Terminal Evaluation Report:

"City of Almaty Sustainable Transport (CAST)" Project, Kazakhstan

(UNDP ID 00076355; GEF 4013; PIMS 3757)

Report
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Country	**Kazakhstan**
Region	**Central Asia**
Focal Area	**Climate Change**
Implementation Partners	**Municipal Government of Almaty/ Department of Passenger Transport and Road (DPTAR) under the Municipal Government of Almaty, Kazakhstan**

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Disclaimer

The analysis and recommendations of this report do not necessarily reflect the views of the United Nations Development Programme, its Executive Board or the United Nations Member States. This publication reflects the views of its author.

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LIST OF ACRONYMS

ADB	Asian Development Bank
BAU	Business As Usual
BPPS	Bureau for Policy and Programme Support, UNDP
BRT	Bus Rapid Transit
CAST	City of Almaty Sustainable Transport Project
CDM	Clean Development Mechanism
CERs	Certified Emissions Reductions
CP	Country Programme
CPAP	Country Programme Action Plan
CSR	Corporate social responsibility
DPTAR	Department of Passenger Transport and Automobile Roads (under the Municipal Government of Almaty)
EBRD	European Bank of Reconstruction and Development
EIAs	Environmental Impact Assessments
EMPs	Environmental Management Plans
GEF	Global Environment Facility
GHG	Green House Gases
GJ	Gigajoules
GoK	Government of Kazakhstan
HOV	High Occupancy Vehicles
IFC	International Finance Corporation (of the World Bank Group)
ITM	Integrated traffic management
ITS	Intelligent Transportation Systems
LRT	Light Rail Transit
MDG	Millennium Development Goals
MoEP	Ministry of Environmental Protection
MoF	Ministry of Finance
MoEMR	Ministry of Energy and Mineral Resources
MTDF	Medium Term Development Framework
MTR	Mid Term Review
NIM	National Implementation Modality
NGOs	Non-Government Organizations
NMT	Non-motorized Transport (cycling and walking)
PDD	Project design document
PMO	Project Management Office
ProDoc	UNDP Project Document
PSC	Public Services Contract
RoK	Republic of Kazakhstan
RTA	Regional Technical Advisor
SUT	Sustainable Urban Transport
TDM	Transport Demand Model
TE	Terminal Evaluation
TJ	Tera Joules
TOE	Tonnes of Oil Equivalent
ToR	Terms of Reference
UNDP	United Nations Development Programme
UNDP-GEF	UNDP - Global Environmental Finance Unit
WB	World Bank

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EXECUTIVE SUMMARY

Project summary table

Table 1: Project Summary

Project Title:	**"City of Almaty Sustainable Transport (CAST)" project**			
			Committed at endorsement	*Realized at TE*
GEF Project ID:	4013	**GEF financing:**	4.886 mill. USD	4.886 mill. USD
PIMS	3757			
UNDP Project ID:	00076355	**IA/EA own:**	0.050 mill. USD	0.050 mill. USD
Country:	Kazakhstan	**Government:**	30.050 mill. USD	30.050 mill. USD
Region:	Central Asia	**Others (private):**	46.426 mill. USD	46.426 mill. USD
Focal Area:	Climate Change	**Total co-financing:**	76.526 mill. USD	76.526 mill. USD
FA Objectives, (OP/SP):	CC-SP5-Transport: Promoting Sustainable Innovative Systems for Urban Transport	**Total Project Cost:**	81.412 mill. USD	81.412 mill. USD
Executing Agency:	UNDP	**GEF endorsement:**	15/06/2011	
Other Partners involved:	Municipal Government of Almaty/ Department of Passenger Transport and Road (DPTAR) under the Municipal Government of Almaty	**(Operational) Closing Date:**	20/06/2016 (original) 20/12/2017 (proposed)	20/12/2017 (expected)

Introduction and brief description of the project

Since its independence, Kazakhstan has experienced a period of robust economic growth, rising personal incomes, and massive inflow of migrant workers from rural areas and neighboring countries. The impacts of economic growth in Almaty as well as other cities of Kazakhstan include those on the transport sector. The impact on the transport sector includes an increase in the emissions of GHG. Within the transport sector, the main sources of GHG emissions are the combustion of gasoline and diesel in personal vehicles (cars). The viable alternative to personal vehicles is public transport. In the baseline case, Almaty's public transport has evolved into a system that does not provide for comfort, convenience and efficient services to commuting passengers and therefore, people avoid its use.

The 'City of Almaty Sustainable Transport (CAST)' project focused on elimination of the barriers to modernizing urban transport in Almaty and proposed interventions in the Almaty public transport sector with the main objective of ensuring modal shifts towards more sustainable transport such as public and non-motorized modes. The project aimed to reduce GHG emissions in the transport sector in Almaty by 31 thousand tones of CO_2 annually from its demonstration project. The GEF-funded interventions were comprised of policy development and capacity building through provision of technical assistance and investment in demonstration activities.

The project has been designed as a full-sized project with the planned funding of USD 81,412,000 as per details provided in **Table 1**. CEO endorsement to the project was provided in June 2011. The project document was also signed in June 2011. The official start date of the project was 20 June 2011, with a duration of 5 years, so the project was expected to conclude on 20 June 2016. The implementation workshop was held in February

2012, and the first project steering committee was held in March 2012. A no-cost extension request till December 2017 was approved by UNDP GEF Executive Coordinator in Dec 2015, extending the project implementation timeline up to 20 December 2017. **Table 2** provides the objectives of the project along with the baseline situation and the targeted values of the indicators.

Table 2: Objectives of the CAST project (as per Project Document)

Indicator[1] / *Modified Indicators*	**Baseline**	**Project Targets**
Project Objective **To reduce the growth of GHG emissions from the transport sector in the City of Almaty, Kazakhstan.**		
A. Tonnes of CO_2 emissions reductions resulting from transport modal switches to public transport services ***New version revised as per MTR: Tonnes of CO_2eq emissions reductions resulting from transport modal switches to public transport services/ to non-motorized transport modes and other project actions.***	• 0 k tonnes CO_2 Baseline 2011 emission was estimated at 2.184 million tons CO2eq per year, but subject to be checked by TDM survey	• 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning • 308 k tonnes CO_2eq (10-year reduction after completion of CAST) ***New version revised as per MTR: 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning 308 k tonnes CO_2eq (10-year reduction after completion of CAST)***
B. Number of firm commitments from stakeholders for the implementation of improved public transport services in the City of Almaty	• No commitments for improving public transport services	• At least 2 plans for demonstration of improved public transport services in Almaty City by Year 3
C. Number of financing institutions committed to financing SUT	• No financing institutions committed to financing demo SUT	• 1 financing institution committed to financing demo SUT by Year 2
D. Percent increase in public transport ridership	• No increase of passenger trips on public transport • Baseline 2011 subject to be checked by TDM survey	• 20% increase of passenger trips on public transport by Year 5.
E. ***Added as revised by MTR: Number of policy documents on the role of urban mobility on national transport and climate change mitigation policies***	•	• ***Added as revised by MTR: One document presenting how national policies are supporting sustainable mobility in cities around the world by Year 5***

Table 3 provides the outline of the project and its different Outcomes and the Corresponding Outputs. The terminal evaluation (TE) of the project is being done before the project is closed. The evaluation was initiated by UNDP CO, Kazakhstan, in accordance with evaluation requirements set forth by GEF. The objective of the TE is to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming.

Table 3: Projected Outputs and Outcomes of the CAST project (as per Project Document)

Outcome	**Outputs**
Outcome 1: Improved management of public transport and air quality management	**Output 1.1:** Streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants for Almaty

[1] Numbering of the indicators has been done at the time of 'Terminal Evaluation', for the sake of easy reference

Outcome	Outputs
	Output 1.2: Strengthened public services contracts used to issue licenses for public transit routes. **Output 1.3:** M&E system for tracking performance of licensed private operators and state enterprises. **Output 1.4:** Study of the true costs and benefits and expected subsidies to sustain public transport quality. **Output 1.5:** Monitoring system for tracking GHG emission and transport-related air pollutants.
Outcome 2: Improved efficiency and quality of public transport in Almaty City	**Output 2.1**: Transport-demand model and strategic master plan for developing sustainable urban transport (SUT) in Almaty **Output 2.2**: Bankable feasibility studies for improved public transport in Almaty City **Output 2.3:** Program for bus fleet modernization
Outcome 3: Integrated traffic management measures in Almaty City	**Output 3.1:** Plans and implementation program for parking schemes in Almaty **Output 3.2:** Feasibility plans for integrated traffic management and retail economic stimulus areas
Outcome 4: Demonstration and raising awareness of SUT	**Output 4.1:** Implementation and engineering plans for a demonstration project on SUT (improved public transport services and integrated traffic management) **Output 4.2:** Technical assistance for construction of the SUT system **Output 4.3:** Technical assistance for operation and maintenance of the SUT demonstration **Output 4.4:** An urban transport information center and website **Output 4.5:** Workshops and papers that document the performance of the demonstration projects at reducing transport-related GHG emissions **Output 4.6:** Replication plans for sustainable transport in Almaty

This TE report is structured around the five UNDP/GEF evaluation criteria: Relevance, Effectiveness, Efficiency, Results/Impacts and Sustainability. Summary of assessment regarding attainment of the results and objectives of different Outcomes of the project and the project at an aggregate level is given in **Table 4**.

Table 4:Summary of Attainment of Results / Outcomes of the project

Project Objective / Outcome	Rating[2]
Project Objective: To reduce the growth of GHG emissions from the transport sector in the City of Almaty, Kazakhstan.	S
Outcome 1: Improved management of public transport and air quality in Almaty City	S
Outcome 2: Improved efficiency and quality of public transport services	S
Outcome 3: Integrated traffic management	S
Outcome 4: Demonstration projects on sustainable transport	S
Project	S

Evaluation Ratings

As per the requirements of the TOR for Terminal Evaluations, **Table 5** provides the ratings for relevance, effectiveness, efficiency, sustainability, and impacts of the project. The Table also provides the ratings for Monitoring and Evaluation (M&E), Implementing Agency (IA) and Executing Agency (EA) Execution, and

[2] Ratings for: Attainment of Results; Highly Satisfactory (HS): no shortcomings; Satisfactory (S): minor shortcomings; Moderately Satisfactory (MS): moderate shortcomings; Moderately Unsatisfactory (MU): significant shortcomings; Unsatisfactory (U): major problems; Highly Unsatisfactory (HU): severe problems

Assessment of Outcomes. Ratings have been provided using the obligatory GEF rating scale.

Table 5: Terminal Evaluation Ratings

1.Monitoring and Evaluation	Rating[3]		2. Implementing Agency (IA) & Executing Agency (EA) Execution	Rating
M&E design at entry	S		Quality of UNDP Implementation	S
M&E Plan Implementation	S		Quality of Execution - Executing Agency	S
Overall quality of M&E	S		Overall quality of Implementation / Execution	S
3. Assessment of Outcomes	**Rating[4]**		**4. Sustainability**	**Rating[5]**
Relevance	R		Financial resources	L
Effectiveness	S		Socio-political	L
Efficiency	S		Institutional framework and governance	L
Overall Project Outcome Rating	S		Environmental	L
			Overall likelihood of sustainability	L

Summary of conclusions

The CAST project has successfully addressed the barriers to sustainable urban transport in Almaty city. The results of the project will help to address similar barriers towards sustainable urban transport in other cities of Kazakhstan as well.

Barring actual implementation of the demonstration projects within the stipulated timelines and approval of a model PSC for urban transport, most of the activities envisaged under the project were successfully executed. Actual implementation of the demonstration project is presently underway and will be achieved in due course of time. However, the benefit of dissemination of the results of the demonstration projects (to achieve the replication and also to incorporate the lesson learnt in such replication projects) will not be realized, unless it is decided to carry out the dissemination of the results of the demonstration projects by the Government, even after closure of the CAST project. What this means is that the dissemination of results planned towards the end of the CAST project will not be able to include the results and lessons from the demonstration projects, as the demonstration projects won't get implemented by that time. The Project Manager has already secured commitment of the Almaty city municipality, including financial investments and PPP arrangements for implementation of the demonstration projects.

One of the implementation risks that was realized for this project is the inability to foster and approve the amendments to the legislation that would allow for the introduction of the Standard Public Service Contracts. In 2015-2017, a regular cycle of legislation revision was going on in Kazakhstan, which provided opportunity for the project to lobby the developed amendments directly through the Central Government and relevant Parliament Committee. UNDP was an active lobbyer of a set of amendments within its portfolio. At the time of TE, the Municipality Transport Department confirmed that the PSCs are on the priority agenda for communications with the Central Government, which is due to the Project's communications efforts and direct technical support.

The project has been able to achieve the reduction in the emission of GHGs (the objective of the project) and other pollutants from the urban transport sector in the city of Almaty, however, the level of reduction is short of the targeted reductions. Against the projected direct GHG emission reductions of 615 thousand tons of CO_2 and consequential (formally called indirect) GHG emission reductions of 1430 thousand tons of CO_2, the

[3] Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution: 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4. Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

[4] Ratings for Relevance: 2. R= Relevant (R); 1. NR=Not relevant

[5] Ratings for Sustainability: 4. Likely (L): negligible risks to sustainability; 3. Moderately Likely (ML): moderate risks; 2. Moderately Unlikely (MU); significant risks; 1. Unlikely (U): severe risks

CAST project would lead to direct GHG emission reductions of 502 thousand tons of CO_2 and consequential GHG emission reductions of 1000 thousand tons of CO_2 (bottom-up estimates) (2000 thousand tons of CO_2 by tops down approach). The CAST project has achieved its objectives in an efficient and effective manner. The results achieved are not only likely to sustain but would also lead to replication of similar projects in other cities of Kazakhstan. Apart from reduction in the emission of GHGs, the project has led to reduction in the emission of other air pollutants as well.

Recommendations

Recommendation 1: The project design of the CAST project is a city specific project. So much so, even the implementing agency for the project is the municipality of the city of Almaty. Due to this reason, there was minimal involvement of the central government of Kazakhstan (please see Section 3.1). Due to this, it became difficult (if not impossible) to address the issue / barriers relating to policy and regulations. For example, in the case of CAST project, a very important deliverable, 'an improved version of the public services contract' could not be worked out as this was in the jurisdiction of the central government. It is recommended that even in cases where the project is focused on a specific geographical area / city of a country, the government at the federal level should be effectively engaged in the execution of the project.

Recommendation 2: For the projects targeted at Urban Transport (or other urban infrastructure), there is very little scope of replication within a given city. For example, it is highly unlikely to have a number of LRT or BRT projects within a city. It is recommended that in such projects the design of the project should focus on other urban areas / cities for replication. The outreach and dissemination component of the project should be designed accordingly.

Recommendation 3: In case of the CAST project, there is a mix up between the Outputs and Activities to be carried out as well as the indicators. Many of the indicators in this case are more of activities (rather than indicators of the achievements). Carrying out the activities doesn't truly reflect the achievement of the desired Outcome. For example, if the desired Outcome is increased awareness level, organizing workshops, creating the website, etc. don't indicate the achievement of the Outcome. The right indicator could be the percentage of targeted population having the targeted level of awareness. The level of awareness could be measured by a survey (at the baseline and end line). It is recommended that the indicators should be objective-oriented rather than activity-oriented.

Recommendation 4: The timeframe assumed for implementation of the demonstration projects was not realistic. When it comes to the project goals for implementing the demonstration projects, the targets were a bit ambitious. It requires a number of time consuming sequential activities like carrying out the integrated transport plan, selection and detailing of the route, detailed engineering, detailed feasibility study, organizing the financing, acquiring the land and construction. The assumption that it would be possible to establish the urban transport infrastructure projects as demonstration projects within the implementation period of the project was unrealistic. This is one of the common problems with many GEF projects. This is considering that at times it is not possible to actually physically implement the basic infrastructure projects within the allowable timelines of four years for the GEF projects. It is recommended that in such cases for the future projects, only partial completion (e.g. funding and commitment organized for implementation of the demonstration project) may be considered as the target.

Recommendation 5: The demonstration project of the CAST project will get implemented only after the CAST project is closed. To ensure the benefits of the demonstration projects in terms of incorporation of good practices and lessons learnt in the replication projects, it is recommended that the process of dissemination of the results and lessons learnt from the demonstration projects be institutionalized. Also, it is recommended that towards the closure of the project a knowledge product be developed to capture all the good lessons learnt from the CAST project. Such a document also needs to be shared with the municipalities of other cities and other stakeholders.

Recommendation 6: The problems of traffic congestion and the resultant air pollution are partially due to unplanned growth and development of cities. The unplanned growth in turn may be due to increase in urban population. It is important that urban planning (taking into account the projected population of a given city) be carried out and the urban transport plan needs to be an integral part of the urban plan. It is also important to plan for homogeneous development at an aggregate level (including urban, semi-urban and rural areas), so that the unnecessary rush towards the cities can be restricted. It is recommended that integrated urban transport planning be carried out in conjunction with the overall urban planning at the country level as well as for city planning.

Recommendation 7: The CAST project missed out on the opportunity to address the issue of GHG emissions by focusing on the quality (standards) of fuels, standards of vehicles and driving habits. Fuel standards and vehicle standards are very effective means to address the underlying problem of GHG emissions and other air pollutants in urban areas. It is recommended that a separate project may be taken up based on the fuel standards and the vehicle standards.

Recommendation 8: Kazakhstan is an oil rich country. Exploration of oil leads to production of lot of associated gas. Not very long ago, large amounts of this associated gas was being flared (in the absence of opportunity to evacuate and use the associated gas). From the national perspective and from the view point of reduction in the emission of GHG (both due to flaring of gas and due to use of fuel in the vehicles), it makes sense to encourage the use of natural gas / associated for transport needs. The use of natural / associated gas can be done either;

- as compressed natural gas
- indirectly in the form of electricity generated using the associated gas and using electrically operated vehicles. This will depend on the logistics and comparative cost economics of evacuating the gas viz. a viz. evacuating the electricity
- after conversion of gas to methanol and use of methanol as fuel for the vehicles. This again will depend upon the volumes of gas, logistics and the comparative cost economics of the available options.

It is recommended that a detailed assessment may be carried out in this regard and the possibilities be explored. However, while exploring the option of use of gas as a transport fuel, the benefits of emission reductions (both GHG and air pollutants) can be fully realized only in cases where the vehicles with higher fuel efficiencies are used (please see recommendation 11 as well).

Recommendation 9: The feasibility studies for the urban transport demonstration projects carried out under the CAST project had not considered advertisement as a source of revenue. Advertisement opportunities exist on the rolling stock, infrastructure and even on the printed tickets. The revenues due to advertisements can provide the desired sustained source of revenues for public transport operators, while at the same time reduce the cost of transportation. It is recommended that the municipality work out a comprehensive plan for advertisements on the public transport rolling stock and infrastructure. Advertisement as a source of revenue may also be considered for all the replications.

Recommendation 10: There was an initial delay in the start of the project implementation. It was due to time taken for staffing. The staffing took time as procedures are required to be followed in the process of recruitment of the staff. This is one of the common problems in many GEF projects, wherein the implementation timelines of the project generally do not have adequate provision for the time required for recruitment of the project team. One of the solutions to the problem could be, to identify the key members of the project team at the time of approval of the project.

Recommendation 11: As evidenced from the estimation done under this assignment, the performance of CNG buses in Almaty (with average fuel efficiency of 66.8 m3/100 km) leads to higher GHG emissions compared to a baseline fleet of EURO V diesel buses. This is largely due to the fact that the CNG buses procured under the project do not meet the stringent fuel efficiency requirements. It is recommended that in case of fuel switching projects, the minimum energy efficiency levels of the rolling stock should be specified.

1. INTRODUCTION

1.1. Context, purpose of the terminal evaluation and objectives

The 'City Almaty Sustainable Transport (CAST)' project was designed to eliminate the barriers to sustainable urban transport for the Almaty city in Kazakhstan. The project focused on elimination of the barriers and proposed interventions in the Almaty public transport sector with the main objective of ensuring modal shifts towards more sustainable transportation such as public and non-motorized modes. The objective of the project was to reduce the growth of the transport-related GHG emissions in the city of Almaty, while simultaneously improving urban environmental conditions.

GEF CEO endorsement of the project was provided in June 2011. The project document was also signed in June 2011. The official start date of the project is 20 June 2011, with a duration of 5 years, so it was expected to conclude on 20 June, 2016. The implementation workshop was held in February 2012, and the first project steering committee was held in March 2012. A no-cost extension request till December 2017 was approved by the UNDP-GEF Executive Coordinator in Dec 2015, thereby extending the project implementation timeline to December 2017.

The project has been implemented with funding from Global Environment Facility (GEF) and United Nations Development Programme (UNDP). With the project approaching its end, a terminal evaluation of the project has been carried out. This is as per the standard practice for all UNDP implemented GEF funded projects. The UNDP CO invited a team of independent consultants comprising an International Consultant and a National Consultant to carry out the TE of the project as per the scope and terms of reference given in **Annex A**. The broader defined objectives of the TE were as follows:

- To compare planned outputs of the project to actual outputs.
- Identify (if applicable) the causes and issues which contributed to non-achievement of the targets of the project.
- Draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming.

The consultants, Mr. Dinesh Aggarwal (India), International Consultant and Ms. Olga Klimanova (Kazakhstan), National Consultant were selected and contracted by the UNDP CO in Kazakhstan to carry out the TE.

1.2. Scope and methodology of the TE

The evaluation has been carried out in accordance with the UNDP-GEF, Guidance for Conducting TEs of UNDP-supported Projects, as provided in the 'Handbook on Planning, Monitoring and Evaluating for Development Results'. Prior to the start of the TE, an inception report was prepared and shared with the UNDP CO at Kazakhstan and the project team. The inception report provided the outlines of the approach and methodology to be followed while carrying out the evaluation. It also provided the proposed timelines for the evaluation. The inception report included a table providing the criteria for the evaluation and the list of main evaluation questions. The table of TE criteria and the questions is given in **Annex B**. Accordingly, the methodology for carrying out the TE was comprised of following activities:

- **Review of Documents and Project Website:** Review of 'Project Design Document' and all relevant sources of information including documents prepared during the preparation Phase. This included the review of information on the project website. The review of documents included a review of financial data, mid-term evaluation report, sample of back to office reports, samples of project communication material etc. **Annex C** provides the list of documents reviewed.
- **Mission to Kazakhstan, Interviews with stakeholders and site visits**. A mission to Kazakhstan was undertaken from 31st July to 4th August 2017. The mission started with a briefing by the UNDP PMU

and the project team. The mission concluded with a presentation regarding the initial findings. During the mission, interviews with different stakeholders and project participants were carried out. The mission included visits to the sites of the demonstration projects being supported by the CAST project. Some of the interviews were also carried out on Skype after the mission. **Annex D** provides the overall schedule of the missions and the stakeholders interviewed during the mission. The mission also served the purpose of collecting some additional documents to support evidence bases evaluation. Some of the documents to be reviewed were also received after the mission.

The assessment of project performance has been carried out, based on the expectations set out in the Project Logical Framework/Results Framework, which provides performance and impact indicators for project implementation along with their corresponding means of verification. While doing so, the modified / additional set of indicators, as suggested at the Mid Term Review (MTR) of the project, have also been taken into account. While carrying out the evaluation, emphasis has been placed on evidence based information that is credible, reliable and useful. As stipulated before, for these additional documents supporting the achievements of the project were collected during the mission to Kazakhstan and also after the mission.

The review of documents provided the basic information regarding the activities carried out to attain the desired outcomes and outputs and the actual achievements. However, the mission was needed to verify the information, get some missing data and to learn about the opinion of stakeholders and project participants to interpret the information. During the mission, the interviews with the key stakeholders' / project participants were based on open discussion to allow respondents to express what they feel are the main issues. This was followed by more specific questions on the issues mentioned. During the interviews, the evaluation criteria and the questions (Please see **Annex B**) were used as the check list to raise relevant questions and issues.

The evaluation has been conducted in accordance with the principles outlined in the United Nations Evaluation Group 'Ethical Guidelines for Evaluation' as given in **Annex E**.

1.3. Structure of the TE Report

The structure of the report is as per the format suggested in the Terms of Reference for the TE. However, the contents of the chapter on findings have been split into three separate chapters due to the size of the text.

The report starts with a chapter providing an introduction which is followed by the chapters of project description and findings. The last chapter of the report provides the conclusions and the recommendations. Additional information is provided in the Annexes to the report. The Executive Summary of the report is provided in the beginning of the report and the rest of the report is organized as follows:

- Chapter 1: Introduction to the project
- Chapter 2: Project description and development context.
- Chapter 3: Findings: Project design and formulation
- Chapter 4: Findings: Project implementation
- Chapter 5: Findings: Project results
- Chapter 6: Conclusions, recommendations and lessons

As has been stipulated before, the findings have been organized in three chapters (instead of one single chapter as suggested in the TOR) due to the size of the text. **Annex B** shows where the main criteria and questions of the TE can be located in different sections of the report.

2. PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

2.1. Project start and duration

UNDP country office in Kazakhstan is the responsible partner for the CAST project that was implemented in accordance with UNDP's National Implementation Modalities (NIM) procedures with Municipality of Almaty city as the National Implementing Partner (NIP). It is a GEF funded five-year project, which started in June 2011 (CEO endorsement date: 15th June 2011) and is expected to be completed by December 2017 (the initial completion date – June 2016). The project implementation period was extended until December 2017 based on the recommendations at the time of MTR. The inception review was carried out in April 2012 (10 months after CEO endorsement). This initial delay was due to the time required for project staffing procedures (please see Recommendation 10 as well). The Mid-Term evaluation was completed in March, 2014.

At the time of the TE in August 2017, the project had been in operation for 6 years. From the planned GEF funding of USD 4.886 million, a total of USD 4.597 (94%) has been spent. The co-financing amount defined in the project document is USD 76.526 million, against which about USD 231.04 million have been mobilized.

2.2. Problems that the project sought to address

The problem that the project seeks to address is the growing GHG emissions and other air pollutants from the transport sector in Almaty city of Kazakhstan, due to the products of combustion from gasoline and diesel fuels. As stated in the project document: *"The CO_2 emissions from the transport sector in Almaty have grown from an estimated 2.3 million tones in 2003 to 5.2 million tones in 2008. A business-as-usual (BAU) approach to urban transport in Almaty will result in a steady increase in CO_2 emissions to 16.8 million tones by 2015 and 24.0 million tones by 2020".* The root causes underlying this problem include three groups of challenges that the project targeted to address:

- Low road capacity of the city's key corridors, ongoing increases in car traffic, unsupervised parking of vehicles along the roads, lack of synchronized lighting, poor fuel quality, a fuel inefficient and aged car fleet, traffic congestion and poor road management.
- Almaty city public transport system does not provide for comfort, convenience and efficient services to commuting passengers due to lack of strategic vision of the system development at the systemic, institutional and operational levels and insufficient capacity of the key stakeholder groups.
- More specific capacity challenges as indicated in the project document include poor inter-sectoral cooperation between governmental divisions and agencies responsible for the public transport system components and monitoring of GHG emissions from public transport; inability to plan and implement the incentive-based and economically viable measures to improve and standardize the quality of public transport services; inability to plan and implement integrated traffic management measures; low awareness and understanding of sustainable urban transport concepts by all stakeholder groups, including governmental agencies, transport sector professionals, public transport operators, car owners, civil society organizations and public transport users.

2.3. Immediate and development objectives of the project

The project was designed to support achievement of GEF-4 Strategic Objective CC 5: Promoting Sustainable Innovative Systems for Urban Transport with a particular emphasis on "non-technology" options, such as planning, traffic management and modal shift to low-GHG intensive transport modes.

The development objective of the project is to eliminate the above listed problems to ensure sustainable transport management and stimulate the modal shift towards more sustainable transport such as public and non-motorized transport. Ultimately, the project aims to reduce GHG emissions from the transport sector in

Almaty City of Kazakhstan by 31 thousand tons of CO_2 equivalent annually (due to its demonstration projects). Further, reduction in the emission of GHG was to be achieved post implementation of the CAST project due to replication. The objectives of the project were to be achieved through addressing the barriers and following specific activities as stated in the project document:

- Streamline institutions and regulatory policy framework for planning and implementing improved urban public transport services;
- Adopt holistic planning approaches towards a successful "demonstration" of improved public urban transport services;
- Demonstrate a 'public transit system' that competes with private transport and shifts travelers from privately owned vehicles to more efficient and environmentally friendly modes of road travel;
- Support the municipality in the implementation of successful SUT demonstration projects for improved public urban transport services and integrated traffic management measures;
- Facilitate the exchanges of old buses for fuel efficient models (CNG) that will operate on high volume routes such as a new BRT route;
- Facilitate awareness among all stakeholders on sustainable transport issues framed by the project scope.

An analysis of the attainment of project Outputs, Outcomes and Objectives is presented in Section 5.1 (Project Results and Impacts), which compares the values of the indicators at the end of the project with the values at the baseline and targeted values for the CAST project.

2.4. Baseline and expected results

Table 6 provides the details of the baseline situation and the expected results of the project

Table 6:Expected Results of the Project (Based on the Log-Frame of the Project)

	Baseline Situation	Expected Results
Reduction in GHG emissions from the urban transport model shift to sustainable transport in the Urban Transport Sector	• Baseline 2011 emission was estimated at 2.184 million tons CO_2eq per year, but subject to be checked by TDM survey	• 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning • 308 k tonnes CO_2eq (10-year reduction after completion of CAST)
Commitments from stakeholders for implementation of improved public transport services in the City of Almaty	• No commitments for improving public transport services	• At least 2 plans for demonstration of improved public transport services in Almaty City by Year 3
Financing institutions providing finance for SUT projects	• No financing institutions committed to financing SUT	• 1 financing institution committed to financing demo SUT by Year 2
Increase in public transport ridership	• No increase of passenger trips on public transport	• 20% increase in passenger trips on public transport by Year 5.

An analysis of the attainment of project Outputs, Outcomes and Objectives is presented in Section 5.1 (Project Results and Impacts), which compares the values of the indicators at the end of the project with the values at the baseline and targets. An assessment of the strengths and weaknesses of the log-frame is included in Section 3.1 (Analysis of LFA / Results Framework)

2.5. Main stakeholders

The project was successful in setting up an effective network of stakeholders engaged in the transport sector of Almaty city and the country. These stakeholders can be classified within four main categories: national and regional governments, international institutions, public and private companies and operators, and non-governmental organizations. **Table 7** provides the list of important stakeholders of the project.

Table 7: List of main stakeholders involved in the CAST project

Stakeholder	Description
Government	
Ministry of Energy	Ministry of Energy is responsible for development, endorsement and implementation of the national policy on environmental management, energy, and transport sectors in Kazakhstan. The goal of the current national policy in relation to the CAST project is to enable strengthening of regulatory control over municipalities on (i) permissible automobile emissions from vehicles and the quality of retail automobile fuels; (ii) reducing the environmental impacts of automobile transport, and encouraging the use of biofuels and fuel additives; and (iii) implementing automated real-time emissions monitoring at the source notably for major industrial enterprises.
Ministry for Investments and Development	Ministry for Investments and Development is responsible for development, endorsement and implementation of the national policy on industrial development, innovations, investments, and energy efficiency in transport sector of Kazakhstan. These policies are implemented through two Committees of the Ministry – Committee of Transport and Committee of Motor Roads. Committee of Transport develops regulations and standards in transport sector and supervises the design and implementation of innovative projects in transport sector. Committee of Motor Roads develops regulations and standards in road infrastructure planning, operation and maintenance, oversees investment and social policies in road construction and renovation sector, and controls the technical quality of the road infrastructure and compliance with appropriate standards.
Almaty city Municipality	Is the Implementing Partner for the GEF-funded UNDP-implemented project in Kazakhstan: City of Almaty Sustainable Transport project and is responsible for the achievement of the main objectives set by the project document, compliance of the project interventions with the national and municipal policies, coordination of the national and municipal stakeholders, and chairing the Project Steering Committee to ensure the effective project management. Three departments of the Almaty city Akimat were the key beneficiaries of the project: Department for Public Transport and Roads, Department of Natural Resources and Environmental Management, and Department of Economy and Budget Planning.
Department for Public Transport and Roads of Almaty city Akimat (DPTAR)	DPTAR is the municipality's authorized body for the formulation and implementation of public policies for passenger transport, road construction and maintenance in Almaty city, as well as administering programs for passenger transport, and construction / repairing of roads.
Department of Natural Resources and Environmental Management of Almaty city Akimat	Department of Natural Resources and Environmental Management provides management oversight to the air quality monitoring programs, estimation and compliance with the maximum permitted standards of hazardous emissions, including GHG emissions from the transport sector, and enforcement of the policy regarding emission standards in newly imported motor vehicles and all motor vehicles manufactured in Kazakhstan.
Department of Economy and Budget Planning	Department of Economy and Budget Planning plans and provides annual budget allocations for all departments within the Municipality.
Department of road police, Department of Internal Affairs of Almaty city	Handles traffic management by implementing the following functions: controls and regulates road traffic, takes measures to maintain road safety, determines rules, regulations and standards for the design of most traffic management schemes and is in charge of contracting out the operation of the traffic signal system as well as road signing and marking. Funds for these measures come from the Almaty city government budget.
Municipal Institutions	
KazGydroMet	Is responsible for monitoring of air quality in Almaty using 16 monitoring stations including 5 automated stations in the city and 6 high altitude automated stations situated in the mountains to the south of Almaty. These stations monitor SOx, NOx, CO_2, phenols, and formaldehyde levels in the air. Reports to the Department of Natural Resources and Environmental Management of Almaty city Akimat.
Transport Holding of Almaty city LLP (TH)	Is a private company affiliated with the Almaty city Municipality that was established to supervise the operation of public transport in Almaty city in accordance with municipal programs and standards. TH tenders and contracts the public transport operating companies, regulates and controls the quality of the provided services. TH is the main operator of the

Stakeholder	Description
	electronic ticketing program that is being introduced in Almaty with the support of CAST project. TH is also responsible for development and implementation of sustainable public transport management in relation to operating companies.
Almatyelectrotrans LLP (municipal public transport operator)	The biggest public transport operator in Almaty both in terms of fleet size (195 trolley buses, 17 trams, and 600 CNG buses) and operational and financial capacity. Municipality of Almaty city was a founder and biggest shareholder of this company. In 2016 ,the Company had transferred all capital assets to Green Bus Company for operation under Trust Contract for 5 years. As a public transport operator in Almaty, electrotrans is in charge for scheduling and management of buses, trolley and tram routes; maintenance and management of bus and tram stops and dispatching of rolling stock into service; development, management and control of power supply for rolling stock including high and low voltage cables; estimation and allocation of subsidies from the budget for transport of passengers eligible for reduced fares (i.e. seniors and students); sale of monthly tickets; formulation and implementation of plans to increase efficiency and growth of ridership; and emergency and safety planning.
Almaty Development Centre	Almaty Development Center was established by Municipality with 100% share. The Center carries out research and studies to introduce innovative practices in urban planning, such as Smart City and Comfortable City projects. The Center provided support and benefitted from technology transfer, awareness and training activities of the CAST project to improve the capacity of the Municipality and the Center in sustainable management of public transport.
NGOs	
"Velo-Almaty" initiative group	The group was actively involved in the project for the implementation of the component of NMT development, particularly in awareness and training activities related to bike lane construction. The CAST project enabled this group to grow its capacity significantly and become a valued partner to Municipality and other governmental agencies.
"Arzhan" Public Fund	The Fund was engaged in awareness and study activities related to public transport access for disabled people.

3. FINDINGS: PROJECT DESIGN AND FORMULATION

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Were the project's objectives and Outcomes clear, practicable and feasible within its time frame?**
- **Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed?**
- **Were lessons from other relevant projects properly incorporated in the project design?**
- **Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval?**
- **Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?**
- **Were the project assumptions and risks well articulated in the PIF and project document?**
- **Whether the planned outcomes were "SMART" (specific, measurable, achievable, relevant and time-bound)?**

3.1. Analysis of LFA/Results Framework

Table 8 provides the Objectives, the planned Outcomes and the Indicators (along with the baseline and targeted situation of the indicators) of the CAST project. Modifications in the project log-frame were suggested both at the time of project inceptions and at the time of MTR of the project. The modifications are also marked in the Table.

Table 8: **CAST Project Objectives, Outcomes and Indicators (as per Project Document and modifications at Project Inception and Mid Term Review)**

Indicator[6] / *Modified Indicators*	Baseline	Project Targets
Project Objective **To reduce the growth of GHG emissions from the transport sector in the City of Almaty, Kazakhstan.**		
A. Tonnes of CO_2 emissions reductions resulting from transport modal switches to public transport services ***New version revised as per MTR: Tonnes of CO_2eq emissions reductions resulting from transport modal switches to public transport services/ to non-motorized transport modes and other project actions.***	• 0 k tonnes CO_2 Baseline 2011 emission was estimated at 2.184 million tons CO_2eq per year, but subject to be checked by TDM survey	• 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning • 308 k tonnes CO_2eq (10-year reduction after completion of CAST) ***New version revised as per MTR: 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning 308 k tonnes CO_2eq (10-year reduction after completion of CAST)***
B. Number of firm commitments from stakeholders for the implementation of improved public transport services in the City of Almaty	• No commitments for improving public transport services	• At least 2 plans for demonstration of improved public transport services in Almaty City by Year 3
C. Number of financing institutions committed to financing SUT	• No financing institutions committed to financing demo SUT	• 1 financing institution committed to financing demo SUT by Year 2
D. Percent increase in public transport ridership	• No increase of passenger trips on public transport • Baseline 2011 subject to be checked by TDM survey	• 20% increase of passenger trips on public transport by Year 5.
E. ***Added as revised by MTR: Number of policy documents on the role of urban mobility on national transport and climate change mitigation policies***	•	• ***Added as revised by MTR: One document presenting how national policies are supporting sustainable mobility in cities around the world by Year 5***
Outcome 1: Improved management of public transport and air quality in Almaty City		

[6] Numbering of the indicators has been done at the time of 'Terminal Evaluation', for the sake of easy reference

Indicator[6] / *Modified Indicators*	Baseline	Project Targets
1. Number of streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants for Almaty ***Revised by MTR:*** ***Number of streamlined institutional arrangements for developing and regulating urban transport services*** ***Number of streamlined institutional arrangements for monitoring transport related GHG emissions and other air pollutants for Almaty***	• Current institutions unable to advance projects to improve the state of urban transport in Almaty	• One institutional management plan that streamlines arrangements for developing and regulating urban transport services and monitoring transport-related GHG emissions and other air pollutants in Year 1
2. Number of standard public service contracts of international standard to be used for private operators delivering public transport services to Almaty	• No effective standard public service contracts for delivery of public urban transport	• One standard public service contract template for developing improvements in public transport in Almaty is available by Year 1
3. Number of trained Municipality personnel in monitoring and managing public service contracts for improved urban transport delivery and GEBs ***Revised by MTR:*** ***Number of trained Municipality personnel in monitoring and managing public service contracts for improved urban transport delivery and monitoring performance of public service contracts GEBs***	• Lack of trained personnel in effective management of public service contracts for public transport services	• 5 trained personnel in effective management and monitoring of public service contracts for public transport services and GEBs by Year 2
4. Number of M&E systems developed for monitoring performance of public service contracts	• No M&E system for monitoring performance of public service contracts	• M&E system for monitoring performance of public service contracts by Year 2
5. Number of studies on the true costs and benefits and expected subsidies to sustain public transport quality.	• No understanding of the cost implications to sustain public transport quality	• One study on expected subsidies to sustain public transport quality in Almaty City by Year 2 • ***New version as revised by MTR: One study and expected subsidies to sustain public transport quality in Almaty City by Year 3***
6. Number of monitoring systems for tracking reduction of transport-related GHG and air pollutant emissions	• No monitoring system for tracking GHG or air pollutant emissions from transport in Almaty	• 1 GHG/air pollutant monitoring system (software, data collection protocols and surveys) to measure and report on CAST direct GHG emission impact by Year • ***New version as revised by MTR: GHG/air pollutant monitoring system (software, data collection protocols and surveys) to measure and report on CAST direct and indirect GHG emission impact by Year 5***
7. Number of trained Municipality personnel in operating public transport in an efficient, safe and demand responsive manner.	• Lack of trained personnel in effective daily operation of public transport	• 5 trained personnel in effective daily management of public transport by Year 2
8. Number of trainees on the operation and maintenance of new public transport rolling stock	• No trained drivers and mechanics on the operation and maintenance of public transport rolling stock	• 50 trainees on the operation and maintenance of new buses and re-fuelling infrastructure by Year 2
Added as per MTR: 9. ***Number of institutional arrangements for coordinating sustainable mobility policies within the Municipality based on SUTS***	• ***Fragmentation of competences and actions within the Municipality.***	• ***One formal Working Group on Sustainable Mobility established within the Municipality, including coordination with urban planning by Year 3***

Indicator[6] / *Modified Indicators*	Baseline	Project Targets
Outcome 2: Improved efficiency and quality of public transport services		
10. An optimized public transport route network developed by a Transport-Demand Model	• City public transport network that has poor connections and routings and is not an integrated system.	• An optimized integrated public transport route network that has been developed by a new Transport Demand Model by Year 2
11. A holistic and integrated Sustainable Urban Transport Strategy and Action Plan	• Lack of holistic and integrated planning of Sustainable Urban Transport	• One integrated Sustainable Urban Transport Strategy and Action Plan approved by Municipality by end of Year 2
12. Number of training programs, local conferences and workshops, field visits on Sustainable Transport	• Lack of knowledge on sustainable transport policies, strategies and projects	• 1 program to enhance knowledge and skills within the Municipality on Sustainable Transport based on international best practice examples by Year 2
13. Number of feasibility studies for the development of sustainable transport improvements that include LRT, BRT and feeder routes, parking, cycling and pedestrian	• Piecemeal initiatives for the development of sustainable transport in Almaty	• At least 1 feasibility study on developing sustainable transport improvements in Almaty by Year 2
14. Investment mobilized in less GHG intensive urban transport	• Moderate investments mobilized for less GHG intensive urban transport	• Commitments for additional financing of less GHG intensive urban transport at the amount of USD 100 million by Year 5.
15. Number of new rolling stock procured and operated in the public transport system through old bus exchanges	• No program or plans for modernization of public transport rolling stock of the private sector	• 200 old buses exchanged for new buses in the private sector by Year 3
*16. **Transferred from Outcome 3 revised as per MTR: An integrated ticketing system for all public transport modes in Almaty***	• ***No integrated ticketing system for public transport***	• ***1 integrated ticketing system for public transport implemented by Year 4***
Outcome 3: Integrated traffic management		
17. Number of paid parking schemes for Almaty planned ***Revised as per MTR: Number of paid parking schemes for Almaty planned and implemented***	• No paid parking schemes being planned	• 2 plans for paid parking schemes in downtown core of Almaty and enforcement of parking restrictions in selected areas of Almaty by Year 2 ***Revised as per MTR:*** ***1 plan paid parking schemes in downtown core of Almaty and enforcement of parking restrictions in selected areas of Almaty by Year 4***
18. Number of traffic management schemes planned	• Ad hoc measures taken to improve traffic flows in Almaty	• 2 traffic management schemes by Year 3
An integrated ticketing system for all public transport modes in Almaty ***(at project inception moved to Outcome 2 – Indicator no. 16)***	• No integrated ticketing system for public transport	• 1 integrated ticketing system for public transport implemented by Year 3
19. Number of plans for restricting motor vehicle movements along certain corridors to encourage pedestrian and cycling (non-motorized vehicle traffic) and retail economic development	• No plans for pedestrians or cycling corridors	• 1 plan for restricting motor vehicle movement along a selected corridor to encourage pedestrian and cycling corridors and enhance retail economic development by Year 3
20. Number of official quality taxi's and taxi-stands available to the public.	• Taxi sector does not offer an attractive alternative	• 1 study on improved quality of taxi sector by Year 1
Outcome 4: Demonstration projects on sustainable transport		
21. Bankable engineering plans for demonstration SUT project in Almaty City	• No demonstration projects on sustainable transport	• At least 1 demonstration on sustainable transport in Almaty. Selection of demonstration project by Year 2. Preparation by Year 3. Implementation Year 4. Operational by Year 5.
22. Number of financing institutions that commit financing assistance to demonstration SUT	• No financing institutions committed to financing demonstration SUT	• 1 financing institutions committed to financing demo SUT by Year 2

Indicator[6] / *Modified Indicators*	Baseline	Project Targets
23. Number of corridors with separated bus lanes and LRT in operation	• 0 km of operational bus lanes and LRT	• two corridors separated bus lanes and one corridor of LRT in operation by Year 5
24. Number of corridors of improved trolley bus routes in operation	• 0 corridors of improved trolley bus routes in operation	• One improved corridors trolley service by Year 5
25. Percent increase in public transport ridership	• 0% increase on public transport ridership Baseline 2012 will be set by the TDM surveys and monitored annually afterwards. A monitoring plan to be implemented in Year2.	• 20% increase in public transport ridership by Year 5.
26. Number of actions to promote public awareness on sustainable transport and CAST-project	• No public awareness of Sustainable Transport and CAST-project	• 1 sustainable transport public awareness campaign and communication about CAST-project by Year 2
27. Number of urban transport information centers established	• 0 information centers established	• 1 information center on SUT demo project established in Year 3
28. Number of websites related to improved public transport in Almaty	• 0 websites on public transport	• 1 website related to improved public transport in Almaty by Year 3
29. Number of workshops where experience of demonstration projects is shared	• 0 workshops conducted	• 3 workshops where experience of demonstration projects is shared completed by Year 5
30. Number of papers documenting performance of demonstration projects at reducing transport-related GHG emissions	• 0 papers that document demo project performance	• 5 papers documenting performance of demonstration projects at reducing transport-related GHG emissions by Year 5
31. Number of plans for replicating demonstration projects	• 0 plans for replicating demo projects	• 2 plans for replicating demonstration projects by Year 5
Added as per MTR: *32.* ***Number of one street parking places removed or regulated under***	• ***Ineffective regulation***	• ***500 parking places removed or regulated in connection with new PT corridors and NMT schemes***
Added as per MTR: *33.* ***Number of plans for improving NMT implemented***	• ***No plans implemented***	• ***One new pedestrian and cycling corridor implemented by Year 5.*** • ***One plan for expansion traffic calming zones implemented by Year 5***

The project design as presented in the 'Project Document' did specify the expected set of Outputs for each of the Outcome of the project. However, the expected outputs did not find their required place in the log-frame of the project. The projected Outputs for the four Outcomes of the project were as given in **Table 9**.

Table 9: Projected Outputs for different Outcomes of the CAST project (as per Project Document)

Outcome	Outputs
Outcome 1: Improved management of public transport and air quality management	**Output 1.1:** Streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants for Almaty **Output 1.2:** Strengthened public services contracts used to issue licenses for public transit routes. **Output 1.3:** M&E system for tracking performance of licensed private operators and state enterprises. **Output 1.4:** Study of the true costs and benefits and expected subsidies to sustain public transport quality. **Output 1.5:** Monitoring system for tracking GHG emission and transport-related air pollutants.
Outcome 2: Improved efficiency and quality of public transport in Almaty City	**Output 2.1**: Transport-demand model and strategic master plan for developing sustainable urban transport (SUT) in Almaty **Output 2.2**: Bankable feasibility studies for improved public transport in Almaty City **Output 2.3:** Program for bus fleet modernization

Outcome	Outputs
Outcome 3: Integrated traffic management measures in Almaty City	**Output 3.1:** Plans and implementation program for parking schemes in Almaty **Output 3.2:** Feasibility plans for integrated traffic management and retail economic stimulus areas
Outcome 4: Demonstration and raising awareness of SUT	**Output 4.1:** Implementation and engineering plans for a demonstration project on SUT (improved public transport services and integrated traffic management) **Output 4.2:** Technical assistance for construction of the SUT system **Output 4.3:** Technical assistance for operation and maintenance of the SUT demonstration **Output 4.4:** An urban transport information center and website **Output 4.5:** Workshops and papers that document the performance of the demonstration projects at reducing transport-related GHG emissions **Output 4.6:** Replication plans for sustainable transport in Almaty

Some of the key issues with the project design are as follows:

1. The project design of the CAST project is a city specific project. So much so, even the implementing agency for the project is the municipality of the city of Almaty. Due to this reason, there was minimal involvement of the central government of Kazakhstan (Please see recommendation 1 as well). Some of the adverse implications of such an approach are:
    a. It becomes difficult (if not impossible) to address the issue / barriers relating to policy and regulations. For example, in the case of CAST project a very important deliverable, 'an improved version of the PSC could not be worked out as this was in the jurisdiction of the central government.
    b. For the projects targeted at Urban Transport, there is very little scope of replication within a city. For example, it is highly unlikely to have a number of LRT or BRT projects within a city. At best one may have different implementation phases of an integrated large LRT and BRT project. In case the project is planned at the national level, replication can be targeted at different cities of the country.
2. The indicators to determine the achievement of the objectives and results of the project have been fixed at the Outcome level, it is advisable to put the indicators at the Output level. There is a mix up between the Outputs, Activities to be carried out and the indicators.
3. There are a couple of indicators that are common at the project objective level and the Outcome level, for example, Indicator C and Indicator 22; Indicator D and Indicator 25.
4. Many of the indicators in this case are more of activities (rather than indicators of the achievements). Carrying out the activities don't truly reflect the achievement of the desired Outcome (please see recommendation 3 as well). For example, if the desired Outcome is the increased awareness level, organizing the workshops, creating the website, etc. don't indicate the achievement of the Outcome. The right indicator could be the percentage of targeted population having the awareness. The level of awareness could be measured by a survey (at the baseline and end line).
5. When it comes to the project goals, the targets were a bit ambitious (please see recommendation 4 as well). This is considering that the timeframe assumed for implementation of the demonstration projects was very optimistic. It requires a number of time consuming sequential activities like carrying out the integrated transport plan, selection and detailing of the route, detailed engineering, detailed feasibility study, organizing the financing, acquiring the land and construction. The assumption that it would be possible to establish the urban transport infrastructure projects as demonstration projects within the implementation period of the project was unrealistic.
6. The project design has missed the important point that the GHGs are global pollutants, whereas, the other air pollutants are local pollutants. It also missed the point that monitoring of GHG is carried out by a mass balance approach, whereas, monitoring of other air pollutants is carried out by actual on-

site measurement. Thus, the monitoring of GHG and other air pollutants should not have been clubbed together (please see Indicator 1, Indicator 6).

The CAST project team recognized some of these problems in the early stages of project implementation and took the corrective actions. For example, the project team included the municipalities of other cities of Kazakhstan and the central government officials in the stakeholders' consultation process and also in all the capacity building and training activities (Please see adaptive measures section 4.1 as well).

3.2. Assumptions and Risks

At the time of project design, a risk analysis of the project was carried out and the risk analysis was included in the 'Project Document' (Annex 1 of the Project Document). **Table 10** provides the identified risks and the corresponding risk mitigation options.

Table 10: Risks identified during project design of CAST Project (as per the Project Document)

No.	Description	Type	Impact	Risk Mitigation Strategy / Response of the Management
1	Lack of ongoing, long-term (municipal or central) government support for improved public transit services (related to Outcome 1)	Political	The risk would prevent the project from delivering on its objectives for Outcome 1	The project will focus on strengthening institutions involved with the formulation of urban transport policy. These efforts will work towards achieving strong institutional agreements with all levels of government and civil society that will be invaluable in the preparation of quality bankable studies for developing SUT and raising the confidence of lending institutions on SUT plans and securing financial commitments for implementing improved public transit services for Almaty City.
2	Unfavourable investment climate for improved urban transit services in Almaty City and modern bus purchases. Current investment conditions for modern buses is poor with private operators assuming large risks risk of congested bus routes, vagueness of subsidy support	Political	The risk would prevent the project from delivering on its objectives for Outcomes 2 and 4.	The project will work closely with the ongoing programs with EBRD to assist in creating a more favourable climate for bus purchases for the SUT project. In addition, designs to improve urban transit will include holistic integrated bus route designs with the intention of ensuring sustained and improved bus services, sustained revenue streams to private operators and reduced risks to private sector in the purchase of the new buses.
3	Sale of municipal bonds does not result in sufficient financing for sustainable transport projects	Financial	The risk could lead to low interest of truck and bus operators in acquiring energy efficient vehicles	Project will assist the Municipality in developing holistic and thorough sustainable transport plans that forecast revenues and expected costs, reduce perceived investment risks and attract other financing institutions.
4	No buy-in for various plans developed from this project and no further efforts would be made	Political	The risk could jeopardize implementation of SUT demonstration and low replication	The project will work closely with the municipality to ensure awareness of the holistic benefits of the project. This would include increased awareness of creating a favourable climate for bus purchases by the private sector, designs of holistically integrated bus routes with the intention of ensuring sustained and improved bus services, sustained revenue streams to private

No.	Description	Type	Impact	Risk Mitigation Strategy / Response of the Management
				operators and reduced risks to private sector in the purchase of the new buses
5	Key components such as monitoring system and program for bus fleet modernization would not be sustained	Institutional		If the implementation of bus fleet modernization program is successful, replication of the sustainable transport model is expected with an expansion of a new bus fleet, increased public transport ridership and additional revenues. After the GEF assistance, other bus operators should find employment under the new public transport system to be attractive, and would be agreeable to trade-in their fuel inefficient buses.

Apart from the risks mentioned in the project document a couple of risks were identified at the PIF stage. The couple of risks which were identified at the stage of PIF are presented in **Table 11**. Also given in the Table is the suggested risk mitigation measures.

Table 11: **Risk of the project identified at the PIF stage**

Risk	Risk Rating	Mitigation Measures
Protracted global financial crisis leads to significant cuts in government spending for public transport sector	High	The risk that municipal government planned highly capital-intensive investment plan in public transport infrastructure (primarily metro) will not materialize as planned is quite likely given the dare situation with municipal budget. The project will therefore focus on promoting less capital-intensive measures and modal shifts which should be possible to finance and implement in the situation of resources-constrained budget.
Insufficient support for key decisions from important government institutions	Low	Key government and city officials will be fully involved and consulted during project preparation and requested to endorse the project strategy and recommendations prior to obtaining GEF approval for FSP
Resistance of public to switch to less GHG intensive transportation	Medium	Mitigation measures to this risk will form a core part of project strategy, i.e. making sure that public transport meets customers' expectations in terms of time, conform and quality. All project components (expect Outcome 3) are designed to contribute to the change in perception and motivate people to use alternatives to private cars

During inception of the project following additional risks were identified:

- Lack of commitment of the Municipality to develop and implement sustainable urban transport projects
- Continuation of implementation of ad-hoc measures and isolated projects by the municipality.
- Lack of capacity at the municipality to work on the development, management and implementation of the CAST-project.
- Lack of commitment of the municipality to adopt a new organizational and institutional model for public transport and urban transport.

All the four additional risks identified at the time of project inception relates to the municipality and are not very different from one another.

The log-frame of the project included a set of assumptions for each of the projected Outcomes of the project. The assumptions which were made at the time of project design are given in **Table 12**. Also given in the Table are the comments and observations at the time of 'TE' of the project.

Table 12: Assumptions made at project design of CAST Project (as per the Project Document)

#	Assumption	Comments at TE
Project Objective		
1	Monitoring and evaluation activities planned under the project are fully supported and implemented	The project implemented the M&E activities in accordance with the UNDP requirements and had full support from the Steering Committee (as a project governing body). Adaptive management approach was adequately utilized by the Project Manager and UNDP staff.
2	Continued Municipality support for the modernization of the bus fleet to reduce air pollution and GHG emissions	Overall national policy (Green Economy) and country development context of Kazakhstan (Renewable energy EXPO) provides good environment for implementation of 'green' initiatives in general, and green transportation in particular. The transport emissions in Almaty are recognized as a key problem for the city. At the designing stage, the project has successfully identified its systemic and institutional niche, which helped to get continued support.
3	Reliable data from surveys on modal transport switches	The project reported that they managed to use the data to define/confirm/communicate the problems with the public transport that was also used to lobby the legislation amendments within the Central Government. The task on development of public transport M&E system, as reported by the project, is being done through the newly introduced e-ticketing arrangements. But this system still provides no reliable data either on switch, or on the quality of services. The risk was not sufficiently addressed.
4	Firm commitments from all stakeholders for the implementation of integrated sustainable transport projects including financing of projects	The risk was adequately addressed by the project manager by taking the advantage of the current strategic paradigm of national development, such as green economy initiatives, green energy initiatives, and conceptual targeted programs at the national level. This was achieved through proactive lobbying, policy and legislation development assistance, networking, awareness and training adaptation to capacity needs at the municipal and national levels, cooperation with the partnering initiatives.
Outcome 1		
5	Proposed institutional and regulatory changes are supported by the Municipality	The established Transport Holding under the Municipality that handles all regulatory functions of public transport sector, will coordinate the gradual introduction of sustainable public transport standards, including those proposed by the project. The improved technical capacity of the staff of the Transport Holding provides good ground for replication and scaling up of the project results after the project with the improved operational standards. Although, as envisaged, the municipality did support the institutional and regulatory changes, the CAST project could not succeed in introduction of most important targets – PSCs and M&E system. This was largely due to lesser involvement of the central government (making changes in the PSC lies in the jurisdiction of the central government).
6	Willingness of designated Municipality personnel to effectively manage and monitor public service contracts to deliver improved public urban transport services	The management of the Transport Holding has demonstrated good understanding of the PSC importance. Moreover, the project completed training activities for the Transport Holding staff responsible for regulating the work with private operators.
7	Legal instruments are promulgated by the government in a timely manner	Legislation revision is generally not an easy process in Kazakhstan in terms of lobbying amendments and timeframe. The project has produced the recommended legislation amendments and Almaty Akimat is now in process of negotiating with central Government, responsible for policy development in transport sector. Historically Almaty city Akimat is in a stronger position compared to other regions and has good political influence within the Central Government. So considering the existing capacity (created by the project) within Akimat, the risk that the developed amendments will be dropped off after the project is not high.

#	Assumption	Comments at TE
8	Willingness of Municipality to implement air quality and GHG monitoring system	The main underlying cause of this risk is poor inter-sectoral coordination between the Transport and Environment Departments of Akimat. But the project has created an instrument (Integrated Sustainable Transport Development Strategy and Action Plan) that provides clear links between two sectors. This document served as a roadmap for the development of the Municipal Transport Strategy, where the air quality and GHG monitoring issues are fully integrated. Since the air quality monitoring from other sectors is already set up, now the Environment Department of Municipality is interested in improving the transport sector monitoring system as a key pollutant in Almaty city to have better ground for implementing the enforcement functions.
Outcome 2		
9	Municipality government is willing to support sustainable urban transport development including subsidizing the project	The risk was assessed as high at the mid-term review stage mostly due to institutional restructuring of the relevant departments. During final review, the Municipality has confirmed funding commitments to construction of BRT and renovation of trolley infrastructure with clear evidences of existing work going on the ground and funded from the municipal budget.
10	Full stakeholder support including existing bus operators	This risk is out of the projects' control and influence in general, but rather depends on the changes in operational arrangements and standards that the project has introduced. Since the Municipality is targeted at consolidation of bus operations in one large company (Almaty-electro trans/Green Bus) and decreasing the number of smaller operators through enforcing efficiency and services standards, most likely their existing operators that are not complying with new requirements will not support the changes, especially if the PSC are introduced in the future. Municipality is ready to deal with this risk.
11	Sufficient capital is available to finance bus program and related infrastructure projects	Repeats Assumption 9
12	Availability of land for bus operations (i.e. maintenance and fuelling depots, bus stops and transfer areas)	Municipality is dealing with the land issue based on the existing legislation. The private lands are to be purchased from the land owners and compensated. Municipality provisions funding arrangements for these procedures.
Outcome 3		
13	Municipality government is willing to support paid parking schemes that will generate more revenue for the Municipality	Municipality has already constructed 3 paid parking grounds under the Public Private Partnership arrangements and one is process. The project has contributed to improving technical specifications of the facilities based on international requirements and standards.
14	Full stakeholder support improving efficiency of motor vehicle movement through synchronized lighting and paid parking spaces	N/A. The relevant Output was replaced with development of traffic management schemes at the inception stage.
15	Sufficient capital is available to finance integrated traffic measures and associated infrastructure projects	The current investment level into improving the transport infrastructure and public transport operation is supported by municipal budget and private investments. Over a short period, the Municipality through the PPP has introduced e-ticketing system, constructed separated bus lanes, pedestrian zones and bicycle lanes, purchased CNG buses and new trolley buses. The construction of BRT and trolley infrastructure improvement is in process. There are no evidences that the funding and private investments may be stopped.
16	Availability of land for multi-level parking lots	Similar to Assumption 12

#	Assumption	Comments at TE
Outcome 4		
17	Sufficient capital is available to fully finance the demonstrations	Although the BRT and LRT are not to be fully completed within the project timeframe, the evaluation team has witnessed the construction works along the planned BRT corridors. Under the Transport Development Plan, the municipality plans to budget completion of the works as was designed by the feasibility study, developed by the project.
18	Availability of land for LRT, trolley and bus operations (i.e. maintenance and CNG fuelling depots, bus stops and transfer areas)	Land issues may imply some difficulties and extra budget for compensating the private land owners, but this is just a matter of following legal procedures. In some cases, the technical standards may be adapted to existing land use patterns.
19	Relevant stakeholders and target groups are interested in participating and cooperating in the design, development and implementation of the demonstration projects	The project addressed this risk within its capacity building and awareness component. All groups were covered and informed communication networks between government and community organizations were established. The surveys conducted by the project also provided good baseline information for the municipality.

Most of the assumptions made at the project design stage remained valid during the implementation of the project, except for the issue of support for the regulatory and policy measures (assumption 5 in the above Table). The project at its design stage failed to identify the risk of non-approval of policy and regulatory measures at the level of central government. The reason for this could be too much focus at the city level and not recognizing the possible roles and responsibilities at the central government level.

3.3. Lessons from other relevant projects

The CAST project design was built on a number of on-going initiatives listed in the project document. Most of these initiatives were targeting specific problems, were minor in overall impact, or focused on smaller demonstrations and pilots. The CAST project was designed in a way that would, on the one hand, accumulate already created capacity within the country, and on the other hand, would integrate all components of the Sustainable Transport Management. As per the 'Project Document', some of the projects which were ongoing at the time of preparation of the project design of the CAST project are as follows:

- The sectoral program Zhasyl Damy for 2010-14 (MoEP): An action plan on environmental protection in Kazakhstan, which includes, inter alia, "strengthening regulatory control of municipalities on permissible automobile emissions [from] vehicles and the quality of retail automobile fuels".
- The transport demand model (on VISUM platform) developed by NIITK and funded by the Municipality of Almaty. The model had focused on traffic flows, and it was intended to add the public transport network and demand through the CAST project.
- The Almaty Air Quality Pilot Project, funded by the EU, with the objective of "formulating and implementing specific instruments for air quality management that are mainly related to urban transportation" (scheduled for completion in late 2010).
- Two loans under consideration by the EBRD to Almatyelectrotrans for modernization of the municipal tram and trolleybuses and the procurement of up to 200 buses, and other related actions, such as the upgrade of the dispatcher center. Another study financed by EBRD is also mentioned, referring to the improvement of the electric public transport network and the structuring of Almatyelectrotrans.
- One World Bank/IFC study on parking, made in 2009.
- Various strategic documents of the municipality on urban transport, and particularly the Urban Passenger Services Program 2009-2010.

The project design of the CAST project has tried to find the linkages with these ongoing projects. However, as such there is no evidence of the lessons from these projects being taken into account while designing the CAST project. The CAST project document has, however, built upon some of the activities foreseen by these related projects. The role of the CAST project can therefore be seen as a way to fill in the gaps and providing an overall structure to various isolated transport initiatives, thus providing a more integrated approach to transport planning and management.

3.4. Planned stakeholder participation

The list of important stakeholders for the CAST project was provided earlier (Table 7). The Project Steering Committee of the project was a main tool for stakeholder engagement into the project planning and implementation and included key beneficiaries of sustainable transport sector at the national and city levels. The project steering committee includes 11 members, as representatives from various departments of the municipality, the EBRD, the Ministry of Transport and Communications (MoT) and the Ministry of Environmental Protection (MoEP). As per the project design, the other opportunities for formal engagement of stakeholders was by way of training sessions, conferences, workshops, awareness creation, project websites, results dissemination etc.

Over and above the planned stakeholder consultation provided for in the 'Project Document', the CAST project has established collaboration with several NGOs and institutions in the city for different actions, particularly in the area of non-motorized mobility. This includes involvement in meetings and workshops. During implementation of the project course, the Project Team was very successful in serving as a coordination center, providing opportunities to all stakeholders and beneficiaries to get engaged into sustainable transport planning through multiple workshops, public events, awareness and conferences.

3.5. Replication approach

When it comes to replication, the design of the CAST project has missing elements. The project design of the CAST project is a city specific project. For the projects targeted at Urban Transport, there is very little scope of replication within a city. For example, it is highly unlikely to have a number of LRT or BRT projects within a city. At best one may have different implementation phases of an integrated large LRT and BRT project. In case the project is planned at the national level, replication can be targeted at different cities of the country.

The design of the CAST project assumes that the successful demonstration project will provide confidence to the municipality and its financing partners that other SUT initiatives can be successfully implemented after the completion of CAST. This assumption misses the important point that the replication in this case needs to be carried out in other cities of Kazakhstan (and not within the Almaty city). The 'Project Document' recognizes that the objective of demonstration is to provide useful lessons for replication as the needs in other cities of similar type will be more or less the same. The 'Project Document' states that the demonstrations seek to build the potential for replication in Almaty as well as other large cities in Kazakhstan and in Central Asia. However, the project design has not provided for the mechanism to share the experiences across the cities and at the central government level to facilitate replication. The only activity in the log-frame of the project pertaining to replication is 'development of plans for replicating demonstration projects' – indicator 31).

The CAST project team recognized this problem in the early stages of project implementation and took corrective actions. For example, the project team included the municipalities of other cities of Kazakhstan and the central government officials in the stakeholders' consultation process and also in all the capacity building and training activities.

3.6. UNDP comparative advantage

UNDP is a leading Development Institution that has a long term formal and informal co-operation agreements with the Government in Kazakhstan at different administrative levels framed in UNDAF and CPAP endorsed by the Government.

UNDP was one of the originators of the Sustainable Development Strategy, and later on proactively participated in conceptualizing the 'Green Economic Development' in Kazakhstan, thus has a significant historical expertise and recognition among international and national institutions in the country.

UNDP has a large portfolio of energy and sustainable development projects in all regions of Kazakhstan with the increasing share of climate change projects and improving capacity to administer the portfolio in a cost effective way.

UNDP maintains a roster of technical experts – international and national – in a variety of thematic areas related to sustainable development. It has a set system of project management and financial administration with proved procedure.

UNDP has established successful partnerships with all International and Development Institutions present in the country, national academic institutions, NGOs networks, and other organizations engaged in energy and environmental sectors and maintain those partnerships within its portfolio.

3.7. Linkages between project and other interventions within the sector

The development of the transport sector in Kazakhstan is regulated by the 'National Program in Integrated Development of Transport System Infrastructure and Action Plan-2020'. Based on this program, Almaty Municipality has developed the Integrated Program on the 'Development of Transport System of Almaty and Action Plan until 2020'. This program was based on the Sustainable Transport Strategy and Action Plan that was developed by the CAST project and includes all components of the STM.

The design of the CAST project identified a couple of national and municipal plans and policies related to the urban transport sector, and the potential to establish synergies. The most relevant of these plans are the projects in the city financed through technical assistance and loans of the EBRD. Involvement of CAST within the other ongoing initiatives has been made on an informal basis.

The EBRD has already provided financial and technical support for improvement of public transport fleet for purchasing 200 CNG buses (400 more were funded from the municipal budget). The EBRD is considering similar initiatives in other regions of Kazakhstan. CAST projects coordinated the implementation of the planned activities with the EBRD, that was also represented on the project Steering Board.

UNDP Green City project has a component on green transport development with a broad regional coverage. The CAST project takes the advantage of the regional networks set up within the new project to distribute the products and information on transport sector improvements among municipalities.

3.8. Management arrangements

The management arrangements as presented in the Project Document had been clearly described and were based on common project management arrangement for UNDP National Implementation Modality. The Project has fully followed the management arrangements as described. The Implementing Partner role was assigned to the 'Almaty City Municipality' with the Deputy Akim chairing the Steering Committee of the project. Due to frequent changes in Akimat staffing, the Chairperson has been changed several times over the project implementation period.

The operational level of the project implementation was coordinated by three departments as described in the stakeholder section – Department of Transport, Department of natural Resources and Environment, and Department of Economic Planning.

The UNDP Country Office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system. Project Steering Committee performed as a key decision-making body at a project strategic planning level. The project held seven documented Steering Committee meetings over the evaluation period mainly focused on progress reporting and planning and revision of the unexpected changes in pilots.

Although the mid-term review reported insufficient inter-sectoral cooperation between the municipality departments caused by strict distribution of responsibilities, as a remaining barrier for project implementation, the evaluation team feels that some results were not possible to achieve mainly due to limited mandates of the Akimats in policy formulation.

4. FINDINGS: PROJECT IMPLEMENTATION

4.1. Adaptive management and Feedback from M&E used for adaptive management

The main questions for the TE are: (please see Annex B for the evaluation questions)

- **Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications.**
- **If the changes were extensive, did they materially change the expected project outcomes?**
- **Were the project changes articulated in writing and then considered and approved by the project steering committee?**
- **Whether feedback from M&E activities was used for adaptive management?**
- **Whether changes were made to project implementation as a result of the MTR recommendations?**

The project considered and implemented all recommendations received from the inception and mid-term reviews. The revisions in the project document were accordingly carried out. Most of these revisions during project inception and at MTR were related to the project design rather than the contents of the outputs and were aimed at more strategic and consistent formulation of expected outputs and indicators. The modifications carried out at project inception stage and at the MTR stage have been marked in the log-frame of the project presented as **Table 8** in this report.

The main revisions that were partially targeting the content are recommendations to estimation of the reduced GHG emissions that were addressed adequately by the project through planning and implementation of additional surveys and recruiting international expertize to maximize the accuracy and reliability of the calculations. Key amendments to the project document over the project implementation are given in **Table 13**.

Table 13: Key Amendments in Project Design During Project Implementation Phase

Implementation Stage	Modifications
Inception Review	• Baseline transport-related GHG emissions have been revised during the project inception phase, following the Manual for Calculating GHG Benefits for GEF Transportation Projects, and have been estimated at 2,184 thousand tons of CO_2 equivalent per year (1,858 thousand tons of CO_2 equivalent based on 2009 data, 2,654 thousand tons of CO_2 equivalent – based on 2012 data), which is substantially lower than the 5.2 million tons indicated in the approved Project Document. • The target for an increase of public transport use has been lowered from 50% to 20%. But it has been decided to keep the original target of 31 thousand tons of CO_2 equivalent per annum of direct GHG emission reduction (and 308 thousand tons of CO_2 equivalent over a period of 10-year) after completion of CAST project subject to revision after the GHG Sustainable Transport Strategy is finalized in 2013. • More strategically framed scope of the project interventions was recommended by development and endorsement of a 'Sustainable Transport Strategy' and its implementation. • Revision of the Project Outputs and relevant 'Project Results Framework (PRF)' Indicators was completed. Rationale for the changes are described in the Inception Report and reflected in the revised PRF.
Mid-Term Review	• The issue of target for CO_2 emission reduction calculations was raised again at the mid-term review with a key concern that current calculations considered only two sources of savings: modal change from cars to the new LRT and BRT corridors and bus fleet renewal from diesel to CNG. It was proposed that an additional indicator could be introduced to consolidate "additional direct and indirect emissions savings from the project".

Implementation Stage	Modifications
	• Revision of the PRF was completed with the proposed changes annexed to MTR. A couple of indicators were modified and a couple of new indicators were introduced.

As was pointed out in section 3.1 (analysis of LFA/ Results Framework) of this report, the design of the CAST project had some problems (as it was a city specific project). The problem was more prominent as far as replication potential of the project is concerned. Some of the other problems included problems with the approach to determine the GHG emission reduction attributable to the CAST project; unrealistic assumption that it would be possible to implement the demonstration projects within the implementation timelines of the CAST project; mix up of the monitoring of GHG emissions and other air pollutants. The CAST project team recognized some of these problems in the early stages of project implementation and took the corrective actions. For example, the project team included the municipalities of other cities of Kazakhstan and the central government officials in the stakeholders' consultation process, and also in all the capacity building and training activities to expand replicability of the demonstration projects.

The project had the provision for developing a monitoring system and carrying out actual monitoring of the performance of the buses (please see indicator 4 in Table 8). The task concerning development of public transport M&E system, as reported by the project, is being done through the newly introduced e-ticketing arrangements. But this system still provides no reliable data neither on switch, nor on the quality of services.

Although the description of the project goal and set objective targets on reduction of GHG emissions were built on best available data at the time of project development, it became an issue over the project monitoring and evaluation cycles. The approaches to calculation of the GHG emission reduction were changed over the project course at least 3 times – at the inception, mid-term review, and TE stages. Baseline transport-related GHG emissions were revised during the project inception phase, following the Manual for Calculating GHG Benefits for GEF Transportation Projects. The issue of GHG emission reduction calculations was raised again at the mid-term review with the key concern that current calculations considered only two sources of savings: modal change from cars to the new LRT and BRT corridors and bus fleet renewal from diesel to CNG. It was proposed that an additional indicator could be introduced to consolidate "additional direct and indirect emissions savings from the project". At the time of TE the GHG emission reduction, computations were reworked by an independent consultant taking into account the latest set of available data and project results.

The CAST project's component on introduction of PSC (indicator 2 in Table 8) as a key tool for improving the quality of services and stimulating the mode shift could not be successfully completed as role of Central Government was underestimated and all efforts were centered on the municipality capacities while the decision on revising the public transport operators contract was to be made by the Ministry. The project team realized this and took adaptive actions by refocusing efforts on the Central level.

The Project Steering Committee was informed about all adaptive measures taken by the project through the reporting procedures and has endorsed all changes and corrective measures at the stage of the approval of the Annual Work Plans.

4.2. Partnership arrangements

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Were there adequate provisions in the project design for consultation with stakeholder?**
- **Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board?**

As described above, the project managed to expand the potential partnerships during the implementation and formed a self-sustaining network of transport-related organizations that are in regular communications beyond the project scope. Moreover, the Project has not only encouraged new partnerships, but also diversified the

composition of the current and potential stakeholders by including more international organizations, academia, and NGO sector. During interviews, the TE team observed that all stakeholders have accepted the participatory approach as an effective mechanism for sustainable transport planning and management. This is particularly important for the municipality that now maintains the contacts with NGOs and other institutions within the created network to get feedback at the early stages of planning. Based on the field interviews carried out during the mission, the TE team is of the view that the role of the Project Manager in building a successful and sustainable partnership network was crucial.

It is recommended that for future projects that are administratively focused on the municipal level, the central government would become a more prominent and proactive partner from the beginning of the project not only through formal management arrangements, such as Steering Committee or Board, but also through their engagement with relevant activities (please see recommendation 1).

4.3. Project Finance

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources?**
- **What are the reasons for differences in the level of expected and actual co-financing?**
- **To what extent project Outcomes supported by external funders were well integrated into the overall project?**
- **What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing?**
- **Whether there is evidence of additional, leveraged resources that have been committed as a result of the project?**

The planned and actual expenditure (up to 28 August 2017) for the CAST project and its distribution amongst different Outcomes of the project is given in **Table 14**. No significant variations between the planned and the actual expenditure assigned to each outcome are observed. Actual expenditure at the time of TE was about 94% of the planned expenditure.

Table 14: Project Delivery by Outcome (Figures in USD)

	Actual Expenditure (as per CDRs)								Planned as per ProDoc	Variation
	2011	2012	2013	2014	2015	2016	2017	Total		
Outcome 1		217839	25862	153010	96159	107012	223419	823303	721400	14%
Outcome 2		217839	467661	448817	154356	30432	17719	1336825	1214500	10%
Outcome 3		207839	39731	29782	30301	228638	205231	741525	812700	-9%
Outcome 4			80884	432501	255584	193626	464548	1427145	1787400	-20%
Management	33385	10000	75016	61828	40008	22589	25280	268107	350000	-23%
Total	**33385**	**653517**	**689156**	**1125941**	**576409**	**582298**	**936199**	**4596907**	**4886000**	

Table 15 shows the financial management of the project. The major drawback of the financial planning process was that the budget revisions were mainly based on the annual cycle and did not cover the whole project period. This resulted in total "over expenditure" within the summed up Annual Work Plans' budgets and low delivery rate reported for some of the years (please see Table 15 for details). The average annual delivery rate for closed years (2011-2016) is 65%. At the time of the 'TE', the project had an unspent balance of USD 289,092 to be delivered until December 2017.

Table 15: Financial Management Track (Figure in USD)

Year	Planned as per Project Document	Planned as per Annual Work Plan	Delivery as per CDRs (as on 28 Aug 2017)	Delivery ProDoc %	Delivery AWP %
2011	1052100	40400	33385	3%	83%
2012	997000	1052100	653517	66%	62%
2013	1154800	997000	689156	60%	69%
2014	867900	1458000	1125941	130%	77%
2015	814200	1360482	576409	71%	42%
2016		992275	582298		59%
2017		1225291	936199		76%

The project reported on the confirmed co-financing for the project as per details provided in **Table 16.**

Table 16: Project co-financing (Figure in Million USD)

Co-financing	UNDP financing		Government		Partner Agency		Total		Notes
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Grants	0.05	0.031				0.06	0.05	0.09	•Partner agency contribution = 0.05 million USD from EBRD and 0.01 million USD by Dutch Embassy
Loans					44.05	53.97	44.05	53.97	•Partner agency contribution from EBRD
In-kind			30.05	153	2.37	0.57	32.42	153.57	•Actual Partner agency contribution from EBRD •Planned Partner agency contribution = 1.67 from EBRD and 0.7 million USD from IFC
Private						23.41		23.41	•15.3 million USD Transport holding (Onay e-ticketing) •3.7 million USD AutoTransGas (CNG buses) •4.5 million USD AlmatySpecParking (on-street parking).
Total	0.05	0.031	30.05	153	46.42	78.01	76.52	231.04	

Co-financing contribution of the Almaty city Akimat has significantly exceeded the committed funding partially because of the extension of the project period from initially planned 5 years to 7 years. The EBRD has provided the co-financing to the municipality within the committed co-financing to the CAST project as per details provided in **Table 17**.

Table 17: Co-Financing of CAST project by EBRD (Figures in USD)

Description	Amount	Type of co-financing
Technical assistance to the municipality for implementation of reform of the public transport sector	162718	In-kind
Loan to the municipality for modernization of trolleybuses and buses	27300000	Loan
Loan to Almaty Bus Sector Reform Phase-2 Investment project	26671000	Loan
Promoting Equal Opportunities in the Workplace (SSF)	50000	Grant
Pre-Shipment Inspection of Buses	81561	In kind
Ex-Post Evaluation Study	9750	In kind
Procurement Support and Contract Supervision	38010	In kind
Procurement Support and Contract Supervision	26333	In kind
Technical Due Diligence	255555	In kind
Total	54594927	

The IFC co-financing which was initially planned (in the project document) for the parking activities, as a follow-up to a previous IFC financed study that analyzed the potential of implementing a PPP scheme, could not be realized.

4.4. Monitoring and evaluation: design at entry

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Is the M&E plan well conceived at the design stage?**
- **Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives?**
- **Was the M&E plan sufficiently budgeted and funded during project preparation and implementation?**
- **How effective are the monitoring indicators from the project document for measuring progress and performance?**

A monitoring and evaluation plan was put in place at the time of the design of the project. There was a provision to review the plan at the time of project inception. As per the plan, the project was to be monitored through the periodic quarterly and annual monitoring. There were provisions for preparation of the APR / PIR. The

APR/PIR combines both UNDP and GEF reporting requirements. Provisions were also made in the project design for an independent MTR and the TE. The GEF Focal Area Tracking Tool for climate change mitigation were also to be prepared before the MTR and at the TE. As per the plan stipulated in the project document, the project team was to prepare a Project Terminal Report, to summarize the results achieved (objectives, outcomes, outputs), lessons learnt, problems met and areas where results may not have been achieved. The set of indicators to be monitored and the corresponding targets were provided in the log-frame of the project. The results of the monitoring and evaluations were to be provided to the project board.

As is evident, the M&E plan at the design stage was well conceived. The plan was well articulated and was sufficient to monitor results and track the progress toward achieving the objectives, except for some issues with the indicators used. For example, the indicators to determine the achievement of the objectives and results of the project have been fixed at the Outcome level; there is a mix up between the Outputs, Activities to be carried out and the indicators; many of the indicators in this case are more of activities (rather than indicators of the achievements) (please see section 3.1 for more details). Adequate provisions were made in the budget for monitoring and evaluation activities. **The M&E design at entry has been rated as Satisfactory**.

4.5. Monitoring and evaluation: implementation

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Whether the logical framework was used during implementation as a management and M&E tool?**
- **What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports?**
- **What has been the effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff?**
- **What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs)?**
- **Whether APR/PIR self-evaluation ratings were consistent with the MTR. If not, were these discrepancies identified by the project steering committee and addressed?**

The quarterly monitoring reports were produced regularly. Annual PIRs were produced using the set of indicators provided in the log-frame. However, the quarterly reports provide information about the activities carried out during the quarter. The quarterly reports do not provide information about the progress of the project at an aggregate level, any issues and concerns etc. The quarterly reports and the PIR did not include impact-oriented information but rather described things such as how many training sessions had been undertaken. It was largely due to absence of object / impact oriented indicators in the log-frame (project design). Probably it was recognised later in the project that there is a need to focus more on impact while still monitoring inputs and activities as per the indicators provided in the log-frame. Audits were carried out on a regular basis.

After having reviewed the corresponding PIR, APR and Risk management documentation it can be concluded that the project has had an active participation of the project manager and project UNDP counterpart in completing the monitoring and evaluation activities. The PIR findings in the documents reviewed were consistent with what was found in the interviews and general project appreciation during the mission.

The project fully complies with reporting cycle and tools as required by UNDP-GEF guidance and reflected in the project document. Apart from progress reporting to UNDP and GEF, the project used the mandate of the Steering Committee to communicate its results within key governmental institutions and other stakeholders and to adapt to unexpected challenges over the project course.

The MTR of the project was carried out in a timely manner. The project management accepted and implemented all the recommendations of the MTR. The 'TE' of the project is being carried out now as per the schedule. The PIR self-evaluation ratings for the year 2016 was Satisfactory, which is consistent with the rating at the time of TE.

M&E Plan Implementation has been rated as Satisfactory. Overall quality of M&E is rated as Satisfactory

4.6. UNDP and Implementing Partner / execution coordination, and operational issues

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Whether there was an appropriate focus on results?**
- **Was there adequate UNDP support to the Implementing Partner and project team?**
- **Quality and timeliness of technical support to the Executing Agency and project team**
- **Were the management inputs and processes, including budgeting and procurement adequate?**

The management arrangements as presented in the Project Document had been clearly described and were based on common project management arrangement for UNDP National Implementation modality. The project had fully followed the management arrangements as described. The Executing Agency/Implementing Partner role was assigned to the Akimat of Almaty City. As stated by the Project Document, the position of 'National Project Director' was assigned to a senior level representative of Almaty Akimat (Deputy Akim). The person at the position of Deputy Akim of the municipality has been changed several times over the project course. At the time of the TE, a new NPD was assigned to the project and has confirmed all commitments until the end of the project.

UNDP country office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system. The Project Steering Committee performed as a key decision-making body at a project strategic planning level.

Although at the inception and mid-term stages of the project implementation there was a high risk of insufficient support and commitment from the Akimat, partially due to insufficient of the formal coordination mechanism between the departments, the Project has addressed this risk through establishing a formal working group and enforced communication and partnership strategies.

One of the implementation risks that was realized for this project is the inability to foster and approve the amendments to the legislation that would allow for the introduction of the Standard Public Service Contracts. In 2015-2017, a regular cycle of legislation revision was going on in Kazakhstan, which provided opportunity for the project to lobby the developed amendments directly through the Central Government and relevant Parliament Committee. UNDP effectively used this opportunity to lobby for the required changes in the PSCs and also perused the Akimat to take it up with the central government. At the time of TE, the Municipality Transport Department confirmed that the PSCs are on the priority agenda for communications with the Central Government, which is due to the Project's communications efforts and direct technical support.

One of the other implementation issues has been the management of public transport in Almaty. In Almaty, management of urban transport is done by the Department (within the municipality), which is responsible for construction of roads. The UNDP project team was of the view that to address the risk of lack of required attention from Akimat on the subject of management of urban transport, it would be beneficial to have a separate department for management of the Urban Transport. The UNDP CAST project team has been able to convince the municipality to have a dedicated department for management of public transport and eventually a separate department for management of public transport was created (although this was once again merged with the department for road construction, once a new mayor took over).

There was an initial delay in the start of the project implementation. It was due to time taken by UNDP for staffing. The staffing took time as procedures are required to be followed in the process of recruitment of the project staff (please see Recommendation 10 as well).

UNDP provided helpful and important support to the Project. However, UNDP could have usefully applied itself in its capacity as a knowledge management broker to an even greater extent. For example, UNDP could have, done more sharing of lessons learned from other urban transport projects at the stage of project design. **Quality of UNDP Execution has been rated as Satisfactory.**

The NIM implementation modality for this project was good and given the focus of the project on Almaty city, the municipality of the Almaty city was the appropriate institution within the government institutions to act as the implementing agency. BPPT collaborated effectively with its partners in the project. Project management and administration has been satisfactory. **The quality of Implementation by the Implementation Agency has been rated as Satisfactory.**

5. FINDINGS: PROJECT RESULTS

5.1. Attainment of Objectives

The main questions for TE are: (please see Annex B for the evaluation questions)

- **What has been the achievements of the objectives against the end of the project values of the log-frame indicators, with indicators for outcomes/outputs, indicating baseline situation and target levels, as well as position at the close of the project?**

A summary of the attainment of the overall project objectives is presented in this section of the report. Achievement of different Outcomes of the project in terms of indicators has been presented first, which is followed by a presentation regarding the achievement of project objectives. This is because the achievement of the project objectives have been assessed both, in terms of the indicators (for project objectives as given in the log-frame) and in terms of the achievement for different planned Outcomes.

As per the requirements, the attainment of results' evaluation has been carried out for the four individual outcomes of the project as well. The attainment of results has been carried out in terms of the indicators of the log-frame. Wherever relevant, the reasons for non-attainment of the target values of the indicators have also been provided.

The mandatory ratings for the attainment of overall results has also been provided. Although the rating is not mandatory for achievement against each indicator, the rating has been provided. This has been done to facilitate the ratings for the individual Outcomes of the project and the project at an aggregate level. The evaluation of the attainment of overall results has been carried out keeping in mind the main questions for TE, as given in the Box at the beginning of this section

5.1.1. Attainment of objectives– Outcome 1

As per the project design (Project Document) the expected outputs of Outcome 1 of the project were as given in Box 1.

Box 1: Outputs for Outcome 1

Outcome 1: Improved management of public transport and air quality management
Output 1.1: Streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants for Almaty
Output 1.2: Strengthened public services contracts used to issue licenses for public transit routes.
Output 1.3: M&E system for tracking performance of licensed private operators and state enterprises.
Output 1.4: Study of the true costs and benefits and expected subsidies to sustain public transport quality.
Output 1.5: Monitoring system for tracking GHG emission and transport-related air pollutants.

Output 1.1 was to support development of an institutional approach and management plan to define the roles and responsibilities of various municipality agencies in developing sustainable urban transport. One of the barriers that Output 1.1 was to address was the lack of communication between various municipal agencies and departments. Output 1.2 was to enable use of the best available international standards for contracting private operators with stronger instruments to encourage contract compliance and strengthen the municipality's ability to manage and enforce urban transport delivery contracts. The aim of Output 1.3 was development of a management information system (MIS) for monitoring bus operators' performance (either contracted or state enterprises). The system was to provide records of an operator's public service contract, completed bus routes, compliance with bus maintenance requirements etc. This was to ensure compliance with the public services contracts (developed under Output 1.2). Output 1.4 was to determine the true cost (taking into account the co-benefits) of the public transport to justify the subsidies to be provided to the public transport system. Output 1.5 was aimed at developing of a monitoring system and actual monitoring of the air pollutants and GHGs. It is important to note that Outcome 1 of the project has the dual objective of improving the management of

public transport and air quality management with very little connection between the two. Further Output 1.1 and Output 1.5 are overlapping.

The project design has provided the indicators at the project outcomes level (and not at the Output level). The indicators provided are more or less a list of activities aimed at achieving the Outcome 1 of the overall project. **Table 18** provides the details of the indicators for achievements of Outcome 1 of the project. Also given in the Table are the baseline situation of the indicators the target value of the indicator, the situation at the time of MTR and at the time of PIR for the year 2016. The ratings regarding the achievement of the targeted values of the indicators at the time of TE is also given in the table.

Table 18: Attainment of objectives – Outcome 1: Indicators and status

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating[7]
1. Number of streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants for Almaty *Revised by MTR:* *Number of streamlined institutional arrangements for developing and regulating urban transport services* *Number of streamlined institutional arrangements for monitoring transport related GHG emissions and other air pollutants for Almaty*	Current institutions unable to advance projects to improve the state of urban transport in Almaty *New version as revised by MTR:* *Current institutions unable to advance projects to improve the state of urban transport in Almaty* *Current institutions unable to advance projects to improve the state of urban transport in Almaty*	One institutional management plan that streamlines arrangements for developing and regulating urban transport services and monitoring transport-related GHG emissions and other air pollutants in Year 1 *New version as revised by MTR:* *One institutional management plan that streamlines arrangements for developing and regulating urban transport services: Public transport authority set in place in Year 2*	Facing significant difficulties towards achievement of target	Department of transport analysis and modelling was created under the Transport Authority (Transport Holding). A transport model has been updated based on 2014/2017 studies. Recommendations aimed at improving the GHG inventory coordination system were conducted with governmental agencies.	MS
2. Number of standard public service contracts of international standard to be used for private operators delivering public transport services to Almaty	No effective standard public service contracts for delivery of public urban transport	One standard public service contract (PSC) template for developing improvements in public transit in Almaty is available by Year 1	Facing significant difficulties towards achievement of target	A draft model of PSC was prepared by EBRD experts in cooperation with CAST project. It was discussed with Ministry for Investments and Development, which is responsible for development of model contracts for public transport sector in Kazakhstan. Project provided a legal analysis and recommendations on introduction of this type of contract to the Municipality.	MS
3. Number of trained Municipality personnel in monitoring and managing public service contracts for	Lack of trained personnel in effective management of public service	5 trained personnel in effective management and monitoring of public service contracts for	Facing significant difficulties towards achievement	Transport holding staff (23 persons) was trained for effective management and	MS

[7] 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4.Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating[7]
improved urban transport delivery and GEBs *Revised by MTR: Number of trained Municipality personnel in monitoring and managing public service contracts for improved urban transport delivery and monitoring performance of public service contracts GEBs*	contracts for public transport services *New version as revised by MTR: Lack of trained personnel in effective management of public service contracts for public transport services*	public transport services and GEBs by Year 2 *New version as revised by MTR:5 trained personnel in effective management and monitoring of public service contracts for public transport services and GEB by Year 4*	of target	monitoring of public transport.	
4. Number of M&E systems developed for monitoring performance of public service contracts	No M&E system for monitoring performance of public service contracts	M&E system for monitoring performance of public service contracts by Year 2 *New version revised by MTR:1 M&E system for monitoring performance of public service contracts by Year 4*	Facing significant difficulties towards achievement of target	Public service contract was discussed by Municipality but it still does not exist. The e-ticketing system was introduced in Dec 2015 and provided a detailed report on performances of operators.	MS
5. Number of studies on the true costs and benefits and expected subsidies to sustain public transport quality.	No understanding of the cost implications to sustain public transport quality	One study on expected subsidies to sustain public transport quality in Almaty City by Year 2 *New version as revised by MTR: One study and expected subsidies to sustain public transport quality in Almaty City by Year 3*	Facing significant difficulties towards achievement of target	Fare types & methodology for public transport services in Almaty and recommendations for implementation were developed and presented to the Municipality. Legal analysis and justification for allocation of subsidies for several categories of passengers were transferred to the Municipality.	S
6. Number of monitoring systems for tracking reduction of transport-related GHG and air pollutant emissions	No monitoring system for tracking GHG or air pollutant emissions from transport in Almaty	1 GHG/air pollutant monitoring system (software, data collection protocols and surveys) to measure and report on CAST direct GHG emission impact by Year 2 *New version as revised by MTR:GHG/air pollutant monitoring system (software, data collection protocols and surveys) to measure and report on CAST direct and indirect GHG emission impact by Year 5*	Target Achieved	The municipal department of environmental protection was equipped by the GHG calculation model and methodology of data collection. Local experts were trained on calculation of transport related emissions. Methodology was introduced to governmental agencies. Recommendations on improvement of monitoring of transport related	MS

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating[7]
				emissions to improve data collection were developed and presented to governmental agencies	
7. Number of trained Municipality personnel in operating public transport in an efficient, safe and demand responsive manner.	Lack of trained personnel in effective daily operation of public transport	5 trained personnel in effective daily management of public transport by Year 2	Facing significant difficulties towards achievement of target	More than 100 representatives of Municipality of Almaty city and other stakeholders were trained on various subjects relevant to management and operating of public transport in frame of all trainings organized by CAST project in Kazakhstan during 2011-2016, 8 persons were trained on trainings outside of Kazakhstan.	S
8. Number of trainees on the operation and maintenance of new public transport rolling stock	No trained drivers and mechanics on the operation and maintenance of public transport rolling stock	50 trainees on the operation and maintenance of new buses and re-fuelling infrastructure by Year 2	Target Achieved	A round table on "CNG in transport sector of Almaty city: Training of specialists" was conducted for stakeholders. The meeting minutes were transferred to relevant Ministries and Municipality of Almaty city in order to create a working group for implementing all recommendations developed.	S
Added as per MTR: 9. ***Number of institutional arrangements for coordinating sustainable mobility policies within the Municipality based on SUTS***	*Added as revised by MTR: Fragmentation of competences and actions within the Municipality.*	*Added as revised by MTR: One formal Working Group on Sustainable Mobility established within the Municipality, including coordination with urban planning by Year 3*		The Task Force group on transport projects development was established and has been working within the Municipality. Sub groups were created for specific pilot projects: LRT, BRT and traffic management.	S
Outcome 1: Improved management of public transport and air quality management					**S**

The suggested sources (as per Project Document) for verification of the achievement of Outcome 1 are:

- Management plans for institutional streamlining related to urban transport
- Standard public service contract improved following best international standards

- Revised tender and contract documentation
- City administration M&E plan to track performance of private urban transport operators
- Study on public transport improvements, real costs and benefits and required subsidies
- City monitoring system/ documentation for GHG and air pollutant monitoring.

The following paragraphs provide the status of achievement at the time of TE, against the indicators for Outcome 1.

Indicator 1: The suggested means of verification (as per the project document) for achievement of this indicator is 'Management plans for institutional streamlining related to urban transport'. In the course of the TE, no document providing the 'management plans for institutional streamlining related to urban transport' could be shared. Discussion with the project team revealed that in the city of Almaty, management of urban transport is done by the Department (within the municipality), which is responsible for construction of roads. Due to this reason, historically the management of public transport did not receive the level of attention required. The CAST project has been able to convince the municipality to have a dedicated department for management of public transport and eventually a separate department for management of public transport was created (although this was once again merged with the department for road construction, once a new mayor took over). As is evident, the project was able to achieve the target against this indicator but has fallen short of institutionalizing the process. It is recommended that the project focus on institutionalizing a separate department for management of the affairs relating to the management of public transport. Post MTR, an additional indicator was added pertaining to creation of streamlined institutional arrangement for monitoring transport related GHG emissions and other air pollutants. Nothing significant could be achieved against this additional indicator. For this additional indicator some of the activities were carried out in collaboration with The Bureau of Transport Health and Environment Pan-European Programme (THE PEP). However, such activities were largely restricted to participation in and organizing the conferences. This includes an international conference in Almaty, "Green and Health-Friendly Sustainable Mobility: Focus on Urban Central Asia" under the Pan-European Programme on Transport, Environment and Health (THE PEP). The project also tried collaborative working with the World Health Organisation (WHO) for monitoring air pollution, but nothing significant could be achieved.

Indicator 2: The suggested means of verification (as per the project document) for this indicator are 'Standard public service contract' and 'Revised tender and contract documentation'. A draft of the standardized PSC has been prepared. However, a workable PSC between the municipality and the bus operators could not be worked out. This is largely due to the fact that the involvement of the Central Government in the CAST project was almost non-existent (please see recommendation 1 as well) and the authority to make changes in the present version of the public services contract lies with the Ministry for Investments and Development, at the central government level. The municipality on its own is not empowered to go for a new version of the standard public service contract. The project provided the new version of the 'standard public service contract' and provided a legal analysis and recommendations for its introduction. A request for legislative changes to enable a new PSC has been made to the Transport committee (Ministry for Investments and Development RK). The results of the request are uncertain at this time.

Indicator 3: This indicator is more or less related to indicator 2. The apparent idea of this indicator seems to be training of the municipal staff on the provisions of the newly introduced standard public service contract (indicator 2). The CAST project in collaboration with the International Association on Public transport (UITP), organized a two-day training on the service quality management in public transportation. The CAST project supported participation of two persons from the Almaty municipality in the training on "Procurement and commissioning of buses, including bus operation planning" in Kaliningrad (by UNDP-GEF project 'Reducing GHG emissions from road transport in Russia's medium-sized cities' project). The training programme was focused on the capacity building of the urban public transport authorities. Although there have been activities towards the achievement for this indicator, the objective of training the municipality personnel on the proposed newly introduced standard public service contract (under indicator 2) could not happen. It is due to this reason that the performance against this indicator is rated as moderately satisfactory (MS).

Indicator 4: The suggested means of verification (as per project document) for this indicator is the M&E plan with the city administrator to track the performance of private urban transport operators. Once again, the idea of this indicator was to develop monitoring and evaluation systems to support implementation of the proposed new PSC (indicator 2). As the PSC (target for indicator 2) could not be achieved, there is no point to have a monitoring and valuation system for implementation of PSC (indicator 4). Thus, indicator 4 is not of much importance. Thus, no specific activity has been carried out under the project for this indicator. Nevertheless, the e-ticking system developed under indicator 16 will provide some data required for evaluating the performance of the operators of the public transport.

Indicator 5: The suggested means of verification (in the project document) of achievement against this indicator is a study on public transport improvements, real costs and benefits, and required subsidies. An international consultant was hired by the project to assess the ticket and fare system of Almaty public transport. The objective of the assignment was to provide advice on fare structure: the basis for calculation of fares; product range-the range of tickets available; fare level-pricing of ticket products; allocation and distribution of revenues to transport operators; phasing and implementation issues of a new ticketing and fare system. The consultant submitted the report in January 2016. This was followed by meetings on ticket and fare policy. The meetings involved municipality representatives and other stakeholders. The report is largely focused on the cost of ticketing operations and the recommendations regarding subsidies to be provided are based on experience in other cities (rather than on the difference in the cost of operations and the projected revenue)

The feasibility studies for BRT and LRT also touched upon the subject of subsidy. However, these studies have not quantified the costs and the quantum of required subsidies. The subject of subsidy for public transport has also been covered in the 'policy review of the development of the Public Transport Sector in Kazakhstan'. Once again, it has not covered the subject of cost and benefits of public transport.

During April 2015, training on 'Public transport fare management' for representatives of Almaty Municipality and public transport organizations (by UITP) was organized. The objective was to provide essential information about fare management including fare policies, regulation, fare structures, fare integration, fare collection systems, technologies and operations etc.

Indicator 6: The suggested sources for verification of achievement of targets for this indicator is a monitoring system/ documentation for GHG and air pollutant monitoring. Different activities which were carried out under the project for achieving the target are:

- Hiring of an International consultant for GHG emissions calculations, the scope included GHG model design and discussion
- Translation (from English to Russian) of the guidelines for calculating of GHG emission reductions for GEF transport projects. The translated version was distributed to stakeholders
- Hiring of a local company for services on data review and preparation of information to clarify baseline calculations for GHG from transport
- Workshop on assessment of GHG emissions from transport in Almaty. The goals of CAST project monitoring component were presented along with the GEF methodology.
- Workshop on "Requirements for monitoring and measures to reduce GHG emissions in the transport sector in Kazakhstan" in Astana. The purpose of the workshop was to clarify current international trends in monitoring and requirements or GEF approaches to the reduction of GHG emissions from transport projects for decision-makers.

When it comes to monitoring air pollutants (other than GHG), there is not much activity. As discussed earlier (while discussing achievement for indicator 1), for air pollutants (other than GHG) some of the activities were carried out in collaboration with The Bureau of Transport Health and Environment Pan-European Programme (THE PEP). However, such activities were largely restricted to participation in and organizing of conferences. This includes an international conference in Almaty "Green and Health-Friendly Sustainable Mobility: Focus on Urban Central Asia", under the Pan-European Programme on Transport, Environment and Health (THE PEP). The project also tried collaborative working with the World Health Organisation (WHO) for monitoring of air pollution, but nothing significant could be achieved.

Indicator 7: The activities which were carried out for attainment of the target against this indicator are as follows:

- TDM training session for stakeholders. The objective of the training session was to explain the use the Trans-CAD software for transport modelling and planning.
- Training on "Service quality management at public transportation" in Almaty (by UITP experts). Participants were introduced to international quality standards in public transport.
- An international conference on "Regulatory framework and governance of public transport" in Almaty (jointly with UITP) was organized. The public transport experts and municipality officials were invited to discuss different alternatives to handle the problems of the municipal mobility, regulation and financing of public transport and possibilities for use of such alternatives in Kazakhstan.
- An international expert was hired for organizing the training on "System of planning and monitoring of public transportation in Almaty". The objective of the training was to increase capacity of the Transport Holding of Almaty on planning and monitoring of public transportation.
- The CAST project supported participation of Almaty municipality and public transport operators in the international conference on "Decarburization – Zero emission mobility future needs good practice today" at Vienna, organized by THE PEP.
- The project supported participation of Almaty public transport specialists in the international Summer School on "Transforming transport and communication spaces of the city" in Kazan (by UNDP-GEF project "Reducing GHG emissions from road transport in Russia's medium-sized cities").
- Training programme + study tour for representatives of Almaty Municipality, Ministry for Investments and Development, public transport operators and other transport specialists on Electric buses by UITP in Europe (Brussels, Rotterdam, Barcelona & Geneva)

Indicator 8: The idea of this activity / indicator was to train the people in the operation of the new rolling stock which would get deployed as a result of the CAST project. This was to focus on the type of rolling stock with which there was no previous experience. Such rolling stock includes the BRT buses, LTR rolling stock, different type of buses. As the pilot projects (BRT and LRT) could not be implemented within the scheduled timelines, the rolling stock specific to BRT and LRT did not get acquired. It is recommended that the training on the operation be a part of the procurement process of the rolling stock for BRT and LRT. Under the CAST project, CNG buses have been introduced for public transport in the Almaty city. The CAST project supported training on safe operations and maintenance of CNG buses. In this regard, some of the specific activities which were carried out are as follows:

- Training for the teaching staff of the Almaty State College of New Technologies on the topic "Motor Transport on Gas Equipment" was organized.
- Guidelines on safe operation and maintenance of CNG buses for drivers developed and distributed (2500 copies)
- A training (2 days) on "Safety requirements for technical maintenance and operation of CNG buses" was conducted with the support of CAST project. In total, more than 45 bus technicians were trained on operation and maintenance of CNG buses.

Indicator 9: During first board meeting (March 2012), the project team proposed that a permanent force task with employees of Municipality be established in order to coordinate the work among various departments to have a prompt and efficient environment for discussion of preparation of the Sustainable Urban Transport Strategy for Almaty. The CAST project facilitated establishment of the task force group on 'Public Transport Projects Management' (including those implemented under CAST as demonstration projects) within the Municipality of Almaty City. The task force group is headed by the CAST project National Director and includes representatives of the Almaty City Municipality, EBRD and CAST project. This format of work allows to hold multilateral discussions various stakeholders and ensures proper monitoring of implementation of demonstration projects within the CAST project framework. The task force is working within the Municipality. Sub-groups have been created for specific pilot projects: LRT, BRT and traffic management.

Outcome 1: The achievement against Outcome 1 of the project has been quite good, except for the indicators which are related to the development and supporting implementation of an effective 'Public Services Contract" (indicators 2, 3 and 4). Even in case of PCS, a draft of the standardized PSC has been prepared and a request for legislative changes to enable a new PSC has been made to the Transport committee (Ministry for Investments and Development RK). It is expected that in due course of time the revised template of the PSC will be in place. The activities carried out supports the envisaged Outcome of Improved Management of Public Transport and Air Quality in Almaty City'. **The achievement against Outcome 1 of the project has been rated as Satisfactory**.

5.1.2. Attainment of objectives – Outcome 2

As per the project design (Project Document) the expected outputs of Outcome 2 of the project were as given in Box 1.

Box 2: Outputs for Outcome 2

Outcome 2: Improved efficiency and quality of public transport in Almaty City
Output 2.1: Transport-demand model and strategic master plan for developing sustainable urban transport (SUT) in Almaty
Output 2.2: Bankable feasibility studies for improved public transport in Almaty City
Output 2.3: Program for bus fleet modernization

The Outcome 2 of the CAST project was targeted at holistic planning of transport fleet modernization; an optimal use of the transport assets; designs that will enhance ridership and minimize "leakage" through the removal of fuel inefficient buses out of service. Output 2.1 was to strengthen Almaty's public transport development strategy. For this purpose a transport-demand model (TDM) was to be created, which could assess the viability of all transport modes (e.g. trolley buses, LRT, metro and feeder buses etc.). Output 2.2 was targeted at preparation of bankable feasibility studies for improved public transport in Almaty City. Under Output 2.3, a program was to be designed to modernize public transport rolling stock as well as to assist the City in sustaining the quality of public transport services through the establishment of a new municipal bus park. The project design has provided the indicators at the project outcome level (and not at the Output level). The indicators provided are more or less a list of activities aimed at achieving the Outcome 2 of the overall project. **Table 19** provides the details of the indicators for achievements of Outcome 2 of the project. Also given in the Table are the baseline situation of the indicators, the target value of the indicator, the situation at the time of MTR and at the time of PIR, 2016. The ratings regarding the achievements of the targeted value of the indicators is also given in the table.

Table 19: Attainment of objectives – Outcome 2: Indicators and status

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
10. An optimized public transport route network developed by a Transport-Demand Model	City public transport network that has poor connections and routings and is not an integrated system.	An optimized integrated public transport route network that has been developed by a new Transport Demand Model by Year 2 *New version as revised by MTR: An optimized public transit route network that has been developed by a new transport" demand model by Year 4*	Facing significant difficulties towards achievement of target	The Transport demand model (TDM) was designed in order to be capable of forecasting travel demand and future performances of highway and public transportation network for years under various scenarios. Daily ridership study for suburb areas and network optimization report were conducted and delivered to the municipality. New hierarchy was proposed and adjusted via TDM. Some routes have already been optimized (11 re-organized, 4 cancelled).	S
11. A holistic and integrated Sustainable Urban Transport	Lack of holistic and integrated planning of Sustainable	One integrated Sustainable Urban Transport Strategy and Action Plan approved by	Achieved	The Sustainable urban transport strategy 2013-2023 document and the Action plan were developed and presented to Municipality. The strategy promotes a much more integrated	S

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
Strategy and Action Plan	Urban Transport	Municipality by end of Year 2		approach, linking all modes of transport together and coordinating them with city development. This will require close collaboration between all partners. This strategy sets new key directions, policy targets and plans for the city. More than 20 organizations took part in discussions of the policies and related indicators through the experts and stakeholders meetings. Key indicators and policies developed under the strategy were recommended to be utilized in the frame of development of a new City master plan (2015-2035) and included in the City Almaty action plan (2016-2020) developed and approved by the municipality in 2016.	
12. Number of training programs, local conferences and workshops, field visits on Sustainable Transport	Lack of knowledge on sustainable transport policies, strategies and projects	1 program to enhance knowledge and skills within the Municipality on Sustainable Transport based on international best practice examples by Year 2 *New version revised as per MTR: At least two conferences and two workshops on international best practice examples organized by Year 4*	Achieved	6 international knowledge sharing conferences (more than 350 participants in total), 12 trainings (more than 150 personnel were trained in total), 10 round tables and workshops, 4 study tours abroad, 10 open events for public and numerous open lectures were conducted during 2011-2016 in order to increase knowledge of policy makers, NGOs and scientific institutions about sustainable mobility policies and practices. Series of meetings with international experts were organized for local stakeholders.	S
13. Number of feasibility studies for the development of sustainable transport improvements that include LRT, BRT and feeder routes, parking, cycling and pedestrian	Piecemeal initiatives for the development of sustainable transport in Almaty	At least 1 feasibility study on developing sustainable transport improvements in Almaty by Year 2	On track towards achievement	Feasibility study for the Light Rail Tram (LRT) project in Almaty has been developed by Municipality and will be used for development of PPP LRT tender. This study was based on the data and studies collected by the project. BRT pre-feasibility study justifies the main BRT corridors and proposes the first BRT line to be developed. Municipality financed preparation of full size feasibility study. Detailed design of BRT pilot corridor 1 was delivered.	S
14. Investment mobilized in less GHG intensive urban transport	Moderate investments mobilized for less GHG intensive urban transport	Commitments for additional financing of less GHG intensive urban transport at the amount of USD 100 million by Year 5.	Achieved	USD 74.5 million EBRD loan for purchasing modern CNG busses; USD 14,2 million EBRD loan for purchasing of new 195 trolleybuses; USD 47,5 million Municipal funds spent for purchasing new municipal public transport fleet (additional 200 CNG buses, 17 trams (not under operation now), 200 CNG taxis). Additional investment was delivered by "Green bus" private operator - 35 new CNG buses for 3,4 million USD (in operation since June 2016). Municipality has prepared a project for USD 100 million for development of a modern BRT system.	S

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
15. Number of new rolling stock procured and operated in the public transport system through old bus exchanges	No program or plans for modernization of public transport rolling stock of the private sector	200 old buses exchanged for new buses in the private sector by Year 3	Achieved	637 CNG buses replaced old diesel buses during period 2011-2016. 200 CNG taxis were transferred to the private sector. Private operators procured additional 35 modern CNG buses and additional 100 will be in operation by the end of 2016	S
16. Transferred from Outcome 3 revised as per MTR: An integrated ticketing system for all public transport modes in Almaty	Transferred from Outcome 3 as revised per MTR: No integrated ticketing system for public transport	Transferred from Outcome 3 as revised per MTR: 1 integrated ticketing system for public transport implemented by Year 4	On track towards achievement	E-Ticketing system was introduced via public private partnership cooperation agreement (15 million USD) between Transport holding and Municipality. Under operation from December 2015.	S
Outcome 2: Improved efficiency and quality of public transport in Almaty City					**S**

The suggested sources (as per Project Document) of verification of the achievement of Outcome 2 are:

- Public transport development strategy and plans for urban transport regulatory reform for Almaty City
- Bankable feasibility implementation plans for SUT development in Almaty
- Bus modernization plans.

Following paragraphs provides the status of achievement at the time of TE, against the indicators for Outcome 2.

Indicator 10: The work carried out includes purchase of software for transport modelling, development of a transport model for the Almaty city using the software and training of personnel on the use of the software and the transport model. Using this an optimized transport model for the city was developed. Some of the specific activities which were carried out to achieve the target for this indicator are as follows:

- Procurement of a TDM software (Trans-CAD)
- TDM training session for stakeholders with the aim of explaining the use of Trans-CAD software for transport modelling and planning.
- Consultancy for public transport network optimization in Almaty
- Supporting participation of Transport Holding's representatives at the training on transport demand modelling in Tel-Aviv (by ROM Transportation & Engineering experts)
- Supporting participation in training on "Transport planning principles and adaptive management of urban traffic" for Transport Holding's experts in Kazan (by UNDP-GEF "Reducing GHG emissions from road transport in Russia's medium-sized cities" project)
- Consultancy for public transport planning for trainings and consultations to Transport holding of Almaty city and Almaty Akimat on development of PT planning and operation
- Training on "Approaches and regulations in the field of changes in the route network and training schedules" for specialists on public transport planning in Almaty.

The activities led to achievement of the target of having 'an optimized public transport route network that has been developed by a new transport demand model'.

Indicator 11: The target of this indicator is the development of an integrated urban transport plan for the city of Almaty. Some of the inputs for this were to come from the activities carried out under the achievement of target of indicator 10. An international consulting firm (ROM Transportation & Engineering) was hired to develop the 'Transport Demand Model' and prepare the 'Sustainable Urban Transport Strategy (SUTS). This

included preparation of an action plan for implementation of the SUTS. This led to the development of the 'Sustainable Urban Transport Strategy for 2013-23' along with an action plan for implementation of the strategy. This was followed by a series of stakeholder consultations. In all, three specific stakeholder consultation meetings were organized (cumulative number of stakeholders' participation in the three meetings was about 150). The objective of the stakeholders' consultation was to discuss and approve key aspects of the Strategy and the proposed reforms. This was followed by the dissemination of the 'Sustainable transport strategy of Almaty for 2013-2023' at different forums.

Indicator 12: The idea of this indicator was to ensure the enhancement of knowledge and skills within the municipality on sustainable transport based on the best international practices. In order to achieve the target, a participation of the officials of the municipality in the international conferences on sustainable transport was supported by the CAST project. Apart from supporting the participation in the conferences, study tours for the officials of the municipality were also organized. The target for this indicator has been achieved, which is evident by the following specific activities carried out:

- Supported participation of Almaty delegation comprising of Municipality representatives in THE PEP event "Sustainable development of public transport - challenges and opportunities" in Moscow
- Supported participation of representative of Ministry of Environment at the 11th session of THE PEP steering committee in Geneva.
- Supported participation of Almaty Municipality representatives at THE PEP conference on Eco-driving organized by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management.
- Study tour on taxi to Dubai for representatives of Akimat, Transport holding and taxi operators of Almaty city (by UITP)
- Study tour on BRT to China (Guangzhou and Yichang) for representatives of Almaty Akimat and Transport holding (jointly with ITDP China)
- Supported participation of Almaty Municipality representatives at the 12th session of THE PEP Steering Committee in Geneva
- Supported participation of two Almaty cyclists in the 4th World Bicycle Forum in Medellin and study tour to Bogota, Colombia.
- Supported participation of representatives from Almaty Akimat and "Almaty-electro-trans LLP" in the UITP World Congress and Exhibition in Milan
- Supported participation of Almaty Municipality representatives at the training on "Public transportation for large-scale events" in Kazan.
- A national consulting company was hired for organizing and conducting consultations on Sustainable Urban Mobility Plans (SUMP) in Kazakhstan cities.

Indicator 13: The CAST project had the provision to support feasibility studies for development of sustainable transport improvements. The CAST project supported feasibility study for LRT. The project also supported the pre-feasibility study for the main BRT corridors. While the CAST project supported the pre-feasibility study for BRT, the full feasibility study was financed by the Municipality. Discussions with the CAST project team revealed that as per the rules in Kazakhstan, only government bodies can order feasibility studies, due to this reason, UNDP, on its own could not appoint a consultant to carry out the feasibility study. UNDP supported the financial analysis part of the feasibility study, while EBRD supported the legal and technical parts of the LRT feasibility study. The municipality hired a separate consultant to put together the overall feasibility study report. Apart from supporting the feasibility study for LRT, other activities were also supported by the CAST project, which includes the following:

- Legal services to Almaty Municipality on preparation of financing scheme for Almaty LRT project. For the purpose a national consulting firm was hired
- Financial advisory services for preparation of PPP tender for Almaty LRT project. For this purpose, services of a national consulting firm were hired.
- An international expert was hired for Almaty bike line design project was hired.
- Supported design and feasibility study of BRT Corridor 1 in Almaty. For this purpose, services of an international consulting firm were hired.

Indicator 14: The CAST project has been instrumental in mobilizing the investment required for the new infrastructure required for the public transport at Almaty. Some of the noteworthy achievements in this regard are as follows:

- Loan of USD 74.5 million from EBRD for purchase of modern CNG buses
- Loan of USD 14.2 million from EBRD loan for purchase of new trolleybuses
- Capital expenditure of USD 47.5 million by municipality out of its own resources for purchasing new municipal public transport fleet (additional 200 CNG buses, 17 trams - not under operation now, 200 CNG taxis).
- Investment of USD 3.4 million by the public transport operator (Green bus) for purchasing 35 new CNG buses (in operation since June 2016).
- Proposal for procurement of 400 buses (Euro 5 standard) to be financed by municipality to the extent of USD 40 million
- Proposal of investment of USD 100 million by the municipality for development of a modern BRT system. It has already started the financing in 2016 for the first part of BRT line infrastructure and new bike lines.
- Proposal to take up construction of LRT in PPP mode. EBRD is willing to support the private parties for creation of the basic infrastructure and procurement of the rolling stock.

Indicator 15: In order to support implementation of the plans for suitable urban transport as envisaged in the CAST project, new basic infrastructure has been created followed by upgrading of the rolling stock. Some of the specific achievements in this regard are as follows:

- Replacement of 637 old diesel buses with new CNG buses
- Introduction of 200 CNG taxis by the private sector.
- Procurement of additional 135 modern CNG buses and additional 400 Euro 5 diesel buses is expected.

Indicator 16: In accordance with the target for this indicator, an e-ticking system has been developed for the public transport in the Almaty city. The system is in operation since December 2015. The CAST project supported hiring of an international consultant to develop the e-ticketing system. This produced a comprehensive report on 'Ticket and Fare System Almaty Public Transport' (by the consultant). The report has covered the system of e-ticketing in detail. However, later a private party was engaged by the municipality to develop and implement the e-ticketing in the city in PPP mode. In the training workshop organized in April 2015 by the CAST project on 'Fare Management in Public Transport', the subject matter of e-ticketing was also covered.

Outcome 2: The CAST project has been able to achieve the targeted values for all the indicators of Outcome 2 of the project. With the implementation of an integrated plan for public transport system and availability of LRT, BRT, better buses etc., the outcome 2 of the CAST project, 'improved efficiency and quality of public transport in Almaty City' is definitely on the way. **The achievement of Outcome 2 of the project has been rated as Satisfactory.**

5.1.3. Attainment of objectives – Outcome 3

As per the project design (Project Document) the expected outputs of Outcome 3 of the project were as given in Box 3.

Box 3: Outputs for Outcome 3

Outcome 3: Integrated traffic management measures in Almaty City
• Output 3.1: Plans and implementation program for parking schemes in Almaty
• Output 3.2: Feasibility plans for integrated traffic management and retail economic stimulus areas

Outcome 3 of the CAST project deals with measures to reduce traffic congestion in Almaty through a combination of removal of parked cars from the main transport corridors and encouraging transport modal

switches by re-zoning areas for retail use. Output 3.1 is focused on the planning and implementation of parking schemes in the city. Output 3.2 focuses on the development of integrated traffic management plans along high volume corridors for improving the traffic flow leading to improvement in efficiency. **Table 20** provides the details of the indicators for achievement of Outcome 3 of the project. Also given in the Table are the baseline situation of the indicators, the target value of the indicator, the situation at the time of MTR and at the time of PIR 2016. The ratings regarding the achievements of the targeted value of the indicators is also given in the table.

Table 20: Attainment of objectives – Outcome 3: Indicators and status

Indicators/ *Revised Indicators*	Base Line	Target	MTR	PIR 2106	TE Rating
17. Number of paid parking schemes for Almaty planned *Revised per MTR: Number of paid parking schemes for Almaty planned and implemented*	No paid parking schemes being planned	2 plans for paid parking schemes in downtown core of Almaty and enforcement of parking restrictions in selected areas of Almaty by Year 2 *New version revised as per MTR:1 plan paid parking schemes in downtown core of Almaty and enforcement of parking restrictions in selected areas of Almaty by Year 4*	Facing significant difficulties towards achievement of target	Municipality conducted a tender and implemented a parking reform in May 2016. Some legislation changes for enforcement of paid parking have been approved. Traffic management study was initiated and contracted via UNDP/GEF and Municipality funds. A final plan is under development.	S
18. Number of traffic management schemes planned	Ad hoc measures taken to improve traffic flows in Almaty	2 traffic management schemes by Year 3 *New version revised as per MTR: One traffic management schemes developed by Year 4*	On track towards achievement	Contract for preparation of the integrated traffic management scheme was signed by Municipality and CAST. The first round of consultations with stakeholders conducted.	S
An integrated ticketing system for all public transport modes in Almaty *(at project inception moved to Outcome 2 – Indicator no. 16)*					
19. Number of plans for restricting motor vehicle movements along certain corridors to encourage pedestrian and cycling (non-motorized vehicle traffic) and retail economic development	No plans for pedestrians or cycling corridors *Added as per revised MTR: No plans for traffic calming*	1 plan for restricting motor vehicle movement along a selected corridor to encourage pedestrian and cycling corridors and enhance retail economic development by Year 3 *Added as per revised MTR: 1 plan for new pedestrian and traffic calming areas by Year 4*	Achieved	Proposals for extension of cycling corridors for city center were developed and transferred to municipality 20 representatives of design companies, state construction expertise agency and public organizations obtained new knowledge about cycling inclusive infrastructure design. The bike safety school and printing of several posters were supported in order to train young cyclists, reduce traffic accidents and promote safe driving. Development of conceptual design of city center reconstruction was taken into account with commitment of	S

Indicators/ *Revised Indicators*	Base Line	Target	MTR	PIR 2106	TE Rating
				the Municipality to create pedestrian and traffic calming zones. New project areas are under development.	
20. Number of official quality taxi's and taxi-stands available to the public.	Taxi sector does not offer an attractive alternative	1 study on improved quality of taxi sector by Year 1	Facing significant difficulties towards achievement of target	NA	S
Outcome 3: Integrated traffic management measures in Almaty City					**S**

The sources of verification (as per Project Document) of the achievement of Outcome 3 are:

- Plans for private parking concessions and enforcement of parking restrictions
- Integrated transport plans that include traffic management
- Plans for urban land use changes with a goal to enhance retail economic development.

The following paragraphs provide the status of achievement at the time of TE, against the indicators for Outcome 3.

Indicator 17: This indicator is focused on the planning and implementation of parking schemes in the city. A number of activities have been carried out to achieve the target for this indicator. Some of the activities supported by the CAST project are as follows:

- An international expert was hired to development a parking strategy and organization of off-street parking management. This lead to a comprehensive report development of On-Street Parking strategy and Organizational structure for Almaty city.
- A local expert was hired for consulting services in the field of legislation on street parking management and passengers' transportation
- An International conference titled "Development of parking policy for Almaty city. International practices and local challenges" was organized. The purpose was to present international experience in the field of parking policy to stakeholders and discuss topical issues of parking in Almaty.
- Local experts were hired for estimation of parking occupancy and duration in Almaty
- A social cartoon for promotion of paid parking was produced and distributed to the stakeholders

This formed the basis for the municipality to act. The municipality conducted a tender and implemented a parking reform in May 2016 based on public private partnership scheme (investment of about USD 4.5 million allocated by private partner). Almaty parking company has been established for introducing paid parking zones. Legislation changes to enforce paid parking have also been approved. Parking zones (3 zones) have been established in the year 2016-2017.

Indicator 18: Some of the activities for this indicator are overlapping with indicator 10 and 11. To accomplish the tasks under this indicator, following specific activities were carried out

- An international consulting firm for 'public transport network optimization' in Almaty. This lead to a very comprehensive report on 'PT optimization'.
- This was followed by training on "Public transport planning" for representatives of Almaty Municipality and Transport Holding. The objective of the training event was to provide trainings and provide consultations on development of planning and operation documentation based on at least one pilot transit route cluster/corridor for further reorganization in the whole public transport network in Almaty city.
- An international consulting firm was hired for development of an integrated traffic management scheme (ITMS) for Almaty City.

Indicator 19: Space for dedicated bike tracks and pedestrian zones (non-motorized transport) is an integral part of the overall plan for the public transport in the Almaty city. Some of the work carried out under the CAST project for the non-motorized transport is as follows;

- Hiring of a national consultant to design bicycle lanes for a pilot project
- The CAST project supported participation of two delegates from "Velo-Almaty" initiative group at the "Velocity conference 2013" in Vienna.
- An international consulting firm was hired to design bicycle lanes for a pilot project in Almaty was hired
- Leaflets for cyclists "Safe cycling" were designed, printed and distributed (in Russian and Kazakh) to stakeholders
- Training was organized on bike route design. Interactive training on bike route design was facilitated and held for representatives of municipality, roads authority, administrative police, urban planners and architects in Almaty.
- Instruction leaflets were developed and provided to bus and trolleybus drivers on safe driving for cyclists
- The CAST project supported the event of the opening ceremony of the 100th bike parking in Almaty city at Transport Holding. On the occasion of 'International Car Free Day' on September 22.
- The CAST project supported a lecture on "Development of pedestrian zones and cycling in Bangkok" to students and other stakeholders in Almaty
- The CAST project supported participation of two Almaty cyclists at the 4th 'World Bicycle Forum' in Medellin and study tour to Bogota, Colombia
- A national firm was hired for holding events on promoting cycling and traffic safety awareness among pupils of Almaty
- A national firm was hired for holding activities to promote safe cycling and walking in Almaty city

One of the specific achievements of the CAST project is the proposals for extension of cycling corridors for city center. This includes development of conceptual design of city center reconstruction taking into account the commitment of Municipality to create pedestrian and traffic calming zones. The CAST project supported development of the preliminary 'National Standard for the Republic of Kazakhstan' on 'Street Road Space'. This standard after due deliberations by the national authorities would be adopted as the national standard for the entire country.

Indicator 20: Taxi services are considered an integrated part of any sustainable urban transport plan. The CAST project supported a study tour on city taxi services to Dubai. The project hired the services of a national consultant to carry out an analysis and consulting inputs on the legislative provision in Kazakhstan for development of the taxi services. A public - private partnership agreement has been established between the Municipality and some private taxi companies for purchasing new CNG taxis. The CAST project also connected the taxi operators in Almaty with the taxi committee of international association of public transport so that the international best practices in the area of operations of taxies can be adopted in Almaty.

Outcome 3: The Outcome 3 of the project which comprised of the implementation program for parking schemes, development of integrated traffic management and development of the non-motorized transport has been achieved at the target value of the indicators. **The achievement towards results for Outcome 3 of the project has been rated as Satisfactory.**

5.1.4. Attainment of objectives – Outcome 4

As per the project design (Project Document), the expected outputs of Outcome 4 of the project were as given in Box 4.

Box 4: Outputs for Outcome 4

Outcome 4: Demonstration and raising awareness of SUT
Output 4.1: Implementation and engineering plans for a demonstration project on SUT (improved public transport services and integrated traffic management)
Output 4.2: Technical assistance for construction of the SUT system
Output 4.3: Technical assistance for operation and maintenance of the SUT demonstration
Output 4.4 An urban transport information center and website
Output 4.5 Workshops and paper that document the performance of the demonstration projects at reducing transport-related GHG emissions
Output 4.6 Replication plans for sustainable transport in Almaty

Outcome 4 of the CAST project is focused on supporting development and implementation of the demonstration projects. This was to be followed by documentation of the results of demonstration, creation of public awareness, information dissemination (Output 4.5 and 4.6) etc., to facilitate replication of the demonstration projects. As the CAST project is a city specific project focusing on the infrastructure development for sustainable urban transport in a planned manner, there is not that much scope within the city for replication (please see recommendation 2). The CAST project team took the corrective action and adaptive measures during the course of implementation of the project by focusing on the other cities of Kazakhstan for the replication of demonstration projects. The project team from time to time has invited officials of the municipalities of other cities in the training programs, workshops, conferences, etc.

Under Output 4.1, detailed engineering and implementation plans for the demo project were to be made. Under Output 4.2, technical assistance for implementation of the demo projects was to be provided. While Output 4.3 was meant for providing technical assistance (training and capacity building etc.) for the operation and maintenance of the demonstration projects. As is evident, the activities for Output 4.1, 4.2 and 4.3 were required to be carried out in a sequential manner. Further, it is important to note that technically the work for Output 4.1 could have been initiated only after the work of 'Integrated Traffic Management plan' (please see indicator 18) has been completed. The process of development of detailed engineering plans is a time-consuming process. Also, actual implementation of the infrastructure projects of this nature takes a long time (it requires preparation of detailed feasibility studies, tendering, financial arrangements, land acquisition, construction and actual implementation). The evaluators are of the view that it is a bit unreasonable to expect actual physical implementation of the demonstration projects of this scale within the timeline of the GEF project (please see recommendation 4).

As has been stipulated before, successful demonstration of the project was expected to provide confidence to the municipality and its financing partners that other SUT initiatives can be successfully implemented after the completion of CAST. However, as implementation of the demonstration projects could not be completed within the implementation timelines of the CAST project, the benefits of successful demonstration would be realized only post implementation of the CAST project. Once again the focus for realizing the benefits of the demonstration and enhanced technical capacity within the country need to be on other cities of Kazakhstan (rather the city of Almaty). **Table 21** provides the details of the indicators for achievements of Outcome 4 of the project. Also given in the Table are the baseline situation of the indicators, the target value of the indicator, the situation at the time of MTR and at the time of PIR 2016. The ratings regarding the achievement of the targeted value of the indicators is also given in the table.

Table 21: Attainment of objectives – Outcome 4: Indicators and status

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
21. Bankable engineering plans for demonstration SUT project in Almaty City	No demonstration projects on sustainable transport	At least 1 demonstration on sustainable transport in Almaty. Selection of demonstration project by Year 2. Preparation	On track towards achievement	LRT 1 (22 km) feasibility study was developed and approved by Municipality. Technical assistance for development of the tender documentation for LRT project via public private partnership (PPP) scheme was provided. Detailed feasibility	S

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
		by Year 3. Implementation Year 4. Operational by Year 5.		study of BRT corridor 1 and detailed design of BRT 1 line (21 km) are under state expertise. Design of a new bike line (5 km) was finalized and presented to Municipality. Construction of 1 km of this bike line was finalized. A bike line is under operation now.	
22. Number of financing institutions that commit financing assistance to demonstration SUT	No financing institutions committed to financing demonstration SUT	1 financing institutions committed to financing demo SUT by Year 2	Achieved	LRT project was considered for financing via public private partnership (PPP) scheme. International Expert support for discussion of PPP scheme was delivered. Tender documentation is under development. Public awareness campaign on all key objectives of the LRT project was conducted.	S
23. Number of corridors with separated bus lanes and LRT in operation	0 km of operational bus lanes and LRT	Two corridors with separated bus lanes and one corridor of LRT in operation by Year 5 (end of the project)	On track towards achievement	Corridors for LRT and BRT lines were identified and included to the new city master plan. Two separated bus lanes were organized by municipality in 2015-2016.	MS
24. Number of corridors of improved trolley bus routes in operation	0 corridors of improved trolley bus routes in operation	One improved corridors trolley service by Year 5	Achieved	Municipality is using EBRD loan purchased new 195 trolleybuses. Trolleybus depot was re-constructed. New management scheme and route optimization to improve efficiency of operation were recommended to Almatyelectrotrance. Recommendations for creation of additional workplaces for women were discussed with EBRD/Almatyelectrotrance. This trolleybus park was transferred to a private company in 2016.	S
25. Percent increase in public transport ridership	0% increase on public transport ridership Baseline 2012 will be set by the TDM surveys and monitored annually afterwards. A monitoring plan to be implemented in Year2.	20% increase in public transport ridership by Year 5.	On track towards achievement	A survey is under development.	S
26. Number of actions to promote public awareness on sustainable transport and CAST-project	No public awareness of Sustainable Transport and CAST project	1 public web-site and two promo materials about sustainable transport and CAST project designed by Year 1 at least 30% of citizen of Almaty aware about sustainable transport principles by end of Year 3	Achieved	Project continued distributing information about sustainable transport and green mobility principles through mass media and organized 5 thematic conference and 3 workshops/round tables in Almaty. One thematic publication: "Energy efficiency in transport sector of Kazakhstan", 1 information poster "10 principles of sustainable transport", 2 technical guidelines (BRT safety and Transport oriented development standards) translated and published, 2 cycling safety posters and 2 CAST project information booklets developed and distributes among	S

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
				stakeholders. More than 20 presentations about CAST project objectives and pilots were distributed in frame of various events and meetings in Almaty, 4 presentations were presented at conferences outside of Kazakhstan and in frame of some events and meetings like the Astana Economic Forum, THE PEP meetings or Environment for Europe Ministerial Conference in Batumi. Four cartoons (in Kazakh, Russian and English) to promote green public transport, safe cycling or paid parking scheme were developed and distributed broadly. A contest of children drawings was organized and gathered more than 90 children, after that the best works of this contest were presented to public at the exhibition and as a social advertisement will be displayed at city banners and led-displays. Communication with public was organized through regularly updated project web page and pages in social networks (Facebook, Twitter, and VK).	
27. Number of urban transport information centers established	0 information centers established	1 information center on SUT demo project established in Year 3	Achieved	Public awareness campaign is under implementation. Leaflets, posters and video materials posted at the billboards and distributed via social networks and available for at least 30% of citizens of Almaty. New map of the city public transportation network has been elaborated and passed to the city municipality. It will help to improve attractiveness of public transport and provide good quality navigation service for passengers. Information center content was discussed with municipality and decision on creating a web info-center has been taken. A web portal is under development.	S
28. Number of websites related to improved public transport in Almaty	0 websites on public transport	1 website related to improved public transport in Almaty by Year 3	Achieved	A new public web site for passengers "Transport of Almaty" is under development. This work will be completed in November 2016. It will include information about all modes of public transport, routes and tariffs, public feedback/complain module/CAST project web page with a library.	S
29. Number of workshops where experience of demonstration projects is shared	0 workshops conducted	3 workshops where experience of demonstration projects is shared completed by Year 5	Achieved	2 workshops in the region conducted. Project shared experience in design mass rapid transit system and cycling routes via international workshops (Irkutsk). New sustainable urban mobility plan (SUMP) project for middle sized cities in Kazakhstan is under development. This project process replication of results of CAST project and will improve transport planning in other cities.	S
30. Number of papers documenting performance of	0 papers that document demo project performance	5 papers documenting performance of demonstration projects at reducing transport-	Achieved	The Analytical report 2015 "Energy efficiency in transport sector of the republic of Kazakhstan. Current status and measures for improvement " developed	S

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
demonstration projects at reducing transport-related GHG emissions		related GHG emissions by Year 5		and distributed via Ministries and public organizations or posted at the UNDP web library. Other materials are under development .	
31. Number of plans for replicating demonstration projects	0 plans for replicating demo projects	2 plans for replicating demonstration projects by Year 5	Achieved	BRT/bike line projects were discussed with administrations of Astana/Bishkek cities. Information about Almaty pilots was shared in frame of Covenant of Mayors Forum and other international events. Bike line design standards and training materials are available for public and municipality officials.	S
32. Added as per MTR: Number of one street parking places removed or regulated under	*Added as revised per MTR: Ineffective regulation*	*500 parking places removed or regulated in connection with new PT corridors and NMT schemes*		Potential for removing/regulation of on-street parking places discussed in frame of BRT pre-feasibility study and implemented partially via separated bus line project implemented by municipality (will be finished until end 2016). Also city design new pedestrian zone in city center. Exact numbers will be identified during detailed design phase. CAST project are not involved in the implementation phase parking reform .	S
33. Added as per MTR: Number of plans for improving NMT implemented	*No plans implemented*	*One new pedestrian and cycling corridor implemented by Year 5.* *One plan for expansion traffic calming zones implemented by Year 5*		One corridor (5 km) for improvement of cycling infrastructure was designed. A cycling infrastructure map is under development in frame of Traffic management component/1 km of a pilot bike line was constructed based on the design provided by project. Other 24 km of bike lines were inspected and corresponding recommendations were submitted to Municipality. City has committed to create several pedestrian/cycling friendly corridors in the city center until the end of 2016 year.	S
Outcome 4: Demonstration and raising awareness of SUT					**S**

The suggested sources (as per Project Document) of verification of the achievement of Outcome 4 are:

- Workshops and papers documenting performance of demonstration projects
- Awareness campaign for demonstration projects
- Technical design and implementation plan for demo projects.

Following paragraphs provide the status of achievement at the time of TE, against the indicators for Outcome 4.

Indicator 21: There is an overlap between the activities carried out for achieving the target for indicator 13 and the activities carried out for indicator 21. The CAST project had the provision to support feasibility studies for development of sustainable transport improvements. As discussed under indicator 13, the CAST project supported the feasibility study for LRT and the pre-feasibility study for the main BRT corridors. Apart from supporting the feasibility study for LRT, a couple of other activities were also supported by the CAST project, which includes the following:

- An international consulting firm was hired for design of bicycle lanes for a pilot project

- Study tour on BRT to China (Guangzhou and Yichang) for representatives of Almaty Municipality and Transport holding (jointly with ITDP China).
- A national consultant was hired for implementation of CAST pilot projects in the area of sustainable transport
- A national consulting firm was hired for financial advisory services to prepare PPP tender for Almaty LRT project
- An international consulting firm was hired for services on design and feasibility study of BRT Corridor 1. The scope included training on BRT systems.

Indicator 22: The target for this indicator is financing institutions committed to financing demo SUT. EBRD has committed to finance LRT project (MOU with city was signed). LRT project will be implemented in a PPP mode. Depending upon the details of the modalities of implementation of the LRT project, EBRD would finance both the basic infrastructure and the rolling stock. EBRD is most likely to finance by providing the debt part of the financing. International expert support for discussion of PPP scheme was delivered by the CAST project. Presently tender documentation is under development. Public awareness campaign on all key objectives of the LRT project was also supported by the CAST project.

Indicator 23:
Apart from the BRT, five separate bus lanes (against the target of 2) were organized by municipality during 2015-2017. The CAST project supported publication on "Traffic safety on bus priority systems".

Indicator 24: The CAST project supported development of project working documentation for the reconstruction and modernization of the existing contact network for the trolley buses. The objective was to optimize the cable network of the trolleybus lines in Almaty, taking into account contact poles and traction substations. The CAST project also hired the services of an international consulting firm (UITP) for peer-review of Almaty trolleybus system.

'Almaty Electro Trans' purchased new 195 trolleybuses using the loan provided by EBRD. Trolleybus depot and some substations were re-constructed. New management schemes and route optimization to improve efficiency of operation were recommended to "Almaty Electro-Trans" LLP. The trolleybus park was transferred to a private company in 2016. New investment for reconstruction of trolleybus infrastructure committed by the Municipality.

Indicator 25: In a study titled 'Transport Behavior and Mobility in the City of Almaty' carried out by BISAM (Business Information, Social and Marketing Research Centre) on behalf of the CAST project, it was found that 39% of the population used public transport for their transport needs. In an earlier study carried out in the year 2102 by ROM Transportation Engineering and Consulting Ltd. for the CAST project, the share of public transport was assessed at 31%. As can be seen during implementation of the CAST project, there is an increase of 8% in the ridership of the public transport in the Almaty city.

As the demonstration projects of LRT and BRT could not be implemented during the implementation phase of the CAST project, the impacts in terms of shift from cars to public transport could not be fully realized. The expectations are that once LRT and BRT are in place there will be a significant shift from cars to the public transport and under such condition the target of increase of 20% in the usage of public transport would be achieved without much problem.

Financing for LRT project has already been organized (EBRD has committed to finance LRT project and a MOU with city was signed). At the time of TE, tender documentation for LRT procurement was under development. Public awareness campaign on all key objectives of the LRT project was also supported by the CAST project. New buses for BRT project were in place at the time of the TE, and the BRT the first set of BRT corridors were about to be completed.

Indicator 26: One of the targets for this indicator is the percentage (30%) of citizens of Almaty aware of sustainable transport. Although the CAST project has increased the level of awareness of the citizens of Almaty

about the sustainable transport, in the absence of a survey (baseline survey and end line survey), it is not possible to determine the percentage of citizens of citizens who are aware of the sustainable transport. A number of activities were carried out under the cast project to achieve the target for this indicator. Some of such activities are as follows:

- Two social videos (ads) on promotion of municipal public transport in Russian and Kazakh Languages
- Publication “RIO+20: Agenda-21. Execution of obligations on sustainable development in Kazakhstan” and CAST project brochure
- International conference "Development of parking policy for Almaty city. International practices and local challenges"
- The awarding ceremony for students of al-Farabi Kazakh National University (final projects on sustainable transport). Students of al-Farabi Kazakh National University were awarded for their projects on sustainable transport 26
- International workshop "BRT for Almaty: international best practices, ideas for Almaty city" (jointly with ITDP)
- ITDP poster with principles of transit-oriented development. Translation from English to Russian, printing and distribution
- Cycling races for children (jointly with "Velo-Almaty" initiative group). The event was dedicated to the International Children's Day and World Environment Day. The event was held for the fifth time.
- The opening ceremony of the first cycling parking lot in al-Farabi Kazakh National University (jointly with Samsung company).
- THE PEP international conference "Green and health-friendly sustainable mobility: Focus on urban Central Asia" in Almaty (jointly with UNECE) Event PEP Conference brought together decision-makers in the field of transport, health and environment for working together to develop strategies and measures to promote sustainable urban transport.
- Forum towards a "green economy" in Kazakhstan - participation of CAST PM as a speaker at the session Event Participation of CAST project manager as a speaker in the session on energy efficiency potential in the field of transport infrastructure and the proposed reforms to Almaty city.
- Calendars for 2014 year with children's drawings on sustainable transport topic designed, printed and distributed to stakeholders
- The awarding ceremony for finalists and winners of the social advertising contest on "Almaty Sustainable Transport" topic. The goal of the contest was to engage young designers in producing social advertisement serving to promote sustainable transport to improve urban environment and safety on the roads.
- Eco-driving week in Almaty: a number of workshops and events (by the Austrian Energy Agency) were organized. Their scope covered GHG emissions reductions and fuel cost savings through driving culture and implementing these programs in the southern capital.
- Three social cartoons for promotion of sustainable transport were designed, produced and distributed (in Russian, Kazakh, and English) to stakeholders.
- Leaflets for cyclists "Safe cycling" was designed, printed and distributed (in Russian and Kazakh) to stakeholders.
- Annual cycling races for children (jointly with "Velo-Almaty" initiative group). The event was held for the sixth time by "Velo-almaty" initiative group with the support of a number of commercial organizations, CAST project, and Traffic police department of Almaty.
- Instruction leaflets to bus and trolleybus drivers on safe driving for cyclists were designed, printed and distributed (in Russian and Kazakh) to stakeholders
- Promotion video about CAST project was designed and produced to be distributed to stakeholders
- Lecture of Enrique Peñalosa to students and other stakeholders in Almaty - "Introduction of BRT and infrastructure for non-motorized transport". The event was held in cooperation with Kazakh Architecture Academy on the eve of the opening of the International Forum Almaty Invest 2014, and the International Conference on Transit-Oriented Development.
- Lecture of Robert van der Bijl to students and other stakeholders in Almaty -"Sustainable city transport: a pragmatic view for Kazakhstan". The event was held in cooperation with al-Farabi Kazakh National University.

- Lecture of Michael Kodransky to students and other stakeholders in Almaty -"Discussion of TOD principles, metrics and international best practices". The event was held in cooperation with al-Farabi Kazakh National University.
- Lecture of Pawinee Iamtrakul to students and other stakeholders in Almaty -"Development of pedestrian zones and cycling in Bangkok". The event was held in cooperation with Kazakh Architecture Academy.
- Publication on "Energy efficiency in transport of RK" (analytical report) designed, printed and distributed to stakeholders (in Russian and English)
- Leaflet "6 cycling games to children". Translated from English to Russian, designed, printed and distributed to stakeholders (jointly with "Velo-Almaty" initiative group)
- Brochures for cyclists on safety cycling. Printed and distributed to stakeholders (jointly with "Velo-Almaty" initiative group).
- The first open festival “Open streets” in Almaty. Habitants and guests of Almaty city had a chance to observe how interestingly the time can be spent on the streets, free of cars, and feel the atmosphere of the modern city. In the frame of the event, during the first half of the day, city center was closed for cars and used for walking, cycling, sport contests, dancing and etc.
- Social cartoon for promotion of paid parking were designed, produced and distributed (in Russian, Kazakh, and English) to stakeholders
- Calendars for 2016 year on the team of sustainable transport were designed, printed and distributed to stakeholders.
- GIZ poster on "10 principles of sustainable urban transport" was translated from English to Russian, designed, printed and distributed to stakeholders
- Posters for "Ecomon GO" public interactive campaign for youth awareness were designed, printed and distributed
- Award for finalists ("Ecomon GO" public interactive campaign for youth) of the interactive game based on "Pokemon Go" prototype. Participants collected "Ecomon Go" characters in public transport and on bus stops.
- Award to finalists of the contest on bus stop design. The contest on bus stop design was conducted in cooperation with Almaty Municipality Almaty Development Centre.
- Tour de Kids - cycling races for children (by "VeloAlmaty" initiative group). The annual cycling competition for children was organized by "VeloAlmaty" initiative group with the support CAST project.
- Posters on TOD Publications/public awareness were printed and distributed amongst the participants of the Summer School on Sustainable Mobility.

Indicator 27 and 28: The activities for achievement of the targets for these two indicators are common and overlapping. Some of the activities carried out are:

- Graphic design for Almaty city public transportation map
- Informational web-portal for passengers of Almaty city
- Data collection and processing for transport portal
- Updating of "City Bus" website and mobile application.

Specific achievement against this indicator has been a new map of the city public transportation network; development of a web portal (alatransit.kz); updating of the two software (Citybus & Starbus) for navigation and monitoring of PT. In consultation with the municipality, a decision was taken to create a web-portal (instead of information center). The new public web portal for passengers developed under the project includes information about all modes of public transport, routes and tariffs, public feedback/complain module/CAST project web page with a library.

Indicator 29, 30 and 31: The activities under these three indicators were focused on documenting the results of the demonstration projects and disseminating the results (by workshops and papers) with the objective of facilitating the replication. When it comes to achievement of the targets against these three indicators, one needs to keep in mind that the actual implementation of the demonstration projects could not be completed

within the implementation phase of the CAST project. Thus, it is not possible to document the results of the demonstration projects and disseminate the results by way of workshops and papers.

One of the other concerns is that the CAST project is a city specific project focusing on the infrastructure development for sustainable urban transport in a planned manner, there is not that much scope within the city for replication (please see recommendation 4). The CAST project team took corrective action and adaptive measures during the course of implementation of the project by focusing on the other cities of Kazakhstan for the replication of demonstration projects. The project team from time to time has invited the officials of the municipalities of other cities in the training programs, workshops, conferences, etc.

Although implementation of the demonstration projects could not be completed within the implementation timelines of the CAST project, there were a lot of learnings and lessons learnt in the process of detailing and implementing the demonstration projects (e.g. legal issues, regulatory issues, financial issues, technical issues for implementing the sustainable transport projects in Kazakhstan). The project team shared these learnings with the other cities on various occasions. For example, the project shared experience in designing mass rapid transit system and cycling routes via international workshops (Irkutsk). During 2011-2017, several workshops and round tables were conducted in Astana, Shymkent and Temirtau. Sustainable urban mobility plans (SUMP) for the cities of Temirtau and Shymkent were developed and submitted to municipalities. Moreover, CAST project will share experience with other cities of RK in frame of events organized by UNDP project on "Sustainable cities" in Autumn 2017. This will facilitate replication of CAST project's results and improve transport planning in other cities. BRT/bike line projects were discussed with administrations of Astana/Bishkek cities. Astana organized dedicated bus lines in 2017 and would like to introduce bike lines as part of transport scheme. Information about Almaty pilots was shared at various international events.

Indicator 32: There is an overlap in the activities for indicator 17 and this indicator. The potential for removing/regulation of on-street parking places was taken up as a part of BRT pre-feasibility study. The scheme was implemented as a part of the segregated bus lane project..

Indicator 33: There is an overlap in the activities carried out for indicator 19 and this indicator. The city designed a new pedestrian zone in the city center. One corridor (5 km) for improvement of cycling infrastructure was designed. The municipality has committed to create several pedestrian/cycling friendly corridors in the city center.

Outcome 4: This Outcome of the CAST project was focused on demonstration projects followed by information dissemination and awareness creation of SUT with the sole objective of replication of the demonstration projects. The project has been able to achieve the objectives of the Outcome of the project. **The achievement of the Outcome 4 of the project has been rated as Satisfactory.**

5.1.5. Attainment of project goals, project objectives

Attainment of the project goals and the project objectives have been assessed based on the assessment of the attainment of goals and objectives of the individual Outcomes of the project, which was presented in the earlier paragraphs. The assessment is supplemented by the evaluation of the attainment against the indicators for project objectives.

The project document stipulates the project goal as reduction in the growth of transport-related greenhouse gas emissions in the City of Almaty, while simultaneously improving urban environmental conditions. The project objectives were to be achieved through its following four Outcomes.

Outcome 1: Improving the management of public transportation and air quality in Almaty
Outcome 2: Building capacity in Almaty to holistically plan and implement improvements in the efficiency and quality of public transport
Outcome 3: Building capacity to holistically plan and implement integrated traffic management measures in Almaty City

Outcome 4: Implementing a demonstration project that raises awareness and increases knowledge of sustainable transport.

As far as attainment of the results is concerned, the achievement of results for the four Outcomes of the project has been satisfactory (as discussed in the above paragraphs). The target value for the project goal is the direct GHG emission reductions of 31 thousand tones of CO_2 equivalent per year due to the demonstration projects. Apart from the direct GHG emission reduction, the CAST project was to lead to indirect GHG emission reductions due to replication of the demonstration projects.

Table 22 provides the details of the indicators for achievements of 'Project Objectives'. The ratings regarding the achievement of the targeted value of the indicators are also given in the table. Also given in the table are the values of the indicators at the start of the project, the target values at the end of the project, situation at the time of MTR, achievement as assessed by the project management in the PIR for terminal year (year ending June 2016) and the ratings of the achievements of the target values of the indicators as assessed during the TE.

Table 22: Attainment of project objectives: Indicators and status

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
A. Tonnes of CO_2 emissions reductions resulting from transport modal switches to public transport services ***New version as revised per MTR: Tonnes of CO_2eq emissions reductions resulting from transport modal switches to public transport services/ to non-motorized transport modes and other project actions.***	0 k tonnes CO_2 *New version as per revised MTR: 0 k tonnes CO_2* *Baseline 2011 emission was estimated at 2.654 million tons CO2eq per year* Baseline 2011 emission was estimated at 2.184 million tons CO_2eq per year, but subject to be checked by TDM survey	31 ktonnes CO_2 eq (direct annual reduction) from starting of demo project commissioning *New version as per revised per MTR: 31 k tonnes CO_2 (direct annual reduction) from starting of demo project commissioning* *308 k tonnes CO_2eq (10-year reduction after completion of CAST* 308 k tonnes CO_2eq (10-year reduction after completion of CAST)	On track towards achievement	LRT line 1 (22,9 km) project could generate reduction 540 ktonnes CO_2 eq per year. BRT line 1 - 32,9 ton per year. Actual direct emissions reduction will be calculated after implementation of the pilots in 2016 (BRT) - 2018 (LRT).	**S**
B. Number of firm commitments from stakeholders for the implementation of improved public transport services in the City of Almaty	No commitments for improving public transport services	At least 2 plans for demonstration of improved public transport services in Almaty City by Year 3	On track towards achievement	Municipality committed to develop LRT 1 (as a Public-Private Partnership project) in 2017-2018 and construct infrastructure for BRT 1 line with a pilot cycling route in 2017-2018. The first part (1 km) of the pilot cycling line was constructed in 2016. In 2016, Municipality approved the City development plan for 5 years and included the indicators from the "City Almaty Sustainable Transport Strategy" to this document. City has already implemented 2 separated bus lines along two major roads and announced implementation of three more. The e-ticketing system was implemented in December 2015.	**S**
C. Number of financing institutions committed to financing SUT	No financing institutions committed to	1 financing institution committed to financing demo SUT by Year 2	Achieved	Municipality financed purchasing 200 CNG buses and committed to finance additional 100 GNG buses; in	**S**

Indicators / *Revised Indicators*	Base Line	Target	MTR	PIR 2016	TE Rating
	financing demo SUT			2012-2015 EBRD financed procurement of 195 trolleybuses and 400 CNG buses, also committed to finance LRT project using PPP scheme. Private investors financed development of the e-ticketing system and purchasing new CNG buses in 2015-2016.	
D. Percent increase in public transport ridership	No increase of passenger trips on public transport Baseline 2011 subject to be checked by TDM survey	20% increase of passenger trips on public transport by Year 5. *New version as revised per MTR: 20% increase of share of sustainable transport modes (10"□year reduction after completion of CAST.* 4% increase of share of sustainable transport modes by Year 5 (along CAST pilot corridors		Projected ridership forecast for 2018 was presented in frame of the optimization of public transport network project. Considering optimization, 15% increase of journeys projected for 2018 (9% for buses and trolleybuses). Data will be adjusted after finalizing LRT/BRT feasibility studies and implementation of these pilot projects and data analysis based on a travel demand survey.	**S**
E. Added as revised by MTR: Number of policy documents on the role of urban mobility on national transport and climate change mitigation policies	*Added as revised by MTR: No documents*	*Added as revised by MTR: One document presenting how national policies are supporting sustainable mobility in cities around the world by Year 5*		Review of energy efficiency policy and recommendations for policy makers were prepared and discussed with stakeholders	**S**
Project Objectives: Reduction in the growth of the transport-related greenhouse gas emissions in the City of Almaty					**S**

The suggested sources (as per Project Document) of verification of the achievement of Project Objectives are:

- Reports of improved public transport demonstration including surveys of ridership making transport modal switches from car to public transport
- Reports from surveys of decreased trip times along corridors where integrated traffic measures have been implemented

Following paragraphs provide the status of achievement at the time of TE, against the indicators for project objectives. It is important to note that some of the indicators for project objectives are the same as for different outcomes. For example, indicator C, for the project objectives is the same as indicator 22 for the project outcomes; also indicator D for the project objective is the same as indicator 25 for the project outcomes.

Indicator A: This indicator is directly related to the project objective of reducing the growth of the transport-related greenhouse gas emissions in the City of Almaty. At the project design stage, the targeted direct reduction in the emission of GHG was 31 thousand tons of CO_2 equivalent per year (aggregating to 308 thousand tons for the lifetime of 10 years for the demonstration projects) due to implementation of the demonstration project. Apart from the direct GHG emission reductions, the CAST project was to lead to indirect GHG emission reductions due to replications of the demonstration project.

The CAST project appointed an international consultant to determine GHG emission reductions due to the project. The assessment presented here is based on the report on GHG emission reductions produced by the consultant. GHG consultant is of the view that the GEF manual only provides for two options of direct mitigation impact: (1) "direct GHG ERs" and (2) "direct post-project GHG ERs". For determination of the direct GHG emission reductions, from the GEF perspective, it doesn't matter whether the GHG impact occurs during project lifetime or post implementation.

Apart from the BRT/LRT demonstrations (which will go beyond the project lifetime), the CAST project has completed three other measures (bike lanes, PT route optimization and PT lanes) which have been estimated to generate 5,980 tCO_2 of lifetime direct ERs (or 1200 tCO_2 in annual ERs).

Although the implementation of the BRT/LRT investment would go beyond the implementation time frame of the CAST project, the investments in BRT/LRT will lead to direct emission reductions. Direct GHG emission reductions post implementation of the CAST project will take place as the demonstration projects supported by it are expected to get implemented post the implementation phase of the CAST project. As the CAST project has been able to create awareness and has built the capacity within the country, there will be replications of the demonstration project in other cities of Kazakhstan, leading to consequential (earlier the term indirect was being used) GHG emission reductions. As stipulated before, the CAST project had retained the services of an international consultant to quantify GHG emission reductions due to the CAST project. Based on the report by the international consultant, the direct GHG emission reductions due to the CAST project have been projected to be 502,710 tons for the lifetime of the demonstration projects. Further, the consultant has estimated the top-down range of consequential GHG emission due to the CAST project at 2 $MtCO_2$. The bottom-up estimate of consequential GHG emission reductions expected from the CAST project has been estimated at around 1 $MtCO_2$ (direct ERs of 0.5 $MtCO_2$ times the replication factor of 2). Details regarding the projected GHG emission reductions due to the CAST project are provided in the next section of this chapter.

Against the target of direct GHG emission reductions of 308 thousand tons of CO_2 equivalent (The log-frame target of 308 thousand tons of CO_2 is based on 10-year lifetime, while the 20-year lifetime target is considered to be more appropriate timeframe for infrastructure investments like BRT/LRT. Thus, the target should actually be 615 thousand tons of CO_2 as provided on page 49 of the Project Document) the CAST project is expected to lead to direct GHG emission reductions of about 500 thousand tones, thus achieving the target.

Indicator B: The CAST project has been instrumental in mobilizing the investment required for the new infrastructure required for the public transport at Almaty. Some of the noteworthy achievements in this regard are as follows:

- Loan of USD 74.5 million from EBRD for purchase of modern CNG buses
- Loan of USD 14.2 million from EBRD loan for purchase of new trolleybuses
- Capital expenditure of USD 47.5 million by municipality out of its own resources for purchasing new municipal public transport fleet (additional 200 CNG buses, 17 trams - not under operation now, 200 CNG taxis).
- Investment of USD 3.4 million by the public transport operator (Green bus) for purchasing 35 new CNG buses (in operation since June 2016).
- Proposal for procurement of 400 buses (Euro 5 standard) to be financed by municipality to the extent of USD 40 million
- Proposal of investment of USD 100 million by the municipality for the development a modern BRT system. It has already started the financing in 2016 for the first part of BRT line infrastructure and new bike lines.
- Proposal to take up construction of LRT in PPP mode. The EBRD is willing to support the private parties for creation of the basic infrastructure and procurement of the rolling stock.

As can be seen, the Municipality has committed to develop LRT 1 in PPP mode and construct infrastructure for the first line of BRT. The construction of BRT is in progress. LRT is presently at the bidding stage. Under the CAST project, the municipality has approved the city development plan for 5 years and included the

indicators from the "City Almaty Sustainable Transport Strategy" to this document. Almaty City has already implemented 5 separated bus lines along major roads and is in the process of preparing design documentation for implementation of three more. The CAST project has been able to achieve the target for indicator B of the project.

Indicator C: The target for this indicator is financing institutions committed to financing demo SUT. EBRD has committed to finance LRT project (MOU with city was signed). LRT project will be implemented in a PPP mode. Depending upon the details of the modalities of implementation of the LRT project EBRD would finance both the basic infrastructure and the rolling stock. EBRD is most likely to finance by providing the debt part of the financing. International expert support for discussion of PPP scheme was delivered by the CAST project. Presently tender documentation is under development. Public awareness campaign on all key objectives of the LRT project was also supported by the CAST project. The CAST project has been able to achieve the target for indicator C.

Indicator D: In a study titled 'Transport Behavior and Mobility in the City of Almaty' carried out by BISAM (Business Information, Social and Marketing Research Centre) carried out on behalf of the CAST project, it was found that 39% of the population use public transport for their transport needs. In an earlier study carried out in the year 2102 by ROM Transportation Engineering and Consulting Ltd. for the CAST project, the share of public transport was assessed at 31%. As can be seen during implementation of the CAST project, there is an increase of 8% in the ridership of the public transport in the Almaty city.

As the demonstration projects of LRT and BRT could not be implemented during the implementation phase of the CAST project, the impacts in terms of shift from cars to public transport could not be fully realized. The expectations are that once LRT and BRT are in place there will be a significant shift from cars to the public transport and under such a condition the target of increase of 20% in the usage of public transport would be achieved without much problem.

In this regard it is important o note that the financing for LRT project has already been organized (EBRD has committed to finance LRT project and a MOU with city was signed). At the time of TE, tender documentation for LRT procurement was under development. Public awareness campaign on all key objectives of the LRT project was also supported by the CAST project. New buses for BRT project were in place at the time of the TE, and the BRT the first set of BRT corridors were about to be completed.

Indicator E: The CAST project supported development of 3 policy documents developed:

- Review of energy efficiency policy and recommendations for policy makers were prepared and discussed with stakeholders.
- "Public transport policy overview and recommendations" document is in process of discussion with key stakeholders and will be transferred to Ministry and municipalities in August 2017.
- Report and recommendations on "Accessibility of Public Transportation for Law-Mobility Population Groups in the Republic of Kazakhstan" presented to public and politics.

Project Objectives: At the end of the CAST project, the alternative to the baseline scenario supported by the project has strengthened the institutional arrangement and coordination for the development of sustainable urban transport in Almaty city. In addition, the completion of the institutional arrangements and the strategic plan has enabled the municipal government of Almaty to strengthen their current urban transport policies that will provide confidence to investors and other stakeholders in the coordinated development of urban transport solutions. The project has also increased the knowledge of civil society on sustainable transport issues through targeted public awareness programs and the demonstration projects on a SUT project in Almaty City. This will provide domestic grassroot growth of the awareness of important sustainable transport issues and climate change in Almaty City as well as the whole of Kazakhstan.

The performance of the CAST project in terms of achievement of the targeted objectives has been rated as Satisfactory.

5.2. Global environmental benefits

The main questions for TE are: (please see Annex B for the evaluation questions)

- **What is the achievements /Results in terms of contribution to sustainable development benefits, as well as global environmental benefits (direct and indirect GHG emission reduction)?**
- **How does the GEF Tracking Tool at the Baseline and the one completed right before the Midterm Review compare with that, prepared at the time of TE?**
- **What are the possible issues with Sustainable Urban Transport in Almaty city?**

The global environmental benefits of the project are the reduction in the emission of GHGs to help the global community to address climate change. Details of the projected GHG emissions at the time of project design and the corresponding set of assumptions is given in **Table 23**.

Table 23: Projected GHG emission reductions at Project design and the assumptions

Category	Quantity	Remarks
Direct	31 thousand tons CO_2 equivalent / Yr. Total or 615 thousand tons of CO_2 equivalent considering the life of 20 years for the demonstration projects	Direct GHG emission reductions has been considered as those that are attributable to completion of the SUT demonstrations along selected corridors that will be completed with project technical assistance by Year 5
Consequential (Indirect) (Bottom-up)	1430 thousand tons CO_2equivalent, considering replication of 2.3-fold over a 10-year period after the GEF project is completed (2016 to 2025).	Consequential (in-direct) emission reductions has been considered, as those that will happen due to the efforts by Almaty authorities in the future to replicate the demonstration projects

Assumptions:

- Direct GHG emission reduction benefits will be derived from Components 2, 3 and 4, specifically from modal switches from cars to trolley buses and the LRT (Output 4.1.) and increased vehicle energy efficiency and integrated traffic management measures, e.g. under Output 3.1. (parking scheme).
- For estimating GHG reductions from CAST, the demonstration corridors are assumed to be:
  - 13 km of LRT corridor (Momyshuly - Tole-Bi – Baitursynov – Makatayev - Žetysuskaya);
  - 14 km of BRT trolley corridor (Sairan Bus Terminal - Abai Ave. – Ablai Khan Auezov Str to Ablai Khan Ave up to the Almaty 2 Railway Station);
- Both corridors will have been developed with integrated traffic management measures to move traffic more efficiently.

The projected GHG emission reductions due to the CAST project, as per the GEF tracking tool at the time of project design and at the time of MTR is as given in the **Table 24** below.

Table 24: Projected GHG emission reductions as per GEF Tracking Tool (Figures in Tons of CO_2)

	Baseline	MTR
Direct	308000	--
In-direct (Bottoms up)	1430000	--
In-direct (Top down)	--	--

As has been noted before, the CAST project has hired the services of an international consultant to quantify GHG emission reductions due to the CAST project. Based on the report by the international consultant, the details of projected GHG emission reductions due to the CAST project is given in the following paragraphs.

In the CAST project, reduction of transport-related GHG emissions will be achieved through a reduction of trips made by private car and an increase of trips made by public transport, offering an attractive integrated public transport system, as well as promotion of cycling and walking.

Based on the analysis of the project documentation and discussion with the project team, the following project activities have been identified as generating direct GHG emission savings:

Table 25: Activities of the CAST project leading to GHG emission reductions

Project activity	Output at project end	Immediate result	GHG impact
Outcome 2: Improved efficiency and quality of public transport services			
2.1 Optimization of public transport route network	Average daily mileage on PT network reduced by 3000 km	Increased efficiency of public transit through reduced "dead mileage", shorter routes etc.	Reduction in GHG emissions from public transit through decreased consumption of fuel/electric energy
2.2 Replacement of old rolling stock of public transit with new CNG buses *	563 new CNG-powered buses procured and running	Increased fuel efficiency and lower carbon intensity of new public transit rolling stock	Reduction in GHG emissions from public transit through displacement of diesel fuel with CNG in higher-efficiency buses
Outcome 4: Demonstration projects on sustainable transport			
4.1 Construction of bike lanes	7.3 km of bike lanes constructed	Modal shift from motor vehicle usage to biking	Reduction in GHG emissions from road vehicles through decreased consumption of fuel
4.3 Introduction of bus rapid transit system (BRT)	FS for a 22.5 km BRT corridor completed, construction works initiated; to be launched in 2018	Modal shift from passenger car usage to BRT, increased efficiency of public transit	Reduction in GHG emissions due to decreased fuel consumption by passenger cars (due to reduced mileage) and public transit (due to improved efficiency)
4.4 Introduction of Light Rail Transit (LRT) system	FS for a 22.9 km LRT corridor completed; PPP selection planned in 2017; to be launched in 2020.	Modal shift from passenger cars to LRT, increased efficiency of public transit	Reduction in GHG emissions due to decreased fuel consumption by passenger cars (due to reduced mileage) and public transit (due to improved efficiency)
4.6 Introduction of dedicated public transit lanes	86 km of dedicated public transit lanes put into operation	Increased efficiency (speed) of public transit (potentially, modal shift from passenger cars)	Reduction in GHG emissions due to lower fuel consumption by public transit (and potentially cars)

As per the report prepared by the consultant on GHG emission reductions, the project relies quite heavily on LRT and BRT demonstration projects for the bulk of the expected mitigation impact. However, the demonstrations of LRT and BRT lines could not be implemented within the CAST project's implementation timeframe. However, considering the substantial efforts that the CAST project has invested into promoting both pilot corridors, as well as the heavy reliance on the LRT/BRT for the direct mitigation impact, it would seem justifiable to consider the expected GHG impacts as direct. The evaluation team has considered that the GEF methodology, defines the direct emission reductions as those which happens due to investments mobilized during the implementation of the project. Thus, the argument of the consultant that the emission reductions due to LRT and BRT projects are 'direct emission reductions' is valid.

The following table provides an overview of the direct GHG emission reductions estimated to have been achieved by the CAST project:

Table 26: Estimated Direct GHG emission reductions

Project activity	Status of project activity as at project end in 2017	Compliance with GEF qualification requirements for direct impacts	Lifetime direct GHG emission reductions, tCO_2
2.1 Optimization of public transport route network	Average daily mileage on PT network reduced by 3000 km	Complies	3,510

Project activity	Status of project activity as at project end in 2017	Compliance with GEF qualification requirements for direct impacts	Lifetime direct GHG emission reductions, tCO_2
2.2 Renovation of public transit rolling stock with CNG buses	563 new CNG-powered buses procured and running	Excluded	Excluded
4.1 Construction of bike lanes	7.3 km of bike lanes constructed	Complies	540
4.2/3 Introduction of mass rapid transit (MRT) system (BRT/LRT)	FS for a 22.5 km BRT + 22.9 LRT corridor completed; BRT construction works initiated; to be launched in 2018; LRT to be commissioned in 2020.	Complies, caveats on investment completion elaborated above	496,750
4.5 Introduction of dedicated public transit lanes	86 km of dedicated public transit lanes put into operation	Complies	1,910
TOTAL project:			**502,710**

The GEF manual provides for two options for estimating consequential GHG emission reductions (formerly termed "indirect"): bottom-up and top-down. The bottom-up approach starts with the direct impacts of the investments under a project, and multiplies that number by a replication factor representing the number of times the project investment is likely to be replicated in other places/markets during the 10 years after the project. The top-down approach starts with forecasting the entire economic potential for GHG abatement of a given technology or investment opportunity in the country. It is then scaled down based on the appropriate GEF causality factor that serves to attribute the expected impacts to the completed GEF project.

According to the 2017 National GHG Inventory Report of Kazakhstan, road transport emissions in Kazakhstan stood at around 18 $MtCO_2$ per year as of 2015. With urban mobility accounting for an estimated 40% of road GHG emissions, annual GHG impact from urban transportation in Kazakhstan can be assessed at 7.2 $MtCO_2$. With sustainable urban mobility plans estimated to generate around 7% in GHG emission reductions through 2030, the overall technical potential from sustainable urban mobility promotion in Kazakhstan can be roughly assessed at 5 $MtCO_2$ over a 10-year post-project period. With GEF causality factor estimated at level 2 (or 40%), where the GEF contribution is modest, and substantial indirect emission reductions can be attributed to the baseline, the top-down range of consequential GHG emission reductions expected from the CAST project are estimated at 2 $MtCO_2$.

While the CAST project represents a whole set of activities bearing direct mitigation potential, aggregating their individual impacts and assigning a single replication factor would provide an overall estimate of the multiplication potential of the set of investments facilitated by the project during the 10 years after the project. With a number of replication activities already in the planning/early implementation stage (e.g. bus lanes, LRT in Astana, bike lanes in Astana, Shymkent), it seems appropriate to conservatively assume a replication factor of 2, to yield a bottom-up estimate of consequential GHG emission reductions expected from the CAST project at around 1 $MtCO_2$ (direct ERs of 0.5 $MtCO_2$ times the replication factor of 2).

The international consultant for estimation of GHG emission reduction has observed / commented that, though CNG is generally regarded as a cleaner fuel compared to diesel, both in terms of air pollutant and GHG emissions, the actual profile of GHG benefits of a CNG fleet depends to a large extent on the efficiency of the CNG buses implemented. As evidenced from the estimation done under this assignment, the performance of CNG buses in Almaty (with average fuel efficiency of 66.8 m3/100 km) leads to higher GHG emissions compared to a baseline fleet of EURO V diesel buses (please see recommendation 11).

Against the projected direct GHG emission reductions of 615 thousand tons of CO_2 and indirect GHG emission reductions of 1430 thousand tons of CO_2, the CAST project would lead to direct GHG emission reductions of

502 thousand tons of CO_2 and consequential (indirect) GHG emission reductions of 1000 thousand tons of CO_2.

As such there are no adverse environmental issues and impacts with the development of sustainable urban transport development in Almaty and other cities of Kazakhstan.

5.3. Relevance

The main questions for TE are: (please see Annex B for the evaluation questions)

- **To what extent is the activity suited to local and national development priorities and organizational policies, including changes over time?**
- **To what extent is the project in line with UNDP Operational Programs or the strategic priorities under which the project has been funded?**

The Kazakhstan 2050 Strategy calls for widespread economic, social and political reforms to position Kazakhstan among the top 30 global economies by the year 2050. Kazakhstan 2050 Strategy was announced by the Kazakh President, Nursultan Nazarbayev in December 2015. As per the address of the president, one of the 10 top projects of 2050 Strategy implementation is making public service transport in Kazakhstan more ecologically-friendly and creation of infrastructure for special electric cars to be used across the country.

As per the Climate Change Co-ordination Center in Kazakhstan, the priority activities in the country includes: to develop a National Energy-Saving Program including creation of conditions for development of renewable energy sources and increase of energy-efficiency of economy sectors; to launch the priority pilot projects on GHG emissions reduction, energy-saving, new technologies introduction, involvement of renewable energy sources in the energy balance.

Kazakhstan is taking steps to transition to a green economy. Kazakhstan's green economy concept policy, adopted in 2013, aims to diversify the economy through careful use of natural resources. The project began in 2015 and is expected to continue through 2018. The country plans to spend an average $3.2 billion a year along with investors to achieve its green goals by 2050 and cut carbon emissions by 40 percent in 2050 from 2012 levels. In order to reduce carbon emissions, Kazakhstan and the UNDP is implementing a project named "Sustainable Cities for Low Carbon Development." The program covers 15 cities of Kazakhstan. In April 2016, the President of Kazakhstan signed the law "On introducing amendments and addenda to some legislative acts of Kazakhstan on the transition to green economy."

The project is relevant and consistent with the national policies of the Republic of Kazakhstan on green economic development and transport.

The Outcome / Indicator of Kazakhstan's UN Development Assistance Framework (UNDAF) (2010-2015) under which the CAST project was designed and carried out "By 2015, communities, national and local authorities use more effective mechanism and partnership that promote environmental sustainability and enable them to prepare, respond and recover from natural and man made disasters". The expected UNDAF Outcome / indicator being supported by the CAST project is, "the Government, industries and civil society take steps to adapt to climate change and mitigate its impact through energy efficiency measures and climate change adaptation policies". As the transport sector is one of the largest emitter of GHGs in Kazakhstan, the CAST project directly supports the Outcome 2.3 of the UNDAF, "the Government and energy consumers are better equipped with knowledge, policies and pilot cases on renewable energy market regulations and energy efficiency measures in sectors with high CO_2 emission level". UNDAF-2010-2015 was successfully completed and the new Partnership Framework for Development (PFD), Kazakhstan, 2016-2020 started after it. The project is in line with UN Operational Programs for Kazakhstan.

The relevance of the CAST project has been rated as Relevant.

5.4. Effectiveness & Efficiency

The main questions for TE are: (please see Annex B for the evaluation questions)

- **To what extent the objectives have been achieved?**
- **To what extent the results have been delivered with the least costly resources possible?**
- **What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention?**

The goal of the CAST project was reduction in the growth rate of GHG emissions from the urban transport in Almaty city of Kazakhstan. This was to be achieved by reducing the GHG emission intensity due to urban transport. The project document had set the goal for the project as reduction in the growth of the transport-related greenhouse gas emissions in the City of Almaty, while simultaneously improving urban environmental conditions. The stated (as per Project Document) objective of the project was facilitation of model shift of urban transport from cars to public transport for environmentally sustainable urban transport in Almaty City.

Though the CAST project failed to deliver when it comes to establishment of the two main demonstration projects (LRT and BRT) and establishment of further urban transport projects, at the end of the CAST project, the demonstration project of LRT envisaged to be implemented under the CAST project is at the stage of bidding to implement in PPP mode, while the construction for first BRT line is underway. Under the CAST project, the municipality has approved the city development plan for 5 years and included the indicators from the "City Almaty Sustainable Transport Strategy" to this document. Almaty City has already implemented five separate bus lines along major roads and is in process of preparing design documentation for implementation of three more. The CAST project has also facilitated modernization of the fleet of buses (replacement of old buses with the new modern CNG buses, and replacement of old trolley buses). One of the other notable achievements of the project is the popularization of the concept of non-motorized transport with dedicated bike lanes. The CAST project has been able to achieve its stated objective of increasing the share of public transport in the overall urban transport in the city. In terms of effectiveness of the project towards achieving its goals, the **Effectiveness of the project has been rated as Satisfactory.**

The contribution of the CAST project in terms of in direct GHG emission reductions is expected to be 502 thousand tons of CO_2. Considering the total GEF support provided to the project as USD 4.886 million, the cost of GHG mitigation works out to be USD 9.7 per ton of CO_2, which is not very good. However, the project will achieve the direct GHG emissions approximately to the extent as was originally envisaged in the project design. In case consequential (indirect) GHG emission reductions which are also included the cost of GHG mitigation work out to be USD 3.25 per ton of CO_2. As is evident, the results of the project in terms of projected (direct + consequential) GHG emission reductions have been achieved in a cost efficient manner. T**he efficiency of the project is rated as Satisfactory**. On a long term basis, the project would facilitate availability of required infrastructure for urban transport across the major cities of Kazakhstan.

5.5. Country ownership

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Was the project concept in line with development priorities and plans of Kazakhstan?**
- **Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee?**
- **Was an inter-governmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved?**
- **Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives?**

The CAST project is in line with the development priorities and plans of Kazakhstan. Particularly, the project targeted to address the problem of growing air pollution levels in the Almaty city due to increasing population of the city followed by increased ownership of cars as a means of transport. When it comes to the country ownership, there are issues, which largely originates from the design of the project itself. The project has been focused on one of the cities of the country with the project objectives defined accordingly. The project design and the implementation was carried out by the Municipality of Almaty city as the implementing partner. There was almost no involvement and partnership of the national government. The only participation by the central government was by way of members of the project board from different central ministries. A Project Board was established by the Implementing Partner, with core members comprised of representatives of different

departments of the municipality and a couple of central government ministries and departments. Thus, the involvement of the government bodies other than the municipality was quite limited.

One of the consequences of limited participation and the lack of ownership by the central government was that an important task of the CAST project of working out a public services contract could not be accomplished.

The NIM implementation modality for this project was good. Given the fact that the project was focused on the Almaty city, the Municipality of the Almaty city was the appropriate institution within the government institutions to act as the coordinating entity. However, the approach for implementation of the project on part of the municipality was more of 'hands off', wherein all the major decisions and management was left to the PMC headed by the 'National Project Manager'.

As stipulated before, the important task of having a template of standard 'Public Service Contract' (Under Outcome 1) of international standard for delivery of public transport services by the private operators could not be successfully accomplished. A draft of a standardized PSC has been prepared. However, a workable PSC between the municipality and the bus operators could not be worked out. This is largely due to the fact that the involvement of the Central Government in the CAST project was almost non-existent (please see recommendation xx as well) and the authority to make changes in the present version of the public services contract lies with the Ministry for Investments and Development, at the central government level. The municipality on its own is not empowered to go for a new version of the standard public service contract. The project provided the new version of the 'standard public service contract' and provided a legal analysis and recommendations for its introduction. Request for legislative changes to enable a new PSC has been made to the Transport committee (Ministry for Investments and Development, Kazakhstan). The results of the request are uncertain.

5.6. Mainstreaming

The main questions for TE are: (please see Annex B for the evaluation questions)

- **How is the project successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment?**
- **Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability).**
- **If the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP).**
- **Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters.**
- **Whether gender issues have been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.)**

While examining the issue of the extent to which the CAST project has helped in mainstreaming sustainable urban transport in Kazakhstan, it is important to consider that the project was a city specific project. Due to this reason, it did not have country level development objectives. The project was aimed at development of sustainable urban transport in the city of Almaty. Apart from the benefit of reduction in the emission of GHGs, one of the co-benefits of the project is the reduction in the level of air pollution at the local level.

Government of Kazakhstan supported the project considering that Almaty is the largest and fastest growing city of the country accounting for about 9 percent of the total population and 19 percent of the total urban population of the country.

The success of this project will help the government to mainstream sustainable urban transport in other cities of the country. This approach will help in making sustainable urban transport an integral part of the initiatives in the area of urban planning and development. One of the important aspects of the CAST project has been the promotion of CNG as the fuel of choice for urban transport. Use of CNG while on one hand will address the problem of increasing air pollution, on the other hand it will lead to an optimal utilization of the natural

resources of the country. It is important to note that Kazakhstan is an oil producing country and being a land locked country, the associated gas from crude oil production used to get flared. Being a land locked country the opportunities to export the gas are very limited. Thus, in country use of natural gas could be one of the best options for reducing the flaring of the associated gas.

The 'theory of change' for the CPD 2016-2020 of UNDP, addresses two main problem statements: 1) the country's ability to maintain its development gains in the face of the anticipated economic slowdown; and 2) sustaining and scaling up Kazakhstan's position as an international facilitator and promoter of regional and global dialogues. The CAST project is in line with the country programme outputs of Kazakhstan. The project is directly related to Indicators 4.1 and 4.2 of the country programme.

Indicator 4.1: Number of national and subnational institutions strengthened in integrating environmental governance practices (climate change, water management and sustainable agriculture)
Indicator 4.2. Number of regional Akimat (Municipalities) benefiting from improved territorial planning and cooperation, and conflict prevention practices.

At the level of UNDP, although there is no direct contribution of this project towards mainstreaming its other priority areas of work like poverty alleviation, improved governance, prevention and recovery from disasters, gender equality, it has no negative impact on any of the other priority areas of the UNDP.

5.7. Sustainability

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Are there financial risks that may jeopardize the sustainability of project outcomes?**
- **What is the likelihood of financial and economic resources not being available once GEF grant assistance ends?**
- **Are there social or political risks that may threaten the sustainability of project outcomes?**
- **What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?**
- **Do the various key stakeholders see that it is in their interest that project benefits continue to flow?**
- **Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?**
- **Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?**
- **Are requisite systems for accountability and transparency, and required technical knowhow, in place?**
- **Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?**

To tackle the problem of increasing traffic and air pollution problems in the Almaty city, the strategy of the project was to achieve a model shift from cars to public transport for the urban transport needs of the citizens. This was to be achieved by making public transport affordable, comfortable, safe and reliable. The components of the CAST project were designed to facilitate sustained modal switches. The achievements of the project include development of an integrated traffic plan and management system for the city along with the increased capacity of the municipality to operate and manage the public transport system in a much more efficient manner.

The measures taken under the project will demonstrate improved efficiency and quality of urban mobility and reduce air pollution. Thus, the measures taken under the project are expected to be socially and politically popular with all levels of society. From the social and political view point, there is not much threat to the sustainability of the results and outcomes of the project. Although some of the stakeholders still feel that for a city like Almaty, personal cars are still a better mode of urban mobility and the efforts could have been made to regulate the movement of cars and create more space for the cars, they realize the limitations of cars as a means of urban transport with the increasing urban population. Thus, from the political and social view point, the sustainably of the results of the CAST project is likely.

One of the general issues with the sustainability of the transport sector projects is the money required for replacement of the rolling stock from time to time. This happens in the cases where there is a limitation in public budget. In the case of CAST project, the urban transport infrastructure is being created with private sector participation. Private sector involvement has reduced dependence on the public budget, thereby

increasing the financial sustainability of the results of the CAST project. The government would maintain investments in infrastructure that would support improved urban mobility such as dedicated bus lanes, synchronized traffic lighting, safe areas for pedestrian and bicycle transport and parking places from the revenues realized from the charge on the private sector operators of the transport services.

The capacity building efforts under the CAST project have been carried out as per the international best practices involving delivery of capacity building that engaged the beneficiaries with international and national practitioners in urban transport. This will contribute to the sustainability of the interventions carried out under the project.

From the view point of policy and regulations, one of the issues is that the CAST project has not been able to put in place a standardized public services contract. In the absence of the revised PSC, the private bus service providers are unlikely to follow the required time and route discipline in the operation of the buses. There are practically no negative environmental impacts of the project. The positive local environment benefits by way of reduction in the air pollution will provide the sustainability to the results of the CAST project. Thus, from the viewpoint of institutional framework and environmental sustainability, the outcomes of the project are likely to sustain. **The overall sustainability of project results is Likely.**

5.8. Impact

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Whether, the project has demonstrated verifiable improvements in ecological status?**
- **Whether, the project has demonstrated verifiable reductions in stress on ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?**

The most direct impact of the project, in terms of GEF objectives is the reduction in the emission of GHG. The project has provided for the direct reductions in the emissions post implementation phase of the CAST project. The CAST project has also provided for the likely long term indirect GHG emission reduction which will be achieved after the project. The outcomes of the CAST project will lead to GHG emission reductions from the transport sector in Almaty City in Kazakhstan on a long term basis. This will have environmental and ecological co-benefits in terms of reduction in the emissions of particulate matter; lead, mercury and other heavy metals; acid gases like NO_x and SO_x.

6. CONCLUSIONS, RECOMMENDATIONS & LESSONS

The main questions for TE are: (please see Annex B for the evaluation questions)

- **Did the project provide cost-effective solutions in order to address barriers?**
- **Are these solutions provided in an efficient way?**
- **What are the best and worst practices in addressing issues relating to relevance, performance and success?**
- **Corrective actions for the design, implementation, monitoring and evaluation of the project**
- **Actions to follow up or reinforce initial benefits from the project**
- **Proposals for future directions underlining main objectives**

The main barriers towards sustainable urban transport in Kazakhstan in general and in the Almaty City in particular which were identified in the project design are as follows:

- Weak institutional coordination to develop a sustainable urban transport system and air quality management in Almaty City
- Lack of capacity to holistically plan and implement improvements in the quality of public transport services
- Lack of capacity to holistically plan and implement integrated traffic management measures
- Low awareness of sustainable urban transport.

The CAST project has successfully addressed these barriers towards sustainable urban transport in Almaty city. The results of the project will also help to address similar barriers towards sustainable urban transport in other cities of Kazakhstan as well.

Barring actual implementation of the demonstration projects within the stipulated timelines and approval of a model PSC for urban transport, most of the activities envisaged under the project could be executed successfully. Actual implementation of the demonstration project is presently underway. The financing for LRT project has already been organized (EBRD has committed to finance LRT project and a MOU with city was signed). At the time of TE, tender documentation for LRT procurement was under development. New buses for BRT project were in place at the time of the TE, first set of BRT corridors were about to be completed. Evaluators are of the view that implementation of LRT and BRT will be achieved in due course of time. However, the benefit of dissemination of the results of the demonstration projects (to achieve the replication and also to incorporate the lesson learnt in such replication projects) will not be realized, unless it is decided to carry out the dissemination of the results of the demonstration projects by the Government, even after closure of the CAST project. The Project Manager has already secured commitment of the Almaty city municipality, including financial investments and PPP arrangements for implementation of the demonstration projects.

As noted before, another implementation risk that has been realized for this project is the inability to foster and approve the amendments to the legislation that would allow for introduction of the Standard Public Service Contracts. In 2015-2017, a regular cycle of legislation revision was going on in Kazakhstan, which provided opportunity for the project to lobby the developed amendments directly through the Central Government and relevant Parliamentary Committee. UNDP was an active lobbyer of a set of amendments within its portfolio. At the time of TE, the Municipality Transport Department has confirmed that the PSCs are on the priority agenda for communications with the Central Government, which is due to the Project's communication efforts and direct technical support.

The project has been able to achieve the objective of reduction in the emission of GHGs and other pollutants from the urban transport sector in the city of Almaty. However, against the projected direct GHG emission reductions of 615 thousand tons of CO_2 and indirect GHG emission reductions of 1430 thousand tons of CO_2, the CAST project would lead to direct GHG emission reductions of 502 thousand tons of CO_2 and indirect GHG emission reductions of 1000 thousand tons of CO_2, thus falling marginally short of the target values. The CAST project has achieved its objectives in an efficient and effective manner. The results achieved are not only likely to sustain but would also lead to replication of similar projects in other cities of Kazakhstan. Apart from reduction in the emission of GHGs, the project has led to reduction in the emissions of other air pollutants

associated with the burring of fossil fuels (e.g. heavy metals, particulate matter, black carbon, NOx, Sox etc.).

6.1. Corrective actions for the design, implementation, monitoring and evaluation of the project

***Recommendation 1*:** The project design of the CAST project is a city specific project. So much so, even the implementing agency for the project is the municipality of the city of Almaty. Due to this reason, there was minimal involvement of the central government of Kazakhstan (please see section 3.1). Due to this, it become difficult (if not impossible) to address the issue / barriers relating to policy and regulations. For example, in the case of CAST project, a very important deliverable, 'an improved version of the public services contract,' could not be worked out as this was in the jurisdiction of the central government. It is recommended that even in cases where the project is focused on a specific geographical area / city of a country, the government at the federal level should be effectively engaged in the execution of the project.

***Recommendation 2*:** For the projects targeted at Urban Transport (or other urban infrastructure), there is very little scope of replication within a given city. For example, it is highly unlikely to have a number of LRT or BRT projects within a city. It is recommended that in such projects, the design of the project should focus on other urban areas / cities for replication. The outreach and dissemination component of the project should be designed accordingly.

Recommendation 3: In the case of the CAST project, there is a mix up between the Outputs and Activities to be carried out as well as the indicators. Many of the indicators in this case are more of activities (rather than indicators of the achievements). Carrying out the activities doesn't truly reflect the achievement of the desired Outcome. For example, if the desired Outcome is the increased awareness level, organizing workshops, creating the website, etc. don't indicate the achievement of the Outcome. The right indicator could be the percentage of targeted population having the targeted level of awareness. The level of awareness could be measured by a survey (at the baseline and end line). It is recommended that the indicators should be objective oriented rather than activity oriented.

***Recommendation 4**:* The timeframe assumed for implementation of the demonstration projects was not realistic. When it comes to the project goals for implementing the demonstration projects, the targets were a bit ambitious. It requires a number of time consuming sequential activities like carrying out the integrated transport plan, selection and detailing of the route, detailed engineering, detailed feasibility study, organizing the financing, acquiring the land and construction. The assumption that it would be possible to establish urban transport infrastructure projects as demonstration projects within the implementation period of the project was unrealistic. This is one of the common problems with many GEF projects. This is considering that at times it is not possible to actually physically implement the basic infrastructure projects within the allowable timelines of four years for the GEF projects. It is recommended that in such cases for the future projects, only partial completion (e.g. funding and commitment organized for implementation of the demonstration project) may be considered as the target.

6.2. Actions to follow up or reinforce initial benefits from the project

***Recommendation 5*:** The demonstration project of the CAST project will get implemented only after the CAST project is closed. To ensure the benefits of the demonstration projects in terms of incorporation of the good practices and lessons learnt in the replication projects, it is recommended that the process of dissemination of the results and lessons learnt from the demonstration projects be institutionalized. Also, it is recommended that towards the closure of the project, a knowledge product be developed to capture all the good lessons learnt from the CAST project. Such a document also needs to be shared with the municipalities of other cities and other stakeholders.

6.3. Proposals for future directions underlining main objectives

The main objective of the project was to address the issue of increasing air pollution and GHG emissions in the unban transport sector in Almaty city (and other cities of Kazakhstan). Given below are some of the future directions and proposals which may be taken up to address the issue of GHG emissions and air pollution due to urban transport.

Recommendation 6: The problems of traffic congestion and the resultant air pollutions are partially due to unplanned growth and development of the cities. The unplanned growth in turn may be due to increase in urban population. It is important that urban planning (taking into account the projected population of a given city) be carried out and the urban transport plan needs to be an integral part of the urban plan. It is also important to plan for homogeneous development at an aggregate level (including urban, semi-urban and rural areas), so that the unnecessary rush towards the cities can be restricted. It is recommended that the integrated urban transport planning be carried out in conjunction with the overall urban planning at the country level as well as for city planning.

Recommendation 7: The CAST project missed out on the opportunity to address the issue of GHG emissions by focusing on the quality (standards) of fuels, standards of vehicles and driving habits. Fuel standards and vehicle standards are very effective means to address the underlying problem of GHG emissions and other air pollutants in urban areas. It is recommended that a separate project may be taken up based on the fuel standards and the vehicle standards.

Recommendation 8: Kazakhstan is an oil rich country. Exploration of oil leads to production of lot of associated gas. Not very long ago, large amounts of this associated gas was being flared (in the absence of opportunity to evacuate and use the associated gas). From the national perspective and from the view point of reduction in the emission of GHG (both due to flaring of gas and due to use of fuel in the vehicles), it makes sense to encourage the use of natural gas / associated for transport needs. The use of natural / associated gas can be done either;

- as such as compressed natural gas
- indirectly in the form of electricity by generated using the associated gas and using electrically operated vehicles. This will depend on the logistics and comparative cost economics of evacuating the gas viz. a viz. evacuating the electricity
- after conversion of gas to methanol and use of methanol as fuel for the vehicles. This again will depend upon the volumes of gas, logistics and the comparative cost economics of the available options.

It is recommended that a detailed assessment may be carried out in this regard and the possibilities be explored. However, while exploring the option of use of gas as a transport fuel, the benefits of emission reductions (both GHG and air pollutants) can be fully realized only in cases where the vehicles with higher fuel efficiencies are used (please see recommendation 11 as well).

Recommendation 9: The feasibility studies for the urban transport demonstration projects carried out under the CAST project had not considered advertisement as a source of revenue. Advertisement opportunities exist on the rolling stock, the infrastructure and even on the printed tickets. The revenues due to advertisements can provide the desired sustained source of revenues for public transport operators, while at the same time reduce the cost of transportation. It is recommended that the municipality workout a comprehensive plan for advertisements on the public transport rolling stock and the infrastructure. Advertisement as a source of revenue may also be considered for all the replications.

6.4. Best/ worst practices in addressing issues relating to relevance, performance

***Recommendation 10*:** There was an initial delay in the start of the project implementation. It was due to time taken for staffing. The staffing took time as elaborate procedures are required to be followed in the process of recruitment of the staff. This is one of the common problems in many GEF projects, wherein, the implementation timelines of the project generally do not have adequate provision for the time required for

recruitment of the project team. One of the solutions to the problem could be to identify the key members of the project team at the time of approval of the project.

Recommendation 11: As evidenced from the estimation done under this assignment, the performance of CNG buses in Almaty (with average fuel efficiency of 66.8 m3/100 km) leads to higher GHG emissions compared to a baseline fleet of EURO V diesel buses. This is largely due to the fact that the CNG buses procured under the project do not meet the stringent fuel efficiency requirements. It is recommended that in case of fuel switching projects, the minimum energy efficiency levels of the rolling stock should be specified.

ANNEX A: TERMS OF REFERENCE

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for Terminal Evaluation (TE) of the *UNDP-GEF "City of Almaty Sustainable Transport" project.*

The essentials of the project to be evaluated are as follow:

PROJECT SUMMARY TABLE

Project Title:	**"City of Almaty Sustainable Transport (CAST)" project**			
			Committed at endorsement	*Realized at completion*
GEF Project ID:	4013 (Project ID)	**GEF financing:**	4.886 million USD	4.886 million USD
UNDP Project ID:	00076355 (Atlas Award ID)	**IA/EA own:**	0.050 million USD	0.050 million USD
Country:	Kazakhstan	**Government:**	30.050 million USD	30.050 million USD
Region:	RBEC/CA	**Others (private):**	46.426 million USD	46.426 million USD
Focal Area:	Climate Change	**Total co-financing:**	76.526 million USD	76.526 million USD
FA Objectives, (OP/SP):	CC-SP5-Transport: Promoting Sustainable Innovative Systems for Urban Transport	**Total Project Cost:**	81.412 million USD	81.412 million USD
Executing Agency:	UNDP	**GEF endorsement:**	20/06/2011	20/06/2011
Other Partners involved:	Akimat of Almaty city	**(Operational) Closing Date:**	20/12/2017 (proposed)	Actual: 20/12/2017

OBJECTIVE AND SCOPE

The project was designed to reduce the growth of the transport-related greenhouse gas emissions in the City of Almaty. Achievement of the objectives will be made within the framework of four components while simultaneously improving urban environmental conditions by

1) improving the management of public transportation and air quality in Almaty;
2) building capacity in Almaty to holistically plan and implement improvements in the efficiency and quality of public transport;
3) building capacity to holistically plan and implement integrated traffic management measures in Almaty City;
4) implementing a demonstration project that raises awareness and increases knowledge of sustainable transport.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method[1] for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact,** as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR (*see Annex C*). The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Almaty and Astana, Kazakhstan. Interviews will be held with the following organizations and individuals at a minimum:

CAST Project team
1. Ms. Yelena Yerzakovich, Project Manager
2. Ms. Nessibeli Abdirova, Project Assistant
3. Ms. Almara Kalipanova, Logistics Assistant team
4. Ms. Aida Abirova, PR & Communications Specialist
5. Mr. Guido Bruggeman, International technical adviser (Netherlands)

UNDP
1 Ms. Marina Olshanskaya Previous UNDP-GEF RTA UNDP, Istanbul
2 Mr. Rassul Rakhimov Head of Sustainable Development and Urbanization Unit UNDP CO
3 Ms. Irina Goryunova Head of Strategic Support Unit

Akimat (Municipality) of Almaty city – Main Partner
1. Mr. Rumil Taufikov Deputy Akim (Mayor) of Almaty city, CAST Project National Director Akimat (Municipality) of Almaty city
2. Mr. Maksut Issakhov Head of Department for Public Transport and Roads of Almaty city Akimat (Municipality) of Almaty city
3. Mr. Yerlan Adilov Deputy Head of Department for Public Transport and Roads of Almaty city Akimat (Municipality) of Almaty city

Project Partners

	Name	Title	Organization
1.	Mr. Kerey Bekbergen	Head of Department	Ministry of Energy
2.	Ms. Aliya Shalabekova	Head of Department	Ministry of Energy
3.	Mr. Olzhas Sutemgenov	Head of Department, Transport Committee	Ministry for Investments and Development
4.	Mr. Moldabek Abdenov	Chief Expert, Transport Committee	Ministry for Investments and Development
5.	Ms. Gulmira Burkutbayeva	Head of Department	Almaty Development Center
6.	Mr. Sadir Khamrayev	Director	Transport Holding of Almaty city
7.	Mr. Abbas Ofarinov	Principal Banker	EBRD
8.	Ms. Svetlana Spatar or Timur Jurkashev	Members	"Velo-Almaty" initiative group

The evaluator will review all relevant sources of information, such as project documentations, reports –

including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in Annex B of this Terms of Reference.

EVALUATION CRITERIA & RATINGS

Project performance assessment shall be conducted based on expectations set out in Project Logical Framework/Results Framework (see Annex A) which provides performance and impact indicators for project implementation along corresponding means of verification. The evaluation shall be based on the following criteria: **relevance, effectiveness, efficiency, sustainability and impact.** Ratings must be provided as per below specified performance criteria. The complete table must be included in evaluation executive summary. The obligatory rating scales are included in Annex D.

Evaluation Ratings:			
1. Monitoring and Evaluation	***rating***	**2. IA& EA Execution**	***rating***
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental:	
		Overall likelihood of sustainability:	

PROJECT FINANCE/COFINANCE

The Evaluation shall assess key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data shall be required as well as annual expenditures. Variances between planned and actual expenditures shall be assessed and explained. Results from recent financial audits, if available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the below co-financing table which shall be included in terminal evaluation report.

Co-financing (type/source)	**UNDP own financing (mill. US$)**		**Government (mill. US$)**		**Partner Agency (mill. US$)**		**Total (mill. US$)**	
	Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Actual**	**Actual**
Grants	0.05				1.676			
Loans/Concessions					44.05			
In-kind support			30.05					
Other					0.7			
Totals	0.05		30.05		46.426		76.526	

MAINSTREAMING

Both UNDP supported GEF financed projects are key components in UNDP country programming as well as regional and global programs. The evaluation shall assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators shall assess the extent to which the project is achieving impacts or progressing towards the achievement. Key findings that should be brought in evaluation include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions**, **recommendations** and **lessons**.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in Kazakhstan. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluation team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 20 working days (for the international consultant) and 18 working days (for the national consultant) over a period of 10 weeks according to the following plan:

Activity	Timing	Completion Date
Preparation	7 w.d.	*July 2017*
Evaluation Mission	5 w.d.	*First part of August 2017*
Draft Evaluation Report	6 w.d.	*September 2017*
Final Report	2 w.d. (for international consultant only)	*September 2017*

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 3 weeks before the evaluation mission: due date	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission: due date	To project management, UNDP CO
Draft Terminal Evaluation Report	Full report, (per annexed template) with annexes	Within 2 weeks of the evaluation mission: due date	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Terminal Evaluation Report*	Revised report	Within 1 week of receiving UNDP comments on draft: due date	Sent to CO for uploading to UNDP ERC.

*When submitting the final version of the Terminal Evaluation Report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

DUTY STATION

Home-based with trips to Astana (2 days) and Almaty (4 days)

INSTITUTIONAL ARRANGEMENT

The International Consultant reports on executed work to CAST project manager. All reports must be

submitted in English.

The International Consultant will have under his supervision National Consultant that shall provide related findings to the International expert as well as assisting International Consultant in organizing interviews or site visits.

TEAM COMPOSITION

The evaluation team will be composed of one international expert and one local evaluator. The consultants shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The international evaluator will be designated as the team leader and will be responsible for finalizing the report. The evaluators selected should not have participated in project preparation and/or implementation and should not have conflict of interest with project related activities.
International evaluator must represent the following qualifications:

- University degree in transport planning, engineering, business administration, or other relevant field;
- Minimum 7 years of professional experience in the field of sustainable urban transport;
- Minimum 5 years' experience with results-based monitoring and evaluation methodologies in the projects focusing on climate change. Experience with GEF financed projects is an advantage;
- Expertise in adaptive management, as applied to climate change and energy resource management projects;
- Minimum 5 years of international experience in drafting the institutional documents, reviews and background papers related to sustainable transport policies, sustainable energy, climate changes issues;
- Experience in negotiating or working with key stakeholders and state/municipal authorities as an asset;
- Knowledge of UNDP and GEF procedures; Proven track record of application of results-based approaches to evaluation of projects focusing on urban transport (relevant experience in the CIS region is a requirement; and relevant experience within UN system would be an asset);
- Full proficiency of English language including ability to review, draft guidelines and edit required project documentation; knowledge of Russian language (for International expert) would be an advantage

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	At submission and approval of the Inception Report
40%	Following submission and approval of the 1ST draft terminal evaluation report
50%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

The following documents shall be sent by applicant:

- Signed UNDP P11 form or detailed CV (up to 10 pages);
- Duly accomplished Letter of Confirmation of Interest and Availability using the template provided by UNDP;
- Financial Proposal that indicates the all-inclusive fixed total contract price, supported by a breakdown

of costs, as per template provided. If an Offeror is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the Offeror must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP;

- Cover letter to UNDP with description of similar consultancy assignments and other relevant information related to proposed methodology of work;
- Two recommendation letters from similar projects within last 3 years

*P11, the template for financial proposal and General terms and Conditions for Individual Contracts could be found here:
http://www.kz.undp.org/content/kazakhstan/en/home/operations/procurement/ic-contracts.html

Criteria for Selection of the Best Offer Initially, individual consultants shall be short-listed on the following minimum qualification criteria:

- University degree in Transport Planning, Engineering, Business Administration or other relevant fields;
- Minimum 7 years of professional experience in the field of sustainable urban transport The shortlisted candidates will be further evaluated based on the following methodology:

Cumulative analysis

When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as: *Responsive/compliant/acceptable, and Suggesting the lowest price "compliant/acceptable" can be determined as fully corresponding to the ToR.*

** Technical Criteria weight: 70%; * Financial Criteria weight: 30%* Minimum passing score for technical evaluation is 70% which is 350 points.

Criteria	***Weight %***	***Max. points***
Academic background and skills		
University degree in transport planning, engineering, business administration, or other relevant field;	20%	100
Full proficiency in English including ability to review, draft guidelines and edit required project documentation; knowledge of Russian language would be an advantage;	15%	75
Experience:		
Minimum 7 years of professional experience in the field of sustainable urban transport;	25%	125
Minimum 5 years of international experience in drafting the institutional documents, reviews and background papers related to sustainable transport policies, sustainable energy, climate changes issues;	15%	75
Knowledge of UNDP and GEF evaluation procedures; Proven track record of application of results-based approaches to evaluation of projects focusing on urban transport (relevant experience in the CIS region is a requirement; and relevant experience within UN system would be an asset);	15%	75
Experience in negotiating with different stakeholders and working for state/municipal authorities as an asset.	10%	50
TOTAL	**100%**	**500**

LUMP SUM CONTRACT

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables (i.e. whether payments fall in installments or upon

completion of the entire contract). Payments are based upon output, i.e. upon delivery of the services specified in the TOR. In order to assist the requesting unit in the comparison of financial proposals, the financial proposal will include a breakdown of this lump sum amount (including travel, per diems, and number of anticipated working days).

Travel;

All envisaged travel costs including trip to Astana (2 days) or Almaty (4 days) and per diem must be included in financial proposal (UNDP rate per diem for March, 2017 in Almaty city is $158, for Astana $177). In general, UNDP should not accept travel costs exceeding those of an economy class ticket. Should the IC wish to travel on a higher class he/she should do so using their own resources.

In the case of unforeseeable travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and Individual Consultant, prior to travel and will be reimbursed.

ANNEX B: TE CRITERIA AND THE QUESTIONS

Before undertaking the TE, an Inception Report was presented, including the proposed tasks, activities and deliverables, as well as a table of main evaluation questions that need to be answered to determine and assess project results. This table of evaluation/review criteria and questions is presented in the Box below.

Contents	Main questions and TE Scope
• Title page with basic report information • Table of contents • Acronyms and abbreviations	
Executive Summary • Project Summary Table • Project Description (brief) • Evaluation Rating Table • Summary of conclusions, recommendations and lesson	
1. Introduction • Context; purpose of the TE and objectives • Scope and methodology of the TE • Structure of the TE Report	
2. Project description and development context • Project description and development context (objectives, project participants, objectives and main outcomes; Project duration and timing) • Problems that the project sought to address • Immediate and development objectives of the project • Baseline indicators established • Main stakeholders • Expected Results	
3. Findings: Project design and formulation ▪ Analysis of LFA/Results Framework ▪ Assumptions and Risks ▪ Lessons from other relevant projects ▪ Planned stakeholder participation ▪ Replication approach ▪ UNDP comparative advantage ▪ Linkages between project and other interventions within the sector ▪ Management arrangements	• Were the project's objectives and components clear, practicable and feasible within its time frame? • Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? • Were lessons from other relevant projects properly incorporated in the project design? • Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? • Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry? • Were the project assumptions and risks well articulated in the PIF and project document? • Whether the planned outcomes were "SMART"?
4. Findings: Project Implementation • Adaptive management • Partnership arrangements • Feedback from M&E	***ADAPTIVE MANAGEMENT*** • Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications.

Contents	Main questions and TE Scope
activities used for adaptive management • Project Finance • Monitoring and evaluation: design at entry and implementation • UNDP and Implementing Partner implementation / execution coordination, and operational issues	• If the changes were extensive, did they materially change the expected project outcomes? • Were the project changes articulated in writing and then considered and approved by the project steering committee? ***PARTNERSHIP ARRANGEMENT*** • Were there adequate provisions in the project design for consultation with stakeholder. • Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board? • Whether lessons from other relevant projects incorporated into project implementation? • Whether feedback from M&E activities was used for adaptive management? ***PROJECT FINANCE / CO-FINANCE*** • Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources. • What are the reasons for differences in the level of expected and actual co-financing? • To what extent project components supported by external funders were well integrated into the overall project? • What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing? • Whether there is evidence of additional, leveraged resources that have been committed as a result of the project? ***PROJECT MONITORING & EVALUATION (AT DESING AND AT IMPLEMENTATION)*** • Is the M&E plan well conceived at the design stage? • Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives? • Was the M&E plan sufficiently budgeted and funded during project preparation and implementation? • How effective are the monitoring indicators from the project document for measuring progress and performance; • Whether the logical framework was used during implementation as a management and M&E tool? • What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports; • What has been effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff; • What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs); • Whether APR/PIR self-evaluation ratings were consistent with the MTR and TE findings. If not, were these discrepancies identified by the project steering committee and addressed? • Whether changes were made to project implementation as a result of the MTR recommendations. ***GEF IMPLEMENTING AGENCY EXECUTION - UNDP*** • Whether there was an appropriate focus on results • Was there adequate UNDP support to the Implementing Partner and project team • Quality and timeliness of technical support to the Executing Agency and project team • Were the management inputs and processes, including budgeting and

Contents	Main questions and TE Scope
	procurement adequate
5. Findings: Project Results • Overall results • Global Environmental Benefits • Relevance • Effectiveness & Efficiency • Country ownership • Mainstreaming • Sustainability • Impact	***OVERALL RESULS*** • What if the Review the achievement of the objectives against the end of the project values of the log-frame indicators with \indicators for outcomes/outputs, indicating baseline situation and target levels, as well as position at the close of the project? ***GLOBAL ENVIRONMENTAL BENEFITS*** • What is the achievements /Results in terms of contribution to sustainable development benefits, as well as global environmental benefits (direct and indirect GHG emission reduction)? • How does the GEF Tracking Tool at the Baseline and the one completed right before the Midterm Review with that Prepared at the time of TE compare? • What are the possible issues while applying sustainable urban transport systems in Almaty city? ***RELEVENCE*** • The what extent the activity is suited to local and national development priorities and organizational policies, including changes over time.? • To what extent the project is in line with UNDP Operational Programs or the strategic priorities under which the project was funded? ***EFFECTIVENESS*** • To what extent the objectives has been achieved? ***EFFICIENCY*** • To what extent the results have been delivered with the least costly resources possible? • What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention? ***COUNTRY OWNERSHIP*** • Was the project concept in line with development priorities and plans of the country? • Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee? • Was an intergovernmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved? • Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives? ***MAINSTREAMING*** • How the project is successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment. • Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability). • Do the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP)?

Contents	Main questions and TE Scope
	• Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters. • Whether gender issues had been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.) ***SUSTAINABILITY*** ***Financial risks:*** • Are there financial risks that may jeopardize the sustainability of project outcomes? • What is the likelihood of financial and economic resources not being available once GEF grant assistance ends? ***Socio-economic risks:*** • Are there social or political risks that may threaten the sustainability of project outcomes? • What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? • Do the various key stakeholders see that it is in their interest that project benefits continue to flow? • Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? ***Institutional framework and governance risks:*** • Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? • Are requisite systems for accountability and transparency, and required technical knowhow, in place? ***Environmental risks:*** • Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes? ***IMPACT*** • Whether, the project has demonstrated verifiable improvements in ecological status? • Whether, the project has demonstrated verifiable reductions in stress on ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?
6. Conclusions, Recommendations & Lessons • Corrective actions for the design, implementation, monitoring and evaluation of the project • Actions to follow up or reinforce initial benefits from the project • Proposals for future directions underlining main objectives • Best and worst practices in	***CONCLUSIONS*** • Did the project provide cost-effective solutions in order to address barriers? • Are these solutions provided in an efficient way? • What are the best and worst practices in addressing issues relating to relevance, performance and success? ***RECOMENDATIONS*** • Corrective actions for the design, implementation, monitoring and evaluation of the project • Actions to follow up or reinforce initial benefits from the project • Proposals for future directions underlining main objectives

Contents	Main questions and TE Scope
addressing issues relating to relevance, performance and success	

ANNEX C: DOCUMENTS REVIEWED

GHG Calculations	
	GEF CC-Mitigation Tracking Tool
	Almaty GHG Baseline
	Report of the GHG consultant
Training and Capacity Building Reports	
	BRT workshop (19 April 2013)
	Cycling and walking conference (22-23 September 2016)
	Gender and transport - Workshop (8 October 2015)
	PT fare management training (7-8 April 2015)
	Service quality training (27-28 March 2014)
	SUMP conference (24-25 November 2016)
	THE PEP conference (26-27 September 2013)
	Training and study tour on electric buses (6-10 March 2017)
	Training on support systems (11-12 September 2014)
Consultancies and Feasibility Studies (reports)	
	2012-2013 ROM (TDM and Strategy) final report
	2012-2013 Willem Brouwer (Parking strategy) final report
	2013-2014 ROM (BRT pre-feasibility study) final report
	2013-2014 W+B (Bike lines) final report
	2014-2015 Jeroen Buis W+B (Bike line design) final report
	2014-2015 SWECO (BRT technical assistance) final report
	2014-2015 SYSTRA (PT network optimization) final report
	2015-2016 Guido Bruggeman (Ticketing and fares) final report
	2016 Georgiy Taubkin WSP Canada (PT planning) final report ENG
Back to Office Reports	
	BTOR Almaty Goryunova 28-30 Nov 2012
	BTOR Almaty Goryunova 7-8 Dec 2011
	BTOR Almaty Goryunova 7-9 Feb 2012
	BTOR Almaty Goryunova 11-14 Oct 2011
	BTOR Almaty Goryunova 15-16 Mar 2012
Audit Reports	
	2012 Audit Report
	2013 Audit Report
	2014 Audit Report
Inception Report	
	Inception Report
Mid Term Review Report	
	Mid-term review report
	Management response to mid-term review report
Project Document	
	Sources for verification (log-frame)
	Request for CEO Endorsement Approval
	Project Document
	PIF Document
	PPG Document
Work Plans	
	Approved Work Plan 2011
	Approved Work Plan 2012

	Approved Work Plan 2013
	Approved Work Plan 2014
	Approved Work Plan 2015
	Approved Work Plan 2016
	Approved Work Plan 2017
Quarterly and annual reports	
	Annual report 2011
	Annual report 2012
	Annual report 2013
	Annual report 2014
	Annual report 2015
	Annual report 2016
	PIR 2012
	PIR 2013
	PIR 2014
	PIR 2015
	PIR 2016
	PIR 2017 (Draft)
	Quarterly Report Q1 2012
	Quarterly Report Q1 2012
	Quarterly Report Q1 2013
	Quarterly Report Q2 2013
	Quarterly Report Q3 2013
	Quarterly Report Q4 2013
	Quarterly Report Q1 2014
	Quarterly Report Q2 2014
	Quarterly Report Q3 2014
	Quarterly Report Q4 2014
	Quarterly Report Q1 2015
	Quarterly Report Q2 2015
	Quarterly Report Q3 2015
	Quarterly Report Q4 2015
	Quarterly Report Q1 2016
	Quarterly Report Q2 2016
	Quarterly Report Q3 2016
	Quarterly Report Q4 2016
	Quarterly Report Q1 2017
	Quarterly Report Q2 2017
Minutes of Board Meetings	
	1 meeting 2012 eng.pdf
	2 meeting 2012 eng.pdf
	3 meeting 2013 eng.pdf
	4 meeting 2014 eng.pdf
	5 meeting 2015 eng.pdf
	6 meeting 2016 eng.pdf
	7 meeting 2017 eng.pdf
Project Budget and Financial Data	CAST Budget Revision_2017 as of 23 June 2017
Combined Delivery Reports	
	Combined Delivery Report 2011
	Combined Delivery Report 2012
	Combined Delivery Report 2013
	Combined Delivery Report 2014

	Combined Delivery Report 2015
	Combined Delivery Report 2016
	Combined Delivery Report 2017 (Up to July 2017)
UNDAF	
	UNDAF 2010-2015
	UNPFD 2016-2020
Publications	
	Brochures
	Leaflets
	Posters
	Publications
CDP	CPD 2016-2020
CPAP	CPAP 2010-2015
Other Documents	
	Plan of measures implementation of the Almaty 2020 Development Program
	List of Pedestrian Zones.pdf
	Transport Data_Fact_sheets.pdf
Internal communications	
	Agreement _2016
	Aggrement_2014
	Almaty ITMS-Inception Report
	Articles, news, publications of CAST project 2012-2017

ANNEX D: FIELD VISITS AND LIST OF PEOPLE INTERVIEWED

ALMATY
31 July – 2 August 2017
CAST project

#	Name	Title	Organization	Address	Contact details
1.	Ms. Yelena Yerzakovich	Project Manager	CAST project team	33/1 Ryskulbekov Str.	yelena.yerzakovich@undp.org +7 701 311 70 68

Akimat (Municipality) of Almaty city – main partner

#	Name	Title	Organization	Address	Contact details
2.	Mr. Marat Daribayev	Deputy Akim (Mayor) of Almaty city	Akimat (Municipality) of Almaty city	4 Republic Square	ilez@inbox.ru (secretary) +7 727 271 65 73 (secretary)
3.	Mr. Maksut Issakhov	Head of Department for Public Transport and Roads of Almaty city			o_transport@mail.ru (general) +7 727 271 65 47, 272 08 72 (secretary)
4.	Mr. Yerlan Adilov	Head of Division, Department for Public Transport and Roads of Almaty city			o_transport@mail.ru (general) +7 701 782 39 34 +7 705 782 39 34
5.	Mr. Bekzat Bekishev	Deputy Head of Division, Department for Public Transport and Roads of Almaty city			o_transport@mail.ru
6.	Mrs. Saniya Mursalimbayeva	Head of Rout Network Division of the Department for Public Transport and Roads of Almaty city			o_transport@mail.ru

Other project partners/stakeholders

#	Name	Title	Organization	Address	Contact details
7.	Mr. Rizvan Tsinayev	Head	"Almatyelectrotrans" LLP (municipal public transport operator)	64 Auezov Str.	rizvan_cinaev@mail.ru +7 701 912 19 66
8.	Ms. Gulmira Burkutbayeva	Head of Department	Almaty Development Center	280 Baizakov Str.	gulmirab@yandex.ru +7 777 780 81 30
9.	Mr. Sadir Khamrayev	Director	Transport Holding of Almaty city	33/1 Ryskulbekov Str.	s.khamrayev@tha.kz sadir1981@mail.ru +7 701 760 09 90
10.	Mr. Abbas Ofarinov	Principal Banker	EBRD	41 Kazybek bi Str.	OfarinoA@ebrd.com +7 701 736 64 90
11.	Ms. Svetlana Spatar	Member	"Velo-Almaty" initiative group	N/a	svspatar@gmail.com +7 707 299 81 48 +7 777 399 81 48

12.	Ms. Kassiyet Omarova	Project coordinator	"Arzhan" Public Fund	N/a	omarova.kas@gmail.com +7 777 233 50 85

ASTANA
3 - 4 August 2017
UNDP

#	Name	Title	Organization	Address	Contact details
13.	Ms. Zhanetta Babasheva	Resource Monitoring Associate			zhanetta.babasheva@undp.org + 7 701 391 42 31

Ministries

#	Name	Title	Organization	Address	Contact details
14.	Mr. Bekberhen Kerey	Department of International Cooperation	Ministry of Energy	19 Kabanbay Batyr Str.	+7 701 524 08 05
15.	Ms. Olga Melnik	Department of "Green Economy"			melnik.29@mail.ru o.melnik@energo.gov.kz +7 7172 740-283 +7 701 847 28 53
16.	Mr. Moldabek Abdenov	Chief Expert, Transport Committee			m.abdenov@mid.gov.kz +7 701 111 55 04

REMOTELY (on Skype)
4 August 2017

17.	Mr. Guido Bruggeman	International technical adviser	CAST project	Remotely Skype Call	guido.bruggeman@planet.nl +31 6 51829054
18.	Ms. RTA, (UNDP-GEF), BPPS	UNDP-GEF RTA	UNDP Regional Hub	Remotely Skype Call	cynthia.page@undp.org
19.	Mr. Dmitry Halubouski	International Expert on Calculation of GHG emissions	CAST Project	Remotely Skype Call	

ANNEX E: GEF CLIMATE CHANGE MITIGATION TRACKING TOOL

Tracking Tool for Climate Change Mitigation Projects
(For CEO Endorsement)

Special Notes: reporting on lifetime emissions avoided
Lifetime direct GHG emissions avoided: Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **during the project's supervised implementation period**, totaled over the respective lifetime of the investments. **Lifetime direct post-project emissions avoided:** Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds. **Lifetime indirect GHG emissions avoided (top-down and bottom-up):** indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication. Please refer to the Manual for Calculating GHG Benefits of GEF Projects.
Manual for Energy Efficiency and Renewable Energy Projects
Manual for Transportation Projects
For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO_2eq per hectare per year), use IPCC defaults or country specific factors.

General Data	**Target at CEO Endorsement**	**Notes**
Project Title	City of Almaty Sustainable Transport (CAST)	
GEF ID	4013	
Agency Project ID	3757	
Country	Kazakhstan	
Region	ECA	
GEF Agency	UNDP	
Date of Council/CEO Approval	March 17, 2010	Month DD, YYYY (e.g., May 12, 2010)
GEF Grant (US$)	4,995,000	
Date of submission of the tracking tool	February 25, 2011	Month DD, YYYY (e.g., May 12, 2010)
Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC?	1	Yes = 1, No = 0
Is the project linked to carbon finance?	0	Yes = 1, No = 0
Co-financing expected (US$)	76,526,000	
Objective 4: Transport and Urban Systems		
Please specify if the project targets any of the following areas		
Bus rapid transit	0	Yes = 1, No = 0
Other mass transit (e.g., light rail, heavy rail, water or other mass transit; excluding regular bus or minibus)	1	Yes = 1, No = 0
Logistics management	0	Yes = 1, No = 0
Transport efficiency (e.g., vehicle, fuel, network efficiency)	1	Yes = 1, No = 0
Non-motorized transport (NMT)	0	Yes = 1, No = 0
Travel demand management	1	Yes = 1, No = 0
Comprehensive transport initiatives (Involving the coordination of multiple strategies from different transportation sub-sectors)	1	Yes = 1, No = 0
Sustainable urban initiatives	0	Yes = 1, No = 0
Policy and regulatory framework	5	0: not an objective/component 1: no policy/regulation/strategy in place 2: policy/regulation/strategy discussed and proposed 3: policy/regulation/strategy proposed but not adopted

		4: policy/regulation/strategy adopted but not enforced 5: policy/regulation/strategy enforced
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	0	0: not an objective/component 1: no facility in place 2: facilities discussed and proposed 3: facilities proposed but not operationalized/funded 4: facilities operationalized/funded but have no demand 5: facilities operationalized/funded and have sufficient demand
Capacity building	5	0: not an objective/component 1: no capacity built 2: information disseminated/awareness raised 3: training delivered 4: institutional/human capacity strengthened 5: institutional/human capacity utilized and sustained
Length of public rapid transit (PRT)	17	km
Length of non-motorized transport (NMT)		km
Number of lower GHG emission vehicles	200	
Number of people benefiting from the improved transport and urban systems	1,600,000	
Lifetime direct GHG emissions avoided	308,000	tonnes CO_2eq (see Special Notes above)
Lifetime direct post-project GHG emissions avoided	-	tonnes CO_2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (bottom-up)	1,430,000	tonnes CO_2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (top-down)		tonnes CO2eq (see Special Notes above)

Tracking Tool for Climate Change Mitigation Projects
(For Mid-term Evaluation)

Special Notes: reporting on lifetime emissions avoided
Lifetime direct GHG emissions avoided: Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **until the mid-term evaluation**, totaled over the respective lifetime of the investments. Please refer to the Manual for Calculating GHG Benefits of GEF Projects.
Manual for Energy Efficiency and Renewable Energy Projects
Manual for Transportation Projects
For LULUCF projects, the definition of "lifetime direct" applies. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO_2eq per hectare per year), use IPCC defaults or country specific factors.

General Data	Results at Mid-term Evaluation	Notes
Project Title	City of Almaty Sustainable Transport (CAST)	
GEF ID	4013	
Agency Project ID	3757	
Country	Kazakhstan	
Region	ECA	
GEF Agency	UNDP	
Date of Council/CEO Approval	March 17, 2010	Month DD, YYYY (e.g., May 12, 2010)
GEF Grant (US$)	4,995,000	
Date of submission of the tracking tool	August 25, 2014	Month DD, YYYY (e.g., May 12, 2010)
Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC?	1	Yes = 1, No = 0
Is the project linked to carbon finance?	0	Yes = 1, No = 0
Cumulative cofinancing realized (US$)	29,350,000	
Cumulative additional resources mobilized (US$)		additional resources means beyond the cofinancing committed at CEO endorsement
Objective 4: Transport and Urban Systems		
Please specify if the project targets any of the following areas		
Bus rapid transit	1	Yes = 1, No = 0
Other mass transit (e.g., light rail, heavy rail, water or other mass transit; excluding regular bus or minibus)	1	Yes = 1, No = 0
Logistics management	0	Yes = 1, No = 0
Transport efficiency (e.g., vehicle, fuel, network efficiency)	1	Yes = 1, No = 0
Non-motorized transport (NMT)	1	Yes = 1, No = 0
Travel demand management	1	Yes = 1, No = 0
Comprehensive transport initiatives (Involving the coordination of multiple strategies from different transportation sub-sectors)	1	Yes = 1, No = 0
Sustainable urban initiatives	1	Yes = 1, No = 0
Policy and regulatory framework	3	0: not an objective/component 1: no policy/regulation/strategy in place 2: policy/regulation/strategy discussed and proposed 3: policy/regulation/strategy proposed

		but not adopted 4: policy/regulation/strategy adopted but not enforced 5: policy/regulation/strategy enforced
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	0	0: not an objective/component 1: no facility in place 2: facilities discussed and proposed 3: facilities proposed but not operationalized/funded 4: facilities operationalized/funded but have no demand 5: facilities operationalized/funded and have sufficient demand
Capacity building	3	0: not an objective/component 1: no capacity built 2: information disseminated/awareness raised 3: training delivered 4: institutional/human capacity strengthened 5: institutional/human capacity utilized and sustained
Length of public rapid transit (PRT)		km
Length of non-motorized transport (NMT)		km
Number of lower GHG emission vehicles	400	
Number of people benefiting from the improved transport and urban systems	500,000	
Lifetime direct GHG emissions avoided	-	tonnes CO_2eq (see Special Notes above)

Tracking Tool for Climate Change Mitigation Projects
(For Terminal Evaluation)

Special Notes: reporting on lifetime emissions avoided

Lifetime direct GHG emissions avoided: Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **during the project's supervised implementation period**, totaled over the respective lifetime of the investments.
Lifetime direct post-project emissions avoided: Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds.
Lifetime indirect GHG emissions avoided (top-down and bottom-up): indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication.
Please refer to the Manual for Calculating GHG Benefits of GEF Projects.

Manual for Energy Efficiency and Renewable Energy Projects

Manual for Transportation Projects

For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO_2eq per hectare per year), use IPCC defaults or country specific factors.

General Data	Results at Terminal Evaluation	Notes
Project Title	City of Almaty Sustainable Transport (CAST)	
GEF ID	4013	
Agency Project ID	3757	
Country	Kazakhstan	
Region	ECA	
GEF Agency	UNDP	
Date of Council/CEO Approval	March 17, 2010	Month DD, YYYY (e.g., May 12, 2010)
GEF Grant (US$)	4,995,000	
Date of submission of the tracking tool	September 29, 2017	Month DD, YYYY (e.g., May 12, 2010)
Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC?	1	Yes = 1, No = 0
Is the project linked to carbon finance?	0	Yes = 1, No = 0
Cumulative cofinancing realized (US$)		
Cumulative additional resources mobilized (US$)		additional resources means beyond the cofinancing committed at CEO endorsement
Objective 4: Transport and Urban Systems		
Please specify if the project targets any of the following areas		
Bus rapid transit	1	Yes = 1, No = 0
Other mass transit (e.g., light rail, heavy rail, water or other mass transit; excluding regular bus or minibus)	1	Yes = 1, No = 0
Logistics management	0	Yes = 1, No = 0
Transport efficiency (e.g., vehicle, fuel, network efficiency)	1	Yes = 1, No = 0
Non-motorized transport (NMT)	1	Yes = 1, No = 0
Travel demand management	1	Yes = 1, No = 0
Comprehensive transport initiatives (Involving the coordination of multiple strategies from different transportation sub-sectors)	1	Yes = 1, No = 0
Sustainable urban initiatives	1	Yes = 1, No = 0
Policy and regulatory framework	3	0: not an objective/component 1: no policy/regulation/strategy in place 2: policy/regulation/strategy discussed and proposed 3: policy/regulation/strategy proposed but

		not adopted 4: policy/regulation/strategy adopted but not enforced 5: policy/regulation/strategy enforced
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	3	0: not an objective/component 1: no facility in place 2: facilities discussed and proposed 3: facilities proposed but not operationalized/funded 4: facilities operationalized/funded but have no demand 5: facilities operationalized/funded and have sufficient demand
Capacity building	4	0: not an objective/component 1: no capacity built 2: information disseminated/awareness raised 3: training delivered 4: institutional/human capacity strengthened 5: institutional/human capacity utilized and sustained
Length of public rapid transit (PRT)	21	km
Length of non-motorized transport (NMT)	20	km
Number of lower GHG emission vehicles	660	
Number of people benefiting from the improved transport and urban systems	1,000,000	
Lifetime direct GHG emissions avoided	502,710	tonnes CO_2eq (see Special Notes above)
Lifetime direct post-project GHG emissions avoided		tonnes CO_2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (bottom-up)	1000000	tonnes CO_2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (top-down)	2000000	tonnes CO_2eq (see Special Notes above)

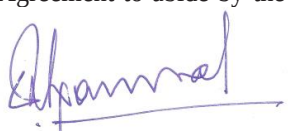
ANNEX F: SIGNED UNEG CODE OF CONDUCT FORMS

Evaluators/reviewers:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrong doing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation/reviewer Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System



Name of Consultant: Dinesh Aggarwal

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

ANNEX G: TE REPORT AUDIT TRAIL

To the comments were received on 25 September 2017 on the draft report on 'TE' of "City of Almaty Sustainable Transport (CAST)" Project, Kazakhstan, (UNDP ID 00076355; GEF 4013)

The following comments were provided in track changes to the draft TE Report; they are referenced by institution ("Author" column) and track change comment number ("#" column):

Apart from these specific comments and suggestions there were some editorial comments and suggestions which have been taken care.

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
1	RTA, (UNDP-GEF), BPPS	List of Acronyms	PSC is not included in the list of acronyms	Corrective action taken
2	RTA, (UNDP-GEF), BPPS	Table 1	Last column to read as realized at TE, instead of realized at completions	Corrective action taken
3	RTA, (UNDP-GEF), BPPS	Table 1	Apart form the proposed closing date include the original closing date also	Corrective action taken
4	RTA, (UNDP-GEF), BPPS	Footnote 2	Include explanation for MS rating	Corrective action taken
5	RTA, (UNDP-GEF), BPPS	Executive Summery Chapter, second para	Please be specific about what is included in dissemination of results – it is understood that the project is holding a final conference to help disseminate results	Following explanation provided: What is meant here is that the dissemination of results planned towards the end of the CAST project, will not be able to include the results and lessons from the demonstration projects, as the demonstration projects will not get implemented by that time. Additional text included in the report to explain this
6	RTA, (UNDP-GEF), BPPS	Executive Summery Chapter, fourth para (dealing with GHG emissions)	On the statement that the project has been able to achieve the reduction in the emission of GHGs Following was commented How was this decided? Paragraph also notes direct emissions were targeted as 615,000 direct yet GHG emission reductions of 502 thousand tons of CO_2 attained. So how has this target been achieved?	Following explanation was provided; The way it is decided is explained in the very next sentence. Here what is being said is that the objective has been meet (we are not saying target). This is considering that the order of the target figures and the achievements is comparable.
7	RTA, (UNDP-GEF), BPPS	Executive Summery Chapter, fourth para (dealing with GHG emissions)	Notes direct emissions were targeted as 615,000 direct yet GHG emission reductions of 502 thousand tons of CO_2 attained. So how has this target been achieved?	Additional text provided to acknowledge that the actual emission reductions has fallen short of the targeted values
8	RTA, (UNDP-GEF), BPPS	Recommendation 4	On the statement, when it comes to the project goals for implementing the demonstration projects, the targets were a bit ambitious	Corrective action taken Additional text provided to explain this

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
			Can more specific comment be made? e.g. ambitious given the baseline regulations, the capacity of the sector, the delivery time for suppliers, etc.? How much of this could have been foreseen?	
9	RTA, (UNDP-GEF), BPPS	Recommendation 5	On the statement "To ensure the benefits of the demonstration projects" Please clarify. Is it to ensure that benefits are captured/understood? Or is this for sustainability and replication?	Additional text provided to clarify this
10	RTA, (UNDP-GEF), BPPS	Recommendation 7	On the statement "The CAST project missed out on the opportunity to address the issue of GHG emissions by focusing on the quality (standards) of fuels" How does this recommendation align with the recommendation that the project was too ambitious in the first place? Does this recommendation indicate that the original focus of the project was not appropriate (i.e. should have had a different focus)	Following explanation was provided: This just points out to the fact that an additional component pertaining to fuel standard and vehicle standards would have increased the impacts and effectiveness of this good project
11	RTA, (UNDP-GEF), BPPS	Recommendation 10	On the statement "There was an initial delay in the start of the project implementation. It was due to time taken to do the staffing. The staffing took time as elaborate procedures are required to be followed in the process of requirement of the staff." Clarify what is meant by elaborate procedures. Are these beyond those required of the UNDP?	Following explanation was provided: Probably elaborate procedure is not the right term to be used here. Text has been modified to provide more clarity
12	RTA, (UNDP-GEF), BPPS		Please use Terminal Evaluation or terminal evaluation or TE consistently throughout	Corrective action taken
13	RTA, (UNDP-GEF), BPPS		Please use throughout "GEF-funded UNDP-implemented" not UNDP/GEF or UNDP-GEF	Corrective action taken
14	RTA, (UNDP-GEF), BPPS	Section 3.1, bullet point numbered 1	On the statement "1. The project design of the CAST project is a city specific project. So much so, even the implementing agency for the project is the municipality of the city of Almaty. Due to this reason, there was minimal involvement of the central government of Kazakhstan" Pilots are often focused on a single city, especially transport projects. Also, the stakeholder section seems to indicate that there were national-level stakeholder targets. Please consider further why this project had insufficient national outreach.	Following explanation was provided: We agree that the pilots are often city specific. What is being said here in that in this case the entire project was city specific. The project design has been carried out accordingly. The project objectives are also city specific. As such there is no harm to have pilots / demonstrations which are specific to the Almaty city, but the project design could have been carried out at the country level with the objectives and targets set at the country level (even if these objectives and targets are meet by way of actual actions which are city specific. The primary reason for of the minimal involvement of the central

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				government is this issue with the project design
15	RTA, (UNDP-GEF), BPPS	Section 3.1, bullet point numbered 1, Sub bullet b.	On the statement "b. For the projects targeted at Urban Transport, there is very little scope of replication within a city. For example, it is highly unlikely to have a number of LRT or BRT projects within a city." From Project Document on replication: "These demonstrations seek to build the potential for replication in Almaty as well as other large cities in Kazakhstan and in Central Asia. A good demonstration would provide important lessons for replicated projects for other congested corridors in Almaty as well as other cities in Kazakhstan and possibly in neighboring countries."	Following explanation was provided: We agree that this statement is there in the project document. But this is the only statement in the entire project document which talks about the replication in other cities. Even in this statement the replication at Almaty city appears twice. Even the defined Outputs of the project (please see Output 4.6 in Table 9 above) talks about the replication in Almaty city only. The only mention of the replication in the entire log-frame is in Indicator 31. Here again it is implicitly for Almaty city. There is no proposed plan or action in the entire Project Document to support the intention of replication in other cities
16	RTA, (UNDP-GEF), BPPS	Table 10, contents of the column "Risk Mitigation Strategy / Response of the Management"	This text is very poorly worded. Please indicate the source and it may be useful to have this thoroughly checked.	Following explanation was provided: This problem was due to machine translation of the risk log from Russian to English. The correction has now been done
17	RTA, (UNDP-GEF), BPPS	Section 3.6, 4th Paragraph	Reword for clarity	Corrective action done
18	RTA, (UNDP-GEF), BPPS	Section 4.1, 5th Paragraph	On the statement, "The approaches to calculation of the GHG emission reduction were changed over the project course at least 3 times" Elaborate on why this happened and what were the implications	Additional text provided to elaborate this point
19	RTA, (UNDP-GEF), BPPS	Section 4.3, 1st Paragraph	On the statement, "No significant variations between the planned and the actual expenditure assigned to each outcome are observed" Define (e.g. % of total project budget)	Corrective action taken Additional text provided
20	RTA, (UNDP-GEF), BPPS	Section 4.3, 2nd Paragraph	On the statement, "This resulted in total "over expenditure" within the summed up Annual Work Plans' budgets" Please elaborate	Corrective action taken Additional text provided
21	RTA, (UNDP-GEF), BPPS	Section 4.3, 5th Paragraph	On the statement "The IFC co-financing which was initially planned (in the project document) for the parking activities, as a follow-up to a previous IFC financed study that analyzed the potential of implementing a PPP scheme, could not be realized Because…? Why?	No explanation provided

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
22	RTA, (UNDP-GEF), BPPS	Section 4.4, 2nd Paragraph	On the statement "The plan was well articulated and was sufficient to monitor results and track the progress toward achieving the objectives, except for some issues with the indicators used" Elaborate on previous comments that the indicators were insufficient in that they focused on achievement of activities and not impact? E.g. "largely due to absence of object / impact oriented indicators in the log-frame" as described in the next section (4.5)	Additional text provided to elaborate this
23	RTA, (UNDP-GEF), BPPS	Table 18, Colum heading of TE ratings	Please correct the footnote	Corrective action taken
24	RTA, (UNDP-GEF), BPPS	Table 18	On Rating for the achievement for Outcome 1 With both S and MS ratings provided (for indicators), how is "S" justified	Following explanation was provided Out of 9 indicators for Outcome 1, performance of 4 has been rated as S and 5 has been rated as MS. Thus, the overall rating for Outcome 1 can be either S or MS. There is bit of subjectivity here. Considering that the overall outlook is positive and PSC (indicator 2) is expected to be in place in due course of time the overall rating for Outcome 1 has been provided as S. For additional clarifications of the S ratings please see the last paragraph of section 5.1.1, where this has been explained in detail
25	RTA, (UNDP-GEF), BPPS	Section 5.1.1, Indicator 4	On he statement "As the PSC (target for indicator 2) could not be achieved" Please clarify	Following clarification was provided Indicator 4 was to support implementation / use of the PSC (indicator 2). As PSC could not be achieved, there is no point to have a monitoring and evaluation system for implementation of the PSC. Additional text has been provided to clarify this
26	RTA, (UNDP-GEF), BPPS	Section 5.1.1, Indicator 5, 2nd paragraph	On the statement "Although, these studies have not quantified the costs and the quantum of required subsidies." Please clarify	Following clarification was provided: The subsidies are required to cover the costs of services delivered and the fare charged. Also in case some of the services to select sections of the society are subsidized the feasibility studies should take into account such subsidies and quantify the extent of subsidy
27	RTA, (UNDP-GEF), BPPS	Section 5.1.2, 1st Paragraph	On the statement "leakage" through the removal of fuel inefficient buses out of service" Clarify	Following clarification was provided: This refers to the replacement of inefficient buses. This text has been taken from the project document

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
28	RTA, (UNDP-GEF), BPPS	Section 5.1.2, Indicator 11	On the statement "In all, three specific stakeholder consultation meetings" Clarify	Addition text provided to clarify this
29	RTA, (UNDP-GEF), BPPS	Table 21, Indicator 25	Please provide a rating	Corrective action taken
30	RTA, (UNDP-GEF), BPPS	Section 5.1.4, Indicator 23	On the statement "Corridors for LRT and BRT lines were identified and included to the new city master plan. Target is "Two corridors with separated bus lanes and one corridor of LRT in operation by Year 5". Are these to be operational by year 5? By end of the project? Please justify "S" rating	Following explanation was provided We agree that the target was to operationalize the segregated bus lanes and LRT. At the same time an option has been expressed, that the evaluators are of the view that the target of operationalizing of LRT corridor within the project implementation timelines was a bit over ambitions. That was the reason for S rating against this indicator. However, considering that the ratings are required to be given considering the achievement of the target (irrespective of the limitations), the rating is being revised from S to MS.
31	RTA, (UNDP-GEF), BPPS	Section 5.1.4, Indicator 25	On the statement "The expectations are that once LRT and BRT are in place there will be a significant shift from cars to the public transport and under such condition the target of increase of 20% in the usage of public transport would be achieved without much problem" Please provide commentary on confidence that the LRT and BRT will be in place, and that therefore the targeted increase is viable.	Additional text provided
32	RTA, (UNDP-GEF), BPPS	Section 5.1.4, Indicator 29.30 and 31	On the statement "Thus, it is not possible to document the results of the demonstration projects and disseminate the results by way of workshops and papers" In light of this, how can the rating be "S"?	Following clarification was provided: This is explained in the next two paragraphs
33	RTA, (UNDP-GEF), BPPS	Section 5.1.4, Outcome 4	On the statement "The project has been able to achieve the objectives of the Outcome of the project. The achievement of the Outcome 4 of the project has been rated as Satisfactory" Please justify (the rating of the achievement as S) in particular given that "the demonstration projects of LRT and BRT could not be implemented during the implementation phase of the CAST project"	Following justification was provided: The rating of 'S' for Outcome 4 has been provided considering the 'S' ratings for most of he indicators for the Outcome.
34	RTA, (UNDP-	Table 22, Indicator A	Please clarify (the S rating) given narrative below: "As the demonstration projects could not be	Following clarification was provided:

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
	GEF), BPPS		implemented within the implementation timelines of the CAST project, there is no direct GHG emission reduction within the implementation time lines of the CAST project"	In the very next sentence it is explained that the direct emission reductions will take place post implementation of the CAST project.
35	RTA, (UNDP-GEF), BPPS	Table 22, Indicator D	Please justify "S" rating. This cannot be determined given that the demonstration projects of LRT and BRT could not be implemented during the implementation phase of the CAST project, and the impacts in terms of shift from cars to public transport could not be fully realized	Following justification was provided. Additional explanation provided in the write up which reads as follows: The expectations are that once LRT and BRT are in place there will be a significant shift from cars to the public transport and under such condition the target of increase of 20% in the usage of public transport would be achieved without much problem. In this regard it is important o note that the financing for LRT project has already been organized (EBRD has committed to finance LRT project and a MOU with city was signed). At the time of TE, tender documentation for LRT procurement was under development. Public awareness campaign on all key objectives of the LRT project was also supported by the CAST project. New buses for BRT project were in place at the time of the TE, and the BRT the first set of BRT corridors were about to be completed.
36	RTA, (UNDP-GEF), BPPS	Section 5.1.5, Indicator A	It is important to refer to the GHG analysis done for the project. In particular: "Failure to complete the interventions within the project timeframe means any GHG emission impacts generated could not technically qualify for direct emission reductions. In fact, as the latest GEF guidelines for GHG emissions accounting clearly state, "direct GHG emission reductions are… attributable to the investments made during the project's supervised implementation period". With large-scale and lengthy projects like a BRT/LRT, one could argue, though, that the manual doesn't specify whether the investments need to be fully completed at the project. Considering the substantial efforts that the CAST project has invested into promoting both pilot corridors, as well as the heavy reliance on the LRT/BRT for the direct mitigation impact, it would seem justifiable to consider the expected GHG impacts as direct."	Following explanation was provided: Reference to the GHG emission reductions done is included. Definitions of direct and consequence (indirect) emissions reductions has also been included. The observations by the consultants on GHG emission reductions has also been included. A couple of other modifications has also been made taking into account the comments by the GHG consultant.
37	RTA, (UNDP-GEF), BPPS	Section 5.2, Paragraph 6	Refer explicitly to the GHG analysis report.	Corrective action done

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
38	RTA, (UNDP-GEF), BPPS	Section 5.2, Paragraph 11	On the statement "Against the projected direct GHG emission reductions of 615 thousand tons of CO_2 and indirect GHG emission reductions of 1430 thousand tons of CO_2, the CAST project would lead to direct GHG emission reductions of 502 thousand tons of CO_2 and consequential (indirect) GHG emission reductions of 1000 thousand tons of CO_2." notes direct emissions were targeted as 615,000 direct yet GHG emission reductions of 502 thousand tons of CO_2 attained. So how has this target been achieved?	Following explanation was provided: We have not talked about the achievement of the targets here. We have just provided the figures regarding the extent of emission reductions and compared it with the target values.
39	RTA, (UNDP-GEF), BPPS	Section 5.2, Paragraph 12	On the statement "As such there are no adverse issues and impacts with" To what does this refer? Please provide a rating.	Following explanation was provided: This refers to any possible global environmental impacts (e.g. ozone depletion, mercury and other heavy metals emissions, POPs emissions etc.). Additional text provides to clarify this.
40	RTA, (UNDP-GEF), BPPS	Section 5.5	Is a rating going to be provided concerning 'country ownership' as has been done for the other topics?	Following explanation was provided: The guidelines for evaluation and the TOR does not require a rating for country ownership
41	RTA, (UNDP-GEF), BPPS	Section 5.6	Is 'mainstreaming' to be rated?	Following explanation was provided: The guidelines for evaluation and the TOR does not require a rating for mainstreaming
42	RTA, (UNDP-GEF), BPPS	Chapter 6	On the statement "Actual implementation of the demonstration project is presently underway" Clarify. Please also indicated whether it is the evaluators' opinion that these will be achieved in due course (and by when) based on discussions with stakeholders, analysis of plans, etc.	Additional text provided to clarify this
43	RTA, (UNDP-GEF), BPPS	Chapter 6	On the statement "The CAST project has achieved its objectives in an efficient and effective manner" See comment above and elaborate this conclusion.	Following explanation was provided: This conclusion is flowing from section 5.4 of the report
44	RTA, (UNDP-GEF), BPPS	Chapter 6, Recommendation 4	Can more specific comment be made? e.g. ambitious given the baseline regulations, the capacity of the sector, the delivery time for suppliers, etc.? How much of this could have been foreseen?	Additional text provided to clarify this
45	RTA, (UNDP-GEF), BPPS	Section 6.4, Recommendation 10	Please qualify this recommendation, as UNDP needs to comply with transparent procurement practices.	Following explanation was provided: Agreed, the idea was to start the procedures at an early date
46	RTA, (UNDP-GEF), BPPS	Annex 1, Terms of Reference, Project Summary Table	Correct the heading 'Realized at Completion'	Following explanation was provided: This is the standard format for the TOR for TE. This was prepared by the

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				UNDP CO. Still if this needs to be changed pl. let me know
47	GHG Consultant (appointed by the CAST Project	Summary of conclusions	Since the original indirect estimate of 1.43 $MtCO_2$ is a bottom-up one, the respective revised estimate is 1 $MtCO_2$.	Correction carried out throughout the document
48	GHG Consultant	Summary of conclusions, Recommendation 7	Fuel quality standards have little (if any) effect on GHG emissions, which depend, among other things, on vehicle fuel efficiency. Perhaps, the project could have worked on "vehicle efficiency standards and labelling", which would have contributed toward GHG mitigation.	Following explanation was provided: We are in agreement that the fuel quality is not directly related to GHG emissions. But we need to understand that vehicles with higher efficiencies generally require better quality of fuel. Thus, we need to have a systems approach. This is one of the practical problems in Almaty city. The imported cars with catalytic convertors are modified (removal of catalytic convertor etc.) because of non-availability of required quality of fuel. When we said focusing on the quality (standards) of fuels, standards of vehicles and driving habits the idea is a systems approach.
49	GHG Consultant	Summary of conclusions, Recommendation 8, Second bullet point	Since the Kazakh grid is currently based largely on coal generation, increasing gas-based share would effectively help decarbonize the grid, but again one needs to compare GHG profiles of relevant vehicle categories driven by fossil motor fuels vs fossil-based electricity.	Following explanation was provided: Agreed, this is just a suggestion which may be explored. However, one need to appreciate that Natural Gas apart from being a comparatively low carbon fuel, gives an efficiency of about 70 percent (in combined cycle) against the 51efficiency of 33 to 35% for coal based power generation
50	GHG Consultant	Summary of conclusions, Recommendation 11	Available research indicates that tailpipe GHG emissions from CNG buses are generally about equal to EURO-V diesel buses. Reported CO_2 emissions (e.g. by Finnish FVT) from diesel buses are around 1100 gCO_2/km, which is about what I've used for EURO-V baseline benchmark in the calculation. Compare that to 1100-1380 $gC0_2$/km as the range for CNG buses (reported by FVT). Almaty CNG bus fleet appears to be at the upper end of this spectrum at 1335 g CO_2/km. But this is not to say that their buses do not meet the stringent fuel efficiency requirements. It looks more like the case of some engine technologies being more efficient than others (e.g. Iveco reports their stoichiometric CNG engines to be some 20% more efficient than comparable lean-burn CNG engine), as well as different operating conditions	Following explanation was provided: When it comes to comparative GHG emissions There are lots of ifs and buts. Still the fact remains that in the case of CAST project there was no specifications regarding the fuel efficiency of the buses to be procured. The GHG emissions levels post project implementation would have been lower in case the CNG buses with comparatively higher fuel efficiency would have been used.
51	GHG Consultant	Additional Recommendation	Another recommendation suggested for consideration	Following explanation was provided: Considering that the pilot projects generally gets implemented towards the

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
			"For the purpose of reliable GHG emission estimate and impact assessment, it would be beneficial to run transport data surveys per standard methodologies at project start-up, mid-term and completion. This would have enabled collection of a time-series of bottom-up transport data that would facilitate a city-wide GHG inventory, as well as enable tracking of key indicators (e.g. modal shares). Bottom-up GHG estimates could be cross-checked with top-down assessments based on fuel sales within the city."	end of the project implementation, such surveys would not be much practical
52	GHG Consultant	Section 5.1.5, Indicator A	As such, GEF manual only provides for two options of direct mitigation impact: (1) "direct GHG ERs" and (2) "direct post-project GHG ERs". Since the second option is not applicable to the CAST case (as the project has not put in place a financial mechanism), we are left with two alternatives: either the CAST project has "direct GHG impact" or it has no "direct GHG impact". From the GEF perspective, it doesn't matter whether the GHG impact occurs during project lifetime or post implementation; what's important is whether the GHG ERs qualify for the "direct impacts". Aside from the BRT/LRT demonstrations (which will go beyond the project lifetime), the CAST project has completed three other measures (bike lanes, PT route optimization and PT lanes) which have been estimated to generate 5,980 tCO_2 of lifetime direct ERs (or 1200 tCO_2 in annual ERs). There is no issue with qualifying these impacts as "direct". The only problem is with the implementation timeframe of the BRT/LRT investment. As agreed during a telecom, these investments were to generate "direct impacts" on the ground of their significance for the project's overall impacts and certain degree of flexibility in applying GEF "direct impact" definition.	Agreed Corrections done
53	GHG Consultant	Section 5.1.5, Indicator A	The ProDoc target (308 $ktCO_2$) is based on 10-year lifetime, while the 20-year lifetime target (which is a more appropriate timeframe for infrastructure investments like	Agreed Corrective actions done

#	Author	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
			BRT/LRT) is actually 615 ktCO_2 (refer to ProDoc page 49). Hence, the comparison should be made with equal investment lifetimes: either 308 kit vs 251 kit (502 kit/2), or 615 kit vs 502 kt.	
54	UNDP-GEF HQ RBM		Add the UNDP PIMS ID to the cover page and the Project Summary Table on page 6	Corrective action taken
55		Section 4.6 (Implementing Partner/execution coordination, and operational issues)	For both UNDP and Akimat, include text on the quality of risk management	Additional text provided
56	UNDP-GEF HQ RBM	Recommendation 10	This recommendation refers to the initial delay in the start of implementation due to the time taken to do the staffing. I assume the consultant is writing about the UNDP procurement procedures for hiring the project team. I think this should be addressed in the section on UNDP as an Implementing Partner because it relates to UNDP's role in the project.	Additional text provided in Section 4.6 to take care of this
57	UNDP-GEF HQ RBM	Annexes	Include the following: Annexed as a separate file: Terminal GEF Tracking Tool	Corrective action taken
58	UNDP-GEF HQ RBM		In the Audit Trail, the 'Author' column should show the organization of the person who commented, and not the person's name	Corrective action taken

ANNEX H: EVALUATION REPORT CLEARANCE FORM

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____