

# Terms of Reference and Description of Services for Preparation of Detailed Engineering Design for Rehabilitation of access road to Mitarbi and Kokhta ropeways, Extension of Parking Lot and Arrangement of Infrastructure at Didveli and Arrangement of a Parking Lot, Access Road and Infrastructure for the New Ropeway in Gudauri

## 1. Introduction

The Municipal Development Fund of Georgia is a legal entity of public law whose purpose is to mobilize financial resources from donors including international and Georgian financial institutions, in order to make them available for investments in local infrastructure and services, while simultaneously helping local self-governments in strengthening their institutional and financial capacity.

MDF implements various regional and municipal development projects, including the Third Regional Development Project (RDP 3) financed by the World Bank Group and the Government of Georgia (GoG). The aim of the RDP 3 is to stimulate economic growth in Mtskheta-Mtianeti and Samtskhe-Javakheti regions through provision of enabling environment for increased tourist visitation and private investment. Arrangement of public tourist infrastructure in the areas adjacent to the cultural heritage monuments or tourist circuits is a type of activity supported by RDP 3.

MDF, in the capacity of Employer, seeks consultant services for the preparation detailed design for the rehabilitation of Mitarbi and Kokhtagora Ropeway Access Roads and Arrangement of two parking lots – one in Bakuriani and one in Gudauri. This sub-project (SP) is included into the work program of RDP 3. Present TOR details technical requirements and outputs expected from the sought consultancy.

## 2. Baseline Information and Objectives of the Assignment

This ToR covers several project sites, including the following:

### 1. Rehabilitation of access road to Mitarbi and Kokhta ropeways and organization of parking

Kokhta-Mitarbi, a newly established four-season resort, is located northeast of Bakuriani resort. This area was a popular destination during the soviet era, then abandoned and now active again. In the past year, the Government funded the installation of a brand new cable car in Mitarbi and rehabilitation of Kokhta ropeway.

Mitarbi access road section starts at Bakuriani's circular road. Most part of Mitarbi access road passes through the unpopulated area. It is a muddy earth road. The ditches are filled with soil and mud. In certain sections the ditches are missing. The storm water flows over the road and creates deep trenches, making it hard to impossible for vehicular traffic.

The length to this road section is 3,350 m with width of 7-9 m. At 900-th meter of this road, the 700 m long and 6-8 meter wide arm leads to Kokhta ropeway.

The total estimated length of both roads is 4,050 m (subject to specification on-site).

It is expected that the detailed design proposes technical solutions including but, not limited to the following:

- cleaning the road from mud and excess earth

- leveling it
- arranging sand-gravel and crushed stone base courses and armored cement concrete pavement with thickness of 18 cm
- cleaning of the existing ditches from mud and earth
- arrangement of engineering structures (pipe culverts)
- in the beginning of the road, a 6m pavement and 1 meter road sidewalks should be arranged. In the section, where the road narrows, a 5m pavement and 0.5-1 m sidewalks should be arranged.
- Reinforced concrete road ditches should be arranged, as required.
- In the beginning of the road, a sidewalk should be arranged on the right side, on the side of hotel “Mgzavrebi”.
- along the entire road section and at parking areas, the signage and other measures, as required, will be organized to ensure pedestrian and traffic safety, including speed limits, barriers, safe crossing points, etc.

Additionally, the Consultant should investigate the parking organization options by both ropeways, consult with MRDC and suggest options to organize drop-off and pick-up points, as well as parking lots within the available space.

## **2. Extension of Didveli parking lot and arrangement of infrastructure**

Didveli parking lot is made of concrete, but has limited space for vehicle maneuvering. The terrain is inclined, which results in traffic jams and accidents on the slippery road during the winter season. The project envisages the extension of the parking lot to allow at least up to 300 cars for parking (or as space allows), leveling of its surface, arrangement and mobility planning, as well as the construction of an administrative building.

Parking lot bypass should be arranged in Didveli, and the asphalt pavement should be rehabilitated and marked. The bypass should enable the drivers (those who do not park, but either pick up or drop off the visitors) to go around the parking lot and exit the area so that no traffic jams are triggered.

## **3. Arrangement of a parking lot, access road and infrastructure for the new ropeway in Gudauri**

Last year, the Mountain Resort Development Company installed a new cable car in Gudauri Resort to allow better skiing opportunities for the visitors. However, the adjacent area lacks an organized space for parking, visitors’ safety and some of the services.

The design area includes rehabilitation of an access road to the parking lot, arrangement of the parking area for up to 200 vehicles (or as space allows) and construction of an administrative building at the bottom of the recently constructed ropeway.

If the parking area, especially in Gudauri, does not allow the space to accommodate more than 50-60 vehicles, the priority should be given to organization of drop-off and pick-up points and short term parking for busses, shuttles and minivans, serving the hotel guests.

For both, Bakuriani and Gudauri parking lots, the following should be considered:

Asphalt cover should be arranged on the access road to Gudauri ropeway, it is also required to install retaining walls and arrange water diversion drainage there, as required.

Places for long and short-term parking should be envisaged for both project sites, as well as the drop off and pick up places.

In Didveli and Gudauri, in the vicinity of parking lots, an administrative building should be designed to accommodate the following facilities:

- Lockers for visitors, which will serve about 200 visitors and skiers per day to keep their personal belongings and ski equipment, change rooms may also be arranged;
- Sports equipment rental facility;
- At least 6 public toilets, including one for handicap;
- Ticket booth;
- It is required to connect the administrative buildings to the existing wastewater and water supply systems, and provide power supply to the buildings.

### 3. Stages and specific Tasks

#### Stage I – Exploration works, survey of the design area

The first stage entails the preparation of the following materials and documentation:

- a) cadastral documentation (to include in the design and status quo topographic plans the registered land plot(s) outline with indication of cadastral boundaries and codes); b) topographic survey of the area; c) general geological survey of the area; d) information on existing communications;
- Analysis of the existing conditions at site and landscape evaluation, documenting and analyzing the current conditions, ensuring completeness of treatment for all the foreseen investments and works, including the unified treatment of public spaces and territory such as parking lots, pedestrian trails and connection to the ropeway stations, etc.
- Develop SP concept – with specified SP site parameters, functions; structural, architectural and technical solutions. At least three alternative options for the site concept and integrated design should be considered, with pros and cons, and discussed with MDF and other key stakeholders to finalize the most suitable option. Analysis of financial data of the Municipality/Entity before the SP and upon the SP implementation; financial and operational capacities of the Municipality and capability of covering operational and other respective expenditures in case of SP implementation; maintenance of the road and the facilities in the operation phase.
- Conduct feasibility study for the selected SP concept, including review of the possible alternatives, analysis of SP challenges and risks, with determining SP scope and parameters (including financial scope) and tentative method and schedule of project implementation.

#### Environmental and Social Survey

The Consultant will conduct environmental and social surveys and collect the information that is needed for evaluation of the environmental and social impacts. The Consultant will acquire and provide information that is needed for evaluation of the resettlement (pre-evaluation of land ownership and scale of impact), as well as number of potential beneficiaries.

Consultant has to submit the background environmental and social information as follows:

- Topographic, geological and hydrogeological information (description of relief, geology and soil, based on archive data and as a result of visual survey; information regarding existence or probability of hazardous geological processes, necessity for conducting of explosive works; depth of location of ground water etc.);
- Information on surface water bodies located in the vicinity of the SP site;
- Brief description of climatic conditions;
- Brief information on the type of vegetation and listing of plant species along the road to be rehabilitated, including identification of any Red Listed species that may be occurring in the SP site;
- Suggested sites for disposing of excess material and construction waste identified through consultations with Borjomi and Dusheti Municipality Gamgeoba, including cadastral information and maps of suggested sites;
- Locations and distances to the nearest licensed borrow pits producing natural construction materials that maybe required for construction works under the SP;
- Review all existing underground and surface communications within the road corridor;
- Cadastral documents for the SP site and information on whether the SP implementation is likely to have impacts on privately owned or leased land plots (temporal disturbance; loss of the part of the land plot or whole land plot by the owner; loss of the property being on the land plot; loss of income etc.);
- Brief social-economic information on surrounding area, including tourism, and on potential beneficiaries, such local population, local and foreign tourists, etc.

Following completion of exploration-survey works and upon submission of the respective reports, rehabilitation-restoration methods, and concept, the Employer will specify scope and parameters of SP intervention, and preferred solutions, which will be followed by decision on commencement of the next stage works. After initial survey, the Employer may come up with a decision to cancel the SP that will lead to termination of contract with the consultant or cancellation of its individual Design works assignment

## Stage II

Preparation of the draft design documentation and its agreement with the stakeholders – Borjomi municipality, Dusheti Municipalities respectively and Mountain Resorts Developments Company (MRDC).

## Stage III

Preparation of the detailed design documentation.

## 4. Deliverables

### Background information

- Geodetic survey of design territory;
- Identification of SP site and its cadastral mapping clearly depicting boundaries of the SP site in relation with areas managed by National Forest Agency/Agency of Protected Areas;
- The land ownership statuses of the SP areas to ensure that they belong to either respective municipality or MRDC.
- Survey of existing road pavement on the carriageway (geological profiles);

- Inventory of structures/communications existing in and around the SP site, including their technical conditions; Environmental and social survey compiled according to the outline described above;
- Alternative options for SP concept with respective graphic, photo and textual contents, including photos of the sited defined for separate structures;
- Initial, tentative cost estimate of works, including alternative proposals.

#### **Report on environmental and Social survey**

- Topographic, geological and hydrogeological information (description of relief, geology and soil, based on archive data and as a result of visual survey; information regarding existence or probability of hazardous geological processes, necessity for conducting of explosive works; depth of location of ground water etc.);
- Information on surface water bodies located in the vicinity of the SP site;
- Brief description of climatic conditions;
- Brief information on the type of vegetation and listing of plant species along the road to be rehabilitated, including identification of any Red Listed species that may be occurring in the SP site;
- Suggested sites for disposing of excess material and construction waste identified through consultations with Borjomi and Dusheti Municipality Gamgeoba, including cadastral information and maps of suggested sites;
- Locations and distances to the nearest licensed borrow pits producing natural construction materials that maybe required for construction works under the SP;
- Information on archeological zones if these are nearby.
- Brief social-economic information on surrounding area, including tourism, and on potential beneficiaries, such as local population, tourists, etc.

#### **Draft Design for the selected SP concept**

- Executive Summary;
- Topographic survey UTM (international ) coordinate system;
- Geological survey (as required);
- General location and master plans (scale 1:500; 1:1000);
- Context and functional Plan of all SP components and investments, including landscape, visual impact and interface with adjacent context and pre-existing structures.
- Architectural shop drawings (plans, sections, facades);
- Main structural solutions;
- Small architectural forms, as required;
- Visual and photographic material.
- Water drainage measures, preparation of design of drainage structures, roadside ditches/canals, culverts etc. (Need for specific structures should be determined at the detailed design stage. Apparently, based on the survey, erosion/landslide preventing measures may be needed in some sections of the road. As for the culvert, it should be provided in the design of drainage structures and water diversion measures (this structure is mentioned in this sub-paragraph of the TOR).

- Design of road safety measures, including barriers, speed limits, signage and road marking;
- Detail drawings of road pavement and structures' elements in scale 1:100/200/500;
- Detailed information about scope of works to be implemented in the specific locations along the road, noting road picket-sections;

### **Detailed Design Documentation**

- Executive Summary;
- Topographic survey UTM (international ) coordinate system;
- General location and master plans (scale 1:500; 1:1000);
- Architectural shop drawings (plans, sections, facades, details, units (1:100, 1:50, 1:25);
- Bill of quantities of finishing, improvement works;
- Detailed drawings of small architectural forms – bench, shed, decorative lamp pole etc. as required;
- Structural shop drawings (schemes, details, units, specifications, (scale 1:100, 1:50, 1:25);
- Engineering part: power network, drainage (schemes, details, units, specifications);
- Work organization project with time Schedule and financial schedule, list of requisite machinery and equipment, etc.;
- BoQ for works to be implemented; Cost estimations (unit rate breakdown by resources and summarized unit rates);
- Detailed and general specifications of bidding documentation;
- Determination of load on engineering communication network for obtaining technical conditions from relevant institutions, as required;
- Economic analysis (should include capital expenditures required for SP implementation as well as average annual operation and maintenance costs. The named data should be provided for each possible alternative solution of SP design (based on technical specifics of the SP, at least two alternative technological solutions should be presented). The deliverables should also include methodology of each alternative of cost calculation with respective clarification and reference to the data sources.

Technical specifications shall include general instructions and recommendations for the contractor (bidders) as well as detailed specifications (specifying all mandatory standards) for controlling materials used, methods of work performance and quality.

The graphical part of the design (construction as well as bidding drawings) shall be prepared in accordance with norms and standards required for working documentation, in appropriate scale and detailing.

Design should be accompanied with brief description.

Registered land plot(s) with indication of cadastral boundaries and index should be mapped on topographic map of existing and design conditions.

During the progress of construction works and even after expiration of the design documentation contract, in order to provide for adherence to the design documentation, the consultant shall take part in definition of design solutions and preparation-coordination of working documentations, bill of quantities and variation orders to the contract, as required

**Design supervision:** During the construction period, once a month or upon MDF’s request, a consultant or his representative will visit and monitor the progress on site. Following the visit, the consultant will prepare and submit a report to the Employer, which will cover the situational analysis on site, list any deviations observed or variations needed, supported by argumentation.

## 5. Consultant’s Qualification and Team Composition

Consultant, in order to ensure high quality fulfilment of undertaken task shall mobilize qualified personnel (both key specialists and supporting technical stuff).

All experts (key specialists) should be recognized professionals in their respective fields with at least 5-year experience in the similar work environment.

The consultant should mobilize the following personnel:

	Experts	QTY	Month	Input (Person Month)
1	Team Leader/ Road Engineer	1	3.5	3.5
2	Road Engineer	1	3.5	3.5
3	Topographer	1	2.0	2.5
4	Geotechnical Engineer	1	3.0	2.5
5	Architect	1	3.0	2.5
6	Electrical Engineer	1	2.0	2.5
7	Water supply and wastewater Engineer	1	2.5	2.5
1	Structural Engineer	1	1.0	1.0
2	Environmental Specialist	1	1.0	1.0
3	Translator	1	1.0	1.0
4	Cost Estimator	1	1.0	1.0

### Narrative Qualification Requirements for Key Experts

Title	Specific experience (Years)	Area of Specialization, Qualification	Main Responsibilities, but not limited to
Team Leader/ Road Engineer	5	<p>Civil Engineering - Road Design Management, experience of implementation of similar size and type projects (design services);</p> <p>Expertise in parking management and design of parking and bus terminal/drop off areas.</p> <p>Minimum bachelor’s degree in civil/road engineering;</p>	<ul style="list-style-type: none"> <li>• Overall responsibility for elaboration of the design and managing the Consultant’s team;</li> <li>• Monitor performance, deadlines, project progress, and conduct a risk management plan to avoid any unexpected incidence that may have a negative impact on the project development.</li> <li>• Coordinate and liaison with Local Government/Employer;</li> <li>• In-depth overall knowledge in detailed design for medium sized road and infrastructure projects;</li> <li>• Knowledge of the local and international standards for construction/rehabilitation works;</li> <li>• Report writing and oral presentation;</li> </ul>

Road Engineer	5	Civil Engineering - Road Designing, experience of implementation of similar size and type projects (design services);  Minimum bachelor's degree in civil/road engineering;	<ul style="list-style-type: none"> <li>• Elaboration of road design;</li> <li>• In-depth overall knowledge in detailed design for medium sized road and projects;</li> <li>• Knowledge of the local and international standards for construction/rehabilitation works;</li> </ul>
Topographer	5	Civil Engineering – land survey, topography and geodesy, experience of implementation of similar size and type projects (design services);  Minimum bachelor's degree in topography and geodesy;	<ul style="list-style-type: none"> <li>• Topo and Geodetic survey;</li> <li>• Preparation of survey report and drawings</li> </ul>
Electrical Engineer	5	M&E Engineering – design of mechanical and electrical equipment, power supply and lighting systems  Minimum 's degree in M&E engineering;	<ul style="list-style-type: none"> <li>• Elaboration of electrical design;</li> <li>• Conducts the research on the existing communications;</li> <li>• Preparation of design report and drawings</li> <li>• Knowledge of the local and international standards for construction/rehabilitation works;</li> </ul>
Geotechnical Engineer	5	Civil Engineering — Geotechnical Engineering; Minimum bachelor's degree	<ul style="list-style-type: none"> <li>• Ground and soil investigations</li> <li>• Checking of designs of foundations, slope and embankment construction</li> <li>• Laboratory and in-situ testing</li> <li>• Preparation of geological report</li> </ul>
Water Supply and wastewater Engineer	5	Water supply and wastewater Engineering; Minimum bachelor's degree	<ul style="list-style-type: none"> <li>• Elaboration of water supply and sewage systems' design;</li> <li>• Conducts the research on the existing facilities;</li> <li>• Preparation of design report and drawings</li> <li>• Knowledge of the local and international standards for construction/rehabilitation works;</li> </ul>
Architect	5	Architect/Recreation and urban area design/landscaping, experience of implementation of similar size and type projects;  Minimum bachelor's degree in civil engineering	<ul style="list-style-type: none"> <li>• Conducts the research on the existing building and the surroundings;</li> <li>• Plans and prepares all the architectural project documentation;</li> <li>• Preparation of design report and drawings</li> <li>• Knowledge of the local and international standards for construction/rehabilitation works;</li> </ul>
Environmental and social Specialist	5	Environmental Science — environmental impact assessment, experience of implementation of similar size and type projects;	<ul style="list-style-type: none"> <li>• Conducts environmental and social survey of the SP area;</li> <li>• Evaluates the hazards that might accompany the implementation of the project;</li> <li>• Prepares report on environmental and social issues reflecting the results of the survey</li> </ul>



		knowledge of international and local regulations for environmental protection	
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## 6. Reporting and schedule

- a) Within 8 weeks period from the commencement of service provision, consultant shall submit results of survey-investigation works (topo-geodetic survey, cadastral maps, final draft of feasibility study, stakeholder consultations report etc.) to the Employer.
- b) Within 9 weeks period from the commencement of service provision, consultant shall submit Environmental and Social survey, and within one week the Employer will provide consultant with comments.
- c) Within 12 weeks period of time consultant shall submit preliminary detailed design to the Employer, and within one week the Employer will provide consultant with comments and notes relating to design.
- d) Within 14 weeks, the consultant is obliged to enter relevant amendments into design and submit final design along with feasibility study and tender documentation to employer.
- e) Within one-week period since submission of final design consultant will submit to the Employer design liaison document with local municipality and MRDC.

At every stage, within one-week period following submission of the documentation, the employer will furnish the consultant with its remarks. The consultant shall consider the above-mentioned for the following stage and introduce the respective amendments to the design documentation.

Finally, the consultant shall submit to the employer four printed copies of the detailed design documentation and bidding documents prepared in Georgian and English languages. The submitted materials shall be accompanied with their electronic versions (textual part in Word and Excel file form, and drawings in - AutoCAD and PDF format).

### Consultant's Reporting Obligations:

Deliverables	Submission Date	Language
Stage 1 - Results of survey-investigation works (topo-geodetic survey, cadastral maps, geological and hydrological reports, final draft of feasibility study etc.)	Within 8-week from commencement of services	Georgian
Report on environmental and social survey	Within 9-week from commencement of services	Georgian/English
Stage 2 - Preliminary detailed design	Within 12-week from commencement of services	Georgian
Stage 3 - Final Detailed Design Documentation	Within 14-week from commencement of services	Georgian/English

## **7. Employer's Contribution**

The employer shall grant access to all available materials, which may be required for the Consultant to perform their services.

## **8. Duration of the assignment**

Tentative time for this assignment is 14 weeks.