



# Road Asset Management in Georgia

Overview

17.05.2017 Tbilisi, Georgia

## Road network asset value / GDP comparison

Road Network	Maximum Asset Value (mln. USD)		Current Asset Value (mln. USD)		Current/ GDP
International	4,505	60%	4,382	67%	26%
Secondary	2,065	28%	1,740	26%	11%
Local	909	12%	458	7%	3%
<b>Total:</b>	<b>7,479</b>	<b>100%</b>	<b>6,580</b>	<b>100%</b>	<b>40%</b>

Source: WB RNET study under Road Sector Financing and Institutional Strategy Development Project

# Road network condition in terms of Roughness (IRI)

Good	Fair	Poor	Bad
IRI < 4	4 < IRI < 6	6 < IRI < 8	IRI > 8

## International Roads – 1600 km



## Secondary Roads – 5300 km



Remaining backlog in system  
(measured)

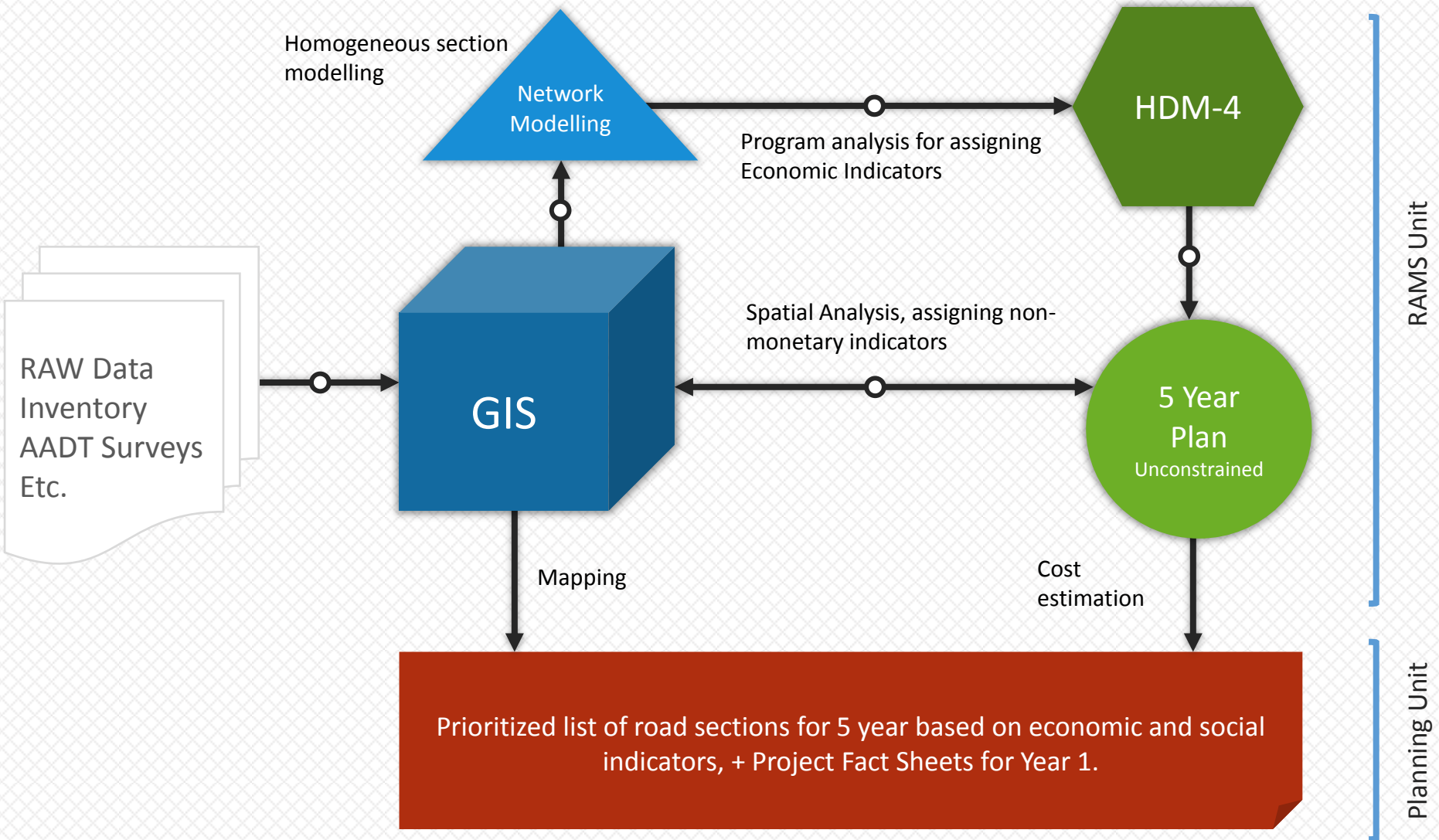
80% in bad condition in year 2004 (estimated)

Remaining backlog comprises of very low traffic road sections with low or negative economic indicators

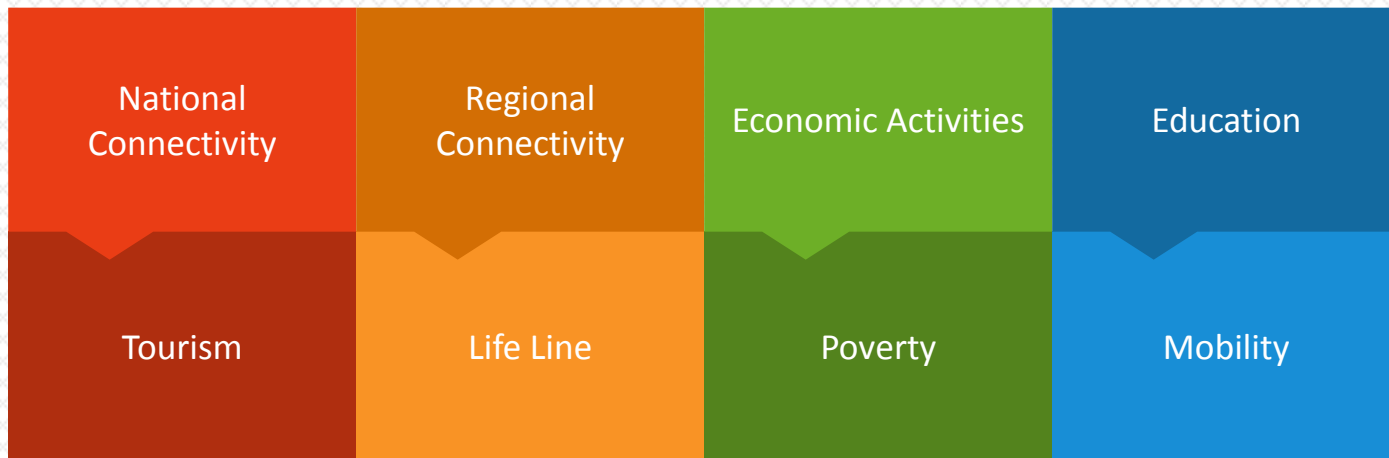
# 5 YEAR PROGRAM FOR SECONDARY ROAD ASSETS IMPROVEMENT AND PRESERVATION 2017-2021



# RMS Components



# Socioeconomic Impact Assessment



Indicators constitute a platform for communication with stakeholders and regional representatives regarding priorities and selection of the upcoming road projects.

# Automated, Data driven, simple indicators

## Main Indicators

- |   |                    |   |
|---|--------------------|---|
| 1 | NPV/CAP            | Benefits/Capital cost ratio                         |
| 2 | Population Density | Total population within 2km buffer / section length |

## Secondary Indicators

- |   |                                |   |
|---|--------------------------------|---|
| 1 | Enhanced National Connectivity | Part of Secondary Road between, connecting two international roads  |
| 2 | Enhanced Regional Connectivity | Distance from the centre of section to closest city centre  |
| 3 | Enhanced economic activities   | Number of registered businesses in the district where the section is located  |
| 4 | Education                      | Number of schools within a 2 km buffer along the road section   |
| 5 | Tourism                        | Number of attraction within a 2 km buffer along the road section  |
| 6 | Life Line Road                 | The road is the only possibility of connecting the village to the outside world   |
| 7 | Rate of poverty                | Number of people receiving government support in the district in relation to the district population, where the road section is located |

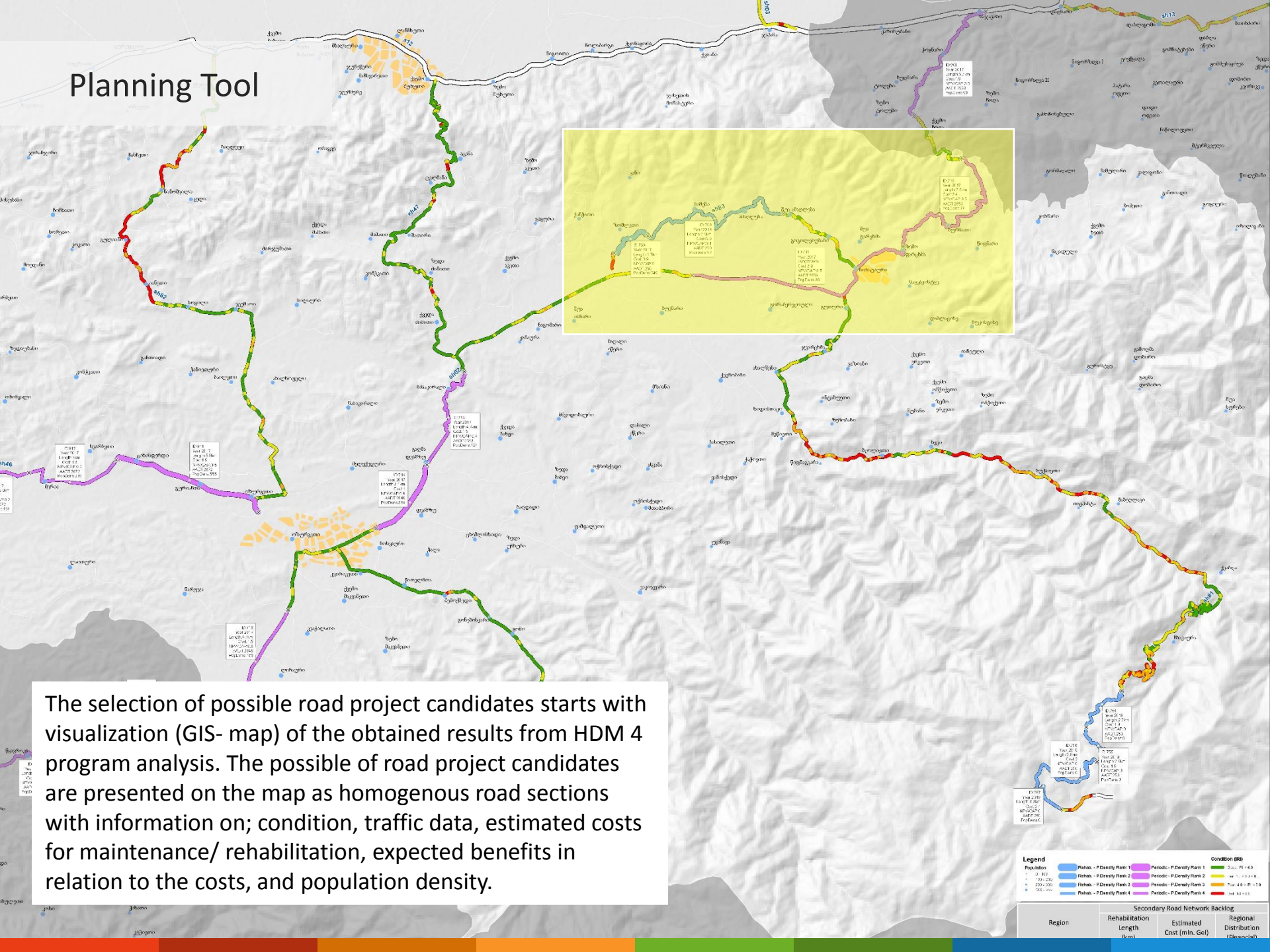
## Custom Indicators

- |   |                  |  |
|---|------------------|--|
| 1 | Emergency Access | Time required from closest city/municipal center to reach populated place          |
| 2 | Mobility         | Total number of villages section provides shortest access to municipal center/city |



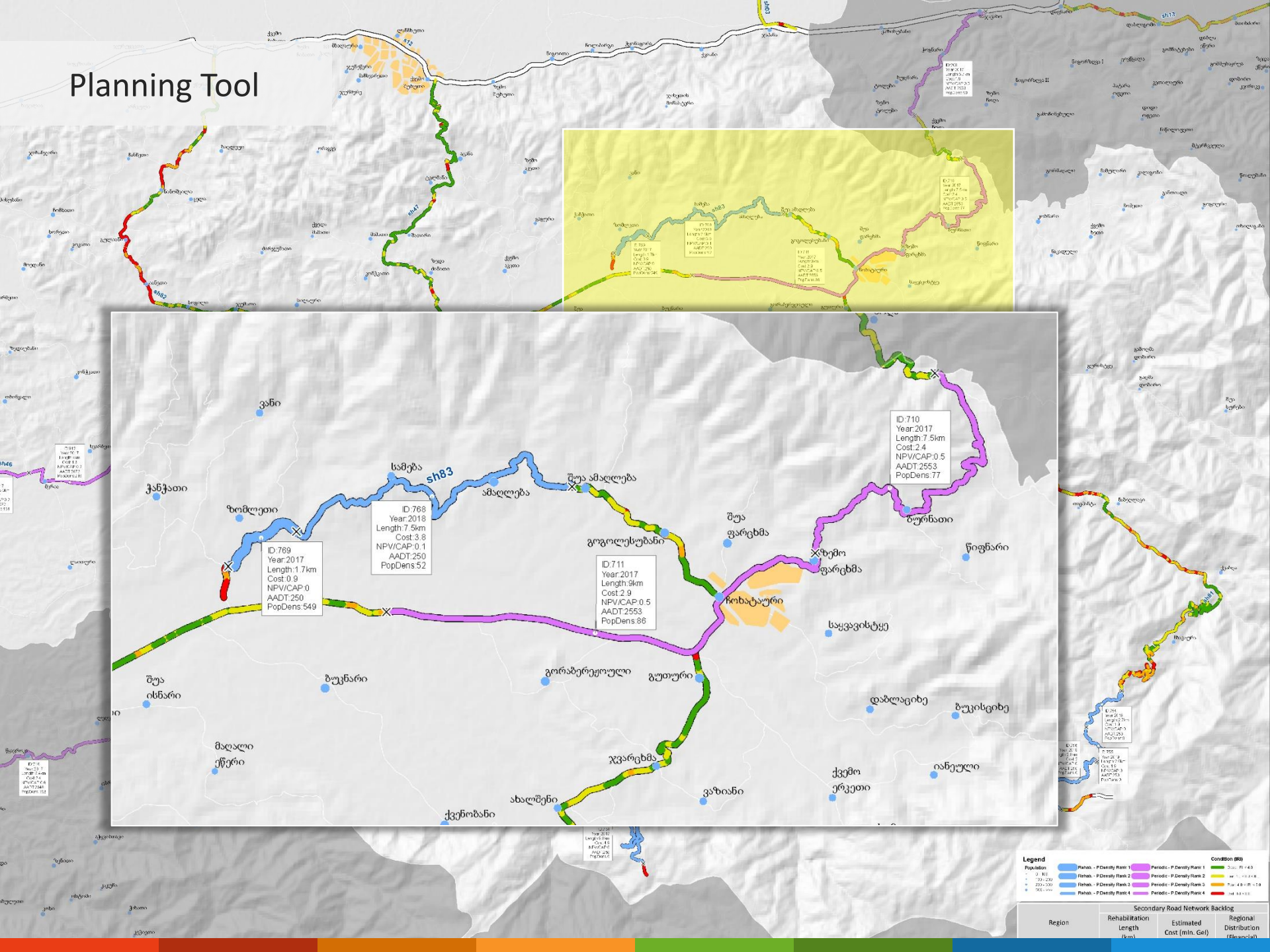


# Planning Tool



The selection of possible road project candidates starts with visualization (GIS- map) of the obtained results from HDM 4 program analysis. The possible of road project candidates are presented on the map as homogenous road sections with information on; condition, traffic data, estimated costs for maintenance/ rehabilitation, expected benefits in relation to the costs, and population density.

# Planning Tool



**ID:768**  
 Year:2018  
 Length:7.5km  
 Cost:3.8  
 NPV/CAP:0.1  
 AADT:250  
 PopDens:52

**ID:769**  
 Year:2017  
 Length:1.7km  
 Cost:0.9  
 NPV/CAP:0  
 AADT:250  
 PopDens:549

**ID:711**  
 Year:2017  
 Length:9km  
 Cost:2.9  
 NPV/CAP:0.5  
 AADT:2553  
 PopDens:88

**ID:710**  
 Year:2017  
 Length:7.5km  
 Cost:2.4  
 NPV/CAP:0.5  
 AADT:2553  
 PopDens:77

Population	Roads - P-Density Rank 1	Roads - P-Density Rank 2	Roads - P-Density Rank 3	Roads - P-Density Rank 4	Periods - P-Density Rank 1	Periods - P-Density Rank 2	Periods - P-Density Rank 3	Periods - P-Density Rank 4	Condition (R)
0 - 100	Blue	Light Blue	Green	Yellow	Light Purple	Medium Purple	Dark Purple	Red	Good
100 - 200	Blue	Light Blue	Green	Yellow	Light Purple	Medium Purple	Dark Purple	Red	Fair
200 - 500	Blue	Light Blue	Green	Yellow	Light Purple	Medium Purple	Dark Purple	Red	Poor
500 - 1000	Blue	Light Blue	Green	Yellow	Light Purple	Medium Purple	Dark Purple	Red	Very Poor

Region	Secondary Road Network Backlog			Regional Distribution (Financial)
	Rehabilitation Length (km)	Estimated Cost (mln. Gel)		

# Project Fact Sheet Form

Project name, description and rationale for prioritization

Main indicators NPV/CAP, Population Density

Secondary Indicators assessing mobility and social impact

Project area map, road condition

<b>Rehabilitation of:</b> Sh37 Sadakhlo-Tsopi-Askhepi secondary road km3-km8 Section						
<b>Project Description</b>						
Following road section is part of rolling program for year 2018, section connects international road S07 Marneuli-Sadakhlo to Armenia border and provides access to social services to more than 1500 people. Road is considered important in terms of Agriculture as well as providing minimum standard of mobility and integration.						
Utilization		Class	Economic Indicators (mln. Gel) / Road Works			
Traffic (AADT)	250	1	Total Capital Cost	3.0	Pavement structure	n/a
Heavy Vehicles (%)	2.5		NPV	0.14	Bridge/Culvert/structure	n/a
<sup>1</sup> Condition	10.91	4	NPV/Cost Ratio	0.03	Traffic Safety	n/a
<sup>2</sup> Population Density	227	4	Cost/Pop. Ratio	0.002	Environment	n/a
<b>Socio Economic Impact Assessment</b>						
Objective	Indicator				Unit	
Enhanced National Connectivity	Part of Secondary Road connecting two international roads.				N	
Enhanced Regional Connectivity	Distance from the centre of section to closest city centre.				34km	
Enhanced economic activities	Number of registered businesses in the district where the section is located.				347	
Population	Number of people living within 2km buffer along the road section.				1520	
Education	Number of schools within 2 km buffer along the road section.				7	
Tourism	Number of attraction within 2 km buffer along the road section.				2	
Poverty	Percentage of people receiving government support within district where road section is located.				n/a	
Life Line Road	The road is the only possibility for connecting the village to outside world.				y	
<b>Project Area Map</b>						
<sup>1</sup> Description of Condition Classes (Good, Fair, poor and Bad) is found in Chapter 4, section 1.1 <sup>2</sup> Number of persons/2km buffer from the homogenous section divided by section length						

## Summery of Steps – Annual Cycle

1. Structuring the available data, using GIS data base and Network modelling tool
2. Defining Maintenance Strategies and unit costs
3. Conducting HDM4, program analysis (life cycle)
4. Using the HDM-4 unconstrained solution
5. Obtaining the expected RD budget for periodic maintenance and rehabilitation, Using the HDM4 unconstrained budge.
6. Assigning non-monetary Indicators using GIS spatial analysis
7. Preparation of a 5 year list over the prioritized road project candidates, based on benefit- cost ratio (NPV/C) sorted by year, and population density,
8. Preparation of project fact sheets for the selected projects in the first year

- Minimum Data requirement: Road Network, Census, social services in GIS, Condition, Traffic.
- Automated Data processing tools, GIS Spatial Analysis, Road Network Modelling tool.
- Close collaboration with Engineers for defining proper maintenance strategies and relative costs.

Thank you.