

Validation Report
December 2023

Pakistan: National Motorway M–4 Gojra–Shorkot Section Project and National Motorway M–4 Gojra– Shorkot–Khanewal Section Project - Additional Financing

Reference Number: PVR-963
Project Numbers: 48402-001 and 48402-002
Loan Numbers: 3300, 3395, and 8308
Grant Numbers: 0440 and 0482

Independent
Evaluation  ADB

Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
AIIB	–	Asian Infrastructure Investment Bank
CAREC	–	Central Asia Regional Economic Cooperation
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
FCDO	–	Foreign, Commonwealth and Development Office
GDP	–	gross domestic product
km	–	kilometer
km/h	–	kilometer per hour
LARP	–	land acquisition and resettlement plan
m/km	–	meter per kilometer
NHA	–	National Highway Authority
OCR	–	ordinary capital resources
MFF	–	multitranches financing facility
NTCHIP	–	National Trade Corridor Highway Improvement Program
PCR	–	project completion report
PIU	–	project implementation unit
RRP	–	report and recommendation of the President
SSMC	–	social safeguard management consultant

NOTE

In this report, “\$” refers to United States dollars.

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PROJECT BASIC DATA

Project numbers	48402-001 and 48402-002	PCR circulation date	27 Oct 2022		
Loan and grant numbers	3300, 3395, 8308, 0440, and 0482	PCR validation date	Dec 2023		
Project name	National Motorway M4 Gojra–Shorkot Section Project and National Motorway M4 Gojra–Shorkot–Khanewal Section Project - Additional Financing				
Sector and subsector	Transport	Road transport (non-urban)			
Strategic agenda	Regional integration Inclusive economic growth				
Safeguard categories	Environment		A		
	Involuntary resettlement		A		
	Indigenous peoples		C		
Country	Islamic Republic of Pakistan		Approved (\$ million)	Actual (\$ million)	
ADB financing (\$ million)	ADF: 0.00	Total project cost	590.00	375.96	
	OCR: 278.00	Loans			
			3300	178.00	106.07
			3395	100.00	53.92
		Borrower			
		3300/0440	47.00	17.42	
		3395/8308/0482	39.00	26.65	
Cofinancier	AIIB and FCDO	Total cofinancing^a			
			0440	92.00	67.73
			0482	34.00	30.12
		8308	100.00	74.05	
Approval Date	3300/0440 3395/0482 8308	Effectiveness date	3300/0440	20 Jan 2016	17 Dec 2015
			3395/0482	18 Sep 2016	1 Sep 2016
			8308	23 Sep 2016	2 Sep 2016
Signing Date	3300/0440 3395/0482 8308	Closing date	3300/0440	31 May 2020	31 May 2020
			3395/8308	31 Dec 2020	31 Dec 2020
			0482	31 Mar 2020	31 Mar 2020
		Financial closing date			
		3300	—	24 Aug 2021	
		0440	—	6 Nov 2020	
		3395	—	6 Jan 2022	
8308	—	31 Dec 2020			
		0482	—	1 Aug 2020	
Project Officers	Z. Wu Z. Naqvi K. Ghafoor	Location ADB headquarters ADB headquarters Pakistan Resident Mission	From	To	
			Dec 2015	Dec 2016	
			Dec 2016	Sep 2018	
			Sep 2018	Oct 2022	
IED review					
Director	N. Subramaniam, IESP				
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‘—’ = no approved financial closing date, ADB = Asian Development Bank, ADF = Asian Development Fund, AIIB = Asian Infrastructure Investment Bank, FCDO = Foreign, Commonwealth, and Development Office, IED = Independent Evaluation Department, IESP = Sector and Project Division, OCR = ordinary capital resources, PCR = project completion report

^a Based on ADB eOperations database.

^b Team members: H. Hettige (quality reviewer), F. De Guzman (Senior Evaluation Officer), W. Zhou and C. Mason (consultants).

I. PROJECT DESCRIPTION

A. Rationale

1. The transport sector contributed about 10% to Pakistan's gross domestic product (GDP) and more than 6% to the country's overall employment. Road transport accounted for 92% of passenger traffic and 96% of freight traffic in 2010. The primary north–south transport corridor in Pakistan runs from Peshawar in the north and passes through primary production and population centers such as Gujranwala, Faisalabad, Lahore, Multan, Sukkur, and Hyderabad before reaching the port city of Karachi in the south. The corridor, comprising national highways and motorways with a total length of about 1,800 kilometers (km), connects the key centers of economic activities that contributes 80%–85% of Pakistan's GDP. As a result of Pakistan's accession to the Central Asia Regional Economic Cooperation (CAREC) Program in 2010, this transport corridor was expected to form an integral part of the CAREC corridors 5 and 6, opening a vital trading link between landlocked Central Asian nations and the country's warm-water ports of Gwadar, Karachi, and Port Qasim on the Arabian Sea.

2. The national motorway M-4, connecting Faisalabad with Multan, was planned to be a part of the north–south transport corridor. Its area of influence, covering Faisalabad, Multan, and the entire Punjab province, was expected to account for 56% of the country's population and 59% of its GDP. It would extend the already completed M-1, M-2, and M-3 motorways southward and shorten the distance between Multan and the twin cities of Islamabad and Rawalpindi in the north. Upon completion, the new four-lane, access-controlled M-4 would provide a faster, safer, and more cost-effective alternative to the existing narrow and congested routes, notably in the heavily trafficked Faisalabad and Khanewal–Multan–Muzaffargarh areas. The 58 km Faisalabad–Gojra section of the M-4 was completed in 2014 under tranche 1 of a multitranche financing facility (MFF) of the Asian Development Bank (ADB) for the National Trade Corridor Highway Improvement Program (NTCHIP).¹ The construction of subsequent sections, i.e., the 62 km Gojra–Shorkot (section II) and 64 km of Shorkot–Khanewal (section III), was originally part of tranche 1. However, at the request of the government in 2008, the two sections were excluded and reserved for a later tranche under the MFF because of cost overruns and delays in land acquisition and resettlement compensation. As the 10-year MFF period was ending in 2017 and in view of the required versus the available construction period before the MFF closing, the government requested ADB to finance the two sections through standalone loans.

3. To continue its support to Pakistan's road sector development and in response to the request of the government, ADB approved a loan of \$178 million from its ordinary capital resources (OCR) and the administration of a grant of \$92 million from the Government of the United Kingdom (acting through its Foreign, Commonwealth, and Development Office, [FCDO]) in September 2015 for the National Motorway M-4 Gojra–Shorkot Section Project.² The project was expected to facilitate north–south connectivity, improve the quality and efficiency of road transport services, and promote inclusive economic growth in Pakistan by constructing a 62 km four-lane, access-controlled motorway connecting Gojra and Shorkot (section II of M-4) and improving the institutional capacity of the National Highway Authority (NHA). In June 2016, ADB approved an additional financing loan of \$100 million from its OCR, the administration of an Asian

¹ ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility and Technical Assistance Grant to Islamic Republic of Pakistan for the National Trade Corridor Highway Investment Program*. Manila.

² ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant to the Islamic Republic of Pakistan for the National Motorway M-4 Gojra–Shorkot Section Project*. Manila.

Infrastructure Investment Bank (AIIB) loan of \$100 million, and the administration of a \$34 million grant from FCDO for the National Motorway M-4 Gojra–Shorkot–Khanewal Section Project.³ The purpose of the additional financing was to scale up the scope of the original project by constructing a 64 km four-lane, access-controlled motorway connecting Shorkot and Khanewal (section III of M-4) as the last remaining section of the national motorway M-4. The government was the borrower, and the NHA was the executing agency for the original project and the additional financing. Both are collectively referred to as the “project” in this validation report.

B. Expected Impact, Outcome, and Outputs

4. At appraisal and completion, the project’s expected impact was the modernization of transportation infrastructure and greater regional connectivity to support a vibrant and growing economy.⁴ Its intended outcome was an efficient and safer transport corridor between Islamabad, Faisalabad, and Multan that enhances the connectivity between the various parts of the country. During implementation, the outcome was changed to a safe and efficient regional network established for the movement of goods and people along the M-4 Motorway and E35 Expressway. Its target outputs, including the originally planned and additional through major revision, had three components: (i) 126 km of four-lane, access-controlled motorway connecting Gojra, Shorkot, and Khanewal constructed and operational; (ii) strengthened safeguard and contract administration capacity of NHA; and (iii) 11 km section of the E35 expressway connecting Hasan Abdal and Havelian constructed.

C. Provision of Inputs

5. The ADB loan and FCDO grant for the original project (section II) was approved in September 2015. The loan and grant agreements were signed in October 2015 and became effective in December 2015. The original project was completed in November 2019 as planned. The loan and grant closing dates were November 2019 as scheduled, without any extension. The loan financially closed in August 2021, and the grant in November 2020.

6. The ADB loan, AIIB loan, and FCDO grant for the additional financing (section III) was approved in June 2016. The loan and grant agreements were signed in June 2016 and became effective in September 2016. The project activities under the additional financing were completed in June 2020 as planned under ADB and AIIB loans but 9 months later than the planned completion date under the FCDO grant. The scheduled closing dates for the loan was December 2020. For the grant, it was March 2020. No extension was involved. The ADB loan financially closed in January 2022, AIIB loan in December 2020, and the grant in August 2020.

7. The estimated total cost of section II was \$317.0 million, with \$178.0 million from ADB’s OCR, \$92.0 million from the FCDO grant, and the balance from the government. The estimated total cost of section III under the additional financing was \$273.0 million, with \$100.0 million from ADB’s OCR, \$34.0 million from the FCDO grant, \$100.0 million from the AIIB loan (36.6%), and the balance from the government. The actual cost of civil works decreased as a result of the lower-than-estimated bids and the depreciation of the Pakistan rupee, leading to loan and grant savings and loan cancelations. Some savings were used to finance the balance of works for an 11 km section of the E35 expressway connecting Sarai Saleh and Havelian, which was not completed

³ ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Additional financing and Administration of Loan and Grant for Additional financing to the Islamic Republic of Pakistan for the National Motorway M-4 Gojra–Shorkot–Khanewal Section Project*. Manila.

⁴ ADB. 2022. *Completion Report: National Motorway M-4 Gojra–Shorkot Section Project and National Motorway M-4 Gojra–Shorkot–Khanewal Section Project - Additional Financing in the Islamic Republic of Pakistan*. Manila.

under the NTCHIP MFF, which closed in December 2017. Financing shares were revised during implementation with the change in loan allocation between categories and in accordance with loan savings and cancelations. The actual cost for section II was about 39% lower than the appraised amount and comprised \$106.07 million from ADB loan, \$67.73 million from the FCDO grant, and the balance from the government. The actual cost for section III was about 30% lower than envisaged and comprised \$53.92 million from ADB loan, \$80.30 million from AIIB loan, \$30.12 million from FCDO grant, and the balance from the government.

8. The project remobilized the design review and construction supervision consultants, who were originally recruited in 2010 for the entire M-4 motorway through a variation order and addendum to the original contract. At completion, the consultants rendered consulting services totaling 50 international person-months and 3,601 national person-months. The supervision consultants guided the contractor throughout the lifecycle of the project and sought approval from the NHA and ADB for major decisions. The project was classified *category A* for environment and involuntary resettlement, and *category C* for indigenous peoples. It was categorized as no gender elements. A social safeguard management consultant (SSMC) was engaged to strengthen NHA's safeguard and contract administration capacity through workshops and hands-on training. The project procured five civil works contracts, including two for section II, two for section III, and one for the E35 expressway Sarai Saleh–Havelian section. For sections II and III, the contractors were mobilized in 2016 and completed the civil works in 2019. For the E35 package, the contractor was mobilized in 2015 and completed the civil works in 2017.

D. Implementation Arrangements

9. As planned, the NHA was the executing agency. The project implementation unit (PIU) at Faisalabad, established by the NHA for the entire length of the M-4 motorway, was responsible for project management activities of sections II and III. It also coordinated with the finance, environment, afforestation, land, and social wings at the NHA headquarters in Islamabad and provided regular progress reporting. The land acquisition and resettlement unit at the PIU office was supported by SSMC, which provided on-the-job coaching and guidance on safeguard-related matters and conducted a series of social safeguards training workshops. These facilitated the implementation and monitoring of the land acquisition and resettlement plan (LARP).

10. The executing agency complied with 40 out of the 44 loan covenants for section II and 40 out of 43 for section III. For each section, two covenants were partially complied with, and one was either not achieved or not applicable. For both sections, the two covenants that were partially complied with pertained to the long-term financial sustainability of NHA by addressing accumulated indebtedness through various options and preparing and approving a detailed financial restructuring plan for the NHA with respect to its balance sheet. For both covenants, the status was that a business plan was prepared and approved by National Highway Council, with options for financial restructuring being considered by the Economic Coordination Committee. For section II, the unachieved covenant related to loan substitution of about \$100 million of the principal amount of the original loan with an equivalent amount of commercial cofinancing in Pakistan rupees. Although negotiation was held with the government, loan substitution for NHA did not materialize. For section III, the non-applicable covenant related to indigenous peoples as the project was classified *category C* for indigenous peoples.

11. The project was supported by a \$15.41 million capacity development technical assistance (TA) financed by FCDO.⁵ The TA aimed to improve the capacity of the government to develop and manage its transport system in a coordinated, efficient, safe, and sustainable manner. A component of the TA's outputs was the development of the abovementioned business plan for NHA to facilitate its transition to a commercially viable and maintenance-focused organization.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

12. The project completion report (PCR) rated the project relevant. Throughout its cycle, the project was fully aligned with the government's development priorities and strategies. Under Pakistan's Vision 2030 strategic framework issued in 2007, the government planned to enhance connectivity and trade facilitation as a special initiative, which aimed to improve transport and trade logistics and diversify exports, thereby helping to raise the trade to GDP ratio from 30% to 60%.⁶ In the more recent Vision 2025, one of the seven priorities was the modernization of transport infrastructure and greater regional connectivity to support a vibrant and growing economy.⁷ Following the change in government in 2018, developing a sound transport sector remained as a strategic priority on the agenda of the new government.

13. The project was fully aligned with ADB's strategies at appraisal and remained so during implementation and at completion. ADB's Strategy 2020 identified infrastructure as a core area of operations and emphasized continued investment for improved transport connectivity within and between developing member countries.⁸ Its Sustainable Transport Initiative Operational Plan of 2010 noted continuing needs for road construction and improvement.⁹ Its country partnership strategy 2015–2019 for Pakistan set strategic priorities for the promotion of better domestic and regional connectivity to lower trade and transport costs with the development of economic corridors and provincial roads and urban public transport systems to provide wider access to markets, jobs, and public services.¹⁰ The project was also aligned with ADB's Strategy 2030.¹¹

14. The engineering of the civil works for motorway M-4 was based on pertinent guidelines, standards, and specifications. The road embankment was sufficiently high to withstand the sheet flows of the highest floods. Considering flood levels of 100-year recurrence interval, the design provided adequate cross-drainage structures and hydraulic structures over perennial water channels as well as canals and rivers. The impact of temperature on asphaltic pavement layers was mitigated by adopting pavement specifications suitable for the climate in the project area. Road safety features were incorporated in the design, such as motorway signage, emergency parking areas, acceleration and deceleration lanes, reflectorized lane markings, rumble strips, and antiglare arrangements, among others.

⁵ ADB. 2015. *Technical Assistance Report: Enabling Economic Corridors through Sustainable Transport Sector Development in the Islamic Republic of Pakistan*. Manila.

⁶ Government of Pakistan, Planning Commission. 2007. *Pakistan in the 21st Century: Vision 2030*. Islamabad.

⁷ Government of Pakistan, Planning Commission. 2014. *Pakistan 2025: One Nation, One Vision*. Islamabad.

⁸ ADB. 2008. *Strategy 2020: Working for an Asia and Pacific Free of Poverty*. Manila.

⁹ ADB. 2010. *Sustainable Transport Initiative Operational Plan*. Manila.

¹⁰ ADB. 2015. *Country Partnership Strategy: Pakistan, 2015–2019*. Manila.

¹¹ ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila; and Appendix 8 of the PCR defines the contribution of the projects against the ADB strategy 2030 which are (i) 1.3.1 Infrastructure assets established or improved; (ii) 3.2.5 New and existing infrastructure assets made climate and disaster resilient; and (iii) 4.1.1 Service providers with improved performance. Since the project is construction of greenfield motorways, hence reference cannot be made to the rural roads.

15. A major change in project scope was approved in the National Motorways M-4 Gojra Shorkot Section Project.¹² The design and monitoring framework (DMF) had some minor deficiencies. First, the outcome indicator relating to fatality rate should have been made more specific and measurable by specifying the percentage to which it was better than the national highways average. Monitored data for this indicator could also have been used in the economic analysis. Second, in the revised DMF following the major scope change, the outcome indicator relating to average travel speed along the E35 was not appropriate. It would have served better as part of the fourth output indicator, similar to the first output for the construction of motorway connecting Gojra, Khanewal, and Shorkot with design speed of 120 kilometers per hour (km/h). As a replacement, this outcome indicator for E35 could have measured the average travel time between Hasan Abdal and Havelian. The project also had a minor change in implementation arrangements, which was approved for the use of advance account with a ceiling up to \$15 million for the sake of processing efficiency.¹³

16. On the whole, the project was fully aligned with the government's and ADB's strategies and policies. Its design was generally appropriate although the DMF had some minor deficiencies. The additional financing helped facilitate north–south connectivity and improve the quality and efficiency of road transport services by completing the last missing section of the national motorway M-4. The construction of the E35 expressway, as a major change in scope, was an appropriate response to the actual needs emerging during implementation, contributing to the project's relevance and envisaged benefits. This validation assesses the project relevant.

B. Effectiveness in Achieving Project Outcome and Outputs

17. The PCR rated the project highly effective. This validation notes that at completion, the project achieved its intended outcome of a safe and efficient regional network established for the movement of goods and people along the M–4 motorway and E35 Expressway. Three of the four outcome targets were achieved at completion, but the last outcome indicator was not monitored. The average daily vehicle kilometers reached 2,500,000 in the first full year of operation for M–4 Faisalabad–Multan, substantially exceeding the target of 1,000,000. The average travel time from Islamabad to Multan was reduced to 6 hours (the target was 6.5 hours). The fatality rate over the period from March 2019 to July 2022 was 6.4 per billion vehicle–km, well below the national highway's average of 14.4 in 2015. The PCR indicated that the average travel speed reached 120 km/h for light vehicles and 100 km/h for heavy or passenger and freight vehicles, exceeding the target of 80 km/h. This validation notes that monitoring data was not available to substantiate the PCR's narrative on E35 expressway.

18. The project delivered its intended outputs. The four-lane, access-controlled motorway of 126 km (target 126 km) connecting Gojra, Khanewal, and Shorkot was constructed, with a design speed of 120 km/h (same as target). The 11 km (same as target) six-lane, access-controlled expressway connecting Sarai Saleh and Havelian as part of the E35 expressway was constructed with a pavement international roughness index of 1 m/km (target was 2 m/km). The project's environment and social safeguard requirements were implemented with good quality, indicating institutional capacity improvement. Contract management and execution were carried out effectively without undue delay and unresolved disputes.

¹² ADB (Central and West Department). 2018. *Major Change in Project: National Motorway M–4 Gojra Shorkot Section Project Islamic Republic of Pakistan. Memorandum*. April (internal).

¹³ ADB (Central and West Department). 2017. *Minor Change in Implementation Arrangement. National Motorway M–4 Gojra-Shorkot-Khanewal Section Project (Additional Financing). Memorandum*. 16 June (Internal).

19. The project was correctly classified for safeguards categories. The environmental impact assessments for sections II and III were updated based on the original version for the NTCHIP MFF to incorporate additional environmental baseline information, new public consultation, and relevant details and data for the two sections. The assessed impacts during construction and operation, contained detailed management and monitoring plans, and met ADB and national requirements. The LARPs for sections II and III contained social impact assessments and established compensation for land, building and crops, payments, and eligibility cut-off dates. A section-by-section approach was used to implement the LARPs. The social monitoring reports were highly detailed and provided a full explanation of LARP implementation and project status, including consultations, emerging issues, payments made, and grievances received. The project delivered all its intended outputs and achieved three out of its four outcome targets. This validation assesses the project effective.

C. Efficiency of Resource Use

20. The PCR rated the project efficient, based on the reevaluated economic internal rate of return (EIRR). The reevaluation was largely consistent with the approach taken at appraisal in 2007 for the NTCHIP MFF comprising section I (Faisalabad–Gojra), section II (Gojra–Shorkot), and section III (Shorkot–Khanewal), and also the first reevaluation of the three sections in 2021 following the opening of M-4 in its entirety.¹⁴ The economic capital investment was updated based on the actual financial costs for the civil works, reflecting the actual project activities and implementation timeline. The maintenance costs of various interventions were taken from NHA's 2020–2021 annual maintenance plan. The economic benefits considered in the reevaluation were savings in vehicle operating costs and travel time, and emission reduction.

21. The recalculated EIRR was 15.6%, exceeding the benchmark of 12% and suggesting economic viability. The PCR's recalculated EIRR of 15.4% was lower than the EIRR of 18.7% of the 2021 reevaluation due primarily to the decrease in values of time in USD terms due to the continued depreciation of the Pakistan rupee and the drop in traffic in 2022 (and the associated impact on traffic forecast for succeeding years). Sensitivity analysis under adverse scenarios suggested that the project would highly likely remain economically viable.¹⁵ On the whole, as the reevaluated EIRR of M-4 exceeded the benchmark, this validation assesses the project (sections II and III of M-4) efficient.

D. Preliminary Assessment of Sustainability

22. The PCR rated the project likely sustainable. According to the PCR, toll revenues are the primary source of funds for maintenance of national highways and motorway network, contributing 70% to 75% of the required funds. Other sources of revenues that go to the road maintenance account under NHA's contract include fines, grants, rentals for use of the right-of-way and highway access, and roadside advertising. Over the past 5 years, the net revenue and grant allocated for the annual maintenance plan has shown a steadily increasing trend, with the 2021–2022 amount

¹⁴ The initial appraisal was undertaken in 2007 as part of a report and recommendation of the President (RRP) for the NTCHIP MFF, with its scope including all sections between Faisalabad and Khanewal. In 2021, following the opening of the M-4 in its entirety, the first economic reevaluation of the three sections was conducted as recommended by the PCR of section I in 2018. The second reevaluation of the three sections conducted in 2022 as part of the PCR, which is the subject of this validation, was to update the 2021 reevaluation by taking account of the final costs of sections II and III and also the more recently observed traffic along M-4.

¹⁵ Under the hypothetical scenario of (i) a 20% decrease in benefits; (ii) a 50% decrease in benefits between 2015 and 2020; (iii) a 20% reduction in traffic growth; (iv) a 25% reduction in value of time and labor costs; or (v) a 100% reduction in real growth of value of time, the project's recalculated EIRR would become (i) 13.4%; (ii) 14.3%; (iii) 12.8%; (iv) 14.0%; or (v) 15.1%.

reaching PRs 53.6 billion, almost double that of 2017–2018. According to the PCR, over 63% of the NHA's network has a service life of over 4 years and over 67% has an International Roughness Index of 2–3 m/km. For motorways, the NHA is increasingly passing the maintenance needs to toll concessionaires not only for physical sustainability but also financial sustainability.

23. Despite the above factors, this validation notes that there is a lack of proper financial analysis for sustainability. First, the PCR did not expound the specific funding arrangements for maintaining the project motorway as to whether 70%–75% of the project roads' maintenance would come from toll revenues and how the balance would be financed. Second, more fundamentally, the PCR did not explain the absence of a financial cost-benefit evaluation for the motorway, which generates toll revenues. A financial internal rate of return (FIRR) should have been calculated for the project to assess quantitatively its financial viability. Without the FIRR, there is inadequate evidence to substantiate the conclusion that the risk of project motorway's being subject to inadequate maintenance and operated under substandard condition would be low. On the whole, this validation assesses the project less than likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

24. The PCR rated the project's development impact satisfactory. The construction and opening sections II and III of the M-4 motorway directly closed the remaining gap between Khanewal and Shorkot, enabling the realization of the full benefits associated with the M-4. Initially planned as part of the National Trade Corridor and, later also becoming part of the overlapping CAREC and China-Pakistan Economic Corridor, the M-4 extends the already completed M-1, M-2, and M-3 motorways southward and shortens the distance between Multan and the twin cities of Islamabad and Rawalpindi in the north. As a four-lane, access-controlled alternative to the existing narrow and congested routes, the M-4 attracts most of the long-distance traffic between Karachi and Islamabad and diverts traffic from the national highway N-5 as part of the north–south transport corridor and Pakistan's longest and most important highway, as well as a provincial road via Jhang. It provides an efficient international link between the north of Pakistan and beyond, and southern Punjab, Sindh, and the ports of Gwadar and Karachi in southern Pakistan. With M-4 completed, the north–south transport corridor has been enhanced. Greater connectivity and safer and more efficient mobility substantially reduced the time and cost of moving goods and people along the entire logistic and supply chain, removing one of the key constraints to raising competitiveness, attracting private sector investment, increasing productivity, as well as deepening and diversifying the industrial base. All these benefits are essential for creating sustainable jobs to a growing population and promoting inclusive economic growth in the country. It is self-evident that the project has been successful in generating significant positive economic and social development impacts. This validation assesses the development impact of the project satisfactory.

B. Performance of the Borrower and Executing Agency

25. The PCR rated the performance of the borrower and the executing agency satisfactory. The government, as the borrower, facilitated supervision and coordination in a timely and responsible manner. The project progress at key stages of implementation was facilitated by the borrower's supervision and coordination. Adequate counterpart funding was included in the government's annual Public Sector Development Program and was released in a generally timely manner. Occasional minor delays in releasing the funds did not have adverse impact on the cash flow of contractors. The NHA, as the executing agency and with adequate capacity in

procurement, implementation, and financial management, demonstrated strong ownership of the project and made appropriate institutional and implementation arrangements. It followed ADB's advice to draw upon the experience from developing section I of the M-4 by remobilizing the design review and construction supervision consultants under section I to avoid procurement delays and ensure smooth implementation and engaging the SSMC to assist with LARP implementation and monitoring. It made all possible legal, formal, and informal efforts to facilitate the compensation payments to persons displaced by the project. The borrower and executing agency efficiently utilized loan savings and the additional financing to scale up the project scope and increase project outputs, which amply augmented project benefits and strengthened project relevance. Most loan and project covenants were complied with. However, there was an issue relating to the internal approval mechanisms at the NHA headquarters for contract variations and timeline extensions, which slowed project progress and warranted a review for the sake of future projects. This validation assesses the performance of the borrower and the executing agency satisfactory.

C. Performance of the Asian Development Bank and Cofinanciers

26. The PCR rated ADB's performance satisfactory. ADB worked closely with the borrower, the executing agency, and stakeholders to ensure the project's timely preparation, approval, and implementation. ADB was responsive and flexible in regard to the requests made by the borrower and the executing agency, e.g., for the use of standalone loans to finance sections II and III, which were originally included in the MFF; the use of loan and grant savings to finance the balance of works relating to the 11 km section of expressway E35; the use of advance account with a ceiling up to \$15 million for higher processing efficiency; and the revision of loan and grant fund ratios to avoid impacts on contractors' cash flow and project progress. ADB was closely involved in monitoring, identifying, and analyzing implementation issues and provided substantial inputs to facilitate their resolution and expedite the implementation progress to the extent possible. It assisted the NHA in seeking high-level interventions to ensure prompt actions and overcome challenges. The project's processing and administration was undertaken by ADB headquarters and was delegated to its Pakistan Resident Mission in June 2017. Throughout project implementation, ADB fielded 16 missions, including one inception mission (2016), eight review missions (2016 to 2019), three project specific contact and consultation missions (2018 to 2019), two midterm review missions (2018), and two PCR missions (2022). The mission back-to-office reports were informative on implementation progress and issues. Guidance and training were provided to support the NHA in procurement, safeguard compliance, and financial management. This validation assesses ADB's performance satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

27. The PCR rated the project successful. This validation assesses the project relevant, effective, efficient, and less than likely sustainable, and hence the project was successful.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Highly effective	Effective	No data to substantiate the target of average travel speed on E35.
Efficiency	Efficient	Efficient	
Sustainability	Likely sustainable	Less than likely sustainable	No financial cost-benefit evaluation
Overall assessment	Successful	Successful	
Preliminary assessment of impact	Satisfactory	Satisfactory	
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Less than satisfactory	Para. 32

ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report.
Source: ADB (IED).

B. Lessons

28. The PCR identified the following issues and lessons. First, project readiness filters could be enhanced for future projects to avoid challenges common to infrastructure projects. These are insufficient construction equipment at the work sites; contractors' chronic working capital shortages; non-payment of local contractors and/or suppliers, resulting in shortages (e.g., of materials and fuel); and a lack of contractor capacity for efficient project management. Second, future project designs could consider a pragmatic approach to the complexities of land acquisition and payment of compensation at the early stages of land acquisition, specifically the moment when the notice to proceed was issued to the executing agency. Construction contracts could be structured on a section-wise basis to better integrate LARP implementation with commencement of works. Third, the prompt establishment of the PIU and the lessons from tranche 1, particularly regarding LARP implementation, contributed to the smooth start-up of the construction activities. However, payment of small amounts to affected persons remains a challenging task.

29. This validation supports the above lessons and offers the following additional lessons.

- (i) **Project-level lesson.** Timely and appropriate changes in scope and reallocation of loan and grant proceeds responding to actual project needs emerging from implementation can help utilize available loan and grant resources in a more targeted and efficient manner to facilitate more activities and deliver more outputs. For example, responding to the government's request relating to E35 contributed directly to developing an efficient and safer transport corridor between Islamabad, Faisalabad, and Multan for more connectivity between the various parts of the country.
- (ii) **Country-level lesson.** The project's implementation was affected by cumbersome approval mechanisms at the NHA headquarters for contract variations and extensions. Frequent interventions by ADB and NHA's top management were required to expedite decision-making. At appraisal of the original project and the

additional financing, the report and recommendation of the Presidents (RRPs) identified major risks and mitigation measures in relation to financial management, land acquisition and resettlement, and cost overruns. However, there was no identification of the risk associated with potential complications of the internal approval mechanisms of NHA. For future projects, due diligence should include obtaining a thorough understanding of the institutional setup, conducting internal review and approval procedures, ensuring prior experience of the executing and implementing agencies in undertaking ADB projects. Developing effective mitigation measures to minimize delays should also form part of the process.

- (iii) **Results framework and methodology-level lesson.** The PCR did not explain why it did not conduct a financial cost-benefit evaluation for the toll revenue-generating motorway. This validation notes that the RRP too did not conduct such evaluation. Instead of following the same approach as the RRP, which is a methodological weakness, the PCR could have identified this inadequacy in financial cost-benefit evaluation and calculated the FIRR to quantitatively assess the project's financial sustainability and used it to substantiate a conclusion.

C. Recommendations for Follow-Up

30. The PCR had four recommendations. First, the NHA should pay unpaid affected persons and retain and institutionalize staff capacity for quality LARP preparation and implementation. Second, financial restructuring of the NHA should be pursued to ensure long-term sustainability. Third, since overloaded traffic has diverted to national and provincial highways, the NHA should work with provincial highway departments to establish a mechanism to ensure that the national road network is protected from damage and provincial road assets are also preserved from premature deterioration to reduce the overall financial burden of road network maintenance. Fourth, the NHA management should consider reviewing the approval process of contract variations to improve contract administration. This validation supports these recommendations.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

31. A comprehensive project performance monitoring system was developed and implemented to monitor and evaluate the performance of the project. Monthly progress reports were prepared by the supervision consultants, endorsed by the NHA, and submitted to ADB on time. The audited project financial statements were submitted generally on time while the audited entity financial statements were submitted with delays of usually 1 year. No material weaknesses were identified in NHA's institutional arrangements for financial management.

B. Comments on Project Completion Report Quality

32. The PCR provided a detailed description of the project background, design and formulation, and the implementation process although it could have been more critical about the DMF design and more informative about the outcome achievement (in particular the average travel speed along the E35). Major implementation issues were clearly explained. The environmental and social safeguards were succinctly summarized. The economic reevaluation was generally well prepared, with clear description and explanation on the key assumptions, parameters, and calculation details. However, the PCR did not include the required financial cost-benefit evaluation for the toll revenue-generating motorway, which calls into

question the project's financial viability. This validation assesses the quality of the PCR less than satisfactory.¹⁶

C. Data Sources for Validation

33. Data sources used for this validation include the PCR, the RRP's and their linked documents, loan and project agreements, mission back-to-office reports, aide-mémoire, safeguard documents, environmental and social monitoring reports, national strategies and policies, and ADB's strategies, policies, and guidelines.

D. Recommendation for Independent Evaluation Department Follow-Up

34. This validation does not find a project performance evaluation report necessary since there are no areas that could warrant a more in-depth evaluation in the future.

¹⁶ During this validation, the Central and West Asia Department disagrees with this rating, noting that the project at appraisal did not have an FIRR calculation.