

ANNEX I: TERMS OF REFERENCES

Technical Supervision of the Works on the Rehabilitation of the Road Structures Affected by the Floods in Serbia

1. BACKGROUND:

The “European Union Support for the Reconstruction of the Road Structures Affected by the Floods in Serbia” is the continuation of the European Union (EU) efforts to support the Republic of Serbia after the devastating floods that hit the country in May 2014 and to create conditions for the flood prevention and reaction in emergency situations. This project, whose budget is 10.49 million Euros, is implemented by the United Nations Office for Project Services (UNOPS) from January 2016-December 2018 (24 months execution period and 12 months for the Defects Notification Period).

As the result of the Project activities, up to 48 critical landslides will be remediated, and up to 14 road structures damaged by erosions will be reconstructed.

The project will be implemented in partnership and close cooperation with Government of the Republic of Serbia Office for Public Investment Management (PIMO), Public Enterprise Roads of Serbia (PERS), Delegation of the European Union (DEU) and Local self-governments.

2. EXPECTED RESULTS

2.1. Purpose

The purpose of this ToR is to define the scope of technical supervision of the rehabilitation works on up to 48 landslides and 14 road structures (bridges) of the road transport network in 20 municipalities and four cities in Republic of Serbia. UNOPS expects to sign eight separate contracts for the remediation works on the landslides and four separate contracts for the rehabilitation works on 12 bridges, while one separate contract will be signed for construction of the two new bridges,

Technical Supervision will include the following elements:

1. Technical Supervision of construction works according to the Construction and Planning Law of RS;
2. Adequate technical assistance to the Contracting Authority and PERS regarding implementation of the works contract
3. Support the technical commissioning of the works as per the Law

2.2. Results to be achieved by the Consultancy

The service will include inspection of the design and the works on site to ensure that the design complies with the Employers' Requirements and the specified Design Criteria and that the works are implemented in accordance with the Technical Specifications. The Consultant will be required to respect the work programme established by the Contractor and approved by the Contracting Authorities.

The Consultant is to organise, carry out and complete successfully, on behalf of the Contracting Authority, the following:

- Works completed in accordance with the requirements of the contract, design and technical specifications;
- Works handed-over and using permit obtained (As Technical Commissioning of the works is part of the separate contract the consultancy should ensure that the Commissioning Body has all technical and contractual documents to produce positive Report and should liaise with PERS to ensure the usage permit is issued during the project duration)
- Achieved technical standards and quality of works specified in the technical requirements for the works contract;
- All risks in terms of design adequacy, potential delays or overspending timely identified and professionally managed.(Consultancy should notify immediately the Contracting Authority of any identified issue that could lead to the changes in terms of scope, quality and the budget and propose the solution verified by the Designer to the Contracting Authority due to issue the variations orders to the contractor in compliance with the contract)
- Works executed within the contracted timeframe and budget;
- Works executed in accordance with health safety and environmental criteria;
- Contractor's payment requests and supporting documentation such as the measurements book, attests are processed, checked and confirmed to comply with the contracts for works conditions;
- "As built" drawings checked and "As built "design approved;
- Works completed in line with RS laws regarding Construction and Supervision and in line with the Contracts for Works conditions.

3. SCOPE OF CONSULTANCY

3.1 Project description

The necessary technical documentation for the remediation of up to 62 landslides and structures which are subject of this Project are prepared based on the site-visits of all the landslides, and on the accurate baseline surveys of the landslide areas. The Geological investigations were undertaken and Geotechnical Studies completed all the permitting for start of the works on remediation of the landslides on the national roads, selected within this proposal, will be done by the Ministry of Construction, Transport and Infrastructure.

3.2 Geographical area to be covered

State Roads I and II category in municipalities of Ivanjica, Sjenica, Užice, Bajina Bašta, Gornji Milanovac, Aranđelovac, Požega, Ijig, Belanovica, Knić, Krupanj, Osečina, Valjevo, Koceljeva, Mionica, Boljevac, Medveđa, Kosjerić, Loznica, Šabac, Surdulica, Knjaževac, Aleksinac and Kovačica in Republic of Serbia

3.3 Activities

The Technical Supervisor will, under the direct supervision of UNOPS On-Call Engineer and overall supervision of UNOPS Lead Engineer and UNOPS Project Manager, work on the Technical supervision of the works on rehabilitation of the 48 landslides and 14 bridges according to RS Law on Planning and Construction

The following activities fall within the scope of work:

1. UNOPS FIDIC based Contract administration
2. Site supervision
3. Quality and Quantity control
4. Other activities

The Consultancy shall carry out duties of the Technical Supervision in accordance with the Particular and General Conditions of the Contract and the national legislation - the current version of Law on Planning and Construction of the Republic of Serbia. For this purpose, the Consultancy shall establish clear lines of responsibility for each member of the Supervising team).

The following is a non-exhaustible list of responsibilities and duties:

1. Contract administration

- 1.1. The Consultancy shall carry out contract administration throughout the duration of the assignment to secure smooth and timely implementation, proper supervision and control of the works contract.
- 1.2. The Consultancy shall seek the Contracting Authority agreement prior to any instruction to the Works Contractor, which could increase the cost and the time extension of the project.

- 1.3 For the implementation of the works, the Consultant shall supervise the procedures and the results of measurement of the works to be carried out by the works contractor. Deviations between quantities and or dimensions of the contracted works and in situ measurements will be managed and agreed with the Contracting Authority within the Work Contract's budget.
- 1.4. The Consultancy shall analyse and monitor work programme submitted by the works Contractor and give corrective instructions in agreement with Contracting Authority Engineers. The Consultancy shall review Contractor's Works Programme on regular basis and throughout the project.
- 1.5. The Consultancy shall ensure that all required approvals, construction permits, and for closing of roads are obtained in time, before commencement of respective works.
- 1.6. The Consultancy shall ensure that the conditions of each respective contract are strictly followed and works Contractor and any sub-contractors respect their contractual obligations. Consultancy shall consult the works Contractor on all the aspects of the implementation, such as measurements, payments, variations, etc. All instructions to the works Contractor shall be clearly documented to the Contracting Authority. .
- 1.7. The Consultancy shall ensure that all safety risks during construction and commissioning of the works shall be assessed in advance and risk mitigation measures introduced prior to commencing the respective activities.
- 1.8. The Consultancy shall be in continuous contact with the Works Contractor to identify and resolve any potential problems in a proactive manner. The Consultancy shall hold weekly coordination meetings with the works Contractor, Contracting Authority Engineers and other stakeholders as necessary. All potential delays and other problems shall be identified and corresponding actions discussed and agreed upon in order to assist the works contractor in avoiding or mitigating overall delay. The Contracting Authority shall be kept informed of the progress of works by providing properly prepared minutes of meetings.
- 1.9. The Consultancy shall prepare Monthly Progress reports to Contracting Authority
- 1.10. The Consultancy shall assist the Contracting Authority in administrative duties, including financial planning and preparation of cash flow forecasts for the contract on regular basis.
- 1.11. The Consultancy shall review and approve the Works Contractor's working drawings and possible modifications to the detailed design or provide the consent from the designer as necessary.

2. *Site supervision*

At the start of project implementation, the Consultancy shall organize a kick-off meeting with the representatives from the Beneficiary Institution and the Contracting Authority to confirm project requirements, present and discuss the work plan, to introduce all parties formally, to discuss and agree on outstanding matters, etc. No additional costs shall be charged to the Contracting Authority for organizing such meetings by the Consultancy.

The Consultancy shall carry out supervision of construction works in accordance with the Works Contract and Consultancies Quality Assurance Manual. The main aim of the supervision is to facilitate achievement of the highest possible standard of construction works within the contract's time. In addition to good quality workmanship, the Consultancy shall also consider possible cost savings to the Contracting Authority. The Consultancy shall advise the Contracting Authority on any appropriate measures that may be taken to avoid and rectify any deficiencies and improve the cost effectiveness of the projects.

3. Quality controls

The Consultancy shall carry out quality controls:

- 3.1 The Consultancy shall ensure that the quality of materials and executed works are to the highest possible standard of quality. All testing shall be carried out in accordance with the works technical specifications, specified procedures and at the specified intervals;
- 3.2 The Consultancy may propose amendments to the design and specifications for the Contracting Authority's approval, if such alterations are sought to be benefit to the quality and economy of the projects;
- 3.3 The Consultancy shall order the Works Contractor to substitute any part of the works, if levels, dimensions, materials or workmanship do not conform to the requirements and specifications, or are otherwise insufficient;
- 3.4 The Consultancy shall monitor and control the works on the construction site daily, visit and inspect the contractor's workshops where elements for the site are in the production phase.
- 3.5. The Consultancy shall control and sign Construction Diary ("Građevinski dnevnik") prepared by the Contractor.
- 3.6. The Consultancy shall control and sign the calculation pages of the construction book ("Obračunski listovi građevinske knjige") prepared by Contractor. This will have no impact on the payments due to the „lump sum price“contract model, but it has to be produced due to the legal obligations and for the monitoring purposes.
- 3.7. The Consultancy shall measure and keep accurate records of permanent works executed by the Works Contractor. The works shall be measured on site by the supervisor in the presence of the Works Contractor;
- 3.8. The Consultancy shall ensure that the Works Contractor's Interim Payment Certificates for executed works are accurate, fair and reasonably represent the value of the work. The Consultancy shall ensure that the Contracting Authority is at all times informed of all matters relating to payments, cash flow or any other impacts on budgetary provisions;
- 3.9. The Consultancy is required to consider time required for all requisite To avoid any delays in payments the Consultancy shall ensure high quality of all payment documents;
- 3.10. The Consultancy shall carefully monitor all levels, lines and other parameters affecting the work, so as to ensure the works are constructed to full satisfaction of the Contracting Authority;
- 3.11. Accurate records shall be taken throughout the duration of the contract in order to reach agreement on the works contractor's final accounts.

4. Other activities

The Contractor shall carry out all other activities needed for the smooth implementation of the Projects. These activities include inter alia the following:

a) Administration of the contract in accordance with the Works Contract's documentation

1. The Consultancy shall take particular note of the requirement to obtain the specific approval of the Contracting Authority before taking any of the actions as detailed in the Particular Conditions of the Works Contract;
2. The Consultancy shall organize monthly progress meetings with the Contracting Authority, keep records and distribute the minutes of the meetings.
3. Checking and confirming that the works Contractor shall mobilize and supply to the respective work all the materials as identified in the contract, and commit those to the project as well as ensure that all works performed remain on site until release has been authorized;

b) Approval of Works Contractor's details of temporary works and operations

1. Approval and surveillance of the traffic management proposals prepared by the Contractor for works to ensure that the works Contractor shall carry out the work to minimize interference with adjacent traffic by providing necessary lights, fencing etc. and provide access to local buildings and properties at all times;
2. Approval and surveillance of environmental measures identified by the works Contractor in order to carry out the work in an environmentally safe way, taking appropriate mitigating action to meet the relevant requirements of the contract and those of the local and state authorities;
3. Consultancy shall require from works Contractor to submit method statements for prior approval for all major activities;
4. Consultancy will ensure that the safety measures are being implementing by works Contactor and ensure that works are constructing in the safety environment
5. If applicable, provide data to the Contracting Authority for determination of the value of any variations to the contract;
6. Assist the Contracting Authority in processing of variations, approve the setting-out of the works and give instructions to the Works Contractors in this regard;
7. Review any changes in drawings and/or specifications, which may prove necessary or desirable before or during execution of the construction works;
8. Negotiate and recommend to the Contracting Authority any variations initiated by the Works Contractor, or to be initiated by the Contracting Authority;
9. Verify and approve "as-built drawings" and deliver to the Contracting Authority all reports, records, quality certificates, measurement sheets, etc. prepared or supplied by the Works Contractor.

c) Verification and approval of operation and maintenance manuals

1. The Consultancy shall instruct the works Contractor to carry out any on-site tests required under the Works Contracts Technical Specifications, including load tests, as may be considered necessary to confirm the adequacy of the works. The Consultancy shall supervise such tests, record the test measurements and verify the adequacy or otherwise of the results;
2. Issue list of defects (“snag list”) and other documentation as required before the Taking Over Certificate will be issued;
3. Carry out final inspection and prepare Taking Over Certificates, list of defects and other documents as required by the conditions of contracts;
4. Ensure that taking over procedures are carried out in line with local regulations and requirements, as appropriate;
5. Advice on any claims or contractual disputes and problems arising during the works, and prevent claims and delays, whenever feasible.

e) Final outputs

The required final outputs of this contract on technical supervision should be as follows:

1. Take-over – Hand over Certificates of the Works Contract including the approval obtained from the Beneficiary and the final site report signed by all concerned parties (Works Contractor, PERS and UNOPS);
2. All contractual paperwork in place in time (insurances, guarantees, permits etc.);
3. Smooth projects implementation system in place and implemented, including quality assurance system. Consultancy shall draft the Supervision Procedures Manual, where supervision team members have assigned responsibilities, which will be adopted by the Contracting Authority.
4. All risks in terms of potential quality problems, delays or budget overruns timely identified and professionally managed;
5. All the works implemented by the works Contractor in strict compliance with respective works contract, within contract time and budget lines. Supervision of works carried out, all relevant documentation completed in accordance with the works contracts and relevant law;
6. Make sure that all works are handed-over and all conditions for issuing the using permit obtained under the statutory procedures.
7. All required technical and administrative reports prepared in time.

4. PROJECT MANAGEMENT

4.1 Responsible body

The Contracting Authority shall be the United Nation Office for Project Services (UNOPS). The present Terms of Reference concern this independent Consultant in the role of Technical Supervision. The tasks required of the Consultant are listed above.

The UNOPS will retain the responsibility of Contracting Authority for the Works, Technical supervision and Technical Commissioning and will act in the role of the FIDIC “Engineer”, monitor and supervise the Project, in addition to any other possible form of involvement of the Contracting Authority in the Project, by examination and endorsement of progress reports provided by the Consultant. The Contracting Authority will assure their representatives on site.

4.2 Management structure

The Contracting Authority will appoint the Project Manager, Lead Engineer, On-call Engineers and the Consultant for Landslides as an “Engineers team” responsible for managing the implementation of a project on behalf of the Contracting Authority.

The Beneficiary of the project is the Public Enterprise Roads of Serbia (PERS).

The PERS will appoint responsible engineer, who will act on behalf of the Beneficiary.

The Team Leader of the Consultancy shall report directly to the Contracting Authority and will be responsible for all aspects listed in the scope.

Operational level site meetings shall be held weekly between the Consultancy, Contractor and the Contracting Authority, while monthly progress meeting shall be held with the Team Leader appointed by Consultancy, Beneficiary representatives, senior representatives of the Work Contractors and the Contracting Authority Project Manager.

4.3 Facilities to be provided by the Contracting Authority and/or other parties

The Contracting Authority will not provide any facilities to the Consultant.

The beneficiary, PERS, on request will provide the project experts with copies of legislation, regulations and other relevant documents necessary for the implementation of the project.

The Contracting Authority as the Engineer on the Project should also provide all assistance to the consultancy as defined in the Works contracts.

5. LOGISTICS AND TIMING

5.1 Location

The works will be executed on remediation of the landslides on 48 locations where endangering the road structures of the state roads IB, IIB and IIA category and on rehabilitation of the 14 bridges in the region of south-west Serbia in 20 different municipalities and four cities in Republic of Serbia.

By geographic affiliation, the landslides were divided in the eight groups (LOTs) and bridges into five.¹ The tendering and the contracting of the works with the work contractors will be processed accordingly. The Consultancy shall prepare the logistic and plan the staff to enable parallel supervision of the eight separate contractors for the works on the 48 landslides and two

¹ List of landslides and corresponding LOTs is given in Annex 1

separate contractors for the works on the bridges that will operate in 20 Municipalities and four cities and to nominate the Team Leader to attend Monthly Progress Meetings and other meetings with the Contracting Authority, Beneficiary, etc, in Belgrade, Republic of Serbia.

5.2 Start date & period of implementation

The provisional starting date of the activities related to the contract (commencement date) is May 2016. The actual commencement date will be determined by an administrative order, after the signature of the Works Contract, issued by the Contracting Authority. The works will most probably not start simultaneously on all contracts.

The period of implementation of the work Contracts will be 20 months, from 10 May 2016 until the end of December 2017, Work plan shall be determined with the Contracting Authority at the beginning of the assignment. The Consultancy will submit the gross daily fee for each expert as a part of the tender documentation. The Consultancy shall be responsible for their own organization and time management, which is crucial for the efficient and successful completion of the assignment. The Contracting Authority may, in accordance with the Contractor, modify the provisional time table according to external constraints.

During the period of implementation the experts shall coordinate their activities with the Contracting Authority, PERS and other relevant stakeholders, in order to ensure smooth implementation of the foreseen works.

The Contracting Authority may, in coordination with the Beneficiary and the Contractor, modify the schedule of the work plan according to unforeseen activities at the site. All the changes and modifications will be duly forwarded to the contractor selected for the implementation of the works. In the course of the accomplishment of the required services, the Contractor shall maintain regular communication with the Works Contractor, Contracting Authority, Beneficiary and all other relevant and involved parties.

6. REQUIREMENTS

6.1 Staff

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

The percentage of engagement for the experts is indicative and should serve to enable the cumulative forming of the lump sum price for the consultancy services.

The selected Company for Technical supervision should have proven expertise and experience in:

- Designing/Technical supervision of the construction/reconstruction works on the road structures on the state road I and II category.
- Thorough knowledge and understanding of Serbia's building and construction legal framework, as well as all regulations governing subject buildings,
- Experience in working with FIDIC modality construction contracts is an advantage,
- Excellent communication and team building skills.
- The team members can be either permanently employed or be engaged on a service contract bases with the company
- All experts must be independent and free from conflict of interest in the responsibilities they take on.

7.2 Support and equipment to be provided by the Consultancy

The Consultancy must ensure that experts are adequately supported and equipped. In particular it must ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure enough vehicles are provided for employees. The Consultancy has to ensure that its employees are paid regularly and in a timely fashion.

Above mentioned costs shall be included in the Consultancy rate.

The Contracting Authority shall provide Consultancy with the electronic version of the works contract documents, including design drawings.

The Contracting Authority will deal with any issue that will arise on the daily management level, if the Consultancy considers being necessary for the Contracting Authority to intervene.

8. REPORTS

8.1 Reporting requirements

All reports, minutes of meetings and other written material are to be produced in English and Serbian language. In case of discrepancies, the English versions shall be the prevailing.

Progress reports must be prepared every month during the period of implementation of the tasks. They must be provided along with the corresponding invoice, the financial report and an expenditure verification report. There must be a final report, a final invoice and the financial report accompanied by an expenditure verification report at the end of the period of implementation of the tasks. The draft final report must be submitted at least one month before the end of the period of implementation of the tasks. Each report must consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, incidental expenditure and expenditure verification.

In addition to any documents, reports and output specified under the duties and responsibilities of each key expert above, the Consultancy shall provide the following reports:

Name of report	Content	Time of submission
The Inception report	<p>This report, among others shall consist of:</p> <ul style="list-style-type: none"> - the project plan of activities, - the logical framework and methodology, - Review of the Design and other documents needed for the works. 	No later than 3 weeks after the commencement day of the Consultancy engagement.
Monthly Progress reports	<p>These reports, among others shall consist of:</p> <ul style="list-style-type: none"> - Main contractual details; - Progress achieved during the reporting period, detailing any delays and acceleration measures; - Cumulative progress achieved; - Progress achieved and planned for the next reporting period - Any problems encountered and proposed solutions; - List of variations; - Claims; - Risks and Mitigates; - Payments; - Photos. 	No later than 5 working days after the end of each month.
Draft Final Reports	<p>The Draft Final Report shall summarize the actions undertaken during the duration of the project, the financial data and technical and financial statistics explaining the overall process of the works and any other relevant facts from the commencement until the Substantial Completion of the works and issuance of the Taking- Over Certificate</p>	No later than 1 month before the end of the Contract. Implementation period.
Final Report	<p>The Final report shall summarize the actions undertaken during the duration of the project, the financial data and technical and financial statistics explaining the overall process of the works and any other relevant facts from the commencement until the Taking - Over Certificate of the works after the completion. The Final Report must be accompanied by the final invoice.</p> <p>The Final Report shall include:</p> <ul style="list-style-type: none"> - a complete overview of all activities implemented during the project; - all outputs produced within project implementation, and critical analyses for any major problems that may have arisen during the performance of the contract, with recommendations regarding resolving similar problems in the future and proposals for future actions. <p>The reports shall be drafted following the instructions</p>	Within 1 month of receiving comments on the draft final report from the Contracting Authority

	and formats received from the Contracting Authority.	
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Additionally, the Contracting Authority may request ad hoc reports on project related issues.

The content of the reports is to be provided to the Contractor by the Contracting Authority and agreed between the Contractor and the Contracting Authority at the start of the assignment.

8.2 Submission & approval of reports

Electronic copy and two (2) hard copies of the reports referred in the table above must be submitted to the Contracting Authority identified in the contract. The reports must be written in both English and Serbian language. The Project Manager of the Contracting Authority is responsible for approving the reports.

Electronic copy of the Draft versions of the Inception and Final report shall be submitted to the Contracting Authority for pre-approval.

9. MONITORING AND EVALUATION

9.1 Definition of indicators

The Contracting Authority will take measures to monitor the process and to make timely evaluation on the base of the provided reports.

A specific judgment about the Consultancy's performance can be obtained from the following:

- Actual and timely deployment of the foreseen supervision team staff;
- Construction works completed within the given time frame
- Timely Approved Inception Report
- Timely Issued Taking over Certificate
- Timely Approved Final Report

9.2 Special requirements

In order to facilitate the processing of the documents handed to the Contracting Authority, the Consultancy shall also submit a digital version of the documents. The electronic version shall be identical to the original (printed) version, however in case of any discrepancies between the electronic version and the original (printed version), the latter will prevail.