expectations that VUDAA had the necessary mandate then and that the government had the capacity to undertake reform proved unrealistic. The reform process faced difficulties, such as the lack of ownership and support from officials of the four urban districts of Chanthabouly, Saysetha, Sikhottabong, and Sisathanak (that were not represented in the project steering committee).

D. Procurement, Construction, and Scheduling

17. There was slow implementation at the outset. Loan effectiveness was slightly delayed, because the executing agency did not take advantage of the advance action approved by ADB

¹¹ This amount included \$0.4 million in community contributions and about \$2.9 million from VUDAA that was borrowed from the central government.

(PCR, para. 22).¹² Once ADB procurement and disbursement procedures were understood, the project progressed quickly and, from the midterm review onward, proceeded ahead of schedule. The project was suspended in 2004 because of VUDAA's unfamiliarity with ADB resettlement procedures. With guidance from two resettlement missions, the PMU was able to put project implementation back on track. Resettlement expertise should have been sought early in the design stage. The loan closing date was extended once, from 28 February to 31 August 2007, to accommodate the government's request to fund additional infrastructure packages that were not included in the original program.

18. Procurement was implemented according to ADB's *Procurement Guidelines* (footnote 12) (PCR, para. 26). The procurement plan at the design stage was broadly in line with the actual mix of procurements. A series of project workshops on the ADB bidding process helped increase the success rate of local contractors in obtaining citywide work contracts (i.e., 7 international competitive bidding contracts compared with 14 local competitive bidding contracts). All the component B contracts used simplified local competitive bidding procedures suited to village conditions. Of the 21 citywide road and drainage contracts, 9 were completed as scheduled and the rest were generally on time, when factors beyond the control of the contractors are considered. During implementation, several contracts were also amended to conform to actual conditions. The performance of the contractors was *satisfactory*.

19. Project implementation concluded with completion of all civil works contracts for roads and drainage in August 2007, or about 14 months behind the target date of June 2006 at appraisal.¹³ More thorough preparation would have overcome initial implementation problems (i.e., executing agency and implementing agency inexperience). But once a problem was identified, effective corrective action was taken. There was no significant impact on implementation efficiency. Later delays from the added investments required only a 6-month extension of the closing date. The project was financially closed on 2 April 2008.

E. Design Changes

20. Exchange rate gains during project implementation generated savings, which enabled the financing of four additional contracts that were not included in the original program of works under component A (para. 12). While the additional works appear justified,¹⁴ the windfall gains from currency movements could have been used differently, on areas with more direct impact on intended beneficiaries, for example. The increase in funding led mainly to an increase in the budget for component A-related civil works. Given the overall impact of the village area improvement program on the quality of life of some 167,000 people, a larger portion of the increase in funding could have been allocated to improve more villages. VUDAA explained that the windfall was used for major capital works, as funding for these was difficult to obtain.

21. Road widths, construction materials, and rights-of-way also underwent design changes during implementation. These changes were reviewed and endorsed by MPWT (then the Ministry of Communication, Transport, Posts, and Construction) and the bidding committee for adherence to national standards and requirements. Several changes were also made to the drainage components in the original design (PCR, para. 10).

F. Outputs

22. The project was implemented, as envisaged at appraisal, to deliver the intended outputs, along with additional road and drainage works. It either met or exceeded all appraisal output

¹² Procurement was carried out in line with ADB's *Procurement Guidelines* (1999, as amended from time to time).

¹³ This still compares favorably with the average implementation delay for transport sector projects of 35 months and 24 months in the Lao PDR and ADB-wide, respectively.

¹⁴ Two of the road contracts cover routes with high traffic volume.

targets for the main citywide infrastructure and village area improvement components (Appendix 1).

23. **Component A.** Both the road and drainage components exceeded their appraisal targets (Table 1). These also provided continuity and a critical mass of interventions within the city. Together with the previous Vientiane Integrated Urban Development Project (1996–2000), ADB financing supported urban development in Vientiane through a cumulative total of (i) 55.2 kilometers (km) of primary and secondary roads (or about 48% of its main and subroad network), (ii) 54 km of neighborhood roads (or about 23% of its village or neighborhood road network), and (iii) 42.3 km of primary and secondary drains.¹⁵

24. The project provided six compactor trucks for use by VUDAA to expand coverage of solid waste collection and disposal. To improve waste collection efficiency, village communities were also trained in solid waste management under component B.¹⁶ Under the traffic management and road safety component, AFD helped install traffic lights at 26 intersections and establish a traffic operations center. The latter is situated in a new four-story building, which was completed in December 2005 using ADB financing. The VUDAA building is located in a DPWT compound. Maintenance equipment was procured in June 2006.

25. **Component B.** The village area improvement component was implemented successfully using a demand-led participatory approach. With support from community preparation and awareness activities (e.g., VUDAA Social Action Unit, training, village committees), it directly improved living conditions in 50 urban villages through better community infrastructure (i.e., 38.5 km of road and drainage) and services (i.e., environmental, community health, and solid waste collection). Support for decentralized urban governance was key to this social action program. This support empowered village communities in local planning, project implementation, and O&M of urban infrastructure and services (Appendix 4 and para. 53).

26. **Component C.** This comprised project implementation support and a capacity-building program. For purposes of this evaluation, this will refer mainly to the capacity-building program implemented to further decentralize urban governance and accelerate VUDAA's transformation into an autonomous agency capable of managing, financing, and delivering urban services. The scope of this assistance (i.e., consultant support, workshops) was closely linked to implementation of the reform agenda. As designed and implemented, the policy reform component was conceptually a parallel activity and not an activity driver.¹⁷ Its achievement relative to the reform agenda was below expectations, with key loan covenants on decentralized urban governance reform still unmet at independent evaluation (para. 29).

G. Consultants

27. There were no major changes in the consultant selection process, which followed ADB's *Guidelines on the Use of Consultants* (2007 as amended from time to time)¹⁸ (PCR, para. 25) Total consultant inputs increased from 270 person-months at appraisal to 426 person-months at completion due to design and supervision requirements from the additional civil works contracts in 2005.

¹⁵ The latter involves 77.8% or 19.95 km of about 25.65 km of drainage channels of the Hong Xeng and Hong Ke drainage systems that cover the Vientiane urban areas.

¹⁶ The project also benefited from a grant by the Japan Fund for Poverty Reduction on Solid Waste Management Income Generation. The latter project was implemented simultaneously in 15 of the 50 project villages.

¹⁷ The project framework did not place the reform agenda as the "foundation stone" of the project. This is clear from the goal statement, for example.

¹⁸ The capacity-building and traffic management and safety consultants were recruited under separate packages, according to AFD procedures. Actual consultant inputs were 197 person-months compared with the 191 person-months initially proposed by AFD.

28. The original team leader was replaced in 2002 because of illness, and this caused some inefficient use of consultant inputs. The consultant team structure was thus changed in 2003 to maximize available skills and realign these to the needs of the implementing agency and the project. The inputs of the international community development and gender specialist, urban revenue specialist, and urban legal specialist were reduced, as their objectives were considered met.¹⁹ On the other hand, inputs from the national community development and gender specialist increased. This proved to be a major factor in the successful implementation of the village area improvement program. The project also recruited the Lao Women's Union (LWU) to monitor and evaluate the village area improvement component, and an independent resettlement monitor to assess the project's conformity with the Lao PDR and ADB resettlement policies, and to recommend remedial actions. LWU worked well with the national community development and gender specialist, reaching out to and mobilizing communities. Overall, consultant performance was *satisfactory*.

H. Loan Covenants

29. At independent evaluation, the majority of the 31 loan covenants had been satisfactorily complied with. Four key provisions relating to decentralized urban governance reform had not, however (*viz.*, the reform agenda, urban revenue generation, urban taxes and fees, and provision for local autonomy)²⁰ (Appendix 5). These effectively deter the project from achieving its stated outcome of improving urban management in Vientiane through an autonomous, well-functioning, and financially sufficient VUDAA.

I. Policy Framework

30. Increased urbanization has led to recognition of the need for an increasingly decentralized urban administration.²¹ Gradual decentralization has been a key element of national urban sector policy since 1995 and of the project's policy context. At the 7th Round Table Meeting, the government reaffirmed its commitment to decentralization and local urban governance reform, redefining the role and culture of government, and to rationalization of central-local relations.

31. **Urban development administration authorities.** Decentralized urban management has been piloted since 1995 through the transformation of urban district governments into what could eventually become semiautonomous municipalities able to provide urban infrastructure and services while generating revenues to meet the requirements for capital expenditures and O&M. Urban development administration authorities (UDAAs) have been established in a number of towns, including VUDAA in Vientiane (Appendix 2). But VUDAA and other UDAAs have been unable to function as efficiently as expected due to a lack of qualified technical, financial, and administrative staff and inadequate revenue generation and consequent heavy reliance on budget transfers from the central and provincial governments. There has also been some resistance to the activities of the UDAAs from line agencies, particularly from provincial DPWTs.

32. Notwithstanding, the government's commitment to decentralization has become a dominant theme of a number of prime ministerial decrees, instructions, decisions, notifications,

¹⁹ Given that the loan covenants for urban revenues and local autonomy were unmet, the reduction in inputs from the urban revenue and legal specialists seemed a step backward for the sensitive urban policy component.

²⁰ On hindsight, these reforms proved ambitious, being improperly framed and sequenced.

²¹ The government is also concerned with the complementary and supportive role of urban centers in rural development, in order to raise the standard of living in rural areas. Investment programs have emphasized strengthening urban-rural linkages by adopting appropriate urban development strategies whereby the role of urban areas as market and service centers for the rural population and products is enhanced to achieve broad-based development. The government recognized the need for (i) deepening its understanding of the extent and nature of poverty, (ii) developing and adopting a coherent framework for investments in poverty reduction, and (iii) continued monitoring of poverty and its impact.

and policy statements. These decrees recognize UDAs in Vientiane and secondary towns as legal entities exclusively responsible for urban communities, and define UDAs as organizations within provincial and prefectural administrative apparatuses. UDAs are delegated to plan, implement, manage, and control urban development activities, including roads, drainage, collection and disposal of waste, sanitation and protection of the environment, public lighting, preventing riverbank erosion, and maintaining public parks.

33. **Reform agenda.** A basic flaw with the implementation of the reform agenda was the assumption that the legal reforms would be fully achieved early in the loan implementation period and that the framework for all the other reforms would therefore be in place. The Law on Local Administration did not provide what was necessary for the reform agenda to be implemented.²² In addition, there is also the problem that not all key stakeholders appeared to endorse decentralization or municipalization of urban management. The reform agenda needed to be flexible, and this was not consistent with being tied to the loan. On matters of detail, the reform agenda had its conceptual flaws, i.e., 100% target for financial self-sufficiency. Other aspects of the reform agenda were more realistic, but the time allowed for achievement of targets was not, even with an appropriate legal framework.

34. **Directions for urban sector management.** As other funding agencies like the World Bank now begin to take more interest in the urban sector, stronger harmonization efforts are needed. Moving forward, emphasis must be in two areas: First, the focus now needs to be on the revision of the Law on Local Administration in so far as it deals with the decentralization of the urban sector. Second, ADB support needs to be part of a national process of formulation of an approach to decentralized urban management that could be linked to emerging government urban policy documents.

35. Over the next decade, urban sector management/oversight will need support including (i) in the short term, support to revision of the Law on Local Administration and operationalization of the National Urban Sector Strategy and Investment Program 2020 (NUSSIP 2020)²³ and preparation of a strategic sector program based on implementation of the revised Law on Local Administration and the NUSSIP 2020;²⁴ and (ii) in the medium and longer terms and through the agreed upon strategy, support to the implementation of the Law on Local Administration and NUSSIP 2020. This kind of capacity development is long-term and low-key, and the TA approach used in the three capacity-development TA operations in the 1990s may not be appropriate.²⁵ Long-term advisory support could be provided by another modality or through enhanced capacity in the resident mission.

²² While the Law on Local Administration established a basis for administrative decentralization, it does not specify a hierarchy of municipality types that corresponds to the hierarchy of urban areas and their associated functions. For example, in Vientiane it is necessary to clarify the relationship between VUDAA and the four districts that comprise the core urban area. This is a major weakness, and a clear analysis of urban functions and an urban hierarchy are needed before the Law on Local Administration can be revised to specify types of municipalities. Only then can municipal governments be established.

²³ This would involve continued support to the process of refining the concepts of “municipality” based on an analysis of urban types by function, and to the appropriate revision of the Law on Local Administration. These could be achieved through enhanced urban sector policy dialogue.

²⁴ At the same time, a clearer and more strategic sector program (not necessarily a bigger one) is needed for urban interventions, strengthening a program approach.

²⁵ Several capacity-building TA operations in the urban sector have had a limited impact if measured by the sustainability of their recommendations and innovations. A more effective way needs to be found to nurture institutional reform in the urban sector. Long-term, low-key support through continuing dialogue by the resident mission would be one way, provided it has staff with adequate skills and time. (It may also be necessary to use short-term inputs of people to help with specific technical problems. For example, an adequate analysis of the urban system in the Lao PDR, with a functional analysis of urban areas in an identified urban hierarchy, would be useful to the Public Administration and Civil Service Authority). The resident mission could engage in continuing discussions with urban institutional stakeholders (e.g., in an “Urban Forum”).

III. PERFORMANCE ASSESSMENT

A. Overall Assessment

36. The project is assessed *partly relevant, effective, efficient, and likely* to be sustainable (Table 2). Components A and B are considered *successful*, while component C, supporting decentralized urban governance reform, is rated *unsuccessful*. Overall, the project is rated *successful*.

Table 2: Overall Performance Assessment

Criterion	Weight	Component A	Component B	Component C	Overall (weighted average) ^a	Rating Description
Relevance	0.2	1.0	3.0	1.0	1.3	Partly Relevant
Effectiveness	0.3	3.0	2.0	0.0	2.4	Effective
Efficiency	0.3	2.0	2.0	0.0	1.7	Efficient
Sustainability	0.2	2.0	1.0	0.0	1.6	Likely
Overall Rating	1.0	2.1	2.0	0.2	1.8	Successful
Rating Assessment		Successful	Successful	Unsuccessful		

^a (i) A weight distribution of 70% for component A, 15% for component B, and 15% for component C was applied to denote the significance of the policy reform agenda; (ii) Highly successful ≥ 2.7 ; successful $2.7 < S \leq 1.6$; partly successful $1.6 < PS \leq 0.8$; unsuccessful < 0.8 .

Source: Independent evaluation mission.

B. Relevance

37. The project was *partly relevant* largely due to emergent issues that took away from its vision of administrative decentralization for sustainable urban development and management.

38. **Component A.** This was very important to the government's investment program, which emphasized the importance of urban infrastructure in national development planning, decentralized government, and poverty reduction. From the government perspective, ADB's use of a multisector approach to urban development was logical, given the demand for subsector infrastructure and services and is consistent with the supply of services provided by the responsible central government ministry (i.e., MPWT) and its provincial offices.²⁶ The subsectors covered by the project are included in the services provided by MPWT and its provincial offices. MPWT played key roles in project design and implementation, despite the allocation of the role of executing agency to the prefecture. Notably, the use of multisector components provided an integrated approach to resolving multiple and interlinking socioeconomic problems. From VUDAA's viewpoint, the government would still prioritize the subsectors and locations selected even without the loan. The government considered the benefits of links between the subsectors in the formulation stage. An assessment of the multisector approach is in Appendix 6.

39. The project's vision of providing sustainable urban infrastructure and services under local urban governance did not, however, take root. VUDAA still functions as an engineering department of Vientiane Prefecture and its evolving relationship with DPWT is an issue.²⁷ The approach to urban sector reforms proved ambitious, given the country's political and institutional landscape. When the project was designed, potential risks to the reforms (i.e., legal

²⁶ Whether choosing the central government ministry responsible for urban development (i.e., Vientiane Integrated Urban Development Project) or the Vientiane Prefecture (i.e., the current project) as the executing agency, coordinated management of the subsectors should be possible, because they already come under what may be termed a "multisector" mandate of MPWT.

²⁷ An earlier geographical split between VUDAA and DPWT is no longer being applied, and some key VUDAA functions may be transferred to DPWT. In the near future, DPWT may assume overall responsibility for urban services provision. MPWT considers this more appropriate as, for example, DPWT is more adequately funded (Appendix 2, para. 9).

inconsistencies in the urban governance structure and a level of uncertainty resulting from the use of decrees to implement urban sector reforms) were acknowledged (RRP, paras. 104–105). It was assumed that these would be mitigated, and political commitment underpinned the reform agenda. In hindsight, this assumption was overly optimistic, although commitment to the principles of the reform agenda continues.

40. Other issues might have affected the design and implementation that emerged during project administration: (i) Urban and regional planning is weak and is not decentralized. Strategic urban and regional plans are needed to guide growth and investment, and these plans would be helpful in prioritizing investments to overcome continuing shortfalls in urban infrastructure.²⁸ (ii) The majority of expenditure was on urban roads and completion of networks, without regard for the development of an urban transport system. For roads, there was a lack of integrated public transport planning. This was acceptable at the time, but a lesson learned is that future road investments should have adequate consideration of public transport requirements. (iii) Because capacity building requires proper planning and upfront implementation, the project could have given more attention to assessing resources, current capacity, and local conditions as part of its project preparation (PPER, para. 8 and PCR, page 14). Overall, component A is rated *partly relevant*.

41. **Component B.** The village area improvement component was *highly relevant* at approval and at independent evaluation. This is most evident in the replication of the village area improvement program itself in other projects across the country and, more importantly, by both project and nonproject communities in Vientiane. After completion of subprojects, non-village area improvement villages submitted requests to VUDAA for road rehabilitation, while providing community contributions. Initially, the project created demand from other villages because the contribution was only 10%. But more recently, some villages have been happy to contribute up to 50% to facilitate construction of an access road.

42. **Component C.** While this component was very relevant at loan approval (with most reforms being elements of an agreed-upon government urban reform agenda), it was only *partly relevant* at independent evaluation. Tying the implementation of the reform agenda to the project loan schedule was not practicable. The project was left with ambitious targets that failed to consider that it would take time for the government to decide on and address political issues, especially the existing local government structure, in which all four project districts were to be transformed into a new municipality reporting directly to the prefecture.²⁹ The phasing of the reforms has taken much longer than expected.

43. There are two key stumbling blocks: (i) Inadequate attention given to the relevant parts of the Law on Local Administration rendered it inoperable as an enabling instrument for establishing municipalities. More resources invested in the preparation of the Law would have been beneficial. The current revision of the Law needs more resources, especially the technical analysis required to underpin its approach to the establishment of municipalities. (ii) There was overconfidence in the acceptability and ownership of the UDAs and VUDAA. The government may not have been sufficiently committed to the goal, and ADB's expectations may have been too high.³⁰ Several issues needed to be addressed, including transformation of the four project districts into a new municipality directly reporting to the prefecture. For now, the IEM does not

²⁸ For example, it could be argued that, while the design was adequate at the time, the drainage component overestimated the absorption capacity of the That Luang Marsh (paras. 76 and 90).

²⁹ Its design could have more thoroughly considered issues on (i) VUDAA management capacity; (ii) local government structure; and (iii) the reasonable phasing and timing of the reforms, as required in the loan covenants.

³⁰ Although VUDAA was recognized as a risk when the project was designed (risks stated in the RRP included [i] maintaining government commitment to urban institutional reforms and the ability to secure changes to the constitution and development of law; and [ii] sufficient and sustained political, institutional, and community support of VUDAA), the risk is more evident now than 9 years ago.

expect the stalled reform process to inhibit the delivery of urban services in Vientiane, because institutional arrangements exist to ensure service delivery through MPWT/DPWT support to VUDAA. The risk is to the program of decentralization and the enhanced quality of urban management.

C. Effectiveness

44. The multisector approach was appropriate and readily implementable, given the matching functions of MPWT and DPWT and the relative weakness of VUDAA. The delivery of infrastructure components was *effective* to *highly effective*, but its institutional component (i.e., the consolidation of decentralized urban management) was *ineffective*. Overall, as a vehicle for urban infrastructure improvement and change in urban governance, the project is rated *effective* in achieving its intended outcomes.

45. **Component A.** This component was *highly effective* in improving the quality of urban infrastructure and delivery of services. It exceeded construction and service provision targets. Appendix 7 summarizes the condition of sample project roads and drainage works.

46. **Roads.** The project enhanced road access by providing the critical missing links of primary and secondary roads. The IEM found a sample of eight citywide roads (including three new roads) to be in good condition. Four of them require routine maintenance for drainage and one for road cleaning. The project roads are well used.³¹ An IEM traffic count on seven of the 13 project roads shows average daily traffic between 17,700 and 34,100 vehicles per day (vpd) and comprising mostly light vehicles (89.8% of total traffic).³² Appendix 8 presents an analysis of postproject traffic characteristics.

47. The improved road infrastructure provided by the project has made public areas, private and commercial property, and village communities more accessible and has reduced travel time through smoother flow of goods and people. Cropland and rice fields along the new roads have been opened up to residential development, and new residential areas have become available, causing a rapid growth in property development. The improved road access has stimulated small-scale business start-ups and relocations to better-served areas. There is also evidence of increased land prices and the use of more permanent building materials in areas with improved infrastructure and services.

48. **Drainage.** The citywide drainage system was significantly improved after the project, reducing flooding. The lengthening of primary and secondary channels, the replacement of inefficient open drains, and the construction of underground drainage drastically reduced areas where prolonged flooding occurs. For example, the Heritage Area is well drained and free from flooding. An IEM social survey also found that flooding in Nongchan, Thongkhankham, and several low-lying city areas was resolved. Complaints remain from some city residents of waterlogging after heavy rains. An inspection of several drainage locations found them to be mostly in good condition, although open drains were full of vegetation. The drains need more cleaning, which VUDAA staff claimed will be done before the rainy season.

49. **Solid waste management.** VUDAA increased the coverage and regularity of its collection service to once a week in residential areas. Parallel village training (component B) also helped change household attitudes on solid waste disposal, leading to improved collection efficiency. Where collection service improved, it contributed to the elimination of uncollected solid waste and thus it improved sanitation. VUDAA reported a 420% increase in household

³¹ For example, the head of VUDAA's road and bridge unit estimates that "before-project" traffic using roads P3 and Thong Sang Nang was only 30% of current traffic estimates (with 60%–70% consisting of motorcycle traffic). Upgrading and extension enabled Dong Na Sok road to become a bypass for road 13N. "Before-project" traffic is estimated at about 40% of present traffic levels.

³² This includes three roads from the PCR analysis and four roads that VUDAA considers to be highly trafficked.

coverage, from 15,000 households at appraisal to 63,000 households by 2010. To achieve this, VUDAA delegated the responsibility of providing solid waste services in residential areas to several contractors.³³ However, VUDAA estimates that it is able to collect only 150–200 tons (47%–62%) of the 320 tons of garbage produced each day. Notably, only 23,000 households or 37% have access to solid waste services, largely due to the lack of access roads.³⁴

50. **Traffic management and road safety.** The technology provided by AFD was good and remains operational. VUDAA is now able to monitor traffic at select junctions. However, since completion of the project, the traffic problem has worsened, due in part to narrow roads and an increase in the number of vehicles (e.g., cars, pickups, vans, and motorbikes) following the road improvements.³⁵ Vientiane is a growing city, and traffic problems could worsen. Unilateral road improvements can thus result in congestion from the traffic generated. The city now needs better public transport and traffic management.

51. VUDAA attributed an increase in the number of accidents to an increase in the number of vehicles and to higher speeds (now that some roads are wider).³⁶ Almost all accidents occur on the road rather than at junctions monitored by VUDAA. Road accidents have been occurring at junctions with no traffic lights, and VUDAA is planning to ask for traffic lights at about 10 junctions. Another issue that has arisen is the lack of parking space, which forces some people to park along the roads, thereby blocking smooth traffic flow.

52. **Maintenance equipment and new VUDAA building.** Since its completion, some equipment provided by the project has broken down, and spare parts could not be obtained locally. The four-story VUDAA office building built under the project is in good condition. VUDAA staff currently occupy two floors. The remainder will be used by the Vientiane governor's staff for 2 years (until completion of the governor's office building by 2011).

53. **Component B.** This social action program has been *effective*. The IEM social survey confirmed significant benefits to beneficiary households in terms of enhanced road access, reduced flooding, the elimination of uncollected solid waste from near or under houses, and improved sanitation. Improved drainage within urban villages supported by the village area improvement program led to improved community health. As the village area improvement approach has proven very effective, it has been replicated in nonproject villages. There is now an evident willingness to pay higher levels of community contributions for enhanced access.³⁷ The village area improvement program, through its community preparation and awareness activities, managed to instill a sense of ownership in communities. In fact, postproject activities of some project village committees aimed at continuing necessary access road projects in their areas. On the downside, the village area improvement program, despite evidence of small business stimulation by the project, has not resolved the continuing concerns about the lack of stable sources of employment and of credit access by poor households in the area. In addition,

³³ VUDAA gave the responsibility for solid waste services in residential areas to six private contractors (including one state-owned enterprise). Its solid waste management division covers road cleaning and solid waste collection in public areas.

³⁴ Field interviews confirm increased regularity of garbage collection. The rapid survey discussions found that only households in the center of the city are able to enjoy adequate garbage collection service. Most villages outside the city still face problems with irregular service and find collection fees expensive. Some households still burn or dump their garbage on vacant lands, along the Mekong River, or on neighbors' land.

³⁵ During the IEM social survey, respondents confirmed the city's traffic problems, especially during peak hours. For example, children must leave home earlier to get to school and return home late because of heavy traffic.

³⁶ Traffic police statistics on accidents for 2005, 2007, and 2009 indicate that most accidents occur in the four districts where city roads were rehabilitated or constructed, particularly in Xaisettha and Sikhottabong districts. The incidence of accidents decreased in 2009, however, perhaps due to an increase in the number of traffic lights and traffic police directing traffic.

³⁷ Under the parallel Japan Fund for Poverty Reduction grant assistance for Solid Waste Management for Vientiane Poor Project, small access roads were built in six villages to facilitate solid waste services. Village contributions ranged from 20% to 50%, with individual contributions determined by the village chief.

some component B subprojects suffered from poor road design and construction quality, and uneven compliance by villages in terms of their maintenance responsibilities (i.e., road and drainage cleaning).³⁸

54. **Component C.** As consolidation of decentralized urban management was only partly achieved by the project, the institutional component was demonstrably *ineffective*. The institutional agenda would have been more effective if the timing, resource constraints, and political will of stakeholders had been realistically addressed. While some positive steps toward decentralization were made during implementation, very little progress has been made since project completion (2007) on the original aims of establishing both a Vientiane municipality under a decentralized system and VUDAA as a technically competent and autonomous urban management organization. This poor progress in implementing the reform agenda (and its four related loan covenants) was due to a variety of reasons, including a contradiction between the need to implement the projects as effectively as possible and the desire to strengthen agencies that were not adequately established in law to be responsible agencies.

55. Perhaps the capacity building for VUDAA in component C and the reform agenda should not have been included in the loan.³⁹ The argument has been that the period of loan implementation was too short to achieve the far-reaching urban management initiatives and that it was inappropriate to tie the reform agenda into the loan schedule. This has proved to be the case. Moreover, although the capacity-building program included assistance to the government, the further development of a clear and sound legal and institutional framework to establish VUDAA as a fully legitimate level of administration with clear linkages with Vientiane Prefecture was not achieved. For the project, the capacity-building aspect of component C, linked to the reform agenda, should not have been included in the loan design, but could have been dealt with in other ways (e.g., a separate intervention⁴⁰ or with parallel TA) including longer term, less intensive policy dialogue. Meanwhile, several other attempts were made at such urban reforms through various TA operations.

D. Efficiency

56. Overall, the project was *efficient* in achieving outcomes relative to its use of inputs. The multisector approach enhanced the efficiency of funds use by addressing several distinct and urgent subsector problems (i.e., traffic, flooding, and waterlogging) in Vientiane. A sequence of single-sector projects could not have been formulated to address various “equal-priority” urban issues in the same time that it took to formulate the single loan using a multisector approach (Appendix 6, paras. 2–3). Implementation performance was also marked by some cost overrun and delay (i.e., higher unit cost, additional work).

57. **Component A.** This component is rated *efficient*. Eight of the 13 citywide roads (including seven covered by the IEM traffic survey) have high traffic levels that provide vehicle operating cost and travel time savings. The reestimated economic internal rates of return (EIRRs) from three of these roads (although lower than estimates at completion) are considered *highly efficient* (footnote 4): 21.8% for the new construction and upgrading of P3 Road (27.9% at appraisal), 28.2% for upgrading Thong Sang Nang Road (26.5%), and 25.7% for upgrading Dong Na Sok Road (17.3%).⁴¹ The base-case EIRR for the drainage component is also good at

³⁸ The IEM found a sample of seven component B roads in four villages to be in fair (three roads) to good (four roads) condition. Of the four villages, three needed to do either road cleaning or maintenance works on their drainage systems.

³⁹ Based on IEM discussions with staff of the Department of Housing and Urban Planning, MPWT.

⁴⁰ On hindsight, a sector development program approach could have been considered at project design and this may be more appropriate even now.

⁴¹ Taking into consideration the project’s need for balance in serving highly trafficked routes and those with low traffic but of social significance, the citywide road component is rated *efficient*. Based on its quantified benefits (i.e., reduced property damage), the drainage component is considered *highly efficient*.

27.7%, although lower than the estimates of 33.8% and 31.1% at project completion and approval, respectively (Appendix 9 discusses the recalculation of EIRRs). By design, the remaining five citywide roads were to provide all-weather access (e.g., prevent flooding) for communities situated far from the city center. Because only beneficiary communities will tend to use the roads, they are likely to have low economic returns. As with the component B roads, these five citywide roads would have delivered similar unquantified benefits.

58. **Component B.** The village area improvement component was *efficient*. These roads will be used mainly by beneficiary communities and will likely have small rates of return. On the upside, there are some synergies in benefits with links between village area improvement and citywide roads. Likewise, there will be a large amount of unquantified benefits to the urban environment, economy, and social conditions at the village level following completion of the project. While it is difficult to directly attribute changes in household income and quality of life to the project, the IEM socioeconomic assessments do confirm their existence in a sample of villages surveyed (para. 69).

59. **Component C.** This component was *inefficient*, because planned outcomes were not achieved. There are questions about VUDAA's institutional sustainability.

E. Sustainability

60. The project is assessed as *likely* to sustain project outcomes over the economic life of investments. This is attributable to sustainable outcomes of component A, which account for the majority of the investment. To the extent that the project facilities were of satisfactory quality and situated in the national capital, prospects for acceptable maintenance allocations look promising. But it is not clear whether the government has the resources to vigorously pursue similar and additional investments in physical infrastructure, in particular village area improvement programs. Likewise, the reform agenda has stalled, and the future of VUDAA is unclear.

61. **Component A.** Generally, both road and drainage facilities provided by the project are in good condition. Sustainability is *likely* despite continuing problems with institutional arrangements and revenue collection for urban infrastructure provision and service delivery, including O&M. The road component will likely sustain expected benefits over its economic life with routine maintenance.⁴² VUDAA indicated that the budget for routine maintenance of the citywide and village area roads is adequate, but it is insufficient for periodic or major repairs. For now, VUDAA estimates that 95% of its citywide and village roads are in good condition. Most of these roads are still in good condition because (i) the quality of work was good, (ii) most were recently constructed (between 2003 and 2007), and (iii) the weight of heavy vehicles is controlled.

62. For the drainage component, uneven compliance with routine maintenance commitments has kept waste materials, soil, and debris in or near roadside drains; drainage channels are often clogged by vegetation; and there is evidence of solid waste in the channels.⁴³ The budget available to VUDAA is inadequate for cleaning the drains the required

⁴² Routine maintenance (i.e., filling potholes, cleaning drainage and side drains, and replacing and/or cleaning access holes) of national and provincial roads is covered by lump-sum maintenance contracts. After completion of the village roads, routine maintenance (e.g., cleaning drainage) was delegated to the community. Contributions under the community maintenance arrangements involved mainly labor.

⁴³ On several occasions, the IEM observed soil material and debris covering side drains and drainage, indicative of villagers' uneven compliance with their obligations for routine maintenance. These materials are likely to clog drainage channels. Villagers have already expressed concern about wastewater, especially during the rainy season, as drain capacity may not be able to handle heavy rains, resulting in flash floods. In the future, a system for enforcing routine maintenance will need to be established. A pilot study should also develop a system for raising funds for O&M within communities, as in the case of the fund for construction of community road networks.

three times a year. Attention needs to be paid to this kind of routine maintenance. MPWT and the provincial government are relied upon to fund major routine and periodic repairs and for major emergencies requiring exceptional funding. VUDAA expects this funding to be available.

63. Without any unforeseen situations requiring major repairs (e.g., severe flooding), benefits from the project are likely to be sustained, because institutional arrangements exist to ensure service delivery (i.e., MPWT/DPWT direct intervention or assistance to VUDAA).⁴⁴ Vientiane's strategic role as the national capital, a regional economic center, and a tourist destination would justify priority funding (even if delayed).⁴⁵ While the original aim of financial self-sufficiency was overambitious and is perhaps improbable to attain, there is room for improved revenue collection to institutionalize an adequate level of maintenance. The underlying issue for the project was that there was insufficient buy-in to the organizational arrangements for revenue collection. While progress has been made to raise the share of internally generated revenues, these still do not cover the cost of services (e.g., maintenance). On the other hand, budget-sourced revenues have slowly declined from FY2006–2007 due to reduced funding from the provincial government. Road Fund revenues from MPWT were constant in the last 3 years. On the upside, IED's recent Lao PDR sector assistance program evaluation observed that the road maintenance fund appears to be improving. This could allow for increased maintenance allocations to roads with higher demand (para. 88).⁴⁶

64. VUDAA's solid waste unit will continue to serve Vientiane and its expanding client base. But the level and quality of service largely depend on how it will manage a fragile financial position (Appendix 9). The recalculated financial internal rate of return (FIRR) of 3.6%, which is lower than previous estimates of 28.5% at appraisal and 31.6% at project completion, reflects the marginal revenue-expenditure stream of this VUDAA unit.⁴⁷ On the positive side, the recalculated FIRR is still viable and above the estimated weighted average cost of capital of 1.5% for the project, which was financed mostly by concessionary or grant funds. The sensitivity tests done by the IEM reiterate the need for cost recovery through (i) a progressive increase in the number of households served; (ii) adequate solid waste collection revenues by private contractors; and (iii) a higher share by VUDAA of these revenues generated from residential customers (i.e., through landfill tariffs).

65. Solid waste services in Vientiane require more support. Due to relative underfunding, VUDAA's solid waste unit faces several challenges as demand for services multiplies: (i) the city still does not have enough staff, (ii) an inadequate budget has resulted in a lack or depreciation of equipment,⁴⁸ and (iii) VUDAA faces several constraints in the management of its new 100-hectare (ha) open landfill site at kilometer 32. In particular, VUDAA does not have enough equipment or the capability to manage the site.

66. **Component B.** The sustainability of the village area improvement subprojects is *less likely*. For now, there is strong ownership and appreciation of subproject benefits to mobilize continued community support. But given the observed uneven compliance with routine maintenance, this support may waver in the future. Village responsiveness to sustain project assets will be mixed and driven by the (i) continuity of supportive, grassroots leadership; (ii) the

⁴⁴ VUDAA reported that the only road in poor condition was destroyed during the major 2008 flooding.

⁴⁵ The generally satisfactory condition of some Vientiane Integrated Urban Development Project or phase 1 roads (built circa 1998 and 2000) attests to this.

⁴⁶ ADB. 2010. *Sector Assistance Program Evaluation on the Transport Sector in Lao PDR*. Manila (paras. 106–108).

⁴⁷ The VUDAA solid waste unit operates the landfill facility and undertakes garbage collection from public areas, i.e., along the roads and for institutional customers. Its budget is sufficient to cover only the cost of services (e.g., gas, maintenance, and labor). Landfill income is used to maintain equipment, while the government budget is used for access-road maintenance, oil (gas) for garbage trucks, etc. Notably, VUDAA's solid waste unit is able to obtain only a small portion of landfill income (i.e., 16.3% in 2010).

⁴⁸ The average age of VUDAA's solid waste equipment is around 7–8 years old, with the last equipment being purchased between 2004 and 2006 (at the time of the project).

village resources (e.g., skills, income level); (iii) the nature of pavement intervention; and (iv) proactive engagement by VUDAA with community-based organizations to address pressing problems (e.g., technology, resources) and ensure their compliance with maintenance responsibilities.

67. **Component C.** This component did not achieve its intended outcome, and there are questions about the institutional sustainability of VUDAA, which like other new agencies (UDAAs and the Water Sector Authority), faces the risk of being regarded as an extended PMU.⁴⁹ During implementation, project accounting apparently took precedence, and insufficient attention was paid to revenue generation, collection, and management.⁵⁰ UDAAAs have reported that without project funds they are dependent on external funding. Government salaries and, in many cases, budgets for O&M are required from central and provincial governments, and development funds need to be provided by international development partners.

IV. OTHER ASSESSMENTS

A. Impact

68. The development impact from the project has been mostly positive. On the whole, it is *significant* for the institutional, economic, environmental, and social activities prompted or pursued by the project. Adverse impacts during the construction works were mostly mitigated either prior to or during construction.

69. **Socioeconomic impacts.** The impacts from components A and B are *substantial*, as the development objectives (impact and outcome levels) were largely met. The project contributed to economic growth through (i) improved travel convenience; (ii) improved access, which opened up areas for land development, including new residential communities, and improved residential housing structures, including larger and more permanent houses; (iii) increased land prices; (iv) increased trade and commerce, including growth in the number of businesses (small shops along the road);⁵¹ (v) reduced flooding in low-lying areas; and (vi) an improved urban environment and public health. The IEM carried out a survey of beneficiaries to validate its observations (Appendix 10). The priority concerns of survey respondents have shifted from those of flooding, inadequate drainage, and poor access roads to the need for better solid waste services, water supply, and traffic management. At the same time, economic conditions and social problems continue to rank among the top household concerns.

70. **Institutional impacts.** The overall impact on institutions by components B and C was *significant*. Component B was an encouraging pilot exercise in community participatory planning. Further development of this as a contribution to a strengthened and responsive planning system would be useful. In particular, the village area improvement program had substantial beneficial impacts in terms of (i) experience in a participatory and demand-driven approach to village development, (ii) a better sense of ownership in village maintenance, and

⁴⁹ Based on IEM discussions with staff from DPWT, Vientiane.

⁵⁰ VUDAA does not have the capacity to administer, oversee, and arbitrate revenue collection. Financial projections for VUDAA were established, but this did not amount to a medium-term fiscal plan. In particular, there seems to have been more emphasis on gaining acceptance of revenue charges by the population than on assessing the impact of revenue charges on the population and their ability to pay. This lack of preparation contributed to the failure of VUDAA to set appropriate targets and to achieve the set revenue collection targets.

⁵¹ The IEM social survey found that the urban infrastructure improvements stimulated small-scale businesses at the village level. There was a significant increase in the number of shops in 189 villages between 2005 and 2006, when most of the citywide roads and village area improvement roads had been completed. After 2006, there was a slight increase in small-scale businesses. The steady increase between 2005 and 2006 could indicate that road improvement was a catalyst for the development of home-based livelihood activities such as selling cooked food, grocery shops, beauty shops, repair shops, gift shops, and others that could be operated by medium- as well as low-income households and particularly by women.

(iii) behavioral changes in solid waste management. Gradual decentralization has been a key element of the government's urban sector policy since 1995, and the village area improvement approach has enhanced the role of (urban) villages in planning and monitoring development activities to ensure that development is equitable and participatory.

71. The impact on VUDAA was on the low end of *moderate*. At completion of the project, VUDAA's status was under review, and it remains so, although the government is actively pursuing the transformation of Vientiane's administration into a municipality. VUDAA's role in a municipal administration will be considered in association with DPWT's role. Despite the difficulties, both government stakeholders and the IEM think that ADB should continue to support reform of the urban administration.

72. A major intrinsic weakness of the project was its tendency to encourage deconcentration rather than decentralization.⁵² This was a result of the inadequacy of the legislation, i.e., Law on Local Administration, intended to provide the basis for the establishment of municipalities. Without the identified revisions to this Law, VUDAA (and other UDAAAs) will not be viable. Without this legal basis for VUDAA (which would enable the position of VUDAA relative to the district governments of Vientiane to be clarified), MPWT and DPWT have provided backstopping to the extent that their roles have been consolidated.

73. Going forward, it is possible that VUDAA's role will be less than anticipated, with the central government (and DPWT) playing an increasingly larger role. This may change when the Law on Local Administration is suitably revised and municipal administrations tailored to urban functions are introduced.

74. **Environmental impacts.** While this category B project shows no adverse environmental impact, periodic monitoring of water quality, along with the institutionalization and enforcement of regulations, was requested at completion, because its major drainage systems were directed toward That Luang Marsh. At independent evaluation, the IEM found that VUDAA still does not have the capacity to properly monitor water quality, although a request has been made to obtain the necessary equipment.

75. In the medium term, poor wastewater quality will become a key drawback to new investments (e.g., tourism) as the urban areas of Vientiane grow. For decades, the city has used a natural treatment process that channels wastewater through the marsh. Some believe water quality from the main drains continues to deteriorate due to wastewater from factories and residences. The IEM social survey found that, in recent years, it has become more difficult for the poor to obtain food in the swamps and the That Luang Marsh. Both were a main source of fish. Some households complained they now go farther to collect small fish.

76. Existing gaps in solid waste services have left unserved or underserved areas (in mostly suburban areas) to burn or bury garbage. This practice has negative effects on the environment and must be stopped. Field interviews of project villages noted complaints that some households and hotels drain sewage into the side drain, particularly during the wet season. In certain areas, this created friction among neighbors, particularly among women (who watch over family hygiene) from households located close to the side drains.

77. **Resettlement and indigenous peoples.** The project did not experience any indigenous peoples' issues during implementation (PCR, para. 42). The number of affected households was 157, compared with 89 at appraisal. Resettlement compensation covered 142 parcels of land, with an area of 2.15 ha (excluding government land), and 63 buildings, compared with appraisal estimates of 126 parcels of land, with an area of 12.9 ha.⁵³ The project construction

⁵² Deconcentration is the transfer of administrative responsibility for specified functions to lower levels within the central government bureaucracy, generally on some spatial basis.

⁵³ The actual cost of resettlement was \$0.638 million, compared with an appraisal estimate of \$1.374 million.

resulted in the resettlement of poor households from the slum area of Nongchan to Chansavang. The IEM social survey found all resettled households to have received land as well as disturbance allowance as compensation. Most households indicated satisfaction with the compensation schemes. However, resettled households, conveniently located close to their place of work at Nongchan market, now have to spend more time and money to travel for their daily livelihood, because there are limited employment opportunities in the new village.

78. The project also contributed to the issue of land access for the poor from Nongchan village by providing rights to land at the new resettlement village. Resettled households received land titles, making them feel more secure after the move. In addition, the new village provided opportunities for children to attend school, as there was no school in Nongchan.

79. **Gender.** The project had a positive impact on women. Some home-based livelihoods can be operated by medium- as well as low-income households, particularly by women. The village area improvement approach also applied a gender-balance concept, and this allowed women to actively participate in the village committees. In particular, the LWU successfully facilitated public awareness campaigns on such matters as environmental sanitation and the importance of community participation in providing and maintaining community infrastructure.

80. **Traffic management and road safety.** Following completion of the project, improved or good road conditions have allowed vehicles to travel at higher speeds. Road safety has become an issue, however, with an increase in accidents. Recent surveys suggest that the number of registered vehicles in Vientiane is increasing by an average of about 11% per year (with about 10.7% per annum growth in motorcycle registrations and 20% per annum growth in car registrations). This level of growth has been in evidence since around 1998. The traffic problem has thus worsened, with a larger number of vehicles using the same (sometimes narrow) roads. Future traffic demand forecasts suggest that the existing road network is inadequate. Future investments should be more oriented toward urban transport provision, complementing the contributions now being made and planned by other major funding agencies.⁵⁴

81. **Private sector participation.** An issue raised at loan processing that was not adequately dealt with was the need for more opportunities to promote the role of the private sector in the provision of urban infrastructure and services. Private sector involvement is currently limited to (i) local contractors for routine maintenance under a lump-sum contract, and (ii) designated local contractors for solid waste collection for residential areas and on an ad hoc basis for public areas.

B. ADB Performance

82. ADB undertook 21 missions, including 10 review missions (or 2 missions per year) and 6 special missions (PCR, para. 30). Staff turnover left four project officers supervising the project at various stages of its 5.6-year implementation period. However, ADB assisted the PMU with speeding up approvals, particularly for disbursements and procurement.

83. Concerns were expressed during project preparation about (i) adequate political support, since legal and regulatory reform continue to be needed; and (ii) the emphasis on human capacity, which requires appropriate levels of investment in capacity building. Although it was clear that there were major concerns about the implementability of the reform agenda (but not its overall aim), the project design and approach were not adapted to be responsive to these concerns. However, the structure and content of ADB interventions in the urban sector have helped conceptualize a sector approach in the Lao PDR, including its role in Vientiane.⁵⁵ ADB

⁵⁴ ADB has already initiated this approach with a proposed project preparatory TA for the Vientiane Sustainable Urban Transport and Pilot Project.

⁵⁵ ADB has been the leading development partner in the urban sector. Its approach, which covered the capital city, secondary provincial towns, small district towns, and urban policy reform, was both comprehensive and ambitious.

supported the introduction of urban management with the establishment and capacity building of VUDAA and UDAs in its urban development projects. Although VUDAA may not survive the current government-led adjustment of urban administration, it is clear that the VUDAA experience initiated a necessary approach to urban management.

84. ADB could have done better by following up on the lagging reform despite constraints on postcompletion sustainability. The project and several other ADB urban projects have not achieved the ambitious goal of decentralized urban management. This will probably involve a much longer process, covering several urban sector and governance projects. But the project and various ADB urban projects that build toward this common reform agenda goal have not been adequately linked. Assuming that the government wants to continue decentralization, ADB should find ways to promote the reform agenda with the borrower. This would include ensuring that technical inputs required by the Public Administration and Civil Service Authority (PACSA), especially the functional analysis of the urban hierarchy in the Lao PDR, are made available. Overall, ADB's performance is considered on the low end of *satisfactory*.

C. Borrower and Executing Agency Performance

85. The project benefited from a strong, supportive executing agency. Vientiane Prefecture, in its capacity as the executing agency, provided critical leadership and support (PCR, para. 29). After a slow start due to the need to learn ADB disbursement procedures (the carry-over project implementation unit director was relieved after the first year) and to enforce resettlement requirements more strictly, disbursement and implementation accelerated in the second half of the project. Staff ownership of VUDAA tasks improved, as did service delivery by VUDAA to the Vientiane community. Vientiane Prefecture was proactive in working with ADB's target communities and disseminating project experiences.

86. With regard to the stalled reform process, IEM discussions with PACSA indicate an understanding of what revisions are needed to make the Law on Local Administration a more effective tool to decentralize urban management. However, past experience suggests that the central government needs to recognize and accept its redefined role in this decentralized system. Other issues raised during appraisal of the project were not adequately dealt with, including (i) promoting private sector participation in the urban sector; (ii) establishing land titles; and (iii) addressing environmental risks, including protection of wetlands. Considering visible on-the-ground achievements, both executing and implementing agency performance are rated *satisfactory*.

V. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS

A. Issues

87. **Status of VUDAA.** At project completion, VUDAA's status was under review, and this remains so. The government is still pursuing the transformation of Vientiane administration into a municipality. The concern is that the Law on Local Administration established the basis for administrative decentralization but did not specify hierarchies of municipality types that would correspond to the hierarchy of urban areas and their associated functions.⁵⁶ This is a major weakness, and the government recognizes that a clear analysis of urban functions and an urban hierarchy are needed before the Law on Local Administration can be revised to specify more operational types of municipalities (footnote 22). Meanwhile, support to UDAs in future urban projects using a multisector approach must be limited to those aspects of their work that MPWT agrees are valid, no matter what the results of the Law on Local Administration revision might

⁵⁶ PACSA suggests that an analysis of the Lao PDR urban areas is needed to identify the functions performed by each urban area (or category of urban area). This would help to identify the services that need to be delivered and the different types of urban administrations required to deliver them.

be. This might support the apparently ongoing process of claiming back functions from VUDAA, but it (and the other UDAAAs) is not currently a viable urban administration. Lastly, the government needs support, as required and in a nonproject modality, to revise the Law on Local Administration, and therefore strong support for the introduction of municipalities should be resumed.

88. Inadequate maintenance funding. Internal revenues of VUDAA do not fully cover its O&M costs. As such, MPWT/DPWT will need to continue providing assistance. The improved capacity of MPWT for maintenance funding, with the strengthening of road fund revenues, is expected to stabilize this in the long run, provided MPWT maintains the current increase in revenues (para. 63). However, this entails possible crowding out of funds for other priority roads like rural roads. This can be avoided with better fiscal solutions, like VUDAA being able to raise more revenue.

89. Deteriorating water quality at the That Luang Marsh. Vientiane has no wastewater treatment plant. While wastewater is reportedly still able to support aquatic life, there is a significant and continuing threat to marsh conditions. Rapid population growth and uncontrolled commercial and residential development will cause further damage as the marsh area begins to exceed its absorptive capacity. Drainage channels were observed to be clogged, not only with water lilies and silt but also with waste materials.

90. Development pressures from increased urbanization. As Vientiane continues to grow and urbanize, an integrated and systematic response is needed to address intensifying, multiple, and perhaps interlinked development concerns (i.e., solid waste collection, road congestion, wastewater pollution, clean air, etc.). For example, vehicle emissions reduction, wastewater quality improvement, and improved public transport need to be integral features of a strategic sector program. Given the limited budget available, the government needs support, including ongoing assistance from the Japan International Cooperation Agency, to develop a master plan for urban regeneration. Support could include (i) finding additional sources of revenue, (ii) identifying future priorities to meet the demands of a growing city for an improved urban environment, and (iii) upgrading VUDAA capacity to manage urban services.

91. Sustainable urban development and management. There was clearly an unmet need for sustained capacity-building support for decentralized urban management in the 2000s, and this need continues. Limited financial resources, inadequate institutional capacities and human resources, and the lack of a clear legal framework for local urban governance have inhibited sustainable urban development and management in the Lao PDR. This has been compounded by generally slow progress in harnessing private sector and community participation in urban planning, development, and management. This kind of support might be best provided by long-term advisory services instead of time-constrained loan implementation or TA approaches. Strengthening the resident mission's capacity to provide such advisory support might also be considered. But given that long-term advisory services are costly and there are limitations on resident mission resources, ADB must address this vacuum and pursue stronger harmonization efforts with other agencies like the World Bank as they begin to take interest in the urban sector.

B. Lessons

92. Implementing urban institutional reform is complex. Careful attention must be paid to the following aspects of urban institutional reform: (i) its acceptance by all key stakeholders through a participatory process; (ii) a thorough understanding of local politics; (iii) realistic phasing, sequencing, and timing of its institutional and policy reform; and (iv) an appropriate balance between allocated resources and expectations of the stakeholders involved. A more open-ended policy dialogue may yet prove more helpful than the application of loan covenants. If substantial policy change is involved, it would also be prudent to consider this as either

(i) separate and parallel policy work in support of the investment components; or (ii) a two-phase process, with policy development preceding the investments.

93. **Difficult decentralization reforms will benefit from a systematic sectorwide approach to change.** While building toward common reform agenda goals, several ADB initiatives toward decentralized urban governance were not adequately linked. This long process would have benefited from a comprehensive reform framework based on institutional, political, and economic imperatives and a clear sector road map. Actions have to be based on solid analysis and engineered to fit into a road map prepared in consultation with stakeholders, for example, a realistic time frame within the context of a medium-term fiscal framework.

94. **A balanced approach to urban land use ensures success.** A “bottom-up” approach to urban land use could help avoid a potential overload of infrastructure and service networks due to overcrowding, pollution, increased poverty, and environmental degradation. Building on the success of the village area improvement initiative, in particular (but also community participation initiatives in earlier ADB-supported urban projects), support for community planning could complement and support higher level urban and regional plans. This would facilitate the involvement of underserved communities in determining their priorities. Such community planning may be acknowledged within the development planning and management system.

95. **A demand-driven community approach facilitates better implementation.** The village area improvement experience highlights the importance of proactive communities during the design, implementation, and maintenance of projects. The use of similar principles may be replicated or expanded for a larger set of beneficiaries. An important lesson from the village area improvement program is its use of a demand-driven approach to development instead of the top-down, supply-driven activities of the past. The main advantages of the village area improvement approach are community inputs and an applied gender-balance concept. These include (i) the participation of many parties, (ii) consultations, (iii) action at the grassroots level, and (iv) the solidarity of the village committee members.

96. **Clear horizontal and vertical roles for urban sector agencies are important under a multisector approach.** A multisector approach in the urban sector is readily implementable in the Lao PDR, because, for the most part, subsectors are within the mandate of the ministry responsible for urban development and its provincial branches. The approach can be enhanced further with the inclusion of urban transport in urban projects. This would not be difficult, given the mandate of MPWT/DPWT. But a multisector approach may be truly tested only when more stakeholders are added to urban projects or programs, bringing in expertise from outside MPWT/DPWT. Moving forward, stronger links may have to be established between (i) infrastructure and services provision and job creation and economic development; and (ii) investments in wastewater treatment and other initiatives responsive to urban issues (e.g., vehicle emissions) that involve outside agencies. Limited experience in dealing with “outside agencies” suggests that an expanded multisector approach will be difficult to implement without clarifying roles and responsibilities across agencies, horizontally and vertically.

C. Follow-Up Actions

97. **Support revisions to the Law on Local Administration and operationalization of the NUSSIP 2020.** The forthcoming country partnership strategy should review and develop appropriate strategies to support strengthening national urban sector management. ADB could assist with the appropriate revision of the Law on Local Administration, including necessary support to refine the concept of “municipality” (based on an analysis of urban types by function). ADB could also assist the government with the implementation of its NUSSIP 2020 including support to strengthen decentralized participatory urban development planning.

98. **Develop and implement a strategic sector program based on the implementation of the revised Law on Local Administration and the NUSSIP 2020.** Through an agreed-upon

strategic sector program for urban interventions, ADB could support the implementation of the revised Law on Local Administration and the NUSSIP 2020 to address multiple development concerns of the urban sectors such as vehicle emissions reduction, traffic congestion, and wastewater quality improvements.

DESIGN AND MONITORING FRAMEWORK: ASSESSMENT OF PROJECT ACHIEVEMENTS

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
<p>Impact: The quality of life of urban residents, especially the poor, improved, and urban productivity and economic growth was enhanced in the Vientiane urban area.</p>	<p>Decrease in poverty; growth in registered in businesses (i.e., manufacturing, services)</p>	<p>Substantial</p>	<p>No assessments provided</p>	<p>A rapid survey of beneficiaries carried out by IEM identified several economic benefits: (i) small business consolidation (e.g., growth in medium- and small-scale businesses along the roads); (ii) emergence of permanent houses and improved land values (e.g., consolidation of temporary dwellings to semi-permanent or permanent structures); (iii) increased vehicle ownership; (iv) changes in livelihood and increased income of households; and (v) improved living standards for poor households. In terms of social benefits, the Vientiane Urban Infrastructure and Services Project was perceived to have contributed to (i) improved school attendance (of poor children), (ii) improved health conditions, and (iii) better control of social disturbances.</p>
<p>Outcome: Improved urban environment and public health, and increased access by the poor to basic services</p>	<p>Improved quality of urban infrastructure and delivery of services, particularly to the poor</p>	<p>Highly Effective</p>	<p>Increased accessibility and reduced travel time (i.e., improved vehicle and pedestrian flow; better access to lots and new development sites in urban and peripheral areas; increase in residential and commercial property development along project roads)</p> <p>Infrastructure is not only a functional and technical success but also provides visual and aesthetic improvements such as lighting, traffic lights, and signs associated with tourist arrivals. Helped mitigate perennial flooding and led to better sanitation and community health. Department of</p>	<p>Following implementation of the project, perceived benefits to urban living conditions include (i) travel time savings; (ii) reduced flooding in low-lying areas; (iii) more convenient access (e.g., improved accessibility after drainage and flood-control works); (iv) reduced dumping of solid waste in the city (e.g., more regular collection of garbage to around once a week); and (v) improved basic sanitation.</p> <p>The IEM rapid survey found several areas for further improvement. These include (i) addressing traffic problems by building more roads, relocating government offices from the commercial areas, expanding public transport to reach suburban areas, building parking spaces in town, and setting more traffic lights; (ii) expanding solid waste collection service to cover more villages and improve the quality of service in areas that are not located along the main roads; (iii) further</p>

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
			Health noted reductions in waterborne diseases (although no survey has established direct causal link with improved drainage)	improving drainage system to solve waterlogging after heavy rain and to control disposal sewage to the side drains; and (iv) expanding the capacity of the water and electricity supply to provide adequate water and power to the growing number of households.
Improved urban management in Vientiane and implementation of appropriate policy reform measures	Decentralized urban governance reform for an autonomous, well-functioning, and financially sufficient urban administration in Vientiane	Less Effective to Ineffective	Increased responsibility of VUDAA to provide infrastructure. However, the status of VUDAA as an arm of government is less than assumed at appraisal. VUDAA was also not able to press the government to institute the needed urban reform. Goals were too ambitious and did not take into account the realities of local politics. Given the status of VUDAA as a department within Vientiane, the original concept and target were unrealistic.	Since project completion, the status of VUDAA has been under review and remains so. The government is still pursuing the transformation of Vientiane administration into a municipality. The concern is that the Law on Local Administration establishes the basis for administrative decentralization, but does not specify hierarchies of municipality types that would correspond to the hierarchy of urban areas and their associated functions. As noted, this is a major weakness and the government recognizes that a clear analysis of urban functions and an urban hierarchy are needed before the Law on Local Administration can be revised to specify more operational types of municipalities. Only then can municipal governments be established.
Outputs				
Citywide Infrastructure and Environmental Improvements		Highly Effective		
Improved roads	35.8 km resurfaced or upgraded	Exceeded target	44.5 km completed, comprising 35.2 km resurfaced or upgraded between 2003 and 2006 and 9.3 km of new roads funded by loan savings	The sample of eight citywide roads (from the 13 road sections covered by the project) inspected by the IEM consultant were found to be in good condition. However, uneven compliance with routine maintenance commitments has kept soil material (from erosion, unpaved roads, construction trucks) and debris in roadside drains and drainage. The IEM traffic survey confirmed that at least seven of the citywide roads covered by the project have high traffic volumes (18,000–35,000 vehicles per day).

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
Improved drainage	14 km of primary and secondary drainage channels	Exceeded target	18.7 km of new primary and secondary channels built, comprising 6.6 km of primary and secondary drainage built and upgraded between 2003 and 2006 and an additional 2.6 km of drainage works funded by loan savings	While sample drainage channels observed by IEM are in satisfactory condition, many of these were clogged by vegetation, which grows quickly on the channel and its walls. Water quality appears poor, with solid waste in the canal. VUDAA plans to clean clogged drainage three times a year but budget allows for only twice a year (before and after the rainy season). For big works, VUDAA contracts heavy equipment from the outside.
Improved solid waste management	Solid waste collection covers about 15,000 households	Exceeded target	Solid waste collection coverage of almost 70,000 households in 204 villages (117 covered by VUDAA and the rest by private sector companies). Vientiane bought six solid waste collection vehicles to improve service delivery. Substantial increase in village contracts due to increased coverage and improved infrastructure developed by village area improvement program.	The main issue for solid waste services is lack of equipment. The average age of VUDAA equipment is from 7 to 8 years, with the most recent procurements provided under the project. The volume of garbage from residential areas alone has increased to 100–150 tons per day. For its residential service, VUDAA used six private sector companies to augment its in-house service and assigned them to specific zones of operation. Village interviews indicate more regular solid waste service of once a week for residential areas. Five solid waste vehicles or compactors from the project are still being used.
Improved traffic management and road safety	Street lighting along 18 km of roads from 2003 to 2006; installation of traffic signals in 2004; street signs and other traffic control systems from 2003 to 2006	Achieved target, but the AFD budget was underestimated and did not take into account street lighting in the Heritage Area of the city. VUDAA asked ADB to install streetlights.	An AFD grant established a traffic operation center at the new VUDAA building and installed traffic lights at 26 intersections. ADB installed 116 street lights.	The 26 traffic lights started operations in 2006 and are located mostly in the center of the city: 7 along Road 13S (MPWT), 4 along Road 1 (Vientiane Urban Infrastructure and Services Project), 5 along Nongbone Road, 6 along T2 Road (Vientiane Integrated Urban Development Project), 2 between Samsenthai Road and Lane Xang Avenue, and 2 along Khounboulom Road. All lights are still operational. The units were not designed for the Lao PDR's local weather and this is likely to reduce design life from 15 to 10 years. In addition to the traffic lights, seven CCTVs were provided. Of these, only two are currently operating, as spare parts are awaited for the

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
				broken units. All 116 street lights were reported to be in good condition. VUDAA pays for power costs.
Maintenance equipment and construction of VUDAA building	Equipment for routine maintenance of roads and drainage procured and office building for VUDAA constructed	Achieved target	New VUDAA building satisfactorily completed in December 2005. Three water tankers, one dump truck, and road cleaning equipment procured in June 2006.	VUDAA building is located in DPWT compound and is in good condition. Presently, VUDAA occupies two floors, while the remaining two floors are temporarily being used by another unit of the Vientiane provincial government. Some of the project equipment has broken down and spare parts could not be obtained locally.
Village Area Improvements		Effective		
Community infrastructure	Upgrading of infrastructure, services and sanitation in 50 urban villages from 2002 to 2006	Achieved target	Improved village infrastructure in 50 urban villages (i.e., 38.5 km of road and drainage works completed) along with environmental, community health, and solid waste collection improvements. VUDAA solid waste management services expanded.	<p>The village area improvement program has performed very well. It has since been replicated in other projects in the country and, more importantly, by the communities themselves from both project and non-project villages.</p> <p>After completion of subprojects, other villages have submitted requests to VUDAA for road rehabilitation, while providing community contributions. Initially, the project created demand from other villages because the contribution was only 10%. But some villagers are happy to contribute up to 50% to facilitate construction of an access road.</p> <p>Village area improvement roads in four villages inspected by the IEM consultant were found to be in fair to good condition. Some villagers complained of poor road design and construction quality. At the same time, project facilities in three of the four villages need maintenance of roads and drainage systems.</p>
Community preparation and awareness	Strengthened capacity of VUDAA and villages for community-based	Achieved target	Training for village groups resulted in improved cleanliness and environmental management, particularly solid waste. Village	The village area improvement component gave communities, in particular its local authorities, a sense of ownership (e.g., reported roads destroyed by heavy vehicles).

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
	project implementation; environmental awareness program implemented; village area improvement committees formed and playing active role in project decision making and implementation		committee established and facilitated exchange of ideas between villages and enhanced implementation of the village area improvement program.	The advantages of the village area improvement approach include (i) participation of many parties, (ii) use of consultations, (iii) action at the grassroots level, and (iv) solidarity of the village committee members. After the project, some village committees mobilized contributions to undertake similar access road projects.
Capacity Building		Ineffective		
Established legal framework for decentralized governance	Law on Local Administration finalized and issued by National Assembly and VUDAA administrative and functional jurisdiction defined (within 18 months of loan effectiveness)	Partly achieved	The Law on Local Administration was passed by the National Assembly in 2003. Implementing guidelines for law drafted but not approved at project completion. Administrative and functional jurisdiction of VUDAA restricted to environmental services and solid waste collection.	The Law on Local Administration is being reviewed by PACSA. IEM discussions with PACSA indicate an understanding of what revisions are needed to make the Law on Local Administration a more effective tool to decentralize urban management. However, past experience suggests that the central government needs to recognize and accept its redefined role in this decentralized system.
Competent and autonomous VUDAA yet to be developed	Revenue generated from VUDAA's own sources met 50% of the cost of services and adequate O&M by 2003 and 100% by 2006	Not achieved	Improved technical competence of VUDAA staff, but VUDAA still financially dependent. Given the difficulties and lack of VUDAA capacity and government support, the target of 100% cost recovery was extended to 2010. Actual achievement was about 30%.	This was not achieved. The revised target of 2010 has lapsed. To date, VUDAA estimates that present revenue generation only meets between 30% and 35% of the cost of services.
	Budgeting and accounting systems and procedures established and upgraded (within 2	Achieved target	VUDAA accounting capacity improved as a result of both ADB and AFD capacity-building components. But as local government organization develops	Financial management capacity was significantly improved through skills training programs funded by ADB and the AFD. Despite not making much progress in capacity building early in the project, VUDAA gradually built capacity for financial

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
	years of loan effectiveness)		further, additional training and qualified staff will be required.	management, engineering design and supervision, and responsive governance through skills training and guided application. The momentum created must, however, be sustained through additional, long-term support from ADB and other donors.
Effective O&M of infrastructure and services	Development and continual updating of (i) an asset register, (ii) an operations plan, (iii) a maintenance plan, and (iii) a capital-works plan within 30 months of loan effectiveness; sufficient skilled staff available to formulate, implement, and update capital, O&M, and budget plans	Not achieved	Asset register developed under the capacity-building subcomponent funded by the AFD; O&M and capital works plans not implemented; VUDAA had limited trained staff to implement and update municipal plans as well as undertake O&M budgeting.	Government stakeholders note that capacity building continues to be required and a Training Needs Assessment would be useful to assess capacity followed by focused interventions.
Responsive urban governance	Participatory management and urban poverty reduction for VUDAA staff; strengthening of Social Action Unit participatory planning and training for village within 1 year of loan effectiveness; information dissemination and	Achieved target	Trained VUDAA and Social Action Unit staff Trained residents in 50 villages. Information dissemination and grievance systems developed	Achieved

Design Summary	Performance Indicators/Targets	Assessment	Achievements	
			Project Completion	Independent Evaluation Mission
	grievance systems in VUDAA developed within 2 years of loan effectiveness			
Effective planning and development and building control	Wetlands designated as protected zones in the master plan by December 2002. VUDAA capacity for development and building control, and revenues from building-permit fees increased by 2005	Not achieved	VUDAA's authority to enforce development and planning controls and obtain revenues from building-permit fees remains inadequate	

ADB = Asian Development Bank, AFD = Agence Française de Développement, DPWT = Department of Public Works and Transport, IEM = independent evaluation mission, MPWT = Ministry of Public Works and Transport, O&M = operation and maintenance, PACSA = Public Administration and Civil Service Authority, VUDAA = Vientiane Urban Development Administration Authority.

Sources: Independent evaluation mission and ADB. 2008. *Completion Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila.

VIENTIANE URBAN DEVELOPMENT ADMINISTRATION AUTHORITY

1. **Organization.** The president or mayor of the Vientiane Urban Development Administration Authority (VUDAA) is the vice-governor of the Vientiane Prefecture. VUDAA is managed by a board chaired by the president and comprising the heads of the four districts in the Vientiane urban area (Figure A2). VUDAA's manager is the most senior staff member in the organization. The manager acts as secretary to the VUDAA board. There are two deputy managers responsible for technical and administrative matters, respectively. Under this management structure, VUDAA has at present five major divisions. VUDAA staff includes transferees from other departments of the Vientiane Prefecture or who were recruited externally.

2. **Defining a legal basis for VUDAA and other urban development administration authorities.** As noted in the report and recommendation of the President (RRP) for the Vientiane Urban Infrastructure and Services Project, in moving from a centralized to a decentralized form of urban governance, the government faces a number of further challenges. The existing Constitution of the Lao People's Democratic Republic (Lao PDR) does not provide for a distinct urban territorial authority. In addition, the provisions of the prevailing State Budget Law, which stipulated a centralized financial system, are not compatible with the government's policy of decentralized revenue generation and financial management reflected in the foregoing decrees. Apart from inconsistency in their legal basis, the current position of the urban development administration authorities (UDAAs) in the national territorial hierarchy is ambiguous. The position of UDAAs as administrative units of provincial and prefectural governments does not fully conform to the concept of autonomous urban local governments. In addition, the interface and linkages of UDAAs with other tiers of administration and with district authorities are not clearly defined, especially in the case of VUDAA, whose geographic jurisdiction cuts across four districts. The prime minister's instruction 01/PM, issued in March 2000, which stipulates decentralization from central to lower levels of government and defines the province as the strategic unit, the district as the budget and planning unit, and the village as the implementing unit, makes no reference to urban authorities. There is also the issue of the geographic jurisdiction of VUDAA. The Vientiane urban area, for which VUDAA is responsible, was determined in 1995. The boundary of the Vientiane urban area that existed then does not cover the current urban area, recently developed on the outskirts of the city, and is leading to inconsistencies in the approach to and level of services.

3. As originally envisioned, a Law on Local Administration, defining the structure and roles of the various levels of government, would be put into effect within 18 months of loan effectiveness. The law would also circumscribe the administrative and functional jurisdiction of the municipality. The project successfully contributed to the passage of the Law on Local Administration by the National Assembly in October 2003 and to its being declared effective by prime ministerial decree in November 2003. Operational guidelines for the implementation of the decree were drafted by the Public Administration and Civil Service Authority (PACSA), and various revenue sources were identified and revenue projections for urban services carried out under the project. However, the law does not explicitly mention the role of urban development administration authorities in the local government structure, and operational guidelines for its implementation have yet to be approved. The dialogue continues, and the government has proposed a new timetable for the operational guidelines to be finalized.

4. **Capacity development within VUDAA.** Financial management capacity was significantly improved through skills training programs funded by the Asian Development Bank (ADB) and Agence Française de Développement (AFD). However, several of the organizational

development workshops had limited impact, as they were attended by part-time employees and the consultants were available only for short-term inputs. The capacity-building subcomponent, financed jointly by ADB and the AFD, was aimed at supporting VUDAA in urban management and organizational development. An asset register was developed with AFD funding, but staff ability to develop a capital works and operation and maintenance (O&M) plans has yet to materialize. There is a shortage of VUDAA staff to update and implement municipal plans. The participation of VUDAA and government staff in participatory planning workshops, their involvement in partnering in the village area improvement program, and good cooperation with field workers managed by the Lao Women's Union (LWU) have made VUDAA more responsive to the needs of beneficiary communities and Vientiane residents. Information systems and grievance mechanisms for resettlement are also in place.

5. Capacity building requires long-term support. Despite not making much progress in capacity building early in the project, VUDAA gradually built capacity for financial management, engineering design and supervision, and responsive governance through skills training and guided application. The momentum created must, however, be sustained through additional, long-term support from ADB and other donors.

6. **VUDAA revenue and expenditures.** An analysis of VUDAA's revenue and expenditure stream from FY2006 to FY2009 shows a ratio of revenues from budget sources (provincial government and Road Fund allocation) to total expenditures of around 80% from FY2006 to FY2009 (Table A2). On the other hand, the ratio of revenue sources (including revenue from own sources) averaged about 19%. Notably, the latter ratio has improved in the last 3 years (from 12.3% in FY2006 to 26.0% in FY2009). This strengthening of non-budget-related sources has allowed for an improvement of the net balance from a deficit of KN491 million in FY2006 to a surplus of KN262 million in FY2009. On the downside, the ratio of VUDAA revenues from its main budget-related sources fell gradually from 84.5% in FY2006 to 75.8% in FY2009. Revenues from the Road Fund have remained constant at KN1.7 billion for road infrastructure and KN0.9 billion for road cleaning. Overall, VUDAA has managed its expenditures in line with available budget resources, but this level of expenditure falls far short of the levels of investment requested and the real demand for investment and service provision.

7. **Development pressures from urbanization in Vientiane.** As Vientiane continues to grow and urbanize, an integrated and systematic response is needed to address intensifying, multiple, and perhaps interlinked development concerns such as solid waste collection, road networks, congestion, wastewater pollution, and clean air. In the case of urban transport, the 2010 sector assistance program evaluation (SAPE) on the transport sector in the Lao PDR¹ pointed to a high demand for improved road planning in Vientiane. It highlighted several issues for the future: (i) the rapid increase in the number of vehicles, resulting in traffic congestion and accidents, which the existing road system cannot cope with; (ii) traffic management issues including (a) a mix of motorized and non-motorized vehicles and pedestrians in narrow roads; (b) the improper installation of traffic signals, signs, and markings; insufficient and/or illegal parking of vehicles in commercial zones and market areas; and limited facilities and capacities for enforcing traffic safety; and (iii) constraints on financing arrangements for urban development given government's limited capacity to generate revenues.² These issues require (i) a road system responsive to future developments, including linkages to an enhanced railway system, town developments, and the use of more public transport or mass-transit systems (i.e.,

¹ ADB. 2010. *Sector Assistance Program Evaluation on the Transport Sector in the Lao PDR*. Manila.

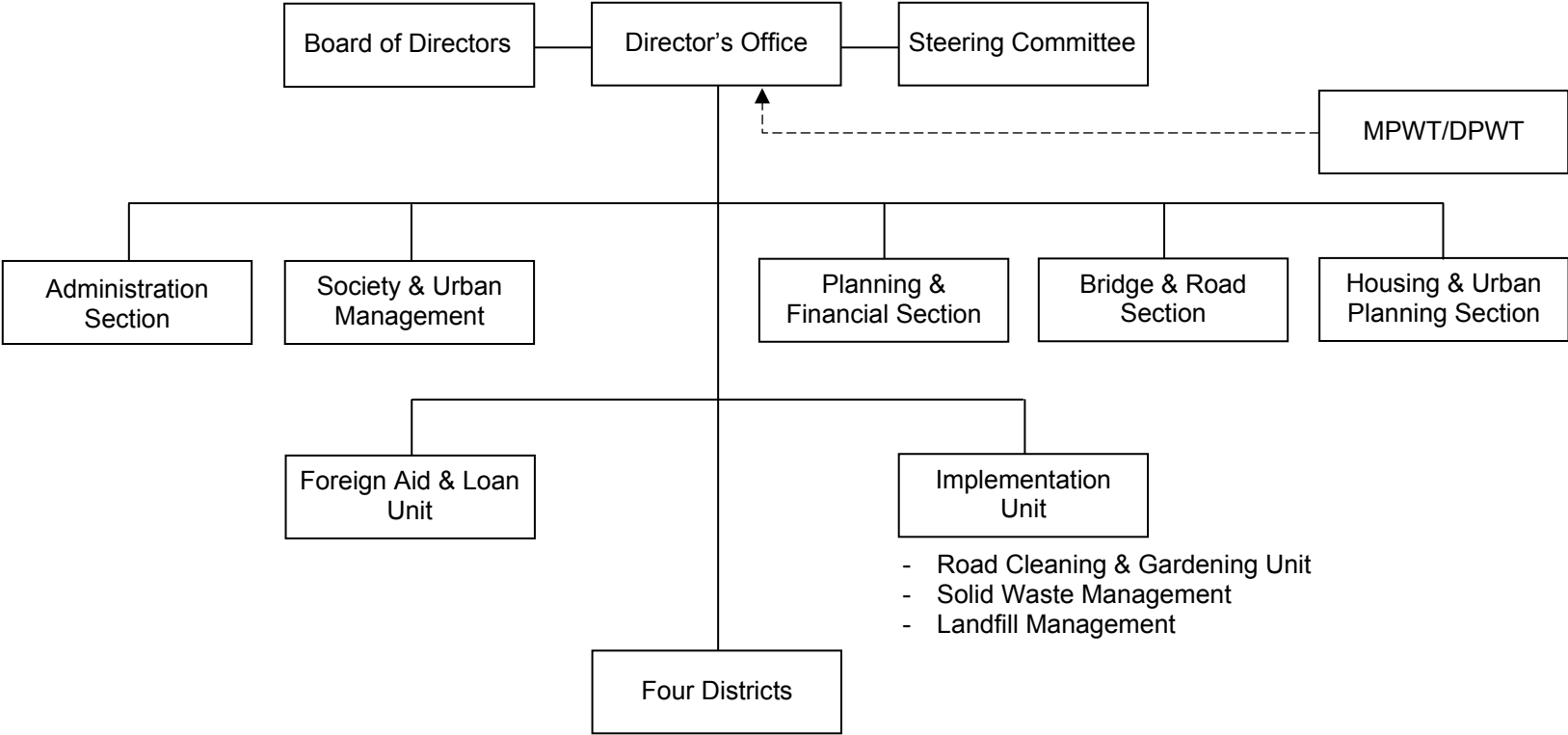
² ADB has included a project preparatory technical assistance (TA) for Vientiane Sustainable Urban Transport in its planned 2011 program.

more bus routes); (ii) countermeasures on traffic management, road safety programs, and a review of transport policies required; and (iii) a suitable framework for sustained funding of O&M, considering direct and indirect cost recovery principles (i.e., funds from vehicle-user charges and property taxes) in line with decentralization and delegation of budget controls.

8. **Future directions for VUDAA.** The eventual development of a Vientiane municipality may entail the amalgamation of the Vientiane DPWT and VUDAA, as well as the merger of the four central districts. This move will, however, require a rationalization of the responsibilities and tasks of all organizations providing services to the Vientiane community. VUDAA is now functioning as the engineering department of this proposed municipality, although the services it provides—solid waste management, street cleaning, and the issuance of building permits for small buildings—do not constitute the entire functions of such an organization.

9. For now, a particular issue is the current and emerging relationship between VUDAA and DPWT. Initially, functions were distributed by geographical area, with VUDAA assuming responsibility for urban services in the central four districts and DPWT responsible for the remaining “outer” districts. However, this geographical split is no longer being applied and some key VUDAA functions will be transferred to DPWT, including road and drainage maintenance. In the near future DPWT could “subcontract” functions to VUDAA, or VUDAA could focus on a more limited range of functions that would include urban landscaping and solid waste collection. In either case, DPWT assumes overall responsibility for the provision of urban services. This is more appropriate as DPWT is more adequately funded.

Figure A2: Organization of Vientiane Urban Development and Administration Authority



DPWT = Department of Public Works and Transport, MPWT = Ministry of Public Works and Transport.
 Source: Independent evaluation mission.

Table A2: Summary of Revenues and Expenditures of VUDAA, 2007–2010
(Lao kip and percent)

Description	Actual			Proposed
	2006–2007	2007–2008	2008–2009	2009–2010
Revenues				
VUDAA Revenue from Budget				
Fund from budget (Vientiane government)	10,635,940,000	9,426,630,000	8,358,620,000	207,474,100,000
MPWT (Road Fund) for infrastructure	1,743,490,000	1,743,490,000	1,743,490,000	1,743,490,000
MPWT (Road Fund) for road cleaning	899,990,000	899,990,000	900,000,000	900,000,000
Total Budget	13,279,420,000	12,070,110,000	11,002,110,000	210,117,590,000
Other VUDAA Revenues				
Electricity bill	624,000,000	624,000,000	1,278,336,000	1,932,672,000
Water supply bill	471,390,630	480,000,000	840,760,000	1,345,824,000
Building permit	137,494,000	139,939,000	100,577,000	180,000,000
Guesthouses and hotels	115,791,500	127,706,000	112,841,500	160,000,000
Others	590,480,750	1,552,389,800	1,442,635,300	975,200,000
Total (Others)	1,939,156,880	2,924,034,800	3,775,149,800	4,593,696,000
Total Revenues	15,218,576,880	14,994,144,800	14,777,259,800	214,711,286,000
Expenditure				
From the Budget				
Resettlement	999,993,163	1,312,420,000	1,499,999,476	500,000,000
Citywide road and drainage construction	7,712,981,449	6,796,250,000	2,455,536,072	2,521,600,000
Village area improvement construction	1,301,859,000	400,000,000	350,000,000	600,000,000
Road maintenance	2,146,700,337	1,717,090,536	3,468,154,083	1,373,960,000
Drainage maintenance	146,411,260	564,103,144	1,907,156,529	100,000,000
Others	71,116,676	380,000,000	418,721,710	268,720,000
Total (From Budget)	12,379,061,885	11,169,863,680	10,099,567,870	5,364,280,000
Other Expenses (Contingency)				
Road cleaning	1,953,159,824	2,148,879,099	2,571,804,911	3,187,896,000
Others	1,376,762,028	1,996,129,953	1,843,582,657	4,109,249,077
Total (Others)	3,329,921,852	4,145,009,052	4,415,387,568	7,297,145,077
Total Expenditures	15,708,983,737	15,314,872,732	14,514,955,438	12,661,425,077
Net Balance	(490,406,857)	(320,727,932)	262,304,362	202,049,860,923
Total Revenue/Total Expenditure (%)	96.90	97.90	101.80	
Total Revenue from Budget/Total Expenditure (%)	84.53	78.81	75.80	
Total Other Revenue/Total Expenditure (%)	12.34	19.09	26.01	

MPWT = Ministry of Public Works and Transport, VUDAA = Vientiane Urban Development Administration Authority.

Source: Vientiane Urban Development Administration Authority.

PROJECT COST AND FINANCING

Table A3.1: Project Cost by Component

Component	Appraisal						Actual					
	VIUDP	%	VUISP	%	Total	%	VIUDP	%	VUISP	%	Total	%
Road	6.3	22.7	11.9	32.2	18.2	28.1	5.9	24.9	18.4	42.1	24.3	36.1
Drainage	6.4	23.1	6.7	18.1	13.1	20.2	7.9	33.3	9.2	21.1	17.1	25.4
Solid waste management	2.4	8.7	0.3	0.8	2.7	4.2	5.7	24.1	0.3	0.7	6.0	8.9
Sanitation	1.8	6.5	0.0	0.0	1.8	2.8	0.1	0.4	0.0	0.0	0.1	0.1
Equipment	0.0	0.0	0.3	0.8	0.3	0.5	0.0	0.0	0.5	1.1	0.5	0.7
Traffic management and road safety	0.0	0.0	1.5	4.1	1.5	2.3	0.0	0.0	2.1	4.8	2.1	3.1
Office building	0.0	0.0	0.3	0.8	0.3	0.5	0.0	0.0	0.6	1.4	0.6	0.9
SAP + VAI	0.5	1.8	4.1	11.1	4.6	7.1	0.1	0.4	5.4	12.4	5.5	8.2
Implementation support	3.1	11.2	5.9	15.9	9.0	13.9	3.8	16.0	6.7	15.3	10.5	15.6
Total (Base)	20.5	74.0	31.0	83.8	51.5	79.6	23.5	99.2	43.2	98.9	66.7	99.0
Contingencies	5.2	18.8	5.4	14.6	10.6	16.4	0.0	0.0	0.0	0.0	0.0	0.0
Interest	2.0	7.2	0.6	1.6	2.6	4.0	0.2	0.8	0.5	1.1	0.7	1.0
Total (Project)	27.7	100.0	37.0	100.0	64.7	100.0	23.7	100.0	43.7	100.0	67.4	100.0

SAP = social action program, VAI = village area improvement, VIUDP = Vientiane Integrated Urban Development Project, VUISP = Vientiane Urban Infrastructure and Services Project.

Source: Asian Development Bank. 2008. *Completion Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila.

Table A3.2: Financing Plan

Item	Appraisal						Actual					
	VIUDP	%	VUISP	%	Total	%	VIUDP	%	VUISP	%	Total	%
ADB	20.00	72.2	24.42	66.0	44.42	68.6	17.14	62.0	28.38	65.0	45.52	63.8
AFD/GOJ	2.71	9.8	4.40	11.9	7.11	11.0	5.65	20.4	5.35	12.3	11.00	15.4
Government of Lao PDR	5.00	18.0	7.60	20.5	12.60	19.5	4.87	17.6	9.46	21.7	14.33	20.1
Subtotal	27.71	100.0	36.42	98.4	64.13	99.1	27.66	100.0	43.19	98.9	70.85	99.3
IDC/ADB Service Charge	0.00	0.00	0.58	1.6	0.58	0.9	0.00	0.0	0.48	1.1	0.48	0.7
Total	27.71	100.0	37.00	100.0	64.71	100.0	27.66	100.0	43.67	100.0	71.33	100.0

ADB = Asian Development Bank, AFD = Agence Française de Développement, GOJ = Government of Japan, Lao PDR = Lao People's Democratic Republic, VIUDP = Vientiane Integrated Urban Development Project, VUISP = Vientiane Urban Infrastructure and Services Project.

Source: ADB. 2008. *Completion Report: Vientiane Urban Infrastructure and Services Project in the Lao PDR*. Manila.

VILLAGE AREA IMPROVEMENT PROGRAM

1. **Background.** Component B of the Vientiane Urban Infrastructure and Services Project covered 50 villages and comprised the upgrading of surface drainage, tertiary access roads, and primary waste collection. Its process of village selection was rigorous and based on measurable indicators such as poverty level, infrastructure conditions and needs, and expressed willingness to participate in the project. Design and implementation decisions were participatory and involved consultations with the communities.¹

2. **Village area improvement approach.** The village area improvement component initiated a new approach in village road development. This included coordinating with the village head and setting up a committee to develop proposals for preparation of preliminary designs and cost estimates. The villagers then reviewed these to decide on preferred options and agree on village contributions. The village contribution of 10% of the total cost was one of the main conditions for provision of village roads to the communities. After agreeing on the village contributions, the village committee was also involved in selecting the final designs, in the bidding as well as construction supervision stages. Under component B, three committees were established: village contribution, resettlement, and routine operations and maintenance (O&M). The first two addressed problems related to road construction (i.e., how to share costs, land acquisition). The committee on routine maintenance is now responsible for monitoring drainage, cutting the grass along the roads, and controlling the weight of heavy vehicles using the road. Village contribution to O&M are mostly in kind. The Vientiane Urban Development Administration Authority (VUDAA) reported villagers fully pay their contributions, although some payments are delayed.

3. **Program implementation.** The first phase of the village area improvement program covered six pilot villages over 9 months. This phase was initially met with skepticism from beneficiary communities, since no similar project had ever been implemented in these areas. As a result, the collection of community contributions was slow. The Lao Women's Union (LWU) successfully facilitated public awareness campaigns on such matters as environmental sanitation and the importance of community participation in providing and maintaining community infrastructure. Training in participatory management and urban poverty for VUDAA staff was also conducted and enabled effective outreach in the 50 villages. The initial response from the second group of 20 villages proved more forthcoming, with contribution targets being easily achieved. In the remaining 24 villages, implementation proceeded either on time or ahead of schedule, except for one village. Overall, the implementation experience is *highly satisfactory*. Indeed, even after the completion of the social action program, VUDAA continued to receive requests to be included from other communities.

4. **Future of the village area improvement program.** The project was the first urban project in the Lao People's Democratic Republic (Lao PDR) to use a demand-driven and participatory approach to village road development. This model is presently being applied to subsequent village road projects in other cities and most communities are now willing to contribute from 30% to 50% of the investment. Before the project, village road developments in urban cities were considered to be solely the responsibility of the provincial or local government,

¹ Villages are the lowest levels of government located in the proximity of urban communities. These provide an interface between the community and the government, and play an important role in planning and monitoring development activities to ensure that development is equitable and participatory. Decentralization was, therefore, viewed as both a means of effective urban management and an important strategy for poverty reduction. The government considered capacity building and human resource development as the major challenge and priority for decentralization.

which is responsible for fund allocation and design decisions. The village authorities and residents were not involved in any process of road rehabilitation and maintenance. Since completion of the project, villagers have proactively protected and maintained their roads. In fact, every Saturday most community members, particularly the youth, carry out routine maintenance of the village roads. This includes cleaning the drains, cutting the grass, sweeping dust, and collecting trash along both village and citywide roads. Many villages that participated in the implementation of the village area improvement program continue to develop proposals or road maintenance in their respective villages. These are submitted to VUDAA through their district authorities.

LOAN COVENANTS NOT YET COMPLIED WITH

Covenant	Status of Compliance at Independent Evaluation
<p>1. Review and update the urban policy and institutional reform agenda annually in consultation with ADB, implement the measures outlined in the reform agenda within the time periods agreed upon (Loan Agreement [LA] Schedule 6, para. 5).</p>	<p>Partly complied with. A draft decree to establish the municipalities was prepared and the government set October 2007 as a target date for the pilot municipalities to start operating. The Vientiane municipal boundary and a new boundary around 192 villages were then identified. These were positive steps. However, operationalization of municipalities has been stalled pending of the Law on Local Administration (Law on Local Administration). The institutional and policy Reform required for the development of the municipality and the financial independence of the Vientiane Urban Development Administration Authority (VUDAA) proved difficult for the executing agency to achieve. Much of the decision making was necessarily at a higher level than the executing agency, as the issues to be dealt with concerned the role and functions of the districts that comprise the Vientiane administration. On a positive note, the reform agenda helped facilitate passage of the Law on Local Administration and a number of supporting ministerial decrees. It also led to the identification of the boundaries of the future municipality, along with continued internal dialogue on the importance of urban service delivery and cost recovery.</p>
<p>2. VUDAA shall generate sufficient revenues from its own sources to meet at least 50% of its costs incurred in providing services and undertaking operation and maintenance (O&M) of the existing infrastructure and project facilities by 1 October 2003, and 100% of these costs by 1 October 2006 (LA Schedule 6, para. 5b).</p>	<p>Not complied with. With a view to transforming it into a self-reliant agency able to manage and finance urban development, VUDAA was expected to generate sufficient revenues from internal sources (i.e., its own sources) to meet at least 50% of costs incurred (i.e., providing services and undertaking O&M of existing infrastructure and project facilities) by 1 October 2003, and 100% of these costs by 1 October 2006. VUDAA was not able to realize such revenues in the periods allotted. An ADB review mission in October 2004 agreed to postpone 100% coverage to 2010, even as VUDAA prepared a plan to increase revenue sources. VUDAA estimates its present internal revenue coverage at around 35% or well below the initial target of 50%. In addition to low urban service rates, the Vientiane Urban Infrastructure and Services Project also met with implementation difficulties because of inadequacies in VUDAA's organizational structure and capacity, and an unrealistic implementation timetable. Furthermore, the Provincial Government Decree 1804/2000 on urban revenues did not suffice in terms of revenue collection and a higher approving authority (e.g., the Ministry of Finance) was required for additional sources. However, despite the slow progress, VUDAA has begun to collect user charges and fees.</p> <p>The revenue and expenditure stream of VUDAA (from FY2006 to FY2009) is in Appendix 2. While VUDAA appears to manage expenditures in line with available budget resources, this level of spending falls far short of the levels of investment requested and the real demand for investment and service provision. A strengthening of internally generated funds allowed for an improvement in its net balance from a deficit in FY2006 to a surplus by FY2009. The ratio of VUDAA revenues from its main budget-related sources fell, however, from 84.5% in FY2006 to 75.8% in FY2009, because revenues from the Road Fund have remained the same over the years.</p>
<p>3. Within 9 months of Loan Effective Date, VUDAA shall have the legislative,</p>	<p>Not complied with. Although the National Assembly passed the Law on Local Administration, VUDAA lacked the operational guidelines to obtain</p>

Covenant	Status of Compliance at Independent Evaluation
<p>administrative, and staffing support necessary to (i) implement the revenue raising powers notified in Decision 1804, and (ii) increase the level of urban related taxes, user charges and fees to meet cost recovery objectives as agreed between the Borrower and the Bank (LA Schedule 6, para. 5c).</p>	<p>the legislative, administrative, and staffing support it needed to raise revenues and increase urban taxes and fees for cost recovery. This critical covenant was therefore unattainable.</p>
<p>4. The content of the Local Administration Bill which is to be submitted to the National Assembly for enactment, shall be consistent with principles of autonomous urban local authorities, and shall include provisions of the financial autonomy of urban development administration authorities and requisite revenue raising powers for levying and collecting direct and indirect user charges and fees, and property related taxes for recovering the costs of urban infrastructure and services for which VUDAA is responsible.(LA Schedule 6, para. 5g)</p>	<p>Not complied with. The loan agreement refers to the reform agenda agreed agenda item bullet point 2, Part A, Legal Reform (“Complete the preparation and resubmit to the National Assembly, the bill for the Law on Local Administration which is in accordance with principles of autonomous urban local authorities...”). The Law on Local Administration No. O3/NA was promulgated in October 2003. However, the Law on Local Administration provisions for urban management were deficient in a number of respects and revisions are now being made.^a No timeline has been set for completion of the revisions.</p> <p>The Law on Local Administration is now under review. The establishment of a Vientiane municipality remains problematic, although there is a consensus that such administrative reform is required. The lack of an appropriate specification in the Law on Local Administration of a capital city municipality is a key issue. PACSA expressed the view of the Prime Minister’s Office that revision of this law will require analysis of the urban system in the Lao People’s Democratic Republic (Lao PDR) and formulation of an urban hierarchy with linked formulations of appropriate municipality specifications for each level. There is no deadline for such revision and early establishment of a Vientiane municipality is not expected. In the meantime, there has been an incremental re-assumption of VUDAA functions by the Department of Public Works and Transport (DPWT) and the role of VUDAA in future urban management reform has become uncertain.</p>

ADB = Asian Development Bank.

^a The Law on Local Administration does not explicitly mention the role of urban development administration authorities in the local government structure, and operational guidelines for its implementation have yet to be approved. The government has designated the Public Administration and Civil Service Authority as the leading agency for implementing this law.

Source: Independent evaluation mission.

USING A MULTISECTOR APPROACH TO URBAN DEVELOPMENT PROJECTS

- 1. Background.** The use of a multisector approach to urban service provision remains relevant in the Lao People's Democratic Republic (Lao PDR). Urban assistance from the Asian Development Bank (ADB) has been guided by the Five-Year Socioeconomic Development Plans of the Lao PDR and the government's recognition of the significance of urban centers in the national development process through its complementary and supportive role in rural development. The multisector approach has also been used to be more responsive to the government's objective of poverty reduction.
- 2. Use of an integrated urban development project approach.** The government was quick to point out that the multisector approach in the urban sector is easy to adopt, as the mandates of the Ministry of Public Works and Transport (MPWT) and the Department of Public Works and Transport (DPWT) cover most relevant subsectors, and that coordination between subsectors is good. The MPWT and the provincial DPWT have increasingly backstopped and supplemented the work of the Vientiane Urban Development Administration Authority (VUDAA) and other urban development administration authorities (UDAAs), where necessary. MPWT and DPWT capacities, especially to coordinate subsectors, match the requirements of conventional multisector urban projects (but fell down when other subsectors were involved, i.e., microfinance).
3. Given that the institutional capacity of the UDAA is considered to be low, the performance of the Lao PDR, in particular, the Vientiane Urban Infrastructure and Services Project, is remarkable compared with other integrated urban infrastructure development projects, for example, in Indonesia.¹ Notably, despite the fact that its urban institutions are much more developed and mature than the UDAA, subsector coordination capacity was lacking in integrated urban infrastructure development projects in Indonesia.
- 4. Synergistic effects of a multisector approach.** Vertical and horizontal links in subsectors within the mandate of the concerned ministry (MPWT, in the case of the project) were consolidated by the multisector approach to project implementation. This approach provided opportunities for ensuring links between the village area improvement roads (component B) and citywide roads (component A) and between the village area improvement roads (component B) and solid waste service provision (a subsector of component A). This meant that appropriate sequencing of activities was not difficult to achieve (i.e., no double digging).
5. The multisector approach also ensured timely intervention, addressing several distinct and urgent subsector problems (i.e., traffic, flooding, and waterlogging) in the Vientiane urban area. A sequence of single-sector projects could not have been formulated to address various "equal-priority" urban issues in the same time that it took to formulate the single Loan 1834 using a multisector approach.
6. The multisector approach has also been used to link needed infrastructure and services investment with consolidating urban management institutions to support the government's creation of VUDAA and other UDAAAs. This approach has therefore been consistent with a number of prime ministerial decrees, instructions, decisions, notifications, and policy statements. These decrees recognize UDAAAs in Vientiane and secondary towns as legal

¹ Country experience may not be immediately comparable. While the approach is the same, the setting may be different. The case for the Lao PDR involves a small city population with benefits from economies of scale.

entities exclusively responsible for urban communities, and define the position of UDAAAs as organizations within provincial and prefectural administrative apparatuses.

7. **Limitations of a multisector approach.** In the case of the project, use of a multisector approach could have strengthened the role of MPWT and DPWT at the expense of VUDAA, even though the Vientiane Prefecture was the executing agency. The use of a single-sector approach would still have consolidated the ministry's role but with less impact on the overall structure of urban sector management. While this does not argue for less use of a multisector approach, it points out the need for more stringent allocation of roles during loan implementation based on the government's intentions and program to consolidate urban management institutions.

8. The use of a multisector approach in the project could also have been enhanced by stronger links between infrastructure, services provision, and job creation. The weakness of the approach may have lain in the use of a more-or-less standard package of subcomponents for a multisector loan. With the objective of enhancing urban productivity and economic growth perhaps the project should have included subsectors to link the physical and institutional subcomponents to economic development.²

9. The horizontal linkages required for effective implementation of the microfinance component of Small Towns Urban Development Project, proved difficult to manage and this aspect of project implementation was poor. Component B of the Vientiane Urban Infrastructure and Services Project could also have been more effective had it not been seen as an "add-on" to a larger project and it might have had more success earlier if it had been a stand-alone (not necessarily single-sector) project. However, this was overridden by the benefit to the village area improvement of assured links between village area improvement roads and citywide roads and the solid waste management subsector, and the government's emphasis on the provision of basic social infrastructure for the development of small towns.

10. **Effectiveness of a multisector approach.** The need for inter-subsector cooperation is most pronounced in urban projects in the Lao PDR, because (V)UDAAAs are relatively new urban management agencies that are having to establish relationships with central and provincial governments and existing agencies, especially the powerful provincial branches of the MPWT and DPWT. It has been noted³ that ADB played a central role in the decentralization process in the urban sector with its support of establishing (V)UDAAAs. During the process, however, more attention was paid to the new agencies than to those that had to give up responsibilities, nor was adequate attention given to how the transfer should happen and how it would affect working relationships. This is a valid point, but the problem is more complicated. The Law on Local Administration establishes the basis for administrative decentralization, but does not specify hierarchies of municipality types that would correspond to the hierarchy of urban areas and their associated functions. This is a major weakness and the government⁴ recognizes that a clear analysis of urban functions and an urban hierarchy are needed before the local administration law can be revised to specify more operational types of municipalities. Only then can municipal governments be established.

² This caused some difficulty in the implementation of Loan 1994-LAO: Small Towns Urban Development Project, where agencies outside the authority of MPWT were involved (i.e., the microfinance agencies). This is not, however, a reason not to consider it in future project preparation.

³ The Special Evaluation Study on Capacity Development Assistance of the Asian Development Bank to the Lao PDR (June 2004). This included a detailed assessment of capacity development for urban management.

⁴ For example, the Prime Minister's Office, Public Administration and Civil Service Authority (PACSA).

ASSESSMENT OF ROAD AND DRAINAGE CONDITIONS

1. **Component A.** The objective of the citywide road component is to improve quality of life, solve traffic problems, and to connect main and access roads for solid waste management. In the past, some roads were narrow and unpaved and provided access to only some villages. The Vientiane Urban Infrastructure and Services Project improved these through road widening, improved drainage, walkways, and road signs. Some roads were extended and connected to the main road as a national road, as part of a provincial road within the urban area, or as other citywide roads. The citywide roads under the project involve three types of pavement (double bituminous surface treatment [DBST], asphalt, and concrete).

2. Average road roughness is around 4 to 5 meters (m) per kilometer (km) for the citywide roads. Since the completion of all citywide roads under the project in 2007, the Vientiane Urban Development Administration Authority (VUDAA) has a budget for minor patching works but not enough for routine maintenance of the roads and side drains. The DBST pavements have an economic life cycle of 8 years, but need maintenance every 5 years. Without routine maintenance, these roads, which may have to bear overloaded trucks, would not last for long. As part of its survey of urban infrastructure under the project, the independent evaluation mission (IEM) inspected a sample of eight road sections covered by the project. These were all found to be in good condition, although in need of routine maintenance (Table A7.1 and Photos A7.1–A7.7).

Table A7.1: Assessment of Citywide Roads

No.	Item	Pavement type	Length (m)	Village Name	Assessment (structure and pavement condition) ^a
1	P3	DBST	1,676	Sibounheung	Good
2	Thong Sang Nang	DBST	4,806	Thong Sang Nang	Good
3	Dong Na Sok	DBST	8,232	Nongduang, Dong Na Sok	Good
4	Simeung	Asphalt	1,386	Simeung	Good
5	Savang–Dongpalab– Donedeng	DBST	1,265	Savang–Dongpalab	Good
6	Nongduang– Nongbouathong	DBST	2,474	Nongbouathong	Good
7	Sokpaluang	DBST	678,5	Sokpaluang	Good
8	Phonpapao	DBST	1,400	Phonpapao	Good

DBST = double bituminous surface treatment, m = meter.

^a All of these need routine maintenance of roads and drainage.

Source: Independent evaluation mission national consultant (urban engineer).

3. **Component B.** A visual inspection of a few village area improvement roads shows mixed results. Two types of pavement surface were observed: concrete and DBST. The IEM found the component B roads with concrete surfaces to be in good condition. The village roads with DBST pavements were in only fair condition. For the latter, the design of the side drain was poor. As such, it was unable to quickly drain water in the rainy season resulting in flooding of the project roads. The project road in Phonsavanh Neua village experienced particular flooding problems after completion of construction works. The pavement surface has been washed away because of poorly designed side drains (Table A7.2 and Photos A7.8–A7.11).

Table A7.2: Assessment of Village Area Improvement Roads

No.	Village Name	Pavement Type	Road condition	Assessment	Maintenance Need
1	Phapo (2 village roads)	Concrete	Good	Clean road	
2	Phonsavanh Neua (2 village roads)	DBST	Fair	One road has problems with its drainage system: it could not flow to the main drainage, and the road was damaged by flooding in the rainy season. Some road sections had no pavement.	Drainage system
3	Sisangvone (2 village roads)	DBST	Good	Concrete road with good drainage system	Road cleaning
4	Thatluang (1 village road)	DBST	Fair	Poor quality of DBST road pavement and drainage system	Drainage system

DBST = double bituminous surface treatment.

Source: Independent evaluation mission national consultant (urban engineer).

4. Some component B roads have also been poorly maintained. VUDAA is responsible for maintaining the roads to the villages along the route. In turn, the village offices assigned this duty to villagers with houses along the project roads. These households are required to clean the fronts of their houses. In addition, every Saturday is considered a “cleaning day,” when all villagers come together to maintain the road and clean the drainage. The IEM observed that some drainage covers were either broken or missing.

5. **Citywide drainage.** An inspection of a sample of the citywide drainage locations under the project showed these to be mostly in good condition (Table A7.3). But maintenance remains a key issue for VUDAA. VUDAA cleans these drainages twice per year or just before and after the rainy season (Photo A7.12). Ideally, it should clean them at least three times per year because of the rapid growth of vegetation, which constrains the flow of wastewater. Some drainage, located near markets, was found to be full of vegetation. While some villages have been able to clean the drainage (particularly small drains) by themselves, they are unable to clean the big channels, which require expensive machines to remove vegetation.

Table A7.3: Assessment of Citywide Drainage

No.	Drainage Name	Length (m)	Village	Drainage Condition	Assessment
1	Hong Xeng (main drainage, Phase 2)	6,595	Phonekheng	Good structure	Full of vegetation ^a
2	Kao Kao (main drainage, Phase 1)		Khouvieng	Good structure	Full of vegetation ^a
3	Hong Kae (main drainage, Phase 1)		Sisangvone	Good structure	Full of vegetation ^a
4	Suanmone (small drainage, planned to drain into Mekong River, Phase 2)	1,355	Suanmone	Fair	Full of vegetation ^a
5	T2 Drainage (covered main drainage, Phase 2)		Nongduang	Good structure	Full of vegetation ^a
6	Watai I (covered main drainage, Phase 2)	2,720	Wattai	Good condition	Covered drainage
7	Watai II (covered main drainage, Phase 2)		Wattai	Good condition	Covered drainage

m = meter.

^a = need more drainage cleaning.

Source: Independent evaluation mission national consultant (urban engineer).

6. The Hong Xeng drainage is a main channel, which drains all wastewater to That Luang Marsh. The That Luang Marsh has since served as an ecological treatment system with all

wastewater receiving “treatment” here. Wastewater is drained through the Mak Hiew drainage for about 60 km before being discharged into the Mekong River.



Photo A7.1: Si Boun Heung Road (Road P3)



Photo A7.2: Thong Sang Nang Road



Photo A7.3: Dong Na Sok Road



Photo A7.4: Savang-Dongpalab-Donedeng Road



Photo A7.5: Nongduang-Nongbouathong Road



Photo A7.6: Sokpaluang Road



Photo A7.7: Phon Pa Pao Road



Photo A7.8: Village area improvement Road Ban Phapo, clean and in good condition (ADB)



Photo A7.9: Village area improvement road at Si Boun Heung village



Photo A7.10: Village area improvement road at Phonsavanh Neua village



Photo A7.11: Village area improvement road at Phonsavanh Neua village; the drainage system has problems



Photo A7.12: Drainage full of vegetation needs maintenance

ASSESSMENT OF CITYWIDE ROAD TRAFFIC

1. **Citywide road traffic survey.** The independent evaluation mission (IEM) carried out traffic counts on seven of the 13 project roads (covered by 16 contracts) under the Vientiane Urban Infrastructure and Services Project. Of these, three were previously evaluated in the project completion report of the Asian Development Bank (ADB) and the other four were selected by the head of the road and bridge division of the Vientiane Urban Development Administration Authority (VUDAA) as the roads with high traffic volume. The traffic count surveys were carried out over a 24-hour period from Monday to Wednesday (10–12 May 2010). The traffic count results were then manually recorded according to vehicle classification three, based on the Highway Design and Maintenance Model Version 4 and Road Economic Decision Model.

2. **Travel time before and after the project.** The IEM estimated the change in travel time for the seven roads. Following improvements, all seven roads experienced reduced travel time and increased vehicle speed (Table A8.1). This change in vehicle traffic performance varied across the road sections, with the greatest improvements reported on roads P3, Thong Sang Nang, Dong Na Sok, and Nongduang Nongbouathong. Of the remaining three road sections, two still experienced vehicle speeds of less than 10 kilometers (km) per hour despite a reported improvement from before-project road conditions.

Table A8.1: Estimated Travel Time along Project Roads

Road and Contract Number	Stretch (km) a	Average Travel Time (hour)		Travel Time Savings		Average Travel Speed	
		Before b	After c	(hour) d=b-c	(h/km) e=d/a	Before (km/h)	After (km/h)
1. P3: Sibounheng-Phonthong (CN 203)	2.593	0.50–0.667	0.083	0.417–0.583	0.091–0.127	3.888–5.186	31.241
2. Thong Sang Nang (CN 214)	3.174	0.167–0.250	0.05–0.083	0.117–0.167	0.016–0.026	12.696–19.006	38.241–63.480
3. Dong Na Sok (CN 205)	8.232	1.000	0.167–0.417	0.583–0.833	0.020–0.051	8.232	19.741–49.293
4. Savang-Dongpalab-Donedeng (CN 212)	1.265	1.000	0.50	0.50	0.395	1.265	2.530
5. Nongduang-Nongbouathong (CN 212)	2.474	>0.500	0.05–0.083	0.417–0.45	0.020–0.034	4.948	29.807–49.480
6. Sokpaluang (CN 201)	0.6785	0.333	0.083	0.25	0.491	2.037	8.175
7. Road Phonpapao (CN 210)	1.400	0.333	0.083	0.25	0.059	4.204	16.867

CN = contract number, h/km = hour per kilometer, km = kilometer, km/h = kilometer per hour.

Source: Independent evaluation mission consultant estimates.

3. **Average daily traffic volume.** The traffic count data over the 3-day period were analyzed and averaged for each lane direction and for the total in both directions. These roads are highly trafficked, with about 18,000–35,000 vehicles per day (vpd), as shown in Table A8.2 below. Savang-Dongpalab-Donedeng Road has the highest traffic volume at 34,426 vpd, or almost twice that of Sokpaluang, which, at 18,016 vpd, had the lowest traffic volume among the roads surveyed.

4. The IEM traffic count results are considered optimistic.¹ The IEM estimates that traffic during a 7-day week could be 7%–8% lower than the average for the 3-day period covered by the traffic survey. The adjusted traffic estimates are also presented in Table A8.2.

Table A8.2: Average Daily Traffic Volume

No.	Road Name	Road Length (m)	Average Daily Traffic Estimate	
			Actual (3-day count)	Adjusted ^a
1	Dong Na Sok	8,232	18,927	17,507
2	Savang-Dongpalab-Donedeng	1,265	34,426	31,844
3	Nongduang-Nongbouathong	2,474	19,154	17,717
4	Thong Sang Nang	3,174	23,067	21,337
5	Sibounheung-Phonthong	2,593	22,843	21,130
6	Sokpaluang	678.5	18,016	16,665
7	Phonpapao	1,400	24,327	22,502

m = meter.

^a Estimates for traffic during a 7-day week.

Source: Independent evaluation mission consultant estimates.

5. **Traffic volume by direction and by hour.** The traffic count shows that from as early as 3 a.m. until 9 a.m. there is a large volume of traffic traveling southbound, while from 4 p.m. to 9 p.m. there is more traffic traveling northbound. This is explained by the fact that most of the traffic is from those either heading for work or going to school, serving the catchment areas from Savang and Thong Sang Nang villages and perhaps Phonetong village as well.

6. On all seven roads, the peak traffic volumes are between 7 a.m. and 9 a.m. and 4 p.m. and 7 p.m. All seven roads also have similar levels of traffic volume per hour. Between 17% and 20% of the total average daily traffic is during the 7 a.m.–9 a.m. peak period. Around 20%–30% of the total average daily traffic is during the evening peak period of 4 p.m.–9 p.m. Between the hours of 9 a.m. and 3 p.m., the percentage of average daily traffic varies between 4% and 6% hourly.

Table A8.3: Comparison of Present and Past Traffic Volumes
(annual average daily traffic)

Item	JICA (2008) (16 hours)	ADB (2010) (24 hours)
P3		22,843
Thong Sang Nang		23,067
Dong Na Sok	21,829 (22,738 est. for 24-hour period)	18,927
Savang–Dongpalab–Donedeng	28,218 (30,572 est. for 24-hour period)	34,426
Nongduang–Nongbouathong		19,154
Sokpaluang		18,016
Phonpapao		24,327

ADB = Asian Development Bank, JICA = Japan International Cooperation Agency.

Source: Independent evaluation mission consultant estimates.

7. **Comparison of past and present traffic.** There is very limited baseline data available to compare current traffic estimates with traffic prior to project completion (Table A8.3). The Lao consulting firm that carried out the baseline traffic count surveys for Road P3 in 2002–2003 was unable to supply the historical traffic data. The only historical data available are from a 2008 Japan International Cooperation Agency (JICA) study on two of the seven roads. The JICA

¹ Peak traffic from Monday to Wednesday is heavier compared with the Thursday to Friday period. Traffic on Saturday and Sunday is estimated at 70% of peak traffic during the week.

traffic count was based on a 16-hour count from 6 a.m. to 10 p.m. The locations of the counting stations were the same as the current traffic count locations. Based on the present traffic estimates, the traffic volume for Dong Na Sok Road (from 10 p.m. to 6 a.m. the following morning) makes up about 4% of the total daily traffic. Adjusting the JICA estimates to a 24-hour count would increase the figure to 22,738 vpd if the estimated 4% were to be added. Similarly, for Donedeng Road, the increase during the 8-hour period not covered by the JICA count is 7.7%. By the same token, the total traffic for a 24-hour period would be 30,572 vpd. From the adjusted JICA figures, it can be determined that the traffic volume on Dong Na Sok Road has fallen by about 17%, while that on Donedeng Road has increased by 13%. The two roads run parallel to each other for a certain length, so improvements on Donedeng Road may have diverted some of the traffic from Dong Na Sok Road.² Overall, there is an insignificant increase in traffic volume for the two roads combined.

8. **Motorized traffic by vehicle class.** Table A8.4 shows the breakdown of motorized vehicle traffic per day. These were mostly light vehicles (89.8% of total traffic), with motorcycles and tuk-tuks averaging 68.8% of traffic. Nonmotorcycle traffic accounted for 31.2% of road users:³ mostly cars, jeeps, taxis (10.1%), and pickups (13.1%). Buses and trucks accounted for only 8.1% of motorized traffic. Bus traffic consisted mainly of small buses and modified pickups (4.2%), while trucks were mostly light trucks (3%). A minor 1%–2% of traffic comprised bicycles.

² Dong Na Sok Road is one of the main roads into the city center, which passes through the monument area. It is extremely congested during peak hours. With the improved road section at Donedeng, drivers can still reach the city center via the Donedeng Road, avoiding the monument roundabout. Some of the traffic has likely been diverted from one road to the other.

³ After motorcycles, pickups make up the second-highest percentage of vehicles, at between 8% and 18%, while cars account for the third-largest share of vehicle type. The transits and para-transits (buses and tuk-tuks) account for around 5%–8% of the total average daily traffic.

Table A8.4: Average Daily Traffic by Vehicle Class

Road/Vehicle Class	Car/Jeep/ Taxi	Small Bus/ Modified			Medium Bus	Heavy Bus	Light Truck	Medium Truck	Heavy Truck	Tractor Trailer	Total Non-			Total Motorcycle	Total Motorized Traffic
		Pick-Up	Pick-up	Bus							Motorcycle	Motorcycle	TukTuk		
Vehicles Per Day															
Road P3	2,832	3,162	1,122	40	10	259	48	13	4	7,490	14,768	412	15,180	22,670	
Thong Sang Nang	2,299	4,488	867	17	8	790	37	11	3	8,520	13,980	403	14,383	22,903	
Dong Na Sok	2,417	2,923	716	18	29	541	73	105	7	6,829	11,396	493	11,889	18,718	
Donedeng	2,989	3,185	1,747	50	10	1,383	218	63	14	9,659	23,512	857	24,369	34,028	
Nongbouathong	1,457	1,430	665	-	1	927	67	9	2	4,558	13,671	554	14,225	18,783	
Sokpaluang	1,828	3,323	523	10	6	38	16	8	-	5,752	11,688	297	11,985	17,737	
Phonpapao	2,181	2,164	1,034	3	2	888	191	289	6	6,758	16,975	366	17,341	24,099	
Average	2,286	2,954	953	20	9	689	93	71	5	7,081	15,141	483	15,625	22,705	
Percent of Total Traffic (%)															
Road P3	12.5	13.9	4.9	0.2	0.0	1.1	0.2	0.1	0.0	33.0	65.1	1.8	67.0	100.0	
Thong Sang Nang	10.0	19.6	3.8	0.1	0.0	3.4	0.2	0.0	0.0	37.2	61.0	1.8	62.8	100.0	
Dong Na Sok	12.9	15.6	3.8	0.1	0.2	2.9	0.4	0.6	0.0	36.5	60.9	2.6	63.5	100.0	
Donedeng	8.8	9.4	5.1	0.1	0.0	4.1	0.6	0.2	0.0	28.4	69.1	2.5	71.6	100.0	
Nongbouathong	7.8	7.6	3.5	-	0.0	4.9	0.4	0.0	0.0	24.3	72.8	2.9	75.7	100.0	
Sokpaluang	10.3	18.7	2.9	0.1	0.0	0.2	0.1	0.0	-	32.4	65.9	1.7	67.6	100.0	
Phonpapao	9.1	9.0	4.3	0.0	0.0	3.7	0.8	1.2	0.0	28.0	70.4	1.5	72.0	100.0	
Average	10.2	13.4	4.1	0.1	0.0	2.9	0.4	0.3	0.0	31.4	66.5	2.1	68.6	100.0	

Notes: 23.60

1. Light vehicles and Heavy vehicle traffic as percent of Total Traffic (%)

Light Vehicles	23.6	Buses	4.2
Motorcycles	66.5	Trucks	3.6
Both	90.1	Both	7.8

2. Medium bus (maximum of 25 seats); Heavy bus (more than 25 seats); Light truck (less than 4 tons); Medium truck (2 axles); Heavy truck (3 axles)

Source: Independent Evaluation Mission traffic count.

FINANCIAL AND ECONOMIC REEVALUATION

1. **Introduction.** The approach used to reevaluate the three main project components of the Vientiane Urban Infrastructure and Services Project is generally similar to that used at appraisal and project completion. The methodology followed the *Guidelines for the Financial Governance and Management of Investment Projects Financed by the Asian Development Bank*, *Guidelines for the Economic Analysis of Projects of the ADB*, and *Framework for the Economic and Financial Appraisal of Urban Development Sector Projects*.

2. The economic benefits were quantified through a comparison of “with” and “without” project situations using the world price numeraire. All benefits and costs are in constant 2010 prices.¹ Except for the solid waste component, the financial benefits and costs were converted to economic prices by applying a standard conversion factor of 0.9 for non-tradeable goods. The economic life of each subproject component was assumed to be about 30 years, with no salvage value at the end of the project life, as at appraisal and completion.

A. Economic Reevaluation of the Road Component

3. **General.** The economic reevaluation was carried out on three of the four road subprojects reevaluated at project completion: road P3 (new construction and upgrading), Thong Sang Nang (upgrading), and Dong Na Sok (DNS, upgrading).² The construction works for road P3 and DNS were implemented from 2004 to 2005 and from 2006 to 2007 for Thong Sang Nang (TSN).

4. **Estimation of costs.** The economic costs comprise capital expenditures and maintenance costs. Financial capital costs were estimated for civil works (i.e., final contract amount) and project management support costs (pro-rata basis) (Table A9.1). Maintenance-related expenses include routine and periodic costs. These were assumed to start the first year after completion of construction works. Routine maintenance costs are assumed at KN3 million per kilometer (km) per month or around \$364 per km per month. Periodic maintenance costs are assumed at \$30,000 per km per month for with-project situation and \$15,000 per km per month for without-project situation.

Table A9.1: Estimation of Financial Capital Costs

Road Name	Length (km)	Construction (\$ million)	PMU Costs (\$ million)	Total (\$ million)
P3	4.579	2.046	0.186	2.231
TSN	3.174	1.623	0.147	1.770
DNS	8.247	3.440	0.312	3.752

DNS = Dong Na Sok, km = kilometer, TSN = Thong Sang Nang.

Source: Asian Development Bank and government project completion reports.

5. Investments in periodic maintenance are assumed every 5 years to retain an average roughness grade of 5 meters per kilometer (m/km) on road P3, 6 m/km on road TSN, and 7 m/km on road DNS. For without-project conditions, an average roughness grade of 6–7 m/km is assumed on road P3, 6–8 m/km on road TSN, and 6–9 m/km on road DNS. Table A9.2 shows the estimated roughness values used to determine the timing of maintenance interventions.

6. **Estimation of benefits.** Direct quantified benefits are from savings in vehicle operating costs (VOC) and travel times. The primary economic benefit is from VOC savings, for which incremental benefits are measured from a comparison of the “with” and “without” project

¹ The manufacturer’s unit value index published by the World Bank was used for converting costs and benefits into 2010 prices. An average exchange rate of KN8,235 per US dollar was applied to foreign currency conversions.

² Roads 1 and 1A were not included in these reevaluations because these were further improved using other donor financing.

situations. The without-project situation assumes some level of investment or maintenance works by the government to keep the roads open to sustain existing traffic.³ The roughness values used to measure these benefits are shown in Table A9.2. The current roughness grade, as estimated by the independent evaluation mission (IEM) national consultant, is 4 m/km for road P3 and 5 m/km for roads TSN and DNS.

Table A9.2: Sample of Roughness Levels Used (m/km)

Year	Without Project			With Project		
	P3	TSN	DNS	P3	TSN	DNS
2002	6.0	7.0	8.0	-	-	-
2006	6.6	7.6	8.6	4.0	-	5.0
2008	6.9	7.9	8.9	4.0	5.0	5.0
2010	5.0	6.0	6.0	4.0	5.0	5.0
2015	6.0	7.0	8.0	4.0	5.0	5.0
2020	7.0	8.0	9.0	4.0	5.0	5.0
2025	6.0	7.0	8.0	4.0	5.0	5.0
2030	7.0	8.0	9.0	4.0	5.0	5.0
2034	5.8	6.8	7.5	4.0	5.0	5.0
2035	6.0	7.0	8.0	4.0	5.0	5.0

- = not applicable, DNS = Dong Na Sok, km = kilometer, TSN = Thong Sang Nang.
Source: Independent evaluation mission consultant estimates.

7. Table A9.3 shows sample VOCs (financial) for the various vehicle classes covered by the evaluation. The unit costs are based on a recent road evaluation study by the Independent Evaluation Department (IED) in the Lao People's Democratic Republic (Lao PDR) and updated for price changes.

Table A9.3. Vehicle Operating Costs (\$/m/km)

Vehicle Class	IRI 4.0	IRI 5.0	IRI 6.0	IRI 7.0	IRI 8.0	IRI 9.0
Motorcycle	0.044	0.053	0.062	0.068	0.069	0.071
Car/jeep/taxi	0.225	0.258	0.291	0.325	0.360	0.395
Pickup	0.341	0.390	0.440	0.492	0.545	0.598
Light bus	0.199	0.232	0.266	0.298	0.329	0.361
Medium bus	0.256	0.291	0.326	0.361	0.398	0.435
Heavy bus	0.449	0.510	0.570	0.634	0.704	0.773
Light truck	0.246	0.284	0.321	0.360	0.399	0.438
Medium truck	0.333	0.379	0.425	0.474	0.526	0.579
Heavy truck/tractor trailer	0.486	0.549	0.612	0.680	0.753	0.825

IRI = international roughness index, m/km = meter per kilometer.
Source: Independent evaluation mission consultant estimates.

8. Incremental VOC savings benefits were quantified for normal, diverted, and induced traffic (Table A9.4). For induced traffic, the benefit per unit is assumed at half of existing normal traffic.

Table A9.4: Composition of Total Traffic on the Evaluated Roads (% of total)

Road Name	Period	Induced	Diverted	Normal	Total
P3	2006	17.5	17.5	65.0	100.0
	2007	25.0	25.0	50.0	100.0
	2008–2034	30.5	30.5	39.0	100.0
TSN	2008–2036	10.0	40.0	50.0	100.0
DNS	2006	15.0	25.0	60.0	100.0
	2007–2034	20.0	30.0	50.0	100.0

DNS = Dong Na Sok, km = kilometer, TSN = Thong Sang Nang.
Source: Independent evaluation mission consultant estimates.

³ From the point of view of VUDAA, the government would still have prioritized the subsectors and locations selected under the project without the loan. In contrast, the PCR assumes that under the without-project situation, no investment in operation and maintenance (O&M) costs would be incurred.

9. Table A9.5 summarizes assumptions on motorized traffic on the three roads studied. In the absence of actual traffic data, pre-project traffic levels (2004) were reconstructed using Vientiane Urban Development Administration Authority (VUDAA) impressions of past traffic levels: 30% of present traffic levels (or around 5,000 vehicles per day [vpd]) for roads TSN and P3, and 40% of present traffic levels (or around 7,000 vpd) for road DNS. Traffic forecasts are based on the 3-day traffic count carried out by the IEM. The result of this traffic survey is in Appendix 8. Traffic for 2010 was reestimated at 92%–93% of actual traffic-count levels to account for cyclical variations between weekdays and weekends. Based on the traffic-count results, average traffic growth from 2004 to 2009 was estimated at around 31% per year for roads P3 and TSN and 25% per year for road DNS. Traffic growth was assumed to grow by 1.5% per year on road P3, 0.50% on road TSN, and 1.0% on road DNS.⁴ For the without-project situation, total traffic is assumed to grow at an average of 2% per year to account for population growth.

Table A9.5 Forecast Motorized Traffic
(vehicles per day)

Road Name	Period	Motorcycle		Non-Motorcycle		Total Traffic	
		Without	With	Without	With	Without	With
P3	2004–2009 (Estimates)	3,231	6,781	1,594	3,346	4,825	10,126
	2010 (Revised actual)	3,461	14,042	1,708	6,928	5,169	20,970
	2011–2022	3,946	15,489	1,947	7,642	5,893	23,131
	2023–2034	5,004	18,519	2,469	9,137	7,473	27,656
	2010–2034 (Average)	4,434	16,885	2,188	8,331	6,622	25,217
	2004–2009 (Compound growth %)	2.00	31.12	2.00	31.12	2.00	31.12
	2010–2034 (Compound growth %)	2.00	1.50	2.00	1.50	2.00	1.50
TSN	2004–2009 (Estimates)	3,032	6,386	1,796	3,783	4,828	10,169
	2010 (Revised actual)	3,248	13,304	1,924	7,881	5,172	21,185
	2011–2023	3,741	13,779	2,216	8,162	5,957	21,942
	2024–2036	4,839	14,702	2,867	8,709	7,706	23,412
	2010–2036 (Average)	4,252	14,206	2,518	8,415	6,770	22,621
	2004–2009 (Compound growth %)	2.00	31.25	2.00	31.25	2.00	31.25
	2010–2036 (Compound growth %)	2.00	0.50	2.00	0.50	2.00	0.50
DNS	2004–2009 (Estimates)	4,276	8,942	2,456	5,136	6,732	14,078
	2010 (Revised actual)	4,580	10,997	2,631	6,317	7,211	17,314
	2011–2022	5,222	11,739	2,999	6,743	8,221	18,482
	2023–2034	6,622	13,228	3,804	7,598	10,426	20,826
	2010–2034 (Average)	5,868	12,424	3,371	7,136	9,239	19,560
	2004–2009 (Compound growth %)	2.00	25.46	2.00	25.46	2.00	25.46
	2010–2034 (Compound growth %)	2.00	1.00	2.00	1.00	2.00	1.00

DNS = Dong Na Sok, TSN = Thong Sang Nang.

Source: Independent evaluation mission consultant's estimates.

10. Travel-time savings benefits (i.e., reduced travel time of passengers) are estimated as a ratio of VOC savings benefits for normal, diverted, and induced traffic. These were assumed as 5% for road TSN, 15% for road P3, and 20% for road DNS.⁵

11. **Results of the economic reevaluation.** Table A9.6 compares base-case results of economic reevaluation from appraisal to independent evaluation. While generally lower than

⁴ The base-case scenario assumes that traffic on DNS will slowly increase to its 2008 level of around 22,000 vpd by 2034.

⁵ Due to data limitations, this reevaluation applied a basic valuation approach for quantifying time savings. The national consultant estimated average time savings at 0.12–0.17 hour for road TSN, 0.42–0.58 hour for road P3, and 0.58–0.83 hour for road DNS. The IEM's rough estimates of passenger time savings by applying these average time savings on vehicle traffic indicate these benefits may be moderate to significant: 5% for road TSN and around 15%–25% for roads P3 and DNS.

economic internal rate of return (EIRR) estimates at completion, present EIRR results continue to support appraisal forecasts that the sample of roads with high urban traffic will likely exhibit the characteristics of a highly efficient investment. Given that eight of the 13 roads supported by the project are highly trafficked with similar cost structures, it is likely that investments in the citywide road component are efficient at the least.

Table A9.6: Comparison of Base-Case Economic Reevaluations

Road Name	Appraisal		Completion		Independent Evaluation	
	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)
1. P3	27.9	1.537	42.21	4.624	21.8	1.33
2. TSN	26.5	0.749	40.13	2.262	28.2	1.32
3. DNS	17.3	0.699	27.42	3.159	25.7	1.84

DNS = Dong Na Sok, EIRR = economic internal rate of return, NPV = net present value, TSN = Thong Sang Nang.

Source: Independent evaluation mission estimates.

12. Sensitivity tests show that results from the base-case scenario are robust (Table A9.7). The EIRR results show minor changes if the volume and mix of total traffic are held constant at the 2010 level. Two other variables, which may influence benefits flow, relate to the level of non-motorcycle traffic and savings from VOC. Without the quantified benefits from travel-time savings, all three roads still remain above the 18% cutoff rate for a highly efficient investment as defined in IED's evaluation guidelines. Likewise, if benefits are measured from non-motorcycle traffic only, two of the three roads will still be categorized as a highly efficient project. The performance of each evaluated road is briefly described below.

Table A9.7: Sensitivity Tests on Benefits Flow

Road Name	Traffic at 2010 Level		Non-Motorcycle Traffic Only		VOC Benefits Only	
	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)
P3	20.7	1.02	14.6	0.31	18.9	0.88
TSN	27.8	1.21	22.8	0.83	26.9	1.19
DNS	25.0	1.48	19.6	0.90	23.1	1.43

DNS = Dong Na Sok, EIRR = economic internal rate of return, NPV = net present value, TSN = Thong Sang Nang, VOC = vehicle operating cost.

Source: Independent evaluation mission estimates.

13. Road TSN generated the highest EIRR of the sample roads by virtue of a low associated capital investment (the shortest length), a high traffic level (second among the three roads), and a significant amount of non-motorcycle traffic (the highest of the three roads in 2010). Road TSN also recorded the highest amount of heavy vehicle traffic (i.e., 866 vpd of medium- to heavy buses and trucks of all types) in 2010 among the three roads.

14. Road DNS turned out the second-highest EIRR with its advantage in terms of a longer road length (longest of the three roads) and a low realized cost per unit (lowest cost per km of the three roads). Road DNS also had the second-highest amount of heavy vehicle traffic (i.e., 773 vpd). Road DNS could not capitalize in terms of traffic volume, however. In particular, the traffic assessment (Appendix 8) noted traffic diversion from road DNS to the parallel Donedeng Road during peak hours.

15. Road P3 has the lowest EIRR of the sample. This is mainly due to the low number of heavy vehicles in the area (i.e., 374 vpd). This was less than half the traffic along road DNS. Table A9.7 confirms this, with road P3 ranking a poor third in terms of EIRR when only non-motorcycle traffic benefits are measured.

16. Table A9.8 shows the results of several sensitivity tests on the performance of the sample of road subprojects. These again confirm that the EIRR results are robust. The only exception is the observed diversion away from road DNS due to congestion. Traffic volume on

road DNS may not rise further than its 2008 level as measured by the Japan International Cooperation Agency (JICA). Notably, the estimated average traffic growth from 2004–2009 on the DNS road was only 25% per year as compared to 30% along roads P3 and TSN.

Table A9.8: Sensitivity Tests for Sample Citywide Road Subprojects

Item	Road P3		Road TSN		Road DNS	
	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)
Base Case	21.8	1.33	28.2	1.32	25.7	1.84
Total benefits lower by 20%	17.2	0.64	21.8	0.74	18.6	0.75
Total benefits lower by 30%	14.6	0.30	18.2	0.45	14.0	0.20
VOC benefits lower by 20%	17.8	0.73	22.1	0.76	19.2	0.83
VOC benefits lower by 30%	15.6	0.43	18.7	0.49	15.2	0.32
Incremental VOC lower by 20%	17.2	0.64	21.8	0.74	18.6	0.75
Incremental VOC lower by 30%	14.6	0.30	18.2	0.45	14.0	0.20
Road P3 and TSN traffic up 3% per year	23.1	1.84	29.8	1.81	27.0	2.69
Road P3 and TSN traffic up 5% per year	24.4	2.47	31.4	2.45	-	-
Road DNS traffic falls to 2007 level of 12,000 vpd	-	-	-	-	23.9	1.01
Without-project traffic up 3% per year	21.2	1.21	27.4	1.19	23.8	1.30
Without-project traffic up 5% per year	19.9	0.92	25.5	0.88	13.4	-0.03

DNS = Dong Na Sok, EIRR = economic internal rate of return, NPV = net present value, TSN = Thong Sang Nang, VOC = vehicle operating cost, vpd = vehicle per day.

Source: Independent evaluation mission estimates.

B. Economic Reevaluation of Drainage and Flood Protection

17. **General.** The economic reevaluation assesses the drainage component as a whole. Benefits and costs are estimated for 18.7 km of completed drainage channels assumed as follows: 8.05 km from 2004 to 2005, 8.05 km from 2005 to 2006, and 2.6 km from 2006 to 2007.⁶

18. **Estimation of Costs.** The economic costs comprised capital expenditures and maintenance costs. Capital costs were estimated for civil works and project management support costs (pro-rata basis). Maintenance-related expenses include routine and periodic costs. These were assumed to start the first year after completion of construction works. Annual routine maintenance costs are assumed at \$642.89 or KN5.29 million per km per year.⁷ Periodic maintenance of the drainage facilities is assumed to be undertaken every 10 years at a cost of \$1.35 million per km.

19. **Estimation of Benefits.** Direct quantified benefits are mainly savings from reduced damage to buildings and property. The value of savings resulting from reduced damage to buildings and property was assumed at \$1,500 per hectare (ha) in 2007 (as at completion) and adjusted by local cost escalation factors (i.e., 9% in 2011, 12% in 2012, 8% in 2013, and 5% from 2014 on). This value was then multiplied by an estimated catchment area to determine the overall savings. Based on the completion of the drainage channels, the cumulative catchment area was assumed to expand from 581 ha in 2005, 1,162 ha in 2006, and 1,350 ha from 2007 on.⁸

⁶ This comprised three international and two local civil work contracts carried out between 2004 and 2007.

⁷ JICA data indicate that Vientiane's expenditures for routine maintenance of drainage averaged around KN342.6 million per year from 2007/2008 to 2009/2010.

⁸ In the absence of VUDAA estimates, the IEM assumed the catchment area at around 1,200 square kilometers (km²). A JICA study indicated that 25.6 km of Vientiane's Hong Xe and Hong Ke drainage channels had a catchment area of 66 km² or 6,611 ha. Of the 25.6 km of drainage, the project was reported to have financed about 6.5 km or around 25%. For the base-case evaluation, the IEM assumed that the project catchment area was around 1,350 ha of the Hong Xe and Hong Ke catchment area as compared to a planned catchment area of 1,050 ha at loan approval.

20. Following reductions in waterlogging, a secondary benefit quantified is from lower health-care costs due to reduced incidences of waterborne diseases (i.e., dengue fever).⁹ Incremental benefits are measured from a comparison of the “with” and “without” project situations. The without-project situation assumes incidences of dengue will increase by 1.5% per year, from 15,834 cases in 2003, to account for population growth.¹⁰ The with-project situation assumes that dengue cases continue to decline from the 9,683 cases in 2006. The evaluation assumes average incremental reductions in dengue of 3,810 cases from 2007 to 2010, 5,995 cases from 2011 to 2020, and 6,810 cases from 2021 to 2030. The number of reductions in dengue cases was then multiplied by an average treatment cost of \$150 per person.¹¹ This was assumed to be constant over the forecast period.

21. **Results of the economic reevaluation.** This economic reevaluation reconfirms that investments in the drainage component are highly efficient. While lower than previous estimates, the recalculated EIRR is highly robust. In particular, net benefits from reduced property damage alone are still above the IED’s cutoff rate of 18% for a highly efficient project. Results of the economic reevaluation and relevant sensitivity tests on select assumptions are in Table A9.9.

Table A9.9: Reestimation of EIRR for the Drainage Component

Item	Appraisal		Completion		Independent Evaluation	
	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)	EIRR (%)	NPV (\$ million)
1. Base case	31.1	13.236	33.78	\$16.992	27.67	9.595
2. Benefits from reduced property damage only					18.81	4.657
3. Benefits from reduced property damage lower by 30%					18.03	3.460
4. Catchment area at 950 ha					18.16	3.535
5. Catchment area at 720 ha					12.09	0.051
6. Catchment area at 1,050 ha					20.63	5.050
7. Without-project dengue incidences constant at 2003 level					24.77	7.297
8. Average medical cost at \$100 per treatment					24.54	7.949
9. Total benefits lower by 20%					19.51	4.517
10. Total operating costs higher by 20%					26.37	8.155
11. Both 6 and 7					17.54	3.077

EIRR = economic internal rate of return, ha = hectare, NPV = net present value.
Source: Independent evaluation mission estimates.

C. Financial Reevaluation of the Solid Waste Component

22. **General.** The financial internal rate of return (FIRR) was recalculated for solid waste management (SWM), which was the only direct revenue-generating project component of the project.

23. **Estimation of costs.** The financial costs included a one-time capital financing from the project and the estimated annual operating cost of VUDAA’s solid waste services unit. Capital expenditures for solid waste equipment provided under the SWM component were \$269,450 in the government project completion report (PCR). Annual operating costs comprised: (i) the cost

⁹ The gains from improved property values remain a significant unquantified economic benefit of this component. The reevaluation has opted not to quantify these. They are mainly valued in financial terms (e.g., difficulty to capture land values based on actual economic productivity) and prices are highly speculative in nature.

¹⁰ The number of dengue cases for the four districts under the project was estimated using the average number of dengue cases found in the six districts of Vientiane: 23,751 cases in 2003, 20,676 in 2004, 17,600 in 2005, and 14,525 cases in 2006.

¹¹ The Lao PDR medical insurance information indicates that insurers will pay around \$300–\$500 for cases with no hospital admission and about \$500–\$1,000 for illnesses that require hospital admission. Further to medical costs, life insurers will also pay a minimum rate of KN25 million in death benefits due to illnesses like dengue.

for providing solid waste services for public areas and institutional clients, and (ii) the cost to operate the new landfill site at KM32.¹² The annual budget of KN80 million for garbage collection in public areas, i.e., along the roads and institutions, is reportedly sufficient to cover its cost of services (e.g., gas, maintenance, and labor). The monthly cost of operating the landfill site was estimated at KN200 million in 2010. Annual operating costs were assumed to increase by projected domestic escalation factors (i.e., 9% in 2011, 12% in 2012, 8% in 2013, and 5% from 2014 on).

24. **Estimation of benefits.** For the base-case scenario, the number of households benefiting from SWM is assumed to increase from 23,000 in 2010 to 63,000 by 2020.¹³ Revenue per household for collection services is assumed at KN24,000 in 2010, KN45,000 by 2020, and KN70,000 by 2030 (i.e., an average of KN49,500 or a 4.6% increase per year from 2010 to 2034).¹⁴ Based on a 12-month operation, private contractors are estimated to collect around KN6,624 million in 2010, KN34,020 million in 2020, and KN52,920 million in 2030 for their collection services.

25. At independent evaluation, VUDAA's financial revenues were estimated at KN1,160 million, comprising KN80 million from the government budget and KN1,080 million from its landfill operations.¹⁵ Budget support from the government is assumed to increase by local escalation factors (para. 23). Total garbage collected from residential customers is assumed to increase from 200 tons in 2010 to 450 tons by 2020, and 700 tons by 2030.¹⁶ All garbage collected by the contractors is assumed to be dumped in the landfill, where VUDAA will collect an appropriate landfill charge. In 2010, VUDAA reported monthly landfill income at KN90 million or only 16.3% of the private contractors' collection. The base-case scenario assumes this ratio to improve to 20% by 2015 and remain constant thereafter.

26. **Results of the financial reevaluation.** The recalculated FIRR of 3.6% is far below the previous estimates of 28.5% at appraisal and 31.6% at project completion.¹⁷ It reflects the fragile revenue-expenditure stream of VUDAA's solid waste services unit. In particular, the landfill facility (which accounts for around 93% of total revenues) is running a deficit based on a monthly income of KN90 million and a monthly operating cost of KN200 million. VUDAA's solid waste services unit is only able to get a small portion of the income (i.e., 16.3% in 2010) from the private contractors who use the landfill. On the positive side, the recalculated FIRR still remains above the estimated weighted average cost of capital of 1.5% for the project, which was financed mostly by concessionary or grant funds.

27. The sensitivity tests reiterate the importance of cost recovery. For example, if VUDAA's share of income from residential customers increases from 20% in 2015 to 25% by 2020 (meaning higher average landfill charges from KN34,918 to KN40,829 from 2011–2034) then the project FIRR will improve to 6.8% (Table A9.10). On the other hand, if its share of income remains constant at the 2010 level during the forecast period then the FIRR becomes negative at –3.44%. The level of revenue collection (i.e., setting solid waste charges) from households is

¹² The landfill site was relocated, as the old site was near an international sports venue.

¹³ This translates to an average of 54,200 households from 2010–2034 (i.e., 43,000 from 2010 to 2020 and 63,000 from 2020 onwards) as compared to the PCR estimate of 68,000 households (PCR, Appendix 7, para. 5).

¹⁴ The private contractors charge KN6,000 for a standard 25-kilogram basket or a fixed rate of KN24,000 per month.

¹⁵ Income from the landfill operations represents VUDAA's share of the private contractors' income from servicing residential areas. VUDAA is able to collect this through a charge of KN15,000 per ton of garbage deposited in the landfill.

¹⁶ Vientiane is able to collect 150–200 of the total 320 tons of garbage.

¹⁷ A meaningful comparison is not possible with the project completion report estimate in the absence of detailed information.

also important.¹⁸ If revenues per household remain constant at 2010 levels then the FIRR is negative. If assumptions on forecast revenue improvements are achieved at only 80% of the base-case forecast then the FIRR is still negative at -4.45%. The sensitivity tests also show the need for an increase in the number of households served to maximize economies of scale from the landfill operations. If the number of households served from 2020 on ends up at 20% lower than the base-case forecast then the FIRR is -4.1%. Proper management of operating costs is also important for VUDAA. Gains from a 20% increase in financial revenues are almost offset by a similar increase in the level of operating costs. Higher costs will require more revenue through an increase in the number of households served or a higher share by VUDAA of solid waste charges collected from residential customers.

28. Overall, the FIRR recalculation does not show robust performance. To stay above the estimated weighted average cost of capital, the base-case targets must largely be met: (i) financial revenues should not fall below 6% of base-case estimates, (ii) the number of households served should be around 92.5% of base-case forecasts, and (iii) revenue per household should be within 93% of base-case forecast from 2020 onwards.

Table A9.10: Reestimation of FIRR for the SWM Component

Item	Appraisal		Completion		Independent Evaluation	
	FIRR	NPV	FIRR	NPV	FIRR	NPV
1. Base case	28.50%	\$0.334 Mn	31.63%	\$0.428 Mn	3.57%	\$0.456 Mn
2. VUDAA's share of residential service collection improves from 20% in 2015 to 25% in 2020					6.81%	\$1.581 Mn
3. VUDAA's share of residential service collection remains constant at 2010 level					-3.44%	-\$0.728 Mn
4. Revenue per household remains constant at 2010 level					Negative	-\$2.880 Mn
5. Revenue per household is assumed at 80% of base-case level					-4.45%	-\$0.825 Mn
6. Revenue per household is assumed at 10% above base-case level					5.88%	\$1.097 Mn
7. Households served from 2020 on are assumed at 80% of base-case level					-4.09%	-\$0.771 Mn
8. Financial revenues lower by 20%					-5.57%	-\$1.034 Mn
9. Financial revenues higher by 20%					8.97%	\$1.947 Mn
10. Financial operating costs 20% higher					-3.12%	-\$0.886 Mn
11. Both 9 and 10					3.85%	\$0.605 Mn

FIRR = financial internal rate of return, Mn = million, NPV = net present value, SWM = solid waste management.

Source: Independent evaluation mission estimates.

¹⁸ The IEM rapid social survey noted that underserved villages outside the city, which experience irregular service, also find the collection fees expensive.

SOCIOECONOMIC ASSESSMENTS

1. **Introduction.** The Vientiane Urban Infrastructure and Services Project supported the continued expansion of the Vientiane urban areas. The population increased from 162,000 in Vientiane and 325,300 in Greater Vientiane at project approval (2001) to 334,966 in Vientiane and 721,302 in Greater Vientiane by 2009. This section summarizes assessments on the anticipated and unanticipated (positive and negative) impacts of the project on local communities in its influence areas. The assessments are drawn from a field survey carried out by the social sector expert during April and May 2010.¹ The discussion below is divided into four parts: (i) villager perception of the positive impacts of the project, (ii) villager perception of the adverse impacts of the project, (iii) villager ranking of priority household problems, and (iv) suggestions on how to further improve the environment of Vientiane.

2. **Methodology.** The independent evaluation mission (IEM) carried out a rapid benefits survey in 15 villages of four districts in Vientiane.² Of the 15 surveyed villages, two did not directly benefit from the project (i.e., component B in particular) while a third was the resettlement village of Nongchan. Fieldwork involved 39 group discussions with 156 women, 71 young men, and 129 children, of whom 81 were girls.³ In addition, random interviews were also carried out on a sample of 41 small roadside business owners. The study area covered villages in the Sikhottabong, Chanthabouly, Saysetha, and Sisathanak districts. The survey assessed community perceptions of how the project improved or adversely affected their quality of life. The analysis uses the results of a participatory poverty assessment (PPA), carried out by the project in 2000, as a benchmark for comparing changes with the present situation of the respondents.

3. **Summary of survey findings.** Several adverse impacts associated with construction works were mostly mitigated prior to or during construction. These included (i) resettlement of Nong Chanh villagers, (ii) disturbances (noise and dust) from construction, (iii) access constraints to houses, (iv) reduced income for shops along affected roads, (v) loss of land and land title, and (vi) disruption of the water supply. After project completion, residents in the study villages mentioned that they were generally pleased with the project outcomes, including the drainage and city road components. However, several villages were not satisfied with the design of their own village area improvement roads. Overall, the project appears to have significantly improved the environment and the economy in these communities and addressed their social problems to some extent.

¹ Pholsena, Minavanh. 2010. *Vientiane Urban Infrastructure and Services Project: Social and Environmental Impacts Assessment*. Vientiane: Lao Consulting Group. (The consultant report is structured to develop a picture of the impacts of the project on poverty reduction from the general to the specific. Chapter 2 provides an overview of the study area, a description of poverty, and the characteristics of livelihoods. Chapter 3 describes positive and adverse impacts of the Project. Chapter 4 ranks the problems provided by the fieldwork. Chapter 5 describes issues and suggestions from community members for improvement of Vientiane).

² The criteria for selecting villages include those with the most active and less active committees for community sensitization (motivation of contributions to the construction and operation and maintenance [O&M] of the infrastructure) and villages that were the most affected by the resettlement of poor households previously included in the participatory poverty assessment of the project.

³ Women, youth, and children of the low- and average-income groups were selected to participate in the group discussions because these were the groups most affected by the poor infrastructure prior to the project and because the survey wanted to check whether these groups were among the primary beneficiaries of the project.

A. Positive Impacts from the Project

4. **Environmental Benefits.** The PPA indicated that the inadequate environmental conditions in settlements occupied by the poor had severely affected the well-being of these households and had subsidiary effects on other aspects of their lives. The benefit survey of the poor communities in low-lying areas found that their primary need for improved access and drainage was fulfilled by the project (Table A10.1).

Table A10.1: Status of Environmental Issues Identified Before and After the Project

Issue	Participatory Poverty Assessment (PPA) (2000)	Independent Evaluation Mission (IEM) (2010)
Reduced incidence of flooding in low-lying areas	During the PPA, constant flooding in low-lying areas was identified as the most critical infrastructure problem. Apart from the damage from constant flooding, problems included waterborne diseases, and skin and foot diseases. Flooding also limited the nature and scope of subsistence activities such as growing vegetables or raising animals. Flooding restricted service provision and limited access. Service providers could not access the communities. Before the project, women had to carry goods to the main roads to get a tuk-tuk to travel to the markets.	After completion of the project, there is no more flooding in the low-lying areas of the surveyed villages. During the monsoon, poor households no longer suffer from flooding inside their houses or from waterborne diseases.
Convenient access	The PPA pointed out that access paths in the study villages were either flooded under a meter of water, or at best (on higher ground or in the dry season) were muddy, slippery, or uneven. While there were exceptional cases where residents walked through a flooded mix of wastewater, sewage, and solid waste to get to their houses, most accessed their dwellings along narrow and sometimes broken timber planks balancing above the flooded and dirty waters. Elderly and disabled people found this difficult or impossible and were housebound as a result.	Access to the community is much improved and it is more convenient to travel to the market. Tuk-tuks can now access the community for provision of services and women no longer have to carry goods to the main road. The project widened road access in the studied villages with side drains and residents contributed their land for road access without compensation. They are very satisfied with the project as it has eased access to their communities and houses.
No more dumping of solid waste in the city	The PPA drew attention to unhygienic conditions linked to the dumping of solid waste, including flies, rotting waste, and putrid smells. In poor communities with constant flooding, household waste was mixed with fecally contaminated flood waters.	Most households now have access to regular solid waste collection service, with which they are generally satisfied. There is virtually no litter and more garbage cans have been placed along streets in the city center. Street sweepers are hired to clean the main roads.
Improved basic sanitation	The PPA observed that household sanitary facilities were basic, lacked secure enclosures, and were surrounded by some form of temporary screens. Other "toilets" in elevated rooms consisted of a simple hole in the floor, without any tank below, depositing the human waste directly into the flooded water. Most households shared toilets.	Many households now have a private toilet and bathing facility. The structures are more stable with concrete walls and septic tank. Most poor households also have some form of running water. Community members share water supply connections. A significant proportion have metered water connections from Nam Papa (i.e., water supply authority) but these may be of some distance from their dwelling or located close to the road. Water is piped through semi-permanent ¾–1" pipes above ground connecting to a private tap located beside or under the dwelling. Other households also obtain water from these "connected" neighbors by paying a fee of between KN10,000 and KN20,000 per month (\$1.5–\$2.5). Households with a Nam Papa metered connection may supply between 4 and 10 households. While most pay for their own water, others perhaps profit by acting as a neighborhood water-seller. While these changes are not a direct result of the project, urban development in the area created an environment that generated economic benefits to improve villagers' standard of living.

Source: Independent evaluation mission rapid benefits survey.

5. **Economic Benefits.** Evidence of economic benefits can be observed at both the city and village levels (Table A10.2). These comprise (i) growth in the number of medium- and small-scale businesses along the roads, (ii) the emergence of more permanent houses and improved land values, (iii) increased vehicle ownership, (iv) changes in livelihood and increased household income, and (v) improved living standards for poor households.

Table A10.2: Status of Economic Issues Identified Before and After the Project

Participatory Poverty Assessment (2000)	Independent Evaluation Mission (2010)
Lack of food and cash, no stable jobs, unstable income	Low income, no stable jobs for the men, the women can generate income from small-scale trade such as selling accessories, vegetables, or cooked food, unstable income
Nowhere to borrow money at reasonable interest rates	Access to loans from informal lenders with higher interest rates than the banks, high debt
Small huts	More permanent houses
No furniture	Some furniture (fan, television, refrigerator)
Increasing costs, but not wages	Increasing costs, but not wages
Unaffordable schooling	Affordable public schooling
Crowded housing	Crowded housing
Houses in bad repair	Houses in bad repair
Buying or sharing electricity with neighbors	Buying or sharing electricity with neighbors, disruption of power supply
Sharing water supply	Sharing water supply

Source: Independent evaluation mission rapid benefits survey.

6. **Medium- and small-scale business development.** Secondary data were collected from different offices to get indicators on the economic development between 2005 and 2009 in six districts that have benefited from the project.⁴ Table A10.3 indicates that between 2005 and 2009 there was an increase in the number of manufacturing businesses, followed by trade. Rental businesses, particularly house rentals and service industries (including restaurants and guest houses), have also increased.

Table A10.3: Number of Businesses in Six Districts of Vientiane Capital, by Category

Year	Production	Trade	Services	Rent
2005	171	1,205	800	676
2007	325	1,310	962	1,019
2009	203	1,728	1,149	1,410

Source: District finance offices.

7. Improvements of the urban infrastructure, particularly roads, have stimulated small-scale businesses at the village level. Secondary data collected by the IEM national consultant indicate that there was a significant increase in the number of shops in 189 villages between 2005 and 2006, when most citywide and village area improvement road construction was completed. Since 2006 there has been a slight increase in the number of small-scale businesses (Table A10.4). The steady increase between 2005 and 2006 could indicate that road improvement spurred the development of home-based livelihood activities such as selling cooked food, grocery shops, beauty shops, repair shops, gift shops, and others that could be operated by medium- and low-income households, particularly by women.

⁴ Data on the large businesses controlled by Vientiane and the central government were not collected during the benefit survey.

TableA10.4: Small-Scale Businesses in 189 Target Villages

Year	Number of Businesses
2005	1,994
2006	4,358
2007	4,455
2008	4,786
2009	4,914

Source: District finance offices.

8. **Emergence of more permanent houses and improved land values.** Enhanced road access has (i) created opportunities for land development, resulting in increased land prices; and (ii) resulted in the opening of new residential communities with more and larger housing structures. Values of private land in the six districts of Vientiane that benefited from the project increased more than twofold from prices 10 years ago (i.e., \$16 per square meter [m²] during the PPA to \$50 per m² in 2010). Private land prices in the city center now range from \$100 to \$800 per m².

9. **Changes in livelihood.** Livelihoods of poor households in villages that benefited from component B of the project are diverse. The men are day laborers at construction sites, collectors of recyclables, tuk-tuk drivers, market carry boys, and assistants at vehicle repair shops, while the women are cleaners or sell vegetables, cooked food, candy, drinks, or accessories. It is now more difficult for young men to find work as unskilled laborers, because most unskilled labor is now being replaced with machines. Unskilled laborers have therefore turned to collecting recyclables for resale to dealers.

10. The women have become more proactive in generating income by opening small shops in front of their houses or by participating in trade fairs at different factories around Vientiane. Before the project, poor women in Thongkhan Kham Tai generated income from recycling plastic bags. In the morning, they walked to Nongchanh to collect plastic bags, during the day they washed them in the swamp, dried them under the sun, and then sold them to vegetable vendors at Thongkhan Kham Market. These women have now become informal traders of accessories at different trade fairs.

11. Each resettled household from Nongchanh and one household from Akad received land tenures, which they did not have in their previous village. They also received disturbance allowances. In the new village they no longer live above water with floating garbage, they have built larger and more permanent houses, and they have their own temple, school, dispensary, and village road. They still travel to the city or Nongchanh Market to earn income. Most women are vegetable vendors, while the men are market carry boys. The main problem they face in the new settlement is unemployment. The new village is located in the suburban area requiring cost of travel to the city for work or medical treatment.

12. **Changes in household income.** During the PPA, low-income residents stressed the hardships created by unemployment, underemployment, and chronically low incomes. Interviews with youth groups revealed that unskilled laborers have gained more income from recyclables than by working at construction sites. Individual interviews with roadside shop owners indicated that after road improvements their income has increased by 30% to 50%.

13. **Changes in living standards.** The period from 2000 to 2009 showed an increase in the number of service-oriented institutions in the survey villages (Table A10.5). These include shops, schools, hotels or guest houses, and restaurants. While this trend is strongly influenced

by general economic development within Vientiane, these may indicate a broad shift in the sophistication of urban living with a reasonable level of urban infrastructure and services.

Table A10.5: Changes in Schools, Shops, Hotels, and Restaurants in Survey Villages, 2000 and 2009 (number)

No.	Village Name	Shops		Schools		Hotels/Guest Houses		Restaurants	
		2000	2009	2000	2009	2000	2009	2000	2009
1	Chansavang	0	35	0	2	0	0	0	0
2	Sikhaithong	n/a	n/a	1	1	0	0	0	0
3	Akad	25	32	2	2	0	1/0	2	3
4	Sithan Neua	27	36	1	0	8/1	8/1	2	2
5	Sihom	120	120	1	6	1/0	1/0	2	3
6	Thongkhan Kham Tai	68	85	1	1	1	1/0	0	0
7	Sisavath	25	198	2	11	0	5/2	0	2
8	Donpalane Thong	n/a	n/a	0	0	0	0	0	0
9	Ban Fai	28	32	1	0	0	0	0	0
10	Dongsavath	0	15	0	0	0	2	0	0
11	Hongka	46	98	2	2	0	2/0	0	2
12	Thatluang Tay	120	253	4	4	0	0/1	0	0
13	Nongniang	20	56	0	2	0	1/0	0	1
	Total	479	960	15	31	8/2	16/6	6	13

Source: Independent evaluation mission national consultant.

14. The PPA indicated that typical assets of poor residents were items essential for their daily survival such as water, electricity connections to the mains or through neighbors, electric cookers, rice cookers, cassette recorders, second-hand televisions, bicycles, second-hand refrigerators, lights, and fans. Their current assets now include high-priced consumer items such as motorcycles or tuk-tuks (Table A10.6). They are also able to live in more permanent houses with private toilets. Motorbikes and tuk-tuks have become the main means of transport.⁵

Table A10.6: Number of Registered Vehicles in Vientiane, 2000, 2007, and 2009

Vehicle Type	2000	2007	2009
Motorcycle	1,763	203,052	278,694
Tuk-tuk	186	3,540	3,588
Car/pickup/jeep	3,424	67,986	91,498
Van	95	7,242	14,579
Truck/passenger truck	424	10,704	15,126

Source: Department of Public Works and Transport, Vientiane.

15. **Social benefits.** Social benefits highlighted during group discussions include improved skills of village authorities in participatory and demand-driven approach, improved sense of ownership of the residents in maintenance of the infrastructure, regular school attendance, improved health particularly with regard to waterborne diseases, land titles for residents from Nongchanh who moved to the new village, and better control of social disorder in the communities (Table A10.7).

⁵ Between 2005 and 2007, the number of vehicles, particularly motorbikes, in Vientiane increased significantly. The increased number of motorbikes and tuk-tuks has improved the convenience of travel for the poor, who are the primary users of these types of vehicles. The poorer parts of the communities have generated more income and can now afford motorbikes.

Table A10.7: Status of Social Issues Identified by the Poor Before and After the Project

Participatory Poverty Assessment (2000)	Independent Evaluation Mission (2010)
Village authorities lack experience in working with participatory approach	Village authorities gained experience in working with the participatory approach and in mobilizing local contributions from the community
Lack of ownership of community members in the rehabilitation of the village road	More participation by community in infrastructure development
Wild dumping of solid waste	Behavioral changes in household solid waste management
Lack of schooling	Improved school attendance
Poor health	Improved health
Landlessness of the poor and threat of eviction	Landlessness of the poor partly resolved by resettlement from Nongchanh to the new village
Village authorities find it difficult to provide administrative and security services to residents	Better road access makes it more convenient for village authorities to provide services and control social disorder in their communities

Source: Independent evaluation mission rapid benefits survey.

16. **Village participation.** Before the project, the development of village roads in urban areas was considered the responsibility of the provincial government, which decided on fund allocations and design. The village authorities and residents were not involved in any process of road rehabilitation and maintenance. Since the completion of the project, the villagers have demonstrated ownership in protecting and maintaining their roads. Every Saturday, most community members, particularly the youth, carry out routine maintenance of the village roads, including cleaning drains, cutting the grass, sweeping dust, and collecting trash along both village and city roads. Most villages that participated in the implementation of component B of the project continue to develop proposals for road maintenance in their respective villages and submit them to the Vientiane Urban Development Administration Authority (VUDAA) through the district authorities.

17. **Behavioral changes in household solid waste management.** Before the project, very few households sorted their garbage. A significant number of households threw their organic, paper, plastic, glass, and other household waste beside or under their dwellings or in the swamp, or dumped it on vacant land or in collection areas (from which it is not always collected). Others burn their garbage. A pilot project in management of household solid waste was initiated in primary schools by the youth groups who participated in the PPA of the project. This project used school children to educate their peers about recycling solid waste. This approach also reached parents and other household members, resulting in a change in attitude toward sorting garbage for compost and for sale.

18. **Improved school attendance of the poor children.** During the PPA, a group discussion drew attention to the problem of poor school attendance by children who had to help their parents with the household economy. In the past, the children in Thongkhan Kham Tai, Thongkhan Kham Neua, and Nongchan accompanied their mothers to collect plastic bags and bottles at different markets and helped their parents clean these for resale. This child and women labor has changed. Most collectors of recyclables are now adult males using carts attached to a motorbike or bicycle. Compared with school year (SY) 2000–2001, the number of schools increased remarkably during SY2007–2008 (Table A10.8). There has been a near doubling of kindergartens, while the number of primary and secondary schools has increased by 11% and 18%, respectively.

Table A10.8: Schools in Six Districts of Vientiane (number)

School Year	Kindergarten	Primary School	Lower Secondary	Higher Secondary	Complete Secondary
2000–2001	91	328	46	10	22
2007–2008	172	366	59	9	39
2009–2010	181	365	54	9	44

Source: Education Department, Vientiane.

19. The resettlement of poor households from Nongchan to Chansavang village also provided the opportunity for their children to attend school in the new village because there was no school in Nongchan.

20. **Improved health.** The poor who used to live in areas of the city prone to flooding no longer do, and they have their own toilets with septic tanks. They are thus less concerned about the hygienic situation in their communities. Those who have been resettled to the new village no longer face problems with air pollution and water contamination. Data from Vientiane's Health Department show that the incidences of waterborne diseases and dengue fever in six districts of Vientiane fell from 23,751 in 2003 to 14,525 in 2006.

21. The problem of landlessness is a critical issue for the poor in Vientiane. Most low-income people do not have any form of land rights. They have occupied either state-owned or privately owned land allocated to individuals or companies. They thus suffer from ongoing insecurity. This project has provided the poor in Nongchan village with land rights in the new resettlement village. All resettled households from the slum area of Nongchan have been provided with land titles that once they did not have in their own village. They now feel more secure from eviction.

22. **Better control of peace and order.** With more street lights and better access roads, the police and village security guards can provide better security services to control peace and order in the communities. Shop owners and food vendors, particularly women, feel safe to keep their shops open later at night. The young students feel safer to drive home along the main streets, where there are street lights and police at critical spots. Village security guards can easily walk around the village to check to prevent burglaries, fighting, and drug abuse (Table A10.9).

B. Adverse Impacts of the Project

23. The focus group interviews touched on the adverse impacts of the project during the construction works (Table A10.9). These were temporary and were mostly mitigated prior to and during the construction. These impacts included (i) the resettlement of poor households in Nongchan, (ii) the loss of some portions of land, (iii) disruption of access to residential houses and commercial buildings, (iv) the disruption of water supply, and (v) air and noise pollution.

Table A10.9: Summary of Adverse Impacts of Vientiane Urban Infrastructure and Services Project

During the Project	After the Project
Resettlement of residents in Nongchanh village Disturbances (noise and dust) during the construction Access constraints to houses Less income for shops along the road where construction was carried out	Fewer opportunities for generating income, increased travel costs to town for residents in the new village More cars and more traffic problems during peak hours More accidents due to higher vehicle speeds Litter visible along the streets. Trash still being dumped on the river bank or burned by some households
Loss of land and land title Disturbance in water supply	Some households drain sewage to the side drain Bad odors from the side drain disturbing houses adjacent to the road Still waterlogging after heavy rain Unregulated building of stalls, schools, and residential houses Inadequate water supply Frequent power outages Deteriorated water quality in the swamps Lack of parking space Peace and order (drug abuse, gambling, burglary, fighting among the youth) Landlessness

Source: Independent evaluation mission rapid benefits survey.

24. Following completion of the project, the social survey found, among other things, that villagers continue to experience disruptions in water and power service during the dry season. As a result of improved infrastructure, more houses were built, but there was no corresponding increase in service provision of power and water. Social disturbances and landlessness continue to be a problem, although these are not attributable to the project. The interviewees raised these issues to draw the government's attention to them so that it might take action to mitigate the problems. Social disorders include drug abuse (selling and consuming), fighting among youth groups, gambling, and burglary.

25. Landlessness remains a critical issue for the poor in Vientiane. The poor live under the threat of eviction and thus do not invest in housing maintenance and upgrades. Many do not want to invest in the capital costs of connecting electricity and water services, preferring to pay the additional running cost of obtaining inferior service from neighbors (Table A10.9).

C. Problem Rankings of Village Households

26. Table A10.10 shows a comparison of problem rankings before and after the project. The priority concerns have shifted from flooding, inadequate drainage, and poor access roads to the need for improved solid waste services, water supply, and traffic conditions. At the same time, economic conditions and social problems continue to rank fourth and fifth among household concerns.

Table A10.10: Comparison of Problems Ranking Before and After the Project

Problem Ranking Before the Project (2000)	Problem Ranking After the Project (2010)
1. Flooding and inadequate drainage	1. Solid waste (83%)
2. Poor access roads	2. Water supply (67%)
3. Uncollected garbage	3. Traffic (50%)
4. Low household income	4. Unemployment, low income (50%)
5. Drug addiction	5. Social problems (drug abuses, street children, gambling) (50%)
6. Lack of land tenure	6. Electricity (33%)
7. Sewage	7. Lack of tenure (33%)
8. Education	8. Accidents (33%)
9. Sharing water supply	9. Village roads (33%)
10. Social problems in community	10. Waterlogging (17%)
11. Vulnerable groups	11. Sewage (17%)
12. Inadequate housing	12. Unregulated house construction (17%)
13. Sharing electricity	13. High debt (17%)
14. Too many children	14. Hospitals (17%)

Source: Independent evaluation mission rapid benefits survey.

27. Most group discussions focus on physical problems. The central concerns in both project or non-project villages relate to solid waste, an inadequate water supply, traffic problems, disruptions in power supply during the dry season, village roads, waterlogging after heavy rains, and sewage problems. While there is a marked concentration on environmental problems, other problems associated with livelihood (lack of cash, unemployment, and debt), social assets (problems within the community), human assets (health), and general support systems were highlighted. These include such quality-of-life improvements as (i) developing recreational parks and installing more street lights; (ii) improving the quality of public schools and hospital service; and (iii) strengthening social capital (groups/networks, trust and solidarity, collective actions and cooperation, information and communication).

28. Respondents view road accidents and traffic as important future concerns. Table A10.11 shows that the number of road accidents peaked around 2007 and is now slightly lower than 2005 levels, following a public awareness campaign.

Table A10.11: Incidences of Road Accidents, 2005, 2007, and 2009

District	2005	2007	2009
Saysetha	384	568	321
Sikhottabong	333	496	292
Xaythani	295	309	283
Sisathanak	228	340	282
Chanthabouly	364	343	261

Source: Police traffic offices, Vientiane.

29. The IEM attempted to identify and rank the priority concerns of a cross section of vulnerable household members, specifically youth, women, and children through focus-group discussions. The problem-ranking exercise was carried out in both project and non-project villages for comparison.

30. Where there was an improvement in urban infrastructure and services provision, youth respondents shifted their concern to the need for improved economic conditions and land rights (Table A10.12). In comparison, youth respondents from a non-project village continued to prioritize service requirements over socioeconomic problems.

Table A10.12: Comparative Ranking of Main Concerns from Youth Respondents

Project Village	Non-Project Village
Unemployment/low household income	Uncollected garbage
Lack of land tenure	Village roads
Traffic problems	Hospitals
Inadequate sewage and sanitation	Traffic problems
Electricity and water supply	Electricity and water supply
Social problems (drug addiction, street children)	Social problems (drug addiction, street children)

Source: Independent evaluation mission rapid benefits survey.

31. Women respondents in both project and non-project villages drew attention to the lack of cash and food to sustain an acceptable quality of living (Table A10.13). For the women in these villages, problems associated with the physical environment do not rank among their immediate concerns.

Table A10.13: Comparative Ranking of Main Concerns from Women Respondents

Project Village	Non-Project Village
Low household income	Low household income, no employment
Lack of secure land tenure	Uncollected garbage
High debt	Low education
Traffic problems	Dust from unpaved village roads
Social problems (drug addiction, gambling)	Water supply
Waterlogging about 2–3 hours after heavy rains	
Litter at garbage collection sites	
Unregulated house construction	
Water supply	
Sewage	

Source: Independent evaluation mission rapid benefits survey.

32. As might be expected, children in both categories of villages focused not on economic problems but improvements the new roads have made to their mobility and enjoyment (Table A10.14). Their main concerns include (i) people driving at high speeds, (ii) road accidents, (iii) litter along the roads, and (iv) the lack of public parks.

Table A10.14: Comparative Ranking of Main Concerns of Children Respondents

Project Village	Non-Project Village
Accidents	Accidents
Litter along the roads	Litter along the roads
People driving at high speeds	People driving at high speeds
Lack of public parks for children's activities	

Source: Independent evaluation mission rapid benefits survey.