

Road Asset Management Systems (RAMS) and Performance-Based Contracting (PBC) in the CAREC Region

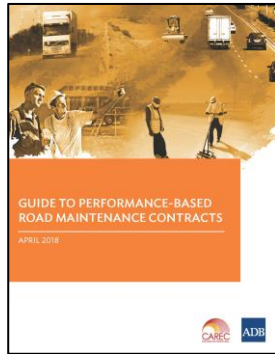
Transport Sector Coordinating Committee, October 2022

Serge Cartier van Dissel

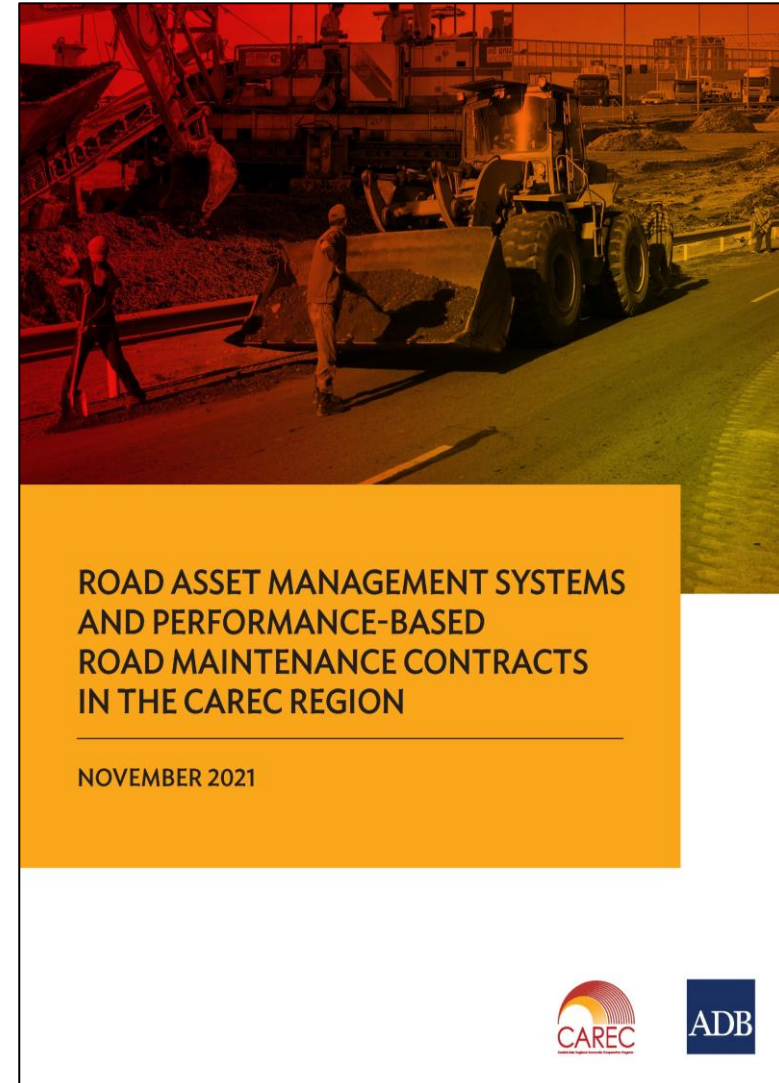


RAMS and PBC in the CAREC region

- Update of the current status 2021
 - Road Asset Management Systems (RAMS)
 - Performance-Based Contracting (PBC)
- Follow up on earlier publications from 2018

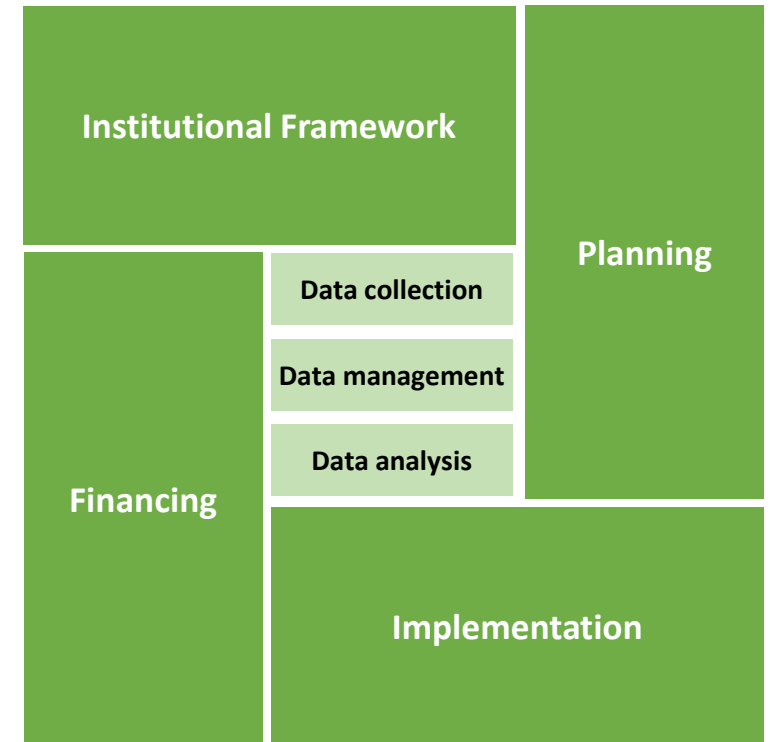


- Complemented by RAMS + PBC training
 - Tajikistan 2020
 - Afghanistan 2021 (online)
 - Kyrgyz Republic 2021 (online)
 - Mongolia 2022 (planned)



Road Asset Management Systems (RAMS)

- Road Asset Management System
 - Data collection
 - Data(base) management
 - Data analysis
- A RAMS needs to be integrated into the wider context
 - An institutional framework for RAMS operation
 - Integration of the RAMS into planning and budgeting procedures
 - Appropriate modalities for financing the plans
 - Capacity for implementing the plans



RAMS Complexity

- Start simple
 - Avoid overly-costly data collection
 - Avoid overly-complex systems
- Pakistan and Georgia very successful with simple systems
 - Limited data collection
 - Basic databases
 - Off-the-shelf software
- Now are they considering the development of more complex systems with more elaborate data collection

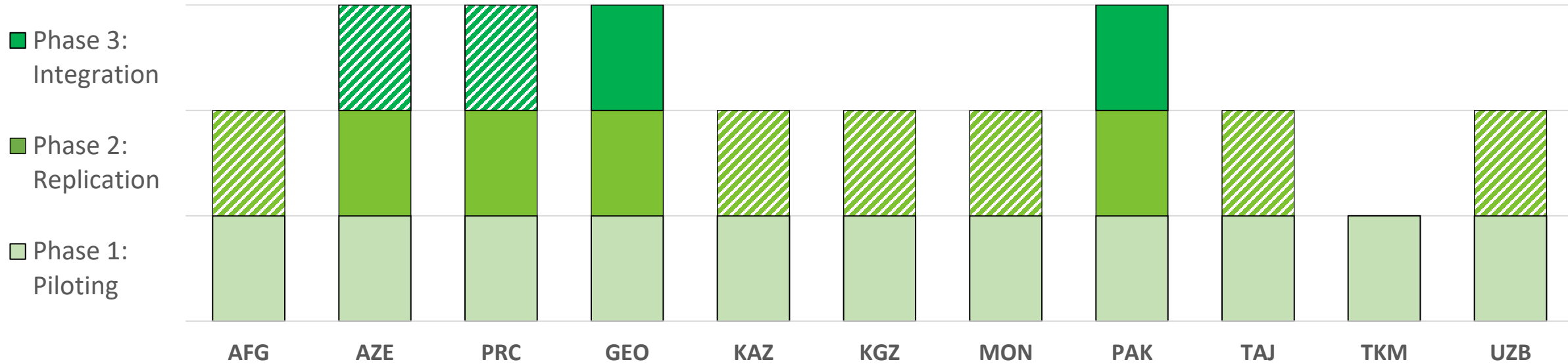
Network coverage

- A RAMS does not necessarily need to cover the entire road network
- Initially focus the RAMS on part of the network
 - Start with the main roads/paved roads/roads with higher traffic volumes
 - Expand to other roads later
- A RAMS can only be used for planning of roads for which data has been collected
- Budgets for low-level roads are often very restricted
 - Benefits of a RAMS for these roads are limited as there is no financing available

Continued support

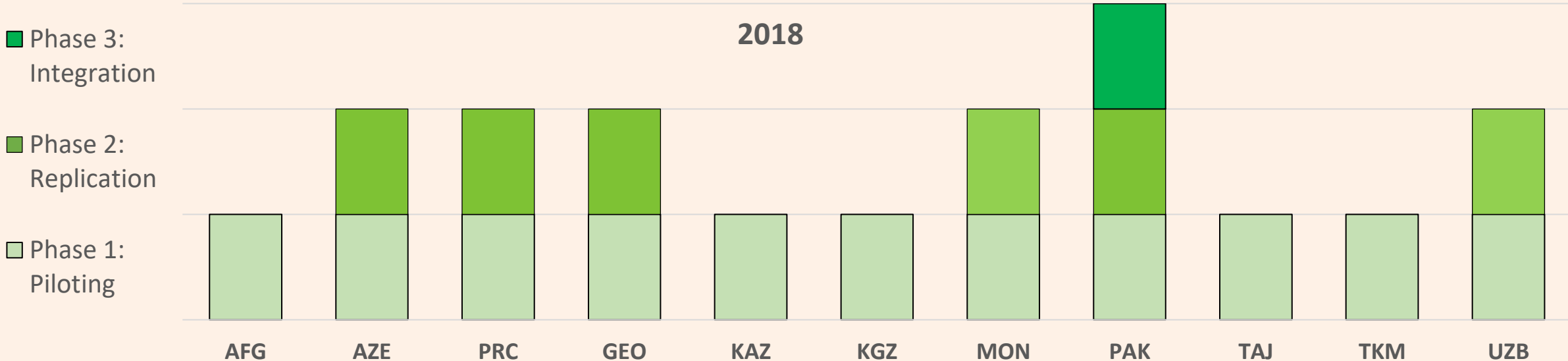
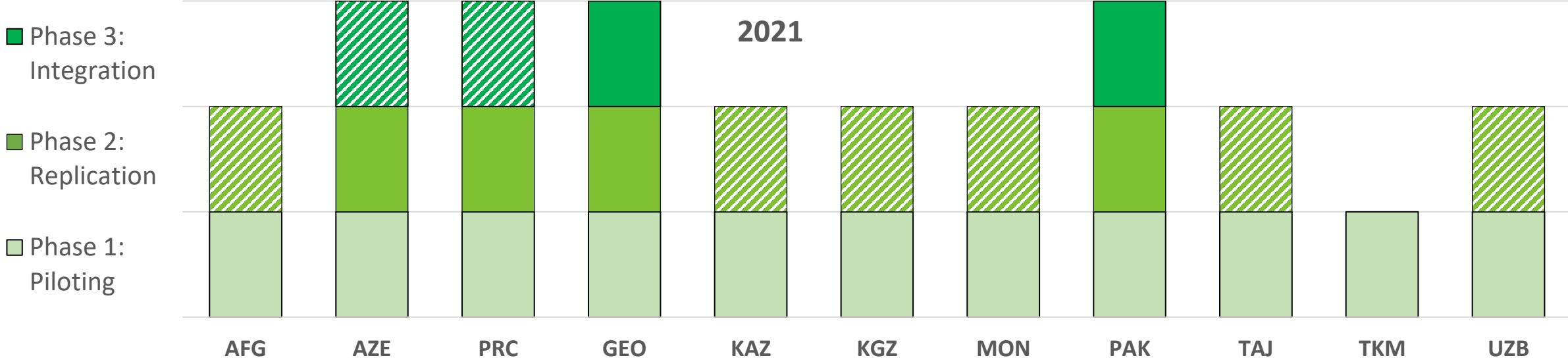
- RAMS development takes time and goes through different phases
 - Piloting
 - Replication
 - Integration
- Each phase easily takes 5 years
 - Throughout the development, the RAMS features will be continuously expanded
- RAMS development requires continued support from development partners
 - More than one project
 - Successive projects and possibly different development partners

Status of Road Asset Management Systems



	AFG	AZE	PRC	GEO	KAZ	KGZ	MON	PAK	TAJ	TKM	UZB
Data collection frequency	Intermittent	Intermittent	Annual	Annual	Intermittent	Intermittent	Intermittent	Annual, outsourced	Starting	Starting	Intermittent
Data collection extent	Partial Network	Network	Network	Network	Partial Network	Partial Network	Partial Network	Network	Partial Network	Partial Network	Partial Network
Database	Being prepared	Yes	Yes	Yes	Yes	Being prepared	Not used	Yes	Being prepared	Limited scope	Being prepared
Data analysis	Being prepared	Intermittent	Most provinces	HDM4	Being prepared	Being prepared	Not used	HDM4	Being prepared	-	Being prepared
Dedicated RAMS unit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
RAMS influencing planning	-	Intermittent	Some provinces	Yes	-	-	-	Yes	-	-	-
RAMS influencing financing	-	-	-	Yes	-	-	-	Yes	-	-	-

Progress from 2018 to 2021



Institutionalization

- Dedicated RAMS Units exist in many CAREC countries
 - Staffing costs are financed
- RAMS operational funding continues to be limited or absent in many countries
 - Annual allocations for data collection
 - Maintenance and replacement of survey and computer equipment
 - Internet access and server storage
 - Office supplies

Planning and Budgeting Procedures

- RAMS should be the basis for annual planning and budgeting
 - RAMS often continues to exist separate from traditional planning procedures
 - There can be legal obstacles to using a RAMS as the basis for planning and budgeting
- RAMS is very different from traditional planning and budgeting procedures
 - Traditionally planning by local maintenance units – consolidation of plans at central level
 - RAMS requires centralized planning based on collected data – verification of plans at local level
- Need to pay attention to integration early on in the RAMS development
 - One of the most difficult steps of RAMS development

Appropriate funding

- A well-functioning RAMS is not enough
 - A RAMS can help estimate funding needs and improve allocation of available budgets
 - Without adequate funding, the benefits of a RAMS will be limited
- Need to identify suitable funding sources for road maintenance and repair
 - Increased amounts of funding
 - Increased predictability of funding
- Use of available funding beyond the end of the fiscal year
 - Avoid procurement delays at start of fiscal year
 - Facilitate multiannual contracts
 - Ensure funding availability in case of implementation delays
- Road funds with earmarked road user charge revenues

Implementation capacity

- RAMS focuses on optimising benefits
 - Shift towards maintenance and repair of roads in good/fair condition
 - Avoid that such roads deteriorate further and require costly repairs
- Increase in amount of periodic maintenance (mid-term repair)
 - As evidenced in Pakistan (over 50% of annual maintenance plan)
- Need to create the capacity to implement such maintenance and repair
 - Introduce suitable contracting modalities
 - Support the development of contractor capacities
 - Promote the participation of private sector

RAMS Action Program

- Each CAREC member country is different
 - Different level of RAMS development
 - Different past experiences
 - Different procedures and legislation
 - Different road networks
- This requires a custom-made RAMS Action Program
 - Cover the next 5-10 years
 - Define specific actions to be undertaken with clear targets
 - Define who is responsible for achieving these and how these will be financed
 - Define the required support from development partners
 - Covering both RAMS development and RAMS integration
- Tajikistan issued a RAMS Action Program by Presidential Decree in December 2020
 - Forms the basis for coordination of development partner support

Performance-Based Contracting

- Performance-Based Road Maintenance (PBRM)
 - Routine maintenance and current repair paid on performance basis
 - Required road conditions defined by performance standards
 - Fixed monthly payments
 - Deductions if performance not in compliance with standards
- Sometimes as Service Level Agreements (SLA) with state-owned enterprises
- Sometimes complemented by larger repairs paid on a volume basis (OPRC)
- Often complemented by provisional sum for winter and emergency maintenance
 - Winter maintenance paid on performance or volume basis
 - Emergency repairs paid on volume basis

Existing and planned PBC contracts

Country	Development Partner	Type	Length (km)	#	Duration (months)	Initial Repairs	Cost (\$/km/year)	PBC Activities	PBC Cost (\$/km/year)
AFG	EU	PBRM	142 km	1	36	-	\$2,800	RM+WM	\$2,800
AFG	USAID	PBRM	1,626 km	5	26	-	\$6,300	RM+WM	\$6,300
AZE	World Bank	SLA	774 km	3	12	-	\$15,000	RM+WM	\$15,000
PRC	ADB	OPRC	57 km	1	60	Full RH+PM	\$33,250	RM	
PRC	ADB	SLA	107 km	1	36	Partial RH+PM	\$25,000	RM	
PRC	World Bank	OPRC	120 km	2	24	Partial RH+PM	\$20,000	RM	
PRC	World Bank	OPRC	776 km	8	60	Partial RH+PM	\$29,000	RM	
GEO	World Bank	OPRC	117 km	1	60	Partial RH	\$28,500	PM+RM+WM	\$5,200
GEO	World Bank	OPRC	240 km	1	60	Partial RH+PM	Cancelled	RM+WM	
GEO	ADB	OPRC	140 km	1	60	Limited RH	Planned	RM+WM	
GEO	ADB	OPRC	150 km	1	60	Partial RH+PM	Planned	RM+WM	
KAZ	ADB	OPRC	1,415 km	4	96	Partial RH+PM	Cancelled	RM+WM	
KGZ	World Bank	SLA		1	12	-	N/A	RM+WM	
KGZ	ADB	PBC	69 km	1	36	Limited RH+PM	\$21,000	RM+WM	\$1,500
KGZ	ADB	PBC	70 km	2	84	Full RH	\$82,000	RM+WM	\$8,700
MON	ADB	PBC	58 km	1	60	Full RH	\$49,000	RM+WM	
PAK	ADB	PBC	104 km	2	60	Limited RH+PM	\$20,000	RM+WM	
TAJ	ADB	PBC	149 km	2	36	Limited RH+PM	\$7,600	RM+WM*	\$5,800
TAJ	ADB	PBC	176 km	2	36	-	\$1,500	RM+WM*	\$1,500

New publication reviewing different PBC contracts

- Detailed review of PBC contracts
 - Contract scope
 - Performance standards
 - Inspections
 - Response times
 - Payments and deductions
 - Procurement and contract award
 - Contract costs

