United Nations Development Programme
Country: Georgia
PROJECT DOCUMENT

Project Title: Georgia: Green Cities: Integrated Sustainable Transport for the City of Batumi and the Achara Region (ISTBAR)

UNDAF Focus area(s): Focus area 1: Inclusive, Equitable and Sustainable Growth

Expected CPAP Outcomes and Outputs:
Outcome 3.2: Underlying disaster risk factors are reduced focusing on sustainable environmental and natural resource management
Output 3.2.2: System, institutional and staff level capacities enhanced for implementation of national environmental commitments and major international agreements on climate change
Output 3.2.3: Environmental concerns and climate change risk considerations incorporated in national policies, strategies and programmes
Executing Entity: Ministry of Environment and Natural Resources Protection of Georgia (MoENRP)
Implementing Entity: Municipality of Batumi

Brief Description

The objective of this Project is to promote sustainable transport in the City of Batumi and Region of Achara in Georgia. This objective will be met through implementation of four (4) components: i) development of integrated sustainable urban transport plans for the City of Batumi and the Region of Achara; ii) development of specific feasibility studies and functional plans for low carbon transport in Batumi; iii) investments in sustainable urban transport measures in Batumi based on the feasibility studies; and iv) development of sustainable transport plans for other corridors of Batumi and other municipalities in Achara Region and Georgia. The Project will be implemented over a 4-year period and is expected to generate direct GHG emission reductions of 877 tonnes CO_2 respectively through sustainable urban transport measures undertaken in Batumi City. Indirect emission reductions are estimated as being some 562,631 tonnes CO_2 that is cumulative for a 10-year period after the end of the Project.

Programme Period:	2015 - 2019
Atlas Award ID:	00082231
Project ID:	00091251
PIMS #	4980
Start date:	1 July 2015
End Date	30 June 2019
Management Arrangements	NIM
PAC Meeting Date	TBD

Agreed by (Government):

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

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ACRONYMS

Acronym	Meaning
ADB	Asian Development Bank
AWP	Annual Work Plan
BAU	Business-as-usual
BUDS	Batumi's Urban Development Strategy
CC	Climate Change
CDM	Clean Development Mechanism
CNG	Compressed natural gas
CO	Country Office
CoM	Covenant of Mayors
CP	Country Programme
CPAP	Country Programme Action Plan
CSO	Civil Service Organizations
EBRD	European Bank of Reconstruction and Development
EC-LEDS	Enhancing Capacity for Low Emissions Development
EIAs	Environmental Impact Assessments
EOP	End of Project
EU	European Union
FY	Fiscal year
GBC	Gorgiladze-Baratashvili-Chavachavadze corridor
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEL	Georgian Lari
GHG	Greenhouse Gases
GIZ	German International Assistance
GJ	Gigajoules
GoG	Government of Georgia
GPS	Global Positioning System
GUD	Green Urban Development
HACT	Harmonized Approach to Cash Transfers to Implementing Partners
ISTBAR	Integrated Sustainable Transport for Batumi and Achara Region
ISUTP	Integrated Sustainable Urban Transport Plan
ITP	Integrated Transport Plan
kgoe	Kilogram oil equivalent
kWh	Kilowatt hours
LEAP1	Long Range Alternatives Planning System software
LEDS	Low Emission Development Strategy (USAID-supported)
LUMP	Land Use Master Plan
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MJ	Megajoules
MoE	Ministry of Energy
MoENRP	Ministry of Environmental and Natural Resources Protection

Acronym	Meaning
MoESD	Ministry of Economy and Sustainable Development
MoF	Ministry of Finance (for the Achara Region)
MoRDI	Ministry of Regional Development and Infrastructure
MPa	Megapascal (a unit of pressure)
mtoe	Million tonnes of oil equivalent
NIM	National Implementation Modality
NMV	Non-motorize vehicle
NPD	National Project Director
OEM	Original Equipment Manufacturer
PIR	Project Implementation Report
PMU	Project Management Unit
ProDoc	UNDP Project Document
PSC	Project Steering Committee
QPR	Quarterly Progress Report
RCU	Regional Coordinating Unit
R&D	Research and Development
SBAA	Standard Basic Assistance Agreement
SEAP	Sustainable Energy Action Plan
SNC	Second National Communications of Georgia
SPR	Standard Progress Report
SUT	Sustainable Urban Transport
TJ	Tera joules
TNC	Third National Communications of Georgia
toe	Tons of oil equivalent
ToR	Terms of Reference
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development
WB	World Bank

1. Currency Equivalents[1]

Currency Unit = Georgian Lari, GEL

1 USD = GEL 1.73

[1] www.oanda.com (exchange rate effective March 8, 2014)

SITUATION ANALYSIS

Context and Global Significance

1. Georgia is located to the southeast of Europe surrounded by the Black Sea to its western side and Azerbaijan to its eastern border, near the Caspian Sea. The total land area is 69,700 km^2 of which the majority is mountainous terrain. With annual precipitation varying from 1,500 to 2,500 mm, Georgia is blessed with an abundance of hydropower potential, sufficient to export energy to neighbouring countries such as Turkey. Georgia's economy, however, has been in transition since the collapse of the Soviet Union in 1991 when there were significant declines in output and production. Since 1997, the Government of Georgia (GoG) introduced a number of reforms to improve the economy resulting in gradual economic growth and improvements in living conditions; between 2004 and 2007, private capital investment into Georgia increased over 4 times to over USD 2.3 billion per annum.

2. A war with Russia in August 2008, led to an abrupt halt in Georgia's economic growth. Georgia suffered heavy losses in all sectors of the economy including those sectors which make a considerable contribution to GDP such as agriculture, manufacturing, trade, tourism, transportation, construction, and banking. In addition, the country has borne a significant social cost of accommodating thousands of internally displaced persons from the war. As a result, city planning and urban development of Georgia's cities has not received the level of attention and focus required for the modernization of the country.

3. Georgia has ratified the UNFCCC in 1994 and the Kyoto Protocol in 1999 and has joined Copenhagen Accord in 2010. As a Non-Annex I Party to the UNFCCC, Georgia does not have specific targets or caps to limit emissions growth. However, Georgia is active in supporting carbon market mechanisms, such as the clean development mechanism (CDM) as a means of promoting new type of investment (carbon credits) in GHG emission reduction projects in Georgia. In 2013, Georgia has commenced development of a Low Emission Development Strategy (LEDS) with support from USAID.

4. The attraction of foreign direct investment has been a key priority of the Georgian government for the last 10 years. This includes attraction of foreign direct investment for projects in the transport sector. To date, urban development in Georgia as well as other similar developing countries can be characterized by typically uncoordinated and unplanned actions with an emphasis on short-term goals without long terms aims and objectives. With the emerging importance of the growth of denser urban areas as primary causes to global warming, municipal governments are struggling to keep pace with these changes. Many large cities currently do not have sound strategies and urban plans that work towards reducing a city's energy demand, carbon emission and environmental impact on ecosystems. Recently, there has been a global movement amongst municipal leaders that is committed to reverse the trends of increased energy demands, carbon emissions and environmental impacts through a "green cities" approach. Green cities exist through gains in efficiency in its use of natural resources and through technology innovation through the proximity of the city to economic activities.

5. Green cities typically have areas of higher urban density with urban infrastructure (such as streets, water and sewage systems) that have lower unit costs per capita. While traffic congestion is a normal impact of dense urban areas, the "greening of a city" can be implemented through actions that reduce this congestion and energy consumption per kilometre-passenger travelled within a city. These cities are governed by leaders who take

actions to become green including the consideration of environmental impacts of new investments in the city infrastructure. In addition, these cities are inhabited by people who are aware of and dedicated themselves to minimize consumption of energy, water, and food and to reduce air pollution. A sustainable green city should meet the needs of the present generation without sacrificing the needs of future generations.

6. The challenges for environmentally conscious developers are to design green cities in such a way that saving energy and reducing greenhouse gas (GHG) emissions is done in a manner which is both economically beneficial and environmentally friendly. With urban development in Georgia primarily driven by economic considerations, "greening" considerations have not yet been adopted in most city planning processes. While there are no cities in Georgia that can be classified as "green cities", there is interest in Georgia to adopt a green cities approach; six cities have signed onto the Covenant of Mayors (CoM) as a commitment to reduce GHG emissions from urban areas by 20% by 2020[2]. As an obligation to being a part of the CoM, each city needs to prepare a "sustainable energy action plan" (SEAP) consisting of a baseline emission assessment, a projection of these emissions in 2020, and the presentation of conceptual mitigation actions to reduce GHG emissions by 20% in 2020.

7. The 2nd National Communications of Georgia (SNC) to the UNFCCC submitted in 2009 has identified transport as the key source of GHG emissions in Georgia and has identified the urban sector as a major source of GHG emissions. The SNC states that if Georgia is to reduce its GHG emissions in a cost-effective manner, the transport sector has to be targeted and sustainable transport has to be promoted[3]. The 3rd National Communications of Georgia (TNC) that will be finalized in late 2014 reiterates the importance of transport for GHG emissions reductions. The rehabilitation of transport infrastructure, improvements in public transport services and the promotion of low emission vehicles were listed as transport-related mitigation measures for the Achara Region[4].

8. Batumi is an important transport and touristic hub of Georgia with development of close economic relations with neighbouring countries. With deepening regional cooperation and location in the southwestern corner of Georgia (as seen on Figure 1), the City's has an increasingly important role and function both as a sea resort and as a sea and land gate of Georgia. Batumi is the oldest and the most important port for the transport of oil in Caucasus region and serves as a logical terminus of the Baku-Batumi railway and pipeline. Highways connect Batumi with the most important centers of Georgia, with internal regions of Achara and to Turkey. Resulting from this increased importance, the area of Batumi city as seen in Figure 2 has expanded from 18 km^2 in 1990 to 65 km^2 through the inclusion of neighbouring towns and villages. This has drastically changed the image and perception of Batumi from a relatively small city into a non-uniform conglomerate with highly developed districts with modern architecture, the old city with century old small buildings and the undeveloped or predominantly rural areas.

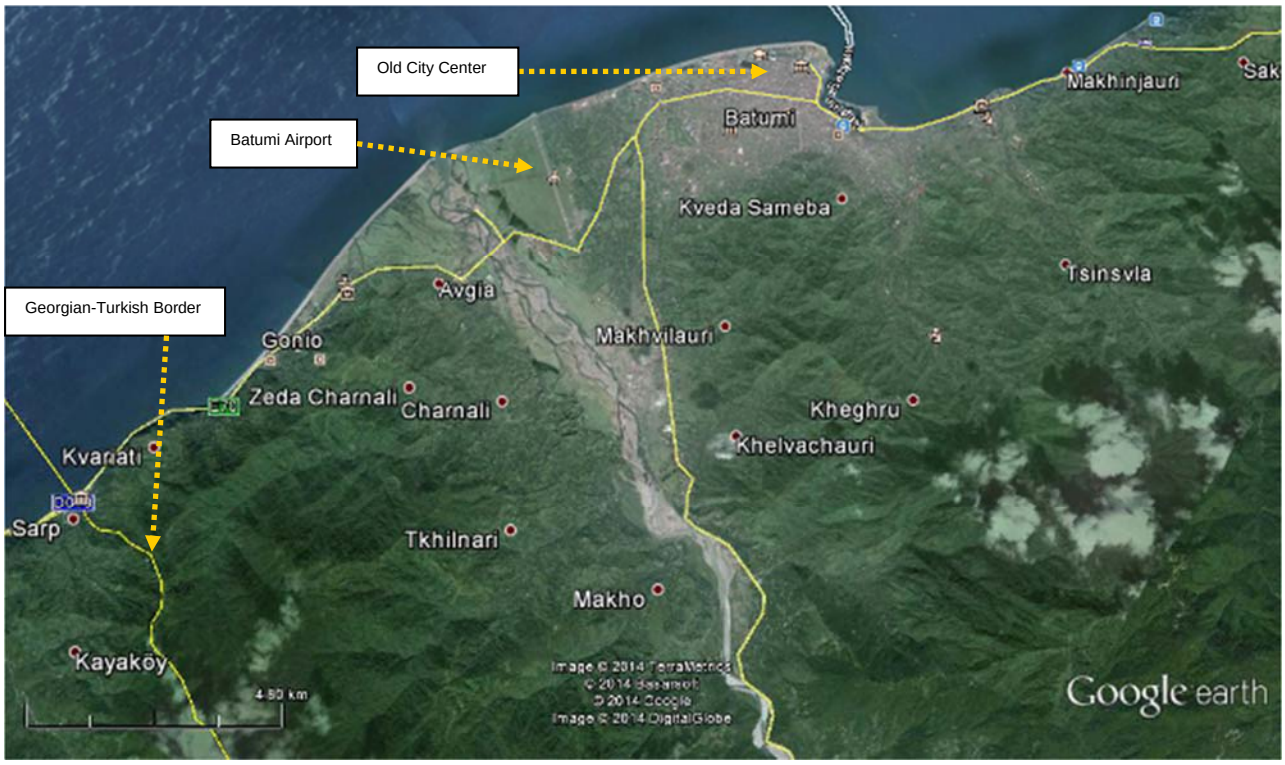
Figure 1: Location of Batumi City in Georgia

[2] This includes Batumi, Tbilisi, Kutaisi, Rustavi, Poti and Gori

[3] Sustainable transport refers to the broad subject of transport that is or approaches being sustainable. It includes vehicles, energy, infrastructure, roads, railways, airways, waterways, canals, pipelines, and terminals. Transport operations and logistics as well as transit-oriented development are included. Transportation sustainability is largely being measured by transportation system effectiveness and efficiency as well as the environmental impacts of the system.

[4] http://mitigationpartnership.net/sites/default/files/6._undp_georgia.pdf

Figure 2: Batumi City and Vicinity



9. The main check point between Georgia and Turkey, Sarpi is located a few kilometres to the south of Batumi. Truck freight to other regions of Georgia, Azerbaijan and Armenia is currently

transported through the city, although a by-pass is currently under construction to divert this traffic from the City. Batumi International Airport opened in 2007 strengthening the City's connection with several regional cities. This growth has emboldened civic leaders of Batumi to create an image of their city as a modern and progressive tourist destination that adheres to the best environmental standards. To achieve these standards, it has strengthened its linkages with external agencies and movements such as the CoM, a high profile mainstream movement in Europe involving local, regional and municipal governments in the overall reduction of CO_2 emissions by 20% by 2020[5]. Batumi's alliance with this movement also reflects the Georgia's general choice of political association and economic integration with the EU. Through its extensive network of mayors in the EU, a number of cities in Georgia in addition to Batumi have already become Covenant signatories. As an obligation under the Covenant, Batumi has developed and adopted a SEAP as of April 2014.

10. The proposed GEF Project "Integrated Sustainable Transport for Batumi City and the Achara Region" (ISTBAR or Project) seeks to ensure that urban development in Georgia takes place with a green approach or in an environmentally sustainable manner. In particular, the Project will focus on the transport sector, a priority sector of the GoG where GHG emissions are continuously rising. As Georgia's leading tourist destination located on the Black Sea, the City of Batumi also has a strong interest in sustainable transport. Batumi has been chosen as the main partner for this Project due to its high level of GHG emissions from the transport sector, the active involvement of the city administration in green urban development, and the willingness and ability of the City to provide co-financing for full implementation.

11. This Project aims to promote sustainable transport in Georgia by initially focusing on the City of Batumi and then more broadly on the Region of Achara[6]. While the main focus of the Project will be on GHG reductions from sustainable transport in the City of Batumi, the largest city in the Achara Region, the Project will endeavor to work with several other municipalities to ensure the replication of Project results. To achieve this goal, several key barriers to sustainable transport in Georgia need to be overcome as described in the following text.

Barriers and Root Causes

12. The root cause for unsustainable urban and transport planning in Batumi as well as Georgia and several other cities of developing countries is the implementation of poor planning practices that emphasize short term benefits and rarely consider long term impacts and benefits. To this end, most Georgian municipalities have not had much exposure until recently, to green city development approaches. Batumi City is somewhat unique in that it has recently developed into the region's premier tourist hub and an important economic gateway into Georgia. These developments, however, have been accompanied by the development of large buildings for hotels and other businesses.

13. The City has struggled to keep pace with supporting infrastructure and services for its growing population. Despite their intentions to green the City since 2011, the municipal government in Batumi has seen an exacerbation of the City's traffic flows over the past 5 years. Traffic congestion during the peak tourist season between June and August is common. In addition, traffic jams have been observed as becoming more frequent during the off-season. The

[5] www.covenantofmayors.eu

[6] The Project will focus exclusively on land transport and exclude maritime transport.

recently adopted SEAP for Batumi has a strategy in place for the reduction of GHG emissions from the transport sector. There have been some actions taken with the intention of addressing traffic congestion issues in Batumi including an expanded network of bicycle paths in the old city and some improvements in public transport[7]. These actions, however, have not resulted in any visible improvements in transport efficiencies and by extension, reduction in transport-related GHG emissions. In large part, this is due to the aforementioned poor planning practices that lack a holistic approach where singular actions such as bicycle paths or fuel efficient buses have been implemented in isolation with no resulting GHG emission reductions.

14. A key barrier for the City to overcome is its insufficient capacity and level of "green city" knowledge to plan and implement sustainable transport measures in a holistic manner. The City has developed linkages to external experience in the areas of green development with the CoM and other donors such as USAID, EBRD and ADB. These linkages along with this proposed UNDP-GEF Project should augment the City's efforts to remove capacity and "green" knowledge barriers. This will position the City to remove associated barriers related to the lack of standards and regulations for green development, lack of access to finance for green urban development projects and the lack of public knowledge and awareness of sustainable transport and other green urban development (GUD) activities.

Barrier Analysis

15. Barriers to the development of sustainable urban transport (SUT) for Batumi City include:
    - Insufficient local government capacity to undertake holistic approaches to SUT development;
    - Insufficient institutional exposure to best international practices to set national standards and regulations for SUT and GUD;
    - Lack of access to finance for SUT and GUD initiatives;
    - Lack of public awareness to support and increase demand for SUT and GUD initiatives being promoted by local government.

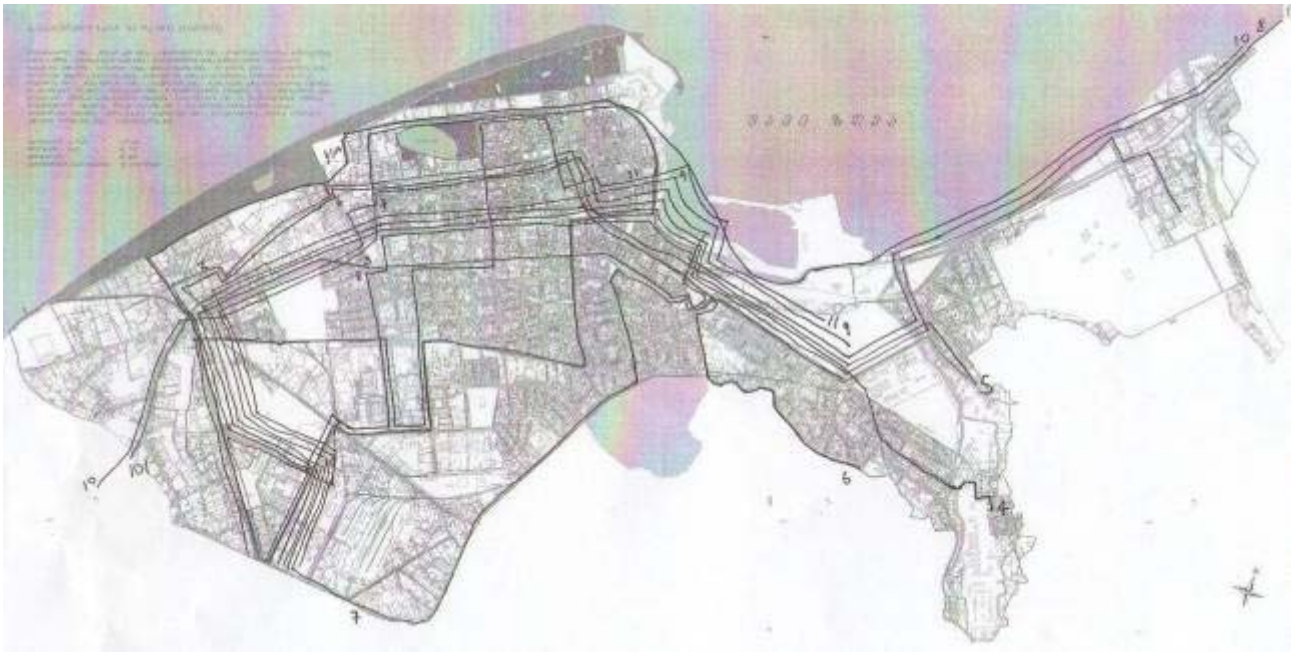
16. The City of Batumi have completed and adopted a SEAP as of April 2014 where the reduction of GHG emissions from the transport sector is their stated top priority. The greening of transport in Batumi has importance to civic leaders of Batumi: it will sustain the positive image of the city as a green tourist destination and reduce the City's air pollution, notably at the end of tourist season when air flows from the Black Sea to the mountains becomes stagnant. Both the Batumi municipal government and the Achara government have intentions of implementing systematic planned development of the City and the region, especially in the transport sector.

17. Batumi, understandably, does not have the capacity to undertake holistic approaches to SUT development:
    - Buses, a primary mode of transport in Batumi as well as the Achara Region have been managed with the intention of being operated and managed in an environmentally sustainable manner. While the public transport company in Batumi, Autotransport Batumi, has implemented several measures along these lines (including a modern bus dispatch center to optimize management of the bus system and the procurement of a new bus fleet in 2005), the outcome of these actions has not resulted in any measurable improvements in public transport efficiencies in Batumi for a number of reasons: a) the buses operate

[7] This included new fuel efficient buses and a dispatch system to locate buses in service.

along congested corridors resulting in journey times being longer than those of private cars; b) the bus network has a number of overlapping routes, as shown on Figure 3 increasing the operating costs and subsidies; and c) decreasing availability of funds to renew their ageing fuel inefficient bus fleet;

Figure 3: Current Bus Network of Batumi



- Cycling as a mode of transport has been encouraged through the construction of a network of cycle paths through some of the streets of the old city, and the placement of bicycle rentals at various points throughout the old city. The cycling paths, however, are seldom used by cyclists except during the peak tourist season when bicycles are mostly used for pleasure rather than as a mainstream mode of urban transport. Primary reasons for this are due to: a) the lack of continuity of the cycling network in the old city; b) the lack of safe and visible cycle road crossings (i.e. no dropped curbs at road crossings and signals to stop cars at a road-cycle path junction); c) lack of enforcement of parking that has resulted in parked cars on cycle paths; d) poorly marked multi-modal use of road space with cycles and cars; and e) lack of awareness on cycling as a mainstream mode of urban transport. In summary, the cycle network needs to be planned holistically with a master transport plan that examines all interactions of a cycling network with land use, traffic patterns, public transport and other modes of urban transport;
- In an effort to reduce traffic congestion in the central districts of Batumi, signage has been placed along roads where vehicle access is restricted. There have been insufficient resources to enforce these restrictions, however, and as a result, there have been no observable improvements in traffic flow efficiencies in these districts. Moreover, traffic congestion in these areas has been observed to be increasing;
- There have been insufficient efforts to closely monitor the energy consumption and GHG emission reductions from the aforementioned sustainable transport efforts. While the need for such a monitoring unit was exposed during the SEAP preparation with the assistance

of USAID, there is insufficient knowledge in the City on the setup of a GHG monitoring unit. Moreover, the City is not likely to find qualified personnel in Batumi to setup and manage this monitoring unit;

- Batumi is preparing with the assistance of USAID a land use master plan (LUMP) with approaches to green urban development. The LUMP, however, is not addressing the issue of an integrated transport plan (ITP). To complete an ITP, the urban land and city architecture development of Batumi must be coordinated with transportation plans. Changes in land-use and geographical expansion of city boundaries will have profound and lasting impacts on transport demands and travel patterns, which ultimately affects transport-related energy consumption in the City. The City floated a tender in 2013 for the formulation of an urban transport strategy which is to be awarded to a foreign firm based in Tbilisi at a price far below market rates for a foreign firm to complete. There is a risk that an ITP for Batumi will not be completed due to lack of sufficient resources;

18. The lack of capacity in the City of Batumi to develop SUT is largely due to *its lack of exposure to best international practices for developing SUT*. As such, neither the City nor the country has any national standards and regulations for developing or implementing SUT measures in Georgia. For example, there are no fuel-efficiency standards for all motor vehicles in Georgia and no requirements or incentives for the introduction and use of hybrid or electric vehicles or vehicles on cleaner alternate fuels. Furthermore, there are no standards for proper dimensioning of cycling paths and roadways for multi-modal use (i.e. shared road space with motor vehicles and non-motorized vehicle (NMV) modes of transport).

19. With insufficient capacity in Batumi city for holistic approaches to SUT development and GUD, *city officials face barriers to finance these green initiatives*. With high capital costs associated with projects to improve urban transport and its infrastructure, it is important for civic officials to be fluent in the issues of green urban development and to be clear on such proposals, outlining in clear terms the green urban development proposal, its long-term benefits and impacts, and the ability of the City to repay such loans. In a business-as-usual scenario, it is likely that financing for SUT and green urban development in Batumi will proceed at a slow pace.

20. Finally, for sustainable transport to successfully adopted in Batumi, there must be public awareness of its benefits. Unfortunately, another barrier to SUT and GUD is the *general lack of public awareness in Batumi as well as the Achara Region on the benefits of sustainable transport and reduced energy consumption*. For example, there have been few if any, effective public campaigns to promote cycling as daily transport in Batumi. In addition, there have not been any effective public campaigns to encourage modal switches from private motor vehicles to public transport, as well as campaigns on improved public transit services in Batumi. Implementing a demonstration sustainable transport corridor in Batumi would raise the visibility and profile of sustainable transport in the City and possibly the entire country. Such a demonstration would catalyse public interest and financing towards the replication of more sustainable transport corridors.

Stakeholder Analysis

21. The stakeholders expected to be involved on this Project on sustainable urban transport and green urban development in Georgia includes:

- The Ministry of Environment and Natural Resources Protection: The MoENRP has the mandate for oversight for natural resource use, planning and conservation, supporting sustainable development in the field of environment through organized environmental planning systems, setting and implementing environmental policies, strategies for environmental protection for sustainable development. They are also being proposed as the executing agency for this Project;
- Ministry of Energy: The MoE has the mandate for oversight of the country's supply and quality of primary fuels. While MoE is not directly involved in any climate change mitigation or efficiency-in-transport activities, it is currently negotiating Georgia's membership in European Energy Community (EEC) and the terms of implementing the European Energy Acquis within the Georgian legislative framework. As this membership would be under EEC membership, Georgia will likely need to introduce fuel quality and fuel efficiency standards for vehicles including a minimum share of bio-fuel usage for which the MoE would oversee;
- Ministry of Regional Development and Infrastructure: MoRDI, as inherent in its name, has the mandate for oversight of modification and modernization of the country's road networks as well as the monitoring of architectural and construction works in Georgia. MoRDI amongst other functions also sets transport policy for Georgia and has a technical agency that is in charge of organizing technical inspections of motor vehicles, a mandatory requirement for all motor vehicles in 2015;
- City of Batumi: Amongst other municipal services that are being provided, functions of Batumi City Hall that are relevant to this Project include the development and implementation management of the City's sustainable transport plan and SEAP that it signed under the CoM. Relevant agencies to be involved with a sustainable transport plan in Batumi would include:
  - The Strategic Planning, Investment and Economic Development Department;
  - The Municipal Transport Department in developing the city transport system through their subsidiary, Batumi Autotransport Ltd., the municipal bus company noted as a progressive enterprise with transparent business practices and modern technologies to improve public transport services in Batumi; and
  - The Architecture and Urban Planning Services with whom agreements and cooperation in developing the pilot GUD concepts are approved;
- Ministry of Finance and Economy of the Autonomous Republic of Achara: The Transport Department of this Ministry have the mandate for oversight and budget allocations for the development of sustainable transport plans for the City of Batumi and other municipalities/districts in Achara;
- Other Municipalities in Achara: These municipalities including Keda, Kobuleti, Khelvachauri, Shuakhevi and Khulo are also seeking to implement a green urban development plan as well as undertaking sustainable transport measures. They seek guidance for undertaking these measures which will in large part be guided by the demonstration projects in urban transport development in Batumi;
- Civil Service Organizations: CSO have played a prominent role in informing public policy, in the case of this Project, on policies to improve public transport, reduce traffic congestion and promoting awareness on sustainable transport efforts being made by Batumi City Hall. There are also two CSOs in Batumi who provide publicity to the City's air quality issues and another CSO, the Civil Society Institute, who are leading the development of Batumi's Urban Development Strategy (BUDS).

Table 6 provides a more complete listing of the stakeholders as well as their roles on this Project.

Baseline Analysis

22. Batumi's population of approximately 180,000 and its 65 km^2 of urban area support its growing economic activities as a port, commercial center, and local industry that revolve around tourism[8]. This growth underscores the recent growth spurt in the number of motor vehicles in the City. Civic leaders understand the importance of addressing the problems associated with increasing urbanization and the need for sustainable transport that has been largely neglected. As of 2014, there has been no officially adopted SUT policy and development approach in Batumi. However, through its association with the CoM, Batumi has completed and officially adopted a SEAP as of April 10, 2014.

23. For Batumi, the SEAP reflected that the reduction of GHG emissions from its transport sector stood as the highest priority. The rationale for the greening of Batumi's urban transport systems is to enhance its image as a tourist destination and generate subsequent economic benefits. For Georgia, its interest in developing green cities and greening the transport sector is along similar lines with the added benefits of developing Georgia into a regional trade hub and tourism destination, reducing the country's trade deficit through decreased reliance on imported fossil fuels, reducing transport-related air pollution from fossil fuels and realizing the resulting the health benefits. The GoG is developing a national policy framework for sustainable transport[9] and a new law on transport; the policy framework has not yet been implemented and the new transport law has yet to be adopted. A national transport plan is also in preparation but has also not been finalized.

24. The SEAP for Batumi provides baseline energy consumption figures from 2011 and attributes GHG emissions from the City to come mostly from energy consumption from residential buildings and transport. Data for Batumi's energy consumption and GHG emissions are shown on Tables 1 and 2. Transport-related GHG emissions for Batumi was estimated to be 128,000 tons CO_2 in 2012 (as detailed on Table 3) and 224,000 tons CO_2 in 2020 under a BAU scenario in the SEAP based on the following:
    - CO_2 emissions are generated from the operation of private cars (30,970 cars), municipal service vehicles (93 vehicles), public transport vehicles (1,285 taxis, 1,757 buses and 1,725 mashrutkas) and commercial transport vehicles (475 small trucks (up to 2 tons cargo) and 310 big trucks);
    - Main fuels used to generate transport GHG emissions are diesel and gasoline;
    - Traffic intensity can be divided into off season (September to May) and in-season (June to August) when intensity is 100 to 150% higher;

Table 1: Energy Consumption for the City of Batumi by Sectors (2011)[10]

Sector	Energy Consumption	Share (%)

[8] Other industries include agricultural processing of citrus fruit and tea, other food processing, shipbuilding and light manufacturing

[9] The policy framework was initially developed by the World Bank and provides statements on developing the concept of sustainable transport

[10] Preliminary data from 3rd Georgian National Communications to UNFCCC, not yet published

	(GWh)	
Residential buildings	436	39
Municipal buildings	21	2
Transport	490	44
Public Lighting	11	1
Other (Commercial, Industry etc.)	152	14
Total:	*1110*	*100*

Table 2: Estimate of 2012 GHG Emissions for the City of Batumi[11]

Sector	Emission reduction (1000 Tonnes CO_{2e})	Share (%)
Residential buildings	69.84	27
Municipal buildings	3.28	1
Commercial buildings and facilities	18.54	7
Transport	128.52	50
Public Lighting	1.96	1
Other (Commercial, Industry etc.)	37.65	14
Total	259.79	100

Table 3: Estimated 2012 baseline GHG emissions from the transport sector (in 1,000 Tonnes CO_{2e})[12]

Subsector	Electricity	Natural Gas	Diesel	Gasoline	Total
Municipal fleet	0.0	0.0	16.0	69.2	85.2
Public transport	0.8	672.0	61,525.8	6,382.4	68,581.1
Private and commercial transport	8.0	1,358.0	19,849.3	38,633.7	59,848.9
Total	**8.8**	**2,030.0**	**81,391.1**	**45,085.3**	**128,515.2**

- Extrapolation of transport GHGs to 2020 based on assumed population increase from 169,400 (2012) to 195,000 (2015) to 200,000 (2020) and estimates generated by "Long Range Alternatives Planning System" (LEAP1) software developed by the Stockholm Environment Institute. Population increase was associated with an increase in motor vehicle ownership based on GDP forecasts;
- GHG emissions are based on weighted average fuel consumption of the various vehicles in the Batumi vehicle fleet;
- Public transport vehicle fuel consumption ranges of 20 l/100 km for gasoline buses to 25 l/100 km for diesel buses with no inclusion of passengers carried on these vehicles.

25. To reduce GHG emissions of urban transport in Batumi, the Batumi SEAP envisages the following activities:

[11] Batumi SEAP 2014 available on http://mycovenant.eumayors.eu/docs/seap/3280_1396512547.pdf
[12] Table 10 in SEAP document with some corrections

a) Promoting active movement such as bicycle and foot travel to improve the condition of the environment and the health of humans. The promotion of these activities in urban planning will increase the attractiveness of the city. The activities will include:
   - Promotion of pedestrian and bicycle movement as the healthy lifestyle among the City's population and tourists as a short-term strategy;
   - Providing bicycle trails including the rental opportunity for bicycles to tourists and planning tourist routes as a short-term strategy;
   - Providing increased walking spaces in places where car transportation will be banned as a long-term strategy;

b) Minimization of urban journeys through smart urban planning. In its urban plans, the City will consider urban development that significantly reduces the necessity of movement within the city through the following:
   - Designing the districts of mixed use where commercial, entertainment and other types of services are accessible within all districts as a short-term strategy; and
   - Promoting services for the residents and tourists via internet thus reducing the necessity of intra-city journeys by motor vehicles as a short-term strategy;

c) Setting limits for the use of high-emission cars in Batumi. The City recognizes that the use of private cars represents one of the largest sources of emissions in Batumi. Despite their importance as a means of urban transport, their increasing numbers are adversely impacting the quality of life and are the primary cause for a deteriorating environment for tourists. Through restricting the use of the private cars, urban transport costs would decrease for the City's residents and tourists and the urban environment would improve significantly due to reduced emissions of various air pollutants and GHGs. Main activities along these lines includes:
   - improving the infrastructure of public transportation, which includes good accessibility to urban transport modes, optimization of routes and stops as a short-term strategy, and developing the various low carbon transport modes of public transportation as a long-term strategy that may include a tramway, electric taxi, cable cars;
   - promoting the use of public transportation, which includes dissemination of information among the population and organization of promotional events as a short-term strategy;
   - transition to the energy efficient technologies, as a short-term strategy, using natural gas for private as well as municipal transport, and then electric transportation as a long-term strategy. The long term benefits of electrical transport are related to the reduction of Georgia's grid emission factor where the Government plans to significantly increase the share of the hydroelectricity power stations in Georgia's energy mix;
   - organization of centralized parking places at the entrance of the city, which would allow the tourists to leave their cars at the special parking places and use the public transportation in the city as a long-term strategy.

26. A complete listing of potential GHG mitigative actions for the transport sector of Batumi as identified in the SEAP is summarized in Table 4. While these measures still need to undergo thorough feasibility studies and be properly implemented, the potential GHG reduction estimates from these actions is in the order 26,375 tons of CO_{2eq} compared to the BAU scenario in 2020 (extrapolated from the BAU Year 2012).

Table 4: GHG reductions from SEAP transport mitigative actions[13]

[13] http://mycovenant.eumayors.eu/docs/seap/3280_1396512547.pdf

Sectors and Fields of Action	Key measures per sector	Implemen-tation Period	Cost	Expected Energy Savings (MWh)	Expected CO_2 Reduction by 2020 [14](ton)
Public Transport	Electric-transport development (electric-taxis, tram, cableway)	2015-20	• Electric-taxis GEL 7.5 million. • Tram cost will be clarified after a feasibility study	10,478	3,112
	Support and development of CNG public transport and fleet renewal	2014-17	• GEL 950,000 for first stage • GEL 14.25 million for completion	-9,458	11,075
	Route Planning and Optimization	2013-15	GEL 25,000 per year	4,500	520
	Public transport services improvement and information campaign	2013-15	USD 100,000 USD per year	2,214	296
Private and commercial transport	Restrictive measures on private cars and encouragement of low emission vehicles	2016-20	Cost to be based on feasibility study for each measure	24,918	6,333
Transport and traffic planning	Restoration and development of transport infrastructure	2014-17	GEL 60 million	8,713	2,239
	Encourage mobility of bicycles and pedestrians	2014-20	GEL 1 million	18,000	2,800
Total				**59,365**	**26,375**

27. Since 2011 and in support of implementing the SEAP, Batumi City Hall has undertaken a number of actions to improve transport efficiencies and to reduce the energy consumed by the transport sector including:
    - The ongoing development of the Batumi Urban Development Strategy (BUDS) under the G3 (Good Governance in Georgia) Program financed by USAID[15];
    - The construction of a City bypass highway to divert through-traffic away from the city center. This highway includes a large number of bridges and tunnels;

[14] The baseline for these emission reductions are 2012 transport-related emissions

[15] In October 2013, the USAID-supported G3 Program provided technical assistance to several cities in Georgia including the City of Batumi towards the development of an urban development strategy. The technical assistance transferred best practices to the City in the field of strategic urban planning. Outputs of the technical assistance amongst other urban development issues included GIS-generated general land use and zoning plans, documentation for urban planning for consistency in plans for future development of Batumi, and strategies to maintain the City's cultural-heritage identity and create green spaces within the City. As of October 2014, the plan was still being developed. There are, however, no overlaps between BUDS and the proposed project. BUDS does not cover the development of a sustainable transport system to support the proposed urban development plans. The proposed project will support the BUDS in tandem with the measures recommended under the "Sustainable Energy Action Plan" (SEAP) through planning and demonstrating some of the key sustainable urban transport measures as detailed in the ProDoc.

- Conceptual plans being developed to move the railway freight logistics hub from the city center between Chavchavadze and Mayakovski streets in the vicinity of Batumi port and the bazaar, to a location outside the City and bringing the passenger railway station into the city;
- Ongoing corridor reconstruction in the central old city of Batumi to increase pedestrian walking spaces and to allow driveways that only allow passage of two medium-sized motor vehicles as a local standard;
- Formation of the setup of Batumi Velo in 2011 to rent bicycles in Batumi's old city;
- A City-issued tender in early 2014 for the formulation of a comprehensive urban transport strategy including public transit route and service optimization, pricing policy, and alternative transport options. Award of the tender is expected later in 2014;
- Completion and official adoption of the SEAP in 2014 whose preparation was assisted by the Winrock International-led NATELI project and financed by USAID;
- Ongoing development of concrete actions for reducing GHG emissions including the transport sector with the assistance of the EC-LEDS program financed by USAID;
- Application for a EUROPAID grant in 2014 for a "Sustainable Urban Demonstration Project" (SUDP) to develop the biogas from sewage system for use in urban transport;
- A 2014 feasibility study for the construction of a bridge between Batumi and Gonio over the Chorokhi River with the assistance of the World Bank, partially addressing the issue of congestion caused by the existing narrow bridge at the southern end of Batumi;
- Application for international technical assistance from INOGATE[16], a facility to be used for hiring qualified experts on Batumi's transport development plans;

28. The City has made efforts to modernize its bus fleet, commencing with the formation of "Batumi Autotransport Ltd." (BTL) in 2004:
    - The City took out a €2.5 million EBRD loan in 2008 for the procurement of 100 low-cost diesel 20-seat buses for BTL, many of which are now in need of replacement;
    - EBRD funded a project (between 2009-11) to improve bus services in Batumi that included European ticketing practices that allowed tickets to be purchased at stores, supermarkets and from bus drivers. The Saunders Group based in Tbilisi served as the lead consultant on the EBRD technical assistance component to the loan;
    - BTL has a dispatch center for their buses installed in 2009 from which bus locations could be monitored through GPS and shared with bus users with electronic signage at bus stops with estimated waiting times;
    - In 2015, new Georgian law will be enforced on minimum technical fitness standards for all motor vehicles. This would include the BTL bus fleet which may add to the cost of operations. The City has been seeking the means to improve the emissions and fuel efficiency of the fleet, and to enhance their image as a green tourist destination;
    - The recent efforts to convert bus fleet to CNG have been hampered by findings that there are technical issues and higher costs associated with the conversion of the current fleet from diesel to CNG. The current plans are to adopt a slower conversion to a CNG fleet due to the higher costs of procuring CNG buses from an OEM. Other options for public transport such as hybrid electric buses or full electric buses are not being considered at this time due to cost considerations (at least $200,000 USD per bus) that are not affordable to the City;
    - There has been no significant progress on greening the bus fleet through encouraging of "green" driving practices that reduce fuel consumption and GHG emissions;

[16] http://ec.europa.eu/europeaid/what/energy/policies/eastern-neighbourhood/inogate_en.htm

- The City reports that the current public transport subsidies in Batumi are in the range of USD 3 to 4 million annually.

29. The outcome of these actions to date, however, has not resulted in any improvement of urban traffic flows in Batumi City. A fundamental cause for this is a lack of government experience in holistic approaches to sustainable urban transport (SUT). Several efforts to improve the urban transport sector have been undertaken in isolation resulting in a high risk of not achieving a positive impact. A holistic approach considers the integration of a number of SUT measures as a prerequisite to a successful pilot demonstration. There has also been a neglect of enforcement transport standards. With no guidance from the national government on the framework for Georgian-specific holistic approaches to SUT, urban transport in the City of Batumi as well as other municipalities governments in Georgia has not been holistically addressed:
    - The Georgian government has taken a liberal approach to its economic development at the expense of deregulation of a number of sectors including the transport sector resulting in weak or non-existent standards and regulations;
    - Notwithstanding the proposed 2015 Georgian law on minimum technical fitness standards for all motor vehicles, technical inspection of transport has been completely abolished. As such, there are no engine efficiency, vehicle emission or fuel quality standards being enforced currently for all motor vehicles in Georgia[17];
    - There has been a neglect of urban development standards including the standards for utility service and road arrangement have led to inadequate planning of the old city center where the narrow driveways are causing obvious problems to residents and need to be reconstructed;
    - The stone pavement of roads improved the aesthetics in the old city but has resulted in low motor vehicle speeds and added safety issues for bicycles;
    - The absence of parking policies in Batumi city center has resulted in parked cars obstructing sidewalks and hampering traffic flow efficiencies. Political opposition to establishing the park-and-ride lots or parking free zones may be strong, unless strong communication strategies and PR campaigns are conducted and stakeholder support secured;
    - Cycling has become more popular in Batumi with 120 bicycle terminals where people can rent bicycles along the seashore. The cycling network, however, is not visible in the old city with the perception that cycling in the old city is not safe, due to the stone pavement and the narrow roads that are shared with private cars.

30. Batumi City also reports that increases in traffic volumes and congestion have been observed since 2011 along several corridors including:
    - The Chavchavadze-Mayakovsky corridor where railway traffic interferes with traffic flows. To date, the City has not made any investments into reducing the congestion;
    - The Gorgiladze-Baratashvili-Chavachavadze corridor (GBC) which is a main thoroughfare on the perimeter of the old town, frequented by tourists. The City suggested that this corridor could serve as a demonstration or pilot for sustainable transport initiatives to improve traffic flows.

[17] The European standards of fuel are being quoted and some of the type of fuel are marked as Euro-Diesel or Euro-gasoline although there is no independent or state control of the fuel quality which is believed to be below the European standards even in cases when this is claimed

STRATEGY

Project Rationale and Policy Conformity

31. The 2009 Second National Communication (SNC) of Georgia underscored the country's recognition that GHG emissions in Georgia from 2000 to 2006 were mainly from the energy sector that includes transportation. Moreover, the transport sector was singled out as one of the fastest growing sectors of the economy, especially in road transport, where GHG emissions had increased significantly. GHG emissions from transport accounted for 31% of all 2006 GHG emissions from fossil fuels combusted in an increasing number of cars, mainly second-hand vehicles, ageing municipal and intercity buses fleets as well as trucks; these emissions are expected to grow to 39% by 2025 under a BAU scenario. The SNC mentions urban transport as an area where GHG emission reductions need to be implemented through "correct transportation policies, consumer preferences, or technologies that serve to increase fuel economy or promote alternative fuel uses, offer large opportunities for reducing future energy consumption, decreasing pollution, and increasing energy diversity". Feasibility studies to optimize city transport in Batumi were recommended.[18]

32. The Third National Communication (TNC) that is scheduled for completion by late 2014 follows up on the recommendations of the SNC. In relation to this Project, this includes resources being allocated to implement the SEAPs by various cities in Georgia, including the SEAP for Batumi that prioritizes the transport sector for GHG reductions. Mitigation proposals mentioned in the TNC include interventions provided under this GEF Project.

33. This Project is also consistent with the 2011-15 UNDAF for Georgia, under UNDAF Thematic Area 3: Disaster Risk Reduction, Outcome 4: Underlying disaster risk factors are reduced, focusing on sustainable environmental and natural resource management.

Country Ownership: Country Eligibility

34. The GoG ratified the UN Framework Convention on Climate Change on 12 May 1994.

Country Drivenness

35. The attraction of foreign direct investment has been a key priority of the Georgian government for the last 10 years. The main economic policies of the Georgian Government are covered under its "For United and Powerful Georgia (2004-09)" by the Ministry of Economy and Sustainable Development (MoESD). This document had provided guidance to the strengthening of the Georgian economy through amongst other actions, the liberalization of entrepreneurial activities, economic deregulation and the development of tourism, communication and transport infrastructure. The document to some extent informed Georgian cities of the necessity of green development as a means to optimize the country's investments into strengthening of their economy[19]. The United Transport Administration and the Department of Roads were in charge of transport infrastructure under MoESD during the 2004-11 period. When these agencies were abolished in 2011, they were moved under the Ministry

[18] Pg 197 of SNC Report for Georgia

[19] The GoG is currently preparing an updated version of this document

of Regional Development and Infrastructure (MoRDI) in 2011 that has the mandate for the modernization of road infrastructure for Georgia.

36. The GoG is also keen to maintain the image of Batumi as a premier tourist destination. In doing so and with inputs from the Municipality of Batumi with regards to the condition of the city, the MoENRP is spearheading the country's national green cities approach, using Batumi's initiative to join the CoM movement as a pilot for a national approach to green urban development. In the case of Batumi, the greening of urban transport development to reduce GHG emissions is viewed as an opportunity to inform national policies on GHG reductions and energy efficiency in the carbon intensive urban transport sector.

Design Principles and Strategic Considerations

37. Green urban development is a crucial issue for Georgia. With over 60% of Georgia's population lives in cities, problems related to urban mobility are growing with the predominant trend of rapid increases in the use of carbon intensive private vehicles. This has a direct impact on public transport in Batumi as well as other cities in Georgia: the share of public transport for urban journeys is decreasing and the quality of public transit is deteriorating. Governmental efforts to address these issues are focused primarily on providing more space and roadways for use by private vehicles rather than developing less carbon intensive modes of urban transport. In addition, private vehicle owners do not have real incentives to travel efficiently and tend to choose less efficient but cheaper cars or more powerful cars for those who are wealthier.

38. The objective of this Project aside from assisting Batumi adopt a green approach to urban development, is to directly generate GHG reductions from sustainable urban transport demonstrations in Batumi and indirectly generate GHG reductions from regional and national policies on the urban transport that have been informed through the demonstration projects in Batumi. The key to meeting this objective for Batumi is to holistically plan and implement a number of sustainable transport measures centred in the old city where there will be higher visibility of such efforts. This heightened visibility will inform other municipalities of the Achara Region as well as other cities of Georgia on how to successfully reduce the carbon intensity of urban transport.

39. Prior to implementing a pilot demonstration on sustainable urban transport measures, the Project will need to support the formulation of an integrated sustainable urban transport plan (ISUTP). The key to successfully implementing an ISUTP is careful preparation that adopts a holistic approach to all modes of urban transport that assesses their impacts on the City and determines their feasibility as an integrated urban transport system. An example of one sustainable transport measure in an ISUTP is shown in Figure 4, where the Batumi bus network is a consolidated, removing the overlaps that exist in the current network as shown in Figure 3. The finalization of a consolidated network would need to complement and even re-shape the land use master plans (LUMP) that are currently under preparation by the City.

Figure 4: Proposed consolidated bus network for Batumi[20]

40. The SUT measures to be demonstrated on this Project need to be located in one particular area or corridor that will maximize the GHG reduction of these measures. SUT measures on their own or in isolation have a high risk of not achieving a positive impact. For example, synchronized lighting by itself may not result in GHG reductions if the City cannot control the excessive number of private vehicles along the corridor that reduce traffic flow efficiency. Another example is encouraging city bicycle travel in isolation without fully implementing a parking strategy and reducing the number of private cars in the old city: this will not result in significant modal switches to bicycles. Integration of sustainable transport measures is a prerequisite to a successful pilot demonstration.

41. As mentioned in Para 30, Batumi City Hall has suggested that the Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor as shown on Figure 5, a main thoroughfare on the perimeter of the old town frequented by tourists; the GBC corridor could serve as a demonstration for SUT initiatives and less carbon intensive modes of transport. Sustainable transport measures along the corridor could include synchronized lighting to improve traffic flows, restrictions on private car access or parking on the corridor, enforcement of the proper use of dedicated bus lanes, use of new CNG buses, improved bus stops with multi-modal transfers between other buses, park-and-ride facilities, bicycles, taxis and pedestrian zones. The City says it is an obvious choice for urban transport improvement, tailoring the interventions for the summer season when traffic congestion and emissions are at their highest and when the City's green and environmentally friendly image is at its highest risk. GEF funds can be used to prepare the business plans, feasibility studies, and pre-investment studies. More importantly, implementation of sustainable transport along a certain corridor will need to have strong management support and sound execution efforts as it will serve as a template for other cities in the Achara Region and Georgia to follow.

[20] Courtesy of Saunders Group, Tbilisi

Figure 5: Proposed Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor

42. Such a demonstration will have significant positive impacts including:

- piloting activities to reduce carbon intensity of the urban transport modes. This can be achieved by increasing the number of private car owners to park their cars at "park-and-ride lots" near the terminuses of the Gorgiladze-Baratashvili-Chavachavadze corridor, and to take either public transit or cycle from these lots into the demonstration area (thereby reducing the number of "carbon-intensive" private vehicle trips into the demonstration area);
- demonstrating improved fuel efficiency of new OEM CNG buses travelling along the selected corridor. By implementing a dedicated bus lane, synchronized lighting, parking restrictions and restricted private vehicle access along a continuous stretch of Gorgiladze Street, the travel time for public transit buses to carry passengers will result in reduced journey times and GHG reductions along the demonstration corridor;
- piloting these SUT measures that will inform national and regional policy on SUT, which will demonstrate the benefits of holistic urban planning and execution through considerations of integrated land use, optimized traffic control and management, low carbon intensive modes of urban transport and vehicle fuel efficiency. These policies can then encourage efforts to replicate the Batumi demonstration within the Achara region after completion and substantive operation of the Batumi demonstration, and towards the latter stages of the ISTBAR Project.

Project Objective, Outcomes and Outputs

43. The proposed Project is intended to address the above barriers, assist Batumi in the accelerated development of sustainable green transport initiatives, and to facilitate replication of green sustainable transport initiatives in other municipalities of the Achara Region.

44. **Component 1: Development of sustainable urban transport plans in Batumi and the Achara Region.** To support Georgia in its intention to adopt green urban development plans in the context of GHG reductions, the Project will support ongoing initiatives to formulate sustainable urban transport plans for Batumi City. The expected outcome from the outputs that will be delivered by the activities that will be carried out under this component is the adoption of sustainable urban transport plans for the City of Batumi and other municipalities of the Achara Region. This outcome will be achieved through:

- *Output 1.1: Draft integrated sustainable urban transport plan (ISUTP) for the City of Batumi:* This output addresses the need for a comprehensive ISUTP that will form the basis for subsequent investments by Batumi City, some of which will be supported by GEF, and serve as the underpinning strategy that will inform regional strategic plans. The ISUTP will address all urban-related sustainable transport issues; identify funding modalities and sources from state and municipal budgets as well as corporate and philanthropic sources; and serve as a template in the preparation of green urban development plans for other municipalities of Achara Region. However, with no precedence of sustainable transport and "green urban development" (GUD) in Georgia, the demonstration activities under Outcome 3 of this Project will provide valuable lessons learned for the refinement of ISUTP for Batumi. Key outputs of this component will be a comprehensive ISUTP that is adopted and subsequently refined by Batumi City Hall during the course of the Project. *To deliver this output, GEF assistance is required for the following activities*:
  - Conduct traffic counts, end-to-end journey analysis, destination mapping, trip generation and modal split for all forms of transport in Batumi in an agreed format that can be used as baseline data. Given that this is a large task, GEF-supported data collection should be restricted to sites where GEF investments will be made, and to demonstrate activities required for transport data collection and protocols that need to be continued after the EOP. It is expected that the City will also support and co-finance this data collection at other priority sites, likely at locations where congestion is currently a problem at peak hours;
  - The procurement, commissioning and necessary training in the use of a computer traffic model (such as Aimsun Microsimulation[21]) to assist in the development of the ISUTP and emerging infrastructure level requirements. The model will form the baseline for understanding city travel behaviour and to test infrastructure level interventions. The traffic model will feed information into the ISUTP and efficiently provide information on optimizing transport-related investments that will meet present needs whilst also addressing future transport needs of Batumi;
  - Stakeholder consultations to formulate the City's vision for its future growth and urban mobility needs that can be used in the traffic model;
  - Integrated planning for target corridors for improved public transport routes and feeders and ticketing policies with the aim to increase ridership and modal switches from private cars through improved delivery public transit services and decreased

[21] www.aimsun.com

journey time. This should include transport from the proposed park-and-ride lots (located in the outer areas of Batumi) to the old city;
- o Formulation of awareness raising plans to influence urban travel behaviour and support smarter choices including partnerships with public transport providers and a comprehensive walking and cycling plan;
- o Integration of the plan with emerging and adopted spatial plans that integrate environmental and public concerns through extensive public consultation processes;
- o An action plan setting out the necessary steps, performance targets, phasing and delivery of the investment over a 5-year period and beyond in a 15-year timeframe;
- o A detailed business case identifying the level of investment required, the payback period, funding sources and procurement criteria for key infrastructure projects that will feed into detailed feasibility studies proposed under Output 2.1;
- o An analysis of the potential of sustainable transport to stimulate the tourism sector and policies required to facilitate;
- o Estimates of GHG reductions that will be achieved with proposed sustainable transport interventions;
- o A comprehensive maintenance plan to sustain quality services of the public transit network;
- o Periodic stakeholder reviews of the ISUTP throughout the course of the Project;

- *Output 1.2: Adopted ISUTPs for other municipalities of Achara:* This output will address the support required for the preparation of ISUTPs for other municipalities of the Achara Region. Development of their plans will follow the activities employed to develop the Batumi ISUTP as well as the spatial development plans for the Achara Region that may also include improving intra-city and inter-city bus travel using CNG buses. ISUTPs will be developed for Acharian municipalities where sustainable transport is a priority, where potential exists to reduce GHG emissions in a cost-effective manner, and where co-financing from the municipalities is available. In addition, lessons learned from the implementation of sustainable transport measures in Batumi (from Outcomes 2 and 3) will improve the quality of SUT measures planned for these other municipalities. *GEF assistance is required for the technical assistance to prepare ISUTPs for these other municipalities;*

45. **Component 2: Development of specific feasibility studies and functional plans for low carbon transport in Batumi.** Using the products from the partially completed ISUTP from Output 1.1, this component will support the development of specific feasibility and functional plans[22] for implementing sustainable transport activities along a selected corridor in Batumi. Based on the City's recommendation of developing the 2.2 km Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor for sustainable transport, this component will support planning and development of the specific measures to lower the carbon intensity of travel along this corridor. The expected outcome from the outputs that will be delivered by the activities carried out under this component is the development of feasibility studies and functional plans for specific sustainable urban transport measures in Batumi that can be leveraged for financing and implementation. This outcome will be achieved through:

- *Output 2.1: Feasibility study for SUT along Gorgiladze-Baratashvili-Chavachavadze corridor*. This feasibility study will use data collected from Output 1.1 to prepare conceptual designs of this corridor that will cluster SUT measures to maximize its GHG

[22] A functional plan is a detailed engineering plan complete with sufficient detailing that would allow a contractor to procure, install and construct.

reduction potential. The feasibility study will examine the measures to be taken in the context of the ISUTP with a public transit central transfer hub likely to be located at the Chavachavadze-Gogebashvili junction near the cable car, and possibly a park-and-ride lot at the western terminus. *GEF assistance is required for the preparation of the feasibility study to determine optimal designs along this corridor using best international practices for*:

- dedicated bus lanes;
- signals to be synchronized for efficient passage of public transit;
- consolidation of the number of bus routes going through the corridor[23];
- location and economics of park-and-ride lot at western end of the corridor;
- location and forecast of passenger loads of multi-modal bus stops for transfers to feeder buses, rental bicycles and pedestrian zones along the corridor;
- parking restrictions along the corridor to improve the efficiency of traffic flows, targeting public transit, and minimization of journey times;
- maximizing fuel efficiency for new CNG buses for public transit[24];
- encouraging increased public transit ridership through enhanced bus stops with bus locators, estimated waiting times and conveniently located bicycle rental racks;
- efforts to enforce proper usage of SUT measures mainly related to enforcing private car usage restrictions in bus lanes and restricted parking areas;
- consultations with all affected stakeholders including bus and mashrutka drivers who will be impacted by these measures. Consultations will need to address new roles for these public transit vehicle operators when SUT measures are being implemented.

The study would also assess the short-term environmental impacts of implementing this SUT corridor, establish a business case for these interventions, identify solid sources of financing these interventions, propose a scheduled action plan, and serve as the basis for subsequent GEF investment support. While one of the adverse short-term impacts of this demonstration will be the moving of traffic congestion to another corridor, the demonstration SUT pilot will also remove private cars from the old city area through increased use of the proposed park-and-ride lots, and the increased use of bicycles. The anticipated increased congestion along other corridors can be resolved through undertaking similar SUT measures. This domino effect throughout the development of SUT in Batumi will eventually lead to an outcome of reduced carbon intensity of urban mobility in Batumi.

- *Output 2.2: Functional plan for dedicated bus lane, bus stops, synchronized signals and a park-and-ride lot along demonstration corridor*. Detailed engineering designs will be prepared with dimensions and specification of materials to be used for these facilities. The designs will be accompanied by an implementation plan specifying the sequencing and phases over which these facilities are developed, and the required financing outlays. *GEF assistance will be required for the preparation of this functional plan using best international practices.*

- *Output 2.3: Feasibility study and procurement plan for CNG buses in Batumi[25].* This output will be divided into 3 phases:

[23] There are currently 3 bus routes and over 8 mashrutka routes through the corridor

[24] Fuel efficiencies would result from increased ridership of CNG buses and reduced journey times of these buses through the demonstration corridor

[25] For buses, CNG was chosen by the Government of Georgia and the City of Batumi due to its cleaner emissions than

- Phase I to determine the CNG bus models that represent the best value for improving transit services along the Gorgiladze-Baratashvili-Chavachavadze corridor;
- Phase II to determine CNG bus models along other priority corridors of Batumi. This will to a large extent be determined by forecasts of increased passenger loads resulting from improved public transit services. The growth of the fleet of CNG buses will also increase the need for a dedicated CNG station for the buses since re-fuelling time of these buses can be between 30 to 60 minutes per bus; and
- Phase III to prepare a long-term procurement plan that will allow the City to fiscally plan the growth and renewal of its public transit fleet to cleaner fuels such as CNG. This plan may include a dedicated CNG re-fuelling station for buses costs in the order of USD 5.0 million, which would likely delay the investment in a larger CNG fleet and the CNG re-fuelling station until after the EOP.

GEF assistance is required in the preparation of Phase I;

- *Output 2.4: Functional plan for an expanded, integrated and safe bicycle network in the old city area of Batumi.* This plan will a) assess the current state of the existing bicycle network and rental bicycles; b) provide recommendations on improving the usage of the network; c) include detailed drawings of properly dimensioned bicycle paths and their location to extend the network beyond the coastal zone to tourist and priority commercial areas and to public transit stops; and d) improve integration with the existing bicycle paths in the old city around City Hall and towards the southeast areas of the old city. The plan will propose an expanded bicycle network with improved visibility and connectivity, measures for enforcement of the bicycle right-of-way (RoW) that includes removal of parked cars on the RoW, priority and safer signaling for bicycles at road crossings, location of rental racks near bus stops, and ease of payment of rental bicycles (that may include the use of the same ticket for buses or the park-and-ride lots). *GEF assistance is required for the preparation of this functional plan;*

- *Output 2.5: Feasibility study on Batumi's overall parking strategy and policies.* The main purpose of the new parking management strategy will be to formulate a parking policy that will improve public incentives on using public transport and cycling within the city of Batumi and discourage the use of private cars in the city's central districts. This feasibility study will provide the designs for parking meters and park-and-ride systems to help with improved traffic management along the demonstration corridor. This may include the sizing of a park-and-ride lot at the western end of the GBC corridor, as well as other locations of other park-and-ride lots and their supporting public transit services. The economic feasibility and environmental impacts of these lots will be examined with action plans proposed for their implementation complete with financing plans and expected revenue streams to service any financing debts. The potential for the City to outsource parking regulations in Batumi should also be examined. In addition to parking pricing at park-and-ride lots and street meters, concessional parking pricing policies will also be considered for residences and businesses in the City's central district that is the target for greening, similar to other cities in Europe and possibly other cities with Sustainable Transport Projects that have received support from GEF. *GEF support is required for the preparation of this study;*

diesel buses (i.e. less particulate matter). In addition, the cost of other clean bus technologies is too costly for the City including clean diesel buses and hybrid buses that cost more than 3 times the cost of CNG buses

- *Output 2.6: Feasibility study on hybrid electric or electric vehicles for taxi fleets*[26]. The main purpose of this study is to identify the hybrid electric vehicles (HEVs) or electric vehicles (EVs) that could be used to modernize and "green" public transport in Batumi. The feasibility study will also examine the costs and possible financing schemes or mechanisms that will allow current taxi owners to seamlessly convert to greener vehicles while servicing the debt for the EV or HEV while continuing to earn a living. The City will then be enabled to leverage investors for the piloting and subsequent scale-up of a fleet of hybrid and electric taxis. *GEF support is required for the preparation of this study and the seeking of investment for piloting and scale-up of EV and HEV fleets for Batumi.*

46. **Component 3: Investments in SUT measures in Batumi.** This component consists of support for direct investments into reducing carbon intensity of urban travel along the 2.2 km Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor. The expected outcome from the outputs that will be delivered by the activities carried out under this component is improved public confidence in public transit that will encourage modal shifts from private cars. This outcome will be achieved through:

- *Output 3.1: Investment in improved traffic flow.* This output consists of direct investments into synchronization of lighting along selected corridors and implementing parking restrictions along the corridor to create more road space for moving vehicles. The impact of these investments should improve the public's confidence of the City's efforts to reduce traffic congestion in the City. *GEF investments will be considered for*:
  - The installation, commissioning and deployment of adaptive control systems for at least 3 sets of synchronized traffic signals. The location of the systems for the synchronized traffic signals will be along the GBC corridor. This investment will include sensor technology to detect oncoming buses on a dedicated bus lane and change traffic signals that will minimize wait times at various intersections. The impact of this technology will be to minimize journey times for public transit vehicles and improve the quality of public transit services as an urban transport mode. This investment will be up to a maximum of USD 15,000 based on detailed design activities from Output 2.2;
  - The creation of parking spaces for visiting cars as well as residents affected by the SUT measures which will restrict parking along the corridor up to a maximum of USD 50,000. Pavement of parking lots or spots along side roads and the installation of parking meters are the capital expenditures required to create these parking spaces. In addition, a strategically located park-and-ride facility will be constructed near at a location near the western terminus of the corridor to reduce the volume of private cars in the old city. Exact locations and designs for these parking measures will be determined through the findings from Output 2.5;

- *Output 3.2: Investment in improved public transit services.* The impacts of these investments are designed to improve the public's confidence that public transit services are competitive with private car usage to the extent that modal shifts from private cars will be encouraged. *GEF investments up to a maximum of 25% of the total investment cost of each measure or USD 130,000 for the entire output will be considered for:*
  - Creating bus priority lanes (2 x 2.2 km) to reduce bus journey times through congested traffic corridors;

[26] For the taxi fleet, hybrid electric or electric technologies for taxi fleets were selected based on their declining costs, and their GHG reduction potential. CNG taxis also may result in higher GHG emissions given the potential for higher GHG emissions from these taxis from CNG refuelling and the combustion of methane in these taxis under less than ideal stoichiometric ratios that would result in tailpipe methane emissions.

- Hardware costs for the provision of "real time" information for passengers on electronic display boards at bus stops and via SMS and mobile apps that track the route and predict the arrival and departure times of services;
- Upgrading bus stops with improved seating, lighting, shelter, level access and passenger information**.** This investment could also be made with corporate sponsors for advertising space that would add quality and value to existing investment plans;
- The "incremental" cost of new CNG buses[27] that would operate along the corridor. Incremental cost can be defined as the cost differential between a new diesel bus and an equivalent OEM-supplied CNG bus;

- *Output 3.3: Investment in the cycling network.* This output consists of direct investments into improvements to the existing bicycle network to include improved visibility of cycle pathways and signage, more conveniently located cycle parking, dropped kerbs, and safer intersections for cyclists and motor vehicles. The exact improvements to be made will be determined through the feasibility study from Output 2.4. *GEF investments up to a maximum of 25% of the total investment cost of each measure or USD 75,000 for the entire output will be considered for*:
  - Construction and rehabilitation of more than 6.0 km of visible bicycle paths into the old city as an extension to the current network around the seashore and to Batumi City Hall. The new cycle paths will improve connectivity of the network and be better integrated with the existing public realm and pavements including improved signage, lines, dropped kerbs and tactile paving, and strictly enforced parking restrictions along the cycle paths;
  - Provision of cycle parking at key nodes, points of arrival and interchanges. This would include the supply and fitting of simple bicycle hoops (for locking), cycle shelters, and safe (signal controlled) crossing points for cyclists;
  - Increased access to bicycle rentals through additional bicycles strategically located near bus stops to facilitate inter-modal transfers;
  - A school campaign to promote cycling as well as a Batumi cycling day.

For GEF supported investments, Project funding for any one specific investment shall not exceed 25% of its total investment cost.

- *Output 3.4: Institutional mechanism for monitoring carbon reductions from SUT measures in Batumi and to raise public awareness of SUT.* This output consists of technical assistance to the City of Batumi on the best international practices for direct monitoring of energy consumption and carbon emissions from urban transport in Batumi. The objective of this proposed monitoring unit in the City is to provide best estimates of carbon reductions resulting from SUT measures undertaken. This institutional mechanism will also include a policy mechanism to ensure enforcement of bus priority lanes for buses only, the impact of which will be higher usage of public transit over private car usage. With unique methods in monitoring carbon reductions from SUT measures, technical assistance will be provided to Batumi City Hall on conducting the necessary traffic surveys to estimate these carbon reductions to a predetermined confidence level[28]. These findings can then be reported to MoNREP and disseminated by City Hall as a means of raising

[27] The incremental cost is defined as the cost difference between a CNG bus and its equivalent diesel bus but up to a maximum of USD 25,000 per CNG bus

[28] UNFCCC methodologies for sustainable transport require 90% confidence in the surveys translating into a survey involving over 10% of passengers on their travel modes. The confidence level of the Batumi surveys for SUT will be determined during the Project based on available resources.

awareness of SUT measures undertaken[29]. *GEF assistance is required for the technical assistance in the setup of these surveys and raising public awareness of the dissemination of SUT measures in the City of Batumi*.

47. **Outcome 4: Development of sustainable transport plans developed for other municipalities in Achara Region and Georgia.** This component focuses on replication of the demonstration strategy in Batumi into the other municipalities of the Achara Region. With sustainable transport plans being developed in at least three (3) other cities of the Achara region from Output 1.2, the expected outcome from the outputs that will be delivered by the activities carried out under this component will be sustainable urban transport plans being adopted in other Achara and Georgian municipalities. Through this initial support from the Project, the outputs from this component in setting up this institutional mechanism for promoting sustainable transport and more broadly, green urban development, will provide assurances that the development of green cities in the Achara Region and the entire country will be sustained beyond the EOP. This outcome will be achieved through:

- *Output 4.1: Institutional mechanism for promoting sustainable urban transport and green urban development*. The lessons learned from implementing SUT measures in Batumi need to be disseminated to a wider forum. In close collaboration with the Achara Regional Government, with officials from other local municipalities in Achara and other regions in Georgia will be invited to a series of workshops and seminars (including two National Workshops) to formulate their own projects in SUT as well as other green urban development opportunities. Knowledge products from Outcomes 1, 2 and 3 will be disseminated to other municipalities in Georgia to provide a forum for knowledge transfer and feedback. The feedback will be used to refine the policies, standards, regulations and knowledge products from these outcomes. Activities of this component will also facilitate the establishment of an institutional mechanism to support cities in Georgia who wish to develop of SUT and GUD plans through participation with the EU Covenant of Mayors or other similar movements. *GEF technical assistance will be required for preparing and conducting these workshops with MoNRE as well as soliciting workshop feedback and preparing workshop proceedings;*

- *Output 4.2: Feasibility studies and functional plans for SUT measures in other Achara municipalities*. Technical assistance will be provided by the Project for the preparation of feasibility studies and functional SUT measures for at least 3 other municipalities of Achara, all of which are smaller than Batumi. Lessons learned from the preparation of the Batumi SUT plans and their SEAP will be used in the preparation of similar studies and functional plans for these Achara municipalities. This would include determination of the baseline energy consumed by the municipality for transport, identification and prioritization of opportunities for energy savings, and indicative costs of energy and carbon reduction opportunities. The quality of these studies and plans and their forecasts for reduced energy consumption will be more attractive for investment. The Project will match the various SUT feasibility studies with appropriate financing sources for the Acharian cities to increase the likelihood of the SUT measures to be financed. *GEF assistance will be required for the preparation of these functional plans and identification of financing sources for these SUT measures;*

[29] The means of dissemination will be determined by the Project that may include web postings, TV and radio spots, pamphlets and promotional campaigns such as “car-free days”.

- *Output 4.3: National sustainable urban transport policies*. At the national level, MoNREP will coordinate efforts by the Government of Georgia to develop SUT and other GUD initiatives by its municipal governments. To this extent, national policies need to be formulated to define sustainable urban transport and green urban development, provide the associated regulatory framework for its implementation, and identify funding modalities and financial mechanisms for sustainability. Since the Project is supporting SUT initiatives that will inform national green policies, the associated regulatory framework and policies, the Project can initiate the formulation of a SUT policies. To achieve this output, *GEF assistance will be required to formulate the framework for national SUT and GUD policies including*:
  - Defining national criteria for SUT and GUD for municipalities;
  - Analysis of existing legal and regulatory system against the criteria of GUD in transport;
  - Identification of key strategic directions of national urban development policy with respect to SUT[30]; and
  - Introduction of eco-standards in SUT development for municipal assets.

48. Without these planned interventions and successful demonstrations for sustainable urban transport in Batumi, it is difficult to envision any further greening of transport in Batumi and for other cities in Georgia. Without the GEF project, the current knowledge base in Batumi City as well as other municipalities in Georgia will not be sufficient to successfully develop sustainable urban transport projects, and there will not be sufficient capacity in the municipalities to prepare sustainable urban transport projects and other green urban development initiatives to attract sufficient financing. These projects tend to have high capital costs and therefore, the municipalities need to be clear on the cost and benefits of SUT and GUD financing applications. Without the removal of the identified barriers, the business-as-usual practices for urban development and the lack of best international practices for developing sustainable transport will prevail. More significantly for the Government of Georgia, GHG reductions from the transport sector will continue to grow.

49. Figure 6 is a flowchart of how the Project will be implemented. Figure 7 is an indicative implementation schedule of how the ISTBAR Project will be implemented.

[30] This could include more emphasis on the use of traffic sensing technology which can be deployed on dedicated bus lanes and traffic hot spots that would assist a City in traffic surveillance, incident detection, emergency response and public transit fleet management. This will ultimately assist municipal governments in transitioning to lower carbon intensive forms of urban transport.

Figure 6: Project Flowchart

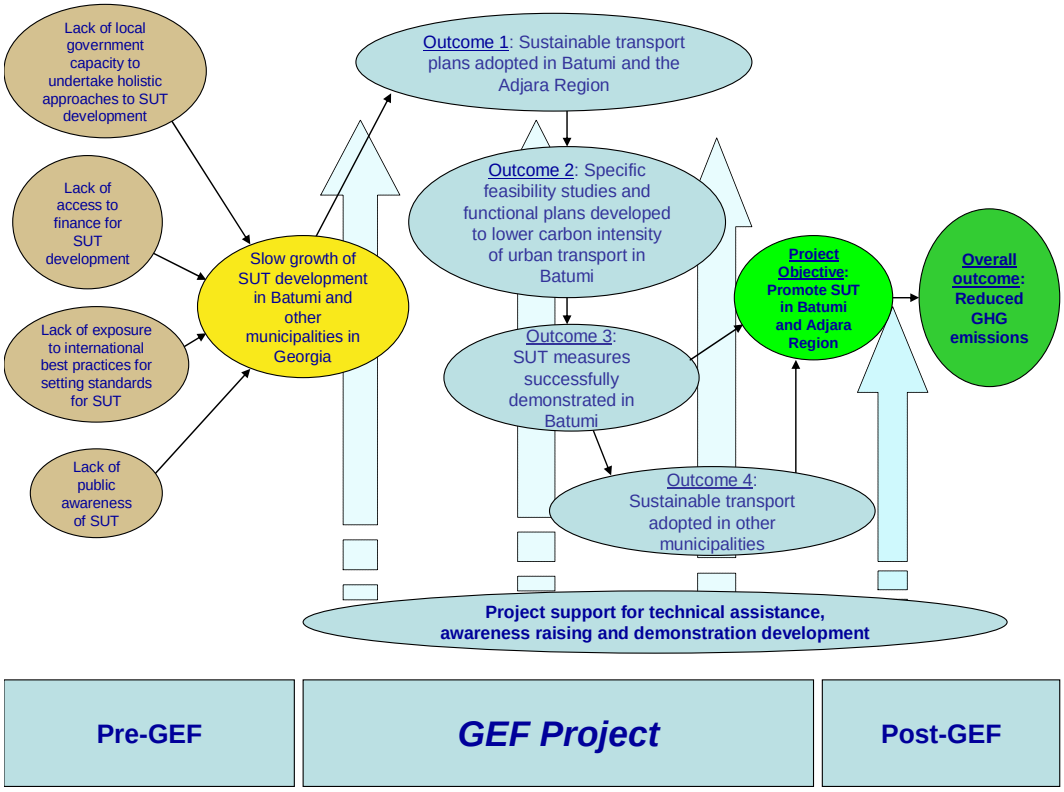
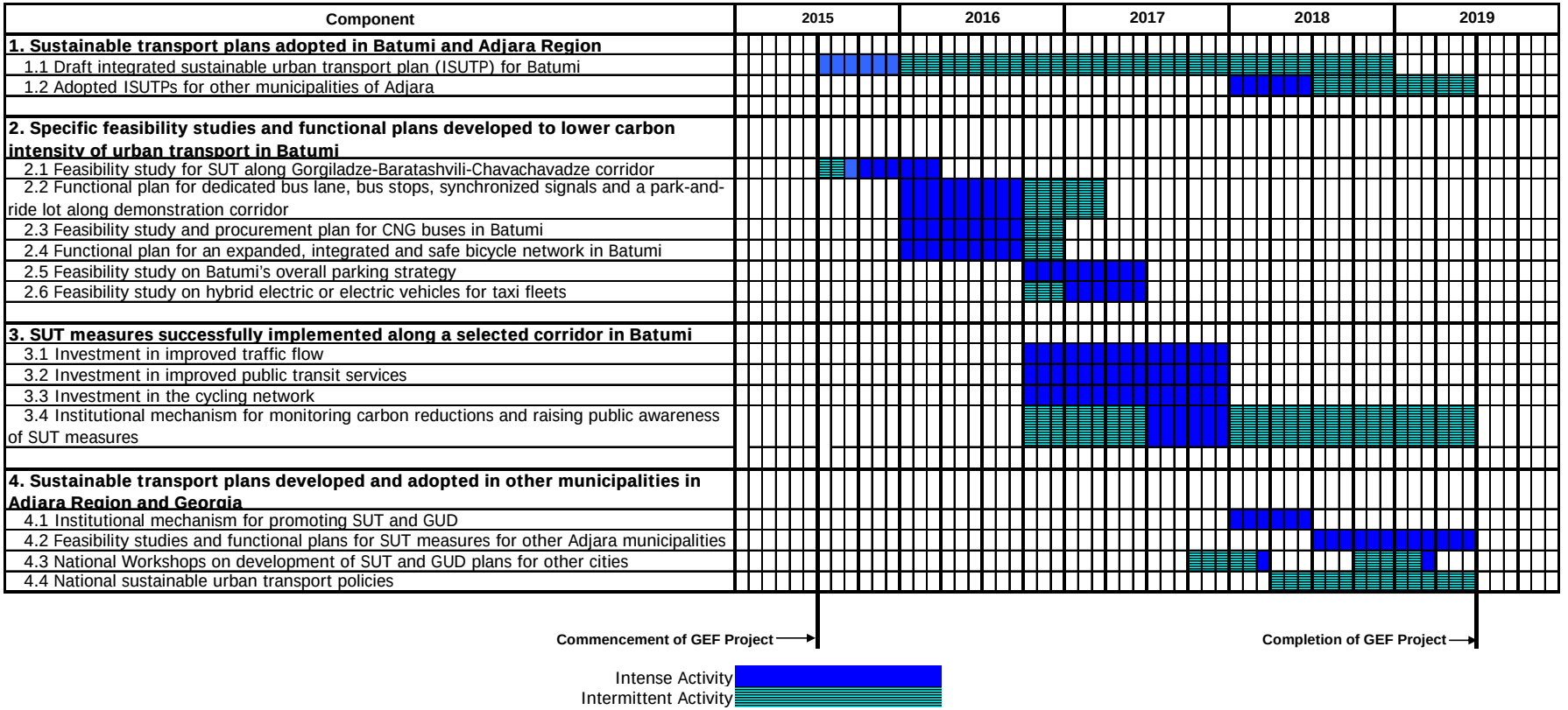


Figure 7: Indicative Implementation Project Schedule



Key Indicators, Risks and Assumptions

Indicators

50. Global environmental benefits directly associated with this Project are initially estimated as a cumulative total of 877 tonnes of CO_{2e} by the EOP by implementing improved public transit services, parking strategies, improved traffic flows along a selected corridor of Batumi, increased use of cycling and other measures introduced by this project. With the implementation of plans and policies formulated through this Project, the 877 tonnes of GHG emission reductions for the City of Batumi will be realized during the Project, an action towards the ER commitments made under the Covenant of Mayors of approximately 26,375 tonnes of CO_{2e} per year by the EOP as shown on Table 4[31]. Detailed calculations of the global environmental benefits from this Project are provided in Annex II.

51. The most direct impact of the proposed Project as it relates to core GEF objectives is the reduction in CO_2 emissions from pilot sustainable transport initiatives designed in Component 2 and implemented in Component 3. These transport-related emission reductions will demonstrate a shift away from the carbon intensive modes of transport, and catalyze interest towards further investments into GHG emission reductions in the carbon intensive urban transport sector. In addition, there are other key impact indicators to gauge the success of the Project and improve sustainability of the ISTBAR Project including:
    - Tonnes of CO_2 saved through improved traffic flows, user-friendly public transit along a selected SUT-improved corridor (Component 3);
    - Number of ISUTPs (Component 1);
    - Number of feasibility studies and functional plans for SUT projects in Batumi (Component 2);
    - Number of kilometers of improved corridor with SUT measures (Component 3);
    - Average number of passengers in buses along the selected SUT-improved corridor (Component 3);
    - % increase in the average speed of buses along selected SUT improved corridor (Component 3);
    - Number of cars using the pilot park-and-ride facilities (Component 3); and
    - Number of replication feasibility studies and functional plans for SUT in other Acharian municipalities (Component 4).

52. Successful implementation of the ISTBAR project will also contribute towards emission reductions from sustainable urban transport efforts in Batumi as well as other Georgian municipalities resulting in:
    - Cumulative direct emissions of 877 tonnes CO_2 resulting from technical assistance provided to other Acharian municipalities provided under Output 4.2; and,
    - Indirect emission reductions (top-down) of 560 ktonnes CO_{2eq} and 2.6 ktonnes CO_{2eq} (bottom-up) between 2019 and 2029, the 10 years after the EOP.

    These are summarized in Table 5.

[31] The 26,375 tonnes of CO_{2e} is a 20% reduction below baseline GHG emissions of 128,520 tonnes of CO_{2e} per annum as provided in Table 2.

Table 5: Summary of Estimated GHG Emissions from Project Interventions[32]

Detail	GHG Emission Reductions (Tonne CO_{2eq})[33]
Traffic efficiency measures along GBC demo route (i.e. synchronized lighting, restrictions on street parking, dedicated bus lane, and consolidation of bus routes)	741
Modal switches from private cars to public transit through the use of park-and-ride lots at the terminus of the GBC demo bus route, and the avoidance of fossil fuel consumption of cars travelling along the GBC corridor based on improved access to safe cycling network provided by Project investment	136
Modal switches from private cars to bicycles based on improved access to safe cycling network provided by Project investment	negligible
Technical assistance provided to municipalities for functional plans for SUT measures in other Georgian municipalities or Batumi (under Output 4.2)	0[34]
Totals for Direct Emissions:	***877***
Indirect emission reductions (top-down)	***560,000***
Indirect emission reductions (bottom-up)	***2,631***

53. Without GEF support to cover the incremental cost associated with the removal of knowledge barriers for developing sustainable urban transport projects, Batumi City will continue towards increasing traffic congestion and a decline in the quality of the city as a tourist destination as well as a place to live. On a national scale, the absence of this Project under a business-as-usual scenario, sustainable urban transport development is unlikely to take hold and gather momentum in Georgia. The problem that this Project seeks to address is the lack of confidence in implementing SUT projects in Georgia. By using Project resources to implement a SUT project in Batumi, GHG reductions as well as urban environmental benefits can be demonstrated. This demonstration should catalyze interest and the leveraging of capital finances to implement SUT projects in a number of Georgian municipalities.

Risks

54. Risks identified in the implementation of the Project includes:
    - Political risks related to political uncertainty and a drop in tourism: The impact could result in less operating revenue for the City's improved public transport services;
    - Lack of municipal co-financing to invest in sustainable urban transport;
    - Resistance by local residents and tourists to various SUT measures that may be deemed as disruptive such as parking restrictions and limitations of private car mobility to the old city area;
    - Technical risks related to government officer capacity to address green urban development and planning issues related to green cities.

    Risks and countermeasures to identified risks are analyzed in detail in Annex I.

[32] Details of the GHG emission reductions can be found in Annex II.
[33] This is the cumulative emissions reduction during the Project period.
[34] Likely to be zero due to financing being available after the EOP.

Assumptions

55. The main assumptions for this Project includes:
    - Strong political will for the support of SUT measures in Batumi;
    - Completion of the Batumi "Land use master plan" (LUMP) by the City. This will improve the quality of the sustainable transport plan since the location and quantity of urban transport demand will be better defined;
    - Timely adoption of a completed ISUTP for Batumi to guide the feasibility studies and functional plans;
    - The City has the financing and undertakes SUT improvements for the 2.2 km GBC corridor;
    - Successful formation of a public-private partnership for developing and operating park-and-ride lots strategically located around Batumi

Cost Effectiveness

56. The GHG reductions expected from this Project are 0.56 million tonnes CO_{2eq} cumulative to 2029, 10 years after EOP. The cost of emission reductions resulting from this Project are USD 1.52 per tonne of CO_2 reduced.

Sustainability, Replicability and Impacts

Sustainability

57. The ISTBAR Project is designed to assist the City of Batumi and the Region of Achara to integrate the concepts of green urban planning with sustainable transport and design of sustainable development plans. Components 1, 2 and 3 focus on planning, designing and implementing SUT measures in Batumi. Successful completion of these components will demonstrate the process of implementing such a project and the GHG reduction and environmental benefits of lower carbon intensity urban transport. With ISTBAR resources, the GHG reduction and environmental benefits for the City of Batumi will be quantified and increase the confidence of the municipal government of Batumi and other Goergian municipalities to invest in SUT measures. Furthermore, improved awareness raising efforts of the benefits of SUT measures in Batumi will increase demand for less carbon intensive modes of urban transport amongst local residents and tourists.

Replicability

58. To encourage replication of the Batumi SUT pilots, Component 4 is designed to support scale-up SUT activities in the Achara Region based on the success of the SUT pilot being completed in Batumi. Moreover, given the interest and intent of the national government through MoENRP, the outputs from the demonstration SUT pilots in Batumi from Components 1, 2 and 3 will inform national sustainable transport policies that will guide other cities in Georgia to adopt green urban development approaches, notably in sustainable transport.

Impacts

59. There are a number of positive social and environmental impacts from the implementation of this Project including:

- Demonstrating a means of reducing air pollution from urban transport that can be replicated throughout other corridors in Batumi and other cities in the Achara Region and Georgia;
- Reduction of noise pollution from motor vehicles;
- Improved and safer urban mobility within Batumi city through improved access to public transport and increased spaces for non-motorized transport.

60. One potential negative impact from the Project will be the increased congestion resulting from the changes made to traffic patterns in the old city including road restrictions on private car access, parking restrictions along the GBC corridor and the location of park-and-ride lots away from the old city. This is viewed as a short-term impact that accounts for the adjustment period for local residents and tourists while they adapt to new urban mobility patterns within the old city.

PROJECT RESULTS FRAMEWORK

Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mainstreaming environment and energy OR **2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor.**
Applicable GEF Strategic Objective and Program: GEF-5 CCM Strategic Program 4: Promote Energy Efficient Low-Carbon Transport and Urban Systems
Applicable GEF Expected Outcomes: a) Appropriate policy, legal and regulatory frameworks adopted and enforced; b) Sustainable financing and delivery mechanisms established and operational; and c) GHG emissions avoided
Applicable GEF Outcome Indicators: a) Extent to which EE policies and regulations are adopted and enforced; b) Volume of investment mobilized; c) Tonnes of CO2 equivalent avoided

Outcomes	Indicator	Baseline	Targets End of Project (EOP)	Source of verification	Risks and Assumptions
Project Objective: [35] To promote sustainable transport in the City of Batumi and Region of Achara	▪ Cumulative direct and indirect CO_2 emission reductions resulting from the GBC demo project and technical assistance to municipalities for SUT functional and detailed engineering plans by EOP, tons CO_2 ▪ Cumulative direct energy saving (MJ) from improved traffic efficiency measures for public transit through 2.2 km GBC corridor, and the avoidance of gasoline consumption from cars in the park-and-ride and modal switches to public transport	▪ 0 ▪ 0	▪ 877 [36] ▪ 2,631[37] ▪ 13.6 million	▪ Project final report as well as annual surveys of energy consumption & reductions from the GBC demo corridor ▪ Surveys of park-and-ride usage to estimate the number of modal switches from private cars to public transit	▪ Insufficient capital is available for financing SUT projects.

[35] *Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR*
[36] This is the direct emission reduction during the course of the 4-year Project.
[37] These are indirect bottom-up GHG ERs accumulated over the 10-year period after the EOP. These ERs can be estimated from SUT Projects in other Adjarian municipalities and in Batumi that receive technical assistance from Project during Year 4 (Output 4.2)

Outcomes	Indicator	Baseline	Targets End of Project (EOP)	Source of verification	Risks and Assumptions
Outcome 1:[38] Sustainable transport plans adopted in Batumi and Achara Region	• Number of versions of the Integrated Sustainable Urban Transport Plans for Batumi prior to adoption by the City by EOP • Number of municipalities with adopted ISUTPs by EOP	• 0 • 0	• 3[39] • 3	• Official documentation various drafts of the ISUTP by Batumi • Official documentation on the adoption of the ISUTP by Batumi City Hall	• Land use master plan is completed by the City. This will improve the quality of the sustainable transport plan since the location and quantity of urban transport demand will be better defined
Outcome 2: Specific feasibility studies and functional plans developed to lower carbon intensity of urban transport along selected corridors in Batumi	• Number feasibility studies for sustainable transport measures in Batumi • Number of specific functional plans to lower carbon intensity of urban transport along selected corridors in Batumi	• 0 • 0	• 4 [40] • 2 [41]	• Completed feasibility studies and functional plans • Municipal budget lines on capital costs for functional plan • Financing agreement for capital purchases of equipment and CNG buses from OEM	• Completion of various drafts and adoption of the ISUTP for Batumi to guide the feasibility studies and functional plans
Outcome 3: Sustainable urban transport measures successfully implemented along a selected corridor in the City of Batumi	• Kilometres of corridor improved with dedicated bus lanes, restricted private car access, synchronized lighting and improved access to bicycles as public transport by Year 3	• 0 • 50	• 2.2[44] • 80	• Municipal permits to construct sustainable transport measures or use of equipment • M&E reports and surveys on baseline and post-project reductions on energy consumption and	▪ Assumed that the City undertakes Gorgiladze-Baratashvili-Chavachavadze corridor for traffic improvements ▪ A private company forms a public-private partnership for developing and operating park-

[38] *All outcomes monitored annually in the APR/PIR.*
[39] Integrated sustainable urban transport plan (ISUTP) for Batumi will be based on new land uses suggested in the new Batumi Urban Development Strategy (BUDS)
[40] Refers to feasibility studies as detailed in Outputs 2.1, 2.3, 2.5 and 2.6
[41] Refers to functional plans as detailed in Outputs 2.2 and 2.4
[44] Assumes the Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor

Outcomes	Indicator	Baseline	Targets End of Project (EOP)	Source of verification	Risks and Assumptions
	• Average number of passengers per bus along improved corridor by EOP[42] • % increase in average speed of buses through the selected corridor by EOP • Average number of cars during Year 4 who are parked in park-and-ride lots and switched to public transit along a SUT-improved corridor[43] • Total MJ of energy saved from passengers leaving cars at park-and-ride facilities in favour of public transit by EOP • Kilometres of bicycle network improved by EOP	• 0 • 0 • 0 • 0	• 25[45] • 250 • 13.6 million • 6[46]	carbon after sustainable transport measures implemented as prepared by monitoring unit of Batumi City Hall • Campaign assessments and feedback from participants	and-ride lots strategically located around Batumi
Outcome 4: Sustainable Transport Plans developed and adopted in Batumi and other municipalities in Achara Region and Georgia	• Number of institutional mechanisms to support SUT and GUD development in Batumi, the Achara Region and Georgia by EOP	• 0 • 0	▪ 1 ▪ 6	• Report on lessons learned from Batumi Sustainable Transport projects	• Successfully implemented demonstration project from Outcome 3.

[42] This only includes the 20 to 40-seat buses and does not include marshrutkas

[43] Passenger surveys are required at the commencement of the operation of the park-and-ride lots until the EOP to estimate the daily modal switch from private cars to public transit. Survey will need to know the passenger's mode of travel was public transit instead of the private car as well as the intended distances to be travelled (that would have otherwise been done with a private car)

[45] Assumes decreased journey times resulting from traffic efficiency measures along GBC demo route (i.e. synchronized lighting, restrictions on street parking, dedicated bus lane, and consolidation of bus routes)

[46] This can include the rehabilitation of the existing bicycle network near City Hall which needs to be better integrated with the cycle network along the coastal areas of Batumi.

Outcomes	Indicator	Baseline	Targets End of Project (EOP)	Source of verification	Risks and Assumptions
	• Number of feasibility studies and functional plans for SUT in Batumi and other Acharian municipalities by EOP • Number of national SUT policies developed for sustainable urban transport by EOP	• 0	▪ 6	• Sustainable transport workshop proceedings	

TOTAL BUDGET AND WORK PLAN

Award ID:	00082231	Project ID(s):	5468 Atlas ID: 00091251
Award Title:	**"**Green Cities : Integrated Sustainable Transport in the City of Batumi and the Achara Region**"**		
Business Unit:	VNM10		
Project Title:	**"**Green Cities : Integrated Sustainable Transport in the City of Batumi and the Achara Region**"**		
PIMS no.	4980		
Implementing Partner	Ministry of Environmental and Natural Resources Protection		

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount (USD) Year 1 2015-16	Amount (USD) Year 3 2016-17	Amount (USD) Year 4 2017-18	Amount (USD) Year 5 2018-19	Total (USD)	Notes
Outcome 1: Sustainable transport plans adopted in Batumi and Achara Region	MoENRP/City of Batumi	**62000**	GEF	71200	International Consultants	12,000	0	0	0	12,000	See Note 1
				71300	Local Consultants	17,050	7,050	4,650	4,650	33,400	See Note 2
				72100	Contractual Services	90,000	40,000			130,000	See Note 3
				71600	Travel	500	500	500	500	2,000	
				75700	Training Workshops	6,000	6,000		3,000	15,000	
					Total GEF Outcome 1	125,550	53,550	5,150	8,150	192,400	
					Total Outcome 1	**125,550**	**53,550**	**5,150**	**8,150**	**192,400**	
Outcome 2: Specific feasibility studies and functional plans developed to lower carbon intensity of urban transport along selected corridors in Batumi	MoENRP/City of Batumi	**62000**	GEF	71200	International Consultants	4,000	24,000	16,000	0	44,000	See Note 4
				71300	Local Consultants	18,940	34,720	0	0	53,660	See Note 5
				72100	Contractual Services	25,000	25,000			50,000	See Note 6
				71600	Travel					0	
				75700	Training Workshops					0	
					Total GEF Outcome 2	47,940	83,720	16,000	0	147,660	

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount (USD) Year 1 2015-16	Amount (USD) Year 3 2016-17	Amount (USD) Year 4 2017-18	Amount (USD) Year 5 2018-19	Total (USD)	Notes
					Total Outcome 2	**47,940**	**83,720**	**16,000**	**0**	**147,660**	
Outcome 3: Sustainable urban transport measures successfully implemented along a selected corridor in the City of Batumi	MoENRP/City of Batumi	**62000**	GEF	71200	International Consultants	0	0	8,000	4,000	12,000	See Note 7
				71300	Local Consultants	0	0	38,680	28,500	67,180	See Note 8
				71600	Travel					0	
				72100	Contractual Services					0	
				72630	Capital Grants to Local Government		50,000	120,000	100,000	270,000	See Note 9
					Total GEF Outcome 3	0	50,000	166,680	132,500	349,180	
					Total Outcome 3	**0**	**50,000**	**166,680**	**132,500**	**349,180**	
Outcome 4: Sustainable Transport Plans developed and adopted in other municipalities in Achara Region and Georgia	MoENRP	**62000**	GEF	71200	International Consultants	0	0	8,000	32,000	40,000	See Note 10
				71300	Local Consultants	0	0	14,780	14,780	29,560	See Note 11
				72100	Contractual Services			20,000	20,000	40,000	See Note 12
				71600	Travel			3,600	3,000	6,600	
				75700	Training Workshops				8,000	8,000	See Note 13
					Total GEF Outcome 4	0	0	46,380	77,780	124,160	
					Total Outcome 4	**0**	**0**	**46,380**	**77,780**	**124,160**	
PROJECT MANAGEMENT (including M&E)	MoENRP	**62000**	GEF	71200	International Consultants	0	0	0	0	0	
				71300	Local Consultants and Local Staff	5,300	5,300	5,300	5,300	21,200	
				72200	Equipment	2,000	2,000	2,000		6,000	See Note 14
				72400	Communications	500	500	500	500	2,000	

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount (USD) Year 1 2015-16	Amount (USD) Year 3 2016-17	Amount (USD) Year 4 2017-18	Amount (USD) Year 5 2018-19	Total (USD)	Notes
				72500	Office Supplies	500	500	500	500	2,000	
				74100	Audit			3,000		3,000	
				73500	UNDP Cost Recovery Charges	1,500	1,500	1,200	1,200	5,400	
				Total GEF Project Management		9,800	9,800	12,500	7,500	39,600	
				Total Project Management		**9,800**	**9,800**	**12,500**	**7,500**	**39,600**	
GEF Total						**183,290**	**197,070**	**246,710**	**225,930**	**853,000**	
UNDP Total											
Grand Total						**183,290**	**197,070**	**246,710**	**225,930**	**853,000**	

Summary of Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Total
GEF	**183,290**	**197,070**	**246,710**	**225,930**	**853,000**
Co-financing:	**254,000**	**3,804,000**	**3,456,000**	**3,150,000**	**10,664,000**
UNDP	70,000	70,000	70,000	70,000	280,000
MoNREP (in-kind)	25,000	25,000	25,000	25,000	100,000
City of Batumi (in-kind)	159,000	209,000	50,000	55,000	473,000
City of Batumi (grant)	0	3,500,000	3,311,000	3,000,000	9,811,000
Total:	**437,290**	**4,001,070**	**3,702,710**	**3,375,930**	**11,517,000**

Notes:

1. This includes professional time for the international sustainable transport consultant (IST) to be in Batumi at USD 4,000 per week (includes travel and per diem costs) for 3 weeks during Yr 1;
2. This includes professional time for the following national consultants: National Project Manager (NPM) (@ USD 500/wk) for 10 wks in Year 1, and 6 wks each for Yrs 2, 3, and 4; Consultant on Sustainable Transport (NTS) (@USD 400/wk) for 26 and 6 wks during Yrs 1 and 2 respectively; and the Admin Finance Officer (AFO) (@USD330/wk) for 5 wks for Yrs 1, 2, 3 and 4;

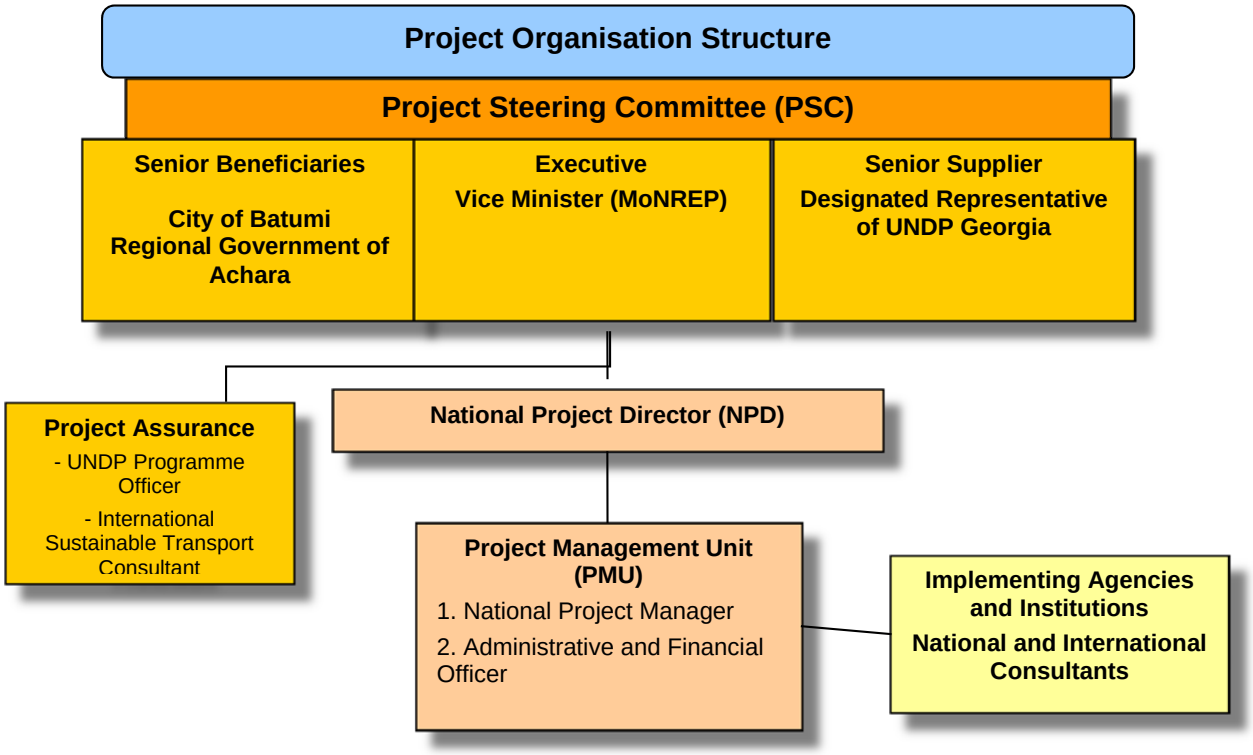
3. USD 10,000 for traffic data collection (Year 1), USD 80,000 for purchase of traffic model and software training (Yrs 1 and 2), USD 40,000 for ISUTP preparation (Yrs 1 and 2);
4. This includes professional time for the following international consultants to be in Batumi, all at USD 4,000 per week (includes travel and per diem costs): IST for 1 and 2 wks during Yrs 1 and 2 respectively; and an International Evaluation Specialist (IES) for 4 wks in early Yr 3 for the mid-term evaluation;
5. This includes professional time for the following national consultants: NPM @ USD 500/wk for 10 and 20 wks during Yrs 1 and 2 respectively; NST @USD400/wk for 8 and 16 wks in Yrs 1 and 2 respectively; Consultant on Municipal Construction (NMC) @USD400/wk for 12 and 26 wks in Yrs 1 and 2; a Procurement Specialist (NPS) (@USD330/wk) for 2 and 8 hrs for Yrs 1 and 2 respectively; and the AFO (@USD330/wk) for 16 wks for both Yrs 3 and 4;
6. Assumes USD 15,000 for Output 2.1, USD 10,000 for Output 2.2, USD 6,000 for Output 2.3, USD 6,000 for Output 2.4, USD 10,000 for Output 2.5 and USD 3,000 for Output 2.6;
7. This includes professional time for the international sustainable transport consultant (IST) to be in Batumi at USD 4,000 per week (includes travel and per diem costs) for 2 and 1 wk during Yrs 3 and 4 respectively.
8. This includes professional time for the following national consultants: NPM @ USD 500/wk for 20 and 10 wks during Yrs 1 and 2 respectively; NST @USD400/wk for 16 and 8 wks in Yrs 1 and 2 respectively; NMC @USD400/wk for 26 wks for both Yrs 3 and 4; NPS @USD330/wk for 8 and 2 hrs for Yrs 3 and 4 respectively; a Communications Specialist (CS) @USD330/wk for 6 wks for both Yrs 3 and 4; and the AFO (@USD330/wk) for 22 wks for both Yrs 3 and 4;
9. Includes investments with a preliminary allocation as follows: USD 15,000 for 3 priority signals along corridor (Output 3.1), USD 50,000 for park-and-ride lots or metered parking near GBC corridor (Output 3.1), USD 60,000 for dedicated bus lanes (Output 3.2), USD 20,000 for enhancement of bus stops and real time information boards, USD 50,000 for the "incremental" cost of procurement of 2 CNG buses (Output 3.2), and USD 75,000 for bicycle infrastructure (Output 3.3);
10. This includes professional time for the following international consultants to be in Batumi, all at USD 4,000 per week (includes travel and per diem costs): IST for 2 wks during Yr 3; and an International Evaluation Specialist (IES) for 4 wks in Yr 4 for the terminal evaluation;
11. This includes professional time for the following national consultants: NPM @ USD 500/wk for 12 wks for both Yrs 3 and 4; NST @USD400/wk for 11 wks for both Yrs 3 and 4; NMC @USD400/wk for 6 wks for both Yrs 3 and 4; and the AFO (@USD330/wk) for 6 wks for both Yrs 3 and 4;
12. Preparation of 6 functional plans for SUT in other Acharian municipalities;
13. 2 national SUT/GUD workshops for Output 4.3;
14. Office equipment including computers.

MANAGEMENT ARRANGEMENTS

Project Organization Structure

61. The project is co-financed with funding from the GEF and UNDP acts as the *GEF Implementing Agency*. In the context of the UNDP, the project will be executed by MoENRP which will assume the overall responsibility for the achievement of project results as the UNDP's *Implementing Partner.* This IP will be subject to the micro assessment and subsequent quality assurance activities as per Harmonized Approach to Cash Transfers to Implementing Partners (HACT) framework. UNDP will provide overall management and guidance from its Country Office in Tbilisi and the Regional Center of UNDP in Istanbul, and will be responsible for monitoring and evaluation of the project as per normal GEF and UNDP requirements. MoENRP will designate a senior official as the *National Project Director (NPD)* for the project. The NPD will be responsible for overall guidance to project management, including adherence to the Annual Work Plan (AWP) and achievement of planned results as outlined in the ProDoc, and for the use of UNDP funds through effective management and well established project review and oversight mechanisms. The NPD also will ensure coordination with various ministries and agencies provide guidance to the project team to coordinate with UNDP, review reports and look after administrative arrangements as required by the Government of Georgia and UNDP. The project will be executed according to UNDP's National Implementation Modality (NIM), as per the NIM project management implementation guidelines agreed by UNDP and the Government of Georgia.

Figure 3: Project Organization Structure



62. The Project Steering Committee (PSC) will have oversight of the Project Management Unit (PMU). The PSC will consist of a Chairperson (MoENRP Vice Minister); with PSC members from the MoENRP, the municipal government of Batumi, the Achara Regional Government, and UNDP Georgia. The primary functions of the PSC will be to provide the necessary direction that allows the Project to function and achieve its policy and technical objectives, and to approve the annual Project plans and M&E reports.

63. The PMU will report to the Project Director from MoENRP. The PMU will be responsible to MoENRP and UNDP for implementing the Project, planning activities and budgets, recruiting specialists, conducting training workshops and other activities to ensure the Project is executed as per approved work plans.

64. As a senior supplier, UNDP also has a role of project assurance. This role will be exercised by the UNDP Programme Officer responsible for the project, based in the UNDP Country Office (CO), and an International Technical Specialist, funded by the project.

65. Both the PMU and the NPD will implement mechanisms to ensure ongoing stakeholder participation and effectiveness with the commencement of the Project by conducting regular stakeholder meetings, issuing a regular project electronic newsletter, conducting feedback surveys, implementing strong project management practices, and having close involvement with UNDP Georgia as the GEF implementing agency. A list of Project stakeholders and their projected roles on the Project are provided on Table 6.

Table 6: List of Stakeholders and Proposed Roles on ISTBAR Project

Stakeholder	Role on the ISTBAR Project
Government Stakeholders	
Ministry of Environmental and Natural Resources Protection (MoENRP)	MoENRP will serve as the executing agency for the Project responsible for overall delivery of Project outcomes and outputs
Municipality of Batumi	The Municipality will play a lead role on all Project Components including the integrated sustainable urban transport plan (ISUTP) for Batumi and activities to demonstrate and promote less carbon intensive modes of urban transport, increased cycling and the development of a parking strategy for Batumi
Ministry of Finance and Economy of the Autonomous Republic of Achara	The Transport Department of this Ministry will play a key role in the development and allocation of financing for SUT projects for the City of Batumi and other municipalities/districts in Achara that work with this Project.
Other Municipalities in Achara	Other municipalities in Achara will play a key role on Component 4 of the Project where they will be beneficiaries of support to develop SUT plans. The choice of six other municipalties/city administrations will be based upon co-financing commitments and the potential for reducing GHG emissions from the transport sector in a cost-effective manner. Municipalities for consideration include Keda, Kobuleti, Khelvachauri, Shuakhevi and Khulo.

General

UNDP support service

66. MoENRP will enter into an agreement with UNDP for support services in the form of procurement of goods and services during the project implementation process. In such a case, appropriate cost recovery will be charged as per UNDP rules and regulations. The support services will be outlined in the form of Letter of Agreement signed between MoENRP and UNDP.

Collaborative Arrangements with Related Projects

67. This Project will complement the ongoing programme "Enhancing Capacity for Low Emission Development Strategies (EC-LEDS)" that is supported by USAID to pursue long-term, transformative development and accelerate sustainable economic growth while slowing the growth of GHG emissions. Amongst several other objectives of the program, the most relevant objective in relation to the ISTBAR project is to support Georgian municipalities in institutionalizing and implementing climate change mitigation measures. To date, the EC-LEDS Programme has supported Batumi and another 10 municipalities in quantifying and reducing GHG emissions, and institutionalizing climate change mitigation. They have been involved with the City of Batumi in preparing the SEAP, determining the baseline for urban transport emissions, and finalizing a parking strategy for the City[47]. Through the direction of the City of Batumi, the EC-LEDS will work with the ISTBAR project to provide advisory assistance and studies towards energy efficiency in urban transport that will translate into concrete actions, policies, programs and implementation plans for the City of Batumi.

68. This Project will also complement:

- the ADB project "Georgian Sustainable Urban Transport Project" that commenced operations in December 2014. This Project will support financing of urban infrastructure upgrades and assist in the formulation of sustainable urban transportation policies in Georgia; and
- USAID's G3 initiative on "Good Governance in Georgia" that can assist in the dissemination of best practices for implementing sustainable urban transport policies.

69. ISTBAR will ensure co-finance and cooperation from the various government partners. Co-financing details are provided on Table 7.

Prior Obligations and Prerequisites

70. There are no prior obligations and prerequisites.

Audit Arrangements

71. The Government will provide the UNDP Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the

[47] Their sub-consultant, Remissia, is in the process of completing a study of locating park-and-ride facilities throughout the outskirts of the City to encourage low carbon modes of transport in Batumi

programming and finance manuals. The audit will be conducted according to UNDP financial regulations, rules and audit policies by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

Table 7: Co-Financing Details

Co-Financer	Amount (USD)	General Description of Co-Financed Activities
UNDP	200,000 (in-kind) 80,000 (grant)	In-kind contribution to Project management as well as M&E. Investment into sustainable transport demonstration
MoNREP	100,000 (in-kind)	In-kind contribution to Project management as well as M&E (USD 80,000). Under Component 4 (USD 20,000): • Institutional assistance to promote SUT and GUD development in the Achara Region and other cities of Georgia; • In-kind contribution for the development of national SUT policies • Assistance in the enforcement of these policies in the development of functional and detailed engineering plans for SUT projects in various municipalities of Achara Region.
City of Batumi	473,000 (in-kind) 9,811,000 (invest)	• Under Component 1, provision of in-kind assistance towards the development of the ISUTP and completion of the LUMP (USD 159,000); • Under Component 2, provision of in-kind assistance for the planning of demonstration SUT measures to be undertaken in the along the 2.2 km GBC corridor (USD 209,000); • Under Component 3, in-kind assistance towards management and operation of sustainable transport infrastructure (USD 105,000) • Under Component 3, capital financing towards[48]: o Rehabilitation and arrangement of roads and streets in the area of Gorgiladze Street including park-and-ride lots and regulated parking spaces (Output 3.1), cycling paths (improving connectivity of an estimated 6.0 km for Output 3.3), safe intersections with proper signals (USD 7.50 million)[49]; o Development of municipal transportation system that includes installation of a priority or dedicated bus lane (2.2 km in length), priority signaling for buses, enhancement of bus stops and provision of “real-time” bus information as a part of Output 3.2 (USD 0.61 million); o Procurement of 20 new CNG buses to replace old buses (30 to 40 seat buses) at an assumed price of USD 85,000; (USD 1.7 million).

[48] Capital co-financing figures will need to be revised pending the outcome of the feasibility studies from Component 2 that will assist in determining the optimal investments for Batumi City in terms of implementing the SUT demonstration along the 2.2 km GBC corridor

[49] Regulated paid parking spots as a part of Output 3.1 included 500 metered parking spaces at an assumed cost of USD 500 per space, and a park-and-ride lot for 500 cars at an assumed price of USD 300 per space. Prices to develop metered parking based on IFC experience in 2008 in developing metered parking in Tbilisi.

Ministry of Finance and Economy of the Autonomous Republic of Achara	Amount not specified	• Under Component 1, in-kind assistance with the completion of ISUTPs for other municipalities in the Achara Region (amount not specified) • Under Component 3, in-kind assistance for the allocation of financing for the SUT demo project along the 2.2 km GBC corridor (amount not specified)
Total:	**10,664,000**	

Agreement on Intellectual Property Rights and Use of Logo on Project Deliverables

72. To accord proper acknowledgement to GEF for providing funding, a GEF logo should appear on all relevant GEF-supported project publications, including among others, project hardware, if any, purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgement to GEF. Alongside GEF and UNDP logo, a MoENRP logo may also feature as the Implementing Partner of the proposed project.

MONITORING FRAMEWORK AND EVALUATION

73. The project team and the UNDP Office in Tbilisi supported by the UNDP-GEF Regional Coordination Unit in Istanbul will be responsible for project monitoring and evaluation conducted in accordance with established UNDP and GEF procedures. The Project Results Framework provides performance and impact indicators for project implementation along with their corresponding means of verification. The GEF CC Tracking Tool will also be used to monitor progress in reducing GHG emissions. The M&E plan includes: inception workshop and report, project implementation reviews, quarterly and annual review reports, independent mid-term evaluation, and independent final evaluation. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The M& E budget is provided on Table 8.

74. *Project start*: A Project Inception Workshop will be held within the first 4 months of the project starting with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders will be invited. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan. The Inception Workshop would address a number of key issues including:

    a) Assisting all partners to fully understand and take ownership of the project;
    b) Detailing the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis-à-vis the project team;
    c) Discussing the roles, functions, and responsibilities within the Project's decision-making structure including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference of project staff will be discussed again as required;
    d) Finalization of the first annual work plan based on the project results framework and the relevant GEF Tracking Tool if appropriate. A review and agreement on the indicators, targets and their means of verification will be required as well as a re-check of assumptions and risks;
    e) Providing a detailed overview and reach consensus on reporting, monitoring and evaluation (M&E) requirements, the M&E work plan and budget;

f) Discussion of financial reporting procedures and obligations, and arrangements for annual audit;
g) Planning and scheduling Project Board meetings; and,
h) Clarification of roles and responsibilities of all project organization structures as well as planned dates of meetings where the first PSC meeting should be held within the first 12 months following the inception workshop.

Table 8: M&E Work Plan and Budget

Type of M&E activity	Responsible Parties	Budget US$ *Excluding project team staff time*	Time Frame
Inception Workshop and Report	▪ Project Manager ▪ UNDP CO, UNDP GEF	Indicative cost: 20,000	Within first four months of project start up
Measurement of Means of Verification of project results.	▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on *output and implementation*	▪ Oversight by CTA with support from the Project Manager ▪ Project team	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	▪ Project manager and team ▪ UNDP CO ▪ UNDP RTA ▪ UNDP EEG	Indicative cost: 5,000 for the first year for the completion and update of the GEF CCM Tracking Tool	Annually by July
Project Board meetings	Project Manager	5,000 x 4 years	Following IW and annually thereafter.
Periodic status/ progress reports	▪ Project manager and team	None	Quarterly
Mid-term Evaluation	▪ Project manager and team ▪ UNDP CO ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team)	Indicative cost: 20,000	At the mid-point of project implementation.
Final Evaluation	▪ Project manager and team, ▪ UNDP CO ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team)	Indicative cost : 20,000	At least three months before the end of project implementation
Project Terminal Report	▪ Project manager and team ▪ UNDP CO	0	At least three months before the end of the project
Audit	▪ UNDP CO ▪ Project manager and team	Indicative cost per year: 2,000 x 4 years	Yearly
Scheduled audits and spot check	▪ UNDP CO ▪ Project manager and team	Indicative cost per year: 3,000 x 4 years	To be decided based on risk assessment from the micro-assessments
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	▪ UNDP CO ▪ UNDP RCU (as appropriate) ▪ Government representatives	2,500 x 4 years	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		115,000 (+/- 5% of total budget)	

75. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

76. *Quarterly Progress Report*: Contents of the QPR include:
    - Progress made as reported in the Standard Progress Report (SPR) and monitored in the UNDP Enhanced Results Based Management Platform;
    - Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS (if applicable otherwise outside ATLAS). Risks become critical when the impact and probability are high;
    - Project Progress Reports (PPR) as generated in the Executive Snapshot and based on the information recorded in Atlas; and,
    - Other ATLAS logs that are used to monitor issues and lessons learned. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

77. *Annual Project Review /Project Implementation Reports (APR/PIR)*: APRs/PIRs are key reports prepared to monitor progress since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements, and includes, but is not limited to, reporting on the following:
    - Progress made toward project objective and project outcomes, each with indicators, baseline data and end-of-project targets (cumulative);
    - Project outputs delivered per project outcome (annual);
    - Lesson learned/good practice;
    - AWP and other expenditure reports;
    - Risk and adaptive management;
    - ATLAS QPR; and,
    - Portfolio level indicators (i.e. GEF focal area tracking tools) that are used by most focal areas on an annual basis.

78. *Periodic Monitoring through site visits:* UNDP CO and the UNDP RCU staff will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

79. *Mid-term of project cycle*: The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office

Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

80. *End of Project*: An independent Final/Terminal Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

81. The Final Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

82. *Learning and knowledge sharing*: Results from the project will be disseminated within and beyond the Project intervention zone through a number of existing information sharing networks and forums. In addition:
    - The Project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for senior personnel working on projects that share common characteristics;
    - The Project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned;
    - The Project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an on-going process and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting the lessons learned. To this end a percentage of project resources will also need to be allocated for these activities; and
    - This GEF-funded Project will endeavour to compile and share its development results within a monitoring framework that is designed to meet the goals of the UNDAF outcomes

LEGAL CONTEXT

83. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Georgia and the United Nations Development Program. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

84. Consistent with the Article III of the SBAA, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner. The implementing partner shall:
    - Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
    - Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

85. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

86. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via: http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

87. Reference is made to Annex VI of this document which defines the support services to be provided by UNDP to this project including a description of support services to be provided and exact chargeable amount. Annex VI provides a copy of the standard letter of agreement between UNDP and the Government for the provision of support services to this project.

ANNEXURES

Annex	Description of Annex
1	Risk Analysis
2	Detailed CO2 Calculations and Assumptions
3	Agreements
4	Terms of Reference for Project Staff and Consultants
5	UNDP-GEF Environmental and Social Screening Procedure
6	UNDP Direct Project Costs : Draft Letter between UNDP and the Government of Georgia

Annex I: Risk Analysis

OFFLINE RISK LOG

Project Title: "Green Cities : Integrated Sustainable Transport in the City of Batumi and the Achara Region"	**Project ID: 00091251**	**Date:**

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Management Response	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
1	**Political risks related to political uncertainty and a drop in tourism:** The impact could result in less operating revenue for the City's improved public transport services		Awareness	P = 1 I = 3	Batumi is a leading tourist destination in Georgia that is also growing through diversification of its economy as a regional trade hub, and to some extent less dependent on tourism. As such, the City will still need to address sustainable transport measures for which the Project will provide technical assistance	Project manager	Submitted by Project Proponent, updated by Project Manager		
2	**Financing Risks related to demonstration and replication projects:** Lack of municipal co-financing to invest in sustainable urban transport .		Financial	P = 3 I = 5	The risk is that that plans are drawn up but then funding is not available to finance sustainable green urban development. One of the major SUT measures where financing could be an issue is the renewal of the bus fleet to CNG. Depending on the types of CNG buses to be procured, each bus will likely cost from USD 40,000 for a 20-seat bus to USD 100,000 for articulated buses with a passenger load of more than 100 persons. This risk is rated as medium due to the fact that budget allocations are changing and the long-term vision of the new national government is still being developed. This risk is rated as high due to the fact that	Project manager	Submitted by Project Proponent, updated by Project Manager		

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Management Response	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
					budget allocations are changing and the long-term vision of the new national government is still being developed. The mitigation measure for this risk is thorough preparations of feasibility studies with Project resources that will assess a wide range of funding sources for SUT measures including NAMA funds, donor programmes and philanthropic sources				
3	**Regulatory/ Awareness risks**: Resistance by local residents and tourists to various SUT measures that may be deemed as disruptive such as parking restrictions and limitations to private car mobility in the old city area		Regulatory/ awareness	P = 4 I = 4	The Project will need to carefully prepare feasibility studies for metered parking and new traffic control changes for the old city area where the GBC demo corridor is to be located. These feasibility studies will need to minimize the disruptiveness of SUT measures for local residents but knowing that local businesses will benefit from SUT measures in creating an improved environment for retail shopping along the GBC corridor		Project Manager		
4	**Institutional risks**: Related to government officer capacity to address green urban development and planning issues related to green cities.		Institutional	P = 2 I = 4	The Project will augment ongoing efforts by the City to implement sustainable urban transport projects and green urban development through working closely with the City's urban planning development and capital works departments. This close working relationship with the Project will expose municipal staff through "on-the-job" training and building their technical				

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Management Response	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
					capacity on best international practices for implementing SUT and GUD projects.				

Submitted by Project Manager _____ Approved by UNDP Programme Analyst _____

Annex II: Detailed CO_2 Calculations and Assumptions

A. Direct Emission Reductions

Direct GHG emission reductions attributable to the Project are a result of *Outcome 3: Sustainable urban transport measures successfully demonstrated in Batumi* through the following outputs that will be implemented along the 2.2 km Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor:

- *Output 3.1: Investment in improved traffic flow.* This output consists of direct investments into synchronization of lighting along selected corridors and implementing parking restrictions along the corridor to create more road space for moving vehicles;
- *Outcome 3.2: Investment in improved public transit services.* The impacts of these investments are designed to improve the public's confidence that public transit services are competitive with private car usage to the extent that modal shifts from private cars will be encouraged;
- *Output 3.3: Investment in the cycling network.* This output consists of direct investments into improvements to the existing bicycle network to include improved visibility of cycle pathways and signage, more conveniently located cycle parking, dropped kerbs, and safer intersections for cyclists and motor vehicles;

The GHG calculations were approached using the TEEMP model followed by a "Sense Check" model solely developed for the ISTBAR Project.

TEEMP Model Inputs:

For the TEEMP Model, the following inputs were provided for the calculation:

- 2017 is considered the base year since there are no SUT measures being undertaken prior to 2017. End year for direct ERs is 2019;
- Fuel distribution amongst the various vehicles does not change from 2017 to 2028. The TEEMP model inputs are shown on Table II-1 with data from the Batumi SEAP;
- Fuel efficiency trends in the TEEMP model are provided on Table II-2, showing improvements for 2 new CNG buses to be procured under this Project;
- SUT measures undertaken along a 2.2 km corridor for SUT
- A 25% improvement in bus speeds with the SUT measures in place over the entire period of the Project. By comparison, the baseline shows a decrease in speeds from the baseline year of 2017 by 1% due to increasing congestion along the GBC corridor. These are shown in Table II-3;
- Increase in average occupancy of buses from 50 passengers or 50% capacity (as provided by the City of Batumi on Table II-6, Row 8) to 80 passengers or 80% capacity as shown on Table II-3;
- Outputs from the TEEMP Model are shown in Tables II-4 showing the GHG reductions from the various SUT measures undertaken;
- Table II-5 provides the lifetime GHG reductions of 5,552 tonnes CO_{2eq} that is cumulative from 2017 to 2029, 10 years after the EOP.

Table II-1: Fuel Distribution of Urban Transport Fleet in Batumi

Fuel Type (%)

		Vehicle Type	2017						
			Petrol	Diesel	LPG	CNG	Electric		sum
No Project	Private	Car	87%	13%					100%
	Public	marshrutka	6%	94%					100%
		Bus	14%	86%					100%
		0							0%
	BRT			94%		6%			100%

Table II-2: Fuel Efficiency Trends for Urban Transport Fleet in Batumi from 2017 to 10 Years after EOP

		Vehicle Type	2017							2019							2028						
			Petrol (km/liter)	Diesel (km/liter)	LPG (km/liter)	CNG (km/m3)	Electric (km/kwh)		Average	Petrol (km/liter)	Diesel (km/liter)	LPG (km/liter)	CNG (km/m3)	Electric (km/kwh)		Average	Petrol (km/liter)	Diesel (km/liter)	LPG (km/liter)	CNG (km/m3)	Electric (km/kwh)		Average
No Project	Private	Car	7.69	8.33					7.78	7.85	8.50					7.93	8.58	9.30					8.68
	Public	marshrutka	7.41	7.41					7.41	7.56	7.56					7.56	8.26	8.26					8.26
		Bus	5.00	4.35		2.50			4.44	5.10	4.44		2.55			4.53	5.58	4.85		2.79			4.95
									-							-							-
	BRT			4.35		2.63			4.24		4.44		2.63			4.33		4.85		2.63			4.72

Table II-3: Trip Characteristics of Urban Transport Fleet in Batumi from 2017 to 10 Years after EOP

			Average Speed (kilometer/hour)			Occupancy			Average Trip Length (km)			Speed Impact
		Vehicle Type	2017	2019	2028	2017	2019	2028	2017	2019	2028	
No Project	Private	Cars	30.0	29.4	26.9	1.8	1.8	1.8	2.2	2.2	2.2	Cars
	Public	masrshrutka	29.0	28.4	26.0	14	14	14	2.2	2.2	2.2	Cars
		Bus	15.0	14.7	13.4	50	50	50	2.2	2.2	2.2	Bus
	BRT		18.8	18.8	18.8	80	80	80	2.2	2.2	2.2	Bus

Table II-4: CO_2 Reductions and Parameters of Other Impacts of SUT Measures in Batumi (2017 to 2029)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
CO2 savings or increase (tons)	440	438	435	433	431	429	427	425	423	421	419	417	415
Cumulative CO2 savings (tons)	440	877	1,313	1,746	2,177	2,606	3,033	3,457	3,880	4,301	4,720	5,137	**5,552**
PM savings or increase (tons)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	
NOx savings or increase (tons)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	
Construction CO2 (tons)	-										-		
VKT savings (millions/year)	1	1	1	1	1	1	1	1	1	1	1	1	1
Projected fatality rates (fatalities/billio	155	150	146	141	136	132	127	123	119	115	111	107	103
No. of fatalities reduced	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of injuries reduced	3	3	3	3	3	3	3	3	3	2	2	2	2
Average Speed of Modes other than BF	25	24	24	24	24	23	23	23	23	23	22	22	22
Average Speed of BRT	19	19	19	19	19	19	19	19	19	19	19	19	19
Difference in Speed	(6)	(6)	(5)	(5)	(5)	(5)	(4)	(4)	(4)	(4)	(4)	(3)	(3)
PKT (millions)	24	24	24	24	25	25	25	25	25	25	25	25	26
Time travel savings('000s hours)	(304)	(296)	(287)	(279)	(271)	(262)	(253)	(243)	(233)	(223)	(213)	(202)	(191)

Table II-5: Summary Output of TEEMP Model for SUT Measures in Batumi (2017 to 2029)

Batumi SUTP

Batumi, Georgia

**analysis does not consider land use impacts*

Ridership/year (millions)

2017	10.92
2019	11.03
2028	11.54

Emissions Savings

Lifetime CO2 reduction (tons)	5,552

Sense Check Model Inputs and Assumptions:

- Key assumptions for the baseline emissions:

⇒ Data were obtained from the Batumi Autotransport company for bus routes 4, 9 and 17 (see Table II-6) as well as marshrutkas (see Table II-7), all of which travel along the 2.2 km Gorgiladze-Baratashvili-Chavachavadze (GBC) corridor, as follows:
  - Average fuel consumption of buses going through 2.2 km corridor is 25 liters/100 km;
  - Each bus passing through the 2.2 km corridor will consume 0.55 liters of diesel;
  - Based on the default carbon value of diesel fuel, 1.0 liter of diesel fuel yields 2.58 kg of CO_2. This is equivalent to 1.42 kg CO_2 for each bus passing through the corridor;
  - Assumed and very rough estimates of modal shares of daily trips along the SUT corridor: cars 75%, bus 10%, marshrutka 15%, walking/cycling 0.1%, all estimated based on observations of traffic during April and June 2014 missions to Batumi;
  - Average occupancy rate: 1.8 passengers for cars, 7 for marshrutkas, 37 for buses;
  - Average speed of traffic assumed at 30 km/h for cars, 29 km/h for marshrutkas, 16 km/h for buses;
  - Average fuel consumption in Batumi along demonstration SUT corridors is 17.1 liters/100 km for marshrutkas, and 25 liters/100 km for diesel buses. Default annual technology improvement rate of 1% is assumed;
  - Default emission factors for vehicle fuel are used: 2.42 kg CO_2/l of gasoline, 2.58 kg CO_2/l of diesel. Same emission factors are used for the baseline and for the project scenarios;
  - For 2014, baseline emissions for buses and marshrutkas along the 2.2 km demonstration corridor is assumed to be 479 tonnes CO_{2e} (74 + 405);
  - Dynamic baseline shifts are assumed for most of the key parameters for project lifetime plus 10 years beyond based on extrapolations of transport sector developments in Batumi until 2029, 10 years after the EOP;
  - Due to the lack of any traffic data for Batumi, average fuel consumption in Batumi along demonstration SUT corridors is assumed to be 13 liters/100 km for passenger cars, traffic volume along the GBC corridor is 2,400 cars per hour (during peak hours for 6 hrs) and 1,000 cars per hour during off-hours (for the other 6 hrs);
  - The growth in passenger car traffic along the GBC corridor under the baseline grows 1% annually reaching a saturation point along the GBC corridor of 3,600 cars per hour;
  - Project activities for Batumi will include the collection of traffic data to improve the baseline knowledge. The GHG emissions presented in this report should be revised to reflect the new baseline data.

Key assumptions for the Project emissions:

- GHG emission reductions from the Project investments will be derived from traffic flow efficiency improvements of 25%[50] from the installation of synchronized lighting and the removal of parked cars from the corridor road space, along the GBC demo corridor that is 2.2 km in length:
  - With the average bus roundtrip assumed to be 45 minutes to cover a distance of 22 km, it is assumed 10 minutes to cover the 2.2 km of the corridor demonstration corridor (higher amount of time for this distance due to congestion as well as more passengers who are dropped off and picked up);

Table II-6: Information and data on the bus routes that goes through Gorgiladze Street

[50] 15% alone is based on experience of OMNIA traffic control systems from Italy and an additional 10% improvement from the removal of parked cars and less cars on the road.

		Bus Route			Assumptions
		4	9	17	
1	Fuel consumption per bus (daily)	47	47	72	Data from Batumi Autotransport
2	Number of kilometres traveled by bus (daily)	192	188	221	Data from Batumi Autotransport
3	Fuel consumption rate (liters/100 km)	24	25	33	
4	Number of kilometres traveled by bus (round trip)	21	22	22	Data from Batumi Autotransport
5	Fuel consumption per bus (liters/ round trip)	6	6	7.5	Data from Batumi Autotransport
6	Fuel consumption per bus through 2.2 km corridor (liters)	0.55	0.55	0.55	Assumes 25 l/100 km fuel consumption for all buses along corridor
7	Number of passengers carried by each bus between the hours of 09:00 and 18:00;	510	222	210	Data from Batumi Autotransport
8	Number of passengers carried by each bus (round trip)	85	37	30	Assume this is 50% occupancy
9	Number of minutes required for each bus (round trip)	96	90	75	Data from Batumi Autotransport
10	Number of realized round trips (daily)	9	8	10	Data from Batumi Autotransport
11	Number of realized round trip between the hours of 09:00 and 18:00;	6	6	7	Data from Batumi Autotransport
12	Number of buses that goes through Gorgiladze Street	8	6	5	Data from Batumi Autotransport
13	Interval (minutes)	11	15	15	Data from Batumi Autotransport
14	Number of passes through 2.2 km corridor each day	96	72	70	
15	CO_2 emissions/bus between 09:00 and 18:00 (kg CO2 per day)	1.62	1.62	1.62	
16	Total daily CO2 emissions from all buses along 2.2 km corridor (kg CO2)	155	116	113	
17	Annual CO2 emissions from all buses along 2.2 km corridor (tonnes CO2)	34	26	25	
Total annual CO2 emissions from all buses along 2.2 km corridor (tonnes CO2)				**85**	

Default CO2 emissions for diesel	2.94	kg CO2/liter
Annual days when congestion may occur	220	days

- A 25% improvement in bus journey time through the demonstration corridor equating to 2.5 minutes of time saved. This will generate GHG emission reductions and save an estimated 25% of the fuel consumed through the GBC corridor. Assuming that the same number of buses are operating through the GBC corridor, a total of 21 tonnes CO_2 (24 + 36 + 25 tonnes x 25%) will be reduced annually through the traffic flow efficiency improvements;
- GHG emission reductions will be generated from transport modal switches from private cars to public transport. Improved public transit services through the GBC demo corridor will facilitate transport modal switches from 250 cars parked daily to use the new bus system through Gorgiladze Street prior to the EOP, yielding a daily VKT reduction of 1,100 km (250 cars not travelling 2.2 km in two directions). This will avoid consumption of 143 liters of petrol daily and emission of 0.35 tonnes of CO_2 daily from 250 cars parked in the facilities and not travelling downtown, or around 76 tonnes of CO_2 for Years 3 and 4, and increasing by 2% annually after the EOP;
- GHG emission reductions will be generated from the consolidation and removal of marshrutka routes along the GBC corridor. While an exact consolidated network has not been generated, a

preliminary consolidated network will eliminate a number of lines that may include one less bus line and more than one half of the mini-bus routes from the GBC corridor. As a result, the GHG emissions reductions from a consolidated network may result in 461 tonnes CO_2 reduced (as shown on Table II-7 based on 2014 emission data from Batumi Autotransport) from the retirement of all marshrutka routes through the GBC corridor with the demonstration project;

Table II-7: Information and data on the marshrutka (mini-bus) route that goes through Gorgiladze Street

		Mini Bus Route													Comments
		№21	№24	№26	№29	№31	№32	№34	№35/35	№36	№38	№46	№47	№55	
1	Reported fuel consumption per mini bus (liters/day)	25	20	20	30	25	20	20	20	25	20	25	20	30	Data from Batumi Autotransport
2	Reported daily fuel consumption from all round trips (liters)	189	153	102	189	224	112	133	105	144	105	144	99	125	Data from Batumi Autotransport
3	Reported fuel consumption rate (liters/100 km)	13.2	13.1	19.6	15.9	11.2	17.9	15.0	19.0	17.4	19.0	17.4	20.2	24.0	Average reported fuel consumption is 17.1 l/100 km
4	Number of kilometres traveled by mini bus for round trip	27	17.6	17.2	21	28	14.8	19	15	24	15	18	11	15	Data from Batumi Autotransport
5	Fuel consumption per mini bus round trip (liters)	3.5	3.3	3.5	3.5	3.5	2.5	2.5	2.5	4	3	3.5	2.5	6	Data from Batumi Autotransport
6	Minibus fuel consumption rate based on round trips (liters/100 km)	13.0	18.8	20.3	16.7	12.5	16.9	13.2	16.7	16.7	20.0	19.4	22.7	40.0	Avg fuel consumption based on round trips is 19 l/100 km
7	Fuel consumption per mini bus through 2.2 km corridor (liters)	0.26	0.38	0.41	0.33	0.25	0.34	0.26	0.33	0.33	0.40	0.39	0.45	0.80	Assumes round trip fuel consumption
8	Number of passengers carried by each mini bus (daily)	105	126	72	144	136	128	105	84	78	98	96	144	80	Unable to establish if these are passengers through the demo corridor
9	Number of passengers carried by each bus (round trip)	15	14	12	16	17	16	15	12	13	14	12	16	16	Data from Batumi Autotransport
10	Minutes required for each mini bus round trip	80	53	52	35	70	44	57	45	72	45	54	33	75	Data from Batumi Autotransport
11	Number of realized daily round trips	7	9	6	9	8	8	7	7	6	7	8	9	5	Data from Batumi Autotransport
12	Number of round trips each day between the hours of 09:00 and 18:00	5	7	4	7	6	6	5	5	4	5	6	7	3	Data from Batumi Autotransport
13	Number of mini buses that goes through Gorgiladze Street	14	18	12	19	10	15	14	12	16	8	15	8	19	Data from Batumi Autotransport
14	Interval (minutes)	10	10	10	10	10	10	10	10	10	10	10	10	10	Data from Batumi Autotransport
15	Number of minibus passes through 2.2 km corridor each day	140	252	96	266	120	180	140	120	128	80	180	112	114	
16	CO_2 emissions/bus between 09:00 and 18:00 (kg CO_2 per day)	0.76	1.10	1.20	0.98	0.74	0.99	0.77	0.98	0.98	1.18	1.14	1.34	2.35	
17	Total daily CO_2 emissions from all buses along 2.2 km corridor (kg CO_2)	107	278	115	261	88	179	108	118	125	94	206	150	268	
18	Annual CO_2 emissions from all buses along 2.2 km corridor (tonnes CO_2)	23	61	25	57	19	39	24	26	28	21	45	33	59	Assumes 220 days annually
	Total annual CO_2 emissions along 2.2 km demonstration corridor													**461**	

Default CO_2 emissions for diesel	2.94	kg CO_2/liter
Annual days when congestion may occur	220	days

Conclusion:

Table II-8 is a summary of "sense-check" estimation of the lifetime GHG emission reductions from the GBC demonstration SUT corridor. This estimated cumulative emission reduction of 5,636 tonnes CO_{2eq} between 2017 and 2029 compares provides favourably to the TEEMP Model estimates of 5,552 tonnes CO_{2eq} of GHG emission reductions on Table II-5.

Table II-8: Summary of GHG reductions from SUT measures along the 2.2 km GBC Corridor

Description	Year 1 *2015-16*	Year 2 *2016-17*	Year 3 *2017-18*	Year 4 *2018-19*	Year 5 *2019-20*	Year 6 *2020-21*	Year 7 *2021-22*	Year 8 *2022-23*	Year 9 *2023-24*	Year 10 *2024-25*	Year 11 *2025-26*	Year 12 *2026-27*	Year 13 *2027-28*	Year 14 *2028-29*	Total
Baseline emissions through GBC corridor*	479	474	469	465	460	456	451	446	442	438	433	429	425	420	6,287
SUT Measures:															
Number of buses passing through GBC corridor**			238	238	240	243	245	248	250	253	255	258	260	263	
GHG emissions from traffic flow efficiency measures and bus route consolidation through GBC corridor***			56	56	56	57	57	58	59	59	60	60	61	62	700
GHG emission reductions from improved traffic flow efficiency and bus consolidation along GBC corridor			414	409	404	399	394	388	383	378	373	369	364	359	4,633
Average daily number of parked cars in park-and-ride facility throughout the year			250	250	255	260	265	271	276	282	287	293	299	305	
GHG offset from transport modal switches (tonnes CO2)****			76	76	78	79	81	82	84	86	87	89	91	93	1,003
Annual Emission Reduction (tCO_{2eq})			490	485	481	478	474	471	467	464	461	458	455	452	5,636
Cumulative ERs			490	975	1,456	1,934	2,409	2,880	3,347	3,811	4,272	4,730	5,184	5,636	

End of GEF Project →

Notes and Assumptions:

* These are the actual emissions from all buses along the GBC route in 2014 with a -1.0% % escalation factor for each year (see Table II-1 and II-2)

** Includes the same number of buses passing through corridor but also with the removal of all marshrutka routes through GBC corridor and addition of 2 CNG buses

*** Includes a 25% improvement of movement through the 2.2 km GBC corridor

**** Assumes cars parked in park-and-ride lot will not travel 4.4 km for a certain number of days each year (when there is the potential of traffic congestion)

1. Default CO2 emissions for diesel	2.58	kg CO2/liter
2. Default CO2 emissions for gasoline	2.42	kg CO2/liter
3. Annual days when congestion may occur	220	days
4. Length of GBC Corridor	2.2	km
5.Assumed fuel consumption of private cars	13	liters/100 km
6.Estimated traffic flow efficiency improvement	0.25	
7. Direct ERs during Project	975	tonnes CO2
8. Direct post-project ERs from GBC demo project	4,661	tonnes CO2
9. Direct post-project MWh saved and ERs from:		tonnes CO2
10. Direct post-project ERs from TA provided from Output 4.2	3,600	tonnes CO2 (based on 6 other municipalities finding 60 tonnes of ERs from their own SUT projects)
11. 2012 urban transport related emissions (Batumi)	128,515	tonnes CO2 (based on 6 other municipalities finding 60 tonnes of ERs from their own SUT projects)
12. P10 for top-down ER estimation	12,851,500	tonnes CO2 (assumes 10 other medium-sized cities in Georgia)
13. Energy saved in Year 3 of GBC demo:		
Total diesel saved through traffic flow efficiency and reduced marshrutka service through GBC corridor	160,357	liters
Energy saved	5,836,980	MJ - assumes 36.4 MJ/liter of diesel
Total gasoline saved through park-and-ride	31,460	liters
	1,006,720	MJ - assumes 32 MJ/liter of gasoline
14. Energy saved in Year 4 of GBC demo:		
Total diesel saved through traffic flow efficiency and reduced marshrutka service through GBC corridor	158,537	liters
Energy saved	5,770,748	MJ - assumes 36.4 MJ/liter of diesel
Total gasoline saved through park-and-ride	31,460	liters
	1,006,720	MJ - assumes 32 MJ/liter of gasoline
Total energy saved	13,621,168	MJ

B. Indirect Emission Reductions

For the top-down GHG emission reduction estimate, the only urban transport emission compilation in Georgia is contained in the SEAP for the City of Batumi. To estimate the 10-year market potential for GHG reductions for Georgia, an assumption was made that there are 10 other cities in Georgia that will have similar urban transport-related GHG emissions to Batumi. The SEAP estimates urban transport GHG emissions for Batumi in 2012 was 128,515 tonnes CO_{2eq} of which the potential for GHG emission reductions was estimated to be 26,400 tonnes CO_{2eq} cumulative by 2020[51]. Given that most of the SUT interventions listed in the SEAP are to be completed in 2020, the cumulative GHG emissions that could be accumulated by 2029 in Batumi was assumed to be 264,000 tonnes CO_{2eq}.

The World Bank's 2012 "Policy Framework for Green Transportation in Georgia"[52] provides a potential GHG emission reduction in the transport sector (from greening options) for the entire country of 2.8 million tonnes CO_{2eq} over the period of 2012-2027. Using this figure as the basis for the 10-year potential for urban transport related GHG emissions, a causality factor of 20% was used to reflect the potential lack of financing to implement a significant number of SUT projects in other municipalities in Georgia, leading to a *top-down GHG estimate of 0.56 million tonnes CO_{2eq}*.

For the bottom-up GHG emission reduction estimate, a replication factor of 3 was employed for similar reasons, that being the lack of available financing that would constrain the number of SUT projects being replicated. Based on the direct GHG emission reductions of 877 tonnes CO_{2eq}, *bottom-up GHG emission reductions are estimated to be 2,631 tonnes CO_{2eq}*.

C. Energy Savings

Energy savings are computed from the reduced use of fossil fuels:

- Diesel is saved through traffic flow efficiency and reduced marshrutka service through GBC corridor. Converting the 461 tonnes of CO_2 (see Table II-7) back to a diesel equivalent (using 2.58 kg CO_2/liter), 160,357 liters are saved in the first year translating to 5.8 million MJ of energy;
- Gasoline is saved through modal switches from private cars (parked in a park-and-ride facility) to public transit traffic flow efficiency and reduced marshrutka service through GBC corridor. Converting the 85 tonnes of CO_2 (see Table II-6) back to a gasoline equivalent (using 2.42 kg CO_2/liter), 31,460 liters are saved in the first year translating to 1.0 million MJ of energy;
- Direct energy savings from the saving of diesel and gasoline is 13.6 million MJ (6.8 million MJ x 2 years (Years 3 and 4)).

[51] See pgs of 30 and 33 of Batumi SEAP
[52] See pg 15 in Report No. 70290-GE for potential emission reductions in the transport sector, available on: https://openknowledge.worldbank.org/bitstream/handle/10986/11899/702900ESW0whit0nsportation00Final0.pdf?sequence=1

Annex III: Agreements

[to be added]

ANNEX IV: TERMS OF REFERENCE FOR PROJECT STAFF AND CONSULTANTS

Regular Project Staff

1. National Project Manager (NPM):

Duties and Responsibilities: The incumbent will be responsible for implementation of the project, including mobilization of all project inputs, setup, implementation and maintenance of project's internal control arrangements, supervision of project staff, consultants and oversight of sub-contractors. The PM will be the leader of the Project Team and shall liaise with the government, UNDP, and all stakeholders involved in the Project. S/he will be specifically responsible for (a) overall management of the project, (b) work closely with Project stakeholders and ensure deliveries as per Project document and work plan, (c) ensure technical coordination of the Project and the work related to regulatory, institutional, financial and implementation aspects, (d) mobilize all project inputs in accordance with UNDP procedures and GEF principles, (e) finalize the ToR for the consultants and subcontractors and coordinate with Procurement for recruitment and contracting, (f) supervise and coordinate the work of all Project staff, consultants and sub-contractors, (g) ensure proper management of funds consistent with UNDP requirements, and budget planning and control, (h) prepare and ensure timely submission of monthly reports, quarterly consolidated financial reports, quarterly consolidated progress reports, annual, mid-term and terminal reports, and other reports as may be required by UNDP; (i) submit the progress reports and key issue report to the **Project Steering Committee**, (j) prepare quarterly and annual work plan, (k) arrange for audit of all project accounts for each fiscal year (l) undertake field visit to ensure quality of work, and (m) undertake any activities that may be assigned by UNDP and **Project Steering Committee**.

Qualifications and Experience: The incumbent should have a minimum Bachelor degree in Engineering with MBA/Master degree or Masters in energy/environment, urban transport or other relevant academic discipline and profession qualifications with at least ten (10) years professional experience at senior level. S/he should have extensive experience and technical ability to manage a large project and a good technical knowledge in the fields related to private sector development, climate change, urban transport, municipal governance and institutional development and/or regulatory aspects. S/he must have effective interpersonal and negotiation skills proven through successful interactions with all levels of Project stakeholder groups, including senior government officials, financial sectors, private entrepreneurs, technical groups and communities. S/he should have ability to effectively coordinate a complex, multi-stakeholder project and to lead, manage and motivate teams of international and local consultants to achieve results. Good capacities for strategic thinking, planning and management and excellent communication skills both in English and Georgian are essential. Knowledge of UNDP project implementation procedures, including procurement, disbursements, and reporting and monitoring will be an added advantage.

2. **Administrative and Financial Officer (AFO):**

Duties and Responsibilities: The incumbent will be responsible to provide overall administration services of the Project and serve as the Project Accountant for processing payments, raising requisition, purchase order, projects logs etc. using UNDP corporate software ATLAS. S/he will be responsible to provide information to UNDP Project web, RRMC reporting and administrative trouble shooting. S/he will also perform (a) word processing, drafting routine letters/messages/reports, mailing (b) arrange travel, itinerary preparation for project related travels, (c) assist to arrange workshops/seminar/training programmes and mailing, (d) assist in work-plan and budgeting, (e) maintenance of all office equipment and keeping inventory/records of supplies and their usage and any other duties assigned by Project Manager or concerned officials (this would include providing administration to the management of Component 4).

Qualifications and Experience: The incumbent should have at least a Bachelor degree in any discipline from a recognized university. S/he should have at least 3 years relevant working experience with foreign aided projects or international development or organizations. Computer proficiency in MS Office (Word, Excel and PowerPoint) and other common software is a prerequisite. Diploma in computer/secretarial science is desirable but not essential. Basic knowledge in procurement, petty cash handling, logistics supports, and filling systems is a basic requirement. Knowledge of UNDP project implementation procedures, including procurement, disbursements, and reporting and monitoring is preferable. Fluent both in written and spoken English and Georgian is required.

Key Short-term Consultants

Detailed TORs of the national and international consultants will be developed during the Project Inception period, in the first 3 months after project start-up, by the NPM in consultation with UNDP and the implementing partners.

3. International Consultant on Sustainable Transport (IST) for all Components

- Provide guidance and knowledge on best international practices for the development of integrated sustainable transport for the City of Batumi and other Acharian Cities as required;
- Provide guidance in the setup of a dynamic traffic model and how to use the results in the ISUTP for sustainable transport investment decisions;
- Identify and justify the import of foreign low carbon technologies that could be used for the SUT demonstration along the GBC corridor in Component 3;
- Provide oversight in the implementation of demonstration SUT projects along the GBC corridor in Component 3 including the setup of a monitoring program for GHG reductions from SUT investments;
- Prepare lessons learned and standards and regulations required for national SUT and green urban development policies.

4. National Consultant on Sustainable Transport (NST) for all Components

- Assist the IST in the delivery of best international practices for the development of integrated sustainable transport for Batumi City;
- Under the guidance of the IST, deliver knowledge transfer to municipal staff on the setup and operation of the dynamic traffic model for the ISUTP;
- Assist the municipality in the preparation of proposed SUT investments based on the traffic model results for the ISUTP with a focus on the GBC demonstration corridor;
- Under the guidance of the IST, setup and implement the monitoring program for GHG reductions including surveys of modal switches from private cars to NMT or public transport;
- Provide support on implementing best international practices for the development of sustainable transport projects for other Acharian municipalities in Component 4.

5. National Consultant: Municipal Construction (NMC) – Components 2, 3 and 4

- Provide inputs into the feasibility studies, functional plans and detailed engineering plans on local municipal construction practices that need to be incorporated;
- Provide oversight to construction of SUT measures and installation and operation of SUT equipment to ensure local standards are in compliance;
- In close collaboration with the IST, recommend amendments or introduce new municipal construction codes or standards that will meet best international practices.

6. **National Consultant: Procurement Specialist (PS) – Components 2 and 3**
   - Provide guidance to the Project team on public procurement rules;
   - Assist in preparing strategies and action plans for the procurement of imported low carbon technologies for SUT demonstrations as recommended by the Project team;
   - Assist municipal procurement personnel to purchase imported low carbon technologies employing procurement strategies that consider the service life of the technology instead of only the purchase cost.

7. **National Consultant: Communication Specialist (CS) – Component 3**
   - Design communications strategy appropriate for the Project and its objectives, most notably with regards to the GBC demonstration on SUT for Batumi and the benefits for the city residence and its tourists;
   - Assist the Project team and the MoNREP in implementing information dissemination of the GBC demonstration project;
   - Monitor and report the effectiveness of information dissemination activities prepared by the Project.

Annex V: UNDP-GEF Environmental and Social Screening Procedure (ESSP)

Annex V-A: Environmental and Social Screening Checklist

QUESTION 1:

Has a combined environmental and social assessment/review that covers the proposed project already been completed by implementing partners or donor(s)?

Select answer below and follow instructions:

X NO → Continue to Question 2 (do not fill out Table 1.1)

☐ **YES** → No further environmental and social review is required if the existing documentation meets UNDP's quality assurance standards, and environmental and social management recommendations are integrated into the project. Therefore, you should undertake the following steps to complete the screening process:

1. Use Table 1.1 below to assess existing documentation. (It is recommended that this assessment be undertaken jointly by the Project Developer and other relevant Focal Points in the office or Bureau).
2. Ensure that the Project Document incorporates the recommendations made in the implementing partner's environmental and social review.
3. Summarize the relevant information contained in the implementing partner's environmental and social review in Annex A.2 of this Screening Template, selecting Category 1.
4. Submit Annex A to the PAC, along with other relevant documentation.

Note: Further guidance on the use of national systems for environmental and social assessment can be found in Annex B.

TABLE 1.1: CHECKLIST FOR APPRAISING QUALITY ASSURANCE OF EXISTING ENVIRONMENTAL AND SOCIAL ASSESSMENT	Yes/No
1. Does the assessment/review meet its terms of reference, both procedurally and substantively?	**n/a**
2. Does the assessment/review provide a satisfactory assessment of the proposed project?	**n/a**
3. Does the assessment/review contain the information required for decision-making?	**n/a**
4. Does the assessment/review describe specific environmental and social management measures (e.g. mitigation, monitoring, advocacy, and capacity development measures)?	**n/a**
5. Does the assessment/review identify capacity needs of the institutions responsible for implementing environmental and social management issues?	**n/a**

6. Was the assessment/review developed through a consultative process with strong stakeholder engagement, including the view of men and women?	**n/a**
7. Does the assessment/review assess the adequacy of the cost of and financing arrangements for environmental and social management issues?	**n/a**
Table 1.1 (continued) For any "no" answers, describe below how the issue has been or will be resolved (e.g. amendments made or supplemental review conducted).	
n/a	

QUESTION 2:

Do <u>all</u> outputs and activities described in the Project Document fall within the following categories?

- ☐ Procurement (in which case UNDP's Procurement Ethics and Environmental Procurement Guide need to be complied with)
- ☐ Report preparation
- ☐ Training
- ☐ Event/workshop/meeting/conference (refer to Green Meeting Guide)
- ☐ Communication and dissemination of results

Select answer below and follow instructions:

X NO → Continue to Question 3

☐ **YES** → No further environmental and social review required. Complete Annex VII-2, selecting Category 1, and submit the completed template (Annex A) to the PAC.

QUESTION 3:

Does the proposed project include activities and outputs that support *upstream* planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change (refer to Table 3.1 for examples)? (Note that *upstream* planning processes can occur at global, regional, national, local and sectoral levels)

Select the appropriate answer and follow instructions:

☐ **NO** → Continue to Question 4.

<u>X YES →Conduct the following steps to complete the screening process:</u>

1. Adjust the project design as needed to incorporate UNDP support to the country(ies), to ensure that environmental and social issues are appropriately considered during the upstream planning process. Refer to Section 7 of this Guidance for elaboration of environmental and social mainstreaming services, tools, guidance and approaches that may be used.
2. Summarize environmental and social mainstreaming support in Annex A.2, Section C of the Screening Template and select "Category 2".
3. If the proposed project ONLY includes upstream planning processes then screening is complete, and you should submit the completed Environmental and Social Screening

Template (Annex A) to the PAC. If downstream implementation activities are also included in the project then continue to Question 4.

TABLE 3. 1 EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS	Answer Yes/No/N.A
1. Support for the elaboration or revision of **global- level** strategies, policies, plans, and programmes. *For example, capacity development and support related to international negotiations and agreements. Other examples might include a global water governance project or a global MDG project.*	No
2. Support for the elaboration or revision of **regional-level** strategies, policies and plans, and programmes. *For example, capacity development and support related to transboundary programmes and planning (river basin management, migration, international waters, energy development and access, climate change adaptation etc.).*	No
3. Support for the elaboration or revision of **national-level** strategies, policies, plans and programmes. *For example, capacity development and support related to national development policies, plans, strategies and budgets, MDG-based plans and strategies (e.g. PRS/PRSPs, NAMAs), sector plans.*	Yes
4. Support for the elaboration or revision of **sub-national/local-level** strategies, polices, plans and programmes. *For example, capacity development and support for district and local level development plans and regulatory frameworks, urban plans, land use development plans, sector plans, provincial development plans provision of services, investment funds, technical guidelines and methods, stakeholder engagement.*	Yes

QUESTION 4:

Does the proposed project include the implementation of *downstream* activities that potentially pose environmental and social impacts or are vulnerable to environmental and social change?

To answer this question, you should first complete Table 4.1 by selecting appropriate answers. If you answer "No" or "Not Applicable" to all questions in Table 4.1 then the answer to Question 4 is "NO." If you answer "Yes" to any questions in Table 4.1 (even one "Yes" can indicated a significant issue that needs to be addressed through further review and management) then the answer to Question 4 is "YES":

☐ **NO → No further environmental and social review and management required for downstream activities. Complete Annex VII-B by selecting "Category 1", and submit the Environmental and Social Screening Template to the PAC**

X YES → Conduct the following steps to complete the screening process:

1. Consult Section 8 of this Guidance, to determine the extent of further environmental and social review and management that might be required for the project.
2. Revise the Project Document to incorporate environmental and social management measures. Where further environmental and social review and management activity cannot be undertaken prior to the PAC, a plan for undertaking such review and management activity within an acceptable period of time, post-PAC approval (e.g. as the first phase of the project) should be outlined in Annex A.2.
3. Select "Category 3" in Annex A.2, and submit the completed Environmental and Social Screening Template (Annex A) and relevant documentation to the PAC.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT		
1.	**Biodiversity and Natural Resources**	**Answer** (Yes/No/ Not Applicable)
1.1	Would the proposed project result in the conversion or degradation of modified habitat, natural habitat or critical habitat?	No
1.2	Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?	No
1.3	Would the proposed project pose a risk of introducing invasive alien species?	No
1.4	Does the project involve natural forest harvesting or plantation development without an independent forest certification system for sustainable forest management (*e.g. PEFC, the Forest Stewardship Council certification systems, or processes established or accepted by the relevant National Environmental Authority*)?	No
1.5	Does the project involve the production and harvesting of fish populations or other aquatic species without an accepted system of independent certification to ensure sustainability (*e.g. the Marine Stewardship Council certification system, or certifications, standards, or processes established or accepted by the relevant National Environmental Authority*)?	No
1.6	Does the project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction.*	No
1.7	Does the project pose a risk of degrading soils?	No
2.	**Pollution**	
2.1	Would the proposed project result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and transboundary impacts?	No

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
2.2 Would the proposed project result in the generation of waste that cannot be recovered, reused, or disposed of in an environmentally and socially sound manner?	No
2.3 Will the propose project involve the manufacture, trade, release, and/or use of chemicals and hazardous materials subject to international action bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants, or the Montreal Protocol.*	No
2.4 Is there a potential for the release, in the environment, of hazardous materials resulting from their production, transportation, handling, storage and use for project activities?	No
2.5 Will the proposed project involve the application of pesticides that have a known negative effect on the environment or human health?	No
3. Climate Change	
3.1 Will the proposed project result in significant[53] greenhouse gas emissions? *Annex E provides additional guidance for answering this question.*	No
3.2 Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)? You can refer to the additional guidance in Annex C to help you answer this question. *For example, a project that would involve indirectly removing mangroves from coastal zones or encouraging land use plans that would suggest building houses on floodplains could increase the surrounding population's vulnerability to climate change, specifically flooding.*	No
4. Social Equity and Equality	
4.1 Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?	No
4.2 Is the project likely to significantly impact gender equality and women's empowerment[54]?	No
4.3 Is the proposed project likely to directly or indirectly increase social inequalities now or in the future?	No

[53] Significant corresponds to CO_2 emissions greater than 100,000 tons per year (from both direct and indirect sources). Annex E provides additional guidance on calculating potential amounts of CO_2 emissions.

[54] Women are often more vulnerable than men to environmental degradation and resource scarcity. They typically have weaker and insecure rights to the resources they manage (especially land), and spend longer hours on collection of water, firewood, etc. (OECD, 2006). Women are also more often excluded from other social, economic, and political development processes.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
4.4 Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?	No
4.5 Have there been challenges in engaging women and other certain key groups of stakeholders in the project design process?	No
4.6 Will the project have specific human rights implications for vulnerable groups?	No
5. Demographics	
5.1 Is the project likely to result in a substantial influx of people into the affected community(ies)?	Yes
5.2 Would the proposed project result in substantial voluntary or involuntary resettlement of populations? *For example, projects with environmental and social benefits (e.g. protected areas, climate change adaptation) that impact human settlements, and certain disadvantaged groups within these settlements in particular.*	Yes
5.3 Would the proposed project lead to significant population density increase which could affect the environmental and social sustainability of the project? *For example, a project aiming at financing tourism infrastructure in a specific area (e.g. coastal zone, mountain) could lead to significant population density increase which could have serious environmental and social impacts (e.g. destruction of the area's ecology, noise pollution, waste management problems, greater work burden on women).*	No
6. Culture	
6.1 Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?	No
6.2 Will the proposed project result in physical interventions (during construction or implementation) that would affect areas that have known physical or cultural significance to indigenous groups and other communities with settled recognized cultural claims?	No
6.3 Would the proposed project produce a physical "splintering" of a community? *For example, through the construction of a road, power line, or dam that divides a community.*	No
7. Health and Safety	
7.1 Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, and erosion, flooding or extreme climatic conditions? *For example, development projects located within a floodplain or landslide prone area.*	No

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
7.2 Will the project result in increased health risks as a result of a change in living and working conditions? In particular, will it have the potential to lead to an increase in HIV/AIDS infection?	No
7.3 Will the proposed project require additional health services including testing?	No
8. Socio-Economics	
8.1 Is the proposed project likely to have impacts that could affect women's and men's ability to use, develop and protect natural resources and other natural capital assets? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their development, livelihoods, and well-being?*	No
8.2 Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?	No
8.3 Is the proposed project likely to negatively affect the income levels or employment opportunities of vulnerable groups?	No
9. Cumulative and/or Secondary Impacts	
9.1 Is the proposed project location subject to currently approved land use plans (e.g. roads, settlements) which could affect the environmental and social sustainability of the project? *For example, future plans for urban growth, industrial development, transportation infrastructure, etc.*	Yes
9.2 Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested land will generate direct environmental and social impacts through the cutting of forest and earthworks associated with construction and potential relocation of inhabitants. These are direct impacts. In addition, however, the new road would likely also bring new commercial and domestic development (houses, shops, businesses). In turn, these will generate indirect impacts. (Sometimes these are termed "secondary" or "consequential" impacts). Or if there are similar developments planned in the same forested area then cumulative impacts need to be considered.*	Yes

ANNEX V-B: ENVIRONMENTAL AND SOCIAL SCREENING SUMMARY
(To be filled in after Annex V-A has been completed)

Name of Proposed Project: "Georgia: Green Cities: Integrated Sustainable Transport for the City of Batumi and the Achara Region (ISTBAR)"

A. Environmental and Social Screening Outcome

Select from the following:

☐ **Category 1**. No further action is needed

☐ **Category 2.** Further review and management is needed. There are possible environmental and social benefits, impacts, and/or risks associated with the project (or specific project component), but these are predominantly indirect or very long-term and so extremely difficult or impossible to directly identify and assess.

☑ **Category 3.** Further review and management is needed, and it is possible to identify these with a reasonable degree of certainty. If Category 3, select one or more of the following sub-categories:

☑ **Category 3a:** Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice, but require some minimal or targeted further review and assessment to identify and evaluate whether there is a need for a full environmental and social assessment (in which case the project would move to Category 3b).

☐ **Category 3b:** Impacts and risks may well be significant, and so full environmental and social assessment is required. In these cases, a scoping exercise will need to be conducted to identify the level and approach of assessment that is most appropriate.

B. Environmental and Social Issues (for projects requiring further environmental and social review and management)

Environmental Issues: While there are few adverse environmental impacts resulting from Project activities, there are a number of positive environmental impacts expected from the Project including: a) a reduction in the number of motor vehicles operating in the central districts of Batumi around the demonstration project; b) a resulting reduction in air pollution and vehicle noise in the area; and c) an increase in the number of people using less carbon intensive modes of transport within the central district of Batumi.

One environmental issue that needs to be reviewed and monitored will be the increased congestion of traffic into surrounding areas of the GBC corridor resulting from Outputs 3.1 and 3.2 that will be a resultant of less vehicles operating along the demonstration GBC corridor. Based on the Project design, this is mitigated through the construction of park-and-ride lots at strategically located near the terminuses of improved public transit routes (for which the Project will support feasibility studies under Output 2.5). The opening of these lots should also be coupled with public awareness campaigns from Output 3.4 that inform the public of parking restrictions in the demonstration area and the alternative of using the park-and-ride lots.

Social Issues: The potential for social disruption resulting from SUT measures being undertaken under Outputs 3.1 and 3.2 along the 2.2 km GBC corridor should be closely monitored with appropriate actions undertaken by the Project activities:
-There is a likelihood of local citizens and drivers complaining of the new traffic patterns;
-With the removal of parked cars along the GBC corridor, local merchants along the corridor will complain about the possible economic losses during the construction of the dedicated bus lanes and

new bus stops. The positive economic impact of these SUT measures, however, will certainly offset a short-term loss of economic opportunities during the construction and installation of phases of the demonstration along the GBC corridor. Moreover, the SUT measures will likely enhance the values of businesses along the GBC corridor and adjacent streets since the area will be more accessible through public transit;
-Displaced marshrutka operators will not support improved public transit services without an agreement from the City for some form of compensation. The CNG bus fleet feasibility study under Output 2.3 will provide strategies for ensuring the employment of existing marshrutka operators is minimally disruptive.

C. Next Steps (for projects requiring further environmental and social review and management):

The Project design already has components and outputs that will provide oversight and mitigative actions to counter any adverse environmental and social impacts from the construction and utilization of SUT measures along the GBC corridor:

- Component 1 will support the development of ISUTPs prior to any SUT investments being made. The ISUTPs will assess the environmental and social impacts of any proposed SUT measure with holistic approaches. City officials will work closely with those preparing the ISUTP to ensure that all environmental and social issues of the City are understood and properly integrated with other potential SUT measures in Batumi;

-Component 2 will prepare feasibility studies for specific SUT measures that will include a more thorough assessment of environmental and social impacts based on more certainty of the SUT designs. These impacts will also be shared with the public prior to approval of these schemes for financing. In addition, Output 2.3 will review the feasibility of a new CNG bus fleet which will have the impact of displacing some marshrutka operators along the GBC corridor. This feasibility study will need to include strategies and mitigative actions to allow for the seamless transition of these marshrutka operators onto other routes or new employment with the upgraded CNG bus fleet;

-Component 3 will support the construction and installation of SUT measures that will be implemented using best international practices to ensure all affected stakeholders, notably the local residents, are minimally impacted by these activities. In addition, Output 3.4 will support a well-organized public campaign to ensure the messaging from the City informs local residents and other city stakeholders of the intent of these measures.

D. Sign Off

Project Manager **Date**

PAC **Date**

Programme Manager **Date**

Annex VI: UNDP Direct Project Costs : Draft Letter between UNDP and the Government of Georgia

STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT FOR THE PROVISION OF SUPPORT SERVICES

Dear Mr. Khokrishvili,

1. Reference is made to consultations between officials of the Government of *Georgia* (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for the project "Green Cities: Integrated Sustainable Transport for the City of Batumi and the Achara Region (ISTBAR)" (#:00091251) implemented by the Ministry of Environment and Natural Resources Protection of Georgia. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Ministry detailed in the respective project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Ministry is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the project budget in accordance with UN Universal Price List.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the project, details are specified in the Attachment:

(a) Payments, disbursements and other financial transactions;
(b) Recruitment of staff, project personnel and consultants;
(c) Procurement of services and goods, including disposal
(d) Organization of training activities, conferences and workshops, including fellowships;
(e) Travel authorization, visa requests, ticketing, and travel arrangements;
(f) Shipment, custom clearance, vehicle registration, and accreditation

4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of the project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the Ministry.

5. The relevant provisions of the UNDP Standard Basic Assistance Agreement with the Government of Georgia (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Ministry shall retain overall responsibility for the nationally managed

project. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for the project.

Yours sincerely,

_____

Signed on behalf of UNDP
Niels Scott
Resident Representative, UNDP Georgia

_____

For the Government
Elguja Khokrishvili
Minister of Environment and Natural Resources Protection of Georgia

Date:

Attachment to Annex VI

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the Ministry of Environment and Natural Resources Protection (the Ministry), the institution designated by the Government of Georgia and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project "Green Cities: Integrated Sustainable Transport for the City of Batumi and the Achara Region (ISTBAR)" (no:00091251), (the Project)".

2. In accordance with the provisions of the signed letter of agreement and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services (insert description)	Schedule for the provision of the support services	Amount and method of reimbursement of UNDP (where appropriate)	Estimated Chargeable Amount
1. Payments, disbursements and other financial transactions	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 2,968.40
2. Recruitment of staff, project personnel and consultants	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 2,866.10
3. Procurement of services and goods, including disposal	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 2,600.00
4. Organization of training activities, conferences and workshops, including fellowships	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 1,800.00
5. Travel authorization, visa requests, ticketing, and travel arrangements	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 2,137.80
6. Shipment, custom clearance, vehicle registration, and accreditation	2015-2018	Cost-recovery for ISS based on UNDP Universal Price List	$ 422.70
Total			**$12,795.00**

4. Description of functions and responsibilities of the parties involved:

UNDP will provide support services to the Ministry as described in the paragraph 3 above in accordance with UNDP rules and procedures; it retains ultimate accountability for the effective implementation of the project;

The UNDP will provide support to the National Project Director (appointed by MoENRP) in order to maximize the programme's impact as well as the quality of its products. It will be responsible for administering resources in accordance with the specific objectives defined in the Project Document, and in keeping with the key principles of transparency, competitiveness, efficiency and economy. The financial management and accountability for the resources allocated, as well as other activities related to the execution of programme activities will be undertaken under the direct supervision of the UNDP Country Office.

The Ministry through its National Project Director (NPD) designated from its staff or through duly authorized person, will approve annual work plans, authorize direct payment requests and submit them to UNDP country office in a timely manner;

The Ministry through its NPD or other duly authorized person will monitor and assure that the project funds are spent in accordance with Annual Work Plan (AWP) by authorizing and signing direct payment requests and Combined Delivery Reports (CDRs).