

Outcome and Performance Based Road Contracts (OPRC) Experience in Georgia

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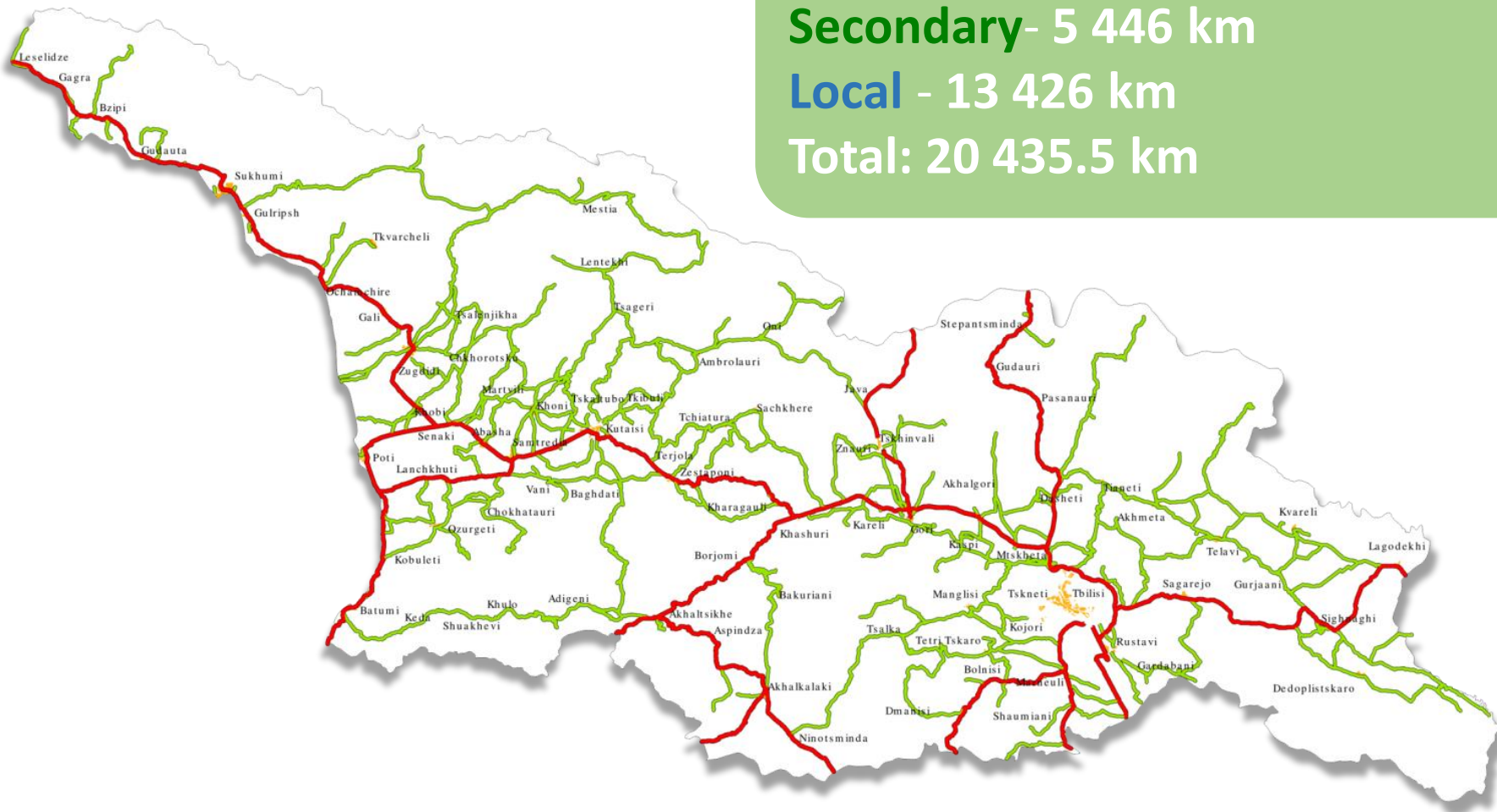


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ზღაბის დეპარტამენტი
ROADS DEPARTMENT OF GEORGIA



Outcome and Performance Based Road Contracts (OPRC) Experience in Georgia

International - 1 563.5 km
Secondary - 5 446 km
Local - 13 426 km
Total: 20 435.5 km





Introduction of OPRC in Georgia

- 2013 – Feasibility of the OPRC
- 2015 – First Bid – Kakheti Region OPRC (totally Outcome based)
- 2016 – Commencement of the OPRC in Kakheti Region
- 2017 – Commencement of the Maintenance Contracts on the countrywide Road Network (Routine+Periodic, BoQ based, 3 years)
- 2018 – 2019 Guria OPRC (Hybrid model) ToR preparation
- Currently starting the state-budget funded 2 years term routine maintenance and separate periodic maintenance projects countrywide



OPRC Key Features

- Take-over and payment for the executed works.
- Evaluation of the road condition by Service Levels
- Prevention
- The risk/responsibility for the Service Levels achievement on the Contractor`s side



Kakheti OPRC: 2016 - 2021

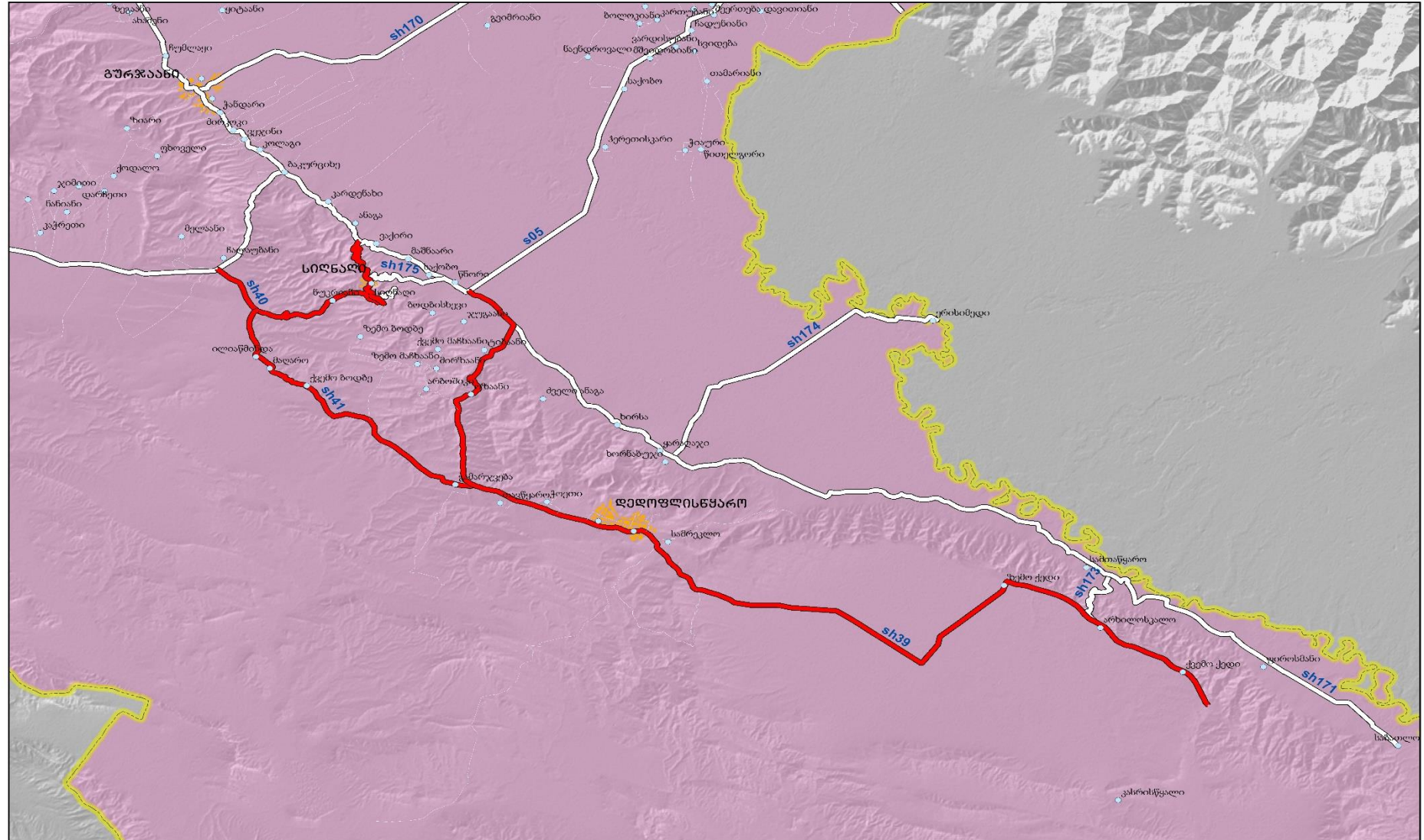
- Outcome Based Rehabilitation –80% of the Contract Price
 - 37.5 km in 24 moths period
 - Detailed Design prepared by Contractor (without particular payment), approved by RD
 - Take-over and payment for minimum every continuous 2 km length rehabilitated section

- Outcome Based Maintenance
(Routine+Winter+Periodic) – 20% of the Contract Price
 - 117 km in 60 moths period
 - Achievement of Service Levels defined on per-km via preset Performance Indicators
 - Monthly Lump Sum Payments

- Emergency and Contingency
 - Traditional BoQs



Kakheti OPRC: 2016 - 2021





Kakheti OPRC: 2016 - 2021

Levels of Service in Kakheti OPRC

Road User Service and Comfort	Road Durability	Management Performance
<ul style="list-style-type: none">• Road Roughness• Road and lane width• Rutting• Skid resistance• Vegetation control• Visibility of road signs and markings• Availability of each lane-km for use by traffic• Response times to rectify defects that compromise the safety of road users• Attendance at road accidents• Drainage off the pavement (standing water is dangerous for road users)	<ul style="list-style-type: none">• Longitudinal profile• Pavement strength• The extent of repairs permissible before a more extensive periodic maintenance treatment is required• Degree of sedimentation in drainage facilities	<ul style="list-style-type: none">• Delivery of regular progress reports to the Road Controlling Authority• Inventory updates and other data sharing requirements• Maintenance history



Kakheti OPRC: 2016 - 2021

Levels of Service /Maintenance Performance Indicators - Example

Noncompliance	Performance Indicator (PI)	Unit of Measurement	Size	Penalty, %
Non-compliance with 100% penalty (4 PIs)	Potholes, diameter	cm	>20	100 %
	Potholes, Edge breaks amount	unit	>5	100 %
Potholes, Edge Break	Potholes, diameter	cm	≤20	10 %
	Potholes, Edge breaks amount	unit	≤5	
	Edge Break, maximum width allowed	mm	>75mm	
	Response time, potholes and edge break	days	10 (30 in winter)	



Kakheti OPRC: 2016 - 2021

Example of Non-Compliance

Non-compliance on km 5-6 of road SH-1:

- drainage and culverts – 6%,
- cleanliness of road carriageway and shoulders when safety hazard – 8%,
- rutting – 6%
- cracks – 6%
- potholes -10%

Reduction of lump-sum payment for 1km by 36%

If not rectified during the first 30 days, liquidated damages start to increase afterwards



Kakheti OPRC: 2016 - 2021





Guria OPRC: 2019 - 2024

- Preparation of the Bidding Documents on the final stage
- Guria Secondary Roads Network – Total length 240 km
- Hybrid Model:
 - BoQ based Rehabilitation – 55% of Contract Price
 - 68 km to be rehabilitated due to the Detailed Design provided by RD.
 - Rehabilitation period – 36 months

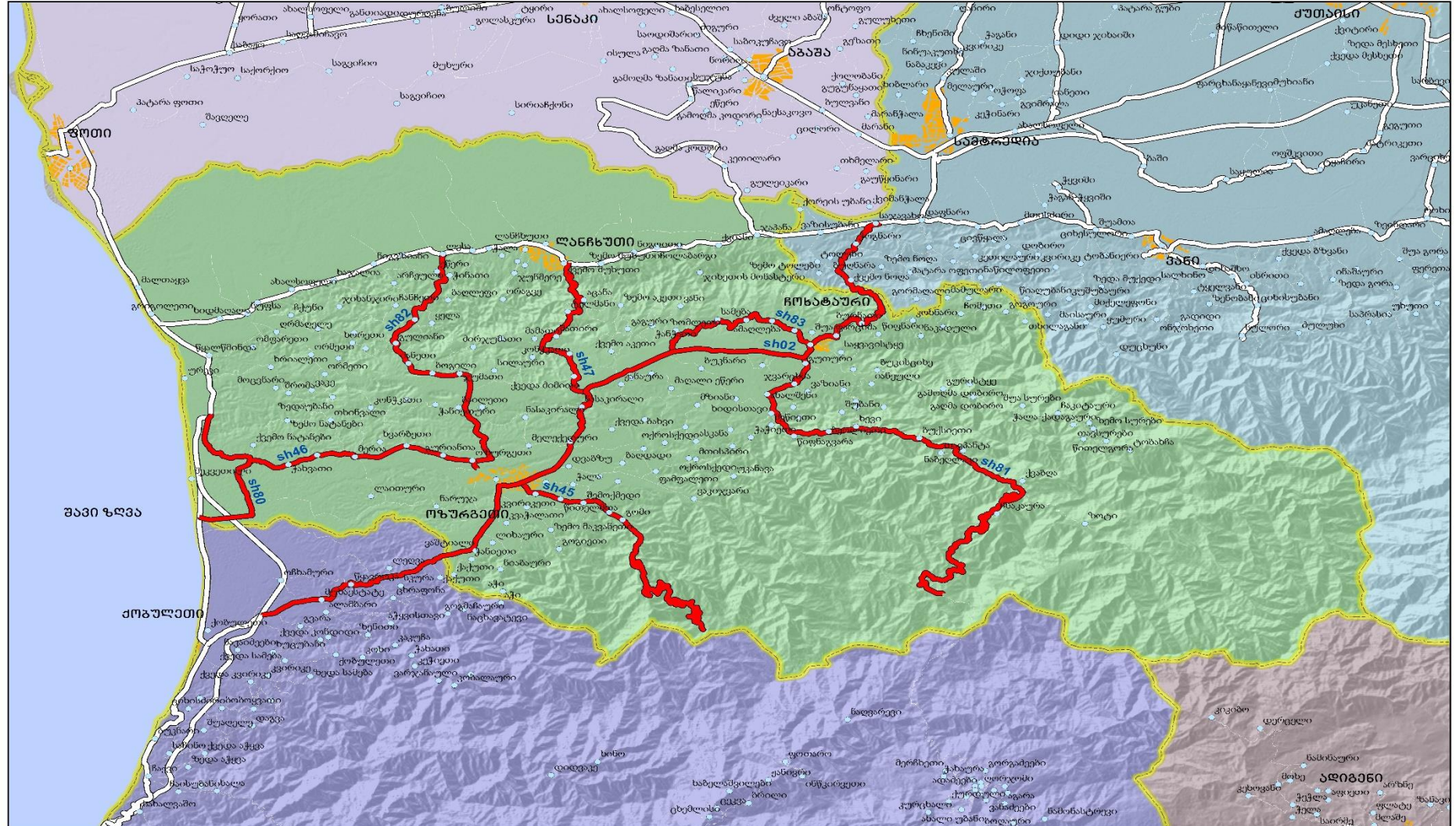
 - Outcome based Periodic Maintenance – 25% of Contract Price
 - 107 km to be covered within 36 months period
 - Take-over and payment for minimum every continuous 2 km length section

 - Outcome based Routine Maintenance – 20% of Contract Price
 - Achievement of Service Levels defined via per-km preset Performance Indicators
 - Monthly Lump Sum Payments

 - Provisional Sum – BoQ based Emergency and Contingency - 7 % of the 3 components price



Guria OPRC: 2019 - 2024





Guria OPRC: 2019 - 2024

Levels of Service in Guria OPRC

Road User Service and Comfort	Road Durability	Management Performance
<ul style="list-style-type: none">• Pavement Maintenance• Unsealed Shoulder Maintenance• Drainage Maintenance• Routine Maintenance of Bridges and Other Structures• Incident Response & Emergency Works Response• Vegetation Control• Road Signs Maintenance• Pavement Marking• Safety Barriers Maintenance• Other Road Furniture Maintenance	<ul style="list-style-type: none">• Minimum Annual Asset Preservation Quantities (in accordance with the approved work plan)• Pavement Roughness• Roadway Cut and Embankment Slopes	<ul style="list-style-type: none">• Contractor's Quality Assurance Management Plan• Contractor's Work Programs• Contractor's Reports• Road Safety & Traffic Management• Inventory Database Management• Environmental and Social Management Plans



Guria OPRC: 2019 - 2024

Levels of Service /Maintenance Performance Indicators – Example

Management Performance Measure		Non-Compliance Weighting	Sub-weighting criteria (Unit)
Performance Measure	Description		
MPM	Road Safety & Traffic Management	2	Each week of non-receipt of RSTMP after deadline and each day delay of non-compliance of RSTMP at worksite
MPM	Inventory Database Management	2	Each week f non-receipt after deadline

Road Users Service and Comfort Performance Measure		Non-Compliance Weighting	Sub-weighting criteria (Unit)
Performance Measure	Description		
RUS & CPM - Pavement Maintenance	Edge Break within any continuous 1km centre line length, the aggregated longitudinal edge line length of deficient sealed width must be less than 5m in length and 75mm in width	2	Each 10 days of non-response
RUS & CPM - Drainage Maintenance	Culvert Cleaning	2	Each week f non-receipt after deadline

Road Durability Measure	Weightings to be Applied to the Recorded Non-Compliance	
	Weighting	Sub Weighting
Pavement Roughness	5	No. of Months
Roadway Cut and Embankment Slopes	5	No. Weeks



Guria OPRC: 2019 - 2024

Example of Non-Compliance

Non-conformance	Number of Non-Conformances P	Multiplication Factor		Score P x W x Z
		Weighting W	Sub Weighting Z	
MPM- 4 Safety & Traffic Management	5	2	5	50
MPM- 5 Inventory Data Base Management	1	2	1	2
Repeat MPM non-conformance	0	4	1	0
RUS&CPM - 4 Routine Maintenance of Bridges and Other Structures	3	2	1	6
RUS&CPM-6 Vegetation Control	15	2	1	30
RUS&CPM- 7 Road Sign Maintenance	20	2	1	40
RUS&CPM 8 Pavement Marking	11	2	1	22
Road Safety Hazard Repair	10	6	2	120
RDPM non-conformance	0	5	0	0
RUS&CPM Generated by the Employer	5	6	1	30
Monthly Aggregated Contract Non-Conformance Score:				300

Monthly aggregated non-conformance score applied in the particular formula towards the Contractor's Monthly Lump Sum payment for Routine Maintenance of the entire network



Calculation of Performance Achievement Payment deductions



Identification of the final monthly Payment amount to the Contractor



Lesson learned

- **Periodic Maintenance to be defined separately from the Routine Maintenance.**

- **The price proportions:**
 - Kakheti - Rehabilitation 80% - Routine + Periodic Maintenance 20%.
 - Guria - Rehabilitation/Periodic 80% - Routine Maintenance 20%.

- **Payment for Rehabilitation (BOQ/OUTCOME)**

- **Rehabilitation Supervision Modality**

- **Performance Indicators relevancy to the Road Network applied - Reality and Rationality**



Challenges

- **The local contractors experienced only in BoQ based works.**
- **Lack of relevant Financial and Technical experience within local contractors.**
- **Lack of OPRC management experience or capacity (lack of experience of simultaneous execution of rehabilitation and maintenance works and perfect asset management capacity)**
- **Lack of Competition.**



Questions

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**Thank you for
your attention!**