Report Number : ICRR0021143

1. Project Data

Project ID	Project Name
P083581	VN-HANOI URBAN TRANSPORT
Country	**Practice Area(Lead)**
Vietnam	Transport & Digital Development

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IDA-43470,IDA_-43470	31-Dec-2013	304,690,000.00
Bank Approval Date	**Closing Date (Actual)**	
03-Jul-2007	31-Dec-2016	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	155,210,000.00	0.00
Revised Commitment	115,901,593.10	0.00
Actual	107,388,341.49	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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Project ID	Project Name
P085393	VN-GEF-Hanoi Urban Transpt Dev (P085393)

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
TF-58293,TF_1-58293	31-Dec-2013	9,800,000.00

Bank Approval Date	Closing Date (Actual)
11-Sep-2007	31-Dec-2016

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	0.00	9,800,000.00
Revised Commitment	0.00	6,422,454.78
Actual	0.00	6,422,454.78

2. Project Objectives and Components

a. Objectives

The objectives of the project as stated in the Legal Agreement (page 5) were to: (a) increase urban mobility in targeted areas of the City of Hanoi through increased use of public transport in selected traffic corridors and reduce travel time between the center and the west and northwest sections of Hanoi; (b) promote more environmentally sustainable transport modes and urban development plans for Hanoi. *This PDO statement is used in this review.*

In the Project Appraisal Document (PAD) (page 4), the objectives were broken into two parts: to increase urban mobility in targeted areas in Hanoi by (a) increasing the use of public transport in two existing corridors and one new corridor, and (b) reducing travel times by all modes between the city center and the west and northwest sections of the city (west of West Lake).

The Global Environmental Facility (GEF) strategic objectives were to promote a shift to more environmentally sustainable transport modes and urban development plans, and to promote the replication of these approaches in the country and region. The specific GEF Objective for the project was to lower Hanoi's transport-related greenhouse gas (GHG) emissions relative to a business-as-usual scenario.

The project, according to the Theory of Change, was expected to lead to increased use of public transport in the selected corridors, reduced travel times, lower emissions and promote environmentally sustainable urban development plans. Long-term, the expectations were an improved business environment, better social inclusion, strengthened environmental management, and improved governance.

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval
06-Nov-2013

c. Will a split evaluation be undertaken?
No

d. Components
1) Development of the Bus Rapid Transit (BRT) System: Estimated cost at appraisal US$99.88 million; actual costs at closure US$32.78 million.
This included provision of busways, stations, terminals, depots, vehicles and a ticketing system; pedestrian and non-motorized transport access at BRT stations; BRT-related consultation, communications and media strategy.

2) Road Infrastructure and Sustainable Urban Planning: Estimated cost at appraisal US$194.33 million; actual costs US$258.14 million.
Second Ring Road (RR2) construction between Cau Giay and Nhat Tan; resettlement (at site CT1); integrated sustainable urban land development and transport planning.

3) Institutional Development: Estimated cost at appraisal US$10.49 million; actual costs US$4.3 million.
This component comprised an Air quality Management Program; traffic safety interventions; a Public Transport Authority; national and regional replication; and project management.

Total appraisal costs US$304.69 million (World Bank US$ 165.01 million); total disbursed costs US$295.22 million (World Bank US$113.81 million). The breakdown by financing source per component was not given in the ICR.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates
Project Cost:
The original estimated project cost was US$304.69 million. This was revisited at restructuring with a new estimate of US$451.62 million. However, the BRT component of the project was reduced in scope and at closing the amount disbursed was US$295.22 million.

Financing:
The original IDA Credit was US$155.21 million, revised down at restructuring to US$122.32 million of which US$113.81 million was disbursed. In addition there was a GEF grant of US$ 9.80 million of which US$6.42 million was disbursed. All disbursed balances were returned.

Borrower Contribution:
The originally estimated amount was US$139.68 million, revised to US$329.30 million at restructuring. The final amount at closure was US$181.40 million.

Restructuring:
The PDOs remained unchanged throughout the project implementation. However, the outcome targets for

the BRT component were revised during the first (level one) restructuring of the project in November 2013 and some new indicators added to measure user satisfaction. This was due to changes in Hanoi's public transport strategy, as a metro line and a light rail line (LRT) were added in the project BRT corridors, so the original project BRT alignment had to be changed and the scope and impact of the BRT system was reduced. Concerned that limited road space in the city center would affect BRT operability in mixed traffic from Kim Ma to Hai Ba Trung and the surrounding streets of Hoan Kiem Lake, the city requested that the BRT Line 1 end at Kim Ma terminal (thus 3.8 km of BRT routes were cancelled). The BRT Line 2 along with a terminal and an interchange were cancelled because of overlap with Metro Line 1. This alignment and scope change of the BRT system impacted the baselines and targets of relevant indicators set out in the PAD, thus necessitating a revision of the results framework. The first restructuring in 2013 also made a reallocation of credit and grant proceeds to reflect the changes in project design and to the covenant to allow the public bus company TRANSERCO to operate BRT for an initial period of five years. The Institutional Development component was also revised to reflect two activities that were cancelled: (a) air quality monitoring equipment and (b) technical assistance for traffic and demand management, which was now to be financed and implemented directly by the city authorities.

Two further changes were made to the BRT component, but not through formal restructurings. One was additional civil works to strengthen a flyover at Lang Ha-Thai Ha intersection to allow for use by BRT vehicles. The other was the cancellation of an equipment contract for a BRT electronic ticketing and communications system due to a bid evaluation delay, as well as the debarment of the recommended bidder, and the city's decision to implement a citywide integrated smart card system at a later stage.

In addition, two further minor (Level two) restructurings occurred. The first, in June 2015, amended the loan closing date and the implementation schedule. The second, in December 2016 was for a reallocation between disbursement categories and included the cancellation of the BRT electronic ticketing system contract. This allowed the reutilization of the cancelled IDA resources to be recommitted to other Vietnam projects before the end of the IDA17 cycle.

Dates:
The project closing date was extended twice, by 36 months in total. The first restructuring in November 2013 extended the credit closing date from the original December 31, 2013, to June 30, 2015. The second restructuring in June 2015 extended the closing date for 18 more months to December 31, 2016. Implementation schedule and disbursement estimates were changed accordingly.

3. Relevance of Objectives

Rationale

Vietnam reached middle-income status in 2009 and graduated from IDA. Since that time its demographic and economic evolution has increased demands on service delivery including greater urban mobility and environmentally sustainable transport. Between 2005 and 2016, the population of Hanoi grew from 5.9 million to 7.3 million. The income growth was even more drastic as nominal income more than doubled in

just six years (2010 to 2016). Motorization in Hanoi also accelerated dramatically, with the number of motor vehicles (including motorcycles) reaching 5.7 million by 2016 compared to two million in 2005. (Note that the number of cars in the city grew from just 56,000 in 2005 to over 328,000 in 2016, but motorcycles continued to dominate the streets in huge numbers, while bus ridership declined, accounting for less than 10 percent of all trips). The target areas of the project were located either in current or in anticipation of large-scale developments with high mobility demand.

The PDOs supported all four objectives of the Vietnam 2007–2011 Country Partnership Strategy (CPS) (Report No. 65200-VN) at project preparation, but especially those aimed at improving the business environment and social inclusion. In the subsequent 2012–2016 CPS, the PDOs remained relevant as they supported its three pillars: competitiveness, sustainability, and opportunity. The PDOs were also aligned with the Government of Vietnam's (GOV's) socioeconomic development strategies and plans. Looking forward, the project PDOs would provide support for two of the three focal areas of the new Country Partnership Framework for Vietnam 2018–2022, (Report No. 111771-VN): (a) To enable inclusive growth and private sector participation by improving planning, management, and delivery of infrastructure in cities, while enhancing the complementary roles of the public and private sectors in infrastructure, and (b) To ensure environmental sustainability and resilience by promoting more environmentally sustainable transport modes that would lower the GHG emissions in the transport sector.

However, Hanoi leadership, though voicing commitment to the project, lacked confidence in the BRT approach and were risk averse. Coordination structures for such a complex and ambitious project were lacking and national government strategy changed during preparation giving top priority to conventional urban rail and metro services. While the project tried to adapt to changing circumstances , a smaller more focused high-impact project would likely have been more relevant. For this reason relevance is considered by IEG to be substantial rather than high.

Rating
Substantial

4. Achievement of Objectives (Efficacy)

Objective 1
Objective
Increase urban mobility in targeted areas of the City of Hanoi through increased use of public transport in selected traffic corridors

Rationale
The Theory of Change for this project commenced with activities that included development of the BRT system; provision of road infrastructure, sustainable urban planning; and institutional development. These activities were intended to lead to increased use of public transport in selected corridors, reduced travel times, less GHG emissions, and more environmentally sustainable urban development plans. Long-term

goals included an improved business environment, strengthened social inclusion and environmental management, as well as improved governance.

Four separate specific objectives were identified and the first PDO concerned improved urban mobility due to the impact of the introduction of BRT to Hanoi. In the original project design, this outcome was measured by number of daily bus/BRT boardings and travel time by bus in the corridor. The first restructuring in 2013 added indicators for user satisfaction of the BRT system.

Output:
The primary output was a BRT route, that included a 14.7 km long BRT busway (one bus lane per direction), 21 BRT stations, 2 BRT terminals, one depot at Yen Nghia, 10 pedestrian overpasses (bridges), 35 BRT vehicles, and various BRT traffic signals. The BRT line began operation on January 1, 2017.

Outcomes:
Ridership
There were major changes in Hanoi's public transport strategy during implementation. There was a significant reduction of ridership target (60 percent) because one line was cancelled and the other line shifted in part to a route with less demand. In addition, the original integrated BRT concept was thwarted as only one line instead of two was to be implemented, thus significantly limiting the ability of the BRT to attract passengers.

The total number of daily bus/BRT ridership on the corridor would have been a good indicator if it had been monitored after a reasonable period of BRT operation with a stabilized service plan for all routes. The Hanoi Urban Transport Management and Operation Center (TRAMOC) reported after 10 months of operation that BRT ridership had been quite stable at 13,000 to 14,000 trips per day, but this is well below the forecast of 36,500 trips per day at the first restructuring. The ridership on the corridor did not meet expectations, and it was also not a good indicator to use as TRAMOC and the Department of Transport (DOT) are still in the process of adjusting the service plans and route organization of other buses on the corridor.

The lower-than-expected ridership at closure was due to several factors, but the most important was the lack of integration with regular bus services. TRAMOC had taken all regular bus routes off the BRT corridor and reorganized five bus routes to connect to BRT, but more effort was needed to achieve service integration and attract riders, including wider scale route rationalization and service planning, relocating some bus stations closer to BRT stations, and solving transfer and ticketing issues.

The access to BRT stations needed improvement. DOT and TRAMOC are now actively looking into these issues and have started to take actions. It is expected that these issues will gradually be addressed over time, and the system is likely to attract more passengers. Higher ridership is expected when more BRT routes are introduced and regular bus services and stations become better integrated. Correspondence with the task team leader indicates that progress since the project closed is being made on this aspect with the launch of several new feeder routes, better integrated with the BRT system. Ridership will also experience significant growth in the near future when the high-density development with high-rise apartments along the corridor from Ring Road 3 to Yen Nghia is completed.

User satisfaction
User satisfaction and user experiences on the BRT systems were measured through BRT passenger surveys. In September 2017, the 9th month World Bank BRT survey showed that 97 percent of passengers were satisfied with the BRT services. A survey conducted by TRAMOC in March 2017 (3rd month TRAMOC survey) showed similar results with 97 percent of passengers responding that the BRT services were good. These results easily exceeded the target value for PDO 5 of 55 percent satisfaction for all users. PDO indicator 6 targeted a 60 percent satisfaction for female users and 95 percent was achieved. Women relied more on public transport than men and the surveys showed a slightly higher level of satisfaction for females. According to the surveys, riders were mostly satisfied with the punctuality, high speed, comfort, ease of getting on and off, and the fare level, but there were issues with accessibility and integration with other bus routes.

Travel time
The average operating speed of the BRT buses is 20 km per hour, 20 percent faster than regular buses. Accordingly, the travel time by bus recorded on the two sections was 27 minutes and 25 minutes, respectively, compared with the target values of 35 minutes and 30 minutes. BRT riders saved 14 percent of their travel time (including walking time to the station and waiting time at the station) per trip. For those who shifted from regular buses to BRT, their travel time savings were much higher: 37–87 percent, as the higher frequency and reliability of BRT buses further saved waiting time for passengers. The saved travel time is evidence of improved mobility. However, the number of riders remained well below expectations. The ICR (page 30) correctly links ridership on the most cost effective mode, BRT, to mobility. However, travelers also consider comfort and safety in their choice of mode.

Rating
Substantial

Objective 2
Objective
Increase urban mobility in targeted areas of the City of Hanoi through reduced travel time between the center and the west and northwest sections of Hanoi

Rationale
This objective captures the impact on mobility of the Second Ring Road (RR2) component. The component involved the construction of a key northwest section of the RR2, including 6.1 km roadway, major interchanges, overpasses, lighting, greening, and a traffic signal system. The RR2 has been open to traffic since January 18, 2016. It connects the city center to the less developed west and northwest sections of Hanoi and to the newly completed Rainbow Bridge financed by Japan International Cooperation Agency. The construction of the RR2 section also enabled five new bus routes to be established connecting the city center to the north and west of the city as well as to the airport. The travel time by bus from Cau Giay to Dyke Road at Nhat Tan with the RR2 is now 21 minutes, seven minutes less than the baseline, almost

meeting the target value (20 minutes). The average travel time by motorcycle from Nhat Tan to Cau Giay at PM peak hours is only 11 minutes by the new RR2, well achieving the target value (18 minutes). A roadside survey and traffic count were conducted along the RR2 in October 2017 to update the economic analysis. According to the traffic count, on a typical weekday from 7 a.m. to 7 p.m., there were 77,000 to 93,000 vehicles (50–75 percent motorcycles) running in two directions along RR2. According to the roadside survey, road users save on average 20 minutes (or 30 percent) in travel time and enjoy significantly improved mobility.

Rating
High

Objective 3

Objective
Promote more environmentally sustainable transport modes

Rationale
The indicator to measure the extent to which the introduction of BRT has promoted more environmentally sustainable transport modes (public transport in this case) is to see how many of the new BRT passengers are switching from private transport mode i.e. 'modal shift'. In the two World Bank BRT surveys, a question asked the BRT rider what transport mode the person would use for that specific trip if the BRT had not been built (the counterfactual 'alternative mode'). Over half of the BRT riders would have used a personal motorized vehicle (including private car, taxi, motorcycle, or motorcycle taxi). The modal shift was 51 percent, exceeding the target value 15 percent in original PAD or 10 percent at the first restructuring. This result provides evidence that with a better quality of service, mass public transport modes such as BRT in Vietnam could attract a significant portion of personal motorized vehicle users.

However, because the BRT ridership is lower than anticipated, the absolute number of passengers who switched modes is not large. Considering both the modal shift percentage against relatively small scale of the impact, the achievement of this part of the PDO is rated Modest.

Rating
Modest

Objective 4

Objective
Promote more environmentally sustainable urban development plans for Hanoi

Rationale

This outcome was also part of the GEF objective. The rationale was that the GEF-financed technical assistance (TA) would help Hanoi to learn and pilot sustainable urban planning that would integrate land use and transport planning and improve the coordination among city agencies for integrated, multimodal transport planning, management, and operation. Disseminating experiences and promoting the replication of the Hanoi BRT in Vietnam and other regions was also mentioned as part of the GEF goal in the PAD.

This outcome was originally measured by the indicator 'adoption of land use TA as an indicator leading to the implementation of pilots, or policy changes in land use planning or controls', 'coordinated institutional system to manage and coordinate public transport planning and operations', and 'the numbers of Department of Architecture and Planning Management (DAPM) staff trained.' In the first restructuring, the 'adoption of land use TA' was relaxed to mean the development and approval of the land use TA final report, without pilots or policy changes. The 'coordinated institutional system' that included substantial institutional reforms (such as control of public transport planning, fare, and schedule integration between bus-based and rail-based systems and establishment of an independent agency) was revised at the first restructuring to 'strengthen capacity for planning multimodal public transport system', which includes the following three steps: (1) decision for establishment of Multimodal Public Transport Committee (MMPTC) issued; (2) draft final report on establishment of a Public Transport Authority (PTA) developed; and (3) final report on establishment of PTA approved ('approved' was further relaxed to 'developed' in the second restructuring in 2015). Targets were achieved for most indicators, but with slightly less ambitious definitions.

Policy changes and institutional reforms in Hanoi, as originally envisioned, proved to be difficult, but the results though hard earned were still incremental. The project supported DAPM on urban planning and integrated land use and transport model. Using the TransCAD-based integrated land use and transport model, training was provided to staff in the Project Management Unit (PMU) and DAPM. In March 2016, the prime minister approved the 'Transportation Plan for Hanoi by 2030, with a Vision to 2050'. This new transport master plan for Hanoi prioritizes mass public transport. The proposed transport system, including eight new BRT corridors, was planned in coordination with the economic, social, and land use planning to accommodate the city's future growth in a sustainable way. The Hanoi DOT and PMU intend to request World Bank financing for two of these planned BRT corridors. This shows that the concept of BRT has been successfully demonstrated and despite initial misgivings of the GoV, the World Bank has played a crucial role in promoting the BRT system.

The project also provided technical support for the establishment of the MMPTC and the preparation for establishing a PTA by strengthening the capacity of TRAMOC. To ensure integration of all public transport modes and to avoid duplication/overlapping, Hanoi People's Committee (HPC) established the MMPTC on July 11, 2013, with participation of key agencies such as the Metropolitan Railway Management Board, TRAMOC, DOT, DPA, Department of Construction, TRANSERCO, and Department of Planning and Investment. In September 2013, HPC approved a general fare collection policy framework, supporting one common ticket for all modes and an open ticketing system. Although a PTA was not established during the implementation period (Hanoi DOT and TRAMOC are still pursuing this goal), as relevant agencies in Hanoi now better understand the importance and methods of coordination and multimodal integration for public transport (ICR page 19).

The project has made efforts and completed several replication activities by conducting workshops, study tours, and other knowledge exchange events in Vietnam and the region. The lessons from Hanoi BRT have been very helpful for Da Nang and HCMC. For example, Da Nang BRT improved its bidding document of the electronic ticketing package by incorporating the lessons learned in this project; HCMC has recently completed a yearlong review of its feasibility study design, in close consultation with Hanoi DOT, TRAMOC, and TRANSERCO, incorporating some design modifications that would allow them to avoid some of the difficulties Hanoi BRT experienced.

Rating
Substantial

Rationale
Objective one (substantial) showed positive results in user satisfaction and travel time even though the routes were re-configured by the authorities. The Second Ring Road component significantly reduced travel time and increased mobility to achieve objective two (high). The third objective could only be partly achieved due to the low ridership on the BRT (modest), while substantial progress was made towards the fourth objective despite the difficult context. Overall efficacy is rated substantial.

Overall Efficacy Rating
Substantial

5. Efficiency

The prolonged project implementation and reduced scope of work for the BRT component affected the efficiency of the project. The implementation period was extended by 3 years (in total 8.5 years from loan effectiveness) and the completion of all project activities was delayed. The scope of work for the BRT component reduced from two corridors to one (but extended) corridor and without the electronic ticketing system. The cost-benefit analyses done at appraisal stage and completion stage showed that the economic internal rate of return (EIRR) and the net present value (NPV) based on a 12 percent discount rate for the BRT component were much lower than originally estimated, even with emission reduction benefits added. The EIRR and NPV for the RR2 component, on the other hand, were higher at completion stage, showing good efficiency given the good traffic volume and higher-than-expected time savings. The higher EIRR at completion is also due to the higher value of time (VOT) estimation using the roadside survey conducted in 2017. Overall, taking the operational and administrative inefficiencies into account the rating is modest.

Results of Economic Analysis

		PAD (2007)	Restructuring (2013)	Completion (

BRT	NPV (US$, millions)a	41.3	3.4	5.2
	EIRR (%)	21.0	13.1	6.0
RR2	NPV (US$, millions)a	34.0	—	165.0
	EIRR (%)	14.5	—	18.5

Efficiency Rating
Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	16.50	96.50 ☐Not Applicable
ICR Estimate	✓	14.00	98.50 ☐Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

With substantial relevance of objectives, substantial efficacy and modest efficiency the overall outcome including the GEF outcome was Moderately Satisfactory. The GoV was initially reluctant to embrace the BRT concept, but thanks to the technical support of this project, no less than eight BRT corridors are now embedded in sustainable transportation development plan for Hanoi.

a. Outcome Rating
Moderately Satisfactory

7. Risk to Development Outcome

For the BRT component, the biggest risk is a future failure to attract ridership. If the BRT loses passengers, mobility is reduced, and keeping the dedicated lane will be an inefficient use of the infrastructure. This risk can only be mitigated by continuing to enhance the quality of service and solving the accessibility and integration issues discussed in the ‘Efficacy’ section. Maintaining speed and reliability are key to attracting more passengers. There is a risk that traffic will not be well managed and BRT buses could lose their advantages of speed and reliability. TRAMOC and DOT will probably need to keep installing hard barriers at least at key sections to protect the dedicated lane from intrusion of other traffic. There is also a risk that the station access

issues will not be solved and people still need to walk a long distance to be able to safely reach the BRT stations. Such lack of access may cause the loss of passengers or lead to accidents should people try to cross in the middle of the street. More importantly, the improved mobility objective through increased public transport use will only be maintained if the BRT is integrated with other modes such as the metro, LRT, other future BRT lines, regular buses, and non-motorized transport (NMT). There is a substantial risk that when LRT Line 2a starts operation, this BRT line will lose ridership as they overlap in a significant portion and the BRT line is not designed to feed the metro. Other risks relate to the potential failure to follow through with establishing a city-wide electronic ticketing system or the establishment of the crucial Passenger Transport Authority.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project objectives were strategically relevant, but too ambitious, aimed at solving too many of the pressing issues Hanoi was facing. The project design was comprehensive, but too complex, with activities covering many difficult fields. Technical, financial, and economic appraisal was done adequately except for substantially overoptimistic estimation of BRT ridership. Risk identification did not adequately anticipate the changes in Government transport policy. The World Bank team engaged with the correct stakeholders, especially Hanoi People's Committee, whose relationship proved to be critical in project. Project preparation placed considerable emphasis on institutional aspects and capacity building to begin to gain political commitment to the BRT implementation, although this proved to be much more challenging than anticipated. Environmental and social safeguards were prepared reasonably diligently, with extensive consultation undertaken. However, the preparation failed to identify the challenges of different local laws and regulations for land and resettlement compensation to fully comply with World Bank resettlement policy. There were also significant weaknesses in the design and implementation of the M&E system (see section 9 below), making it difficult to assess the achievement of the stated objectives and test the links in the results chain, and there were also some weaknesses in the use and impact of the M&E system. While the fiduciary team applied due diligence to the procurement aspects of the project, the lengthy approval processes involved on the Borrower's side were underestimated.

Quality-at-Entry Rating

Moderately Unsatisfactory

b. Quality of supervision

Intensive supervision and technical support: The World Bank team provided Hanoi with intensive technical support and supervision throughout the implementation process. Besides regular missions (more than two a year), the team conducted additional technical visits; study tours; workshops; review meetings; consultations; and numerous discussions between experts, consultants, and the client. For example, the Mid-term Review (MTR) was conducted during June 7–12, 2012. A quality enhancement review, chaired by the Sector Director was carried out during August 20–28, 2012, to share experience from other countries and provide advice to the team on how to address these difficult issues. After the MTR, due to the mounting difficulties facing the project, World Bank management recommended that HPC could consider cancelling the project and this was

met with strong push back from GoV. High-level management, especially the Country Management Unit (CMU), had been engaging and working closely with HPC with mixed results. However, given a renewed commitment from HPC, the World Bank team decided to continue with project extension during the mission in April 2013. The project was restructured for the first time, with the important realignment of BRT and extension of closing date, as well as an updated and improved M&E framework. In 2015, the World Bank processed a second restructuring with another 18-month extension to allow for the remaining project affected households (PAHs) by the RR2 to be resettled and BRT to be completed. An example of proactivity and cooperation occurred in October 2016, before the launch of the BRT, when a conference on urban public transport under the GEF component, focusing on BRT, was organized by the Ministry of Construction with the support of the World Bank. The conference discussed the lessons learned from ongoing BRT projects financed by the World Bank in Vietnam (Hanoi, Ho Chi Minh City, and Da Nang) as well as other countries (such as China, Republic of Korea, and India).

Flexibility: Facing the unique urban transport characteristics and institutional challenges in Hanoi, the World Bank team tried to adapt to the context and seek flexible solutions by sometimes making compromises. For example, in 2016 when the city was having a difficult time approving the traffic management plan for the BRT corridor, especially the dedicated busway with hard barriers, the World Bank team agreed to compromise on the traffic management plan as a pilot and to use road markings, but fencing off key areas such as stations and intersections. The 'pilot' traffic management plan finally got signed in time for BRT to start operation. With the BRT actually operating, the drivers, traffic police, and passengers began to see the need for better protection of the dedicated bus lane, and hard barriers have now been installed. Public opinion and perception of BRT has, moreover, improved. During implementation the promotion of BRT by the authorities had been underwhelming and perhaps the Bank could have done more to convince the authorities of the need for a good public relations campaign.

In summary, the World Bank team has been providing considerable technical support and supervision to the project, especially after it appeared the project might be cancelled. The World Bank team focused on development impact and made greater efforts to communicate with clients. The World Bank management, especially the CMU, played a crucial role in engaging and working closely with HPC to solve difficult issues and turned the project around. Implementation Supervision Reports and Aide Memoires showed candor and quality in performance reporting. The client showed appreciation to the World Bank team and requested future BRT projects for World Bank financing. After credit closing, the team continued the good relationship with the relevant agencies and continued providing support. For example, the team mobilized a trust fund to support the city in the operation and expansion of the BRT system, including assessing the overall public transport network for accessibility and connectivity improvement. TRAMOC is managing the new BRT system with confidence and producing quality monthly operation reports (ICR page 29).

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The operation's activities and goals in respect of the Theory of Change were clear, but the indicators were poorly selected. For example, the total bus and BRT ridership on the corridor was not attributable solely to project activity, but rather more associated with bus operational and service planning. The indicators were not well defined and there were inconsistencies between the description, the baseline and the target values. For example, for PDO indicator 'number of BRT riders whose alternate mode would have been a private motorized vehicle/taxi': 'number' should read 'percentage', and alternate should be 'alternative'. GHG emissions in Hanoi should be limited to 'transport sector'. The methodology of how to estimate each indicator was unclear. For example, the results for modal shift as well as transport-related GHG emission reductions could vary considerably by using different methods.

b. M&E Implementation

An M&E consultancy was contracted by the PMU to carry out the M&E as well as the completion evaluation. However, the ICR is silent as to whether such a completion evaluation was done and what it said. There was no annex on such an evaluation, although there were comments given on the Bank's draft ICR. Due to the lack of information on methodologies for many of the indicators, the M&E data, though collected regularly, were not analyzed in a methodologically sound manner. The M&E consultant did make some effort to clarify the methodology and improved monitoring arrangements after the first restructuring.

c. M&E Utilization

Although the M&E consultant carried out M&E regularly, some of the data and results were not used to inform project management and decision making because these indicators did not measure project progress or outcomes. For example, the total bus and BRT ridership on the BRT corridor was monitored regularly before the BRT started operation, and mostly achieved the target.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

The project was classified as a Category A project under OP 4.01 - Environmental Assessment due to the disruption to be caused by the construction of a new road, BRT lanes, and stations and a resettlement site in an urban setting. The only environmental safeguard policy triggered in the PAD was Environmental Assessment (OP/BP 4.01). The project Environmental Impact Assessment (EIA) identified potential negative environmental impacts associated with construction-related disruption, noise, and the possibility of

increased air pollution and treatment of wastewater. The EIA and Environment Management Plan (EMP) were satisfactorily prepared in line with the Government and the World Bank safeguard policies and disclosed at the InfoShop in English and at the project sites in Vietnamese. The EMP included detailed practical mitigation measures and estimated budgets for their implementation, institutional responsibilities, monitoring plans, and building capacity for environmental management and a budget for implementation.

During implementation, specific requirements of the EMP were included in the bidding documents to ensure effective execution of the mitigation measures during construction. Training on environmental management and monitoring of EMP implementation was provided to the staff of the PMUs and contractors. Monitoring of the implementation of EMPs was carried out by the technical supervision staff of the PMU and Construction Supervision Consultant. An Independent Environmental Monitoring Consultant (IEMC), hired by the Hanoi PMU, also conducted quarterly environmental monitoring and provided reports on the implementation of the EMPs, including results of consultation with local communities regarding environmental concerns and complaints. The EMP was implemented satisfactorily as confirmed by the Hanoi PMU and the IEMC in project progress reports. Though not initially triggered in the PAD, it was found necessary to ensure compliance with Physical Cultural Resources (OP/BP 4.11).

The project demonstrated good practices in management of physical cultural resources. A 300-year-old banyan tree was located within the originally planned right-of-way of RR2. As a result of consultation and design examination, it was proposed that the tree would be kept in the median of the road. The ancient Buoi dyke surrounding inner Hanoi is located along the RR2 alignment. Consultation with the flood prevention and dyke management authority resulted in the selection of an engineering design that maintains the dyke's flood protection function as well as its cultural and historical value.

The World Bank missions consistently rated environmental performance of the project as satisfactory and moderately satisfactory during the project implementation. The final World Bank supervision mission concluded that the current environmental safeguards management was satisfactory for the BRT corridor and along RR2. There were no outstanding environmental safeguard issues.

The project also triggered the Involuntary Resettlement (OP/BP 4.12) social safeguard policy. The Resettlement Policy Framework (RPF) and Resettlement Action Plan (RAP) were prepared in line with local laws, regulations, and World Bank's policy and disclosed at project preparation. The RAP was updated to reflect the changes in the first restructuring and also subsequently disclosed. A multilevel organization was established for the management and implementation of the resettlement program at the Hanoi municipal, district, and ward levels. The PMU was responsible for implementing the RAP on behalf of HPC. An external agency was engaged to carry out independent M&E of the RAP's implementation. The reporting frequency of external resettlement monitoring was increased from every six months originally to every three months after the first restructuring.

Also after the first restructuring, RR2 was the only activity causing involuntary resettlement. The RR2 component affected many project affected households (PAHs) (1,541 PAHs, including 714 relocated ones). During the project implementation, the World Bank missions rated social safeguard performance of the project as moderately satisfactory and moderately unsatisfactory when noncompliance was found. For example, the midterm review (MTR) found that the PMU and local (mainly district) authorities had been

following the HPC regulation but not the RFP and RAP, including not assisting in the case of illegal residential land, replacement cost not replacing PAHs' losses, earlier cut-off date per the Land Law, eligibility for compensation/assistance of illegal land occupation, and not providing assistance for unregistered businesses. The World Bank team had worked intensively with the PMU and HPC to make them comply with the approved RPF/RAP.

The final World Bank supervision mission concluded that the social safeguards were moderately satisfactory by project closing. According to the PMU report, the compensation and resettlement activities for the whole project had been completed, except for two outstanding cases. HPC was requested to instruct all project districts to (a) speed up the process of payment for the income losses in Tay Ho, Cau Giay, and Dong Da districts as per the RPF/RAP and (b) assist the business PAHs in finding new sites for them to restart their business either at the resettlement site or any markets available in the city. Otherwise, cash payment or new job training should be provided to the PAHs to help them in restoring the income sources as per RPF/RAP requirements.

b. Fiduciary Compliance

Financial Management (FM)

The ICR observed that an adequate FM system was in place that could provide, with reasonable assurance, accurate and timely information that World Bank loan proceeds were being used for the intended purposes. The FM reviews also recognized there was reasonable adequacy of FM staffing, accounting, and internal control systems; maintenance of supporting documents in the project; and implementation of auditor recommendations for annual audit. Quarterly financial reports of an acceptable quality were submitted on time. A regular funds flow arrangement was applied and the fund sources of project were allocated promptly. By October 31, 2017, a total of US$102.8 million or 80 percent of US$129.2 million project funds had been disbursed. However, the Implementation Supervision Reports consistently flagged a moderately satisfactory performance. This was due inter alia to slow payments to contractors and the need to improve the contract management system.

Procurement

Although there was significant delay in implementing the procurement activities under the project, it was noted that the PMU made considerable efforts to keep the project moving ahead. The overall procurement performance of the PMU is considered moderately satisfactory. There were several critical issues that caused procurement and project implementation delays: (a) lengthy internal approval process within the PMU and Hanoi DOT, (b) difficulties in resettlement and site clearance, (c) cases of complaints during the procurement process and (d) delays in making payments to consultants and contractors causing delay in contract implementation.

c. Unintended impacts (Positive or Negative)

Though not an explicit part of the PDO, BRT also improved the safety in the corridor. No fatalities or injuries were reported in the first year of operation.

d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	---
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of M&E	Modest	Modest	---
Quality of ICR		Substantial	---

12. Lessons

In complex urban situations a more focused project design may be the most appropriate. This project was designed with too many activities and ambitious goals. Given the limited capacity of both the World Bank team and the client, it may have been better to focus resources in a smaller, high-impact area so that both sides could make decisions and solve problems more quickly. The financial instrument most appropriate to implement this focus should be selected. For example, Development Policy Loan might be more effective in bringing critical policy and institutional changes.

Deploying mass transport projects requires both a political champion and technical expertise. Introducing a new system such as BRT involves many stakeholders with divergent interests. The city leadership had to make tough decisions with political implications. Maintaining a high-level political ‘champion’ and dedicated technical focal points who are responsible to implement the decisions was key. Continuous political ‘buy-in’ or commitment needed to be built on a full understanding of the political and technical risks in the local context. The public needs to be well informed about the deliberations and processes. Sometimes compromises had to be made. ‘Getting the buses running’ on a pilot/trial basis was a good decision. Relying on an established and experienced operator to commence services reduced the start-up difficulties and spread out the launch risk.

A BRT operation plan is necessary before finalizing designs. One of the important lessons was to complete a sufficiently detailed operational and service plan before building the infrastructure. A detailed operational and service plan should be part of the project feasibility studies and include a business plan and financial model. These plans should guide the design and implementation of infrastructure and be updated as necessary to ensure system accessibility and intermodal integration.

A long-term technical adviser needs to be in place on the client's side. When there is weak technical capacity of government agencies, hiring external consultants can help support timely decision making and the project management skills of the PMU. Appointing independent technical advisers on longer-term contracts, who can be embedded within the PMU, can help align incentives to deliver longer-term objectives. Such an adviser was needed to develop the BRT operations and service plan and guide the design and implementation of these components. Similarly, a stakeholder strategy and public media campaign are important and require experienced professionals to support the project from the earliest stages.

The implications of necessary institutional changes need to be thought through and incorporated into the project design. As is often the case with infrastructure projects, the larger 'hard' components such as the Ring Road tended to dominate management attention and overshadow the 'softer' institutional components. However, institutional changes are often the key to sector reform. For example, introducing a new system opens a window of opportunity to transform the bus operating industry by allowing incumbent operators to reassemble themselves into creditworthy, asset-owning, highly performing operators. On the other hand, it is usually the institutional obstacles that delay project implementation and affect outcomes. It is important to anticipate and evaluate these obstacles, for example, lack of legal framework, no coordination mechanism, lack of transparency, monopoly of the market, and large difference in safeguard policies such as land and resettlement compensation or environmental regulations, so that correct expectation can be set and incorporated into project design with sufficient resources allocated to make necessary changes happen**.**

13. Assessment Recommended?

Yes

Please explain

There is much to learn from this project and the urban environment in Hanoi is growing rapidly. The small BRT component funded by the Bank has demonstrated to the authorities the benefit of this system and it may be expanded further in the future, thus vindicating the contentions of the project team with regard to BRT effectiveness. Because the indicators for ridership did not reflect well on the project, it would be useful to revisit this aspect when it is bedded down and other reforms and improvements have been introduced. Useful comparisons could be made with transport systems utilizing or contemplating BRT in similar urban environments in other countries.

14. Comments on Quality of ICR

The ICR was candid, but could have been shorter. There was too much information in places and it appeared to sometimes have an agenda in promoting the project rather than dispassionately evaluating it. In this context,

there was perhaps too much about what might happen in the future as opposed to what was the reality when the project closed. Nevertheless, given the complexity of the project, the ICR was comprehensive and the quality of analysis satisfactory. This ICR included useful figures and photographic evidence of the traffic in the corridors before and after some of the project improvements. The ICR was also consistent with most of the guidelines and provided clear, useful and evidence-based lessons.

a. Quality of ICR Rating

Substantial