

Project Administration Manual

Project Number: 46377
Loan Number:
September 2015

Islamic Republic of Pakistan: Sindh Provincial
Road Improvement Project

Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Works & Services Department (WSD) is wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by WSD of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Loan Agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

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Abbreviations

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
AFS	=	audited financial statements
CQS	=	consultant qualification selection
DMF	=	design and monitoring framework
EMP	=	environmental management plan
ICB	=	international competitive bidding
IEE	=	initial environmental examination
LAR	=	land acquisition and resettlement
NCB	=	national competitive bidding
NGOs	=	nongovernment organizations
PAM	=	project administration manual
PMU	=	project management unit
QCBS	=	quality- and cost based selection
RRP	=	report and recommendation of the President to the Board
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
SPRSS	=	summary poverty reduction and social strategy
TOR	=	terms of reference
WSD	=	Works and Services Department

I. PROJECT DESCRIPTION

1. **Project Location, Description, and Rationale.** The proposed provincial road improvement project is located in the Province of Sindh. Sindh has the second largest economy in Pakistan and contributes 33% of Pakistan's gross domestic product (GDP). Endowed with coastal access, Sindh is a major center of economic activity in Pakistan and has a highly diversified economy ranging from heavy industry, agriculture, and service sector. Sindh's economy is to a large extent influenced by the economy of Karachi, its capital and Pakistan's largest city in which the Karachi Port handles about 75% of the entire national trade. Although Sindh remarkably has a high GDP per capita of \$1,400, which is three times that of the rest of the nation or 1.33 times the national average, the economy development is unbalanced geographically, especially beyond Karachi due to poor road connectivity.

2. Roads are the predominant mode of transport in Pakistan, which carries 91% of passenger traffic in passenger-kilometers and 96% of freight traffic in ton-kilometers¹. Sindh follows same pattern, and has a road network of 25,737 km—1,365 km of national highways, 2,830 km of provincial highways, 11,630 km of secondary roads, and 9,912 km of access roads, which gives 0.18 km/ sq.km in density of the road network and is lower than the national road density of 0.33 km/sq.km.² The low road density and poor road condition has constrained the development of Sindh economy.

3. The project will improve about 328 km provincial highways in Sindh. It will involve rehabilitation and upgrading some major inter-district connections to standard width of 7.3 m carriageway with appropriate drainage and safety facility, including institutional strengthening, road safety, and road asset management improvement components. A project preparatory technical assistance was provided³ to prepare the project.

4. The ownership of the network is shared by different government agencies. The Works & Services Department (WSD) of the Government of Sindh is responsible for the entire provincial and secondary road networks with total length of 14,460 km, the National Highway Authority (NHA) is managing national highway, and local district government is responsible for all local and access roads. The proposed project will help provincial road network improvement to enhance connectivity between provincial transport centers and cities with local markets and communities, provide much-needed access to education and health facilities, and contribute to poverty reduction by creation of jobs and employment opportunities.

5. The Project constitutes (i) rehabilitating and upgrading about 328 km of provincial highways; (ii) institutional strengthening of WSD on road asset management, Sindh road network master plan, emergency response equipment for traffic police, and training to WSD staff.

6. **Impact and Outcome.** The impact will be an efficient and integrated transportation system established to facilitate the development of a competitive economy. The outcome will be key sections of the provincial highway network in Sindh improved.

7. **Outputs.** The outputs of the project aims to (i) about 328 km of provincial roads rehabilitated; and (ii) institutional capacity of the WSD strengthened in road planning, maintenance, and road safety

¹ ADB. 2009. *Country Partnership Strategy: Pakistan, 2009–2013*. Manila.

² World Bank, <http://data.worldbank.org/indicator/IS.ROD.DNST.K2>

³ ADB provided project preparatory technical assistance for TA-8406 PAK: Provincial Road Improvement Project.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	Months							Responsible
	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	
Establishment Project implementation Arrangement	x							WSD
Advance Contracting Actions		x						WSD/ADB
ADB Board Approval		x						ADB
Loan Signing			x					Government/ADB
Government Legal Opinion			x					Government
Government Budget inclusion					x			Government
Loan Effectiveness						x		Government/ADB
Contract Award							x	WSD

ADB = Asian Development Bank, WSD = Works and Services Department, Government = the Government of Sindh.

B. Overall Project Implementation Plan

	2015				2016				2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A. DMF																								
About 328 km provincial highway rehabilitated																								
Award civil works contracts by Q2 2016																								
Select the Project Management Consultant by Q3 2016																								
Complete civil works by Q4 2018.																								
Institutional capacity of WSD strengthened																								
Select consultants by Q2 2016																								
Procure and install hardware and software of training facility by Q4 2016																								
Procure emergency response equipment by Q4 2016																								
Upgrading the existing RAMS Q4 2017																								
Complete Sindh road master plan by Q2 2018																								
Conduct training every year and complete all trainings by Q4 2018																								
B. Management Activities																								
Procurement plan key activities to procure contract packages																								
Consultant selection procedure																								
Environmental management plan key activities																								
Mid-term review																								
Project completion report																								

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project implementation organizations	Management Roles and Responsibilities
Planning and Development Department (Executing Agency) (Steering Committee)	<ul style="list-style-type: none"> ➤ Provide overall guidance on and oversight to the implementation and performance of the project. ➤ Resolve issues and conflicts that would compromise quality of results, investment cost or project completion time. ➤ Approve the annual activity plan. ➤ Review implementation progress and resolve issues. ➤ Convening meeting on quarterly basis or as and when required.
Works & Services Department (Implementing Agency)	<ul style="list-style-type: none"> ➤ Overall responsibility for implementation of the project. ➤ Focal point for communication with ADB on project related matters, and signatory to important documents such as civil works contracts, consultancy service contracts, withdrawal applications, and audit reports. ➤ Ensure timely completion of project. ➤ Administer all consultancy and works contracts (instructing the supervision consultant, approving variations, suspending and terminating contracts) ➤ Ensure compliance with loan covenants, ADB's guidelines, procedures, and policies. ➤ Prepare, implement, and monitor safeguards in accordance with the ADB's SPS, loan agreement, and the project agreement. ➤ Establish a grievance redress mechanism with a dedicated grievance officer. ➤ Establish a PMU. ➤ Maintain all project accounts and accurate records of both financial and physical progress with regards to all project components. ➤ Procure and supervise execution of civil works. ➤ Payments to contractors. ➤ Operate imprest account. ➤ Provide ADB in timely manner quarterly and annual reports including audited financial statements duly audited as per the loan agreement. ➤ Carry out monitoring and evaluation regularly and on time. ➤ Disseminate and publish procurements contracts-related information. ➤ Conduct spot checks for physical verification of safeguards compliance and complete checklists
ADB	<ul style="list-style-type: none"> ➤ Assist WSD in providing timely guidance at each stage of the project implementation. ➤ Review all the documents that require ADB approval. ➤ Conduct regular project review missions, a midterm review, and project completion mission. ➤ Process withdrawal applications and releasing eligible funds. ➤ Update regularly the project performance review reports with the assistance of WSD. ➤ Update and post on ADB website the project information for public disclosure, and the safeguards documents in accordance with the ADB SPS (2009).

ADB = Asian Development Bank; EA = executing agency; PMU = project management unit; SPS = Safeguards Policy Statement; WA = withdrawal application; WSD = Works & Services Department.

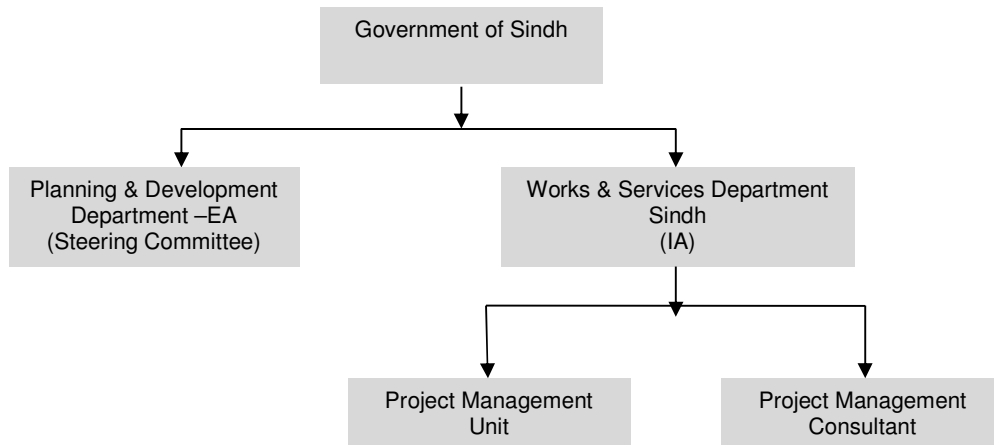
B. Key Persons Involved in Implementation

Executing Agency	Mumtaz Ali Shah Secretary Works & Services Department Telephone: + 92-21-99222992 Email address: Office Address: New Sindh Secretariat Building No. 1, 3rd Floor, Opp: Income Tax Building, Shahrah-e-Kamal Atta Turk, Karachi, Sindh. Works & Services Department
ADB	Xiaohong Yang Director, CWTC Telephone No.: +63-2-632-6765 Email address: xyang@adb.org
Mission Leader	Jiangbo Ning Senior Transport Specialist Telephone No.: +63-2-632-6130 Email address: jning@adb.org

C. Project Organization Structure

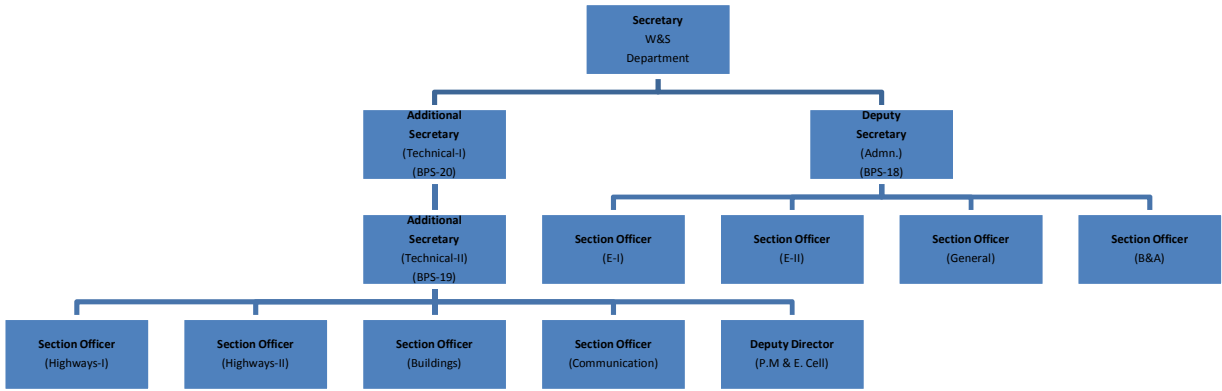
8. The Planning and Development Department of Sindh will be the executing agency (EA), and the Works & Services Department (WSD) will be Implementing Agency (IA) which has the mandate for planning, designing and implementing transport projects for provincial highways as well as policy and regulatory authority over the sector in the province. The project organization structure is as the Figure 3-1.

Figure 3-1: Project Organization Structure



9. The WSD is headed by a Secretary level position in the Government of Sindh. In its organization, there are two staff offices and seven operational directorates. The sanctioned strength of the Department is shown in the Figure 3-2.

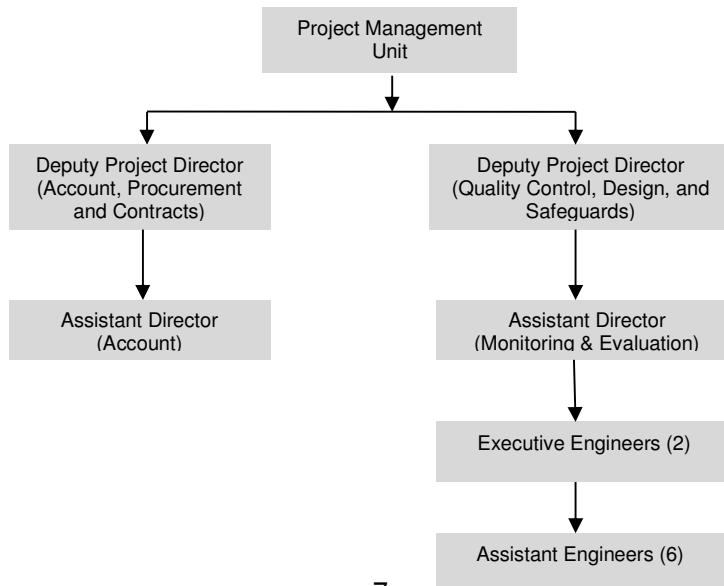
Figure 3-2: Organization Chart of WSD



10. The Project Management Unit (PMU) will be responsible for overall implementation of the project including supervision of contractors and consultants and day-to-day monitoring of project implementation in accordance with the provisions of the PAM and related legal agreements. The Project Management Unit Organizational Char is as Figure 3-3.

Key Positions for Project Management Unit	
Title	Positions
Project Director	1
Deputy Director (Account, Procurement and Contracts)	1
Deputy Director (Quality Control, Design and Safeguards)	1
Assistant Director (Accounts)	1
Assistant Director Research (Monitoring & Evaluation)	1
Executive Engineers	2
Assistant Engineers	6

Figure 3-3: Project Management Unit Organizational Chart



IV. COSTS AND FINANCING

A. Detailed Cost Estimates by Expenditure Category

\$ million				
	Foreign Exchange	Local Currency	Total Cost	% of Total Base Cost
A. Investment Cost				
1.	Resettlement	0.00	0.10	0.05
2.	Civil Works	37.48	138.69	87.63
3.	Equipment	0.25	0.25	0.25
4.	Local Taxes and duties		11.28	5.61
5.	Consultants			
	a. Project Management	2.00	2.50	2.24
	b. Institutional Strengthening	3.00	4.50	3.73
	Subtotal (A)	42.73	157.32	99.50
B. Recurrent Cost				
1.	Incremental Administrative Cost	1.00	1.00	0.50
	Subtotal (B)	1.00	1.00	0.50
	Total Base Cost (A+B)	43.73	157.32	100.00
C. Contingencies				
1.	Physical	1.87	7.49	4.65
2.	Price	1.44	9.77	5.58
	Subtotal (C)	3.32	17.26	10.24
D. Financial Charges during Construction				
1.	Interest During Implementation	5.18	0.00	2.58
2.	Commitment Charge	0.70	0.00	0.35
	Subtotal (D)	5.88	0.00	2.92
	Total Project Cost (A+B+C+D)	52.93	174.58	113.16

B. Allocation and Withdrawal of Loan Proceeds

Number	Item	Total Amount Allocated for ADB Financing (\$)		Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Civil Works	168,680,000		90% of total expenditure claimed
2	Consulting Services	12,000,000		100% of total expenditure claimed*
3	Equipment	500,000		94.34% of total expenditure claimed
4	Incremental Administrative Cost	1,000,000		100% of total expenditure claimed*
5	Financial Charges during Implementation	5,880,000		100% of total amount due
6	Unallocated	9,790,000		
	Total	197,850,000		

* Exclusive of taxes and duties imposed within the territory of the Borrower.

C. Detailed Cost Estimates by Financier

Item	ADB		Government				Total Cost
	Amount	% of Cost Category	Amount	Amount (Taxes and duties)	Amount (Total)	% of Cost Category	
A. Investment Cost							
1. Resettlement Cost	0.00	0.00	0.10	0.00	0.10	100.00	0.10
2. Civil Works	168.68	90.00	7.50	11.25	18.74	10.00	187.42
3. Equipment	0.50	94.34		0.03	0.03	5.66	0.53
4. Consultants							
a. Project Management	4.50	100.00					4.50
b. Institutional Strengthening	7.50	100.00					7.50
Subtotal (A)	181.18	90.57	7.60	11.28	18.87	9.43	200.05
B. Recurrent Cost							
1. Incremental Administrative Cost	1.00	100.00					1.00
Subtotal (B)	1.00	100.00					1.00
Total Base Cost (A+B)	182.18	90.61	7.60	11.28	18.87	9.39	201.05
C. Contingencies							
1. Physical	4.68	50.00	4.68		4.68	50.00	9.37
2. Price	5.11	45.54	6.11		6.11	54.46	11.21
Subtotal (C)	9.79	47.57	10.79		10.79	52.43	20.58
D. Financial Charges during Construction							
1. Interest during Implementation	5.18	100.00					5.18
2. Commitment Charge	0.70	100.00					0.70
Subtotal (D)	5.88	100.00					5.88
Total Project Cost (A+B+C+D)	197.85	86.96	18.39	11.28	29.66	13.04	227.51

D. Detailed Cost Estimates by Outputs/Components

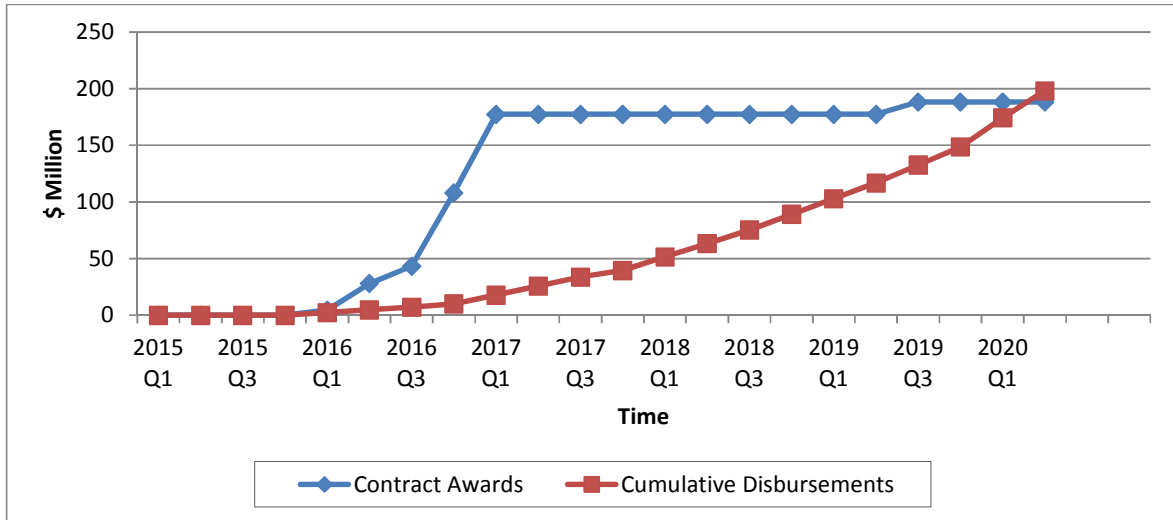
	Total Cost	328 km Provincial Highway Rehabilitated		Institutional Strengthening	
		Amount	% of Cost Category	Amount	% of Cost Category
A. Investment Cost^a					
1. Resettlement Cost	0.10	0.10	100.0%		0.0%
2. Civil Works	176.17	176.17	100.0%		0.0%
3. Equipment	0.50			0.50	100.0%
4. Local Taxes and duties	11.28	11.25	99.7%	0.03	0.3%
5. Consultants					
a. Project Management Consultant	4.50	4.5	100.0%	0.00	0.0%
b. Institutional Strengthening	7.50	0.0	0.0%	7.50	100.0%
Subtotal (A)	200.05	192.02	96.0%	8.03	4.0%
B. Recurrent Cost					
1. Incremental Administrative Cost	1.00	0.80	80.0%	0.20	20.0%
Subtotal (B)	1.00	0.80	80.0%	0.20	20.0%
Total Base Cost (A+B)	201.05	193.82	95.9%	8.23	4.1%
V Contingencies					
1. Physical	9.37	8.43	90.0%	0.94	10.0%
2. Price	11.21	10.09	90.0%	1.12	10.0%
Subtotal (C)	20.58	18.52	90.0%	2.06	10.0%
D Financial Charges during Construction					
1. Interest during Implementation	5.18	4.66	90.0%	0.52	10.0%
2. Commitment Charge	0.70	0.63	90.0%	0.07	10.0%
Subtotal (D)	5.88	5.29	90.0%	0.59	10.0%
Total Project Cost (A+B+C+D)	227.51	216.94	95.2%	10.88	4.8%

E. Detailed Cost Estimates by Year

	Total Cost	(\$ million)					
		2015	2016	2017	2018	2019	2020
Investment Cost							
1. Resettlement Cost	0.10	0.00	0.10				
2. Civil Works	176.17	0.00	26.43	61.66	61.66	22.90	3.52
3. Equipment	0.50		0.50				
4. Local Taxes and duties	11.28		3.38	3.95	1.69	1.13	1.13
5. Consultant							
a. Project Management Consultant	4.50	0.00	1.40	1.40	1.40	0.20	0.1
b. Institutional Strengthening	7.50	0.00	2.25	2.25	1.50	0.75	0.75
Subtotal (A)	200.05	0.00	16.44	34.02	48.63	54.93	46.02
B Recurrent Cost	1.00	0.00	0.21	0.21	0.21	0.21	0.14
Total Base Cost (A+B)	201.05	0.00	16.66	34.24	48.85	55.14	46.13
C Contingencies	20.58	0.00	4.80	6.00	6.00	2.18	1.6
D Financial Charges during Construction	5.88	0.00	1.20	1.20	1.15	1.10	1.23
Total Project Cost (A+B+C+D)	227.51	0.00	22.66	41.44	56.00	58.42	48.96
% of Total Project Cost	100.00	0.00	9.90	18.20	24.60	25.60	21.50

Source: ADB estimates.

F. Contracts and Disbursements S-Curve

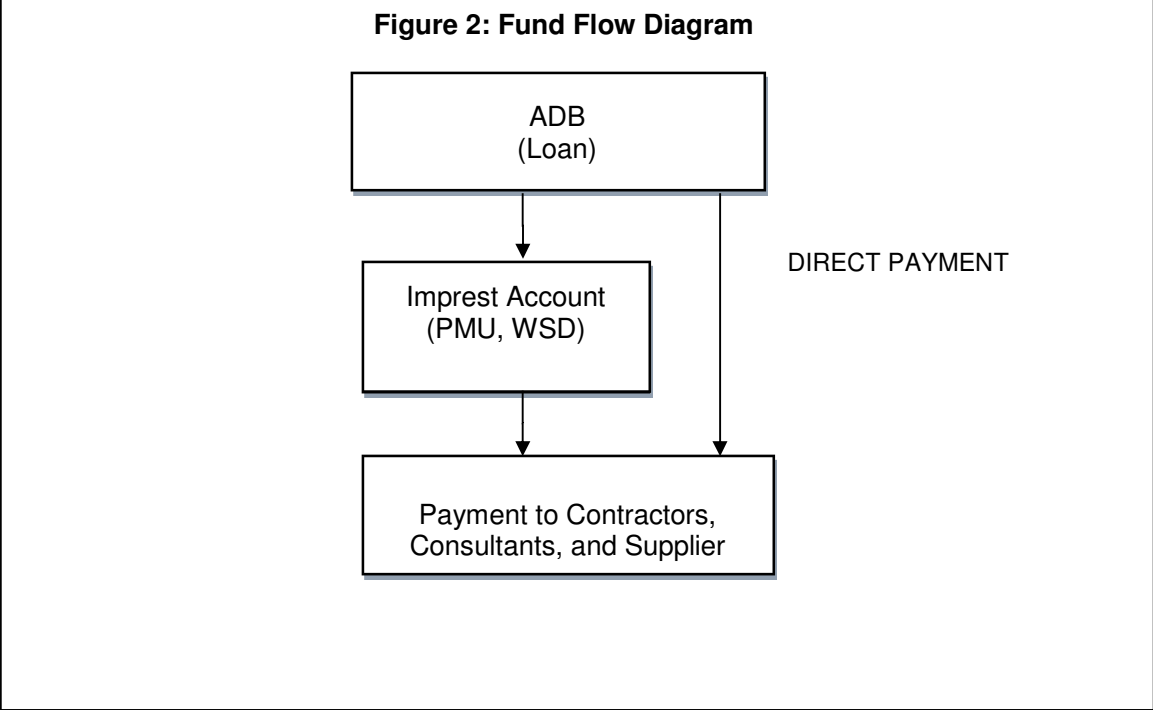


Contract Awards					
Year	Q1	Q2	Q3	Q4	Total
2015	0.0	0.0	0.0	0.0	0.0
2016	4.5	23.5	15.3	64.7	108.0
2017	74.2	0.0	0.0	0.0	74.2
2018	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	9.8	0.0	9.8
2020					
				Total	192.0

Disbursements					
Year	Q1	Q2	Q3	Q4	Total
2015	0.0	0.0	0.0	0.0	0.0
2016	2.4	2.4	2.4	2.8	9.9
2017	7.9	7.9	7.9	5.9	29.7
2018	11.9	11.9	11.9	13.9	49.5
2019	13.9	13.9	15.8	15.8	59.4
2020	25.7	11.9	11.8		49.4
				Total	197.9

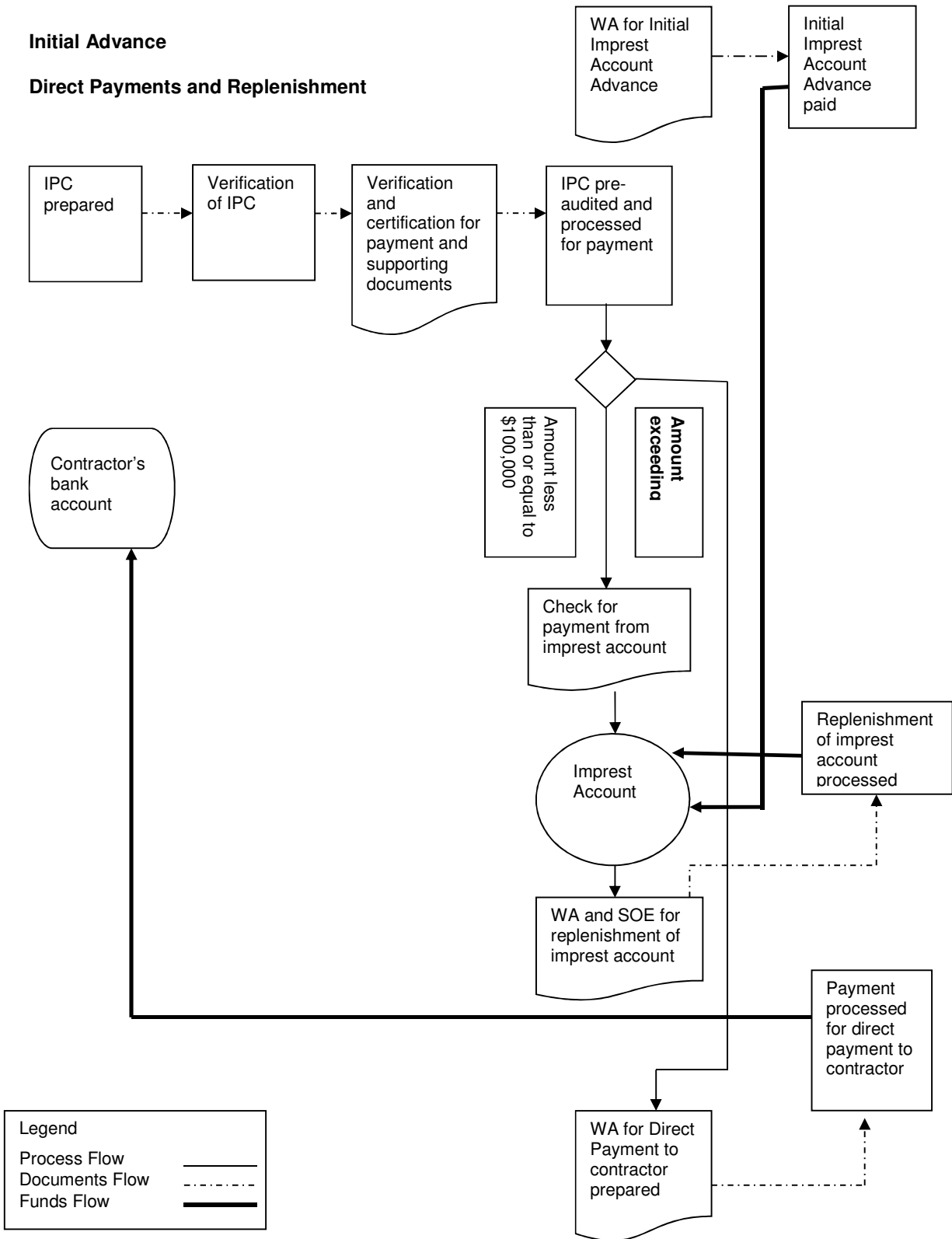
Source: ADB estimates.

G. Fund Flow Diagram



Initial Advance

Direct Payments and Replenishment



V. FINANCIAL MANAGEMENT

11. Financial management assessment (FMA) was conducted for WSD in March 2015 in accordance with ADB's *Guidelines for the Financial Management and Analysis of Projects*⁴ and *A Methodology Note on Financial Due Diligence*⁵. Key findings are given below, while detailed findings is given in Annex 1.

A. Financial Management Assessment

12. FMA confirmed that WSD is committed to provide adequate number of accounting professionals and procedures which will control accounting, financial and physical progresses related to the Project. The Government's New Accounting Manual shall be used which is adequate and is followed in all ADB projects in Pakistan. FMA also confirmed that the WSD's financial management system generally meets ADB requirements for institutional capability and accounting and budgetary systems and procedures. The FMA considered WSD in its role as the proposed project IA. The FMA assess the financial management capacity of IA which included the funds-flow arrangements, staffing, accounting and financial reporting systems, internal and external auditing arrangements, and financial information systems.

13. The assessment identified the main financial management risks as: (i) operational risk – the risk that the revenue generation from toll fee will be insufficient to cover operation and maintenance costs, (ii) incomplete and inaccurate financial reports due to manual recording accounting transactions, and (iii) compliance risk – the risk that the project and WSD will be unable to comply with ADB's requirements on financial management. The overall financial management risk-rating of the project before considering mitigating measures is Substantial. The identified financial management risks are summarized as below and will be closely monitored during project implementation.

Table 5.1: Summary of Financial Management Internal Control and Risk Assessment

Risk type	Risk Assessment	Risk Description	Mitigation Measures
Inherent Risk			
1. Country-Specific Risks	S	Budget Execution Risk - delay in receiving fund from the government and actual expenditure deviates from budget estimates.	PMU prepare and submit budget plan to WSD for approval. PMU monitor the expenditures against budget on monthly basis. Any deviations from approved budget will require justification and approval by WSD. The government ensures adequate budget to be released to the project in one installment each year.
2. Entity-specific risks	M	Financial and Operational Risk – Revenue generation from toll fee is insufficient to cover operations and maintenance costs which result in private contractors walking out from the maintenance contract. This leaves the roads without maintenance.	WSP conducts periodic reviews of toll fee and the contractors' operational performance to ensure an immediate intervention such as increase in toll fee. WSP and the government need also to allocate sufficient budget for road maintenance in the case all possibilities are fully exhausted including increase the toll fee.

⁴ ADB. 2005. *Financial Management and Analysis of Projects*. Manila. Available at: <http://www.adb.org/Documents/Guidelines/Financial/default.asp>.

⁵ ADB. 2009. *Financial Due Diligence: A Methodology Note*. Manila. Available at: <http://www.adb.org/Documents/Others/FM-toolkit/Methodology-Note.pdf>.

Risk type	Risk Assessment	Risk Description	Mitigation Measures
3. Project-specific risks	M	Project Completion Risk – PMU staff do not have sufficient understanding of ADB financial management requirements, disbursement procedures to manage the project fund flows which contributes to delays in project implementation.	ADB will provide financial management training to PMU staff to clarify ADB requirements including disbursement, financial reporting and auditing requirements.
	M	Operational Inefficiency - Low salaries and dissatisfied staff lead to underperformance and financial loss.	Due to the high unemployment rate in the country, the market does not offer competitive compensation packages to attract staff from other entities, leaving little incentive for staff to consider employment elsewhere. WSD provides some form of job security and reasonable compensation package.
Overall Assessment of Inherent Risk	S		
Control Risk			
1. Implementing Entity	L	Compliance Risk - Project financial management policies and procedures are not fully documented.	The Finance Director is responsible for the preparation of project financial statements, disbursements, budget and expenditure monitoring, among others, and ensures that policies and procedures are adhered to. Develop financial management manual to strengthen internal control, quality and efficiency financial function.
2. Funds Flow	M	Financing Risk – Counterpart funds are not provided timely and adequately.	PMU prepare 3 years project budget and update on annual basis. The government allocate sufficient budget for the project and release one instalment each year.
3. Staffing	L	Execution Risk - PMU staff do not have sufficient understanding of financial management requirements and procedures which contributes to project delays and non-compliance with requirements.	Existing PMU has experience and somehow familiar with ADB's financial requirements under Loan 2742 and Loan 2743. However, training will be provided for PMU staff to clarify ADB's requirements and increase familiarity. Financial reporting requirements (submission of financial statements and audit requirements) will be the primary focus in addition to disbursement procedures.
4. Accounting and Reporting	M	Incomplete and inaccurate financial reporting - Manual accounting processes increase likelihood of errors and omissions.	Develop financial management manual to strengthen internal control, quality and efficiency financial function.
5. External Audit	M	Compliance Risk – Audit requirements are not fully complied with due to external auditor's limited understanding of ADB requirements.	Auditor General of Pakistan and ADB will jointly review audit requirements to ensure that the audit scope includes required opinion and assurances.

Risk type	Risk Assessment	Risk Description	Mitigation Measures
6. Reporting and Monitoring	L	Financial Risk – Delayed submission of WSD financial reports undermines ADB’s ability to assess WSD’s capacity to implement, maintain, and operate the projects	Develop financial management manual to strengthen internal control, quality and efficiency financial function. Audited project financial statements (APFS) under Loan 2742 and Loan 2743 of the last two financial years have been submitted timely. PMU ensures it will continue to submit APFS timely.
7. Information Systems	S	Incomplete and inaccurate financial reporting - Manual accounting processes increase likelihood of errors and omissions.	Develop financial management manual to strengthen internal control, quality and efficiency financial function.
Overall Control Risk	M		
Overall Risk	S		

*H= High, S=substantial, M= moderate, N= negligible or low.

14. The financial management action plan is as follows:

Table 5.2: Financial Management Action Plan

Action	Responsibility	Resource	Timing
Financial management training to be provided to PMU staff to clarify ADB requirements including disbursement, financial reporting and auditing requirements	WSD through PMU	PMU	Within 1 year after loan effectiveness by ADB
Develop financial management manual to strengthen internal control, quality, and efficiency financial function	WSD through PMU	PMU*	Within 1 year after loan effectiveness by ADB

* Financial management manual for ADB-funded projects in Pakistan to be developed under RETA 8697. PMU then can custom for its own needs.

B. Disbursement

15. The Loan proceeds will be disbursed in accordance with ADB’s Loan Disbursement Handbook (2015, as amended from time to time), and detailed arrangements agreed between the government and ADB.⁶

16. To facilitate project implementation through timely release of loan proceeds, the EA, through PMU, will establish an imprest account promptly after loan effectiveness at a commercial bank acceptable to ADB.⁷ The imprest account is to be used exclusively for the ADB’s share of eligible expenditures. The currency of the imprest account will be US Dollar. The EA, through PMU, who established the imprest account in its name is accountable and responsible for proper use of advances to the imprest account. The initial and additional advances to the imprest account may be requested based on 6 months estimated expenditures to be financed through the imprest account. The imprest account will be established, managed, and liquidated in accordance with ADB’s Loan Disbursement Handbook and detailed

⁶ Available at: http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf.

⁷ The bank charges incurred in the operation of the imprest account may be financed from the loan proceeds.

arrangements agreed by the Government and ADB. ADB's Loan Disbursement Handbook describes which supporting documents should be submitted to ADB and which should be retained by the government for liquidation and replenishment of an imprest account.

17. The statement of expenditure (SOE) procedure will be used to reimburse eligible expenditure and to liquidate and replenish the imprest account for individual payments of \$100,000 equivalent and below. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

18. PMU (refer to Para. 8) will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB. Before the submission of the first withdrawal application, the government shall submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is \$100,000 equivalent. Individual payments below this amount should be paid from the imprest account or by the EA and subsequently claimed to ADB through reimbursement unless otherwise accepted by ADB.

C. Accounting

19. WSD thru PMU will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project. PMU will prepare project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing

20. WSD through PMU will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and with the Government's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements will be submitted in the English language to ADB within six months of the end of the fiscal year by the PMU.

21. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents.

22. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

23. The Sindh Government and WSD have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.⁸ ADB reserves the right to require a change in the auditor (in a

⁸ ADB approach and procedures regarding delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six

manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

24. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).⁹ After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.

- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

⁹ Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

25. Advance contracting and retroactive financing will be considered. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (2015, as amended from time to time) (ADB's *Procurement Guidelines*)¹⁰ and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time) (ADB's *Guidelines on the Use of Consultants*).¹¹ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The borrower and WSD were advised that ADB's approval of advance contracting will not commit ADB to subsequently approve or finance the project; and ADB will not finance expenditures paid by the borrower prior to loan effectiveness, even if advance contracting is approved, unless retroactive financing has also been approved by ADB.. the retroactive financing will be up to 20% of the amount of the loan proceeds for eligible expenditures incurred on works, equipment, and consulting service for the project in accordance with agreed procedures and during the 12 months before the signing of the loan and project agreements.

B. Procurement of Works and Consulting Services

26. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines*. WSD and ADB have discussed procurement packages and procedures and understood that the proposed project does not involve national competitive bidding (NCB) for works. The procurement plan should be updated whenever change in the procurement arrangements is required and agreed.

27. A 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

28. Procurement activities under WSD will be the responsibility of the designated officers, other staff, and consultants. ADB will closely monitor all major project implementation activities. Contracts for civil works will comprise about 6 international competitive bidding (ICB) packages. All contracts for civil works and goods will be procured in accordance with ADB's *Procurement Guidelines*. ADB's standard bidding documents will be used in all cases.

29. All consultants will be recruited according to ADB's *Guidelines on the Use of Consultants*. Consulting services are required to facilitate project management and implementation. The expertise requirement of international consultants and national consultants are given in the relevant sections of the terms of reference in Annex 2. Consulting firms will be engaged using the quality- and cost- based selection (QCBS) method with a standard quality: cost ratio of 90:10.

30. WSD will institute a referencing system in record keeping. All procurement files including bid invitations, winning bids, evaluation reports, pre-contract documents, contracts documents and invoices are kept in single contract files. The government regulations require keeping all records for eight years which sufficiently covers ADB requirement to keep the project records for two years after project completion, considering that all projects under the proposed loan are envisioned to be completed within 3 years following procurement activities. A procurement risk assessment is in Annex 2.

¹⁰ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

¹¹ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

C. Procurement Plan

31. The procurement plan describes all procurement of good and works to be undertaken for the Project. The supervision consultants will consist of 73 person-months of international consultants and 2,309 person-months of national consultants. Consultant's terms of reference are in Appendix 2.

PROCUREMENT PLAN

Basic Data

Project Name: Sindh Provincial Roads Project	
Project Number: 46377-002	Approval Number:
Country: Pakistan	Executing Agency: Planning & Development Department, Sindh
Project Procurement Classification: Category B	Implementing Agency:
Project Procurement Risk: Low	Works & Services Department
Project Financing Amount: US\$ 227,510,000 ADB Financing: US\$ 197,850,000 Cofinancing (ADB Administered): NA Non-ADB Financing: US\$ 29,660,000	Project Closing Date: December 2019
Date of First Procurement Plan: 3 September 2015	Date of this Procurement Plan: 3 September 2015

1. Methods, Thresholds, Review and 18-Month Procurement Plan

1.1. Procurement and Consulting Methods and Thresholds

32. Except as the ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding for Goods	US\$ 2,000,000 and Above	
National Competitive Bidding for Goods	Between US\$ 100,001 and US\$ 1,999,999	The first NCB is subject to prior review, thereafter post review.
Shopping for Goods	Up to US\$ 100,000	
International Competitive Bidding for Works	US\$ 15,000,000 and Above	
National Competitive Bidding for Works	Between US\$ 100,001 and US\$ 14,999,999	The first NCB is subject to prior review, thereafter post review.
Shopping for Works	Up to US\$ 100,000	

Consulting Services	
Method	Comments
Quality- and Cost-Based Selection for Consulting Firm	

1.2. Goods and Works Contracts Estimated to Cost \$1 Million or More

33. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
1	Kandikot-Jacobabad	22,180,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	(43 km)						Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works
2	Jacobabad-Rotodero (36 km)	17,330,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works
3	Khyber-Sanghar (64 km)	37,680,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works
4	Sanghar-Mirpurkhas (91 km)	35,870,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works
5	TMKhan-Badin (67 km)	41,640,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
6	Mirwah-Naukot (54 km)	32,670,000.00	ICB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Large Works

1.3. Consulting Services Contracts Estimated to Cost \$100,000 or More

34. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS1	Project Management Consultant	4,500,000.00	QCBS	Prior	Q4 / 2015	FTP	Assignment: International Quality-Cost Ratio: 80:20 Advanced Contracting: N
CS2	Sindh Road Network Master Plan and RAMS Upgrading Service	7,500,000.00	QCBS	Prior	Q4 / 2015	FTP	Assignment: International Quality-Cost Ratio: 80:20 Advanced Contracting: N

1.4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

1. The following table lists smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
G1	Emergency Response Equipment	500,000.00	1	NCB	Prior		Q4 / 2015	Prequalification of Bidders: N

Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
								Domestic Preference Applicable: N Advanced Contracting: N Bidding Document: Goods

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
None								

2. Indicative List of Packages Required Under the Project

35. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Comments
None							

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior/Post)	Type of Proposal	Comments
None							

3 National Competitive Bidding

3.1. General

36. The procedures to be followed for national competitive bidding shall be those set forth in the Draft Public Procurement Rules 2006 prepared by Government of Sindh (Islamic Republic of Pakistan) with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the ADB Procurement Guidelines.

a. Registration

- (i) Bidding shall not be restricted to pre-registered firms and such registration shall not be a condition for participation in the bidding process.
- (ii) Where registration is required prior to award of contract, bidders: (i) shall be

allowed a reasonable time to complete the registration process; and (ii) shall not be denied registration for reasons unrelated to their capability and resources to successfully perform the contract, which shall be verified through post-qualification.

b. Prequalification

37. Normally, post-qualification shall be used unless explicitly provided for in the loan agreement/procurement plan. Irrespective of whether post qualification or prequalification is used, eligible bidders (both national and foreign) shall be allowed to participate.

c. Bidding Period

The minimum bidding period is twenty-eight (28) days prior to the deadline for the submission of bids.

d. Bidding Documents

Procuring entities shall use the applicable standard bidding documents for the procurement of goods, works and services acceptable to ADB.

e. Preferences

No domestic preference shall be given for domestic bidders and for domestically manufactured goods.

f. Advertising

38. Invitations to bid shall be advertised in at least one widely circulated national daily newspaper or freely accessible, nationally-known website allowing a minimum of twenty-eight (28) days for the preparation and submission of bids. NCB contracts estimated to cost \$500,000 or more for goods and related services and &1,000,000 or more for civil works will be advertised on ADB's website via the posting of the Procurement Plan.

g. Bid Security

39. Where required, bid security shall be in the form of a bank guarantee from a reputable bank.

h. Bid Opening and Bid Evaluation

- (i) Bids shall be opened in public.
- (ii) Evaluation of bids shall be made in strict adherence to the criteria declared in the bidding documents and contracts shall be awarded to the lowest evaluated bidder.
- (iii) Bidders shall not be eliminated from detailed evaluation on the basis of minor, non-substantial deviations.
- (iv) No bidder shall be rejected on the basis of a comparison with the employer's estimate and budget ceiling without the ADB's prior concurrence.
- (v) A contract shall be awarded to the technically responsive bid that offers the lowest evaluated price and no negotiations shall be permitted.

i. Rejection of all Bids and Rebidding

Bids shall not be rejected and new bids solicited without the ADB's prior concurrence.

j. Participation by Government-owned enterprises

40. Government-owned enterprises in the Islamic Republic of Pakistan shall be eligible to participate as bidders only if they can establish that they are legally and financially autonomous, operate under commercial law and are not a dependent agency of the contracting authority. Furthermore, they will be subject to the same bid and performance security requirements as other bidders.

k. ADB Member Country Restrictions

41. Bidders must be nationals of member countries of ADB, and offered goods and services must be produced in and supplied from member countries of ADB.

D. Consultant's Terms of Reference

42. There are two consulting service contracts

- (i) project management consultant to carry out the design review and construction supervision services, and support the preparation, implementation, and monitoring of safeguard action plans including consultations and social and gender analysis as well as project management training. PMC will also assist in the preparation of performance-based contract for operation and maintenance concessionaire and establishment of financial control monitoring and disbursement procedures; and
- (ii) the consultant will review assess the existing road network plan in Sindh, and identify key Issues and transport trend in terms of economy development in Sindh, and identify the key issues and economy development trends, propose the road development plan; develop Master Plan with a multi-criteria analysis (MCA) and cost-benefit analysis (CBA) approach; conduct feasibility study for prioritized projects, and deliver training. The consultant will also review of the software architecture and major functional components of the existing road management system; suggest an off-the-shelf commercial software product that can be customized to meet all basic requirements for working as the state-of-the practice RAMS; transfer all data from the existing system to the new software; provide sufficient hands-on training sessions and workshops for the WSD staff to fully understand the new system operation and maintenance

43. The outline terms of reference (TOR) for each are given in Annex 3.

VII. SAFEGUARDS

A. Environment

44. The project has been categorized as environment category B, the civil works associated with the six road rehabilitation sub-projects is limited to reconstruction and some widening. This will involve minimum civil works and the entire operation will remain within the existing right-of-way (ROW). The environmental impacts that will result from this operation are limited to the construction phase and all impacts will be temporary in nature, with no residual long term impacts. IEE reports for the six project roads have been prepared and uploaded on the ADB website in June 2015. The environment specialist of the project management consultant team will be responsible for implementation of the environmental management plan of the six IEEs. The PMU will submit bi-annual environmental monitoring reports to ADB, which will be disclosed on ADB's website. The WSD shall ensure that:

- (i) The EMP is to be updated based on surveys of the alignment once the detailed design is available and prior to the implementation of civil works;
- (ii) WSD has sufficient resources to implement and record the implementation of the EMP;
- (iii) WSD, with the help of a construction supervision consultant, will submit to ADB semi-annual environmental reports for the project within 3 month of the close of each half of the calendar year during project implementation, and the reports will include a review of the progress on environmental measures in the IEE and EMP, monitoring of such measures, problems encountered and remedial measures taken;
- (iv) The detailed engineering design and civil works and other contracts for the project incorporate applicable environmental measures identified in the IEE and the EMP; and
- (v) Civil works contractors need to prepare a site-specific EMP that reflect their understanding and commitment to address environmental issues, and are supervised by the construction supervision consultant to ensure their compliance with the requirements of the IEE and the EMP.

B. Involuntary Resettlement

45. **Land Acquisition and Resettlement:** The project is classified category as B for resettlement impacts. The project was designed to avoid land acquisition and minimize the involuntary resettlement impacts by adopting existing alignment of the project roads and resorting to the most feasible technical design. According to the detailed design, the proposed rehabilitation works will be within ROW limits. However, in some sections near settlements and along agricultural lands, the ROW is encroached by adjoining land owners, the width of shoulder has been lessened to minimize the resettlement impact. Impact assessment and full census was conducted, based on the detailed designs and the resettlement plans were prepared following ADB's Safeguard Policy Statement (SPS), 2009.

46. According to resettlement plans, there will be no land acquisition and key resettlement impacts include partially affected structures (permanent structures and temporary thatched sheds/kiosk) and trees encroached into ROW. There are total 28 affected persons and 8 structures will need to be reallocated. All the affected households will restore/rehabilitate their structures by reconstruction of lost parts at the same place outside of the ROW and will not be displaced physically or economically. The project impacts will be temporary and insignificant in nature and affected households will be compensated for all their lost assets on replacement cost basis and income restoration support will be provided for business/livelihood losses. The total resettlement budget is estimated as approximate \$0.5 million.

47. Change to the scope, location or alignment of the project road shall be avoided and if during design review or implementation of the project, any such change to the scope, location or alignment of road is identified, shall not be made without prior approval of ADB. Any new LAR-related impacts as a result of final detail engineering design or changing in project scope, location or alignment will require a new RP which should be submitted to ADB for its approval. The additional plan should be prepared following ADB's SPS and its required guidelines. No construction activities shall be commenced in the sections with new/additional LAR impacts before full implementation of ADB approved RP is confirmed and cleared by ADB. Any new LAR impacts must be kept minimal so as not to cause changes in the project's involuntary resettlement categorization from B (limited impacts) to A (significant impact).

48. **Grievance Redress:** In addition, the WSD, shall ensure (i) efficient grievance redress mechanisms are in place and functional prior starting RP implementation and contractor's mobilization to assist affected persons resolve queries and complaints, if any, in a timely manner; (ii) all complaints are registered, investigated and resolved in a manner consistent with the provisions of Grievance Redress Mechanism as agreed in ADB approved RP, (iii) the Complainants/aggrieved persons are kept informed about status of their grievances and remedies available to them and (iv) adequate staff and resources are available for supervising and monitoring the implementation progress of the RP.

49. **Information Disclosure:** Public consultation and information disclosure were undertaken during the preparation of resettlement plans, including affected persons and the general public along the project roads. The consultation and information sharing process will be continued throughout project implementation. Main features of the resettlement plan including project impacts, asset valuation, entitlements and compensation provisions were disclosed to the project affected persons during consultative meetings. The resettlement plan is disclosed to general public by uploading it on WSD and ADB websites. The implementation of resettlement plans will be monitored regularly by WSD and the result including social monitoring will be shared with ADB quarterly during implementation phase of resettlement plans and biannually throughout project implementation period after implementation of resettlement plan is completed.

50. **Monitoring and Evaluation:** RP implementation shall be monitored internally by WSD with support of a Resettlement Specialist mobilized through Project Management Consultant following monitoring parameters specified in the RP. Land Acquisition and Resettlement Units in PMU will conduct day to day internal supervision and monitoring of RP implementation progress to ensure compliance with the provisions of the RP for each road. During RP implementation phase, the monitoring results shall be consolidated into semi-annual monitoring reports and shared with ADB for review and clearance. Once RP implementation is completed, semi-annual monitoring reports will be prepared and submitted to ADB for review and clearance. Upon clearance of monitoring reports by ADB, these will be disclosed by uploading on WSD and ADB websites within 14 days of receipt.

51. The overall responsibility to oversee resettlement activities rests with WSD through PMU. At project level, PMU will, with the support of social safeguard specialist of the PMC, be responsible for finalization/updating of resettlement plans, RP implementation and monitoring of resettlement activities.

52. Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB's Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement.

C. Indigenous Peoples

53. The project roads are located in the settled areas of Sindh Province with no indigenous population/peoples as defined under ADB's SPS. Therefore, no indigenous people communities will be affected by the project. Accordingly, the project is classified as category C under Safeguard requirement III "Indigenous Peoples" of ADB's SPS with no indigenous peoples planning documents required.

VIII. GENDER AND SOCIAL DIMENSIONS

54. Established socio-cultural practices in the project area mean that women residing along the project roads are unlikely to participate in civil works or roadside business with construction workers or drivers. Focus group discussions were undertaken with women in the project influence area, and detailed gender analysis will be conducted by a national specialist at early stage during implementation to identify priority concerns of local women. In preliminary consultations women saw the project benefits for them as including: better transport services and improved access to social services, markets, education and health facilities, and employment opportunities. The bidding documents provide clauses designed to ensure that all civil works contractors comply with applicable labor laws; do not employ child labor or forced labor; encourage the employment of the poor, particularly women; and do not offer different wages to men and women for work of equal value.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with			
An efficient and integrated transportation system established to facilitate the development of a competitive economy (Pakistan Vision 2025). ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Key sections of provincial highway network in Sindh improved	a. Percentage of road condition rated above <i>good</i> increased to 70% by 2020 (2014 baseline: less than 50%)	a. Executing agency's project completion report	Political instability and deteriorating security situation
Outputs 1. About 328 km of provincial roads rehabilitated	1a. By 2019, 328 km provincial highways are rehabilitated with international roughness index below 3.5 (2014 baseline: more than 7 on the average)	1a. PMC's project progress report	Deteriorating security situation delays project implementation
2. Institutional capacity of WSD strengthened in road planning, maintenance, and road safety	2a. More than 1,800 WSD staff trained by 2018 2b. Sindh road master plan approved by 2019 2c. RAMS upgraded and functioning by 2019 2d. More than 70% of annual maintenance budget allocated based on the results generated by RAMS, by 2019	2a.-2d. Executing agency's project completion report	The government fails to approve the Sindh road master plan
Key Activities with Milestones			
1. About 328 km of provincial roads rehabilitated 1.1 Civil works contracts awarded by Q2 2016. 1.2 Project management consultant selected by Q3 2016. 1.3 Civil works completed by Q4 2018. 2. Institutional capacity of the WSD strengthened in road planning, maintenance, and road safety 2.1 Consultants selected by Q2 2016. 2.2 Hardware and software of training facility procured and installed by Q4 2016. 2.3 Emergency response equipment procured by Q4 2016. 2.4 Existing RAMS upgraded by Q4 2017. 2.4 Sindh road master plan completed by Q2 2018. 2.5 Training conducted every year and completed by Q4 2018.			
Inputs Asian Development Bank (loan): \$197.85 million (ordinary capital resources) Government of Pakistan: \$29.66 million			
Assumptions for Partner Financing Not applicable.			

km = kilometer, PMC = project management consultant, Q = quarter, RAMS = road asset management system, WSD = Works & Services Department.

^a Government of Pakistan, Ministry of Planning, Development and Reform. 2014. *Pakistan Vision 2025—One Nation, One Vision*. Islamabad.

Source: Asian Development Bank.

B. Monitoring

55. **Project performance monitoring.** The ADB and the WSD have agreed on a preliminary set of indicators to be monitored and for evaluating project performance. Representative indicators are included in the design and monitoring framework. At the beginning of project implementation, WSD will confirm baseline values for social, environmental, and poverty reduction impact indicators. Monitoring indicators will be measured, with appropriate frequency, during implementation. Comments and findings regarding these project indicators will be incorporated in progress report to ADB. In addition to indicators for implementation monitoring, indicators for project evaluation will be measured at project completion, and 3 years after completion. Where relevant, indicators will be disaggregated by gender, participatory surveys will take place, and results will be compared with the baseline. A final report will evaluate changes in the preceding 3 years. WSD has developed its monitoring capability for the ongoing projects, and has the capacity to monitor the project. PMU will establish a monitoring and evaluation system with the help of PMC, and periodically updating project impacts on socioeconomic, gender, and environment.

56. **Compliance monitoring:** Compliance to the covenants will be jointly monitored by WSD and ADB through monthly and semi-annual updates provided by the engineering, PMC. The consultant will submit to ADB a status report on the covenants with the explanation and time-bound actions on partly or non-complied covenants. Apart from ADB project review missions 2–3 times a year, ADB’s resident mission in Pakistan will also hold quarterly country portfolio review meetings with WSD to ensure the full compliance of the covenants.

57. **Safeguards monitoring:** The environmental management plan (EMP) will be monitored regularly with the assistance of supervision consultant team, the performance and results of which (through EMP reports) will be uploaded in ADB and WSD websites. Construction environmental monitoring is a day to day process, which ensures that departures from the EMP are avoided or quickly rectified, or that any unforeseen impacts are quickly discovered and remedied. Specific actions in the EMP that are to be monitored are included in the initial environmental examination. These include the preparation of plans for aspects of the work, such as construction camps, borrow pits and quarries, establishing crusher and asphalt facilities, and a site safety plan, which need to be completed and approved during the preconstruction phase. Also included are air, noise, and water quality monitoring parameters that follow related Pakistan national standards, and regular monitoring of the condition of the road surface, bridges, culverts, drainage structures and slope protection structures. In addition, information on the locations, type and consequences. If there are any unforeseen safeguards impacts or incidents these will be reported to ADB immediately for necessary action.

58. **Monitoring of land acquisition and resettlement (LAR)** tasks will be routinely conducted by PMU with the assistance of Resettlement Specialist mobilized through PMC. The monitoring results of LAR tasks and issues can be included in the monthly project progress report for ADB. However, monthly monitoring reports will be consolidated into quarterly monitoring reports (during RP implementation) and bi-annual (when RP implementation is completed) to be submitted to ADB for review and clearance before its disclosure on WSD and ADB websites. Specific monitoring benchmarks for LAR monitoring report include (i) information campaign and consultation with affected persons; (ii) status of grievance/complaints recorded and grievances redressed during monitoring period; (iii) compensation for affected structures and other assets; (iv) relocation of affected persons; (v) payments for loss of income; and (vi) living standard and income restoration activities.

59. **Gender and social dimensions monitoring:** A summary poverty reduction and social strategy has been prepared. PMU, with the assistance of PMC, shall ensure the

project follows (i) measures to raise public awareness of the risks of HIV/AIDS and other sexually transmitted infections, drug and human trafficking; (ii) requirements for the civil works contractor(s) to take measures to protect construction workers from the risks of HIV/AIDS and other sexually transmitted infections, and for the testing and treatment of construction workers; (iii) awareness raising among temporary workers of important social and health issues; and (iv) measures to protect public and workers with requirements for the civil works contractor(s) to maintain their labor environment in healthy condition will be incorporated into the contract documents and are provided in the mitigation provisions of the EMP to meet requirements of ADB's Core Labor Standards (2006) and the country's relevant laws and regulations.

C. Evaluation

60. ADB will field an inception mission within 3 months after signing of the loan agreement. Review missions will be carried out every 4–6 months jointly by representatives of ADB, the Borrower, and WSD. The review missions will assess the status of the project implementation and site visits are also required, whenever possible. ADB and the government will carry out a midterm review of project implementation before mid-2016. The review will focus on project impacts, particularly those relating to institutional, administrative, organizational, technical, environmental, and social aspects and poverty reduction. The project's economic viability, and other aspects that may have an impact on project performance, will be assessed. The review will examine the implementation progress of policy reforms and compliance with assurances specified in the loan agreement. This will allow for any necessary mid-course corrections to ensure successful implementation and the achievement of the project objectives.

D. Reporting

61. The WSD will provide ADB with (i) monthly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated semi-annual project progress reports including (a) progress achieved by output as measured through the indicator's performance targets; (b) key implementation issues and solutions; and (c) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project financial statements together with the associated auditors' report, would be adequately reviewed by WSD and ADB.

E. Stakeholder Communication Strategy

Project Documents	Means of Communication	Responsible Party	Frequency	Audience(s)
Project data sheet (PDS)	ADB's website	ADB	Initial project data sheet posted on the website no later than 2 weeks after approval of the concept paper; updated at least twice a year	General Public
Design and monitoring framework	ADB's website	ADB	Key information from the draft reflected in project data sheet; final version posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General Public

Project Documents	Means of Communication	Responsible Party	Frequency	Audience(s)
Initial Environmental Examination Reports (IEE)	ADB's website	WSD, ADB	Draft posted on the website before appraisal; and the final version no later than 2 weeks of receipt by ADB	General Public, project-affected people
Resettlement Plan (RP)	ADB's website	WSD, ADB	Draft posted on the website before appraisal; and the final/updated version no later than 2 weeks of receipt by ADB	General Public, project-affected people
Loan Agreement	ADB's website	ADB	Posted on the website no later than 2 weeks from their signing, after removing any information falling within exceptions at the time of the negotiations	General Public
Report and Recommendation of the President (RRP)	ADB's website	ADB	Posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General Public
Summary of Poverty Reduction and Social Strategy	ADB's website Consultation	ADB WSD	Posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General Public
Procurement requirements	ADB's website for procurement notice (ACN/SPN), invitation for bids (IFB), Local newspaper advertisement	ADB WSD	Available online (current and archive)	General public, potential civil works contracting firms
Consulting services requirement	ADB's website for recruitment notice (CSRN) for expression of interest ADB's website for list of shortlisted firms	WSD ADB	When required Always available	General public, consulting firms General public, consulting firms
Project Administration Manual	ADB's website	ADB	Posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General Public
Environmental & Social Safeguard Monitoring Reports	ADB's website WSD's website	ADB WSD	Within 14 days of receipt	General Public, project-affected people in particular
Audited project financial	ADB's website	ADB	Within 30 days of	General Public

Project Documents	Means of Communication	Responsible Party	Frequency	Audience(s)
statements and the auditors' report			receipt	
Project Completion Report	ADB's website	ADB	Within 2 weeks of circulation to the Board for information	General Public
Evaluation Report	ADB's website	ADB	Within 2 weeks of circulation to Management and the Board	General Public

ADB=Asian Development Bank, ACN= advance contracting notice, CSRN = consulting services recruitment notice, IEE = initial environmental examination, IFB = invitation for bids, WSD = Works and Services Department, RRP = Report and Recommendation of the President, SPN = specific procurement notice.

X. ANTICORRUPTION POLICY

62. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.¹² All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project.¹³

63. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the Project. The Government will disclose to the public and update the current status of the Project and how the loan proceeds have been used through a website to be established for the purpose. For each contract financed under FERP, the EAs and IAs will disclose on the website the following information.

- (i) list of participating bidders,
- (ii) name of the winning bidder,
- (iii) basic details of the bidding procedures and procurement method adopted,
- (iv) amount of contract awarded,
- (v) list of goods/services ,including consulting services procured, and
- (vi) intended and actual utilization of the loan

XI. ACCOUNTABILITY MECHANISM

64. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.¹⁴

¹² Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

¹³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

¹⁴ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

XII. RECORD OF PAM CHANGES

PAM Version	Created Date	Revision Date	Reasons for Change	Main Contents of Change
V1.0	Sep. 2015	NA	Initial	NA

FINANCIAL MANAGEMENT ASSESSMENT

Executive Summary

1. The financial management assessment (FMA) was conducted in March 2015 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects. The FMA considered Works & Services Department (WSD) in its role as the proposed project implementing agency (IA). The FMA assess the financial management capacity of IA which included the funds-flow arrangements, staffing, accounting and financial reporting systems, internal and external auditing arrangements, and financial information systems.

2. The assessment identified the main financial management risks as: (i) operational risk – the risk that the revenue generation from toll fee will be insufficient to cover operation and maintenance costs, (ii) incomplete and inaccurate financial reports due to manual recording accounting transactions, and (iii) compliance risk – the risk that the project and WSD will be unable to comply with ADB's requirements on financial management. The overall financial management risk-rating of the project before considering mitigating measures is Substantial. The identified financial management risks will be closely monitored during project implementation. The financial management action plan is as follows:

Table 1: Financial Management Action Plan

Action	Responsibility	Resource	Timing
<i>Financial management training to be provided to PMU staff to clarify ADB requirements including disbursement, financial reporting and auditing requirements</i>	PMU	PMU	Within 1 years after loan effectiveness by ADB
<i>Develop financial management manual to strengthen internal control, quality and efficiency financial function</i>	PMU	PMU*	Within 1 year after loan effectiveness by ADB

* Financial management manual for ADB-funded projects in Pakistan to be developed under RETA 8697. PMU then can custom for its own needs.

A. Introduction

1. This Financial Management Assessment was conducted in accordance with ADB's Guidelines for the *Financial Management and Analysis of Projects*¹⁵ and the Financial Due Diligence: a Methodology Note. The FMA was performed on WSD as the IA for the project.

B. Project Description

2. The project will improve about 300 km of the Province of Sindh. It will involve rehabilitation and upgrading some major inter-district connections to standard width of 7.3 m carriageway with appropriate drainage and safety facility, including institutional strengthening, road safety, and road asset management improvement components.

C. Country Level Issues

3. Country issues that potentially impact the financial management of WSD and the project include lack of budget transparency and comprehensiveness specifically foreign

¹⁵ ADB. 2005. *Guidelines for the Financial Management and Analysis of Projects*. Manila.

assistance, weak budget execution and control, weak accounting, recording and reporting, and weak legislative scrutiny over audit.

4. ADB's 2005-2019 Country Partnership Strategy¹⁶ (CPS) indicates improvement in the country public financial management and fiduciary risks, however, several measures are required to further enhance the public financial management (PFM), procurement and anticorruption activities. The measures recommended by development partners focus on (i) strengthening the budget process to improve credibility including establishing multi-year budgets, expenditure prioritization, and improving legislative oversight, (ii) improving transparency through greater public access to fiscal information, fiscal risk records, tax assessments, revenue collection, (iii) implementing rules-based procurement, grievance system, procurement training and information databases to improve planning and credibility, and (iv) developing internal audit capacity to eliminate delays and improve reconciliation between monetary and fiscal balances, including the anticorruption institutions to ensure consistency in rules, procedures, and commitment. Deficiencies in the area of audit including audit reviews by public accounts committees, provincial procurement practices, and implementation of national anticorruption strategy would require attention.

5. The Public Financial Management Accountability (PEFA) assessment conducted in 2012 is a follow up to the 2009 PEFA assessment for Pakistan. The recent assessment highlights improvements in public financial management in recent years; however, further strengthening in several areas is required to ensure better budgetary outcomes. One of the main areas emphasized by the assessment is improving the credibility of budget where deviations exist between the approved budget estimates and the actual expenditures caused mainly by external factors such as force majeure (floods), and fiscal activities such as debt servicing and inflation. Predictability of expenditure is poor and undermines credibility of the budget. Transparency and comprehensiveness of budget remains weak albeit improvements in public access to fiscal information and introduction of a standardized chart of accounts. Deficiencies in reporting and monitoring of foreign assistance were considered concerning following some cases where income and expenditure for foreign assistance remain unrecorded due to insufficient budget allocation. Policies driving budget activities have largely improved with the roll-out of the Medium-Term Budgeting Framework, issuance of budget circulars delineating timelines and responsibilities, and the preparation of Budget Strategy Paper, however, linkages among these activities need to be established to ensure coordinated and integrated budget process. Other areas of concern include procurement and internal controls on non-salary expenditures which rated poor due to limited information on budget and expenditure commitments, lack of grievance system and audit. Accounting, recording, and reporting practices remain weak due to large backlog of unreconciled accounts, and significant improvements in expenditure reporting and disclosure of financial information is required. Legislative scrutiny likewise has to substantially improve in order to ensure timely resolution of audit issues and more robust audit process.

D. Risk Analysis

6. A Financial Management Internal Control and Risk Management Assessment was conducted which considered existing circumstances, staffing and procedures, and includes recommendations for risk mitigation measures. Based on the assessment, it is concluded that the overall project financial management pre-mitigation risk is Substantial.

1. Inherent Risk

7. Inherent Risk is the susceptibility of the project financial management system to factors arising from the environment in which it operates, such as country rules and

¹⁶ ADB. 2015. *Pakistan: Country Partnership Strategy(2015-2019)*, Manila

regulations and entity working environment (assuming absence of any counter checks or internal controls).

Risk type	Risk Asst¹⁷	Risk Description	Mitigation Measures
1. Country-Specific Risks	S	Budget Execution Risk - delay in receiving fund from the government and actual expenditure deviates from budget estimates.	PMU prepare and submit budget plan to WSD for approval. PMU monitor the expenditures against budget on monthly basis. Any deviations from approved budget will require justification and approval by WSD. The government ensures adequate budget to be released to the project in one installment each year.
2. Entity-specific risks	M	Financial and Operational Risk – Revenue generation from toll fee is insufficient to cover operations and maintenance costs which result in private contractors walking out from the maintenance contract. This leaves the roads without maintenance.	WSP conducts periodic reviews of toll fee and the contractors' operational performance to ensure an immediate intervention such as increase in toll fee. WSP and the government need also to allocate sufficient budget for road maintenance in the case all possibilities are fully exhausted including increase the toll fee.
3. Project specific risks	M	Project Completion Risk – PMU staff do not have sufficient understanding of ADB financial management requirements, disbursement procedures to manage the project fund flows which contributes to delays in project implementation.	ADB will provide financial management training to PMU staff to clarify ADB requirements including disbursement, financial reporting and auditing requirements.
	M	Operational Inefficiency - Low salaries and dissatisfied staff lead to underperformance and financial loss.	Due to the high unemployment rate in the country, the market does not offer competitive compensation packages to attract staff from other entities, leaving little incentive for staff to consider employment elsewhere. WSD provides some form of job security and reasonable compensation package.
Overall Assessment of Inherent Risk	S		

¹⁷ H = High, S = Substantial, M = Moderate, N = Negligible or Low.

2. Control Risk

8. Control Risk is the risk that the project's accounting and internal control framework are inadequate to ensure project funds are used economically and efficiently and for the purpose intended, and that the use of funds is properly reported.

Risk type	Risk Asst¹⁸	Risk Description	Risk Mitigation Measures
1. Implementing Entity	L	Compliance Risk - Project financial management policies and procedures are not fully documented.	The Finance Director is responsible for the preparation of project financial statements, disbursements, budget and expenditure monitoring, among others, and ensures that policies and procedures are adhered to. Develop financial management manual to strengthen internal control, quality and efficiency financial function
2. Funds Flow	M	Financing Risk – Counterpart funds are not provided timely and adequately.	PMU prepare 3 years project budget and update on annual basis. The government allocate sufficient budget for the project and release one instalment each year.
3. Staffing	L	Execution Risk - PMU staff do not have sufficient understanding of financial management requirements and procedures which contributes to project delays and non-compliance with requirements.	Existing PMU has experience and somehow familiar with ADB's financial requirements under Loan 2742 and Loan 2743. However, training will be provided for PMU staff to clarify ADB's requirements and increase familiarity. Financial reporting requirements (submission of financial statements and audit requirements) will be the primary focus in addition to disbursement procedures.
4. Accounting and Reporting	M	Incomplete and inaccurate financial reporting - Manual accounting processes increase likelihood of errors and omissions.	Develop financial management manual to strengthen internal control, quality and efficiency financial function.
5. External Audit	M	Compliance Risk – Audit requirements are not fully complied with due to external auditor's limited understanding of ADB requirements.	Auditor General of Pakistan and ADB will jointly review audit requirements to ensure that the audit scope includes required opinion and assurances.

¹⁸ H = High, S = Substantial, M = Moderate, N = Negligible or Low.

Risk type	Risk Asst¹⁸	Risk Description	Risk Mitigation Measures
6. Reporting and Monitoring	L	Financial Risk – Delayed submission of WSD financial reports undermines ADB's ability to assess WSD's capacity to implement, maintain, and operate the projects	Develop financial management manual to strengthen internal control, quality and efficiency financial function. Audited project financial statements (APFS) under Loan 2742 and Loan 2743 of the last two financial years have been submitted timely. PMU ensures it will continue to submit APFS timely.
7. Information Systems	S	Incomplete and inaccurate financial reporting - Manual accounting processes increase likelihood of errors and omissions.	Develop financial management manual to strengthen internal control, quality and efficiency financial function.
Overall Control Risk	M		
*H= High, S=substantial, M= moderate, N= negligible or low			

E. The Existing Project Financial Management System

9. Existing PMU under WSD has implemented Loan 2742 and Loan 2743. The financial management arrangements of this project will have a similar structure and implementation arrangements of Loan 2742 and Loan 2743.

1. Strengths

10. The project benefits from staff experience and familiarity of ADB's financial management requirements, as follows:

- (i) Staffing –PMU are equipped with experienced staff that are knowledgeable of ADB requirements. The PMU personnel have sufficient understanding of the disbursement procedures of lending agencies including ADB. The Finance Director is responsible for the oversight over the accounting, budgeting, disbursement, and expenditure authorization for ADB projects.
- (ii) Financial reporting – timely submission of audited project financial statements under Loan 2742 and Loan 2743

2. Weaknesses

11. The project may prompt to inconsistency of application and variance staff judgment about approving authority, recording accounting transactions, and preparing financial reporting, associated with:

- (i) Financial Management manual – PMU follows accounting manual issued by the Auditor General of Pakistan. However, there is no consolidated manual to ensure payment and/or accounting transactions are approved and recorded appropriately.
- (ii) Response to audit observations raised by the auditor – PMU needs further improvement in provide timely response and justifications to the audit observations raised by the auditor

F. The Executing and Implementing Entity

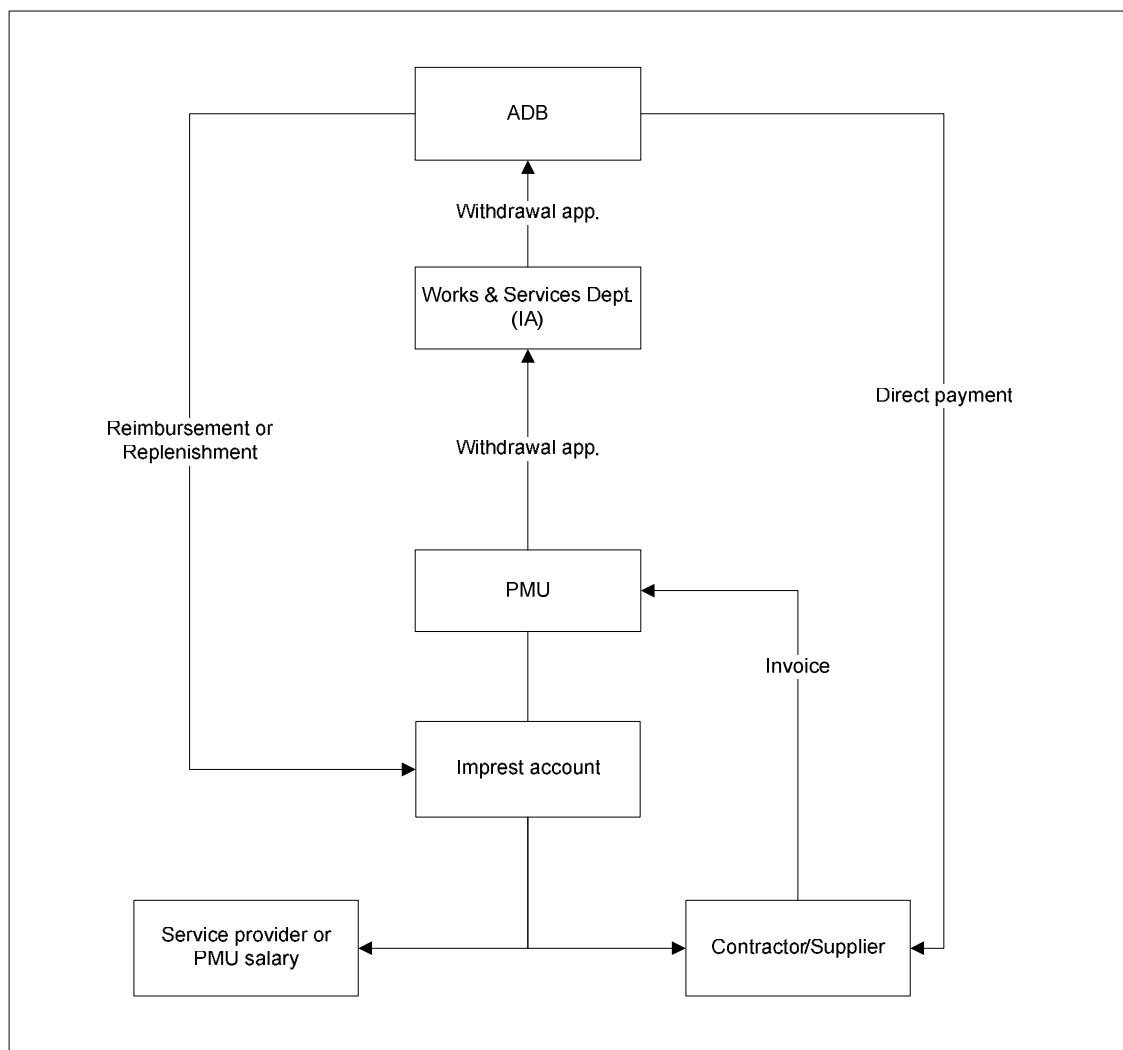
12. WSD established the Project Management Unit (PMU) under Loan 2742 and Loan 2743 headed by Project Director to supervise and monitor implementation of the projects. The existing PMU will implement this project. Project funds are disbursed upon approval by Project Director. Maintenance of accounts and reconciliations are the responsibility of the Director of Finance through its support staff. Finance staff have experiences and familiar with ADB's financial management requirements and disbursements.

G. Funds Flow Mechanism

13. WSD will be responsible for implementing the project according to the legal agreements and other implementation arrangements described in the Project Administration Manual (PAM). The funds flow chart is presented in Figure 1 below. ADB will monitor the project and review its progress to ensure that the loan proceeds are spent as agreed upon. Upon effectiveness, an imprest account will be opened. All disbursements will be carried out in accordance with *ADB's Loan Disbursement Handbook (2015, as amended from time to time)*.

14. The project will use imprest account, direct payment, reimbursement, and commitment procedures. PMU may request for initial and additional advances to the imprest accounts based on 6 months of estimated expenditures to be financed through the imprest accounts. To expedite flow of funds and simplify the documentation process, the ADB Statement of Expenditure (SOE) procedure will be used for liquidation and replenishment of the imprest account, and for reimbursement of eligible expenditures. The minimum value per withdrawal application is \$100,000 equivalent. Individual payments below this amount should be paid (i) by the government funds and subsequently claimed to ADB through reimbursement, or (ii) from the imprest fund, unless otherwise accepted by ADB.

Figure 1: Funds Flow



H. Personnel

15. The Accounts Division is headed by Finance Director supported by Accountant and 4 Account Clerks along with a Computer Operator. Finance Director, who is from Accountant General Sindh, is assigned to PMU. It is to ensure every payment transaction is reviewed and signed by Accountant General Office.

I. Accounting Policies and Financial Reporting

16. Similar to Loan 2742 and Loan 2743, PMU uses cash basis IPSAS to record financial transactions and prepare project financial statements.

J. Internal and External Audit

17. No internal audit exists in WSD or government of Sindh. It is also pointed out in PEFA Pakistan Sindh Province November 2013 report as a weak internal control due to the absence of internal audit. To overcome the internal audit function, the Accountant General

Sindh applies certain pre-audit checks before processing any payment. In pre-audit function, the Accountant General Office checks whether budgeted funds are available, the payment is supported by appropriate documentary evidence, the payment has been approved by the competent authority, and other rules and regulation are complied with. However, these processes cannot be termed as an alternative of internal audit function.

18. The project financial statements under Loan 2742 and 2743 were audited by Auditor General of Pakistan. Similar arrangement will be applied for this project.

K. Information Systems

19. The financial management system is currently prepared using spreadsheets. In the meantime, staff are adequately trained to produce financial reports under the current system. Confidentiality, integrity and availability of data are maintained under the prescribed WSD rules and procedures.

L. Action Plan

Table 2: Financial Management Action Plan

Action	Responsibility	Resources	Timing
<i>Financial management training to be provided to PMU staff to clarify ADB requirements including disbursement, financial reporting and auditing requirements</i>	PMU	PMU	Within 1 years after loan effectiveness by ADB
<i>Develop financial management manual to strengthen internal control, quality and efficiency financial function</i>	PMU	PMU*	Within 1 year after loan effectiveness by ADB

* Financial management manual for ADB-funded projects in Pakistan to be developed under RETA 8697. PMU then can custom for its own needs.

PROJECT PROCUREMENT RISK ASSESSMENT REPORT

EXECUTIVE SUMMARY

1. The overall assessment of project procurement risk is Low. Planning and Development Department (P&DD), Sindh is the executing agency. Sindh Works & Services Department (WSD) is the implementing agencies (IA) of this project.
2. WSD is already implementing various donor-funded projects in the province. There is one Project Management Unit (PMU) established under the Loan 2742. There is enough capacity within the department at the field level (engineers and technical experts) to undertake procurement activities according to Sindh Public Procurement Rules 2010 (SPPR). However, the capacity at the field level to apply ADB procurement guidelines is somewhat deficient. The WSD has successfully implemented the Loan 2742, the procurement risk is low.
3. Following mitigation measures may be adopted to mitigate and manage the potential risks:
 - Up-front engaging of dedicated procurement staff consultant in the PMU which will be responsible for the preparation of procurement documents for procurement of goods, consulting firms, and civil works where needed;
 - Increased oversight by the project division, including prior review of all contracts for goods, civil works and services before award;
 - Keep close liaison with the PMU; provide continuous capacity building support from resident mission to the EA/IA during the procurement process;
 - Coordinate with Sindh Public Procurement Regulatory Authority and arrange a series of training programs for the procurement practitioners at field level;
 - ADB to hold procurement clinics for IA to provide hands-on trouble shooting.

I. INTRODUCTION

1. The assessment was prepared in accordance with the Guidelines for Assessing Country, Sector and Project Procurement Risks. The project procurement risk assessment was undertaken in April 2015. The EA and IA have implemented projects funded by ADB recently. Preparation activities included reviewing procurement documents, and interviews and discussions with counterparts in the WSD.

II. PROJECT PROCUREMENT RISK ASSESSMENT

A. Overview

2. The risk rating of individual elements of EA is assessed as Low. WSD and PMU is familiar with use of ADB procurement guidelines and its staff has demonstrated command for procurement of civil works and consulting service.

3. Organizational and staff capacity and processes for information management, procurement practices, effectiveness and accountability measures are generally satisfactory. The minor deficiencies which do not pose any major procurement risk can be addressed by placing staff consultant wherever procurement takes place under ADB funded projects.

Organization and Staff Capacity

Risk Assessment:

4. Overall risk rating for the organizational and staff capacity is assessed as Low. The WSD has very well defined administrative hierarchy with financial powers delegated to the authorities at the field level. The project director is the focal person who initiates procurement process based on estimated rates prepared. There is a tender opening committee notified by the competent authority. WSD has established project management unit (PMU) for the Loan 2742 in 2011. Since then, WSD has acquired a good skill in procurement through special and hands-on trainings. Although procurement unit exists and required skill is available, but number of staff are far less than the workload. Additional dedicated staff consultant will be needed for the proposed project, especially in the initial stage. The physical resources are however satisfactory for project implementation.

Information Management

Risk Assessment:

5. Overall risk rating for the information management is assessed as Low. WSD is required to maintain the complete details including evaluation reports, original bids, contract and correspondence of the procurement process either awarded or annulled for five years. WSD keeps record for 10 years as old institutional practice and managing it in the same spirit. In addition, WSD has maintained referencing system which provides unique identification number of each procurement activity. When feasible, the IT is used for keeping track of procurement record. It is however felt that with the increase in work load; PMU will be requiring designated human resource for document control and information management.

Procurement Practices

Procurement of Goods and Works Risk Assessment:

6. Overall risk rating for the "Procurement of Goods and Works" is assessed as Low. The value of contracts for works is ranging from \$17 million to \$43 million. WSD has a system of enlisting the contractors on annual basis. The estimates are prepared in

accordance with market rate system (MRS) notified by the provincial finance department and Composite Schedule of Rates for Sindh issued by the National Highway Authority.

The underlying table presents a summary of review of provincial procurement practices.

S#	Activity	WSD	Remarks
1	Approval/ Technical Sanction	Yes	Steering Committee accords approval; a different authority initiates procurement and a different authority makes payments.
2	Advertisement	Yes	In more than two newspapers including one English
3	Open or limited bidding	open	Open bidding is conducted
4	Tender fee	Yes	Nominal fee is paid through Pay Order.
5	Response time	Min 15 days	Usually more than 15 days
6	Bid security (Earnest Money)	2% of the estimate	In the form of bid security guarantee
7	Bidding Document	Yes	Bids are usually prepared with ADB standard bidding document
8	Bid Opening	Opened on the last date of submission of bids	1S1E procedure is used currently. On the same day evaluation sheet is prepared.
9	Evaluation	yes	On paper
10	Negotiations	Prohibited	Exactly follow ADB's procurement guidelines
11	Contract Form	Available	Largely in favor the department. The project director himself becomes the person-in-charge. The contractor in no way can go against the department.

Consulting Services

Risk Assessment:

7. Overall risk rating for the “Consulting Services” is assessed as Moderate. Generally, WSD has experience to hire the project management consultant to supervise the project, but less experience to work with the consultants for institutional strengthening due to complexity of consulting service. During implementation, PMU may has difficulty to monitor the quality and progress of the service, especially when some of experts in the team need to be replaced. In order to monitor progress of the institutional strengthening component, ADB's strong supports will be needed.

Effectiveness

Risk Assessment:

8. Overall risk rating for “Effectiveness” is assessed as Low. The project director and his team monitor the execution of works. The payments to the contractors and consultants are made as per guidance laid down in the contract document. WSD is obliged to decide the complaint with 15 days of receipt of complaint.

Accountability Measures

Risk Assessment:

9. Overall risk rating for “Accountability Measures” is assessed as Moderate. To ensure transparency and business ethics, an integrity pact is signed by the Supplier/Contractor/Consultants for all procurements. It is, however, pertinent to note that though a paragraph is added on conflict of interest in SPPRA regulations for consulting

services but detailed provisions as in case of ADB's guidelines are not found. The EA's accountability mechanism in place is simple and governed by Sindh Government Code of Conduct. The provincial Accountant General office is altogether an independent office for making payment in accordance with Financial Rules of provincial government. In general the accountability mechanism is satisfactory and also simple so it would not impede the progress of projects

B. Strengths

10. The existing institutional arrangements in WSD provide reasonable comfort regarding execution of small and medium civil works contracts across the province. WSD has full capacity to undertake procurement of goods and civil works in accordance with SPPR, 2010. In addition, WSD has adequate record keeping infrastructure and robust document retention policy and has adequate ethics and anticorruption measures in place.

C. Weaknesses

11. Currently, there is no strong capacity to procure large consulting services under ADB procurement guidelines. The capacity will be enhanced through a staff consultant and ADB's close monitoring and supports.

III. CONCLUSION

12. The overall assessment of project procurement risk is Low. WSD has enough procurement capacity to undertake procurement of contracts. WSD procured 1 PMC consultant contract and 42 civil works contracts under the Loan 2742 and has already executed it successfully. The engagement of a Institutional Strengthening Consulting firm using ADB procurement guidelines will be a challenge, especially during implementation stage.

D. National Competitive Bidding

General

13. The procedures to be followed for national competitive bidding shall be only equipment for goods.

Registration

- (i) Bidding shall not be restricted to pre-registered firms and such registration shall not be a condition for participation in the bidding process.
- (ii) Where registration is required prior to award of contract, bidders: (i) shall be allowed a reasonable time to complete the registration process; and (ii) shall not be denied registration for reasons unrelated to their capability and resources to successfully perform the contract, which shall be verified through post-qualification.

Prequalification

14. Normally, post-qualification shall be used unless prequalification is explicitly provided for in the loan agreement/procurement plan. Irrespective of whether post qualification or prequalification is used, eligible bidders (both national and foreign) shall be allowed to participate.

Bidding Period

15. The minimum bidding period is reduced to twenty-eight days (28) days prior to the deadline for the submission of bids.

Bidding Documents

16. Procuring entities shall use the applicable standard bidding documents for the procurement of goods, works and services acceptable to ADB.

Preferences

17. No domestic preference shall be given for domestic bidders and for domestically manufactured goods.

Advertising

18. Invitations to bid shall be advertised in at least one widely circulated national daily newspaper or freely accessible, nationally-known website allowing a minimum of twenty-eight (28) days for the preparation and submission of bids. NCB contracts estimated to cost \$500,000 or more for goods and related services and \$1,000,000 or more for civil works will be advertised on ADB's website via the posting of the Procurement Plan.

Bid Security

19. Where required, bid security shall be in the form of a bank guarantee or call-deposit receipt (CDR) from a reputable bank.

Bid Opening and Bid Evaluation

- (i) Bids shall be opened in public.
- (ii) Evaluation of bids shall be made in strict adherence to the criteria declared in the bidding documents and contracts shall be awarded to the lowest evaluated bidder.
- (iii) Bidders shall not be eliminated from detailed evaluation on the basis of minor, non-substantial deviations.
- (iv) No bidder shall be rejected on the basis of a comparison with the employer's estimate and budget ceiling without the ADB's prior concurrence.
- (v) A contract shall be awarded to the technically responsive bid that offers the lowest evaluated price and no negotiations shall be permitted

Rejection of all Bids and Rebidding

20. Bids shall not be rejected and new bids solicited without the ADB's prior concurrence.

Participation by Government-owned enterprises

21. Government-owned enterprises in the Islamic Republic of Pakistan shall be eligible to participate as bidders only if they can establish that they are legally and financially autonomous, operate under commercial law and are not a dependent agency of the contracting authority. Furthermore, they will be subject to the same bid and performance security requirements as other bidders.

ADB Member Country Restrictions

22. Bidders must be nationals of member countries of ADB, and offered goods and services must be produced in and supplied from member countries of ADB.

PROJECT PROCUREMENT RISK ASSESSMENT QUESTIONNAIRE

QUESTION	RESPONSE	RISK
A. ORGANIZATIONAL AND STAFF CAPACITY		
PROCUREMENT DEPARTMENT/UNIT		Low
A.1 Does the agency or Government have a Procurement Committee that is independent from the head of the agency?	yes	Low
A.2 Does the agency have a procurement department/unit, including a permanent office that performs the function of a Secretariat of the Procurement Committee?	Procurement is decentralized and approved by a Committee	Low
A.3 If yes, what type of procurement does it undertake?	-	
A.4 How many years' experience does the head of the procurement department/unit have in a direct procurement role?	Procurement is decentralized. The officials learn procurement at field level before they are promoted to higher level.	Low
A.5 How many staff in the procurement department/unit are: i. full time ii. part time iii. seconded	The deputy project director (procurement) works on full time basis.	Low
A.6 Do the procurement staff have a high level of English language proficiency (verbal and written)?	Sufficient level of verbal and written English language proficiency.	Low
A.7 Are the number and qualifications of the staff sufficient to undertake the additional procurement that will be required under the proposed project?	Yes.	Moderate /Low
A.8 Does the unit have adequate facilities, such as PCs, internet connection, photocopy facilities, printers etc. to undertake the planned procurement?	Yes,	Low
A.9 Does the agency have, or have ready access to, a procurement training program?	Yes.	Low
A.10 At what level does the department/unit report (to the head of agency, deputy etc.)?	The project director reports to the Secretary of WSD frequently.	Low
A.11 Do the procurement positions in the agency have job descriptions, which outline specific roles, minimum technical requirements and career routes?	The JDs are not in writing. However, there are institutional arrangements which help new entrants to learn the procurement practices.	Low
A.12 Is there a procurement process manual for goods and works?	Sindh Public Procurement Rules, 2010 (Amended) provides guidance. There is no separate procurement process manual.	Low
A.13 If there is a manual is it up to date and does it cover foreign-assisted projects?	Sindh Public Procurement Rules, 2010 (Amended) provide guidance in this regard.	Low
A.14 Is there a procurement process manual for consulting services?	The processes are explained in the Sindh Public Procurement Rules 2010 (Amended).	Low
A.15 If there is a manual is it up to date and does it cover foreign-assisted projects?	yes	Low

QUESTION	RESPONSE	RISK
PROCUREMENT MANAGEMENT UNIT		Moderate
A.16 Is there a fully (or almost fully) staffed PMU for this project currently in place?	yes	Moderate
A.17 Are the number and qualifications of the staff sufficient to undertake the additional procurement that will be required under the proposed project?	Yes, except for large consulting service procurement	Moderate
A.18 Does the unit have adequate facilities, such as PCs, internet connection, photocopy facilities, printers etc. to undertake the planned procurement?	yes	Moderate
A.19 Are there standard documents in use, such as Standard Procurement Documents/Forms, and have they been approved for use on ADB funded projects?	Yes.	Low
A.20 Does the agency follow the national procurement law, procurement processes, guidelines?	Yes.	Low
A.21 Do ToRs for consulting services follow a standard format such as background, tasks, inputs, objectives and outputs?	Yes. ADB templates will be used.	Low
A.22 Who drafts the procurement specifications?	Technical experts	Low
A.23 Who approves the procurement specifications?	PD	Low
A.24 Who in the PMU has experience in drafting bidding documents?	Deputy project director (procurement)	Moderate
A.25 Are records of the sale of bidding documents immediately available?	Yes	Low
A.26 Who identifies the need for consulting services requirements?	Procurement Plan details these requirements	Low
A.27 Who drafts the Terms of Reference (ToR)	Procurement staff in coordination with technical expert	Low
A.28 Who prepares the request for proposals (RFPs)	Procurement staff	Low
B. INFORMATION MANAGEMENT		Low
B.1 Is there a referencing system for procurement files?	Yes	Low
B.2 Are there adequate resources allocated to record keeping infrastructure, which includes the record keeping system, space, equipment and personnel to administer the procurement records management functions within the agency?	Yes	Low
B.3 Does the agency adhere to a document retention policy (i.e. for what period are records kept)?	Yes, usually the records are kept for 10 years.	Low
B.4 Are copies of bids or proposals retained with the evaluation?	Yes	Low
B.5 Are copies of the original advertisements retained with the pre-contract papers?	Yes	Low
B.6 Is there a single contract file with a copy of the contract and all subsequent contractual correspondence?	Each contract is given a separate file number and treated as a separate case.	Low
B.7 Are copies of invoices included with the contract papers?	Yes	Low
B.8 Is the agency's record keeping function supported by IT?	Yes, when needed.	Low
C. PROCUREMENT PRACTICES - GOODS AND WORKS		Low

QUESTION	RESPONSE	RISK
C.1 Has the agency undertaken procurement of goods or works related to foreign assistance recently (last 12 months or last 36 months)? If yes, indicate the names of the development partner/s and project/s.	WSD has implemented various ADB and other donors funded projects since 2004.	Moderate /Low
C.2 If the answer is yes, what were the major challenges faced by the agency?		Moderate
C.3 Is there a systematic process to identify procurement requirements (for a period of one year or more)?	Yes.	Low
C.4 Is there a minimum period for the preparation of bids and if yes, how long?	Yes, 28 days	Low
C.5 Are all queries from bidders replied to in writing?	Yes	Low
C.6 Does the bidding document state the date and time of bid opening?	Yes	Low
C.7 Are bids opened in public?	Yes	Low
C.8 Can late bids be accepted?	No	Low
C.9 Can bids (except late bids) be rejected a bid opening?	No	Low
C.10 Are minutes of the bid opening taken?	Yes, when required	Low
C.11 Are bidders provided a copy of the minutes?	Yes. When requested by the bidders	Low
C.12 Are the minutes provided free of charge?	Yes	Low
C.13 Who undertakes the evaluation of bids (individual(s), permanent committee, ad-hoc committee)?	Concerned Procurement Committee	Low
C.14 What are the qualifications of the evaluators with respect to procurement and the goods and/or works under evaluation?	Evaluators are engineers and Accountants as members of the committee	Low
C.15 Is the decision of the evaluators final or is the evaluation subject to additional approvals?	Decisions of the evaluators are final	Low
C.16 Using the three 'worst-case' examples in the last year, how long from the issuance of the invitation for bids can the contract be awarded?	Usually the contracts are awarded within the original bid validity of bids	Low
C.17 Are there processes in place for the collection and clearance of cargo through ports of entry?	Yes	Low
C.18 Are there established goods receiving procedures?	Yes	Low
C.19 Are all goods that are received recorded as assets or inventory in a register?	Yes	Low
C.20 Is the agency/procurement department familiar with letters of credit?	Yes.	Low
C.21 Does the procurement department register and track warranty and latent defects liability periods?	Yes	Low
Consulting Services		Moderate
C.22 Has the agency undertaken foreign- assisted procurement of consulting services recently (last 12 months, or last 36 months)? (If yes, please indicate the names of the development partner/s and the Project/s.)	yes	Moderate
C.23 If the above answer is yes, what were the major challenges?	Difficulty in engaging complex consulting service	Moderate
C.24 Are assignments and invitations for expressions	no	Moderate

QUESTION	RESPONSE	RISK
of interest (EOIs) advertised?		
C.25 Is a consultants' selection committee formed with appropriate individuals, and what is its composition (if any)?	yes	Low
C.26 What criteria is used to evaluate EOIs?	ADB standard RFP	Low
C.27 Historically, what is the most common method used (QCBS, QBS, etc.) to select consultants?	QCBS	Low
C.28 Do firms have to pay for the RFP document?	No	Low
C.29 Does the proposal evaluation criteria follow a pre-determined structure and is it detailed in the RFP?	Proposal evaluation criteria is detailed in the RFP	Low
C.30 Are pre-proposal visits and meetings arranged?	Yes, on need basis, not as a norm	Moderate
C.31 Are minutes prepared and circulated after pre-proposal meetings?	Yes, when needed,	Moderate
C.32 To whom are the minutes distributed?	To the shortlisted firms	Low
C.33 Are all queries from consultants answered/addressed in writing?	Yes	Low
C.34 Are the technical and financial proposals required to be in separate envelopes and remain sealed until the technical evaluation is completed?	Yes	Low
C.35 Are proposal securities required?	No	Low
C.36 Are technical proposals opened in public?	Yes	Low
C.37 Are minutes of the technical opening distributed?	Yes	Low
C.38 Who determines the final technical ranking and how?	CSC,	Moderate
C.39 Are the technical scores sent to all firms?	On request basis	Moderate
C.40 Are the financial proposal opened in public?	Yes	Low
C.41 Are minutes of the financial opening distributed?	Yes, when requested	Moderate
C.42 How is the financial evaluation completed?	According to the procedure prescribed in the RFP	Low
C.43 Are face to face contract negotiations held?	Yes	Low
C.44 How long after financial evaluation is negotiation held with the selected firm?	Within 28 days	Low
C.45 What is the usual basis for negotiation?	Technical and financial issues	Low
C.46 Are minutes of negotiation taken and signed?	Yes	Low
C.47 How long after negotiation is the contract signed, on average?	28 days	Low
C.48 Is there an evaluation system for measuring the outputs of consultants?	Yes, head of agency gets feedback from the user department	Low
Payments		Low
C.49 Are advance payments made?	Yes	Low
C.50 What is the standard period for payment included in contracts?	30 days	Low
C.51 On average, how long is it between receiving a firm's invoice and making payment?	56 days	Low
C.52 When late payment is made, are the beneficiaries paid interest?	No	Moderate
D. EFFECTIVENESS		Low

QUESTION	RESPONSE	RISK
D.1 Is contractual performance systematically monitored and reported?	Yes	Low
D.2 Does the agency monitor and track its contractual payment obligations?	Usually the contractor pushes for payments; Accountant General office, Punjab makes payments directly to the contractor.	Low
D.3 Is a complaints resolution mechanism described in national procurement documents?	Yes,	Moderate
D.4 Is there a formal non-judicial mechanism for dealing with complaints?	Yes	Low
D.5 Are procurement decisions and disputes supported by written narratives such as minutes of evaluation, minutes of negotiation, notices of default/withheld payment?	Varies from case to case basis	Moderate
E. ACCOUNTABILITY MEASURES		Low
E.1 Is there a standard statement of ethics and are those involved in procurement required to formally commit to it?	Government of the Sindh's Conduct Rules govern the conduct of officials.	Low
E.2 Are those involved with procurement required to declare any potential conflict of interest and remove themselves from the procurement process?	Yes. However, they are not fully and effectively familiar with the concept of conflict of interest.	Moderate
E.3 Is the commencement of procurement dependent on external approvals (formal or de-facto) that are outside of the budgeting process?	No	Low
E.4 Who approves procurement transactions, and do they have procurement experience and qualifications?	Depending on the value, there are different authorities for technical sanctioning of the project.	Low
E.5 Which of the following actions require approvals outside the procurement unit or the evaluation committee, as the case may be, and who grants the approval?	All approvals are given within the IA	Low
a) Bidding document, invitation to pre-qualify or RFP		
b) Advertisement of an invitation for bids, pre-qualification or call for EOIs		
c) Evaluation reports		
d) Notice of award		
e) Invitation to consultants to negotiate		
f) Contracts		
E.6 Is the same official responsible for: (i) authorizing procurement transactions, procurement invitations, documents, evaluations and contracts; (ii) authorizing payments; (iii) recording procurement transactions and events; and (iv) the custody of assets?	No	Low
E.7 Is there a written auditable trail of procurement decisions attributable to individuals and committees?	Yes	Low

Terms of Reference for Project Management Consultancy

A. BACKGROUND

1. The Government of Sindh has applied a loan from the Asian Development Bank (ADB), and part of the loan will be used for the project management consultancy service of the Sindh Provincial Road Improvement Project (the Project). The project will rehabilitate following provincial highways in Sindh:

Road Section	Length (km)
Jakobabad to Kandhkot	43
Jakobabad to Ratodero	36
Khyber to Sanghar	64
Sanghar to Mirpurkhas	64
TM Khan to Badin	67
Mirwah to Naukot	54
Total	328

2. The Works & Services Department (WSD) of Sindh will be implementing agency for the Project, and a Project Management Unit (PMU) was established with a head of the Project Director (Client's representative). A consultant service (the Consultant) will be recruited to provide services for design review and construction supervision of these road sections to be rehabilitated and reconstructed under the Project.

3. The Consultants will be responsible to serve as the Engineer within the context of the conditions of the construction contracts and will be required to nominate Resident Engineers for the contract(s) that will be a full-time resident in the area or located in the proximity of project area. In addition to the primary role, the Consultants will assist the client (PMU WSD) in the efficient administration and implementation of the subprojects, support and strengthen it in its tasks, monitor progress, financial management, social and environmental safeguards and gender mainstreaming in the project. The Consultant will report to the PD appointed by WSD. The Consultant will work under the overall guidance, coordination and directions of the Project Director.

B. OBJECTIVES

4. The overall objectives of these Terms of Reference are to:
- a. Ensure that the detailed engineering design is reviewed, and updated if required, in accordance with the specified parameters/ standards and best international practices prior to implementation of civil works contracts.
 - b. Ensure that high quality construction is achieved in time within budget and that all work is carried out in full compliance with the approved engineering designs, technical specifications, agreed work schedule, and within the terms and conditions of all other contract documents and sound engineering practices;
 - c. Demonstrate the efficacy of contract administration and supervision by independent external agencies;
 - d. Monitor and evaluate the implementation of environmental management plan, resettlement plan and other social safeguard measures by the contractor and client.

- e. Promote technology transfer and the introduction of modern Contract Administration practices within WSD.

C. SCOPE OF SERVICES

5. General Duties and Responsibilities of the Consultants.

- a. The Consultants will carry out a critical review of the detailed engineering design prior to the commencement of works to identify anomalies or omissions that constitutes inconsistency in the design and completeness of works. This review will be carried out immediately after the services commence and will be completed within 6 weeks. On completion of the review, the Consultant will prepare a report, setting out all findings and recommendations for correcting any defects or omissions identified. Notwithstanding these, the Consultant will immediately inform the employer of any defect or omission that may have a substantial impact on the Project at the time the defect or omission is uncovered.
- b. Civil works will be carried out based on the MDB FIDIC June 2010¹⁹ contract. The consultant will administer the civil work's contracts, make engineering decisions, be responsible for quality assurance, provide general guidance and furnish timely responses to the contractors in all matters relating to the civil works, and ensure that all clauses of the contract agreement between the civil works contractors and PMU are respected.
- c. The consultant will advise PMU on all matters relating to the efficient and successful execution of the civil works contracts, and will act at all times to protect the interests of the project and will take all reasonable steps to keep the construction costs to a minimum, consistent with sound economic and engineering practices; and will prepare a "Contract Administration and Construction Supervision Manual" outlining routines and standard operating procedures to be applied in contract administration and construction supervision, based on sound internationally recognized practice.

6. **Design Review.** The Consultant will review and validate on ground, the detailed engineering design including the design reports, design calculations and design drawings. Thereafter the Design Review Consultants will bear the professional liability for the accuracy of the design, which will be covered under this contract. The design review and ground validation shall include but not limited to the following tasks;

- a. Review & ensure that the design meets all the standards & parameters specified in the Terms of Reference for Design Consultants, WSD specifications, and best international practices.
- b. Review & ensure that the geometric alignment particularly the horizontal curve and vertical profile for provincial highways as well as service road, meets the minimum specified criterion.
- c. Review & ensure that a cost effective embankment height, has been adopted throughout the alignment, based on the required capacity of soil, depth of water table and drainage pattern of the surrounding area.
- d. Review & ensure that the pavement is most efficient and cost effective; design has been carried out on the basis of traffic studies conducted by the Design Consultant, strength/ CBR of the proposed pavement materials, the calculated EASLES, and prescribed design life.

¹⁹ <http://www.adb.org/sites/default/files/FIDIC-GCC-Construction.pdf>

- e. Review and ensure that the design parameters, calculation, location and layout of hydraulic & other traffic engineering structures to include bridges, flyovers, underpasses and culverts, on the basis of hydrology report, geotechnical investigations, soil analysis, drainage pattern, and site conditions, ensuring that safe and cost effective designs are adopted.
- f. Review and ensure that the design of road side drainage and cross drainage structure has been carried out as per the site requirement and flow patterns/ calculations of run off.
- g. Review and ensure that the design, lay out & requirement of retaining walls, breast walls , other retaining structures, and slop stability/ slide control measures as per the geotechnical requirement and site conditions.
- h. Review and ensure that the requirement of intersections, underpasses, overhead bridges, Entry/ Exits, and all other highway related works have been included in the design.
- i. Varyify a highway safety audit to ensure that all traffic signs, pavement marking, and pavement studs have been provided in the design as per the requirement. Also check those work zone safety requirements proposed are in accordance with best international practices.
- j. Review and ensure that the Bill of Quantities vis-à-vis the proposed design for pavement and structures are accurate up to a tolerance of 5%.

7. **Contract Administration & Construction Supervision.** The Consultant while supervising construction works will make all necessary arrangements for quality control and implementation of the works. The task of the Consultant will include but not be limited to:

- 1) Give Notice to contractor to commence works.
- 2) Assure submission and advise PMU on the adequacy of the Contractors' insurance policies, performance bonds, and advance payment guarantees.
- 3) Review and approve the Contractor's work programs and progress schedules ensuring that the Contractors have incorporated/ followed the most effective and expeditious methodology of carrying out the works; and advise the Contractors in setting up a computerized project control system for reporting physical and financial progress as well as the forecasts, if included in the bids and/or if demanded later on by the PMU. Subsequently, closely monitor the construction progress on regular basis to determine whether it is proceeding in accordance with the approved work program.
- 4) Provide advance advice to PMU concerning the Schedule of handing over of sites, and possible delays due to lack of possession with a view to assure that the Contractors are given Possession of Site in accordance with the agreed work programs.
- 5) Assess minimum construction equipment, plant and machinery requirements, by type and specification, and monitor, keep and regularly update a list of the Contractors' equipment, plant and machinery in order to keep a check on the Contractors' mobilization. Inspect and evaluate the Contractor's establishments including in particular the laboratory facilities to ensure compliance with the terms and conditions of the Contract Agreement.
- 6) Assure the receipt of and maintain as permanent records of all warranties required under terms and conditions of the Contract Agreement for materials including their source and equipment accepted and incorporated in the project.

- 7) Without relieving the Contractors of their obligations under the Contract, check and approve the contractors' Working Drawings, Method Statements and Temporary Works proposals;
- 8) Carry out any subsequent design changes, and expeditiously issue supplementary drawings, site instructions, variation orders and day work orders to avoid delay to the works and to ensure that the works are executed in accordance with Contract.
- 9) Without relieving the Contractors of their obligations under the Contract, review and approve the traffic management and safety plan, and ensure compliance such that the Works are carried out at all times in a safe and secure manner and damage or injury to persons or property is avoided.
- 10) Assure that the Contractors have all necessary data for setting out and check the Contractors setting out including staking the right-of-way limits, centerline, and grade and confirm permanent monuments in the construction area.
- 11) Inspect quarries and borrow pits, and crushing plants, and order tests of materials and ensure adherence to specifications, and approve the sources of materials.
- 12) Without relieving the Contractors of their obligations under the Contract, monitor the Contractors' laboratory testing, evaluate the Portland cement concrete and bituminous mixture designs prepared by the Contractors, and recommend improvements (if any) to ensure the desired performance, and accord approval thereof.
- 13) Assure quality of the works during construction, continuously inspect the soils and materials; construction operations and the works with regard to workmanship and compliance with the specifications; and carry out independent testing in the field and/or in the "Engineer/Project Manager" laboratory, and approve or disapprove and certify the works that conform with the specifications and maintain permanent records of results of all the tests made.
- 14) Give notice to Contractors of any defects and deficiencies, and issue instructions for the removal and substitution of the improper works, where provided under the contract. If required, order suspension of the work(s) and/or recommend to PMU other recourse available under the Contract.
- 15) Attend and make measurement and computation of quantities of the completed works, or any work which is about to be covered or put out of view before permanent work is placed thereon, and maintain permanent records of all such measurements, and keep the measurement books and records in safe custody.
- 16) undertake project performance monitoring and evaluation in accordance with the Project Framework and ADB's *Project Performance Management System (PPMS) Handbook* including the baseline data survey and the following annual survey and reporting up to project completion;
- 17) Monitor and appraise progress of the works, and maintain a day by day project diary which shall record all events pertaining to the administration of the contract, requests from and orders given to the Contractors, and any other information which may be at a later date be of assistance in resolving queries which may arise concerning execution of the works.
- 18) Issue monthly-consolidated progress reports on a format to be agreed with the PMU including payment estimates and comments on the Contractors' work programme, and advice PMU of any problems or potential problems which might arise and cause delay in implementation and recommend corrective action(s) to be taken.

- 19) Check the Contractor's periodic statement of the estimated value of work completed and certify that these statements clearly and accurately describe the value of work executed on the value of the quantities of the items in the "Bill of Quantities".
- 20) Issue the interim certificates to PMU for payment to the Contractors on the basis of "Measured Work Items", having regard to any contractual provisions for advance payment, variation of price, and exchange rate fluctuation etc. Certify the completion of the Activities/Works or parts thereof and process final payments to the Contractors.
- 21) Assist with interpretation of Contract Documents, explain and or reconcile any ambiguities and or discrepancies in the Contract Documents, and apply various provisions of the contract documents; and provide PMU all relevant documentation needed for settling disputes (if any) with the Contractors, and make recommendations to PMU for resolving the Contractors' escalation claims, contract time extensions, variation orders, subletting, additional cost, rate and price fixing etc.
- 22) Advise PMU on need for effective liaison with local authorities, police, landowners, utility owners, the public and other organizations affected by the Works in order to minimize or avoid unnecessary delays or disputes.
- 23) Carry out the following duties related to environmental mitigation with particular reference to the technical requirements of sound environmental standards on the basis of ADB's *Environmental Guidelines for Selected Infrastructure Development Project (Highways & Roads)* during construction. (i) prepare a site specific Environmental management Plan in accordance with Environmental management (ii) Frame work. Ensure that all the environmental mitigation measures required to be implemented are incorporated into the contract documents. (iii) the Contractors comply with all necessary requirements contained in the Environmental Framework and Environmental management Plan (iv) ensure that the day-to-day construction activities are carried out in an environmentally sound and sustainable manner; (iii) develop good practices construction guidelines to assist the Contractors and PMU staff in implementing the Framework; and (v) prepare and submit monthly progress report on the implementation 'Environmental management Plan (EMP) to PMU and ADB (vi) in the event of occurrence of any unexpected environmental impacts, to provide necessary mitigation measures. (vii) Prepare due diligence and environmental monitoring reports periodically as required by ADB/PMU.
- 24) HIV/AIDs and Human Trafficking. Monitor that the contractors comply and carry out required actions as provided in the respective contract documents, such as awareness and education of laborers and workers. Ensure that the contractor does not involve child labor for the execution of the civil works contracts in accordance with the provisions of the contract agreement
- 25) Jointly inspect with PMU the completed civil works, and assist in formal taking over and review and approve or prepare "as built" drawings and plans (as the case may be), and provide report(s) testifying to the satisfactory completion of the contracts.
- 26) Inspect the completed works periodically during the defect liability period within the term covering the Consultant's Agreement, prepare lists of deficiencies (if any), and carry out supervision of the remedial works, and issue the Defects Liability certificates after the rectification of notified defects by the Contractors.
- 27) Establish a comprehensive system of maintaining site records including site correspondence, inspection records, test data, site diaries, records of meetings, financial records, progress records etc.

- 28) Provide any other specialist services requested by PMU under conditions to be mutually agreed ensure that the construction methods as proposed by the contractor for carrying out the works are satisfactory, inspection of contractor's construction equipment; and safety of the works, property, personnel, and general public; the schedule of mitigation measures for adverse environmental impacts; and
- 29) Support the PMU to implement the resettlement plan including public consultation, verification of the resettlement compensation payment, and preparation of monitoring report.

D. STAFFING

8. The implementation periods of the Contract is 36 months excluding the defects liability period, which will be 12 months. There will be three "site supervision teams", for six contract package. The staff for each package is expected to mobilize on the date of actual commencement of works by the contractors. The Team Leader of the Consultants is expected to be full time and mobilize approximately two month in advance of the commencement of the works in order to assist PMU with activities leading up to mobilization of the Contractors. The tentative team composition is as below:

Sr. No.	Experts	Key Position	Fulltime Employee
A)	International Experts		
1	Chief Resident Engineer (CRE)	Yes	Required
2	Contract Specialist	Yes	Preferred
3	Performance-based maintenance specialist	Yes	Preferred
4	Material Engineer	Yes	Required
5	Environmental Specialist	Yes	Preferred
B)	National Experts		
1	Deputy Team Leader/ SRE	Yes	Required
2	Resident Engineer	Yes	Required
3	Highway Engineers (ARE)	Yes	Required
4	Structure Engineers (ARE)	Yes	Preferred
5	Material Engineer	Yes	Required
6	Environmental Specialist	Yes	Preferred
7	Survey Engineer	Yes	Preferred
8	Drainage Engineer	Yes	Preferred
9	Highway Design Engineer	Yes	Required
10	Structure Design Engineer	Yes	Preferred
11	Quantity Surveyors	Yes	Preferred
12	Contract Specialist	Yes	Preferred
13	Resettlement Specialist	Yes	Preferred
C)	Design Review Experts (International)		
1	Senior Highway Design Engineer (Team Leader for Design Review)	Yes	Required
2	Senior Structural Engineer	Yes	Required
3	Geotechnical Engineer	Yes	Preferred
4	Highway Safety Auditor	Yes	Preferred

E. REPORTING & DOCUMENTS REQUIREMENTS

9. Reporting Requirements: The Consultant will prepare and submit to PMU five copies of each of the under mentioned reports. The format of these reports shall be mutually agreed with the PMU. One copy shall be sent directly to the Asian Development Bank together with softcopy;

- a . **Inception Report:** The Consultant will submit an Inception Report at within one Month after mobilization. This will contain full detail of the consultant's supervision, & contract administration methodology and staff plan with supporting CVs of professional staff and projected monthly billing.
- b . **Design Review Report.** The consultant will submit a detailed Design Review Report, under the guidance of team leader within three months, indicating any deficiencies / improvements required in the detailed design prepared by the Design consultant. The design review will ensure that the construction drawings carry all details necessary for executing the job and shall not result in claims of non BOQ items / additional associated costs.
- c . **Monthly Contract Administration Reports:** The Consultant will, no later than the 10th of each month, prepare a narrative progress report summarizing:
 - (i) Construction progress during the month and cumulative to date for each individual contract drawing specific attention to any major causes of delay (administrative, technical or financial) with details of remedial action taken or recommended to the Employer.
 - (ii) A comparison of actual and forecast expenditure both during the month and cumulative to date for each individual contract, and a record of the status of payment of the Contractors' monthly invoices, of all claims for cost or time extensions, and of actions required of PMU to permit unconstrained works implementation. The Consultant will also advise on the final estimated cost for each individual contract and draw attention to any major changes in the project budget including details of remedial action taken or recommended to the Employer.
 - (iii) Brief on all correspondence exchanged with the contractors particularly relating to contractual clauses, with financial and time implications.
 - (iv) Technical appreciation of any design or quality control problems for each individual contract including details of remedial action taken or recommended to the Employer.
 - (v) Status of compliance with the Environmental & Resettlement Plans.
- d . **Annual Management Information Report at the end of each Financial Year:** The Consultant will prepare a comprehensive report summarizing all activities under the services at the end of each Financial Year, and also at other times when considered warranted by either the Consultant or PMU because of delay of the construction works or because of the occurrence of technical or contractual difficulties. Such reports shall summarize not only activities of the Project Engineer/ Manager but also the progress of the Contracts including all contract variations and change orders, the status of the Contractor claims, and brief descriptions of the technical and contractual problems being encountered and other relevant information for each of the ongoing contracts.
- e . **Resettlement Monitoring Reports.** A quarterly report highlighting the progress on implementation of resettlement, documenting all activities including formal & informal consultation, gender issues, socio economic

aspects, child labor, drug trafficking, hygiene,& safety and other social aspects

- f. **Technical Reports:** The Consultant will produce as necessary technical/ due diligence reports and position papers dealing with project matters during implementation.
 - g. **Interim Contract Completion Reports:** The Consultant will prepare completion report for each contract within 30 days of issuance of Taking-over Certificate/Certification of Completion. This report shall summarize the implementation and financial history of the project. The defects list provided to the contractor and all outstanding claims pending resolution.
 - h. **Final Project Completion Report:** The Consultant will prepare a comprehensive final Completion Report within 90 days after Issuance of the Taking Over Certificate of the last civil works contract. The Consultant will prepare a comprehensive final Completion Report for the project including each of the contracts and shall summarize the method of construction, as built record showing the location and details of all works carried out, all defects and certification of the satisfactory correction of such defects for each of the construction contracts, the construction supervision performed, and recommendations for future projects of similar nature to be undertaken by PMU.
 - i. **Project Documentary Report.** The Consultant has to make documentary of all major activities during constructions as well as that of completed project sections to be submitted towards the end of the project. These should also pertain;
 - a) Laying and compaction of various pavement layers
 - b) Operation of Asphalt and concrete Plants
 - c) Quarry sites and laboratory activities
 - d) Road after completion showing road furniture
 - e) Various important stages in construction of structures
 - f) Any other major activity involved requiring specific mention
 - j. **Roughness Survey Report** .The roughness surveys will be carried out at substantial completion in coordination with WSD, before the end of the defect liability period. The consultant is required to submit his findings along with data in this report.
 - k. **Revised PC-1.** The Consultant shall prepare the revised PC-1 of the project, before completion of the project, if required by incorporating all changes in the scope of work and, prepare completion report (PC-IV), at the completion of the project.
10. Documents & Manuals Required. The consultants will prepare following documents to be approved by the client for efficient contract administration & construction supervision.
- a. Contract Administration Manual
 - b. Quality Control & assurance manual
 - c. Laboratory Manual
 - d. Environmental Monitoring Checklist
 - e. Safeguard Monitoring Check list

F. TRAINING REQUIREMENT

11. The consultants will organize seminars and workshops, arranged every 6 months on the following subjects for WSD staff, consultants and contractors with a view to introduce best international practices and standards. Reputed resource persons will be arranged under the provision of this contract. Each training topic will have 2 sessions, and each session will cover around 30-50 trainees. The consultant shall submit CVs for approval for each trainer prior to commence training.

- a. Project Management
- b. Contract administration
- c. Quality control and assurance.
- d. Role of the engineers and Engineer's representative.
- e. Preparation, monitoring & evaluation of work programs.
- f. Preparation and scrutiny of Interim Payment Certificates.
- g. Asphalt paving techniques.
- h. Environmental & Social Issues management.

G. MISCELLANEOUS

12. Facilities: The Construction Contractor shall provide, operate and maintain the following facilities for the exclusive use of the Consultants:

- a. Laboratory and Testing Equipment
- b. Site Office and Residential Accommodation (adequately furnished)
- c. Site Transport
- d. Survey Equipment

13. The Consultants are encouraged to familiarize with Construction Work before submitting their proposals. Draft sample bidding documents and the Environment Management Plans can be inspected at PMU.

Sindh Road Network Master Plan and RAMS Upgrading Service Outline Terms of Reference for Consulting Service

A. Introduction

1. The Government of Sindh has applied a loan from the Asian Development Bank (ADB), and part of the loan will be used for the preparation of the Sindh Road Network Master Plan (2016-2035) (Plan) and upgrade the existing road asset management system (RAMS). A consulting firm consisting of international and national specialists will be recruited to help the government to prepare this Plan and upgrade the existing RAMS to make it functional. The Consultants will be recruited according to the Asian Development Bank's Guidelines on the Use of Consultants (2013, as amended from time to time). The Works & Services Department (WSD) of Sindh will be implementing agency for the Project, and a Project Management Unit (PMU) was established with a head of the Project Director (Client's representative).
2. The consulting services will be implemented by an international consulting firm. PMU will select and engage the consulting firm in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) and other arrangements satisfactory to ADB. The quality- and cost- based selection with full technical proposal will be used to select the consulting firm. We expect the team leader to be full time.

B. Scope of Services

For Master Plan

- 1) Review and assess the existing road network plan in Sindh, and identify key Issues and transport trend in terms of economy development in Sindh
- 2) Conduct a diagnostic of the Sindh road network system. Identify the underlying causes which are responsible for the manifestation of problems, as well as identifying the problems at a spatial level so that specific objectives and interventions can be identified
- 3) Develop Master Plan with a multi-criteria analysis (MCA) and cost-benefit analysis (CBA) approach considering two scenarios: (i) "Economically Sustainable" Scenario, and (ii) an Economically and Environmentally Sustainable" Scenario. Each project was scored in the MCA according to how well it met the defined appraisal criteria. Using different weights for the scores, each projects was given two scores, applying to each scenario, which gave a different set of priority projects for each scenario
- 4) Conduct Feasibility study for prioritized projects
- 5) Deliver training

For Upgrading of RAMS

- 1) Review of the software architecture and major functional components of the existing road management system in terms of database management, analysis modules or capabilities and system operations, which are described in the main body this report.
- 2) Search and provide an off-the-shelf commercial software product that can be customized to meet all basic requirements for working as the state-of-the practice RAMS and, have the capabilities of carrying out the basic road asset maintenance analysis and reporting functionalities expected from the RAMS.

- 3) Transfer all data from the existing system to the new software, where any new data (including any types of road asset inventory and condition data) can be updated, and any data files required for specific analyses in HDM-4 can be prepared and exported with a specially designed data management function. In other words, an interface between HDM-4 and the new RAMS should be provided in terms of data files import and export functions.
- 4) provide sufficient hands-on training sessions and workshops for the WSD staff to fully understand the new system operation and maintenance

C. Consultant Tasks

3. The consultant's tasks will include:

For Master Plan

- (i) Preparation of a comprehensive review of the existing status of the transport sector. The review will cover: (a) the contribution of the transport sector to the economic and social development of Sindh; (b) demand for transport services and infrastructure; (c) current state of both physical transport infrastructure and of transport services; (d) legislative, regulatory and policy background; (e) efficiency of transport services; (f) transport planning capacity at transport agency levels; (g) general human resource capacity in transport sector; (h) current development plans for road, and other transport sectors, including the potential to develop into a multimodal logistics hub; (i) operations and maintenance; (j) road safety; (k) current issues impeding the development of Sindh road network; (l) environmental impacts of transport; and (m) funding envelope available for transportation and current practices regarding allocation of resources between transport sectors/modes.
- (ii) Review of future challenges for the road sector, considering Sindh's strategic geographic location, and the demographic and economic background. This review will consider the government's desired goals for the transport sector and other relevant policies.
- (iii) Undertake consultations on the formulation of the road master plan through consultation workshops or other forms, such as seeking the views of stakeholders as to existing and likely future, issues in the road sector in both inception and upon completion stage. The stakeholders to be consulted will include but not be limited to: relevant government ministries, transport agencies, state-owned transport agencies, private sector, civil society and international development partners.
- (iv) Preparation of a human resource development plan for the road sector. This plan will consider existing road planning capacity within relevant transport agencies; review existing transport agency staff skill levels; identify any mismatch between current staff skill sets and organizational needs across each transport agency; consider the university sector and other research institutes, and propose a series of recommendations designed to ensure that relevant road sector agencies have workforces with the right skills mix and experience.
- (v) Review of existing strategic planning capacity within WSD and other transport agencies and strengthening of their ability to plan long-term for development of sector policies, and transport services and capacity.
- (vi) Preparation of a framework for prioritization of road sector projects. This framework will assist road agencies and decision makers on transport projects through the process of ensuring that the best choices are made and the best value for money obtained from investment in transport projects in Sindh. The final product will be in line with best international practice and will be an objectives lead framework within which the various costs and benefits

of a project can be brought together for consideration. The framework will likely include both Cost Benefit Analysis (CBA) and Multi-Criteria Analysis (MCA) approaches.

- (vii) Preparation of a Sindh transport policy, which will include but not be limited to: (a) review the importance of transport to the economy of Sindh; (b) summarize existing demand for transport and existing condition of transport infrastructure and services; (c) review existing funding of transport sector and propose a reasonable funding envelope for transport distinguishing between various modes and between operation and maintenance of existing infrastructure and new investment; (d) set out the strategic priorities for transport in Sindh, including key transport corridors for development; (e) review the structure for delivery of existing transport services and recommend necessary reforms in transport policies, regulations and organizational structure; (f) summarize the framework for prioritization of transport policies; (g) summarize the human resource plan developed; (h) recommend a series of measures designed to develop Sindh into a multi-modal logistics hub; (i) review existing road network to make recommendations as to needed improvements to facilities and procedures; (j) review progress made in terms of road/transport safety and make any recommendations necessary to fulfill Sindh's road safety targets; (k) minimizing transport's impact on the environment; and (l) review existing design standards relating to transport projects and make recommendations as to needed changes.
- (viii) Finalization of the road network master plan after completion of final round of consultations. Two scenarios are developed, an "Economically Sustainable" Scenario, and an Economically and Environmentally Sustainable" Scenario. Each project was scored in the MCA according to how well it met the defined appraisal criteria. Using different weights for the scores, each projects was given two scores, applying to each scenario, which gave a different set of priority projects for each scenario.
- (ix) Standard feasibility study for prioritized projects will be conducted to include project analysis on economic, engineering, hydraulic, traffic, cost estimate, etc.
- (x) Provide trainings to WSD staff on the road planning, design, and economic analysis for road project. The training will be 3 sessions for each topic and each session will include around 20 trainees. The Consultant needs to submit the resource person's CV for approval from the WSD.

For Upgrading of RAMS

- 1) Review of the existing RAM data structure and database management, including data types and formats, data input and editing, data file import and export, data storage and transfer, data statistics and reporting, data access interface design and connections with other data relevant such as GIS, Google map, GPS, web-browse function and data validation, system operation and technical support, user access and security.
- 2) Searching and evaluation of the state-of-practice RAMS commercial software available on the market and summary of their individual functional components or capability, flexibility and customization, and price.
- 3) Assessment of the existing software structure as comparing to the state-of-practice road asset management systems commonly used by road agencies in the world, and identifying the gaps or differences in terms of practical

application, calibration module, costing and maintenance.

- 4) Selecting and proposing a commercial of-the-shelf software product and all supporting hardware that is the most cost-effective and suitable for the Province of Sindh.
- 5) Acquisition and installation of the system components at designated location(s) is part of the consulting assignment, including hardware, software and all supporting devices or operating programs to initialize operating system for the expected RAMS applications.
- 6) Customization of the data input or data loading program, validation of all parameters and formulae for analysis models, and reporting systems. In addition, local experience based maintenance and rehabilitation (M&R) treatments, decision trees, M&R application strategies and constraints, unit costs of all possible M&R treatments are to be placed in the system for use in maintenance and management of the road network, which will meet, but not limited to, the following requirements and specifications:
 - To have a sound database management system designed to manage all road asset inventory and road condition data, including data loading, updating, importing, exporting, statistical analysis and reporting, communicating with external data through interfaces. In addition, operation of the software must be safe of the stored information, despite system crashes or attempts at unauthorized access. If data are to be shared among several users, the system must avoid possible anomalous results due to multiple users concurrently accessing the same data.
 - To have all basic functional components and capability of performing road asset management related tasks (such as performance target based maintenance and rehabilitation investment needs analysis, outlook funding based performance evaluation and prediction analyses, priority and optimization analyses of all road maintenance and improvement projects on the list for implementation, etc.). The software product should be essentially designed and programmed as an engineering and economic analysis tool for assisting decision-makers in efficient management of transport or infrastructure assets in terms of maintenance programming and investment planning.
 - To be customized to meet all special requirements and specifications for individual road agencies or any other types of users. For example, it can be programed to import from and/or export to DHM-4 data files so that the primary analysis functions of the HDM-4 applications will be conducted efficiently, including preparation of short term projects, medium term maintenance and rehabilitation programming, and strategic plan for long-term road maintenance and improvement projects at network level.
 - To be potential applications of maintenance management of many other infrastructure or road related assets (pavements, bridges, culverts, traffic signs, sidewalks, guardrails, signals, and more.) in the near future. For the

time being, although the WSD will apply the software to only pavement management, it will be able to accommodate database and analysis models for management of other asset components.

- To be applied in quality control and performance monitoring of any maintenance and rehabilitation or improvement projects by communicating and real time data collection and decision-making process. Especially, it is expected that the software will be used for monitoring long-term performance and quality of the proposed PPP sub-projects to be financed by the ADB, it will be also used in weekly monitoring and reporting of road conditions and needs for immediate maintenance actions under the performance based long-term road maintenance contracts, as second stage of the PPP projects.
- 7) Providing a series of hands-on training sessions and workshops for WSD designated users to access the system facilities (software and hardware), and to understand the system operation for business applications. To ensure a successful implementation of the system applications in Sindh, it is also very important to provide the WSD staff and/or technical support technicians with a knowledge transfer program.
 - 8) Providing the system operation user manual and technical guidance to exploring all potential RAMS applications and system enhancements. In addition, system maintenance, modification and enhancement from time to time will be specified in the agreement of this assignment.

D. Reporting Requirements

4. The consultants will be required to submit the following deliverables to the Government of Sindh and ADB:

- (i) an inception report within 1 month of commencement of services;
- (ii) a mid-term report after 6 months of commencement of services;
- (iii) a draft road network master plan within 15 months of commencement of services.
- (iv) Feasibility study reports for prioritized projects will be submitted within 18 months of commencement of services.
- (v) a draft final report on RAMS including system architecture, user manual, and annual maintenance program format.
- (vi) The Consultants will also submit monthly progress reports to the ADB and Government of Sindh.
- (vii) Draft reports shall be finalized no later than two weeks after receipt of comments from ADB and Government of Sindh.