City Telavi (Kakheti Region) Sewage Collector Rehabilitation

Environmental and Social Screening and
Environmental Management Plan

WORLD BANK FINANCED
SECOND REGIONAL AND MUNICIPAL INFRASTRUCTURE DEVELOPMENT PROJECT

Tbilisi, Georgia
Sub-Project (SP) envisages rehabilitation of the existing central sewerage collectors in Telavi city. The SP site is located in Telavi, main city and administrative center of Kakheti Region, Georgia’s eastern province. Its population approximately consists of 21,800 inhabitants. The city is located on foothills of Tsiv-Gombori Mountain Range at 500–800 meters above the sea level.

Telavi sewer system was built mainly of d=200 mm pipes and represents a gravity network. The collectors of d=300 mm pipes, cross the main channel of the irrigation system flowing north, join beside of the Telavi-Kvareli highway adjacent to the airport, proceed along the right side of the highway, cross agricultural lands and deliver sewage to a biological treatment plant located on bank of Alazani river, on the upper slope of floodplain. Purified water discharge pipe flows into the river Alazani.

Telavi sewerage system *(main collectors)* is virtually in ruins and needs to be totally rehabilitated. Since decades the sewer system does not include any waste water treatment and even proper sewage drainage is no longer given. Currently Telavi fecal sewage network is in a satisfactory condition but on the upper (right) side of the main channel of Alazani Irrigation Scheme, the collectors are broken at 3 locations and sewage discharges into irrigation canal. As the channel dries at a certain time of the year, the sewage flowing into the channel causes significant aggravation of sanitary conditions. When the channel is operational, the contaminated water used for irrigation flows down to the villages and agricultural lands. The outlet sewage collector and wastewater treatment plant are deteriorated and in a bad conditions as well. One of the main objectives of SP is to collect and transmit wastewater from Telavi town for treatment at the existing WWTP site. MDF has planned the rehabilitation and reconstruction of old damaged WWTP which will be implemented by under Sustainable Wastewater Management Project (SWMP) supported by WB and granted by SIDA. Implementation of SP is scheduled in 2015 – 2017.

The SP envisages rehabilitation of sewage collectors The total length of the collectors to be rehabilitated is 16,240 m. the rehabilitation works include installation of new sewage collectors and arrangement of 31 units of D=1.5 m and 312 units of D=1 m reinforced concrete sewerage wells on the collectors. No replacement of old sewage pipes is planned, they will stay on their old position and new pipes will be installed in parallel of existing collectors. Design parameters for the collectors are based on feasibility study of Telavi WWTP prepared by consulting firm "ILF". Number of population served by the collectors by 2040 will be: Telavi – 23,461 persons, v. Kurdghelauri – 5,183 persons, v. Vardisubani - 3,326 persons, v. Shalauri - 2,952 persons, Total – 34,922 persons. For hydraulic calculations of the collectors has been used specific water consumption - 225 l/person/day; Institutions - 10%. Peak load factor is 3. The design envisages using of a high-density polyethylene (HDPE) corrugated pipes (standard EN 13476-1) with different diameters for the arrangement of the collectors.
The SP envisages rehabilitation of the following sections of sewage collectors:

1) Collector "A" - the starting point from the well (D = 1.0 m. H = 2.0 m) located at the end of the Caucasus street; this is the main pipeline, from which the sewerage flows to treatment plant. Collector diameter varies between $D_n = 300$–$700$ mm.

2) Collector "B" ($D_n = 300$ mm) starts from the well (D=1,0m; h=1,5m ; ) located above the channel on the Alazani Avenue and joins the collector "A" in the well # 48.

3) Collector "C" ($D_n = 300$ mm) begins from the well (D=1.0m. H=1,0m.), located near the brigade at Sulkhanishvili street an irrigation channel crossing point, in the village Kurdgelauri and joins to the collector "A" in well # 65.

4) Active collector "D", which starts at Meskhishvili street, south of the city, collects fifth part of the city's sewage network and through d=400 mm pipe flows along Telavi-Kvareli highway to the south of the airport and there connects to the well. Due to the pipe has small diameter and is damaged it cannot be used in the future.

The diameters and lengths of the collectors to be installed are given in the table below:

<table>
<thead>
<tr>
<th>N</th>
<th>Sewage collector pipe diameter, mm</th>
<th>Length, m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>315</td>
<td>4,550</td>
</tr>
<tr>
<td>2</td>
<td>400</td>
<td>5,488</td>
</tr>
<tr>
<td>3</td>
<td>600</td>
<td>3,497</td>
</tr>
<tr>
<td>4</td>
<td>700</td>
<td>2,705</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16,240</strong></td>
</tr>
</tbody>
</table>

The expected duration of the SP is 12 months.

At several locations, piping will cross the networks of different communication systems, including fiber-optic cables owned by “Delta Com” Ltd, Rustavi-Telavi-Zhinvali d = 200 mm the gas transmission main pipeline and local natural gas supply pipelines, located in the SP corridor. To avoid damaging of the above-mentioned networks during construction works, the operator organizations have been informed in advance regarding the planned activities and design was agreed with them (the relevant letters are attached to the document).
### (A) IMPACT IDENTIFICATION

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has sub-project a tangible impact on the environment?</td>
<td>The subproject (SP) is expected to have a modest short-term negative environmental impact while its long-term impact is expected to be positive. The impact during construction phase will be related to the rehabilitation works, which includes installation of new wastewater collectors and arrangement of reinforced concrete sewerage wells. The SP will improve sanitary conditions of city Telavi and its adjacent territories were sewage flows through the old no damaged wastewater collectors, and sewage non-centralized spills in the natural environment.</td>
</tr>
<tr>
<td>What are the significant beneficial and adverse environmental effects of sub-project?</td>
<td>The SP is expected to have positive long-term environmental and social impacts through improving technical conditions of the sewage system of city Telavi that will beneficially effect on the sanitation of the town and environment in the proximity of the sewerage system. The expected negative environmental impacts related to the construction activities will be likely to be short term and typical for medium scale construction works in modified landscape: noise, dust, vibration, and emissions from the operation of construction machinery; generation of construction waste. No removal of old sewage pipes is planned, they will stay on their old position and new pipes will be installed in parallel of old collectors. So, no impacts related to the generation of waste like old damaged and contaminated sewage pipes are expected. The SP site is located in the environment modified through anthropogenic impacts. Therefore, the impact is transitory and insignificant (noise, emissions, construction waste, temporary disturbance of traffic and access, etc.). proper management of generated solid waste should be ensured to reduce impact on the environment. The impacts during operation of the sewage system will be related to the activities described above, because of maintenance works, and to the generation and discharge of increased amount of wastewater in the natural environment, river Alazani.</td>
</tr>
<tr>
<td><strong>May the sub-project have any significant impact on the local communities and other affected people?</strong></td>
<td>No land or other types of resettlement are expected. The long-term social impact will be beneficial, as local community will be provided with renovated sewerage system. SP will improve sanitation in Telavi and surrounding territories were sewage non-centralized spills in the natural environment, and risk of spreading infectious diseases will be reduced. Limited and temporary positive impact related to Job opportunities for construction workers during construction and limited during operation is expected. Negative impact is short term and limited to the construction site. They are related to the possible disturbance described above. The territory where SP site is located is not under private ownership. United Water Supply company of Georgia who is responsible to manage the water supply and sewage systems in Telavi is carrying out registration procedures and information will be provided later.</td>
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</tbody>
</table>

(B) MITIGATION MEASURES

<table>
<thead>
<tr>
<th><strong>Were there any alternatives to the sub-project design considered?</strong></th>
<th>As the SP envisages rehabilitation of existing sewage main collectors the following alternatives have been considered: • Digging out and removal of the existing damaged pipes and installation of new pipes in the same position; and • installation of new pipes in parallel position of the existing collectors without digging out of damaged pipes. To reduce environmental risks and impacts alternatives 2, installation of new pipes without digging out of existing collectors has been decided.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What types of mitigation measures are proposed?</strong></td>
<td>The expected negative impacts of the construction phase can be easily mitigated. The contractor will be responsible: • For the waste disposal at the permitted location; • Use the quarry materials from the licensed quarries only or obtain materials only from licensed providers, prevent water and soil from pollution (fuel spills due to equipment failure, concrete spills etc.); • Avoid disturbance of population (noise, dust, emissions) through proper work/supplies scheduling, good maintenance of the construction machinery, etc.</td>
</tr>
</tbody>
</table>
• Proper topsoil management. It will be stripped, stored appropriately and used for reinstatement and landscaping.

To avoid negative impacts related to the generation of waste like old unusable sewage collectors, it was decided to leave them in their old location; and install new pipes in parallel of existing position. It is also important to avoid impacts that may be associated with the interruption of sewage collectors operation.

The negative impacts, during operation of system, will be related to the increased amount of sewage, which discharges without treatment in the natural environment, river Alazani.

The design and other required documents of wastewater treatment plant to be constructed in Telavi are under preparation and will be financed as a part of Sustainable Wastewater Management Project (SWMP) supported by WB and granted by SIDA. This will avoid or mitigate at minimum level the sewage related impact.

Within the next five years (2015-2020) it is envisaged to rehabilitate the sewer network of Telavi and its surrounding villages. The rehabilitation program includes the construction of a new waste water treatment plant on the site of the old WWTP site. Additionally, approximately 6.3 km long transport pipelines connecting the sewer network with the WWTP and a 1.65 km effluent pipeline from the WWTP to Alazani river have to be implemented.

The WWTP construction project will contribute removal/reduction of pollutants from the Alazani River. On the bases of the ILF consultant report (Telavi WWTP Feasibility Study Final Draft, March 2015; A Joint Venture of ILF Beratende Ingenieure ZT GmbH, Saunders Group Ltd. and p2mberlin GmbH – with ILF as Lead) the intended removal amounts of the pollutants for first phase will be 495.4 tones of BOD and 680.7 tones of TSS for per year and for 2040 will reach to 1814.1 tones of BOD and 1759.7 tones of TSS.

To avoid damaging of the above-mentioned networks during construction works, the operator organizations have been informed in advance regarding the planned activities and design was agreed with them (the relevant letters are attached to the document).

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<thead>
<tr>
<th>What lessons from the previous similar projects have been incorporated into the sub-project design?</th>
</tr>
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<tbody>
<tr>
<td>MDF has wide experience of implementation of medium and large-scale water and waste-water subprojects financed by various donor organizations. Based on lessons learned from previous projects, the design envisages not only installation of new sewage manholes but also their hydro-insulation to avoid</td>
</tr>
</tbody>
</table>
wastewater leakage and groundwater contamination. These measures will prevent infiltration of groundwater into the manholes as well.

| Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in sub-project preparation? | The SP has been developed by UWSC in close coordination with Telavi City Hall and Sakrebulo. SP-specific EMP has been available for the Town Telavi population and discussed prior to the commencement of works, at the consultation meeting held on July 8, 2015 in town Telavi. |

(C) RANKING

The SP has been classified as environmental Category B according to the World Bank safeguards (OP 4.01) and requires completion of the Environmental Management Checklist for Small Construction and Rehabilitation Activities.
# Social Screening

<table>
<thead>
<tr>
<th>Social safeguards screening information</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the information related to the affiliation, ownership and land use status of the sub-project site available and verifiable? (The screening cannot be completed until this is available)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2. Will the sub-project reduce people’s access to their economic resources, such as land, pasture, water, public services, sites of common public use or other resources that they depend on?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3. Will the sub-project result in resettlement of individuals or families or require the acquisition of land (public or private, temporarily or permanently) for its development?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4. Will the sub-project result in the temporary or permanent loss of crops, fruit trees and Household infra-structure (such as ancillary facilities, fence, canal, granaries, outside toilets and kitchens, etc.)?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

If answer to any above question (except question 1) is “Yes”, then OP/BP 4.12 Involuntary Resettlement is applicable and mitigation measures should follow this OP/BP 4.12 and the Resettlement Policy Framework
### INSTITUTIONAL & ADMINISTRATIVE

<table>
<thead>
<tr>
<th>Country</th>
<th>Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project title</td>
<td>Regional and Municipal Infrastructure Development Project II</td>
</tr>
<tr>
<td>Sub-Project title</td>
<td>City Telavi (Kakheti Region) Sewage Collector rehabilitation</td>
</tr>
</tbody>
</table>

**Scope of site-specific activity**

Sub-Project (SP) envisages rehabilitation of existing central sewerage collectors in Telavi city. The SP site is located in Telavi, main city and administrative center of Kakheti Region, Georgia’s eastern province. Its population approximately consists of 21,800 inhabitants. The city is located on foothills of Tsiv-Gombori Mountain Range at 500–800 meters above the sea level.

The SP envisages rehabilitation of the following sewage collectors with total length 16,240 m and arrangement of 31 units of D=1.5 m and 312 units of D=1 m reinforced concrete sewerage wells on the collectors. For the arrangement of collectors, a high-density polyethylene (HDPE) corrugated pipes (standard EN 13476-1) with different diameters will be used. Design parameters for the collectors are based on feasibility study of Telavi WWTP prepared by consulting firm "ILF".

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The expected duration of the SP is 12 months.

<table>
<thead>
<tr>
<th>Institutional arrangements (WB)</th>
<th>Task Team Leader: Xiaolan Wang</th>
<th>Safeguards Specialist: Darejan Kapanadze Nino Metreveli Michelle Rebosio</th>
</tr>
</thead>
</table>

**SITE DESCRIPTION**

<table>
<thead>
<tr>
<th>Name of institution whose premises are to be rehabilitated</th>
<th>United Water Supply company of Georgia (UWSCG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address and site location of institution whose premises are to be rehabilitated</td>
<td>Vaja Pshavela ave. 76b, Tbilisi, Georgia (central office)</td>
</tr>
<tr>
<td></td>
<td>Erekle II str. #6, Telavi, Georgia (regional service centre)</td>
</tr>
<tr>
<td></td>
<td>SP site is located in town Telavi, Kakheti Region. Distance from Tbilisi is 110 km.</td>
</tr>
<tr>
<td>Who owns the land? Who uses the land (formal/informal)?</td>
<td>SP will be implemented on the land owned by Telavi municipality government. UWSCG has all responsibilities for management and maintenance of the water supply and sewage systems in Telavi.</td>
</tr>
<tr>
<td>Description of physical and natural environment around the site</td>
<td><strong>General Physical-Geographic Conditions</strong></td>
</tr>
<tr>
<td></td>
<td>In terms of administrative arrangement, the project site is located in Kakheti Region, Telavi Municipality area.</td>
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<tr>
<td></td>
<td>Telavi Municipality shares a border with Akhmeta Municipality to the north and west, with Dagestan Republic – to the northeast, with Kvareli – to the east, with Gurjaai – to the southeast, with Sagarejo Municipality - to the south-west; total area of Telavi Municipality is 1095 km². Agricultural lands</td>
</tr>
</tbody>
</table>
occupy 33156 ha of this area. Major part of municipal lands are taken by broad-leaved forests.

In terms of orography, the survey area is divided in two zones: southern slope of Caucasus, in particular – Gombori Range and Alazani Valley.

Gombori Range is a large young anticline developed on the substrate of Pliocene Molassa deposits. These deposits are situated in unconformity on the Cretaceous and Paleogene complex-folded flysch deposits. In the crest part of Tsiv-Gombori ridge and upper step of its northern slope, there are fragments of plain-wavy watersheds and denudation surfaces are surviving. They are dissected with gorges characterized with strong mudflow activity.

**Climate.** According to Georgia’s climatic zoning, the area belongs to IIb sub-region of II climatic region. The average temperature in January and July is from -5°C to -2°C, and +21°C to +25°C respectively. Annual quantity of precipitation is 700-800 mm.

**Hydrology.** River network of the region is presented by right tributaries of Alazani (Turdo, Vardisubnishkevi, Matsantsara, Telavis Rikhe, Khrukiaskhevi, Svianaantmkhevi, Salmianiskhevi, Kisiskhevi).

**Geotectonic zoning.** The area belongs to Jinvali-Gombori subzone, the east zone of the folded system of the south slope of the Greater Caucasus.

**Engineering geological zoning.** The area is located in Neogene marine and continental semi-crystalline and plastic sediments of the eastern immersion zone of the Georgian Block.

**Engineering-geological characteristics of the central sewerage collector route.** Telavi central sewerage collector with total length of 16230 meters located between km 0 and km 16+230 pickets within the survey area, is entirely arranged in old quaternary alluvial-prolluvial deposits.
**Seismicity.** The territory of Georgia, as constituent part of seismoactive region of Caucasus, belongs to the meditteranian seismic belt and is located in the moderate seismic activity zone. Pursuant to the law on approval of “Aseismic construction” norms and regulations of the Ministry of Economy and Sustainable Development of Georgia of October 7, 2009, (01.01.09), in terms of general seismic zoning scheme, the survey area falls within the highest risk zone of 9 grade intensity, with 0,28 seismicity coefficient.

**Population and Economy:** According to the year 2012 data, total number of Telavi Municipality population is 71 200, out of it - number of urban population is 19 400, number of rural - 51 800. There are 23 settlements in the Municipality, 22 of them are villages. Population density is 36 man/km², which is far less than the mean density index for the country (67 man/km²).

Main livelihood for the population is commerce, agriculture and service industries. The municipal budget, including local revenues and equalizing transfer amounts to GEL 15 387 300.

| Locations and distance for material sourcing, especially aggregates, water, stones? | Water will be available at the construction site from the municipal water supply system.  
Distance to the nearest licensed borrow pit is approximately 5 km. |
|---|---|

**LEGISLATION**

National & local legislation & permits that apply to project activity

The SP has been classified as low risk Category B according to the WB policies and the ESMF.

The SP proposal has been officially presented to the MDF by local municipality for financing and represents the need and priority of the Municipal Government according to common demands.

Georgian legislation does not require any type of environmental review, approval, or permitting for the SP. Though according to the national regulatory system:

(i) construction materials must be obtained from licensed providers,

(ii) if contractor wishes to open quarries or extract material (rather than purchasing these materials from other providers), then the contractor must obtain licenses for extraction,

(iii) if contractor wishes to operate own concrete plant (rather than purchasing these materials from other providers),
then the contractor must prepare technical report on inventory of atmospheric air pollution stationary source and agree with Ministry of Environment and Natural Resources Protection (MoENRP);

(iv) Permanent placement of the inert material (cut ground and sedimentary soil) generated in the course of earth works in a selected location must be approved by local (Telavi municipal) governing bodies in written;

(v) Construction waste must be disposed on the nearest municipal landfill in accordance with written mutual agreement with operating company.

GOST and SNIP norms must be adhered.

<table>
<thead>
<tr>
<th>PUBLIC CONSULTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When / where the public consultation process will take /took place</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ATTACHMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment 1: Site location, photos and a sketch of the new building.</td>
</tr>
<tr>
<td>Attachment 2: Communication with operators of associated infrastructure</td>
</tr>
<tr>
<td>Attachment 3: Documents on the public consultation</td>
</tr>
<tr>
<td>Attachment 4: Agreement on the disposal of excess earth</td>
</tr>
<tr>
<td>Attachment 5: Agreement on purchase of gravel</td>
</tr>
</tbody>
</table>
### ENVIRONMENTAL /SOCIAL SCREENING

<table>
<thead>
<tr>
<th>Activity/Issue</th>
<th>Status</th>
<th>Triggered Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Building rehabilitation</td>
<td>[ ] Yes [ ] No</td>
<td>See Section A below</td>
</tr>
<tr>
<td>B. New construction</td>
<td>[ ] Yes [ ] No</td>
<td>See Section A below</td>
</tr>
<tr>
<td>C. Individual wastewater treatment system</td>
<td>[ ] Yes [ ] No</td>
<td>See Section B below</td>
</tr>
<tr>
<td>D. Historic building(s) and districts</td>
<td>[ ] Yes [ ] No</td>
<td>See Section C below</td>
</tr>
<tr>
<td>E. Acquisition of land¹</td>
<td>[ ] Yes [ ] No</td>
<td>See Section D below</td>
</tr>
<tr>
<td>F. Hazardous or toxic materials²</td>
<td>[ ] Yes [ ] No</td>
<td>See Section E below</td>
</tr>
<tr>
<td>G. Impacts on forests and/or protected areas</td>
<td>[ ] Yes [ ] No</td>
<td>See Section F below</td>
</tr>
<tr>
<td>H. Handling / management of medical waste</td>
<td>[ ] Yes [ ] No</td>
<td>See Section G below</td>
</tr>
<tr>
<td>I. Traffic and Pedestrian Safety</td>
<td>[ ] Yes [ ] No</td>
<td>See Section H below</td>
</tr>
</tbody>
</table>

¹ Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

² Toxic / hazardous material includes but is not limited to asbestos, toxic paints, noxious solvents, removal of lead paint, etc.
### PART C: MITIGATION MEASURES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
</tr>
</thead>
</table>
| 0. General Conditions | Notification and Worker Safety | (a) The local construction and environment inspectorates and communities have been notified of upcoming activities (including the site of the works)  
(b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites  
(c) All legally required permits have been acquired for construction and/or rehabilitation  
(d) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.  
(e) Workers’ PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots)  
(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. |
| A. General Rehabilitation and/or Construction Activities | Air Quality | (a) Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust;  
(b) During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site  
(c) The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust  
(d) There will be no open burning of construction / waste material at the site  
(e) There will be no excessive idling of construction vehicles at sites  
(f) Truck loads should be confinement and protected with lining. |
| | Noise | (a) Limit activities to daylight working hours;  
(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible  
(c) The machinery should move only along the preliminarily agreed route;  
(d) The maximum allowed speed should be restricted;  
(e) Proper technical control and maintenance practices of the machinery should be applied;  
(f) No-load operations of the vehicles and heavy machinery is not allowed. Proper mufflers will be used on machinery. |
| | Water Quality | (a) Contractor will be required to organize and cover material storage areas and to isolate wash down areas from watercourses by selecting areas that are not free draining into any watercourse. The material storage sites should be protected from washing out during heavy rain falls and flooding through covering by impermeable materials.  
(b) Contractor will plan all excavations, topsoil and subsoil storage so as to reduce to a minimum any runoff.  
(c) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.  
(d) Revision of vehicles will be required to ensure that there is no leakage of fuel and lubricating materials. All machinery will be maintained and operated such that all leaks and spills of materials will be minimised. Daily plant checks (Vehicle Maintenance Procedure) will be undertaken to ensure no leaks or other problems are apparent. Vehicle maintenance, cleaning, degreasing etc. will be undertaken in designated areas, of hard-standing, not over made ground. Maintenance points will not be located within 50m of any watercourse.  
(e) Lubricants, fuel and solvents should be stored and used for servicing machinery exclusively in the designated sites, with adequate lining of the ground and confinement of possible operation and emergency spills. Spill containment materials (sorbents, sand, sawing, chips etc.) should be available on construction site. |
(f) Wet cement and/or concrete will not be allowed to enter any watercourse, pond or ditch.

(g) Upon completion of washing and disinfection of water reservoir and water pipe the disinfection solution will be neutralized by the contractor prior to release to the environment – to avoid damage to terrestrial or aquatic organisms. In the case of disinfection via chlorination this is achieved by application of a reducing agent, such as sodium bisulfate to achieve de-chlorination. The reducing agent, in turn, must be applied by the contractor at the precise dosage to neutralize the disinfectant – but no more, since reducing agent residuals are also detrimental to aquatic ecosystems. Releasing of neutralized water to the environment by the contractor will be agreed with the local municipality.

**Waste management**

(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.

(b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.

(c) Construction waste will be collected and disposed properly on the agreed location.

(d) The records of waste disposal will be maintained as proof for proper management as designed.

(e) Burning of waste on the SP site is forbidden.

(f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos)

**Material supply**

(a) Use existing plants, quarries or borrow pits that have appropriate official approval or valid operating license.

(b) Obtain licenses for any new quarries and/or borrowing areas if their operation is required;

(c) Reinstate used sections of quarries and/or borrowing areas as extraction proceeds on or properly close quarries if extraction completed and license expired;

(d) Obtain wood materials only from licensed suppliers.

(e) Contractor will be required to submit to the MDF copies of the licenses, permits, written agreements, certificates, etc. to prove that all materials are obtained from licensed providers.

(f) Haul materials in of peak traffic hours;

(g) Place speed regulating, diverting, and warning signs for traffic as appropriate.

**Earthworks**

(a) Topsoil should be stripped before starting of earthworks;

(b) Proper topsoil storage practice should be applied to ensure maintenance of physico-chemical and biological activity of the soil; Temporary protective silt fencing should be erected to avoid erosion (wash down);

(c) Stored topsoil should be used for reinstatement and landscaping.

(d) Topsoil from the sites, which will not be reinstated to the initial conditions will be distributed carefully on the surrounding area.

(e) Topsoil will be reinstated separately from subsoil, with care taken to avoid mixing of the materials. The topsoil reinstatement will be sufficient to restore the fertile depth to the initial conditions as judged by the topsoil strip during visual observation and comparison of the reinstated site and adjacent land. When replacing the topsoil Contractor will program the works such that the areas furthest away from the stockpiles are reinstated first with reinstatement getting progressively closer to the stockpiles, thus reducing the number of vehicle movements over the reinstated topsoil. The reinstated topsoil will then be harrowed, where practical, to protect the stability and promote vegetative growth.

(f) In case chance find is encountered in the course of earth works, the contractor must immediately stop any physical activity on site and informs the MDF. The MDF promptly notifies the Ministry of Culture and Monument Protection, which takes over responsibility for the following course of action. Works may resume only upon receipt of written permission from the Ministry of Culture and Monument Protection.
<table>
<thead>
<tr>
<th>B. Individual wastewater treatment system</th>
<th>Water Quality</th>
<th>(a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities. (b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment. (c) Monitoring of new wastewater systems (before/after) will be carried out. (d) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Traffic and Pedestrian Safety</td>
<td>Direct or indirect hazards to public traffic and pedestrians by construction activities</td>
<td>(a) In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to: ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards. ▪ Construction site should be fenced and properly secured to prevent unauthorized access (especially of children); ▪ Appropriate lighting and well-defined safety signs should be provided; ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.</td>
</tr>
</tbody>
</table>
## Part D: Monitoring Plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>What</th>
<th>Where</th>
<th>How</th>
<th>When</th>
<th>Why</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply with construction materials</td>
<td>Purchase of construction materials from the officially registered suppliers</td>
<td>In the supplier’s office or warehouse</td>
<td>Verification of documents</td>
<td>During conclusion of the supply contracts</td>
<td>To ensure technical reliability and safety of infrastructure</td>
<td>MDF, Construction supervisor</td>
</tr>
<tr>
<td>Transportation of construction materials and waste; Movement of construction machinery</td>
<td>Technical condition of vehicles and machinery; Confinement and protection of truck loads with lining; Respect of the established hours and routes of transportation</td>
<td>Construction site</td>
<td>Inspection</td>
<td>Unannounced inspections during work hours and beyond</td>
<td>Limit pollution of soil and air from emissions; Limit nuisance to local communities from noise and vibration; Minimize traffic disruption.</td>
<td>MDF, Construction supervisor, Traffic Police</td>
</tr>
<tr>
<td>Earthworks</td>
<td>Temporary storage of excavated material in the predefined and agreed upon locations; Backfilling of the excavated material and/or its disposal to the formally designated locations; In case of chance finds immediate suspension of works, notification of the</td>
<td>Construction site</td>
<td>Inspection</td>
<td>In the course of earth works</td>
<td>Prevent pollution of the construction site and its surroundings with construction waste; Prevent damage and loss of physical cultural resources; Prevent topsoil losses.</td>
<td>MDF, Construction supervisor</td>
</tr>
<tr>
<td>Activity</td>
<td>What</td>
<td>Where</td>
<td>How</td>
<td>When</td>
<td>Why</td>
<td>Who</td>
</tr>
<tr>
<td>----------</td>
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</tr>
<tr>
<td>Sourcing of inert material</td>
<td>Ministry of Culture and Monument Protection, and resumption of works exclusively upon formal consent of the Ministry. Topsoil is striped before starting of the earthworks; Proper topsoil storage practice is applied; Temporary protective silt fencing is erected; Striped topsoil is used for reinstatement and landscaping.</td>
<td>Borough areas</td>
<td>Inspection of documents</td>
<td>In the course of material extraction</td>
<td>Limiting erosion of slopes and degradation of ecosystems and landscapes; Limiting erosion of riverbanks, water pollution with suspended particles and disruption of aquatic life.</td>
<td>MDF, Construction supervisor</td>
</tr>
</tbody>
</table>

**What**
- Is the parameter to be monitored?

**Where**
- Is the parameter to be monitored?

**How**
- (Define the frequency / or continuous?)

**When**
- (Is the parameter being monitored?)

**Why**
- (Is responsible for monitoring?)

**Who**
- (Is the parameter to be monitored?)
<table>
<thead>
<tr>
<th>Activity</th>
<th>What</th>
<th>Where</th>
<th>How</th>
<th>When</th>
<th>Why</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>stream, arrangement of protective barriers of gravel between excavation area and the water stream, and no entry of machinery into the water stream. Construction vehicles and machinery are washed only in designated areas where runoff will not pollute natural surface water bodies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generation of construction waste</td>
<td>Temporary storage of construction waste in especially allocated areas; Timely disposal of waste to the formally designated locations</td>
<td>Construction site; Waste disposal site</td>
<td>Inspection</td>
<td>Periodically during construction and upon complaints</td>
<td>Prevent pollution of the construction site and nearby area with solid waste</td>
<td>MDF, Construction supervisor</td>
</tr>
<tr>
<td>Workers’ health and safety</td>
<td>Provision of uniforms and safety gear to workers; Informing of workers and personnel on the personal safety rules and instructions for operating machinery/equipment, and strict compliance with these rules/instructions</td>
<td>Construction site</td>
<td>Inspection</td>
<td>Unannounced inspections in the course of work</td>
<td>Limit occurrence of on-the-job accidents and emergencies</td>
<td>MDF, Construction supervisor</td>
</tr>
<tr>
<td>Activity</td>
<td>What</td>
<td>Where</td>
<td>How</td>
<td>When</td>
<td>Why</td>
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<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maintenance of rehabilitated sewage collectors</td>
<td>Scheduling of maintenance works in at less busy hours and proper signage of maintenance area.</td>
<td>Rehabilitated collectors</td>
<td>Inspection during operation of sewage system</td>
<td>Minimize nuisance to local residents Prevent pollution with solid waste</td>
<td>Telavi City Hall; United water supply company of Georgia</td>
<td></td>
</tr>
</tbody>
</table>
Attachment 1: Site location and pictures
<table>
<thead>
<tr>
<th>Image 1</th>
<th>Image 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overflow into Irrigation channel at Kurdgelanzi Street and possible measurement shaft</td>
<td></td>
</tr>
<tr>
<td>End of main trunk leading to Irrigation Channel (Akhmeta to Dedoplistkaro) at Alazani Boulevard (the sewer ends after further 50m in a flooded pit hole)</td>
<td></td>
</tr>
<tr>
<td>End of the old sewer trunk to Telavi WWTP beside the state road to Alazani Bridge</td>
<td></td>
</tr>
<tr>
<td>Telavi main sewer draining to irrigation channel</td>
<td></td>
</tr>
</tbody>
</table>
Attachment 2: Communication with entities owning/operating linear infrastructure in the sub-project area crossed or potentially affected by upcoming works on sewage collectors
საქართველოს გასამყოფი ყუნიხმაძის კომპანიის
ჩანაწერის შიგნიდან: ჩამორთვა ტექსტი და თავდაპირველი სათაურები
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date: 28.01.2015

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</thead>
<tbody>
<tr>
<td>1</td>
<td>541087.152</td>
<td>4644151.169</td>
<td>133.0</td>
</tr>
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1. საქართველოს გასამყოფი ყუნიხმაძის კომპანია 13-ია მხარით შემდეგ ჩანაწერში: ჩამორთვა ტექსტი და თავდაპირველი სათაურები

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7. გასაშვები გაბატონების შესაძლო განხილვის უფრო მცირე წარმოქმნის შემთხვევაში სიუჰარული გარშემოქმნის, მოქმედი შეკრების 0,5%- ს სიმაღლით და ზუსტად დაბლობი 20 მ სიღრმე ფარგლების ფლობთ.

8. კონტროლის კოლონიები გაბატონების გადატანის შემთხვევაში გაბიანების თანამედგენი 20 მ (ზომის შერეული ადგილის საშუალო ნახევრის უფრო შერეულით მაღლა დაახლოებით) (საქართველოს ფილატოლოგიის ქართული ლანგუჯის ქარტობრივი სიტყვად).

9. თუ კონტროლის კოლონია არ გახდება გაბიანების არაღებული, ის რამდენიმე დღის განმავლობაში არ გავშვება 10 (ათა) შენახვით, მარბაზ (ქართ. 2.03-06-85*).

10. გაბატონები უძგა გადატკიცილი მოჯ ძროხი არ შეიძლება 0,35%- ს სიმაღლით (ღირსის შერეული შემთხვევით).

11. შესაძლებელი უძგა გადატკიცილ ით, თუ დაუთო აზიან რეგიონში გადატკიცილი ნახევრები.

12. გაბიანები გადატკიცა უძგა მცირე არ შეიძლება 60%- ის გუნდით.

13. გაბიანების გადატკიცილ ადგილზე, უძგა გადატკიც გადატკიცილი ნახევრები, რომლებმ იგრძელია კონტროლის კოლონიებში.

14. საქართველოს ფილატოლოგიის ინსტიტუტში და საქართველოს საომართლოში.

გაწევთ გადატკიცი სექცია - 1 ფოტოგრაფია

პატივსცემა

(სექტორის მიერ)

(პატივსცემის მდგ.

(სექტორის ფოტოგ)

(პატივსცემის მდგ.)
საქართველოს მინისტრთა შრომის, არიტრაქტიულის და დანარჩენი გარემოების მინისტრობის

GEORGIAN OIL AND GAS CORPORATION

ქალაქის, მარიამ, 0190 ქალაქი თბილისი. 31
ტელ. (+995 32) 224 40 40 ფაქს (+995 32) 224 40 41

No 031-7-15 02/15

20 01 2057

მიხეილ მაზარეს,

რუსეთისათვის გადასცემონ სა საქართველოს მინისტრთა შრომის, არიტრაქტიულის და დანარჩენი გარემოების მინისტრობის „2015 წელის 8 ივლისი No 87/1 (ჩინური No 1301-1) ფშირინგის საფარზე.

გარდაცვალები აღინიშნება წინადგომი და სახელმწიფო სარგებლობა სა საქართველოს გარემოების მინისტრობის მინისტრობის გარემოების მინისტრობი.

გაფრთხილება: 1 გვერდით და 1 CD.

მდგომარეობა,

[サイン]

დროის მოტორიზებული სადგუროში

4/28/16
22 01 5
26 სექენია, 2015 წ.
#01/87

საქართველოს გარემოსსართული
შემოთავსების
საბჭოთა

თეთრი წერილი (№87/1/08.01.2015) ბარებით გონიოსმ, რომ თქვენი სახელი წაურევს ჩანაწერით ყურადღება და გვეხაბ მომხმარებლის მონაცემებს. შეადგენთ ყველა გვერდი ლაპარაკს, ასევე უზარმაზარი დარიგებით განთავსეთ, ამ ადგილების ხელი გამარჯვება.

მოძღვრე უნდა მოხსენოს ყველა მომხმარებლის პირადმა მონაცემების მონაცემები. აქ არ არის საჭირო გამოყენება ასეთ მონაცემებში გამოყენებით შეფარდების ამოღები. (დამროლით, თანამგზავრობა იმისი აღნიშნულ მიხედავა შეფარდელი ჩვენი).

ვინმეთა კანონების ექსპონენცი, ფილანთროპიული მოქალაქიანი პატივსაცემად.

საპატიო მახორობის დირექტორ ქალაქში ყოფილი მომხმარებლები, რისც საბჭოში გადაწყვეტა 5 77 21 22 73 ხდომებს გალ მეგრონი.

ჩარჩო საპატიო მახორობის დირექტორ

1/16490

748, 1-შახვავაძი ავენიუ
0162 თბილისი, გრეგორი
TEL: +995 322 91 53 15
FAX: +995 322 91 52 55
WEB: WWW.WISSOL.GE
E-MAIL: OFFICE@WISSOL.GE
სამუშაო სიჩქარეზე გარკვეული შეფასების შესახებ ერთმანეთის თანახმად ფაქტების შეგრძნების უმჯობესი და სივრცეშის ნაკრძალის 8-8 საათის განათები.

24/21-8

სამუშაო დღე.

შესრულებული წერილი №871 საბაჟო გამოცდილი, რომ არჩევითა აღმოჩენით ჩინაურთა გადამხდარი ბარათის როლის მიხედვით, რომლის გამოცდილი ჭკვიანია გამოვალ ადმინისტრაციული CD-ღონის.

სახელის გამოყენება მიღწევის შეადგენილი: 2950029, 2932748

დარწმუნე: I. CD ღონი (2 ღამე)
2. ხელმძღვანელის ღამისთან #4

მონაცემთა

[სქetch]

[დაჯდება]

[იმსახურება]

[შეყვანილი]

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Attachment 3: Documents on the public consultation

July 8, 2015
Town Telavi, Georgia

Minutes
of Public Consultation Meeting

of Environmental Management Plan for the Sewage Collector rehabilitation SP in town Telavi

On July 8, 2015 in the Niko Sulkhanishvili Music School building, located in town Telavi, Public Consultations were held on Social and Environmental Management Plan for the SP of Sewage Main Rehabilitation in town Telavi. The meeting aimed at keeping local population abreast of sub-project related planned activities, the expected negative impact on the natural and social environment and the ways and means of preventing them.

Those present at the meeting:

Representatives of the Town Telavi Administration: Giorgi Enukidze, Beka Ebatashvili,

Zurab Abuashvili – “Telavi is my Town”
Tamar Lazariashvili – Chairman of “Telavi is my Town”
Jumber Sakhenishvili – “Public Chamber”
Zurab Gelashvili - “Public Chamber”
Davit Tsikaridze – Executive Unit “Old Telavi”
Giorgi Kurashvili - Executive Unit “West Telavi”
Lasha Gigauri - Executive Unit “Central Telavi”

Local residents: Sveta Ninikelashvili, Tamar Chavelashvili, Besik Gigauri, Ioseb Papunashvili, Vazha Kajrishvili, Zurab Tavberidze, Zurab Lomidze, Giorgi Mchedlishvili,

Representatives of mass media:

Meri Zaalishvili – Journalist
Zurab Arsenishvili – Journalist
Davit Ghonghadze – Radio “Hereti”, blogger
Representatives of the Municipal Development Fund of Georgia:

Nino Patarashvili – Environmental Safety Specialist
Nona Chichinadze – Social and Gender Specialist
Davit Bakhsoliani – Resettlement Specialist
Irakli Japaridze – Environmental Protection and Resettlement Unit, probationer

During the meeting, Nino Patarashvili briefly informed the audience of the SP aims and about construction works to be implementated under the SP.

Nino Patarashvili presented to the audience the draft Environmental Management Plan prepared for the SP. She explained to the public social and environmental screening procedures applied for the WB funded SPs and environmental and social requirements of the presented SP. She discussed works planned under the Sub-project; social and environmental impacts expected as a result the SP activities and measures for mitigation or prevention of anticipated adverse impacts of the SP. She briefly touched on the wastewater treatment plant construction project to be implemented in Telavi under the sustainable wastewater management project, which is being implemented by the MDF and is backed by the World Bank and SIDA grant. N. Patarashvili noted that these two projects will be carried out concurrently, independently of one another, in order to minimize the expected adverse impact related to effluent discharge into the river Alazani.

Nino Patarashvili also noted that EMP forms integral part of the contract made with the civil works contractor and that the contractor is responsible for performance of mitigation measures envisaged under the EMP and protection of social and natural environment. She informed the participants of the contact persons to be communicated by the population in case of existence of any complaints concerning environmental or social issues.

N. Chichinadze discussed social and gender related project impacts, she focused on the benefits to be derived by the population as a result of project implementation, which mainly implies generation of temporary and permanent job opportunities; as well as health and safety issues, women employment, significance of the project in terms of business and tourism development, community involvement and perspectives of improvement of accountability of the local governments, and importance of transparency and information awareness during project implementation.

After the presentation, the audience was given a possibility to express their opinions and/or participate in Q&A session concerning presented issues, they posed the following questions:
<table>
<thead>
<tr>
<th>Questions and remarks</th>
<th>Answers and comments</th>
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</thead>
<tbody>
<tr>
<td>When will the wastewater treatment plant construction commence?</td>
<td>The design and such other requisite documentation is prepared, we cannot set any precise deadlines so far, though preparatory works are ongoing in order to obtain the required permits, prepare bidding documentation and select the contractor company in the shortest possible term.</td>
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<tr>
<td>Where will the new wastewater treatment plant be constructed?</td>
<td>Construction of the biological wastewater treatment plant is envisaged in place of the old WWTP. Under the project, the old plant will get dismantled and a new, current technology biological treatment plant will be constructed.</td>
</tr>
<tr>
<td>Is it possible to rehabilitate under the project sewage pipeline sections and sewage manholes located in the yards?</td>
<td>As we have already mentioned, the present project envisages rehabilitation of the Telavi sewage main and associated sewage manholes and no other works are eligible for funding under this sub-project.</td>
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<tr>
<td>Specify, who is capable of providing assistance.</td>
<td>For addressing the existing problem, you may apply to the Telavi City Hall and United Water Supply Company of Georgia, which is responsible for faultless operation of the city water supply and sewerage systems.</td>
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</table>

At the end of the meeting the audience expressed their positive attitude towards the project and their wish for the sewerage collector rehabilitation works and WWTP construction works to be concurrently completed, in order to prevent wastewater runoff into the river Alazani and its pollution.

Photo material and copy of meeting participants’ registration list are hereby enclosed.

Minutes prepared by Nino Patarashvili, MDF Environmental Safety Specialist.

July 8, 2015
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Attachment 4: Agreement on disposal of excess earth
Attachment 5: Agreement on Gravel Purchase

I. General Conditions
1.1. Agreement on gravel purchase: "Agreement" refers to the agreement to purchase gravel.
1.2. Agreement conditions are applicable to all gravel purchases.

II. General Conditions of Purchase
2.1. The gravel is to be purchased in the amount of 20 (twenty) cubic meters.

III. Payment Terms
3.1. "Agreement" conditions apply to all gravel purchases.
3.2. Payment terms are as follows:

IV. Additional Terms
4.1. Additional terms may be added if necessary.
4.2. Additional terms may be added if necessary.

V. Additional Conditions
5.1. Additional conditions may be added if necessary.
5.2. Additional conditions may be added if necessary.

VI. Additional Terms
6.1. Additional terms may be added if necessary.
6.2. Additional terms may be added if necessary.

VII. Additional Terms
7.1. Additional terms may be added if necessary.
7.2. Additional terms may be added if necessary.

VIII. Additional Terms
8.1. Additional terms may be added if necessary.
8.2. Additional terms may be added if necessary.

IX. Additional Terms
9.1. Additional terms may be added if necessary.
9.2. Additional terms may be added if necessary.