The fortress with a vibrant green urban culture

November 2023

Mediaș
Green City Action Plan

Primăria Municipiului Mediaș

European Bank for Reconstruction and Development

EBRD GREEN CITIES

Resources & Waste Advisory Group

ARCADIS Design & Consultancy for natural and built assets

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Message of the Mayor

Dear citizens of Mediaș,

This strategic document reflects our commitment to the future of Mediaș. With its rich history and hilly landscape surrounded by forests, this town is a truly special place. We witness a long history of urban culture based on a multi-ethnic society, and we are determined to preserve and develop this valuable heritage.

The 21st century, however, brings about significant challenges. We are aware of the issues related to climate change, the need to use natural resources more efficiently and the importance of sustainable development. Mediaș is not isolated from these global realities; it is our responsibility to act now to meet these challenges.

With the support of EBRD's Green Cities Programme, we are committed to addressing these issues in an integrated and systemic way. We have set up a team of experts and involved a wide range of stakeholders, including young people in Mediaș, to identify and prioritise our challenges. One of the main challenges we face is the declining population and the migration of young people, negative social phenomena which, in the long term, can affect our development and prosperity. This is why we have placed a strong emphasis on sustainable development, attractive for the city's younger generation.

The actions proposed in this document reflect our priorities. We want to reduce the dependence on private cars for transport, ensure that people have access to more walking and recreational areas and adapt to climate challenges in this way. In fact, through these measures, we aim to increase our city's capacity to adapt to future changes, to create a healthier and more pleasant environment for all the inhabitants of this city and to attract more tourists to discover the beauty and rich history of Mediaș.

We are determined to turn these ideas into reality, working together for a greener and more prosperous future. I hope to maintain good cooperation and constructive dialogue with all the citizens of Mediaș, to make this city a place where everyone feels at home and where nature and culture come together harmoniously.

Gheorghe Roman

Mayor of Mediaș

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List of Abbreviations

CSOs	Civil Society Organizations
EBRD	European Bank for Reconstruction and Development
GCAP	Green City Action Plan
GHG	Greenhouse gases
LED	Light Emitting Diode
MSW	Municipal Solid Waste
PSR	Pressure – State – Response
PV	Photovoltaics
RES	Renewable Energy Sources
SO	Strategic Objective
WWTP	Wastewater treatment plant

Mediaș

Green City Action Plan

Executive summary

Brief overview of the GCAP process and its benefits

Mediaș, a charming town of around 39,000 residents embedded in the hilly landscape of Transylvania, is one of the oldest urban settlements in Romania, its fortified walls, heritage buildings and traditional layout bearing witness to **a long history of vibrant urban culture grounded in a multiethnic society**. It provides unique opportunities for a **quality life for its inhabitants and an excellent atmosphere for tourists**. However, the town also faces **multiple challenges of the 21st century** in terms of sustainability, climate resilience, and smart use of natural resources.

The EBRD's **Green Cities programme** is an excellent framework for the city to address these issues in an **integrated and systemic way**. Mediaș, located in Sibiu County in the central Romanian region of Transylvania, is the 50th member to join the EBRD Green Cities programme in October 2021, triggered by the urban regeneration investment on rehabilitating, modernising and improving energy efficiency in public buildings, as well as public transport investments[1]. This EBRD loan represents the city's co-financing of a larger investment for a total value of RON 138.4 million (€28.1 million), approved under the relevant EU Regional Operational Programme in Romania.

The GCAP project team consisting of representatives of the EBRD London and Bucharest offices, Municipality and municipal enterprises, and the consultants of RWA Group and Arcadis consultancies, first developed a **green city baseline** according to EBRD Green Cities methodology, screened the state of the environment, and examined the pressures on the environment coming from sectors like transport, energy, buildings, industry, water, waste and land use. In addition, all current policy initiatives were analysed. Based on the findings, the drafting and **prioritization of challenges** followed.

The process involved a wide range of **stakeholders**, including the city's population, more specifically the **young generation of Mediaș**. A total number of 187 persons attended the stakeholder engagement sessions, out of which 123 (66%) were women. As it turns out, Mediaș is struggling with societal challenges in terms of population decrease and the migration of youth from the city, these trends being an impediment to its development and thriving. Therefore, throughout the process and in the GCAP we put a strong emphasis on a development pathway that is both sustainable and attractive to young generations. The proposed GCAP actions reflect priority challenges, aiming to enhance the city's adaptive capacity and performance in terms of climate resilience and overall improve the quality of life for citizens and tourists alike.

The main **environmental challenges** of the city are the **high reliance on private cars for transportation**, **low level of access to quality green spaces** within urban limits, and **climate change vulnerability** to urban heat islands and extreme rainfall.

[1] https://www.ebrd.com/news/2021/fastgrowing-ebrd-green-cities-signs-up-50th-member-medias.html

The table below provides a brief overview of the **main sectoral challenges**:

TRANSPORT

- Parked cars at street level, creating traffic congestion/disruption and discomfort for pedestrians/cyclists;
- Few crossings over the railway and river lead to congestion in the city centre at rush hour;
- Lack of smart bus stops;
- Reduced use of bicycle transport, low safety of cyclists;

ENERGY & BUILDINGS

- Investment needs in energy efficiency measures for public and private buildings, and renewables, to reduce dependency on gas;
- Investment needs for energy efficiency in public lighting;
- Insufficient adoption of smart and digital solutions for monitoring and control

INDUSTRY

- Insufficient development of the tourism industry
- Risk of loss of local industry brands, which are part of the city's heritage;
- Lack of labour force for the industry;

WATER AND WASTEWATER

- Lack of greywater reuse systems at the building level;
- Pressure of extreme weather events and insufficient stormwater runoff delay;
- Investment needs in energy efficiency and smart metering

WASTE

- Illegal dumping and littering;
- Destruction/damage of bins, containers or vehicles;
- High waste generation and low recycling rates;
- Lack of sufficient and modern equipment;
- Lack of a real-time monitoring system for waste management;

LAND USE

- Insufficient comfortable and safe crossings over the railway and river, for all types of users;
- Uncomfortable and unsafe traffic for pedestrians and bicycles;
- Limited space available for the adoption of sustainable mobility.

Vision, objectives and actions to address these challenges

During the stakeholder consultation workshops and online surveys, it became clear that the city administration and the citizens of Mediaș all share the purpose of:

> Creating a pleasant, comfortable and highly gratifying city with ample opportunities for leisure and business, while preserving and enhancing its features.

Thus, a powerful **vision** emerged for a future Green City Mediaș formulated as follows:

> **Fortress with a vibrant green urban culture.**

The objectives to achieve this vision are the following:

SO 1 **Strategic objective 1**
Build synergies based on current city strengths

SO 2 **Strategic objective 2**
Future-proof green urban infrastructure for a comfortable city

SO 3 **Strategic objective 3**
Harness and develop existing entrepreneurial spirit

Out of **the long list of 74 actions, a total of 24 GCAP actions were prioritised and consequently developed in detail**. Altogether, they provide an investment plan and equate to a total funding requirement of **318 million EUR (CAPEX)** over a 5-year period.

Thematic areas cover transport (5 actions addressing the entire complexity of the sector), energy & buildings (4 actions, centred on energy efficiency), industry (2 actions, with a highlight on supporting local strengths), water (4 actions, besides infrastructural improvements, also focused on sustainable tourism), waste (3 actions, one introducing a novel measure for textile waste management), land use (3 actions, focused both on citizens' livelihood improvement and green routes for tourists), and 3 cross-sectoral actions (including one that would actively engage the city's youth in local sustainable development projects).

GHG emissions in Mediaș are projected to decrease from 2 $MtCO_2e$ per capita in 2019 to 1.5 $MtCO_2e$ per capita in 2050 under a business-as-usual emissions scenario. GCAP actions, assuming they are all implemented, are expected to contribute with ~4,690 tCO_2e reduction of GHG emissions, representing 5% of the required emissions reduction between business-as-usual and Paris-aligned pathways. Mediaș accounts for approximately 0.1% of national GHG emissions.

Several actions include **smart components** to make a difference in the city and to allow for optimizing daily operations on an administrative level and in public interactions in a cost-effective way, integrating these with existing initiatives in the city.

All GCAP actions have been analysed against social performance indicators, so that the investments which will follow up in the coming years all aim at making Mediaș more attractive for tourists and citizens in order to stop the downward trend in population size. The city will modernise and digitalise all public services, will make considerable investments in public infrastructure (road infrastructure, water supply and wastewater treatment, waste management, green spaces, etc.) but will also work on reducing the social disparities between different groups present in the local community, open communication channels and develop

cooperation projects between different groups of stakeholders in order to help the integration process of most vulnerable ones and will pay special attention to marginalised communities.

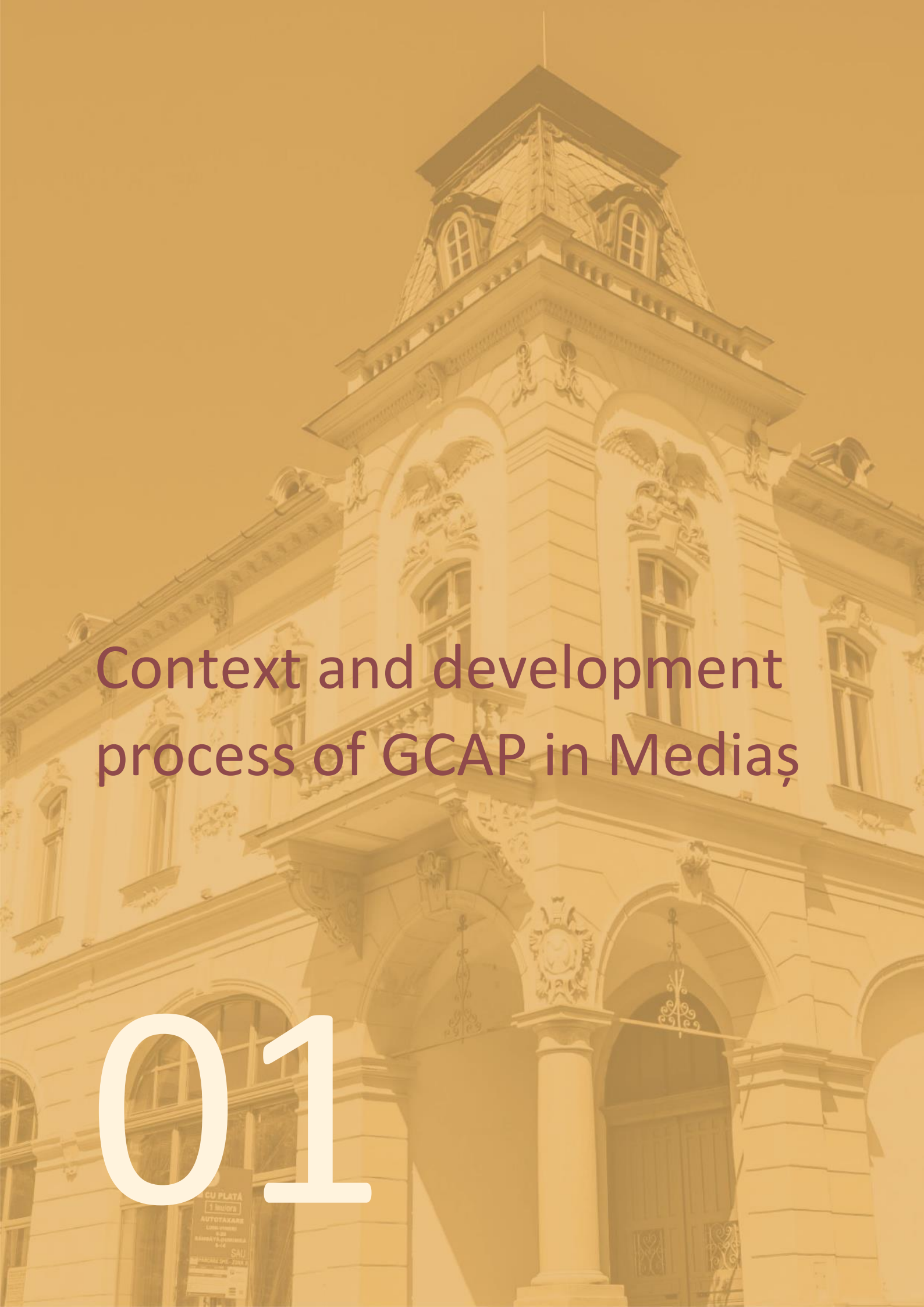
Sectoral actions envisaged in this GCAP will consider gender mainstreaming and social inclusion aspects such as: safety pedestrian walking areas; diversifying the cultural life of; engaging with youth groups and vulnerable groups in order to work towards creating a more appealing environment for younger generations; support the diversification of the labour market; build partnerships with Academia from cities around Medias to open branches of higher education institutions in Mediaș in order to stop the outmigration of young people; make use of public spaces for social events, gatherings and social cohesion initiatives.

Overall, the implementation of the GCAP actions would directly require creating a minimum of 33 **new jobs**. Most importantly, these actions would allow for a thriving sustainable business environment and vibrant local tourism, which in turn ought to create more jobs, engaging especially the younger generation to find an attractive future in their city.

Total investment needs defined by the GCAP for the period of 2024 – 2028 are estimated at the amount of approximately 318 million EUR. To finance this investment, there are substantial funds that can be accessed through EU funded programmes, co-funding may be secured through national and IFI's concessional loans. Average annual own municipal revenues for the last three amount to 21 million EUR and are increasing annually. The current municipal debt repayments represent less than 10% of own revenue. As ceiling for municipal indebtedness is 30%, municipal additional borrowing capacity may be utilised, if needed.

The table below provides an overview of all GCAP actions.

Sector	Action	Policy / Investment	CAPEX [€]	OPEX [€]	GHG savings (tCO_2e)	Timetable (2024 – 2028)				
						24	25	26	27	28
Transport	1. Optimising the public transport network	I	2,290,000	74,000	621	■	■	■	■	
	2. Transforming the railway station into a multimodal hub	I	1,780,000	178,000	197.1	■	■	■	■	
	3. Development and enforcement of a coherent parking policy	P & I	655,000	14,000	3.3	■	■	■	■	
	4. Road maintenance programme	I	5,100,000	500,000	N/A	■	■	■	■	■
	5. Comfortable and safe traffic for sustainable mobility users through investment and traffic reconfiguring (includes RTR)	I	203, 950,000	365,000	N/A	■	■	■	■	■
Energy and Buildings	6. Smart and efficient public lighting	I	2,400,000	35,000	297	■	■	■	■	
	7. Public buildings energy efficiency and digitalization programme	P & I	2,515,000	237,500	52.37	■	■	■	■	
	8. Deep retrofit of the historic building “Casa Armatei”	I	5,025,000	50,000	12.25	■	■	■	■	■
	9. Energy efficiency programme in private buildings	I	25,115,000	250,000	1,940.4		■	■	■	■
Industry	10. Promote and support local brands with tourism activities	I	100,000	10,000	N/A	■	■	■	■	■
	11. Promote green industry and facilitate the development of local services and small production sector	I	385,000	35,000	N/A	■	■	■	■	■
Water	12. Rehabilitation and expansion of water and wastewater networks	I	53,900,000	575,000	2.05	■	■	■	■	■
	13. Improvement of the anaerobic digestion process in the WWTP	I	4,300,000	400,000	100.08	■	■	■	■	
	14. Set up drinking fountains and public toilets in relevant areas of the city	I	540,000	50,000	7.45	■	■	■	■	■
	15. Installation of a new meteorological station	I	365,000	33,500	N/A		■	■		
Waste	16. Investment in an automatic sorting line and shredder for green waste	I	2,400,000	230,000	645.62	■	■	■	■	
	17. Investment in additional capacity for waste management	I	1,560,000	156,000	13.33		■	■	■	
	18. Set up a system for the sound management of textile waste	I	125,000	10,000	768	■	■	■		
Land use	19. Make riverbanks more accessible and attractive	I	3,000,000	300,000	10	■	■	■	■	■
	20. Improve and greenify schoolyards	I	150,000	15,000	10	■	■	■		
	21. Develop sustainable touristic features connected by green routes	I	2,065,000	100,000	10		■	■	■	
Cross-sectoral	22. Sustainable tourism strategy	P	150,000	75,000	N/A	■				
	23. Enhance the capacity of local administration to implement the GCAP	P & I	150,000	15,000	N/A	■	■			
	24. Adapt the education system to future development needs	P	140,000	14,000	N/A	■	■	■	■	■
	TOTAL		318,160,000	3,722,000	4,690 tCO_2e					



Context and development process of GCAP in Mediaș

01

1. Introduction to the GCAP

EBRD has developed **EBRD Green Cities** programme in an effort to build a better and more sustainable future for cities and their residents. The programme comes as a response to the acknowledgement that although cities are dynamic and vital parts of society and the main engines of social, economic and technological development, rapid urban growth has vastly increased demand for resources, which, in turn, affects the environment as well as the quality of life of urban residents.

One of the programme's central components is the **Green City Action Plan (GCAP),** the process whereby a city's environmental challenges are systematically assessed, prioritised and addressed through various policy instruments and sustainable infrastructure investments.

The Municipality of Mediaș joined the programme in 2021, and started to develop its Green City Action Plan together with the consultant team consisting of experts from the RWA Group and Arcadis consultancies, involving in the process a wide range of local stakeholders.

The aim of the Green City Action Plan (GCAP) for the Municipality of Mediaș is to address the existing environmental and urban development challenges in a systematic way, while considering its social concerns, including gender. It aims to provide input to optimize the Municipality's financial and personnel capacity, while addressing the urban issues with great environmental benefits and social and gender co-benefits. GCAP Mediaș includes actions for the administrative area covering the City of Mediaș and Ighișu Nou village.

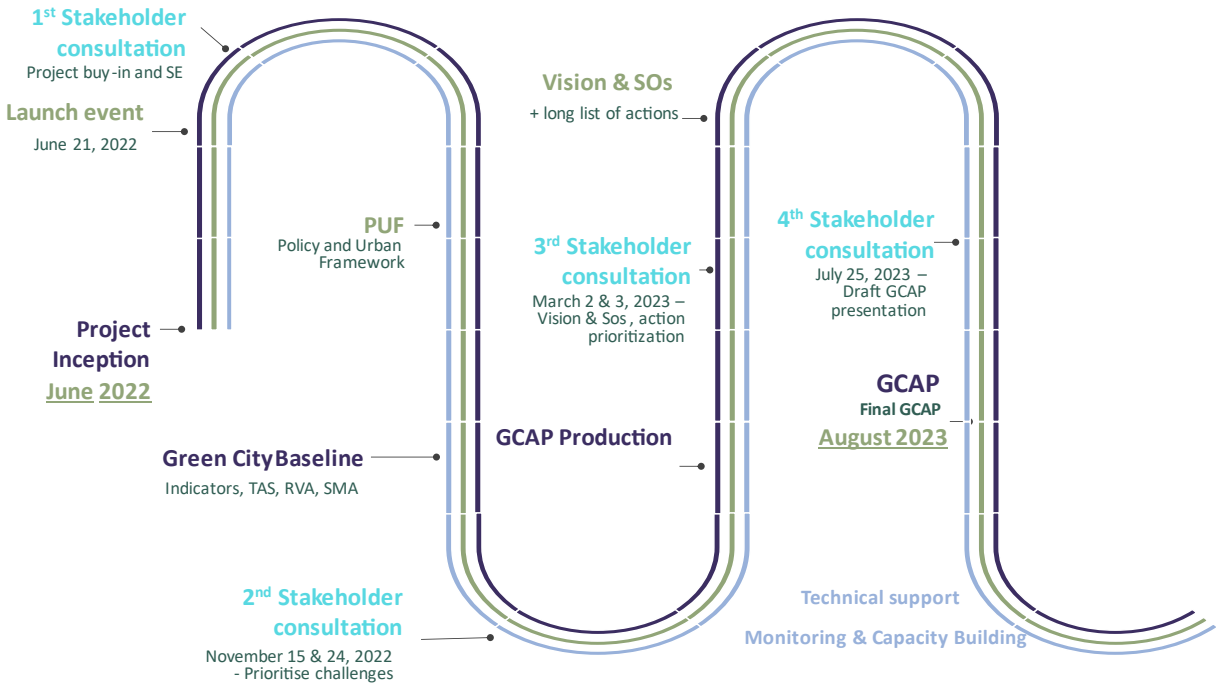


Figure 1. Process flow of developing the GCAP

The process of developing the GCAP had **the following phases and key milestones**:

The first phase consisted in **developing the city baseline**. It was a complex process, which aimed to assess the environmental and policy performance of the city, to map its resilience based on risks and vulnerabilities, to examine its smart maturity, and to perform an analysis of gender aspects.

Following this assessment, **challenges were identified and consulted with key stakeholders**. The consultation process allowed us the prioritization of the challenges.

Once the prioritized challenges were formulated, a **long list of GCAP actions** was elaborated and submitted to public consultation, which had as a final result the range of **short- and medium-term actions** to include in the present action plan.

The following chapters briefly present the main findings of baseline analysis. It is to note that all the above-mentioned aspects are broadly discussed and presented in a series of stand-alone documents available at Mediaș Municipality. These documents are the following (the list is also an explanation to the abbreviations in the Figure 1 above):

- Stakeholder Engagement Plan (SEP)
- Policy and Urban Framework (PUF)
- Green City Baseline:
    - Indicators' Database
    - Technical Assessment Report (TAS)
    - Risk and Vulnerability Assessment (RVA)
    - Smart Maturity Assessment (SMA)
    - Gender and Social Inclusion Report

2. City overview

Geography

Mediaș is one of the oldest cities in Romania. The first officially recorded mention of the city dates from the 13th century. It is noted for its well-preserved medieval fortifications, which represent one of the main tourist attractions. The municipality includes the City of Mediaș and the village Ighisul Nou located 4.3 km South of the City, both forming the area of interest for this study.

Figure 2. Map illustrating the location of Mediaș compared to surrounding major cities in Romania

The city is categorized as a tier 2 settlement – city with district importance, secondary district development pole.

Mediaș is situated in the centre of Romania, in the basin of the Târnava Mare River, at a medium elevation of 320 m. The highest point within the City is recorded in Wewern hill, in the northern part, at 555 meters high.

Social conditions

Mediaș is the second city in Sibiu County, with a population of around 39,000 residents[2], representing around 10% of the county's population.

According to the National Statistics Institute (NSI) the population in Mediaș presents a downward trend, decreasing from 67,043 in 1992 to 57,220 in 2019 (2011 census data, likely), mostly due to outbound migration. This in turn impacts the age distribution within the city, an area in which a relative ageing process of the population can be observed (Figure 3). According to the City, the young population is choosing larger cities of Cluj-Napoca, Sibiu or Bucharest for higher education opportunities, often choosing to continue living and working in those cities after graduation.

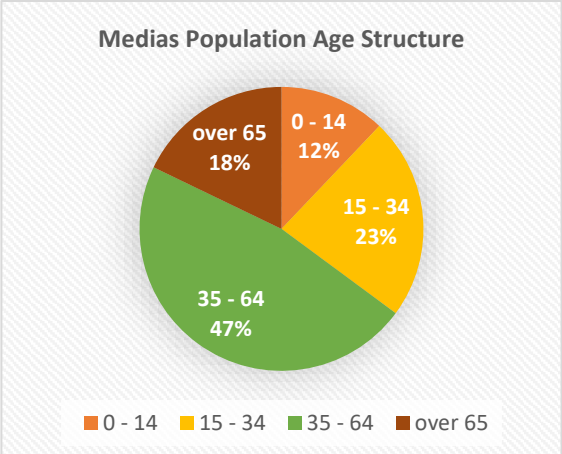


Figure 3 Mediaș population age structure

New data emerging from the 2021 census confirms the downward population trend, Mediaș having 39,505 inhabitants. This represents a 16%

[2] Preliminary data published in 2023 by the NSI, at https://www.recensamantromania.ro/comunicate-de-presa/

decrease in population from the last census data. The population decrease has intensified, as between the 1992 and 2011 census, the decrease was 15%.

According to the Atlas of Marginalized Settlements in Romania developed by the World Bank, Mediaș does not have any marginalized or segregated communities, however, the Local Development Strategy has identified 5 underdeveloped areas that might fall under the category of marginalized urban areas.

In terms of social innovation or transformation, the city has several issues to tackle. As indicated in the **Gender and Social Inclusion Report**, the main challenges in this field are the following:

- ***Size of the population*** - as mentioned above, the population of Mediaș has considerably reduced in 10 years (35% reduction). This situation was determined by many aspects, such as labour migration, and brain-drain.
- ***Ageing process of the population*** – it is a generic problem all over the country. Still, in Mediaș this is becoming more and more obvious since the city has reduced its population size quite considerably and the young generation is moving away leaving behind their relatives.
- ***Marginalised areas*** – there are 5 such areas already identified by the Municipality. Some measures towards reducing the socio-economic disparities and working towards inclusion of the vulnerable groups living in these areas in the local community have already been taken by the Municipality.
- ***Limited economic development opportunities*** – Private investors are confronted with limited availability of labour force and/or low level of education of the existing labour force.
- ***Mobility and accessibility for persons with disabilities*** - although most of the public institutions have designed their access points with facilities for persons with disabilities, there are also other elements in the city which can be considered challenges for this group of persons.
- ***Digital literacy*** – most of the young generation is up to date with new and innovative digital developments, but the elderly group is most of the time challenged by the novelty of the developments.
- ***Data management*** - data on socio-economic aspects are limited at the city level. The Municipality has also limited capacities in conducting data collection processes, data processing and data management (digitalisation of data). Thus, the decision-making processes are suffering due to a lack of reliable data on socio-economic aspects.

Further details related to the socio-economic conditions in the city are included in the Gender and Social Inclusion Report, which is a stand-alone document prepared within the context of the GCAP development process.

Policy landscape relevant for the GCAP

Local and national policies which have high relevance to this plan, providing the legal basis for implementing the GCAP actions are briefly mentioned here onwards. It is to mention that the Policy and Urban Framework report includes not only a detailed mapping of relevant policies, but also a benchmarking of these policies against the assessed Green Cities indicators.

Sustainable Development Strategy of Mediaș (2021-2027)

It is a highly relevant policy for all Green City sectors. One of its core objectives is urban regeneration; under the specific objective Modernization of urban infrastructure, the strategy sets priorities to which many of the elaborated actions are directly linked, especially those that refer to urban infrastructure networks, mobility, energy consumption reduction, and urban revitalization.

Sustainable Urban Mobility Plan (2017)

The policy aims at modernizing the transport system in the city in order to reduce the air pollution and noise levels generated by the cars that are running in or through the city. The vision is to have a city where non-motorised vehicles are prioritized, the length of the bicycle lanes will increase to almost 10 km, public transport will be mainly based on electric-powered vehicles and usage of private cars will be reduced considerably.

Smart City Strategy for Mediaș, Horizon 2027

The vision proposed by the strategy is for Mediaș to become a smart city by 2027, where the use of technology in facilities, equipment, public services, activities of citizens and businesses contributes to the improvement of the quality of housing and public services and increased attractiveness for tourists and investors, and supports the connection and active implication of users (inhabitants, visitors, business environment), in a citizen-centred approach.

The objectives set out in the strategy are:

- Smart community, involved in the development of the municipality and adapted to the new digital revolution;
- Centre of entrepreneurship of regional significance, acknowledged as a destination for investment, entrepreneurship and economic dynamism based on a workforce trained in the fields of the knowledge-based economy;
- Efficient transport system aiming at sustainable travel habits;
- Urban centre dedicated to reducing energy consumption and increasing the quality of environmental factors with the help of the community;
- Attractive city and promoter of well-being, offering a diverse range of high-performing public services, cultural, touristic and leisure opportunities, attractive to the local community and visitors;
- Innovative local public administration involved in the co-creation of public services alongside citizens who are informed and prepared for the digital age.

Regional Waste Management Plan for Sibiu County 2019–2025

Environmental contamination risk from improper waste management is one of the aspects flagged in the plan. It is the main document which leads the waste management modernisation process in Mediaș. The document has strong objectives and is correlated with the national sectoral policies. The main policy objectives are referring to improving the waste transfer capacities and to the management of specific waste streams. Another important aspect to be addressed is the constant need to improve the awareness of Mediaș citizens towards separate waste collection system and waste prevention measures. Last, but not least, the Regional Waste Management Plan refers to the closure of previously used waste dumpsite which is no longer in use.

Climate Change Mitigation and Adaptation Strategy and Action Plan for Mediaș (2023, draft)

The document includes an analysis of the impact of climate change on sectors such as agriculture, biodiversity, forestry, infrastructure, construction and urban planning, transport, energy, industry, waste management, health, education, as well as tourism and recreational activities. The purpose of the strategy is to contribute to the increasing of the climate resilience of natural and anthropogenic systems and to guide social and economic activities towards climate neutrality.

GHG emissions in Mediaș

There is little to no data at city level regarding to GHG emissions per sector, or emission reduction targets which are set at city level. However, since the city does not have any major energy-intensive industry, and it is not expected to have significant discrepancies in terms of emission shares per sector compared to the average national level, it can be considered that the % distribution of GHG emissions per sector is similar to national level estimations below:

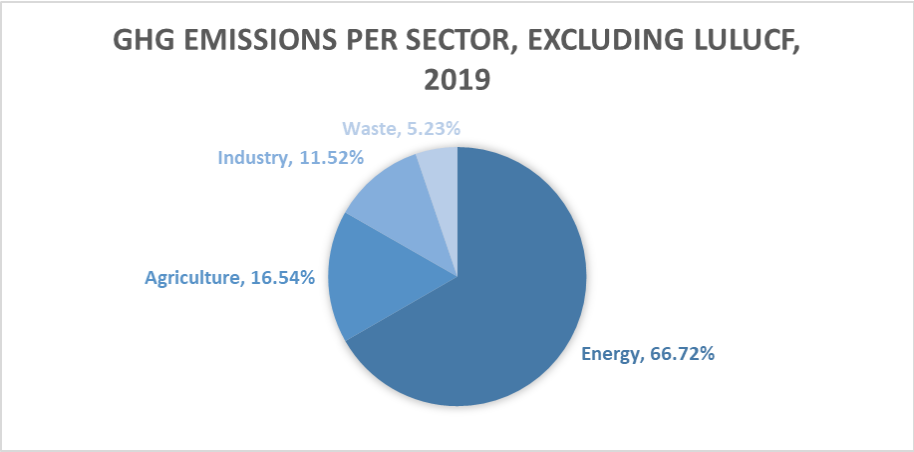


Figure 4 Share of GHG emissions per sector on national level[3]

In the energy sector accounting for 66.72% of emissions, the distribution of GHG emission shares in 2019 is:

- 28.19% energy industries
- 24.92% transport

[3] Source: Romania's Greenhouse Gas National Inventory Report for 1989-2019, https://unfccc.int/documents/274077

- 19.15% manufacturing industries and Construction
- 11.36% fugitive emissions
- 15.54% other sectors
- 0.83% other emissions

Based on the transport emission data and national-level shares of GHG emissions, we have estimated that **Mediaș accounts for approximately 0.1% of national GHG emissions**. This would translate in absolute figures comparative to 2019 national-level data to a total amount of ~113 kt CO_2eq at city level.

GCAP Actions, assuming they are all implemented in full, are expected to contribute 5% of the required emissions reduction between business-as-usual and Paris aligned pathways. Energy, Transport and Waste sectors contribute most to the GHG savings. A summary diagram of the GHG trajectories and GCAP actions emission savings is presented in the figure below.

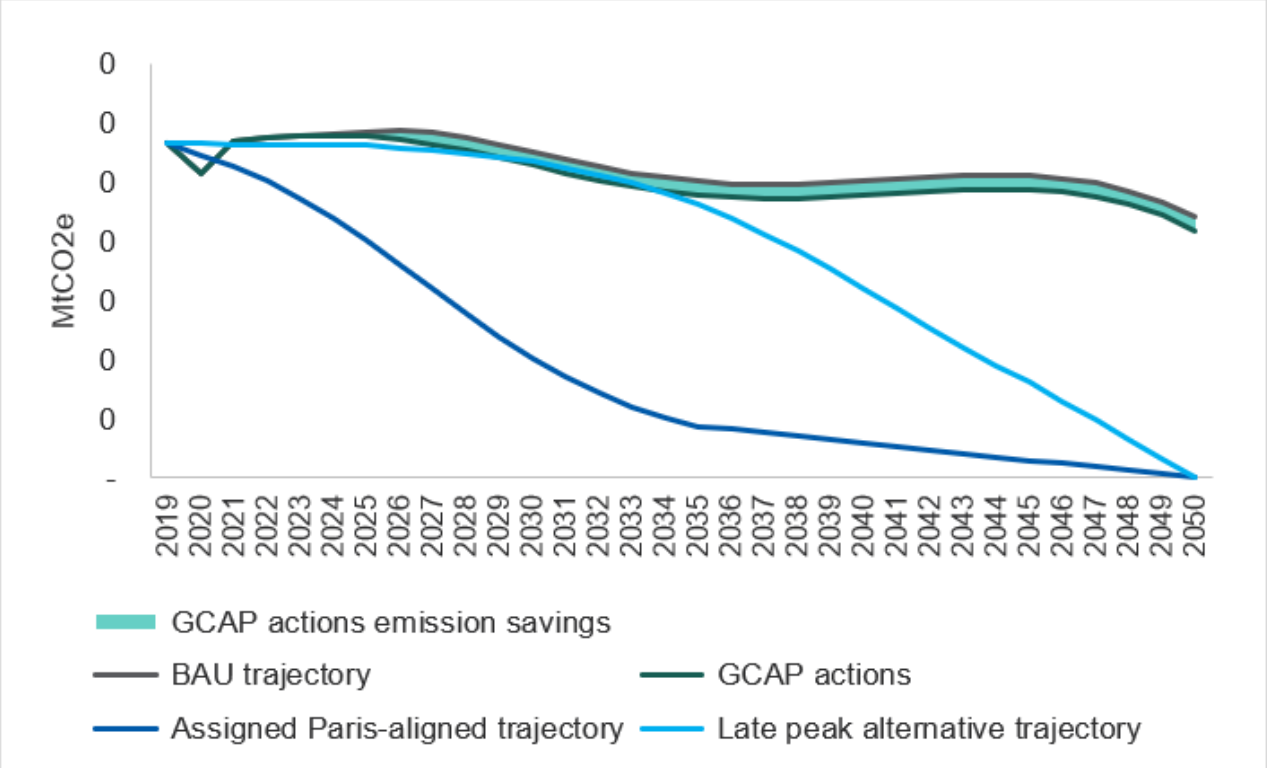


Figure 5. Summary GHG trajectories related to GCAP Mediaș implementation

Risks and hazards, and their impact on urban systems and services

The hazards that may manifest in Mediaș stem from its location, economic activity and social conditions which have shaped the urban fabric to its current status, as well as already manifesting and expected climate change consequences.

As resulting from existing studies (IPCC reports, the Draft Climate Change Adaptation Strategy and Action Plan developed for Mediaș – 2022, etc.), the most prevalent **hazards** influencing the country in general, and Mediaș, in particular, are an increase in the frequency and intensity of extreme weather events and an expected increase in temperature.

The side-by-side maps in **Error! Reference source not found.**6 below indicate a statistically significant increase in mean temperatures in and around Mediaș compared to the adjacent areas. The Climate Change Adaptation Strategy and Action Plan for Mediaș highlights that for these areas, it is expected to observe a decrease in the overall quantity of rainfall, coupled with increases in temperature and particularly more frequent and intense extreme weather events. The expected extreme weather events include storms and/or intense rainfall in a short period, followed by and/or preceded by prolonged periods of drought. An increase in mean temperatures and the more frequent and intense heat waves confirm the high potential for the formation of urban heat islands in Mediaș.

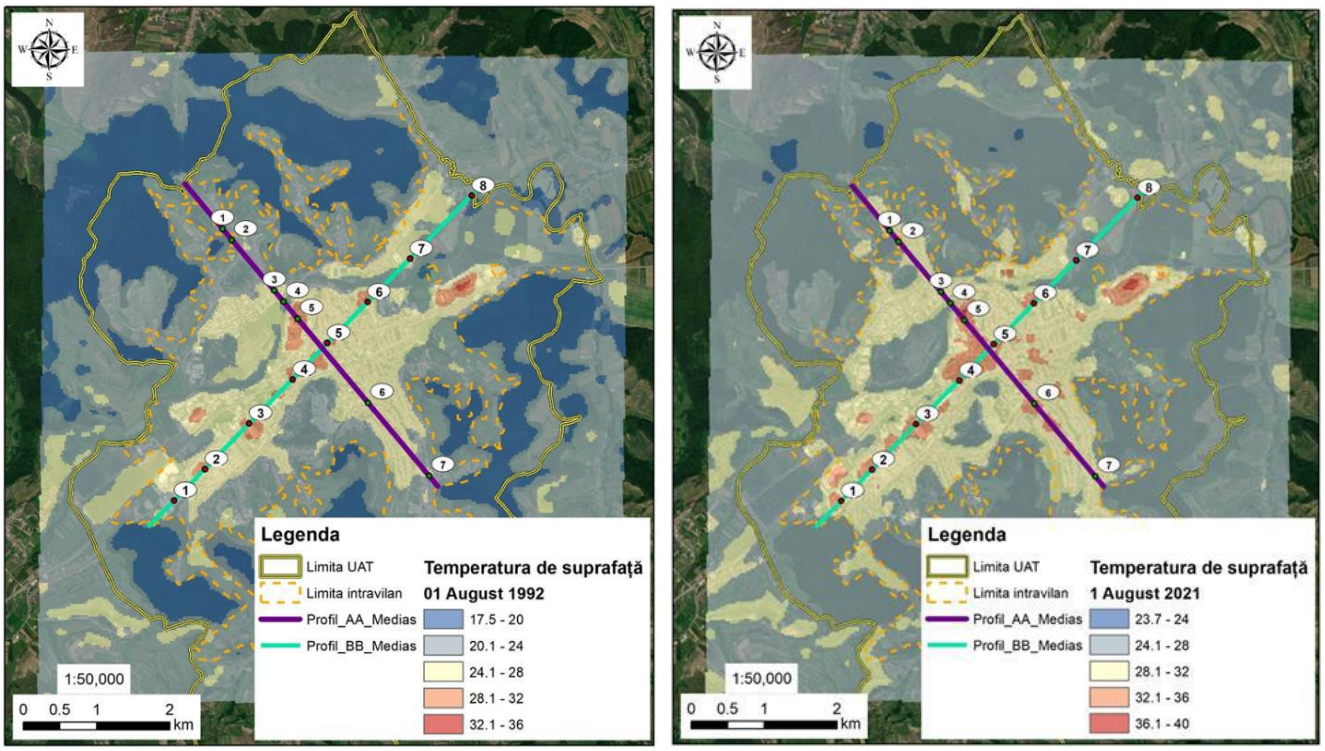


Figure 6. Spatial distribution of surface temperature in Medias on August 1st, 1992, compared to 2021 (SPAASC draft study)

The Risk and Vulnerability Assessment elaborated during the baseline development phase of the GCAP provided an analysis of **vulnerabilities**, pointing out that Mediaș scores the highest in terms of vulnerability in the following issues; it is to note that these vulnerabilities are coupled with low levels of adaptation capacity:

Environmental (natural-physical, climatic)

- Increase in frequency of extreme rainfall events leading to urban flooding
- Increasingly frequent and prolonged heat waves and urban heat island effect affecting the population and increasing energy consumption

Environmental (anthropogenic)

- Water, air and soil degradation and subsequent public health issues due to improper waste management due to insufficient technological capacity

Socio-economic

- Population decrease (16% decrease compared to previous census data)

- Presence of vulnerable groups (pertaining to minority ethnic groups and/or low income persons or persons receiving social benefits from the state)

Priority risks have multiple impacts on GCAP sectors, i.e. the increase in frequency of extreme rainfall leads to increased energy consumption for pumping and treatment of wastewater, or the increasingly frequent and prolonged heat waves and urban heat island effect leads to increased energy consumption, among others. Therefore, the proposed GCAP actions reflect these priorities and aim to enhance also the city's adaptive capacity in terms of climate hazards and risks.

Smart maturity of Mediaș

Conducting a smart maturity assessment was part of developing the baseline to the prioritization of environmental challenges and further on, elaborating the GCAP actions. The full assessment, including smart maturity analysed in each GCAP sector is available in a separate report which can be consulted at the Municipality of Mediaș.

The main conclusion of the smart maturity assessment is that **Mediaș is in its Initiating stage of smart initiatives and digital transformation**. This means that the Municipality acknowledges the importance of the smart components and tries to include such elements in all their initiatives. It also means that there is still room for improvements in all sectors and at the Municipality level. Still, it should be also acknowledged the fact that by the measures already taken, the Municipality is working toward creating an enabling environment for smart initiatives and digital transformation.

2.1. Green City environmental baseline

Developing the green city baseline involved documenting the environmental conditions and sectoral status of Mediaș, and to establish the challenges faced by the city. This exercise followed the methodology provided by the EBRD and developed in collaboration with the OECD: the pressure-state-response (PSR) framework categorises various, specific indicators to illustrate the causal linkages between environmental pressures, the resulting state of the environment, and associated responses by the local government, residents and the private sector. The identified challenges were prioritized through consultations with key stakeholders and translated into green city priorities.

Mapping the city's environmental performance included collecting and benchmarking state (air quality, water bodies, soil, water use, land use, biodiversity and ecosystem, mitigation and adaptation) and pressure (transport, energy and buildings, industry, water and waste management, land use) indicators against international standards. The Baseline Report presents a comprehensive analysis of these data registered in the Indicators Database. Both documents are stand-alone reports and can be consulted at the Municipality of Mediaș.

The infographic below highlights the main findings of this analysis.

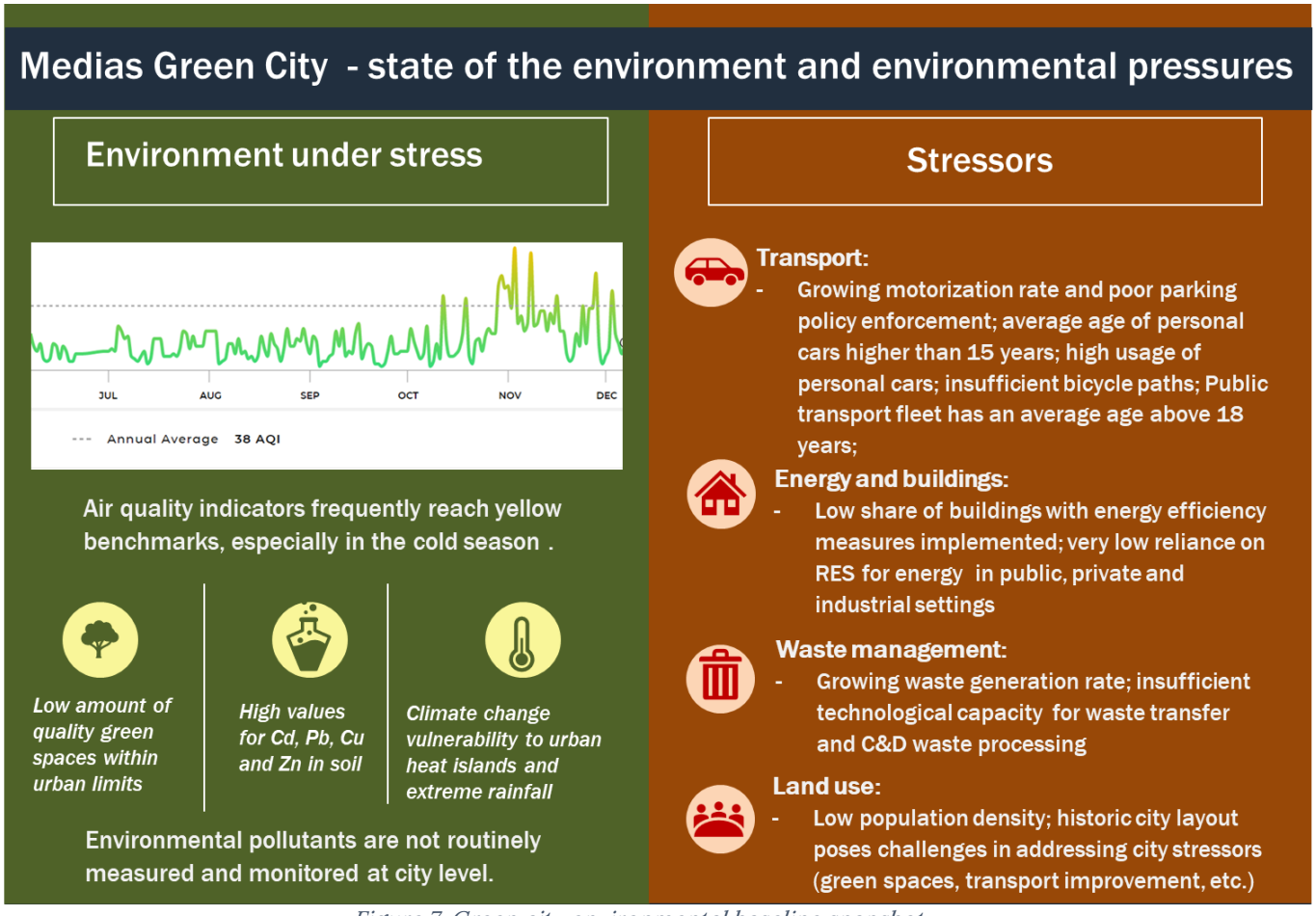


Figure 7. Green city environmental baseline snapshot

2.2. Green City environmental challenges

The benchmarking of the collected data allowed us to have a clear understanding of the environmental challenges the city is facing. In order to conceive a feasible, consequential action plan, which has the potential to transform Mediaș into a sustainable, green city, we identified the most important challenges and set up the priorities. This exercise, as mentioned in the sub-chapter on stakeholder engagement, was carried out with the active participation of local stakeholders.

Thus, the following priorities to address by the GCAP were determined.

Transport

- Parked cars on the streets/sidewalks in the centre and neighbourhoods lead to disruption and traffic congestion and discomfort for pedestrians/cyclists;
- Few crossings over the railway and river lead to congestion in the city centre at rush hour;
- Lack of smart bus stops;
- Reduced use of bicycle transport, low safety of cyclists in traffic;

Energy and buildings

- Investment in energy efficiency measures for public and private buildings needs to be improved;
- Investments in renewable energy sources are needed. High dependence on gas for heating;
- The public lighting system requires investments to reduce energy consumption;
- Lack of an integrated digital system for collecting data on energy consumption in public buildings;
- Lack of Smart Meters;

Industry

- Insufficient development of the tourism industry in Mediaș;
- Risk of loss of local industry brands, which are part of the city's heritage;
- Lack of labour force for the industry;
- Insufficient use of renewable energy sources in industry;

Water

- Lack of greywater reuse systems at the building level;
- The increase in the frequency of extreme weather events and the insufficiency of measures to delay the leakage of rainwater into sewage systems;
- Lack of smart meters;
- Investments in energy efficiency at the company level can be improved;

Waste

- Illegal dumping of construction and demolition waste;
- Poor enforcement of the law for the prevention of littering – the associated pollution of soil and water;
- Destruction/damage of bins, containers or vehicles by throwing hot materials (ash, cigarette butts, soot, etc.);
- Large amount of waste generated per capita;
- Low recycling and composting rates compared to benchmarks;
- Lack of equipment for shredding green and bulky waste;
- Lack of a real-time monitoring system for waste management;

Land use

- Insufficient comfortable and safe crossings over the railway and the Târnava Mare River, for all types of users;
- Uncomfortable and unsafe traffic for pedestrians and bicycles;
- Limited space available for the development of modern facilities such as dedicated lanes for public transport, bike lanes separated from car traffic, green corridors, etc.
- Insufficient mechanisms available to promote compliance with good architectural practices on private property.

3. Stakeholder engagement process

The stakeholder engagement activities aimed at involving a wide range of stakeholders in the GCAP development process: municipality departments, municipal companies, local businesses, civil society, youth and local citizens. A diverse set of tools were applied: physical and online meetings, online survey, digital tools (an online platform for voting) alike.

A novel element in the process consisted in **addressing the youth** (students from several high schools in the city) within the framework of dedicated workshops for the 2nd and 3rd stakeholder engagement events.

The process included **four major engagement events** as follows:

GCAP Launch event and 1st stakeholder consultation

The official launch of the GCAP project was held on the 21st of June 2022. A total number of 40 persons participated (55% female and 45% male, 14 from the part of the Municipality, 4 representing municipal companies, 2 from CSOs, and 20 external individuals).

The 1st stakeholder consultation was delivered as an informal discussion with the launch event attendants as well as an online survey for wider stakeholder contributions. The consultant team prepared the online survey, available through a QR code, where the participants could express their opinion on what can be improved in Mediaș, regarding the sectors analysed in the GCAP.

After the launch event, the stakeholder engagement survey was made public for all citizens of Mediaș. Dissemination activities such as direct email to all the participants, mass media posts and social media posts were published in order to ensure a high level of stakeholder engagement. The Municipality also published the QR code and link on its website.

Prioritisation of city challenges workshop and visioning exercise – 2nd stakeholder consultation

The 2nd stakeholder consultation consisted in two workshops, and made use of an online voting platform as well in order to engage as many stakeholders as possible.

The first consultation workshop took place on the 15th of November and the second on the 24th of November 2022. A total number of 45 people attended the events – 69% female and 31%

male. The first meeting was held with municipality representatives and companies, sector specialists, the business sector, academia, NGOs, civil society and regional authorities; the second meeting addressed the youth (students of several high schools in the city), where the students were invited to express their views on challenges and also vote as part of the prioritization exercise.

In addition to prioritising green city challenges, this workshop was also used as an opportunity to draft a vision and ideas of strategic objectives for the GCAP. Workshop participants from both stakeholder groups were asked to state key words or phrases which would define Mediaș in the future. This was an interactive exercise using digital means, and the results were displayed in the form of word clouds, with the size of the words in the word cloud being proportionate with the number of times it was suggested. The results were used to draft the vision statement and strategic objectives for Mediaș GCAP. These were then discussed and decided upon in a subsequent meeting with the working group.

The word clouds resulting from the 2nd stakeholder consultation meeting, which constituted the starting point in drafting the vision statement and strategic objectives of GCAP Mediaș are depicted below.

Figure 8. GCAP vision and strategic objective drafting exercise with workshops participants (municipality and other key stakeholders- left, youth groups - right)

Workshop to prioritize actions – 3rd stakeholder consultation

Organized on the 2nd and 3rd of March 2023, it aimed at the prioritization of the actions foreseen to be included in the GCAP based on the long list of actions prepared and consulted with stakeholders in the city. Two dedicated meetings have been organised to discuss the actions as well as an online voting platform was provided, where people could read additional information about the actions and prioritize them. The prioritisation survey was completed by 57 respondents – 70% female and 30% male.

Workshop to present GCAP – 4th stakeholder consultation

The workshop was organised on the 25th of July in the main hall of Mediaș Municipality and included participants from municipality departments and key stakeholders in the city. The municipality invited several groups of stakeholders to the meeting, which included but were not limited to representatives of municipality departments and municipal companies, representatives of the educational sector, private sector companies, representatives of youth groups and members of the civil society.

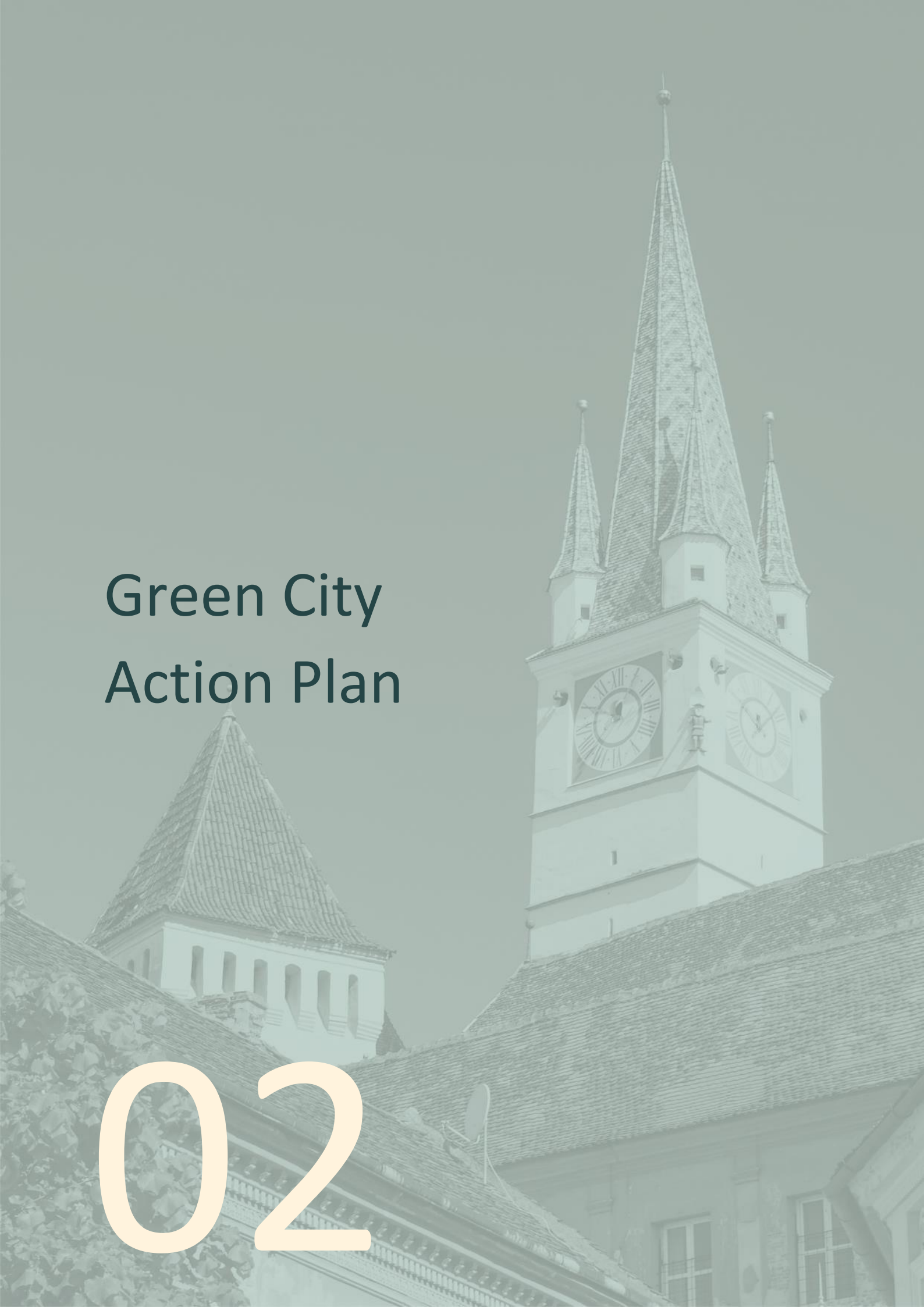
The event was also notified on the municipality's website (http://www.primariamedias.ro/portal/medias/portal.nsf/AllByUNID/D915180E0225B89CC22589F2003EC23A?OpenDocument – accessible from the municipality's main web page, Announcements section) as well as on EBRD's Green Cities website (https://ebrdgreencities.com/news-and-events/events/media-green-city-action-plan-4th-stakeholder-consultation-25-07-2023/).

Participants were invited since the beginning of the workshop to consult the actions with complete details on the dedicated website www.paovmedias.ro and submit any questions or comments to the consultant via the website contact form within the next two weeks. During the workshop several of the participants were active, with questions and discussions focused on land use actions, waste management actions, particularly the one regarding textile waste management, as well as the transport action related to comfortable and safe traffic for sustainable mobility users through investment and traffic reconfiguring.

The workshop included a total of 42 participants (67% female and 33%male), including the GCAP working Group within the Municipality, representative of EBRD's London office and the Consultant.

The stakeholder engagement process conducted for the GCAP development was inclusive and took into consideration gender equity principles. A total number of 187 persons participated physically at the stakeholder engagement workshops organised during the GCAP development process. Out of these, 66% were women. The detailed breakdown of participants per each meeting is presented in the table below.

	Number of participants		
	Total	**Female**	**Male**
Launch event and first stakeholder consultation meeting	40	22	18
Second consultation workshop - Prioritization of city challenges	45	31	14
Third consultation workshop - Vision, Strategic Objectives and Prioritization of GCAP actions	64	45	19
Final consultation workshop - GCAP presentation	38	25	13
Total	**187**	**123**	**64**
in % out of total		**66%**	**34%**



Green City Action Plan

02

4. Green City vision and strategic objectives

The Green City vision of Mediaș is to have a

A fortress with a vibrant green urban culture

Mediaș is a medieval city which has a very high potential to develop as a sustainable tourism hub and centre for a vibrant green urban culture. The city is home to the historic setting of Romanians, Hungarians and Saxons harmoniously living together and creating a cultural richness that few cities in the country can relate to.

Adding to this potential is the developed professional knowledgebase, skills and craftsmanship that have shaped the city in the last century. It is this cultural identity, local skills and vibrant potential, together with the beautiful natural setting that the city aims to value in its goals to become an example of sustainable development and climate-mindful urban regeneration.

The advantages of the city include the highly developed professional sector in terms of skills and knowledge and its rich cultural and historic character, as well as the easy-going, slower-living vibe of a boutique city that is modern Mediaș. Larger and more developed cities located around Mediaș nowadays have considerably more opportunities for working and spending time but lack the wellbeing factor and the gift of having the time to enjoy the city in a leisurely, stress-free way, which Mediaș still has.

Creating a pleasant, comfortable and highly gratifying city with ample opportunities for leisure and business, while preserving and enhancing its features will establish the foundation of the Green City Mediaș which citizens and tourists of all ages can enjoy.

In what follows, the Strategic Objectives serving this vision are briefly presented.

The fortress with a green urban culture

SO 1
Build synergies based on current city strengths

SO 2
Future-proof green urban infrastructure for a comfortable city

SO 3
Harness and develop existing entrepreneurial spirit

SO 1

Build synergies based on current city strengths

The municipality is constantly seeking to improve the livelihood and to maximise the development opportunities for all its citizens. More and more effort is needed to be invested in building synergies between different actors and stakeholders at local and regional levels to elevate the city's profile and transform it into an attractive urban environment both for its citizens and people who will visit it.

The strengths of Mediaș are mainly related to its geographical position, the historical background, cultural diversity and the natural capital available in the urban area or its proximity. The municipality is very much aware of these strengths. Also, the municipality knows its shortcomings related to human resources and the challenge a small city is facing when considering the overall ageing process of its population, limited resources, and administrative capacities.

By implementing the current GCAP, the city will strive to engage with the key stakeholders in order to establish functional partnerships with the municipality.

Synergies between different actors will lead to combine effects which will have a greater impact than the sum of individual impacts generated separately by these stakeholders. Thus, the partnerships will be the fertile ground for the development of investment projects in education, research, innovative and creative businesses which will enable the city to attract more young people and turn it into an attractive, environmentally and socially sound city.

SO 2

Future-proof green urban infrastructure for a comfortable city

In order to achieve its vision of promoting a vibrant green urban culture, the city needs to improve the level of comfort of its citizens and visitors. Comfort and wellbeing needs to be prioritised in the city infrastructure in relation to transport, energy and buildings, waste management and land use most. Necessary measures to prepare industry and the water sector to existing and future challenges are also included in this strategic objective.

All actions related to improving the energy and general efficiency, safety and reducing emissions from the transport, energy and buildings and waste GCAP sectors are the main tool in achieving this strategic objective.

Actions related to land use focus on improving the city layout to better accommodate modern urban infrastructure and functionalities but also to increasing the comfort and wellbeing of citizens and visitors. Proposed measures of increasing the share of green infrastructure would also better prepare it to face climate induced hazards, enhance social cohesion and mitigate climate emissions.

SO 3

Harness and develop existing entrepreneurial spirit

Considering the city's strengths, economic progress is achievable by promoting non-polluting industries, SMEs, services and sustainable tourism. The municipality has the capacity to provide institutional and administrative support to these initiatives to ensure their success while promoting environmentally friendly practices and economic development.

To address the issue of local development from a business perspective, a holistic approach is needed that includes the encouragement of a growth mindset among individuals and businesses in the city, provision of access to resources such as mentorship and training and of a supportive culture for experimentation, risk-taking, and learning from failure.

It is important to support networking and collaboration among entrepreneurs and businesses, create opportunities for experimentation with sustainable initiatives and technologies through incubators and accelerators.

The objective is to encourage green investments, develop regulations and policies that support sustainability, educate and engage the community on the importance of it and the opportunities that exist for individuals and businesses to contribute to the development of the city. This achievement will not only drive economic growth but will contribute to the creation of a future-proof city.

5. Green City actions

The core chapter of GCAP includes the detailed description of the short-term actions.

The short-term actions have been designed to address priority challenges in an integrated manner and help achieve the three strategic objectives which accomplish the vision of Mediaș Green City. Each of the actions lists on the cover page the key challenges and vulnerabilities addressed by the measures included in the action, as well as the main and secondary strategic objective(s) it helps achieve.

First, an **overview of the actions** is provided in a table. The strategic objectives are marked with **P** ('primary') whenever the action specifically targets one of the three objectives, and with **S** ('secondary') when the action contributes also to other specific objectives.

Regarding the structure of the description of the actions, the following are to be noted:

- The first page indicates with colour-fill icon (i.e. SO1) the primary, and with no-fill icon (i.e. SO1) the secondary objective.
- The policy framework for all actions consists of the main policy documents listed under the sub-chapter *Policy landscape relevant for the GCAP* in **Chapter 2 – City overview**.
- Under the Key Stakeholders sections, only stakeholders eventually responsible for the implementation of the actions are indicated. Additional stakeholders, such as residents or tourists are not mapped in this phase of the project.

5.1. Overview of actions

Sector	Action		SO1	SO2	SO3
Transport	1.	Optimising the public transport network	S	P	
	2.	Transforming the railway station into a multimodal hub	S	P	S
	3.	Development and enforcement of a coherent parking policy	P	S	
	4.	Road maintenance programme		P	
	5.	Comfortable and safe traffic for sustainable mobility users through investment and traffic reconfiguring		P	S
Energy & Buildings	6.	Smart and efficient public lighting		P	
	7.	Public buildings energy efficiency and digitalization programme		P	S
	8.	Deep retrofit of the historic building “Casa Armatei”	S	P	S
	9.	Energy efficiency programme in private buildings	S	P	S
Industry	10.	Promote and support local brands with tourism activities	S		P
	11.	Promote green industry and facilitate the development of local services and small production sector	S		P
Water	12.	Rehabilitation and expansion of water and wastewater networks		P	
	13.	Improvement of the anaerobic digestion process in the WWTP		P	
	14.	Set up drinking fountains and public toilets in relevant areas of the city		P	S
	15.	Installation of a new meteorological station	S	P	
Waste	16.	Investment in an automatic sorting line and shredder for green waste	S	P	S
	17.	Investment in additional capacity for waste management	S	P	
	18.	Set up a system for the sound management of textile waste	S	P	S
Land use	19.	Make riverbanks more accessible and attractive	S	P	S
	20.	Improve and greenify schoolyards	S	P	S
	21.	Develop sustainable touristic features connected by green routes	S	P	S
Cross-sectoral	22.	Sustainable tourism strategy	P	S	S
	23.	Enhance the capacity of local administration to implement the GCAP	P	S	S
	24.	Adapt the education system to future development needs	P	S	S

ACTION 1- Investment

Optimizing the public transport network

SO 1 SO 2

ESSENCE

Optimise the infrastructure and operations of public transport, develop available fleet in order to reduce its impact on the environment.

CHALLENGE/VULNERABILITY ADDRESSED

- Insufficient infrastructure (absence of dedicated lanes, outdated bus-stops)
- Insufficient coverage of the public transport network
- Aging vehicle fleet with high level of pollution and low level of comfort for the users

BENEFITS

- Increased number of public transport users, lowering the private car use, decreasing air pollution, lower exploitation cost (fuel savings) and more reliable public transport
- Better coverage of the transport needs in the areas with limited access to public transport; decrease of congestion of bus traffic leading to an increase of punctuality and reliability.

TIMEFRAME	GHG SAVINGS	CAPEX
2024-2027	621 t CO2 eq/year	2,290,000 €

Context/Description

Due to the congestion problems in the city, public transport is facing some serious issues concerning its service and reliability. The bus service is therefore not able to provide an efficient way of traveling. Due to limited space available for improving the network, priority must be given to bus lines situated in highly congested areas. Designated (or priority) lanes is a commonly applied method allowing to tackle the problems of low speed at the bottleneck. Designating priority lanes on the roads with 2x2-lanes profile is crucial. In this way busses can complete their trip without the disturbances of other traffic and a smooth flow is guaranteed on most of the streets.

The local public transport in the municipality is provided by Meditur - the municipal public transport company. It owns 44 vehicles for passenger transport, this fleet consisting of 28 buses, 5 minibuses and 11 trolleybuses. However, the bus and minibus fleet represents a higher associated pollution factor, with most vehicles having EURO 2 engines (15 buses and 1 minibus), while there is only one vehicle with the most preferable fuel standard, EURO 6. The public transport network is organized around the major traffic generators located on the outskirts of the city (the industrial areas along DN14 and the residential districts of Gura Câmpului, Gloria and Moșnei, ensuring their connection by crossing the historic centre. Since all public transport lines converge towards the centre, traveling through important links such as Gura Câmpului and the southwest industrial area is much more difficult with public transport than with other means of transport. Although the network serves most areas of interest, the frequency of vehicles is low. As a compact city that can easily be travelled by bike or on foot, often the low frequency of public transport makes this service less attractive, especially from a travel time perspective. Part of the public transport stops has already been modernized to provide the necessary facilities to ensure safe waiting for public transportation users, however they still lack useful features such as real-time information on wait times. The renewal of public transport stops must be continued to renew all available outdated infrastructure; the new stops must be installed including all the necessary facilities from the beginning.

The public transport service quality is not sufficient. Especially in the suburbs, the service underperforms due to low frequency and long waiting lines. Alignment and increasing frequency (by purchasing or redistributing buses) can lead to a better coverage ratio of the suburbs. A large part of the public transport fleet in Mediaș is still outdated. Renewing the (trolley)bus fleet is a high priority towards a greener, more comfortable, and reliable (trolley)bus service, which is at the same time a future-proof tool for the possible introduction of the Low Emission Zone (LEZ). Here lies the opportunity to go for the economic and environment-friendly fleet with large double doors and low floor boarding for better accessibility. Next to the fleet itself, the contact lines for the trolleybuses also need renovation. Also, the public transport company has implemented some smart measures such as fleet tracking system and introduced smart ticket selling points, and they are aiming at developing and implementing an e-ticketing system.

Targets

- At least 5% reduction of air pollution and GHG emissions from public transport due to fleet renewal after action implemented
- 50% of bus fleet contains Euro 4 or higher in 5 years after GCAP approval
- Less than 75% of the public transport busses runs on diesel in 5 years after GCAP approval
- Pass regulations for gender equality for public transport drivers
- Increase the number of public transport users by 30% in 5 years time, averaged by population
- Functional public transport e-ticketing system.
- Increased average travel speed for buses on the major thoroughfares by 10% (installing priority bus lanes on 2x2 roads)

Implementation steps

1. Develop a plan for acquiring low-emission public transport vehicles (procurement, available financial resources, timing).
2. Invest in capacity building throughout the entire life cycle of the bus (personnel for procurement, planning, exploitation and bus drivers, maintenance staff, and the technical workshop).
3. Monitor the state of the trolleybuses and set up a maintenance plan.

Key stakeholders

Municipality of Mediaș – decide; Meditur – design and implement

Estimated costs (CAPEX and OPEX)

Activity	CAPEX (€)	OPEX (€)
Replacing rolling stock of fleet- electric (either battery powered buses or IMC trolleybuses), 300,000 € per bus - estimated total 5 buses	1,500,000	25,000
Replacing and extending the trolleybus networks (incl. priority lanes), 200,000 € per km – estimated 2 km	400,000	40,000
Bus stop infrastructure, 20,000 € per stop – estimated at least 10 stops	200,000	5,000
Development of smart components related to public transport – e-ticketing and digital route monitoring and optimisation software	150,000	1,500
Low Emission Zone (LEZ)	40,000	4,000

Source of financing

Municipality budget, IFIs, EU Funds

Social and gender aspects

- Inclusivity and accessibility for all users: optimalisation of the public transport system must take the following aspects into account:
    - Safety and comfort with attention for more vulnerable users (children, elderly, disabled people etc.) – on short-term this should be the focus of the city. The new public transport vehicles will have facilities for increasing comfort of disabled person and elderly.
    - Accessibility of public transport (information search, trip planning etc.)
    - Accessible infrastructure, optimised for people with physical or mental disabilities, visual impairment, deaf or hard of hearing etc.
    - Accessible vehicles (ramp and reserved places for wheelchair users, oral and written stop announcement, highlighting with bright colours etc.)

Smart and digital aspects

- App for trip scheduling and route-tracking, indication of (trolley)bus occupancy level. Explore integration possibility with existing open-source applications. E-ticketing.

ACTION 2 - Investment

Transforming the railway station area into a multimodal transportation hub

SO 1 SO 2 SO 3

ESSENCE

Transformation of the railway station area into a multimodal hub: train – (trolley)buses – pedestrians/cyclists – private/shared cars, including the infrastructure for e-vehicles and a wide range of additional services.

CHALLENGE/VULNERABILITY ADDRESSED

- Poor interconnectivity between different transport modes, resulting in unsatisfying route planning and poor attractivity of sustainable transport modes.

BENEFITS

- Reduced number of cars in the city centre, railway station and surroundings
- Streamlined connections between the city and neighbouring settlements with different modes of transport.
- Multiservice hub also providing guidance and information to the tourists/visitors of Mediaș
- Access to shared mobility facilities

TIMEFRAME	GHG SAVINGS	CAPEX
2024-2027	197.1 t CO2 eq/year for an estimate reduction of 50 cars present in the city center	1,780,000 €

Context/Description

Parking pressure and congestion at some traffic junctions are the main mobility problems in Mediaș. The prominent presence of cars in the urban transport network is the culprit. Shifting this dominance and integrating different modes of transport can be a solution to this issue. The centrally located railway station can become a multimodal hub, that will host a mobility service infrastructure where people can easily switch between different modes of transport. The area of the railway station is already functioning as a transport hub, as local bus lines, urban-rural minibuses, trains and taxis all have stops there.

This hub should give access to public transport, (e-)bikes, (e-)scooters, charging stations for electric vehicles and parking areas for private cars. Besides mobility alternatives it is also desirable to offer other additional services such as deliveries (food, groceries, clothes, etc.), lockers, laundry salons, bike repair tools and informational displays, incl. various information for the visitors of Mediaș (maps, starting point of tourist routes, tourist attraction poles etc.).

When outlining the plan for a multimodal hub, the municipality has the power to control and decide the providers. In this way, it is possible to choose which shared mobility is needed and desired. In Mediaș, the focus should lie in keeping a large share of the cars out of the city center.

Focusing on the last mile (or first) of the journey of the commuter is a challenge. Shifts in this domain can be reached by creating support and commitment, involving citizens in the early stage of the process etc. For example: campaigns, information events, participation evenings, etc., however, mainly by providing convincing alternatives.

Targets

- Reduction of private cars presence in the city center with 50%, in 5 years after GCAP approval, compared to baseline (year previous to approval)
- Increase usage of public transport with 50% in 5 years after GCAP approval, compared to baseline
- Increase usage of alternative micro-mobility facilities with 50% in the city center, in 5 years after GCAP approval, compared to baseline

Implementation steps

1. Feasibility study including detailed design plan for the new multimodal transportation hub.
2. Strengthen the capacity of the municipality for infrastructure acquisition procedures through knowledge and experience sharing with good practice examples from EU.
3. Tender the construction of the hub and the acquisition of equipments for shared mobility, charging stations, services, multi-storey modular and sustainable car and bike parking, etc.

4. Construction and implementation of multimodal hub
5. Evaluating, managing, and monitoring the multimodal hub

Key stakeholders

Municipality of Mediaș – Department of Transport and Communications – decide, design and implement; Meditur - consult

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Feasibility study (full inventory of the railway station area, infrastructure, services etc.) and creating design plan (including citizen participation)	100,000	
Construction of a multi-storey modular and sustainable car and bike parking, including parking spaces for people with reduced mobility, shared mobility, EV charging stations	1,500,000	178,000
Lockers for minimum 40 boxes	10,000	
Station of 6 shared bikes/e-scooters	25,000	
Digital displays and data infrastructure, Wi-Fi hotspots, etc.	40,000	
Theft-proof and covered bike park	25,000	
Waiting infrastructure including seats and garbage bin	80,000	

Source of financing

Municipal budget, National Government, IFIs

Social and gender aspects

the design of the new railway station multimodal hub will take the following aspects into account:

- Accessible vehicles (ramp and reserved places for wheelchair users, oral and written stop announcement, highlighting with bright colours)
- Safety and comfort with attention for more vulnerable users (children, elderly, disabled people)
- Accessibility of public transport (information search, trip planning)
- Accessible infrastructure, optimised for people with physical or mental disabilities, visual impairment, deaf or hard of hearing

Smart and digital aspects

Digitalisation: on long-term, develop an integrated app for trips scheduling and route-tracking, corelate with the e-ticketing system for public transport if possible, indication of (trolley)bus occupancy level, multimodality, informational displays providing time schedules, tariffs, weather information.

ACTION 3 – Policy and investment

Development and enforcement of a coherent parking policy

SO 1 SO 2

ESSENCE

Updating the current parking policy in the city of Mediaș taking into consideration the quality and availability of the public space

CHALLENGE/VULNERABILITY ADDRESSED

- Parking pressure leading to poor quality of public space
- High level of 'asphaltisation'
- Little enforcement of the parking regulation

BENEFITS

- Improved enforcement and increased parking charges encourage more use of public transport and of biking/walking, and less use of cars. Reductions in car traffic will contribute positively towards liveable streets, an attractive local economy, and will help to reduce road accidents.
- Parking policy which prevents obstructions for pedestrians can bring benefits of accessibility and improved safety, especially for people with limited mobility and for children.
- Net revenue generating action (revenues from parking and fines)
- Environmental benefits: reduced losses of open spaces and biodiversity, the reduction of GHG emissions and air pollutants occurring while cars are cruising for parking.

TIMEFRAME	GHG SAVINGS	CAPEX
2024-2027	3.3 t CO2 eq/year for an estimate reduction of 50 cars/day parked in the city center	655,000 €

Context/Description

Public space in Mediaș is sacrificed for the sake of parked cars. Organized parking is an underestimated asset by the city since it generates income and serves many goals (accessibility, liveability, the attractiveness of the city centre etc.). The economic value of organised parking will even increase when parking becomes a place to charge the battery of electric vehicles.

Also, each parking area should include environmentally friendly elements such as bike parking space, green facades, and rainwater harvesting systems as well as smart components, such as intelligent monitoring and ticketing system, mobile vehicle plate recognizing system (with a car or parking steward), etc. Increased revenue generation from existing parking facilities can be ringfenced and explicitly used for the development of alternative modes, i.e. infrastructure improvements, incentives, and subsidies.

One of the main challenges that the city has is the parking of private vehicles in the neighbourhoods. There are several areas where small streets situated in neighbourhoods are blocked by parked cars. Furthermore, parked cars are also obstructing public transport vehicles. The new parking policy should focus on all parking areas of the city and the enforcement mechanism both for the city centre and the residential areas. Digital solutions should also be included as an embedded aspect in the parking system.

Targets

- Reduced number of on-street parking spaces on the public domain in the city center with 50%, in 5 years after GCAP approval
- All new urban development and redevelopment projects will be conceived in accordance with regulations on parking and accessibility

Implementation steps

1. Make an inventory of all actual parking situations in selected zones (occupation, duration, vehicle type, departure point of vehicles).
2. Assess the enforcement measures (regulations, capacity, practice) related to parking in Mediaș and include digital and smart elements for increasing the enforcement capacities.
3. Update the parking regulations for urban developments, based on best practices; align these regulations with the parking strategy in the city center; adapt tariffing and licensing for public parking spaces (roadside parking and parking lots), with differentiation of tariffs based on location.
4. Prepare the feasibility study for the pilot project and start the implementation.
5. Raise awareness and gain acceptance of the parking policy.

Key stakeholders

Municipality of Mediaș – Department of Transport and Communications – decision, design and implementation

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Full inventory of actual parking situation	10,000	
Roll-out of an enforcement system	300,000	
Public Parking System update	45,000	4,000
Setup capital cost including equipment and training for the staff, ticket and permitting process, equipment for maintenance	300,000	10,000

Source of financing

Municipal budget, National Government, IFIs

Social and gender aspects

- Ensure that all categories of persons including vulnerable groups such as persons with disabilities will have access to the newly developed infrastructure.
- Level of accessibility, lighting, colour coding, safety, cleaning and maintenance level, activity, customer assistance amenities etc. will be considered when designing and operating the new parking facility.
- Employment opportunities.

Smart and digital aspects

The development of the parking system will include digital solutions, such as license plate recognition system and payment through digital means. EV charging and car sharing options should be featured in ‘best spots’ to promote a more sustainable car usage behaviour.

ACTION 4 - Investment

Road maintenance program

SO 2

ESSENCE

Rehabilitation of the urban road infrastructure to improve its overall quality and to be able to proactively respond to the future mobility challenges and strategic goals

CHALLENGE/VULNERABILITY ADDRESSED

- Poor walking and cycling infrastructure in the city
- Poor attractivity for active modes (pedestrians and cyclists)
- Poor public transport infrastructure
- Traffic safety
- Noise pollution

BENEFITS

- Maintenance of the durability and quality of the infrastructure
- Direct cost reduction on the long term (for example, costs which could be necessary for major reconstructions)
- Indirect cost reduction (e. g. social costs related to traffic accidents)
- Stimulating mental and modal shift from cars to more sustainable transport modes
- Reduced journey time
- Improved road conditions will reduce congestion, emissions and noise pollution, and fuel consumption.
- Use of new technology to build more sustainable roads with economic use of cement reduces GHG emissions (cement contributes to GHG emissions: every ton emits up to 622 kg CO_2)

TIMEFRAME	GHG SAVINGS	CAPEX
2024-2028	2% contribution to the reduction of total emissions resulting from road traffic; further pollution reduction as program is upscaled	5,100,000 €

Context/Description

Roads in Mediaș are in moderate to poor condition. There is a high need for road maintenance at municipal level. Maintenance and rehabilitation of roads should be based on a strategic plan, leading to an investment and maintenance programme that includes urgent repairs as well as structural improvements.

Prioritizing investments and maintenance work goes hand in hand with drawing up a multi-year budget. The setting of priorities depends on a multitude of factors, which are determined by means of a multi-criteria analysis and a risk assessment.

Proper planning and coordination of the roadworks is essential: for example, the works must be coordinated with the necessary works on the drainage system and the implementation of the blue-green network. The use of sustainable techniques and materials will be an essential part of the action, which will also consider the full rehabilitation of the local roads, meaning that besides improvement to the pavements, the rehabilitation will also include organizing parking, installing street furniture, planting trees etc., thus making the streets more pleasant for walking and cycling.

The programme must take into account budgetary constraints, which means that strict phasing is required. In addition to the tendering of contracts, the institutional strengthening of municipal services will be instrumental in ensuring the success of the programme – this can be in relation to project and programme management, procurement, engineering, design, site inspections, quantity surveying and cost consultancy, and so on.

Road maintenance and rehabilitation is needed city wide, but priority should be given to certain axes that play an essential part in the transport system.

Targets

- Rehabilitate 10% of the roads per year, over a course of 5 years
- All roads to benefit from a systematic method of road maintenance and associated facilities process (pavement management system – includes sidewalks, stormwater drainage, etc.)

Implementation steps

1. Prioritize all roads based on their function within the network
2. Design a feasible and realistic investment program for road maintenance
3. Continue investments into road rehabilitation based on the updated prioritization
4. Introduce a pavement management system

Key stakeholders

Municipality of Mediaș – Department of Transport and Communications – decide and implement

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Developing an investment plan for road rehabilitation and maintenance, including procurement documentation	50,000	
Road rehabilitation – investment foreseen for 5 years, 1,000,000 €/year	5,000,000	500,000
Introduction of the pavement management system	50,000	

Source of financing

Municipal budget, National Government, IFIs

Social and gender aspects

- All the investments in the road rehabilitation and maintenance will take into consideration inclusive design elements such as levelled crossings, street lights with sound, pedestrian walkings specifically designed for persons with disabilities;
- Equal opportunities for women and community-based organisation to participate in the decision-making process and selection of roads to be rehabilitated Introduction of safety measures targeting reduction of car incidents at city level and especially around schools, kindergartens, markets, etc.
- Encouraging public participation of women and other local organisations via consultations at neighbourhood level for identifying the local needs and specific measures required for enhancing the quality of life in the city

Smart and digital aspects

Digital solutions can make an important contribution to optimizing roads and the public domain in general. For example, a system can be set up whereby citizens can report defects, so that this can be included in planning maintenance. This platform can also be used to communicate about planning, and to propose options to reduce nuisance during road works.

ACTION 5 - Investment

Comfortable and safe traffic for sustainable mobility users through investment and traffic reconfiguring

SO 2 SO 3

ESSENCE

Improving the cycling and walking network, providing bicycle lanes on all newly built or renovated roads. Increasing the usage of public transport by prioritizing and creating dedicated lanes on rehabilitated roads.

CHALLENGE/VULNERABILITY ADDRESSED

- Poor walking and cycling infrastructure in the city.
- Car-focused transportation system
- Traffic safety
- Limited road width to fit dedicated public transport lanes

BENEFITS

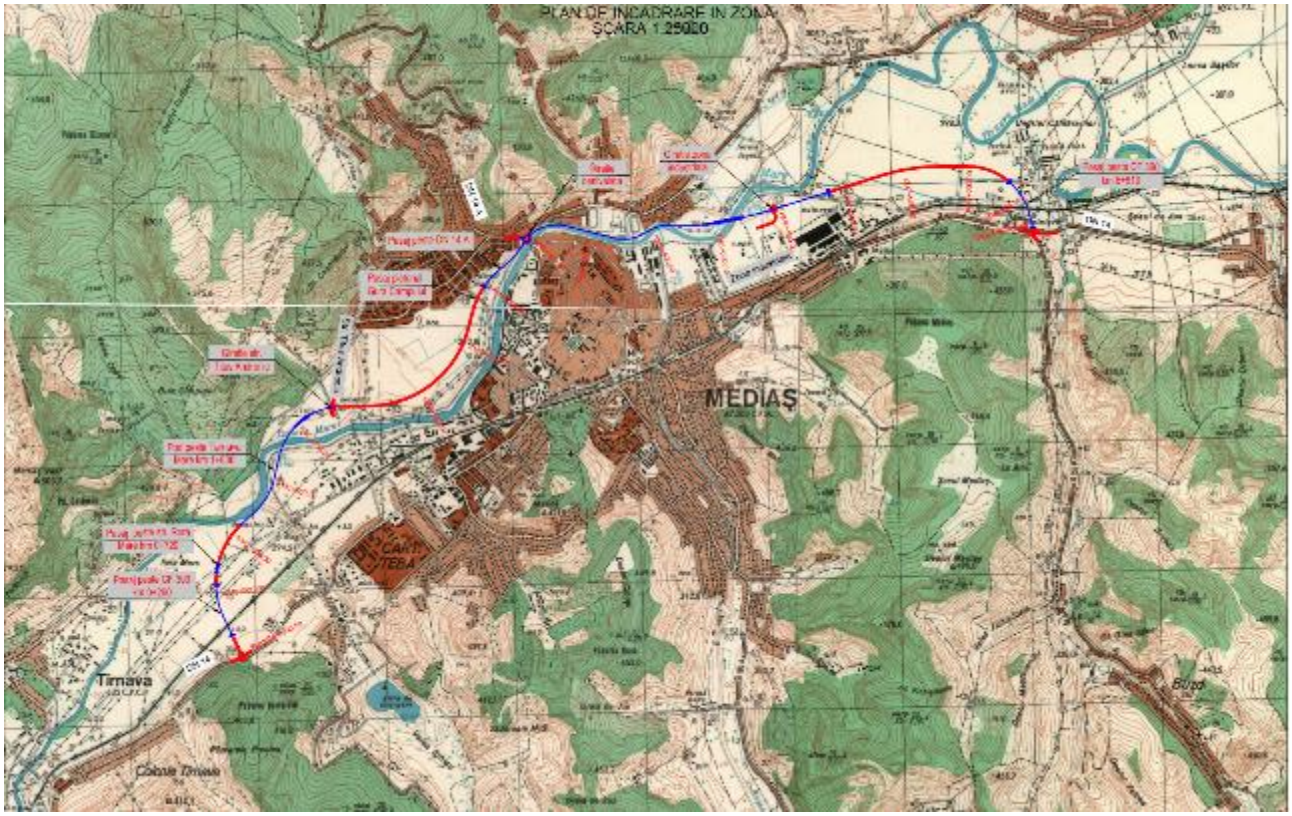
- The realisation of a network for pedestrians and cyclists will stimulate a modal shift to these modes of transport. This will significantly decrease GHG emissions, the volume of dust and other air pollutant emissions, also this may lead to better health of people.
- The project has a high potential to positively impact tourism. Improving the safety of cyclists encourages others to start cycling.
- Increased active transport provides opportunities for social interaction and can host benefits for communities.
- Some groups of people with lower incomes may benefit from the cheap form of mobility provided by cycling. It increases the mobility for those groups with relatively low levels of car ownership.

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	2% reduction of pollution from cars	203,950,000 €

Context/Description

Cycling and walking are healthy, environmentally friendly and flexible transport modes. Well developed cycling infrastructure and pedestrian lanes encourage citizens to cycle and walk more. Combined with sightseeing and connecting green and blue elements in the city, this can also contribute to bicycle tourism. In line with international good practice, cycle and walking facilities should be planned, designed and installed based on the principles of visibility, accessibility, safety and security, maintenance and monitoring, availability and capacity, connectivity and attractiveness. New areas for cycle parking need to be located strategically throughout the city (see also Action 3), preferably close to areas where there are significant concentrations of tourists, commuters and students. In the near future, a new bicycle path is planned at the northern section of the Târnava Mare River, connecting the Gura Campului bridge with the Gaz Metan Mediaș stadium.

The road rehabilitation and maintenance programme (foreseen in Action 4) as well as the investments in the rapid transit road will all contribute to better transport infrastructure, safer mobility conditions for all users and better living conditions for Mediaș citizens.



At present, the city is crossed and divided in two parts by a national road which is used for freight as well. This is the main reason why the municipality has managed to develop a project for a Rapid Transit Road (RTR) which will deviate all the heavy trucks which are currently crossing the city each day from the city center and the main arteries of the city. This will enable the city to reconfigure the roads and their destinations (see also Action 1 on optimising the public transport network) once this rapid transit road will be finalized. Once finalised, the RTR will be part of the national roads network and the previous section of the national road

passing through the city will become a street, to be managed by the municipality. This will enable the municipality to optimise transport in the city and develop public transport priority lanes and other sustainable mobility features on this major artery crossing the city.

The rapid transit road project is in its feasibility study development stage and will be a 2-lane road with a total length of approximately 8.4 km. The high cost for this road is due to its complex design which includes several bridges, a suspended roundabout and several sections suspended above the river. The project was already included in a priority list of investments financed with the support of National Resilience and Recovery Programme. Maintenance of the RTR will likely be ensured through national funds.

The RTR will also include:

- 2 bridges over the railways tracks
- 3 roundabouts out of which, one will be a suspended one over the existing road and bridge that is situated at Baznei street junction with Stadionului street
- 2 overpass above existing roads or pedestrian/cycling bridges
- 1 bridge over Târnava Mare river and one small bridge over a water stream.

The Rapid Transit Road is a must for the city since the current national road used for transit is a 4 lanes road that stretches from the eastern to the southwestern part of the city and in the city center is limited to 2 lanes. There is also only one crossing over the railway tracks and this bridge is also one of the busiest junction points in the city. This puts a lot of pressure on the public transport system as well. The completion of the Rapid Transit Road will allow the municipality to reconfigure the streets that are currently used for transit and to allocate dedicated space for public transport and for micro-mobility vehicles.

Targets

- 8.4 km of Rapid Transit Road completed by 2028
- 5 km of cycle and pedestrian lanes developed by 2028
- Increased use of active transport (cycling and walking) by 20% by 2030, compared to baseline year 2024
- Improve traffic safety for cyclists and pedestrians – reduce by 50% number of accidents involving cyclists and pedestrians in 2030 compared to baseline year 2024
- Dedicated lanes for public transport vehicles on roads that are no longer used for transit, after RTR completion

Implementation steps

1. Rapid Transit Road – organise tenders for construction and supervision of work; construction and commissioning
2. Develop a coherent plan for cycling and walking routes including missing links and intersections with traffic lights
3. Tender process for selection of entrepreneur and consultant for construction works and traffic light optimization
4. Organise campaigns to promote the use of the network by showing the results and advantages (communication & sensibilization: modal shift, reduce impact during

working phase, create awareness, counting billboards indicating how many cyclists are passing on a daily or annual basis)
5. Redesign the streets that will no longer be used for transit purposes and give priority to public transport vehicles and micro-mobility

Key stakeholders

Municipality of Mediaș – Department of Transport and Communications – design and implement; National Road Company – inform and consult.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Construction of bike lanes (1 km/year, 5 km in total),	1,500,000	365,000
Construction of pedestrian routes (1 km/year, 5 km in total)	1,000,000	
Installation of smart traffic lights (1 intersection/year, at least 3 intersections in total)	450,000	
Tunnel/bridge for pedestrian/cyclist (per unit)	1,000,000	
Rapid Transit Road – maintenance to be covered by national authorities	200,000,000	-

Source of financing

Municipal budget, National Government, IFIs, National Programme for Resilience and Recovery

Social and gender aspects

- Make walking and cycling paths accessible to wheelchairs, strollers, and provide regular benches for elderly and children to rest.
- Consult with women and youth organisations in order to understand their expectations and needs and consider health and safety aspects when designing the new cycling routes in order to encourage women and youth to use them.

Smart and digital aspects

- The new cycling and pedestrian routes can be equipped with smart street lighting
- Digital walking/cycling maps or apps
- Counting billboards indicating how many cyclists are passing on a daily/annual basis

ACTION 6 - Investment

Smart and efficient public lighting

SO 2

ESSENCE

Replacement of outdated street light fixtures with smart, connected and energy-efficient fixtures

CHALLENGE/VULNERABILITY ADDRESSED

- Outdated and inefficient streetlights, not corresponding to current standards
- Lack of full coverage of street lighting network
- Lack of centralized/digital control centre
- System too old to host smart technologies

BENEFITS

- Increased public street lighting quality during the night
- Increased road and pedestrian safety
- Reduced energy consumption as well as maintenance and operational cost
- Increased coverage of public lighting in the city
- Promoting the adoption of smart cities technologies

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2027	297 t/y CO_2 eq	2,400,000 €

Context/Description

Public lighting is a critical public service that aims to provide high visibility for road users, pedestrians and citizens reducing traffic accidents and increasing the level of safety perceived by citizens. However, public lighting consumes a significant amount of energy and contributes to greenhouse gas emissions.

Street lighting is managed by the Municipality and consists of a system with around 5,124 low-efficiency (sodium) light bulbs. Annually, approximately 1,900 MWh of electrical energy is consumed for public lighting.

The replacement of old streetlights with best available, energy efficient and smart such as LED (light-emitting diode) technology represents a significant step towards sustainability and cost-effectiveness. Efficient lights offer numerous advantages over traditional lighting systems. Firstly, they consume significantly less energy, leading to substantial reductions in electricity consumption and subsequently greenhouse gas emissions reductions and cost savings. Additionally, new technologies allow to enhance the use of connected and smart city technologies such as smart controllers or different sensor such as traffic, air quality or river level monitoring. With a smart city approach, all systems can be controlled or monitored in a centralised control centre, and the infrastructure can be used to provide bidirectional communication (e.g. using Internet of Things devices).

The municipality is implementing a project to replace all the bulbs with LED-based bulbs expecting that by the end of 2025, all low-efficiency light bulbs are replaced. This represents an opportunity to use best practices in procuring performance-based design, financing, installation, operation and maintenance of energy efficient solutions. Where there is no funding available, new ways of financing with a focus on third-party finance and performance contracts, such as the Energy Performance Contracts (EPC) developed by Energy Service Companies (ESCOs) should be considered.

The modernisation works must include the following components:

- Centralised remote-control centre for the street lighting network (to control, among others, energy consumption or dimming schedules).
- Smart monitoring and bi-directional communication solutions, allowing a smart city approach.
- Retrofitting of the existing outdated streetlights with the best available energy efficient technology, namely LED fixtures.
- Modernising and digitalisation of Measurement and Protection blocks for public lighting
- Additionally, the action will include the replacement of the deteriorated poles, anchorage and cables (eventually laying them underground, where feasible).

Where street lighting is not available, or it is insufficient, new/upgraded street lighting network will be installed according to norms (e.g. CEN TR/EN 13201 'Road Lighting' standard) and state-of-the-art requirements.

Where feasible, as mentioned, a smart city approach must be considered. For instance, the ToR for the acquisition and installation must allow, where feasible, the use of LED fixtures and

poles for other services such as air quality monitoring, electrical vehicle charging, or 5G or connectivity. Also, the ToR must define standards and communications protocols to allow the integration and connectivity of different elements and systems.

Promoting the use of smart city technologies would allow to achieve energy savings and public safety and security.

Targets

- Reduce by 70% the energy consumption related to outdated and low-efficiency (sodium) light bulbs, i.e., and reduction of 1,300 MWh of electrical energy;
- Increase the penetration of Internet of Things devices promoting the adoption of smart city approaches

Implementation steps

1. Develop a feasibility study/Approval Documentation for Intervention Works and implementation programme for the modernisation of the public street lighting system including the smart city approach.
2. Outsource the modernization and rehabilitation works for the public lighting system. This includes preparation of the Terms of Reference (ToR) / acquisition documentation. The ToR should include minimum performance indicators, eligibility criteria and business models.
3. Perform renovation and modernisation works according to the implementation plan.
4. Train administrative personnel and operating and maitenance staff how to operate and manage and maintain the public lighting system and smart control centre.
5. Monitor implementation and evaluate performances. Promote results through information campaigns.

Key stakeholders

Energy Services Companies (ESCO): providing private capital under energy performance contracts.
Internal departments of the Municipality (legal, economic, urban planning, technical, energy, road maintenance), lighting and technical providers: setting minimum performance indicators for outsourced contractors and supervising the implementation of the programme.
Distribution System Operators (DSO): Managing the energy supply and infrastructure.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility study and Implementation Plan	20,000	
Improving and retrofitting existing lighting fixtures (5000 fixtures)	2,000,000	25,000
Control centre and smart infrastructure (covering 30% of the retrofitted/new network)	375,000	10,000
Information and awareness campaign	5,000	

Source of financing

Private financing via Energy performance contracting (EPC); European Structural and Investment Funds (ESIF); Recovery and Resilience Facility (RRF) and NextGeneration EU Funds for the connected and smart components; Romanian Energy Efficiency Fund (REEF); Environmental Fund Administration. Equally, Energy Services Companies (ESCO) providing private capital under energy performance contracts, commercial loans and soft loans from IFIs are options for financing.

Social and gender aspects

- Better lighting ensures an enhanced feeling of safety in the city for women, children, the elderly and other vulnerable people, improves the sense of well-being and increases quality of life in the city. Increased visibility reduces the risks of accidents and injuries, it expands mobility, contributes to the empowerment and inclusion for women and marginalised communities and to the reduction of gender-based violence and violence towards vulnerable populations.
- Gender-sensitive planning and inclusive community engagement will be applied when implementing public lighting projects to ensure that the needs and concerns of different genders and marginalized groups are adequately addressed.

Smart and digital aspects

- The public lighting infrastructure is particularly relevant for promoting connectivity platforms that offer not only smart lighting but also a series of other functions and benefits such as the integration of various sensors and telecommunication technologies necessary in smart cities.
- The infrastructure to be adopted must be based on a connected and smart lighting approach.

ACTION 7 - Investment

Public buildings energy efficiency and digitalization programme

SO 2 SO 3

ESSENCE

Energy efficiency and energy digitalization programme for public buildings

CHALLENGE/VULNERABILITY ADDRESSED

- High energy costs in public buildings
- Growing energy prices
- Reduced comfort of users
- Impacts on health and well-being

BENEFITS

- Energy savings
- GHG emissions savings
- Energy and maintenance cost savings
- Increasing users' comfort, indoor air quality,health and well-being
- Control building data such as energy consumption or temperature.

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2027	52.37 t/y CO_2 eq, for 5% of the public building stock in 5 years, achieving 35% primary energy savings	2,515,000 €

Context/Description

The public buildings in Mediaș have a total surface of approximately 95,000 m^2. On average, and considering the information available, heating consumption in public buildings was higher than 150 kWh/m^2/year, indicating high energy losses. This is mostly because the building stock lacks sufficient investments in maintenance or energy rehabilitation measures. Some offices are overheated, since thermostat valves to regulate the temperature are not available.

The Municipality owns and administers diverse buildings such as schools, kindergartens, sport centres, administrative, cultural, social and health care institutions, including some that are considered historical ones.

This action involves a holistic approach to reduce the energy consumption in Mediaș and renovate public buildings in the city through a deep retrofit approach designed to increase their energy and water efficiency and adopting digitalization technologies. The drive to act is strengthened by the ever more ambitious targets set by the European Parliament through the revized Energy Performance Building Directive and the Renovation Wave programme.

For this, the first action is to perform an assessment of the state of energy efficiency and smart/digitalization readiness of the public buildings and facilities namely by setting up an energy audits programme. The audit must cover also an analysis of the structural conditions of the buildings. Based on the results of this programme the most energy inefficient buildings will be subject to a deep retrofit.

The energy efficiency works in buildings shall follow the deep retrofit hierarchy, focusing first on reduction of demand via passive measures, then the use of energy efficient systems and appliances and at the end on generation of energy from renewable sources to cover the remaining needs to the extent possible.

As such, the deep retrofit can include measures such as insulating the building envelope, replacing windows and doors, heating/cooling and mechanical ventilation improvements, efficient lighting and appliances, building management systems, smart metering and control systems, green roofs or water harvesting/reuse.

In cases of large buildings, such as the Meditur garage for public transport vehicles a study must be performed to evaluate the viability of solar PV panels for self-consumption (or under an energy community approach) and already foreseen charging stations.

Also, small-scale renewable energy sources such as photovoltaic, solar water heaters, biomass, and heat pumps will be promoted to reduce the buildings' carbon footprint and ensure the local or on-site RES share in total energy consumption of buildings of at least 15%.

The action will also promote the use of smart technologies such as building automation and monitoring systems together with capacity building activities for administrators, building management and technical personnel. All these aspects are also in line with the provisions envisaged in the Smart City Strategy of Mediaș. Digital energy management tools will allow the Municipality to use information and communication technologies to adjust the operation of buildings to the needs of the occupants and the grid, to improve the energy efficiency of the building and the energy chain (supply and demand optimisation).

Additional measures to improve the building performance, such as monitoring water use and implementing measures for water saving/ rainwater harvesting will be included in the programme.

Information and awareness raising campaigns will be organized to promote energy efficiency in buildings and the importance of reducing GHG emissions associated with the building sector. Site visits could also be organised, to promote achieved results and inspire citizens to adopt similar measures.

Targets

- Minimum of 35% energy saving of heat energy for all retrofitted buildings with an overall impact of 30 to 50% energy savings within 5 years of implementation.
- Promote the use of small-scale renewable energy with at least 15% of energy coming from local/on-site renewable energy.

Implementation steps

1. Procure for and implement a comprehensive building assessment programme based on energy audits in public buildings, according to legal requirements. This step shall include:
    a. Energy and technical audits referring to the building structural elements, water seepage and ingress, smart components.
    b. Selection of suitable buildings considering the impact and investment needs estimation;
    c. Develop technical documentation for approval of intervention works, including detailed technical design, bill of quantities and the terms of reference for the renovation projects (e.g. minimum requirement on energy efficiency, renewable energy, water savings and digitalization);
2. Identify and assess funding and financing opportunities. The challenge of often very long payback periods for deep renovation of public buildings should be taken into account during the implementation phase.
3. Launch the tenders and carry out implementation works and construction supervision.
4. Carry out an ex-post evaluation based on Energy Performance Certification of the renovated buildings
5. Monitor implementation and evaluate performances via digital tools.
6. Develop an energy efficient users' guide for all occupants of public buildings and deliver an energy efficient behaviour programme.
7. Organize site visits to promote implemented measures and results.

Key stakeholders

Construction companies: developing the works; Internal departments of the Municipality (legal, economic, urban planning, housing, energy): developing the ToR and conduct the energy efficient behaviour programme.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Assessment programme and ToR development (10 buildings)	125,000	
Development of materials for the energy efficient behaviour programme	15,000	
Measures implementation. Average investment cost of 500 €/m2; for ~10 buildings (4,750 m2)	2,375,000 €	237,500

Source of financing

Accessing grant financing from European Structural and Investment Funds (ESIF); Recovery and Resilience Facility (RRF) and NextGeneration EU Funds for the connected and smart components; Romanian Energy Efficiency Fund (REEF); Environmental Fund Administration is a priority. Use of soft loans from IFIs, loans from commercial banks and financing through ESCOs is also an option.

Social and gender aspects

- Social and gender benefits of improving energy efficiency in public buildings include improved indoor comfort, health and safety and resilience of users, aspects often experienced differently by women, the elderly, persons with disabilities and other vulnerable groups compared to the general population.
- By prioritizing energy efficiency in public buildings, policymakers can promote a more equitable and sustainable society, benefiting women, children, the elderly, ethnic minorities, socioeconomically disadvantaged people, those with certain medical conditions, and the entire community. It is crucial to ensure that energy efficiency initiatives are implemented with gender-responsive approaches, including the participation of women in decision-making processes and considering their specific needs and priorities. Th rehabilitated buildings will bring direct benefits to disadvantaged groups through improving accessibility, safety and offering dedicated space for gathering, events, discussions and opinion sharing.

Smart and digital aspects

The city is currently monitoring and holding a good database with energy consumption for public buildings. This dataset will be a good starting point for future smart elements, such as installation of digital and smart tools - metering and control systems providing real-time control and data collection. Digital measures will include a connected building management system to control aspects such as heating and lighting. Sensors may monitor key factors such as indoor air quality, and occupancy besides thermal comfort and energy consumption depending on specific needs of the building. This data will allow the validation of the effectiveness of the different measures along the use of the building and support maintenance operations.

ACTION 8 - Investment

Deep retrofit of the historic building “Casa Armatei”

SO 1 SO 2 SO 3

ESSENCE

Pilot project on deep renovation of the historic building

CHALLENGE/VULNERABILITY ADDRESSED

- Limitation in deep renovation process on historic buildings

BENEFITS

- Promoting sustainability in a cultural/tourism building
- Reducing dependence on imported fuels and resources
- Creating economic development and jobs and increasing demand for skilled building professionals

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	12.25 t CO2eq/y, for an assumed 35% energy savings achieved following retrofit	5,025,000 €

Context/Description

Improving the energy performance of historic buildings has the potential to reduce carbon emissions while protecting built heritage through its continued use. However, implementing energy retrofits in these buildings faces social, economic, and technical barriers since there is usually limited access to proven retrofit solutions.

To support the process a pilot project has been selected, namely the rehabilitation, consolidation and modernisation of the old army regiment building (once called Casa Armatei in Mihai Viteazul street no 12) aiming at increasing the available space of the Municipal Museum of Mediaș.

For this purpose, the building will be subject to deep renovation including the rehabilitation, consolidation and modernization of the 2 existing blocks within the building with a total ground floor area of 1,111 m2 in order to make it functional as a modern Municipal Museum including spaces for entertaining and educational activities and to enhance the value of the local cultural heritage and by creating exhibition spaces and equipping them with modern equipment for the presentation of works of art, cultural goods in order to increase the tourist attractiveness of the municipality of Mediaș.

Being the oldest of the cultural institutions existing today in Mediaş, the museum has its beginnings documented in the second half of the 19th century, and its foundation was finalized in 1901. Today, the Mediaş Municipal Museum is the owner of almost 30,000 cultural assets, some of them classified in the "treasure" category within the national cultural heritage.

Within the Mediaș Municipal Museum, 3 sections are structured, respectively ethnography - art, history - archeology and natural sciences, with a series of permanent exhibitions. Given that the space in which the Mediaș Municipal Museum currently operates is not appropriate in both size and functionality and does not fully satisfy its needs, it is desired to relocate it within a building located in the historical area of the city, with the aim of highlighting the historical architecture and increasing tourist attractiveness.

It is also desired to rehabilitate the building, respecting the architectural characteristics of the building and the area as a whole. As a result of the relocation of the Museum to the area of the old city center, along with other important tourist attractions, the attractiveness of the Museum will increase, thus managing to show interest for tourists visiting the historical area of the city.

During the development of the project and terms of reference, measures such as the following must be considered (not limited to):

- Insulation of building envelope considering architectural requirements and limitations
- Green roofs considering architectural requirements and limitations
- Natural ventilation
- Efficient heating, ventilating and air conditioning
- Natural and efficient lighting
- Energy from renewable sources (e.g. solar)
- Smart energy management system
- Building management system
- Smart metering
- Low water use and water harvesting equipment
- Waste prevention and reduction techniques
- Amenities for sustainable and micromobility prioritising – easy access to the building and suitable parking facilities
- Energy from renewable sources (e.g. solar)

The energy efficiency works in the building shall follow the deep retrofit hierarchy, focusing first on reduction of demand via passive measures, then the use of energy efficient systems and appliances and at the end on generation of energy from renewable sources to cover the remaining needs as possible.

The overall measures must lead to a nearly zero building, and, if feasible, the building can be subject to a green building certification (e.g. LEED or BREEAM).

In parallel, a monograph on the development and implementation of the 'Casa Armatei" renovation project will be developed, highlighting what went well and not, challenges and bottlenecks, lessons learnt, design options considered. This should be followed throughout the implementation, from all perspectives – technical, planning, project management, procurement of materials, contracting of workers, construction process, etc. – to establish a good reference for similar future developments.

Targets

- Building certified as Nearly-Zero Energy Building

Implementation steps

1. Procure for and implement development of technical documentation and TOR for deep energy retrofit and modernization of Casa Armatei. This step shall include
    a. Energy and technical audits referring to the building structural elements, water ingress, etc.
    b. Develop technical documentation including detailed technical design, bill of quantities and the terms of reference for the renovation projects (e.g. minimum requirement on energy efficiency, renewable energy, water savings and digitalization);
2. Identify and assess funding and financing opportunities

3. Launch the tenders and carry out implementation works and construction supervision.
4. Carry out Energy Performance Audit and Certification of the renovated buildings
5. Monitor implementation and evaluate performances via digital tools.
6. Develop monograph of 'Casa Armatei' documenting the renovation process.
7. Organize site visits to promote implemented measures and results.

Key stakeholders

Construction companies: implementing the works; Internal departments of the Municipality (legal, economic, urban planning, housing, energy): developing the one-stop-shop and conduct information and awareness campaigns; Institutions, authorities or other entities that are current occupants of historical buildings;

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Rehabilitation of the building	5,000,000	50,000
Development of the 'Casa Armatei' renovation process monograph	25,000	

Source of financing

Accessing grant financing from European Structural and Investment Funds; Recovery and Resilience Facility (RRF) and NextGeneration EU Funds for the connected and smart components; Environmental Fund Administration is a priority. Use of soft loans from IFIs, loans from commercial banks is also an option.

Social and gender aspects

- Given that the building will host the Municipal Museum, care must be taken that gender and social inclusivity aspects are adhered to for staff and visitors, throughout its use.
- Collecting disaggregated data on gender and age groups, in addition to museum and building experience-related data from visitors, to inform future decision-making.

Smart and digital aspects

The building retrofit encompasses the installation of smart energy metering (for both electricity and heating) and an automated heat control system, as digital and smart tools, providing real-time control and data collection. This data will allow the validation of the effectiveness of the different measures and observing trends in consumption and building comfort parameters which can later be cross-checked with user comfort. Additional smart and digital aspects which would be useful to implement are building management system related sensors, air quality monitoring sensors with visual & digital warnings on exceedance of various levels of indoor pollutants (indicators measured could include CO and CO2 levels, O3, NOx, formaldehyde, etc.), automatic access features and sensors, as well as digital smoke and gas detectors in addition to classical ones.

ACTION 9 - Investment

Energy efficiency programme in private buildings

SO 1 SO 2 SO 3

ESSENCE

Promotion of energy efficiency in private, multi-storey buildings - programme promoting small renewables such as solar PV and heat pumps to reduce energy poverty via a one-stop-shop.

CHALLENGE/VULNERABILITY ADDRESSED

- Energy poverty (households are unable to heat their homes conveniently);
- Growing energy prices;

BENEFITS

- Improve residents' comfort
- Improve energy efficiency
- Reduce energy bills
- Reduce energy poverty
- GHG savings

TIMEFRAME
2025–2027

GHG SAVINGS
9,240,000 kWh/year = 1940,4 t/y CO_2 eq, based on an average consumption reduction of 30% of an average 308 kWh/m^2 consumption (national data)

CAPEX
25,115,000 €

Context/Description

In the municipality of Mediaș there around 7,400 registered residential buildings comprising around 22,000 conventional, mainly privately owned dwellings. The average habitable floor area of privately owned dwellings is 50 m^2. Most of these buildings were built before 1990 without any energy efficiency standards and no major investments in rehabilitation are being undertaken especially in low income areas. This results in a highly deteriorated housing stock with a low energy efficiency performance.

This action proposes support residents and homeowners associations in the retrofitting of privately owned residential multi-storey buildings aiming to encompassing 2,000 conventional dwellings via the establishment of a one-stop-shop.

The one-stop-shop, implemented by the Municipality, will support the development of investment-grade energy audits and thermal imaging, showcase technologies, materials, and evidence of successful rehabilitation, as well as promote existing local and national incentives and the adoption of financing schemes.

Residents will have access to the programme via the physical or online one-stop-shop and, in case they comply with the requirements, an invest grade audit will be performed to identify the measures to be adopted towards a deep retrofit of the buildings. These audits include a very thorough, calculated and detailed analysis process, able to identify cost-effective intervention measures. They can be developed by the Municipality with the support of national and European grants.

Residents and homeowners associations will be responsible to implement the measures that can include, in first place passive measures such as the insulation of the building envelope, replacing of windows and doors followed by active measures such as heating improvements including individual thermostatic radiator valves and apartment level heat metering, hot water cylinder jackets or heat pumps, replacement of elevator equipment, efficient lighting such LED, water savings and where feasible green solutions such as green roofs. The action will also support the adoption of small-scale renewable energy sources such as photovoltaic for self-consumption or under an energy community approach, solar water heaters to cover the remaining energy needs.

The selection of the buildings and the results of the audits and retrofit improvements must be monitored to ensure the impact of the programme and the quality of the works.

Targets

- Deep retrofit of 2,000 dwellings comprising 100,000 m^2.

Implementation steps

1. Set up the municipal one-stop-shop by assigning dedicated staff of 2-3 persons and mandate the staff to handle all necessary municipal approvals for retrofit. The staff will also be acting as a hub for information about technical solutions, legislation, financing options regarding retrofits as well as liaison to reliable service and solution providers from the private sector and financing organizations. The One-stop-shop

should be able to provide fiscal and other incentives for home owners and home owner associations. One-stop-shop could be implemented as a digital platform with continuous maintenance and update. Ideally, the one-stop-shop will be present both physical and online. Technical staff will be trained on topics such as energy efficiency, finance, regulation or taxation.

2. Support residents and homeowner associations with investment-grade audits and thermal imaging, technical information, funding and providing incentives available;
3. Develop the terms of reference and requirements for invest grade audit eligibility;
4. Develop an implementation plan.
5. Support the outsourcing of the renovation works according to the implementation plan.
6. Monitor implementation, evaluate performances and incorporate the results in the one-stop-shop.
7. Conduct information and awareness campaigns to promote energy efficiency in residential buildings.

Key stakeholders

Residents: Owners or tenants of the buildings; Homeowners Associations;
Construction companies: developing the works, namely including passive or structural measures;
Energy Service Companies (ESCO): developing the works, for active and renewable energy measures;
Internal departments of the Municipality (legal, economic, urban planning, housing, energy): developing the one-stop-shop and conduct information and awareness campaigns.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Develop the one-stop-shop	50,000	
Deliver the investment grade audits	65,000	
Building retrofit (12,500 €/dwelling)	25,000,000	250,000

Source of financing

Accessing grant financing from European Structural and Investment Funds (ESIF); Recovery and Resilience Facility (RRF) and NextGeneration EU Funds for the connected and smart components; Romanian Energy Efficiency Fund (REEF) is a priority. Private funding from homeowners, soft loans from IFIs, loans from commercial banks and financing through ESCOs will be needed in parallel to the available grant financing.

Social and gender aspects

- Social and gender benefits of improving energy efficiency in private buildings include improved well-being through financial savings, reduced energy poverty, improved indoor comfort, health and safety and resilience of residents, aspects which often women, the elderly, persons with disabilities and other vulnerable groups experience differently when compared to the general population.
- By prioritizing energy efficiency in private buildings, policymakers can promote a more equitable and sustainable society, benefiting women, children, the elderly, ethnic minorities, socioeconomically disadvantaged people, those with certain medical conditions, and the entire community.
- It is crucial to ensure that energy efficiency initiatives are implemented with gender-responsive approaches, including the participation of women in decision-making processes and considering their specific needs and priorities.

Smart and digital aspects

The building retrofit encompasses the installation of smart heating controls and smart metering systems providing real-time data collection regarding heating demand and energy consumption. This data will allow the validation of the effectiveness of the different measures and the adoption of demand response approaches. Retrofitted buildings could incorporate additional smart and digital functionalities related to sensors and building management system for common spaces, air quality sensors (for common indoor air pollutants) and safety (gas and smoke detectors), as well as access features (smart locks on doors and windows, motion detectors, etc.), depending on user/homeowner association preference. The one-stop-shop could provide information on such technologies, and in addition local telecom companies already providing such solutions.

ACTION 10 – Investment

Promote and support local brands with tourism activities

SO 1 SO 3

ESSENCE

Mediaș is home to several local industry brands which are unique and contribute to the city's charm, creating opportunities for tourism activities to support them.

CHALLENGE/VULNERABILITY ADDRESSED

- Lack of skilled workforce/ageing workforce
- Young people leaving the city for better opportunities

BENEFITS

- Support for the emerging tourism industry in Mediaș
- Newfound appreciation of residents and visitors for the city
- Preservation of historic and cultural heritage
- Job creation – an estimate of 5 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	N/A	100,000 €

Context/Description

There are several industrial facilities in the city that have a rich historical heritage and are unique to Mediaș. Some of these are:

- **Teracota Mediaș** – local terracotta tile stove manufacturer. The tiles are produced using the same process, recipe and technique that has been used since 1906. It is the last factory of hand-pressed and hand-painted stoves in the country, possibly also in the wider area.
- **Emailul Mediaș** - local factory dating back to 1921, producing enamel cookware. The production facilities are located in the center of the city and are widely known by Romanians, being the signature kitchenware of households in the country until recently.

Rosian Express – this is a family business continuing a tradition of hand-made games that dates back to the 60's. This is the only Rummy game producing facility in the country that still uses the original manual finishing techniques to create the game pieces. Being signature local brands with a high artistic value and a potential for display of craftsmanship for Romanian and foreign tourists alike, these facilities need to be encouraged to either develop touristic activities themselves or support touristic activities in the city with craft workshops or industrial tour style of actions.

Souvenir shops conveniently located next to the facilities and in the city center would help advertise the city and the specific industry to tourists. It is important displaying 'Mediaș' together with the brand name on the souvenirs, to help attract more tourists and raise the city's brand. Souvenirs should aim to be practical objects used in daily life, with minimal to no packaging (no plastic), thus promoting a sustainability culture among tourists.

Examples of activities:

- *Organize one-hour weekend tours and on-demand workshops* for groups of tourists at Teracota Mediaș; Develop workshops for longer-staying tourist groups, where they can paint their own clay tiles for coasters/magnets, with next-day delivery to their hotel.
- *Industrial facility tour with a complimentary souvenir* (useful object) at the end of the tour, for visitors of Emailul Mediaș. Make the facilities available for movie productions, if/when industrial activity allows for it.
- *Facility tour*, 'paint your own Rummy Jolly' workshop and Rummy/Chess/Scrabble game sessions at Rosian Express facility.

Targets

- At least 5 workshops per year at each facility, at least 100 participants/year, with a 20% yearly increase aim.
- Visit Mediaș physical shop set up and functional in 4 years after GCAP approval

Implementation steps

1. Municipality to set up discussion with the management of each facility deemed a 'Mediaș brand'
2. Discuss possibilities to produce branded souvenirs, organize workshops and tours and set up product & souvenir shops in accessible areas next to facilities and the city centre.
3. Design souvenirs in collaboration with the Municipal Department for Culture, Sports, Tourism and Youth. This could be a collaboration with local schools/youth centres/CSOs.
4. Produce sample souvenirs and test market; adjust based on feedback and revise. Batch production of souvenirs, as needed.
5. Design tours at each facility, develop narrative and price depending on tour duration (2 options – short and long tour, without or with practical activities and souvenir included).
6. Recruit/designate and train tour guides from or for each facility or thematic. In the beginning, until well-established flow of visitors, tour guides could be volunteers (from youth groups/associations) or one tour guide for all facilities, employed by the Municipality. Municipality may also consider externalising this service, in case of lack of resources.
7. Tourism office of the Municipality to promote tours with local hotels and B&Bs, as well as with local, national and international tourism agencies and at international tourism fairs.
8. Tours and workshops booking system to be integrated with www.visitMediaș.com platform.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth – design and implement;
Designated facility management representative or designated liaison person, for each of the relevant facilities – consult, inform and implement;
Youth and tourism associations, local CSOs – consult, inform and implement.

Local hotels, B&Bs and tourist shops/agencies – consult and inform

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Design tours and workshops, training for tour guides	25,000	
Design branded souvenirs	10,000	10,000
Produce souvenirs (5000 pc) and set up Visit Mediaș physical shop	50,000	
Develop tour and workshop booking functionality in VisitMediaș.com platform	15,000	

Source of financing

Municipality budget, private funding from facilities involved in the program, ERDF – i.e. through URBACT program, EU funds for urban development.

Social and gender aspects

- New job opportunities will be created - Opportunities for social inclusion to be demonstrated when designing souvenirs – specific CSOs could be involved to ensure social and gender aspects are considered throughout implementation
- Gender equality principles will be applied throughout the selection process for tour and workshop guides and souvenir shop employees.
- .

Smart and digital aspects

- Opportunities to use digital tools for designing souvenirs and promoting local brands
- Digital platform to be used for tours and workshop reservations – connect with www.visitMediaș.com. This platform could be also used as a market place for touristic services.

ACTION 11 - Investment

Promote green industry and facilitate the development of local services and small production sector

SO 1 SO 3

ESSENCE

Green industry development, including the small production sector coupled with quality local services will boost tourism and make the city more attractive for the young generation to live and work there.

CHALLENGE/VULNERABILITY ADDRESSED

- Lack of skilled workforce/ageing workforce
- Young people leaving the city for better opportunities

BENEFITS

- Support for the emerging tourism industry in Mediaș
- Newfound appreciation of residents and visitors for the city
- Non-polluting city development; SME development and boost in the local production sector
- Job creation – an estimate of 10 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2027	N/A	385,000 €

Context/Description

Mediaș Municipality has taken several steps in supporting green industry development in the city. A designated industrial platform for green businesses has been designed and is currently under implementation.

As the platform is located in the vicinity of Apa Tarnavei Mari (the water and wastewater management company) and EcoSal headquarters, synergies are easier to develop. One of the industrial facilities operating on this platform has already implemented rainwater harvesting and reuse, following the recommendations of the water and wastewater management company. This is a good pioneering effort which can be further supported by the municipality.

Among green industries that need promotion and support is a robust and sustainable tourism industry, focusing on local/regional production. This will encourage green values and promote the local cultural identity among visitors and residents.

This also represents a good opportunity to develop the small production sector by supporting the development of social enterprises.

A set of measures aimed at promoting green industry development in Mediaș would potentially include:

- Reduced taxes for low-carbon, carbon-neutral and nature-positive industries that will be located on the designated platform or elsewhere in the city or Ighisul Nou village. Examples of industries that could be included in this category are (list is not exhaustive):
    - Small manufacturing facilities using renewable energy and applying circular economy principles
    - Small-scale organic farming and producers applying permaculture principles to food production
    - Local food and beverage production applying circular economy principles (waste prevention, food loss&food waste prevention, in-house composting)
    - Local vineyard owners and wine producers to honour the cultural heritage of the region and form cluster/association to offer Municipality better opportunities to promote the industry
    - Local restaurants and bistros which commit to using at least 70% local and regional (up to 100km away from Mediaș) produce and supplies.
    - Local textile and leather industry – handcraft
- Organising matchmaking sessions between investors and local entrepreneurs looking to become more ‘green’ or expand their environmentally sustainable business
- Organising/supporting/hosting a business incubator, to prompt the young generation to establish start-ups in the city.
- Municipality to offer annual awards for local green, carbon-neutral and nature-positive businesses.
- Develop ‘Produs de Mediaș’ (‘product of Mediaș’) label and offer certification to qualifying businesses – yearly renewal (i.e. ‘Produs de Mediaș-2024’). Develop qualification criteria and register label to OSIM.

Targets

- At least 2 green local start-ups become active in the first 5 years, with revenue generation.
- At least 3 matchmaking events organised by the municipality in the first 5 years, with more than 50 participants.
- At least 10 businesses receive 'Produs de Mediaș' label every year. Can be the same businesses renewed every year, if conditions still apply.

Implementation steps

1. Develop a cost-benefit analysis for establishing a local regulation for tax reduction for businesses registered in Mediaș employing green solutions such as: rainwater harvesting and reuse, greywater reuse, nature-positive landscaping on premises (encouraging biodiversity, carbon capture greater than emissions, etc.), use of RES, zero waste, organic produce, local supply etc.
2. Develop local regulation on 'Mediaș Green Business' annual award, including conditions to apply and win, the annual date for Mediaș Green Business award ceremony (could be on Earth Day). Broadcast it to businesses and the public.
3. Identify local entrepreneurs looking to become more 'green' and offer support to organise workshops to map out needs and possible solutions. Example: offer meeting space, prompt/lead discussions, provide support letters when small businesses apply for funding etc.
4. Organise matchmaking sessions between local entrepreneurs looking to become more 'green' or existing already 'green' ones looking to expand business and possible investors, existing successful initiatives nationally or abroad, experience sharing opportunities, etc.
5. Set up business incubator for local youth to start green businesses in Mediaș. Draft eligible business guidance and lay out financing conditions. Funds could be allocated as part of the Municipality's projects, municipal budged, crowd-funding, other, or a combination of these.
6. Develop 'Produs de Mediaș' ('product of Mediaș') label and underlying regulation and award criteria/conditions. Offer certification to qualifying businesses – yearly renewal (i.e. 'Produs de Mediaș-2024'). Register label to OSIM.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth; Technical; Economic; Local Public Administration – design, decide, consult, inform, implement

Representatives of local 'green' businesses – consult and implement;

Students in local highschools; Youth associations, local CSOs – consult and inform.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Cost-benefit analysis for establishing tax reductions for green local businesses	20,000	35,000
'Mediaș Green Business' award design and deploy	5,000	
Support for local entrepreneurs looking to become 'green' or existing ones looking to expand - venue and organizing (3 years), 10,000 € per year	30,000	
Matchmaking sessions for green local businesses - venue and organizing - 5,000 € per session – 3 sessions estimated	15,000	
Business incubator for local youth to start green businesses in Mediaș (OPEX foreseen for accounting and admins support related to businesses set up)	300,000	
'Produs de Mediaș' label design and registration to OSIM	15,000	

Source of financing

Municipality budget, private funding from facilities involved in the program, EU funds, crowdfunding etc.

Social and gender aspects

- New job opportunities will be created
- The 'Mediaș Green Business' and 'Produs de Mediaș' labels/awards eligibility criteria will also include elements related to gender equality elements, such as: the role of women in the business environment and the role of women in decision making positions.
- Opportunities for social inclusion to be demonstrated when setting up business incubators – specific CSOs could be involved to ensure that social and gender aspects are considered throughout implementation.

Smart and digital aspects

- Promote smart solutions for businesses to become more 'green', through initiatives such as energy efficiency solutions (assistance could be offered through the one-stop-shop - see Action 9), local supply of materials and services, implementing environmental, social and governance good practices, and other similar initiatives which could all be showcased on visitmedias.com platform
- Business incubator to support the use of digital tools and smart solutions for emerging businesses to address city issues.

ACTION 12 - Investment

Rehabilitation and expansion of water and wastewater networks

SO 2

ESSENCE

The existing water supply system needs to be rehabilitated and extended to cover the new requirements in supply, due to the pressure ensuing from real estate development.

CHALLENGE/VULNERABILITY ADDRESSED

- Low pressure in the water supply system
- Lack of drinking water distribution networks in the newly developed areas
- Losses in the drinking water supply system; treatment of drinking water more than required due to losses in the network.
- Insufficiency of the wastewater collecting networks
- Leakages in the wastewater networks which generate soil and groundwater pollution.

BENEFITS

- Ensuring the provision of services at optimal quality standards and a harmonious development of the city
- Increasing the connection rates to the municipal services and thus reducing pollution
- Monitoring the water consumption
- Detection of failures/issues in the operation of the drinking water supply system and wastewater collection system
- Improved quality of life for new service beneficiaries
- Savings in energy consumption and chemicals in the water treatment process as the losses within the network will be minimized

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	2.05 t CO2 eq/year, based on a 10% reduction in water losses	53,900,000 €

Context/Description

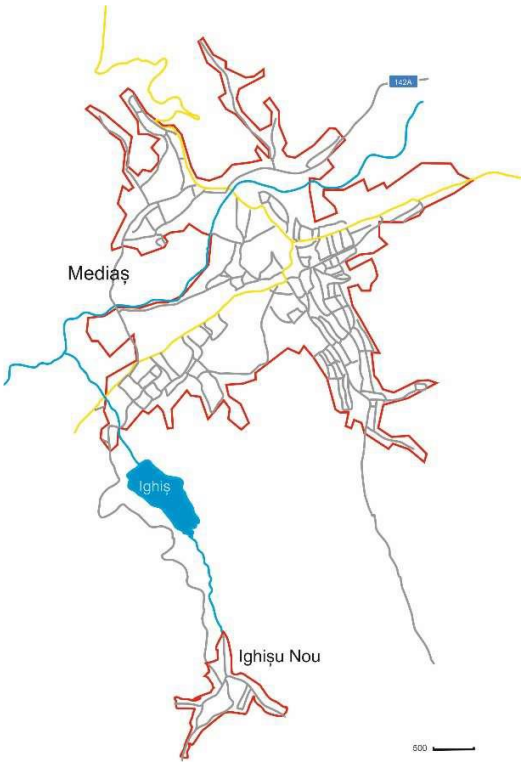
The water and wastewater management company that operates at the level of the city is Apa Târnavei Mari, in which the city council is a shareholder. Water abstraction is carried out from the Târnava Mare river (surface water source) and treated before it is supplied to the final consumers.

The water operator distributes drinking water to a total of over 12,000 consumers, of which 89.9% are households and over 1,200 commercial entities and public institutions. 86.35% of the population has quality drinking water services, an indicator that has increased in recent years due to the expansion of the network's length. In terms of the wastewater collection network, 85.93% of the population are connected to it. Pit latrines do not represent an issue in the city, but real estate development puts pressure on the existing network.

Regarding the metering of water, it is carried out in a proportion of 92.8% for domestic users and 95.3% for commercial entities and public institutions.

The connection rate to the water supply system must increase to 100% in order to comply with the legal requirements (including the Drinking Water Directive). In addition, due to the real estate development, the operational area of the water provider has to be extended.

Through the Sectoral Operational Programme Environment (POS Mediu) and Large Infrastructure Operational Programme (LIOP), major investments were made to improve the water and wastewater infrastructure. Recently, another contract was signed, as part of a major regional project.



Map of the water distribution network and wastewater collection network of the city

The investment needed to extend and optimise water supply and wastewater collection and treatment has the following objectives:

- Rehabilitation and expansion of water transmission pipelines
- Rehabilitation and expansion of the water distribution network
- Rehabilitation and expansion of wastewater collection network
- Ensuring the necessary pressure: two pressure zones addressed by the storage tank located in Ighișul Nou and Binderbubi.

By implementing smart metering and with the help of the existing SCADA system, a proper monitoring system will be in place with the purpose of increasing the operational efficiency of the water supply system and wastewater collection system, diminishing the operational expenses and increasing the quality of the service.

The rehabilitation of the water distribution network and its verification with loss detection equipment imply a reduction in energy consumption for water collection and treatment and indirectly reduce greenhouse gas emissions. The increase in the wastewater collection rates contributes to avoiding water body pollution and compromising its quality, which would generate additional energy costs, indirect GHG emissions and materials in the case of freshwater sources for abstraction.

The reduction of infiltrations and exfiltrations in and from the sewerage networks reduces the risk of urban flooding and high dilution of wastewater at the entrance to the wastewater treatment plant, respectively it reduces resource consumption and treatment costs, indirectly leading to GHG emission reduction as well. The prevention of exfiltrations from sewerage networks through periodic checks with leak detection equipment leads to the avoidance of groundwater contamination and the compromising of underground water quality and implicitly to the reduction of treatment costs in order to make it potable.

The installation of devices for measuring the water flows supplied and discharged in the sewerage networks encourages the reduction of water consumption, respectively the efficient use of water resources in the context of climate change and leads to indirect GHG emissions reduction. The estimation of CO_2 emissions is calculated in the feasibility study and cost-benefit analysis.

Targets

- Increase to 98% the connection rate to the water supply system
- Increase to 98% the connection rate to the wastewater collection system

Implementation steps

1. Elaboration of the Feasibility Study, Financial and Institutional Analysis, and Application Form (in case of EU financing), depending on the guidelines issued by the funding entities
2. Elaboration of the technical design and public procurement documents
3. Contracting technical assistance for works supervision and project management
4. Contracting and implementation of the works contracts

Key stakeholders

Municipality of Mediaș – consult and inform, decide;
Water Company Apa Târnavei Mari – consult, design, implement;
Intercommunity Development Association Apa Târnavei Mari – inform and consult.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility Study	200,000	
Rehabilitation and expansion of water and wastewater networks. Indicative lengths, referring to all area serviced by the water company (northern part of the county).CAPEX estimate just for Mediaș.: • 82.7 km extension and 69.4 km rehabilitation of drinking water distribution network • >100 km extension and 22 km rehabilitation of wastewater network	53,000,000	500,000
Water storage tanks in 2 peripheries of the city: Binderbubi and Ighișu Nou	700,000	75,000

Source of financing

IFIs & EU funding; Operational Program for Sustainable Development (PODD); the National Recovery and Resilience Plan (PNNR); Regional Operational Programs (POR); Municipal budget

Social and gender aspects

- New jobs are required during the construction and operation of the extended water and wastewater networks.
- Gender equality and equal rights to be considered during the recruiting process

Smart and digital aspects

- On short-term, the water company would install smart metering systems to accurately measure water consumption and identify leaks or abnormal usage patterns, with the purpose of optimizing water distribution, reducing non-revenue water, and improving overall system efficiency. These smart meters would be first installed at district level and then at household level. Pressure and flow sensors would be also installed at key distribution points to facilitate the detection of leakages.

ACTION 13 - Investment

Improvement of the anaerobic digestion process in the WWTP

SO 2

ESSENCE

Improvement of the sludge treatment line in the WWTP

CHALLENGE/VULNERABILITY ADDRESSED

- High and steeply growing cost of energy
- Increase in the sludge quantities generated from the wastewater treatment process

BENEFITS

- Production of heat, electricity or fuel from biogas that can be used on site
- Reducing greenhouse gas emissions by capturing methane that might otherwise be emitted into the atmosphere and replacing fossil fuel energy
- The resulting digestate can be used as a potent fertiliser in agriculture.

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2027	100.08 t CO2 eq/y	4,300,000 €

Context/Description

The water company, Apa Târnavei Mari, operates a wastewater treatment plant serving the Municipality, having a designed capacity of 17,280 m^3/day, while the effectively used capacity is 8,210 m^3/day (2014).

The wastewater treatment plant uses ~1,500 tons per year of sludge resulting from the wastewater treatment process to produce biogas, which is used to cover part of the company's own energy needs (currently up to 37% of electricity needs of the WWTP). The company is also willing to introduce PV systems in its facilities (plans to install a 0,9 MWp PV plant).

The company intends to refurbish the existing anaerobic digestion facility to increase performance and efficiency - in terms of the amount of material processed, processing time and amount of energy generated.

Anaerobic digestion of WWTP sludge has a substantial contribution to climate change mitigation, as stated in Commission Regulation (EU) 2021/2139 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

A monitoring and contingency plan is in place in order to minimise methane leakage at the facility. The produced biogas is used directly for the generation of electricity or heat, upgraded to bio-methane for injection in the natural gas grid, or used as vehicle fuel and as feedstock in the chemical industry.

The activity complies with the general criteria established in the Commission Regulation for climate change adaptation, for sustainable use of protection of water resources, and for protection and restoration of biodiversity and ecosystems.

Regarding pollution prevention and control, the emissions are within or lower than the emission levels associated with the best available techniques ranges set for anaerobic treatment of sludge in the latest relevant best available techniques conclusions for sludge treatment. The resulting digestate could be intended for use as fertiliser or soil improver, having in view its nitrogen content.

Targets

- 20% increase in energy generated within the anaerobic digestor in 1 year after action implementation
- 25% increase in the sludge quantities processed in the upgraded plant in 1 year after action implementation

Implementation steps

1. Conduct a Feasibility study, Financial and Institutional analysis, and prepare Application Form (in case of EU financing) depending on the Guidelines issued by the funding entities
2. Technical design and the public procurement documents
3. Contracting technical assistance for works supervision and project management
4. Contracting and implementation of the works contract

Key stakeholders

Water Company Apa Târnavei Mari – design, decide and implement;
Intercommunity Development Association Apa Târnavei Mari – consult and inform.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility Study	150,000	
Equipment and technology upgrades	1,500,000	400,000
Biogas utilization and energy generation systems	1,900,000	
Piping and distribution systems	450,000	
Smart sensors and monitoring systems	300,000	

Source of financing

IFIs & EU funding; Operational Program for Sustainable Development (PODD); the National Recovery and Resilience Plan (PNNR); Regional Operational Programs (POR); Municipal budget

Social and gender aspects

- New jobs are required during the extension and operation of the anaerobic digestion facility in the WWTP
- Gender equality and equal rights to be considered during the recruiting process

Smart and digital aspects

- Sensors and monitoring systems collect real-time data on temperature, pH levels, gas production and other relevant parameters. These offer the possibility to access and monitor the data remotely, allowing the operator to make informed decisions and optimise the performance of the facility.
- For better process control and integration within the overall WWTP infrastructure, automated control systems regulate feed rates, temperature, mixing rate etc. to maintain optimal conditions for the operation.

GHG savings

The implementation of efficient sludge management has a direct impact on GHG emission reduction.

The production of the energy through anaerobic digestion process of sludge leads to the reduction of energy demand and implicitly to the reduction of GHG emissions.

The installation will be selected on the basis of energy consumption and CO_2 emissions during the life cycle.

The estimation of CO_2 emissions will be calculated in the feasibility study and cost-benefit analysis.

ACTION 14 - Investment

Set up drinking fountains and public toilets in relevant areas of the city

SO 2 SO 3

ESSENCE

Improving the living conditions for the citizens and contributing to the development of the tourism industry in Mediaș, having in view its significant potential.

CHALLENGE/VULNERABILITY ADDRESSED

- Existing but closed public fountains
- Insufficient public toilets

BENEFITS

- Provision of civilised conditions for tourists and locals; more walkable cities, increasing the health of a city
- Installing aesthetic and recreational fountains results in creating pleasant places where all generations can meet
- Improved tourism and increased local financial benefits
- Water management in public areas (controlled water consumption and wastewater collection)

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	7.45 t CO2 eq/y, from an estimate of 50 PET bottles not purchased, for 180 days/year	540,000 €

Context/Description

Access to drinking water is essential in a city. Free drinking water in public spaces promotes health and supports sports and time spent in public areas. A network of drinking fountains makes a city more pleasant and more resistant to heat waves. However, walking, jogging, and biking ventures become uncomfortable without nearby toilets. Access to public toilets promotes a clean city, adds value for tourists (and residents) visiting the city and supports time spent outdoors. Moreover, Mediaș has an increasing touristic potential which can be exploited by the local authorities to obtain various benefits, especially financial.

The installation of drinking fountains and public toilets is intended to increase the benefits of the local community (residents and tourists as well). The use of public fountains will lead to a decrease in the waste packaging (i.e., single-use plastic bottles) generated by bottled water; water fountains provide an accessible and convenient way for people to refill bottles and drink tap water on the go. In addition, the reclaimed water from drinking water fountains can be used to supply public toilets under an integrated management system in the area.

The public toilets will ensure comfort for people moving around green/recreational spaces and along the city centre tourist route. Additionally, including Braille signage for individuals with visual impairments and accessibility features like ramps for individuals with mobility challenges will improve accessibility for diverse user groups.

The water company can extend the drinking water supply network and the sewerage networks with the consumption points (fountains and toilets) on the basis of the development plan for the green areas and touristic or recreational routes. The water and wastewater networks will be developed having in view the health and environmental/waste priorities in close coordination with the Urban Development Plans, which establish the places of public interest.

Choosing the right location will help to maximise the benefits provided by the drinking fountains and public toilets. Some issues have to be considered when installing these facilities, such as:

- Natural surveillance and security - a high footfall, visible and well-signposted area where it will be used frequently will also provide passive security to avoid deliberate vandalism.
- Accessibility – an important consideration both physically for different users and at different times of the day.
- Shelter – due to the fact that external settings allow for more regular access, consideration should be given to exact siting. It is important to minimise damage from the weather: avoid frost damage in the case of fountains by providing adequate insulation; avoid direct sunlight.
- Hygiene – perceptions of the cleanliness of a public fountain and toilets are as big a consideration as any actual issue of hygiene when ensuring a fountain/toilet is used.

Locations to be considered:

- Parks or other green areas – can benefit many user groups including families, children, people exercising, dog walkers and their dogs,

- Touristic area – very important for a person coming to visit,
- Schools and public buildings,
- Transport hubs – helping people access drinking water/toilets on the go,
- Shopping precincts and centres – these are high footfall spaces where a fountain can reduce bottled water purchases.

Targets

- At least 1 public toilet facility and 2 drinking fountains set up in the first 2 years of GCAP approval.
- 50% annual reduction in the number of related complaints
- 10% annual increase in the number of tourists

Implementation steps

1. Conduct a Feasibility study, Financial and Institutional analysis, and prepare Application Form (in case of EU financing) depending on the Guidelines issued by the funding entities
2. Technical design and the public procurement documents
3. Contracting technical assistance for works supervision and project management
4. Contracting and implementation of the works contracts

Key stakeholders

Water Company Apa Târnavei Mari – consult and implement;
Municipality of Mediaș – design, decide and implement.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility study	30,000	
Public toilets (150,000 € per 1 location) (3 locations)	450,000	45,000
Drinking fountains (6 pcs)	60,000	5,000

Source of financing

Municipal Budget, EU Funding, Regional Operational Programs (POR), IFIs, crowdfunding, and private companies through their CSR programmes.

Social and gender aspects

- Taking into consideration the needs of people with disabilities, the action will ensure that individuals, regardless of gender or ability, will have equal access to these basic amenities, promoting inclusivity and accessibility in the city.
- To ensure privacy, safety and security, public toilets and drinking fountains will be designed to satisfy the needs of all genders and also for people with mobility challenges.

Smart and digital aspects

- Sensor-operated faucets, flush systems, and soap dispensers will ensure touchless operation, minimizing the risk of germ transmission and promoting water conservation.
- Digital payment systems, such as contactless payment or mobile payment options, make it more convenient for users to access paid facilities .
- Smart sensors employed to monitor air quality, temperature, and humidity levels within the facilities will be used to ensure a comfortable and healthy environment for users and prompt action if any issues arise.

ACTION 15 - Investment

Installation of a new meteorological station

SO 1 SO 2

ESSENCE

Extension of the infrastructure for monitoring and warning of meteorological phenomena by the installation of a new meteorological station.

CHALLENGE/VULNERABILITY ADDRESSED

- The increase in the frequency of extreme weather events and the insufficiency of measures to delay the leakage of rainwater into the sewage systems
- Inaccurate warnings of severe hydro-meteorological phenomena

BENEFITS

- Improvement of the meteorological data availability in the area
- Possibility for warning and taking measures in case of severe hydro-meteorological phenomena.
- The collected data could support predictive maintenance of public infrastructure (sewerage system especially)Automatic reception, processing, visualization, archiving, and dissemination system using the meteorological satellites.
- New job opportunities: estimated 1 new job for operation & maintenance

TIMEFRAME	GHG SAVINGS	CAPEX
2025–2026	N/A	365,000 €

Context/Description

The new meteorological station will replace the existing station and in addition will contribute to the requirements formulated within the Romanian National Strategy on Climate Change regarding the provision of essential data and information on the meteorological and climatic parameters that have affected and will affect Romania, especially the extreme meteorological phenomena generating floods and coastal erosion.

Considering the increase in the frequency of local extreme weather phenomena and their intensity, as well as the high speed of travel, the new meteorological station will significantly contribute to the implementation of the measures required to ensure meteorological observations. This would increase the accuracy of forecasts and weather warnings regarding strong wind intensifications, hailstorms, torrential rains generating major floods of a local character or flash floods, including in the urban environment.

The meteorological station will include transducers of air temperature, relative air humidity, wind, atmospheric pressure, atmospheric precipitation, solar radiation, and surface and deep soil temperature. The station will be equipped with a system for receiving, processing, visualizing, archiving and disseminating data from meteorological and atmospheric surveillance satellites.

The new meteorological station will involve land planning and construction of the meteorological platform and will consist of the execution of the support structures for the meteorological equipment requested for automatic meteorological stations, including, but not limited to:

- Supporting structures for the location and installation of heliometers and rain gauges,
- Supporting structures for the location and installation of transducers for determining the thickness of the snow layer and systems for viewing and determining the type of clouds and associated phenomena,
- Protection box for the electrical and electronic equipment, connections and accessories,
- Underground cable routes,
- Connection of the meteorological equipment to the energy supply system, as well as to the existing communications/telecommunications infrastructure,
- Integration of the flow of measured data into the Console type application within the new communication architecture (transmission of meteorological data directly from the automatic meteorological station, without the intervention of a computer located at the meteorological station),
- Automatic atmospheric ozone measuring spectrophotometer capable of making measurements independently, automatically, without the intervention of the human operator, in any type of weather, even when there is precipitation.

The new meteorological station will be connected to the national meteorological communication system by providing the locally collected data and comparing/processing the receiving data.

Targets

- Maintain a minimum accuracy level of ±1°C for air temperature measurements, ±5% for air humidity measurements, ±2 m/s and ±10° for wind speed and direction measurements
- Ensure accurate measurement of atmospheric precipitation with a resolution of at least 0.1 mm
- Ensure real-time data availability to support weather forecasting, research, and public information.
- Establish an online platform or portal to provide public access to meteorological data and forecasts

Implementation steps

1. Elaboration of the Feasibility study, Financial and Institutional analysis and prepare Application Form (in case of EU financing) depending on the Guidelines issued by the funding entities
2. Elaboration of the technical design and the public procurement documents
3. Contracting technical assistance for works supervision and project management
4. Contracting and implementation of the works contract

Key stakeholders

Municipality of Mediaș – design and decide, implement, liaise with National Meteorological Agency to coordinate activities;
Mediaș Local Council – consult and inform.

Estimated costs (CAPEX and OPEX)

To be determined under the feasibility study, depending on the technical and construction features of the meteorological station.

CAPEX and OPEX will be calculated in the feasibility study, depending on the area of the project and financing sources (non-funding gap). Some estimates are presented below.

Element	CAPEX (€)	OPEX (€/y)
Feasibility Study	30,000	
Equipment for the meteorological station – instruments and sensors	300,000	33,500
Supporting Structures & associated amenities	35,000	

Source of financing:

IFIs & EU Fundings, Operational Program for Sustainable Development (PODD), The National Recovery and Resilience Plan (PNRR), Regional Operational Programs (POR), Municipal Budget

Social and gender aspects

- New jobs are required during the construction and operation of the meteorological station
- Gender equality and equal rights are to be considered during the recruiting process.

Smart and digital aspects

- The meteorological data are measured, processed, archived, and disseminated automatically by the system using the meteorological satellites
- The meteorological station is equipped with automatic equipment which will ensure the increase in the reliability and precision of measurements, the homogeneity of data, correlation with other meteorological networks by using standardized measurement techniques, the high-frequency transmission of meteorological data as well as the satisfaction of new trends and requirements for meteorological observations.

ACTION 16 - Investment

Investment in an automatic sorting line and shredder for green waste

SO 1 SO 2 SO 3

ESSENCE

Improving the current waste management system by introducing an automatic sorting line and a shredder for green waste.

CHALLENGE/VULNERABILITY ADDRESSED

- Insufficient sorting capacity leading to low recycling and composting rates;
- Accumulation of waste at the transfer station
- Inefficient transport of green waste

BENEFITS

- Increased quantities of sorted waste in less operational time
- Increased recycling rates
- Reduced volume of green waste due to shredding, resulting in fewer haulage trips to the composting station, with higher bulk density
- Job creation – an estimate of 5 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2027	645.62 t/y CO_2 eq	2,400,000 €

Context/Description

Back in 2008, Mediaș built one of the first sorting stations in the country. Today, the facility is called the "Centre for the collection, processing and recovery of waste", operating as a sorting and transfer station. The station for the collection and temporary storage for processing and/or transfer of waste has a maximum capacity of 2,700 tonnes/month, while the sorting capacity of the facility is 5,000 tonnes/year. The sorting activity is carried out manually, the station being equipped with a sorting line, with spaces/containers for each type of sorted waste, handling machinery and equipment for pressing and baling waste.

Since the waste collection is carried out in 5 fractions (mixed residual, paper/cardboard, metal and plastic, glass and biodegradable), mixed dry recyclables get onto the sorting line and source-separated biodegradable green waste is temporarily stored on the concrete platform, for further transfer to the composting station. Currently, the plant operates as an MRF (Material Recovery Facility), with quantities of total mixed packaging waste collected and sorted of 2-2.5 thousand tonnes/year, representing approximately 15-20% of total collected MSW.

Generally, the transfer capacity of the station is exceeded, and waste is accumulating at the transfer station. On the other hand, the sorting efficiency of the facility is varying between 10-20% of total source-separated dry recyclables. This depends on the availability and reliability of workforce engaged. Automating the sorting process with the latest technology will contribute to achieving higher sorting rates.

An upgraded and automatic sorting line will include a conveyor system, pre-sorting, screening and sorting equipment, baling and compacting, residue collection and control systems. A system to produce RDF is also foreseen through this action, hence the associated targets.

Yearly quantities of separately collected biodegradable green waste range from 2-3.5 thousand tonnes/year. Additionally, ECO-SAL organizes 2 campaigns per year to collect green waste (autumn/spring) and regularly collects abandoned Christmas trees at the beginning of each year. Collected quantities are not getting any pre-treatment before arriving at the composting station. In view of this, a shredder for green waste at the transfer station would optimise the volume of green waste by reduction. In view of this, less haulage trips will be necessary from the transfer station to the composting station due to increased bulk density. In addition, the shredded organic material will likely enhance the composting process.

Targets

- By 2030, at least 80% sorting efficiency – total amount of waste sent for recycling as a percentage of total waste accepted at the sorting plant for dry recyclables
- By 2030, a minimum 30% recycling rate of the total amount of municipal waste generated

Implementation steps

1. Conduct a Feasibility Study of establishing and operating an automatic sorting line and shredder for green waste
2. Initiate procurement process, launch a tender for the acquisition
3. Installation of the automatic sorting line equipment and the shredder for green waste according to the planned design

Key stakeholders

Waste management company ECO-SAL – design and implement; IDA ECO-NORD Sibiu – inform and consult;
Municipality of Mediaș – decide and implement;
Mediaș Local Council - decide.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility study	100,000	
Equipment for the automatic sorting line with a sorting capacity of 3,000 tonnes/year input of separately sorted recyclables	2,000,000	230,000
Equipment for the shredder for green waste	300,000	

Source of financing:

Municipal Budget, IFIs, National Government, EU Funds.

Social and gender aspects

- New job opportunities for people currently engaged in waste sorting due to re-orienting them towards other activities required either at the Sorting station or other activities in the company.
- OHS measures will include comprehensive safety protocols, PPE and regular safety training, taking into account the specific needs and concerns of both male and female workers
- Education and awareness campaigns regarding waste management, the importance of separation at source, recycling and the importance of efficient sorting will be promoted, including targeted programs that aim to engage and educate individuals from all genders and diverse socio-economic backgrounds.

Smart and digital aspects

- The automatic waste sorting line will include:
    - various sensors to capture data about the waste materials. These sensors include cameras, infrared sensors, weight sensors, metal detectors, and optical sorters. They will collect information about the size, shape, colour,

composition, and other attributes of the waste items. The collected sensor data will be processed and analysed in real-time. This involves extracting relevant information, such as waste type, recyclability, and contamination level, from the sensor inputs.

- Digital control systems manage the overall operation of an automatic waste sorting line.

ACTION 17 - Investment

Investment in additional capacity for waste management

SO 1 SO 2

ESSENCE

Additional capacity for waste transfer/transport and street cleaning would further boost the tourist city's noticeability; local communities can benefit from reduced pollution, better sanitation, and a more sustainable environment overall.

CHALLENGE/VULNERABILITY ADDRESSED

- Accumulation of waste around the transfer station due to an insufficient number of vehicles for the transportation of waste from the station to the landfill
- Old and obsolete waste collection, transport and street cleaning fleet.
- Water, air and soil degradation and subsequent public health issues due to improper waste management related to insufficient technological capacity

BENEFITS

- More efficient city-wide collection of waste
- Optimised urban cleanliness
- Optimised operation at the sorting and transfer station and more efficient transfer of waste to the regional landfill
- Reduced GHG emissions from the transport of waste
- Job creation – an estimate of 5 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2025–2027	13.33 t/y CO_2 eq.	1,560,000 €

Context/Description

Regarding waste collection coverage, Mediaș can be proud of achieving a 100% collection rate for several years. Although, the efficiency of this collection can be further optimised with a renewed waste collection fleet. Having in mind the future cultural, infrastructural and touristic development of Mediaș, waste generation rates will probably have a steady growth pattern.

While the number of waste collection vehicles is assessed to be sufficient, an estimated 50% of the waste collection fleet needs to be modernized to provide a better, more efficient service. Furthermore, additional transfer capacity is needed to tackle the challenges related to the accumulation of waste around the transfer station. At the moment, the maximum capacity of the transfer station is 2.7 thousand tonnes/month, which is frequently exceeded. For that reason, investments must be made to increase the specialised vehicle fleet to transfer the waste to the regional sanitary landfill.

Urban cleanliness is an important aspect of a tourist city like Mediaș. The city has plenty of narrow streets and hilly areas, so the current street sweepers are not always suitable for ensuring general urban cleanliness. Also, in recent years, several undergoing projects aim to maintain or rehabilitate open spaces, roads, sidewalks and water supply and sewage systems, especially in the city centre but also in the residential areas and city peripheries. Therefore, small and efficient street sweepers are needed to provide optimised street cleaning possibilities.

Investments in waste management and street cleaning lead to cleaner neighbourhoods, improving the quality of life for residents. These investments aim to benefit the communities through reduced pollution, better sanitation, and a more sustainable environment overall.

Additionally, by incorporating smart and digital aspects into investments for waste transfer/transport and street cleaning, the operator can enhance operational efficiency, reduce costs, minimize environmental impacts, and ultimately improve the quality of services delivered to the community.

Targets

- Waste remaining time in the transfer station of maximum 3 days achieved in 1 year after investment
- Zero fires in transfer station after investment
- 30% reduction in complaints regarding street cleaning/illegal dumping, achieved 1 year after investment

Implementation steps

1. Conduct a Feasibility Study to assess the technical, economic and environmental viability of the investments;
2. Procurement process, prepare tender documents for acquisition of waste collection, transfer and street cleaning equipment;
3. Training on the proper use of new equipment;
4. Deliver improved services.

Key stakeholders

Waste management company ECO-SAL – design and implement; IDA ECO-NORD Sibiu – inform and consult;
Mediaș Municipality – decide and implement;
Mediaș Local Council – decide.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Feasibility Study	75,000	
4 waste collection vehicles with compaction, 7 m^3 /3.5 t	400,000	
2 waste collection vehicles with compaction, 16 m^3/7 t	300,000	
1 compactor truck with bin washing system, 12 m^3	150,000	
1 haulage truck for waste transfer, 70 m^3/28.8 t	200,000	156,000
2 small truck-mounted vacuum sweepers	150,000	
1 truck-mounted vacuum sweeper	160,000	
2 compact vacuum sweepers, 3 leaf blowers	65,000	
1 truck-mounted street washing machine	60,000	

Source of financing

Municipal Budget, National Government grants, PPPs, IFI

Social and gender aspects

- Investments in waste management and street cleaning can create employment opportunities, particularly for low-skilled workers. Recruitment processes will be fair, inclusive and accessible to both men and women.
- Efforts will be made to promote gender equity in job distribution, providing equal opportunities for men and women to access various positions.
- Ensuring adequate health and safety measures is crucial for the well-being of workers. Gender-sensitive approaches will be adopted to accommodate both male and female workers' specific needs and safety concerns.
- Education and awareness campaigns regarding waste management, recycling and the importance of urban cleanliness will be promoted, including targeted programs

Smart and digital aspects

- On short-term, the following elements will be included as investments: a fleet tracking system and a route optimisation software.
- In the long-term, IoT devices and sensors can be deployed in street sweepers and cleaning and collection equipment to collect data on usage, fill levels, and operational status. This data can be analysed to optimize resource allocation, predict maintenance needs, and enable proactive decision-making – currently not included in the CAPEX.

ACTION 18 - Investment

Set up a system for the sound management of textile waste

SO 1 SO 2 SO 3

ESSENCE

Promoting a holistic and integrated approach to textile waste management, while aiming to create a more sustainable and resilient city that embraces circularity and environmental responsibility, through awareness-raising programmes

CHALLENGE/VULNERABILITY ADDRESSED

- Low recycling rates
- Textile waste is not collected separately yet
- Population not aware of good waste management practices

BENEFITS

- Support the circular economy
- Reduction of textile waste streams destined for landfilling.
- Reduced GHG emissions
- Job creation – an estimate of 5 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2026	768 t/y CO_2 eq	125,000 €

Context/Description

The action focuses on establishing a system for the separate collection of textiles. The measure promotes waste reduction by encouraging individuals and businesses to rethink their consumption patterns and extend the life of textiles through reuse and recycling.

The action embodies the principles of the circular economy by promoting the recovery and regeneration of textile materials. Through effective collection, sorting, and recycling, textile waste can be transformed into new products or raw materials, closing the loop and minimizing the environmental impact of textile production. Additionally, by establishing a separate collection system for textiles, the amount of textile waste ending up in landfills will be reduced. By diverting textiles from landfill, valuable resources are conserved, while the environmental burden of textile production and greenhouse gas emissions is reduced. Separately collected textiles could be reintroduced in the use cycle through sorting, cleaning and reselling operations. Setting up a social enterprise and a pop-up store would ensure such actions would be effectively carried out. Promoting women and disadvantaged groups entrepreneurship represents a good opportunity in this action.

As per the awareness-raising programme, the company responsible for waste management is delivering plenty of interactive activities, especially for the youth. The present action aims to extend and support these initiatives, engaging participants through interactive activities, videos and real-life examples, to make the programme more informative and attractive.

The Municipality is working towards expanding the cultural life in Mediaș, establishing a cultural centre and organising several events and festivals. These events have to be connected with environmental awareness campaigns on the importance of waste generation reduction and sound waste management. This programme will reach out to schools and institutions, to provide targeted educational programs and to draw the youth's attention to the importance of good waste management practices.

Topics which will be covered through this programme:

- Current waste generation, major sources of waste and areas where improvements can be made
- Encouraging source reduction, by implementing practices such as minimizing packaging and promoting reusable products
- Promote responsible consumption, encouraging the use of environmentally friendly products and packaging – also support local businesses that prioritize sustainability and offer alternatives
- Importance of recycling and recovery of waste
- Composting and biodegradable waste management
- Responsible waste disposal, proper waste segregation and disposal practices, the importance of following local waste management regulations
- Case studies of communities that have implemented effective waste management practices

By informing and engaging the community, individuals are empowered to make informed choices, adopt sustainable practices, and actively participate in an efficient waste management system.

Targets

- By 2025, at least 5 collection points for separate collection of textile waste put into function
- 10% reduction in the fraction of textile waste that reaches the landfill from the general municipal waste in 1 year after action implementation. Increased reduction by 5% yearly after 1st year.
- 1 social enterprise and pop-up store established and functional

Implementation steps

1. Conduct a feasibility study for separate collection of textile waste, to determine the best options for system configuration, sizing and operator model.
2. Establish dedicated collection points with containers specifically for textile waste in strategic locations such as recycling centres, public areas, and community spaces, as resulting from the feasibility study.
3. Tender out/assign operation of the system as per the suggested operator model. Duly inform residents.
4. Set up a social enterprise and a pop-up store for textiles re-use
5. Organise periodical initiatives and connect cultural events and festivals organized by the municipality with behaviour change actions related to waste management, together with designated waste management operator in the city.
6. Monitor progress and take action to adjust the system in order to reach targets.

Key stakeholders

Waste management company ECO-SAL – design, consult and implement;
Intercommunity Development Association ECO-NORD Sibiu – inform and consult;
Municipality of Mediaș – decide, design and implement;
Mediaș Local Council - decide; NGOs and community organisations – consult, inform and implement.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Feasibility study	20,000	
Collection points - estimation for 5 smart collection bins of 4 m^3 and associated amenities	25,000	10,000
Social enterprise and pop-up store for textiles	50,000	
Public behaviour change and awareness campaigns	20,000	
Updating and maintaining mobile application “Ara”	10,000	

Source of financing

Municipal Budget, National Government, IFIs

Social and gender aspects

- Promoting women and disadvantaged groups entrepreneurship represents a good opportunity in this action.
- Behaviour change and awareness campaigns regarding the importance of good waste management practices and recycling will be promoted, including targeted programs that aim to engage and educate individuals from all genders and diverse socio-economic backgrounds.

Smart and digital aspects

- Implement a digital tracking and tracing system to monitor the journey of collected textiles from collection points to recycling facilities to further enhance transparency, accountability, and traceability within the waste management process.
- Update the existing *Ara* mobile software application. Include features that provide guidance on proper textile disposal and offer tips for waste reduction and sustainable textile practices.

ACTION 19 - Investment

Make riverbanks more accessible and attractive

SO 1 SO 2 SO 3

ESSENCE

Redevelopment and natural rehabilitation of approx. 1 km length of the riverbank area along the Târnava Mare river alongside the newly planned bicycle path will make the riverbanks more accessible, while the installation of benches, tables and leisure infrastructure will make it more attractive. The action contributes to improving climate resilience through nature-based solutions.

CHALLENGE/VULNERABILITY ADDRESSED

- Need for more public green and open spaces
- Lack of leisure and sports facilities (one of the reasons why young people choose to settle in other cities)
- Allow leisure and easy access in the vicinity of the riverbanks

BENEFITS

- Increase in public green spaces and possibilities for leisure; create a more walkable city and save commuting time;
- Increased climate resilience through nature-based solutions;
- Boosting the attractiveness of the city for tourists and locals, especially the young generation in Mediaș;
- Safer river crossing for pedestrians and bikers, without interference with vehicles; connecting neighbourhoods;
- Opportunity to create stunning viewpoints.

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	1 t/y CO_2 eq absorbed for an estimate of 100 trees planted (conservative estimation); 9 t/year CO_2 eq for an estimated 20 persons swapping car usage for cycling/walking	3,000,000 €

Context/Description

At the Municipality level of Mediaș, a small surface of green areas is properly maintained and accessible for people, including sports and recreation areas, forest and protection zones. Mediaș has its space limits in terms of establishing new green and open areas. However, enhancement of the riverbanks of the Târnava Mare River offers possibilities to create additional accessible green space. Natural embankments of the river increase climate resilience and create space for people to walk, cycle, do sport and meet each other.

A new, approximately 1 km long bicycle path is planned on the right riverbank of the Târnava Mare, connecting the Pasarela Gura Câmpului with the Stadionul Gaz Metan Mediaș. This brings the ideal opportunity to redevelop the riverbanks alongside the bicycle path. This redevelopment of the riverbanks includes increased accessibility for pedestrians, the inclusion of nature-based solutions to address erosion and flood risk, increased shading and soil permeability, improvement of water quality and the rehabilitation of riparian galleries for which, in an urban context, there is often no space left. Furthermore, it includes the placement of recreational infrastructure such as benches, picnic tables, (elevated) boardwalks, public barbecue places etc. When desired and possible, for example by temporarily blocking part of a road, space for pop-up markets can be created.

A holistic approach to the blue-green network of the city is relevant for developing urban plans and for creating awareness for citizens. Therefore, the compatibility with transport actions and water infrastructure actions should be considered, to meet multi-value benefits. An integrated blue-green urban plan incorporating the river and its natural banks, especially alongside slow mobility routes such as bicycle lanes and pedestrian paths, creates a network of blue and green open spaces and corridors within urban environments that provides sustainable drainage infrastructure and integrated social environments. Rehabilitated riparian galleries can furthermore balance the increase of impermeable surfaces in the city and help maintain the natural course of the river.

The following actions can be taken to rehabilitate the riverbank area (feasibility study should inform on which specific actions to develop):

- Reset the natural topography, vegetation and river floodplains
- Create natural habitats, increasing riparian vegetation and habitat complexity can improve rivers. In highly constrained locations, gravel substrate can be introduced. Trees and natural vegetation will also enhance climate resilience of the area to floods, droughts and heat waves.
- Create wetlands (e.g. for pollutant retention).

- Connect sustainable drainage systems in the city with the river: sustainable urban drainage and green roofs are long-term approaches to managing surface and groundwater by reducing the rate and volume of run-off. Therefore, it can help to return flow to a more natural state.

The Pasarela Gura Câmpului crossing needs rehabilitation and redesign for easier bike access, while at the Gaz Metan Stadion, a new river crossing would improve accessibility for the citizens. Therefore, collaboration with the transport actions is needed. Note that with the rehabilitation of the Pasarela Gura Câmpului, attention should be given to the present pipelines running along the bridge.

In scope of this investment action: 18,000 square meters on the river area of the Târnava Mare River, connecting the Pasarela Gura Câmpului with the Stadionul Gaz Metan Mediaș: Bridge intersection Baznei street with Ac. I. Morar street - Bridge intersection Gării street with T. Andronic street. Towards the future, rehabilitation of the riverbanks areas further downstream and upstream can take place, connecting larger networks of blue-green across the city.

Targets

- Redesign and rehabilitation of the two river crossings – Gura Câmpului and Stadion.
- Rehabilitate the river area along the new bicycle path in a natural way with the inclusion of best practices for biodiversity, add at least 100 trees along the river. An estimate of 100 trees planted along the 1 km rehabilitated right riverbank dyke has been considered for the GHG savings calculation.
- Develop at least one elevated boardwalk.
- Install 1 leisure area with sustainable amenities.

Implementation steps

1. Identify and prioritize river area rehabilitation works to protect and enhance agricultural, environmental and cultural assets, while building on the climate resilience of the area.
2. Work with engineers and landscape architects to design natural and sustainable areas with leisure features (picnic tables, benches, work-out equipment etc.) and to incorporate nature-based solutions (e.g. to increase biodiversity and decrease the negative ecological footprint).
3. Carry out procurement and implementation procedures for the redesign and rehabilitation of the two river crossings for cycling and pedestrian traffic.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth; Urban Development Department; Technical Department; Public Domain Administration – decide, design, implement;
'Romanian Waters' National Administration, Mures River Basin Management Administration, Mediaș hydrotechnical system – inform and consult.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Redesign and rehabilitation of pedestrian and cycling bridges (including feasibility study)	2,800,000	300,000
Natural rehabilitation of the riverbank area (approx. 18 km^2)	150,000	
Leisure infrastructure along the riverbank (barbecue and picnic tables and benches)	50,000	

Source of financing

Municipality budget, national government funds, IFIs, EU funded projects for climate resilience, etc.

Social and gender aspects

The investment is addressed to all inhabitants of the municipality:

- Make walking and cycling paths accessible to wheelchairs, strollers, and provide regular benches for older people and children to rest.
- Consult with women and youth organizations in order to understand their expectations and needs. Consider these needs and general health and safety aspects when designing new infrastructure features.

Smart and digital aspects

The new routes and green areas can be equipped with smart street lighting to accommodate for safety, while taking into account shielding from light for some animal species.

The project foresees Wi-Fi distribution infrastructure and installation of video surveillance. This allows for comprehensive data collection and analysis with regard to, for example, the number of users, prevailing use, natural development of the area and biodiversity.

ACTION 20 - Investment

Improve and green schoolyards

SO 1 SO 2 SO 3

ESSENCE

Enhancing schoolyards with the inclusion of nature-based solutions, and making them accessible to the broader public, expanding the usable green space for citizens.

CHALLENGE/VULNERABILITY ADDRESSED

- Need for more public green space accessible to citizens
- Schoolyards need improvement and should be greenified
- Improve the communities' (particularly pupils and students) ecological health and climate resilience

BENEFITS

- Improvement of public health by enabling a more active lifestyle, providing a safe space for physical activities, social interaction, and recreation, reducing the risks of obesity, cardiovascular disease, and poor mental health
- Improvement of the young generation's wellbeing, learning and play, while contributing to their communities' ecological health, social cohesion, and climate resilience
- Improving the landscape value and biodiversity in the city
- Increased share of accessible green space in the city
- Strengthening of the community as it facilitates shared community experience and is also an important enabler of fighting social inequality as even low-income households can share this experience
- Increased/newfound level of appreciation and sense of ownership of citizens for their city

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2026	10 t/y CO_2 eq absorbed for an estimate of 1000 trees planted (conservative estimation)	150,000 €

Context/Description

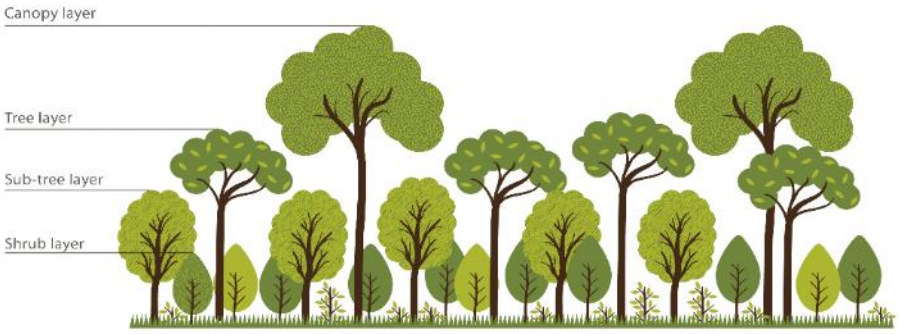
This action involves the transformation of asphalt-covered schoolyards into park-like green spaces. When these park-like spaces are made accessible to the general public after school hours, the whole neighbourhood can enjoy the benefits of the investment and of accessible green spaces in terms of increased ecological health, climate resilience, people's well-being, etc.

Including green infrastructure in schoolyards will improve overall well-being, as well as the playing and learning capabilities of the students. Examples of such elements are large trees giving shade, water features such as wadi's (shallow infiltration zones for water), fruit, vegetable and flower gardens, and playground equipment made from and decorated with native natural material or even with the integration of living plants such as willow-houses.

Additionally, the greening of schoolyards also includes measures that can significantly improve local biodiversity and the ecological health of the environment. The development of native flower/grass beds and the placement of insect-, bird-, and bat nesting boxes are just some examples. Furthermore, they can give learning opportunities to the children.

Lastly, this action also includes measures that significantly contribute to climate resilience. The placement of trees helps capture carbon from the atmosphere and filters pollutants. Additionally, trees and water features help mitigate the urban heat islands effects, significantly cooling the environment for the students and staff.

Pocket forests planted using the Miyawaki method tend to grow faster than the traditional style of forest planting and ensure increased carbon capture. The Miyawaki method consists of planting native species of all layers of forests in a dense manner, with heavy mulching. Competition among plants and minimal maintenance in the first year ensures quick growth with visible results.



When made publicly accessible, not only students and staff will benefit from these measures, but also other residents or visitors.

There is also an economic benefit to the development of local green spaces. It can significantly boost the attractiveness of the city to visitors, with some estimates putting the

value of urban green spaces at €7-€17 per visit. Green space can also boost the value of nearby properties, contributing to economic growth.

Targets

- A minimum of 3 schoolyards to be developed in a green way and made publicly accessible by 2028
- For these schoolyards, a minimum 35% of the paved surfaces need to be converted by soft (permeable) surfaces
- Between 15% - 25% of the schoolyard should receive increased shading by tree cover
- A variation of native plant and tree species should be used.

Implementation steps

1. Determine locations to implement the action:
    a. Screening of schools that are willing to collaborate
    b. Screening of neighbourhoods that have the highest need for extra public greening
2. Develop an implementation plan adapted to each school location
    a. Miyawaki planting protocol includes the following steps: identification of native species; designing the multi-layered forest; soil preparation; planting; maintenance. Details: https://www.orchardofflavours.com/miyawaki-inspired-food-forest
    b. Use volunteers among students and teachers to establish and maintain forest.
3. Set out an action plan and time scale for the development of more public schoolyards.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth; Urban Development Department; Technical Department; Public Domain Administration – decide, design, implement, maintain;
School Board at county level.; Board and students from participating schools; parents' associations – consult, inform, design, implement, maintain.

Local plant nurseries; local businesses implementing CSR policies – implement.

Local environmental/social CSOs – consult, inform, implement, maintain.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Green playground equipment	50,000	5,000
Vegetation and planting supplies – saplings and materials (up to 100 € /m^2 of planted forest) – estimated 1000 m^2 to be planted in the next 5 years	100,000	10,000

Source of financing

Local businesses through CSR initiatives; crowdfunding; municipal budget; EU financing as part of EU funding for larger projects which include this component (i.e. URBACT, LIFE, European Urban Initiative, etc.)

Social and gender aspects

The investment is addressed to all inhabitants of the municipality:

- The playgrounds should be accessible to children of all ages
- Public green spaces should be accessible to wheelchairs, strollers, and provide benches for older people and children to rest.
- Consider health and safety aspects when designing the new infrastructure

Smart and digital aspects

The action offers the possibility of integrating various smart and digital aspects, such as:

- Possibilities to integrate smart lighting in essential areas, provided sensitive species are shielded from intense light.
- Biodiversity observation cameras and IoT devices, enabling data collection on soil and green space micro-climate features, an opportunity for schools to collect and use data for learning processes.
- Placing of small panels with QR codes informing students and other users on planted species, benefits of nature-based solutions and care and maintenance instructions for established green spaces.

ACTION 21 - Investment

Develop sustainable touristic features connected by green routes

SO 1 SO 2 SO 3

ESSENCE

This investment action involves on one hand the development of sustainable slow-mobility routes that connect (new) touristic locations and viewpoints (platform, adventure park, camping places), on the other hand the development of interactive digital panels explaining the city map and indicating the best routes and interesting locations.

CHALLENGE/VULNERABILITY ADDRESSED

- Insufficiently developed touristic potential of the city
- Presence of urban heat islands in the city

BENEFITS

- Enhancement of touristic attractiveness and encouragement of an active lifestyle
- Boosting the tourism industry, attracting visitors and related business
- Easier navigation in the city
- Newfound appreciation of residents for their city
- GHG emissions reductions by choosing slow mobility

TIMEFRAME

2025–2027

GHG SAVINGS

1 t/y CO_2 eq absorbed for an estimate of 100 trees planted (conservative estimation)
9 t/year CO_2 eq for an estimated 20 persons swapping car usage for cycling/walking

CAPEX

2,065,000 €

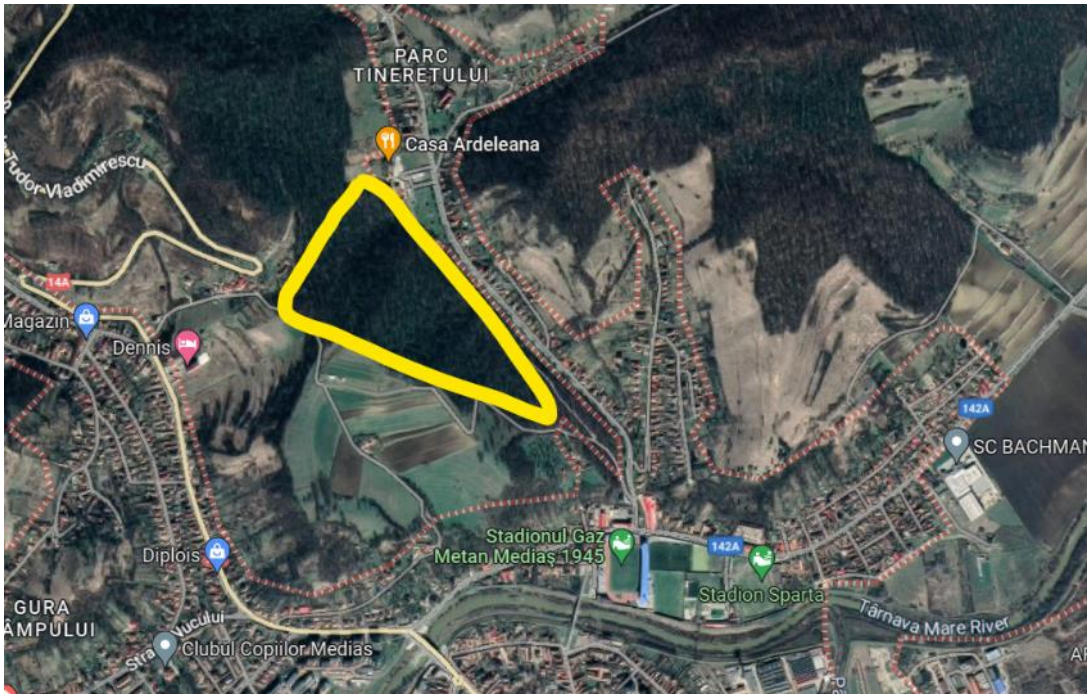
Context/Description

This action involves several investment steps: (1) the development of new viewpoints and potential new touristic locations such as an adventure park, camping places, kayak, etc., (2) the development of sustainable slow-mobility routes that connect the (new) touristic locations and viewpoints in Mediaș and (3) the development of interactive digital panels informing on the touristic locations and the sustainable routes connecting them, as well as providing information on route features, local biodiversity, sustainability tips.

(1) Touristic locations

To enhance the tourist attractiveness and for Mediaș to stand out against the larger tourist cities in the surrounding, the following viewpoints and location enhancements are proposed. Based on a feasibility study, a priority shortlist of these can be compiled along with a timeline for development.

- Wooden platform on top of the hill in Greweln Forest and Fortress Hill, as a viewpoint over the city and the surroundings.
- In the Greweln Forest, an adventure park can be developed including high rope courses, balance courses, climbing walls, etc. Next to routes for adults and youth, a climbing forest for toddlers and small children can be added. There is an opportunity to connect the high-rope adventure courses with the wooden platform viewpoint.
- River access points for leisure on the river, like kayak and stand-up paddling. To be developed alongside changing rooms, toilets, showers and the opportunity for food and beverages, or an organized transfer to these sport facilities.
- Development of leisure on water at the Ighis Lake (feasibility to be explored).



Area highlighted in yellow - suggested location for adventure park

(2) Sustainable routes around the city

Well-developed cycling infrastructure and pedestrian lanes encourage citizens to cycle and walk more. When combined with sightseeing and connecting green and blue elements in the city, this also enhances touristic attractiveness. In line with international good practice, cycle and walking facilities should be planned, designed and installed based on the principles of visibility, accessibility, safety and security, maintenance and monitoring, availability and capacity, connectivity and attractiveness.

There are some potential touristic routes to develop further and integrate blue-green infrastructure, such as

- the Greweln Forest tour;
- Fortress Hill;
- Mediaș – Ighis – Mosna circuits;
- Via Transilvanica sections in and around Mediaș;
- other nature walks and day tours and routes throughout the city connecting viewpoints.

Improvement of the green cover along the routes will increase shading and brings natural enhancement and a series of added environmental and socio-economic benefits. To make the proposed nature routes visible, consistent signage and floor markings indicate the correct direction.

As the central part of the city dates back to the medieval period and the layout seldom allows for additional tree plantings, shading of pedestrian areas could be done using climbing vines (ideally grapevines, which are a trademark of the region) set on horizontal structures set at a comfortable height to allow pedestrian/cycling passage but also allow showing architectural features of buildings. Pasajul Smardan street could be a first pilot location in setting up this type of shading system, but also narrow passages with stairs would allow for such interventions.

Example of narrow pedestrian street shaded with grapevine (Jerez de la Frontera, Spain)

The possibility of adding e-bike charging stations or bike/e-bike rental services in key points along the routes needs to be explored. The railway/bus station multimodal transport hub should be one of the locations providing such services, with easy access for tourists and residents. Bike/e-bike rental should be made as easy and straightforward as possible, to ensure uptake.

(3) Digital interactive panels

The routes can be indicated on interactive digital panels. These digital panels, strategically placed at the river crossings and at the viewpoints, inform on the starting and end points of the routes, the interesting points to visit along the way, the length and elevation of the route. Furthermore the digital panels can indicate public toilets, restaurants and bars and their opening hours.

The strategically positioned on-street navigation posts can feature different levels of information, including 'heads-up mapping' (where the signage orientation corresponds with the direction that the user is facing, as opposed to following the traditional true-north orientation), walking times, walking directions, building locations, finder mapping, integrated transport nodes and street names etc.

Furthermore, the interactive digital panels can be used to educate people on nature-related actions, ecosystem services and interesting facts about the city and its surroundings.

The disadvantages of digital panels are the need for high investment and maintenance costs, as these often get vandalized in a lack of comprehensive surveillance. An advantage, however, is that they help build up users' digital skills, and could be customised to include various types of information. To counteract the important disadvantages, a first digital interactive panel could be placed strategically in the city centre (i.e. in front of the municipality building) to test the degree of use and maintenance needed in a local context. Additional information could be initially conveyed as panels with QR codes placed strategically along routes, leading the user to a digital platform/app which includes the above-mentioned type of information. An opportunity would be to build up the existing www.visitMedias.com platform to include the above mentioned functionalities and have an associated app.

Targets

- Develop at least 2 viewpoints in the next 5 years
- Develop at least 3 touristic routes to connect the viewpoints, with extra green infrastructure, clear signage and floor markings within the next 5 years
- Place one interactive digital panel in the square and at least 10 panels with QR codes at strategic positions along the routes (river crossings, viewpoints, etc.) in the next 5 to 10 years.

Implementation steps

Touristic locations:

1. Determine the best location(s) for the new platform viewpoint(s).
2. Determine the best locations and do a feasibility study for the development of an adventure park, for water leisure and for accompanying sport infrastructure.
3. Develop the viewpoints and touristic attractions based on the results of step 1 and 2.

Sustainable routes:

1. Determine new sustainable routes connecting the new touristic locations.

2. Do a feasibility study on how and where to add nature and green infrastructure along the routes, so ecosystem services (such as provision of shade) give advantage to the neighbourhood.
3. Develop clear signage and floor markings to indicate the routes.

Digital interactive panels:

1. Determine features to be included on the digital maps/app.
2. Determine the best locations for the digital panel and QR code panels.

Key stakeholders

Municipality of Mediaș, Department of Transport and Communication, Architecture and Urban Planning Department, Tourism office, NGOs – decide, design, implement, maintain.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Adventure park Panoramic/scenic wooden viewpoint platforms/towers (50,000–90,000 / viewpoint)	1,000,000	100,000
Development of sustainable touristic routes	1,000,000	
Interactive digital panel and associated digital platform/app (for the interactive digital panel, depending on included features)	65,000	

Source of financing

Municipality budget, National Government funds, IFIs, EU funding through urban development

Social and gender aspects

- Make walking and cycling paths accessible to wheelchairs and strollers, and provide regular benches for older people and children to rest.
- Consult with women and youth organisations in order to understand their expectations and needs and consider health and safety aspects when designing the new routes in order to encourage women and youth to use them.

Smart and digital aspects

The action offers the possibility of integrating various smart and digital aspects, such as:

- New features can be incorporated in interactive digital panels indicating the sustainable touristic routes.
- A digital interactive app can complement information on info panels and contain more features. Integration with and updating of existing www.visitMedias.com platform would be beneficial.
- The new routes can be equipped with smart street lighting.

ACTION 22 - Policy

Sustainable tourism strategy

SO 1 SO 2 SO 3

ESSENCE

Mediaș aims to advance its economy through enhancing its tourism sector, while preserving local values and developing sustainably.

CHALLENGE/VULNERABILITY ADDRESSED

- Underdeveloped tourism sector, despite potential
- Local brands insufficiently promoted across the country and country boundaries

BENEFITS

- Local economy boost by developing the tourism sector
- Long term sustainability in implementing GCAP vision
- Newfound appreciation of residents and visitors for the city, improved social cohesion

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2025	N/A	150,000 €

Context/Description

Mediaș is a medieval city which has a very high potential to develop as a sustainable tourism hub. The city is home to the historic setting of Romanians, Hungarians and Saxons harmoniously living together and creating a cultural richness that few cities in the country can compare to. Adding to this potential is the developed professional knowledgebase, skills and craftsmanship that have shaped the city in the last century. It is this cultural identity, local skills and vibrant potential, together with the beautiful natural setting that the city aims to value in its goals to become an example of sustainable development and climate-mindful urban regeneration. A well-sustained tourism sector boosts local appreciation of residents for their city, which is likely to encourage more young people to build their future in Mediaș.

Other cities in the region, such as Sibiu and Sighișoara have a strongly-established tourism sector, offering a wide range of services and experiences for all types of tourists. Mediaș is located on the road between Sibiu and Sighișoara, and despite having a well-preserved medieval city centre, it rarely attracts visitors for more than a few hours.

Developing a 'green' tourism strategy for the city is a good opportunity to boost the local economy and to ensure the city grows sustainably. It is mandatory that the team developing the Sustainable Tourism Strategy adequately considers all the actions included in these GCAP, both short-term and long-term.

The strategy will be developed following a participatory and inclusive approach, in close consultation with interested stakeholders, such as, but not limited to the Municipal Museum, Hermann Oberth Memorial House, Museum of Natural Gas; Local, regional and national tourism associations, Local hotels and B&Bs, Local restaurants and cafés.

Local strengths which could be enhanced through the sustainable tourism strategy for Mediaș include:

- Possibilities for families to spend time and experience slow living in a charming city;
- Hiking and trail biking which are plentily available around the city, for sports enthusiasts;
- Rich history and culture, for medieval city enthusiasts;
- Arts and crafts;
- Thematic tours - local industry and art;
- Traditional local products (i.e. lichiu);
- Wine-tasting facilities, tours and events;
- Regular fairs, markets and events;
- Science and industry – themed museums, in addition to the rich collections of the municipal museum;
- Local legends and mysteries;
- Circuit through Saxon villages, starting from Mediaș, etc.

The municipality is already taking steps in this regard, training three of their staff in the field of touristic destination management. In addition, the previously developed web platform www.visitMediaș.com could be used in developing and implementing the sustainable tourism strategy of the city.

Targets

- Strategy developed and approved within 2.5 years from GCAP approval
- 10% annual increase in the number of overnight stays in the city compared to the baseline before strategy implementation

Implementation steps

Contract suitable consultancy to develop the Sustainable Tourism Strategy for Mediaș, which will take the following steps:

1. Assess current tourism status: number of overnight stays, types of tourists, main attractions, existing infrastructure and amenities, access and mobility options for tourists in the city.
2. Define sustainable tourism goals, in line with Sustainable Development Strategy, Smart City Strategy and Mediaș GCAP.
3. Conduct tourism market research and identify the city's unique features and opportunities setting it apart from other similar cities.
4. Develop product and experience offer, in line with market research results and tourist preferences (see examples above).
5. Support improvement in tourism infrastructure and services and improve public services and amenities to respond to the growing number of tourists and increased standards. Include training for municipality staff responsible for strategy implementation, monitoring and review.
6. Foster community involvement: Engage local residents in the tourism development process, promote community participation, and create opportunities for them to benefit from tourism. Encourage the preservation of local traditions, involve local businesses, and promote community-led initiatives.
7. Implement sustainable practices such as energy efficiency, waste and water reduction, and biodiversity protection in the municipality's own events and manifestations; encourage businesses to do the same through annual sustainability awards/contests. Provide training on sustainable tourism to representatives of local tourism-related amenities (hotels, B7Bs, restaurants, café's, museum and local attractions staff, local tour operators, tourism CSOs representatives, etc.)
8. Develop a targeted marketing and promotional plan to raise awareness about the city's sustainable tourism offerings. Leverage digital marketing channels, collaborate with travel agencies and tour operators, and participate in relevant trade shows and events.
9. Develop framework to regularly monitor the progress of the sustainable tourism strategy, assess the impact on the environment, local economy, and community, and make adjustments as necessary. Use feedback from visitors, residents, and stakeholders to continually improve the strategy's effectiveness.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth; Technical; Economic; Local Public Administration – decide, design, implement.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
External consultancy for developing the strategy, including underlying baseline and market research • Capacity building and training, and ongoing community engagement • Marketing and promotion	150,000	
Monitoring and evaluation during strategy implementation		5,000

Source of financing

IFIs, Municipality budget, private funding from beneficiaries, EU funds, national funding programmes, etc.

Social and gender aspects

- Gender equity and social inclusion principles to be embedded in the Strategy and promoted in both employment in the tourism industry, as well as when it comes to the provision of services to beneficiaries. Youth should be a special targeted group for which the strategy should strive to define specific measures for creation of employment opportunities.
- Local social CSOs can be involved to ensure equity in participation and implementation of the strategy

Smart and digital aspects

- Opportunities to use digital tools to keep parties informed and involved
- Opportunities to use smart solutions to enhance the visibility of the city and target tourists, boost the use of www.visitMediaș.com platform.
- Educational programmes need to build capacity in terms of smart and digital skills for both beneficiaries and support staff (students, teachers, coordinators from local administration, and target audience).

ACTION 23 – Policy and investment

Enhance the capacity of local administration to implement the GCAP

SO 1 SO 2 SO 3

ESSENCE

Mediaș Municipality is a public administration entity which is constantly under pressure for ensuring quality public services for its citizens. The Municipality is committed to work towards enhancing its capacities in order to improve its performance.

CHALLENGE/VULNERABILITY ADDRESSED

- Lack of skilled workforce/ageing workforce
- High number of development projects to be implemented in the coming years

BENEFITS

- Reduce costs with project implementation
- Better and more qualitative services offered by the Municipality
- Enhanced management practices for city development
- Job creation – an estimate of 2 new jobs

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2025	N/A	150,000 €

Context/Description

In the last years, the city has managed to attract and mobilise resources for the implementation of different development projects such as the bi-pass road, road rehabilitation, building renovation, energy efficiency and other projects, which all aim at improving the living conditions in the city and the municipal services provided to citizens. The Municipality is currently operating within an institutional framework that includes an office for Project Implementation Unit with only one person assigned as PIU coordinator. This office is subordinated to the Technical Department and is closely working with experts from other departments whenever needed. The current projects are implemented with the support of different project implementation teams established based on each project's needs. The Technical Directorate is the entity responsible for determining the project implementation resources required and the members of each project implementation team.

The city is missing a unit that would lead the municipality strategic development process. This is currently done mostly by the mayor and the vice mayor and the heads of different departments. Also, the available human resources are not sufficient for coordinating the implementation of this GCAP. Further on, under the current circumstances where the city is confronted with a considerable decrease in population, the institutional setup of the Municipality will have to be adjusted accordingly.

This action focuses on strengthening the institutional capacities of Mediaș Municipality for enabling them to attract and implement strategic development projects by enhancing the capacities of the existing Project Implementation Unit (PIU). Also, the current action includes measures for increasing the level of digitalization of Mediaș Municipality both internally and in relation to end-users.

Foreseen measures:

- *Enhance the capacities of the current Project Implementation Unit* Based on existing information the recommendation would be to have a functional PIU with minimum 3 full-time employees (members). Additionally, the PIU activity will be supervised by a steering committee formed from heads of different departments (Technical Departments, Financial, Architecture, etc), the city manager and the political decision-makers (mayor and/or vice-mayor) PIU would act as the coordinating body for the GCAP implementation as well as for all the strategic documents developed and approved by the Municipality. The unit will be responsible for monitoring and evaluating the way strategic documents are implemented. They will have to liaise with all the relevant departments and collect and manage all the necessary data about the projects under implementation. Also, they will have clear responsibilities for coordinating the project implementation teams dedicated to each project. The unit will have to be subordinated directly to the vice-mayor or the city manager in order to reduce the decision-making timing, avoiding unnecessary delays caused by the different layers of units and departments that need to approve documents related to project development and implementation. The members of the unit will have to have good knowledge and skills related to project management and financing schemes that are applicable to public authorities, have a good overview of the city's development

process and will have to establish functional working relations with all departments and public service companies coordinated by the Municipality.

- *Online one-stop-shop dedicated to all urban development actions*. The one-stop-shop will have the ability to provide information to citizens related to all necessary documents and permits required, necessary steps required for obtaining such permits, information related to funds available at the local level for different investments, projects, and programmes run by the Municipality etc. Mediaș has already developed the necessary infrastructure for digital interaction with its citizens. A dedicated portal for Mediaș was launched in 2022 and is currently underused. The one-stop-shop will be developed under the current web portal. To enhance the usage of the web portal, the Municipality will have to make sure that citizens are well-informed about this portal as well as its own employees know how to operate it. Further on, the administration of the one-stop-shop could be externalized.
- Continue the investment (in hard and software) for *digitalization of the current operational activities, data monitoring and control* in the context of GCAP monitoring and municipal infrastructure supervision. The Municipality will continue to allocate resources and attract funds for digitalizing its operations. Also, the investments will focus on developing a well-designed capacity-building plan for the Municipality to ensure that it is equipped to meet the needs of its citizens and visitors and to capitalise on new opportunities.

Targets

- 3 full time employees at PIU
- Functional one-stop-shop
- All employees to work on the newly established digital platform available at the Municipality
- Increased level of end-user satisfaction and reduced time with citizens interaction (reduced costs)
- Increase usage levels of Mediaș web portal with 50% in 5 years.

Implementation steps

1. Conduct an institutional analysis to determine the exact position of the enhanced PIU in the Municipality's organigram, the membership and the functions covered by the unit. The institutional assessment should also determine the training needs of municipality employees and formulate recommendations related to training programme for the coming 2 years. A special focus would be on the available and required digital competencies.
2. Prepare the documentation required for approving the new PIU structure and responsibilities and approval process.
3. Select members of PIU and make sure their job description is in line with the functions includes in PIU mandate. Acquisition of technical equipment required for PIU operation (IT equipment, materials, etc.).
4. Develop the digital one-stop-shop.
5. Implement the training programme.

Key stakeholders

Municipality of Mediaș – decide, design, implement

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€)
Institutional assessment and training programme	20,000	15,000
Fully functional PIU	30,000	
Digital one-stop-shop	100,000	

Source of financing

Municipal Budget

Social and gender aspects

- Ensure that the enhanced PIU is established considering gender mainstreaming principles and respecting the gender equity principles.
- Make sure that the digital platforms developed for citizens are inclusive and develop adapted information campaigns for end-users.
- Ensure access of all employees to the training programme.
- Evaluate the usage of digital services provided to citizens and observe any gender or social inclusion challenges reported by them.

Smart and digital aspects

- New high-tech equipment and up-to-date software will be procured.
- Training of employees on the usage of new equipment and software will be ensured.

ACTION 24 – Policy and investment

Adapt the education system to future development needs

SO 1 SO 2 SO 3

ESSENCE

Schools in Mediaș are very good and produce elite students that have great potential to support the city in its future development goals. This action aims to raise the students' interest and skills in fulfilling emerging city needs, as well as the municipality's capacity to foster research.

CHALLENGE/VULNERABILITY ADDRESSED

- Lack of skilled workforce/ageing workforce
- Young people leaving the city for better opportunities

BENEFITS

- Increased capacity of the local administration and private sector to adapt to future city challenges.
- Support for the emerging tourism industry in Mediaș
- Long term sustainability in implementing GCAP vision

TIMEFRAME	GHG SAVINGS	CAPEX
2024–2028	N/A	140,000 €

Context/Description

The city has a long-standing tradition of providing excellent-quality education services, both in theoretical and practical fields. High schools in Mediaș routinely rank high in national scoring boards for student performance and in national/international competitions. In the lack of local opportunities for higher education facilities in the city, the best students leave for universities in larger cities in Romania or abroad and most often than not decide to remain there. Being perceived by the younger generation as a city with few opportunities for development and much less vibrant than Cluj-Napoca, Sibiu, Brașov or Bucharest, Mediaș is rarely chosen by skilled students as their future.

This action aims to make the city administration, the city's potential and unique opportunities more approachable to high-school students around the time they decide on the future careers they want to pursue. This would inspire them to contribute to building the future they want to have in their home town.

In addition, the city has unique opportunities to develop highly-specialised experts of the future in emerging technologies, such as hydrogen production and use. The highly-developed gas industry in Mediaș is already starting to prepare to migrate to this type of greener fuel and future experts in this filed could be trained in Mediaș.

The city has already taken steps in promoting sustainability through projects developed in schools, such as the 'Clean City' knowledge-sharing programme with schools from the Netherlands, collaboration with Eco-Sal, the municipal waste management company, and others. Further enhancing collaboration with Universities in nearby cities, such as Technical University of Cluj-Napoca, Babes-Bolyai University, Lucian Blaga University in Sibiu and others are a logical next step in this direction.

Measures included in this action are targeted at keeping a close connection between the Municipality administration and the high schools in the city, enriching the curricular and extra-curricular framework with activities such as:

- Creating an education and innovation cluster with the Municipality, local schools, regional universities and the two main companies activating in the gas industry – Romgaz and Transgaz, as well as other key stakeholders.
- Using the 'green week' and 'different week' school programmes to teach entrepreneurship and business management classes, focused on green and local small business sector, public administration and enhancement of local values, as well as scientific research in emerging technologies;
- Reviving the Pupils Municipal Council initiative, involving them in the decision process at the municipal level;
- Expanding and enhancing the collaboration with the Technical University in Cluj-Napoca, Babeș-Bolyai University in Cluj-Napoca and Lucian Blaga University in Sibiu, with the longer-term aim of offering higher education pursue options in Mediaș;
- Proposing the development of ideas for 'local product' type of businesses within the Entrepreneurship and Applied Economics classes of high-school seniors;
- Provided the upcoming updates in education legal framework allow it, using the local development classes to promote activities and the green values the Municipality is

pursuing, to inspire the young generations to identify with them and contribute to their achievement.

Targets

- Cluster established in the first 2 years from GCAP approval
- Municipality participates in at least 1 research project as a beneficiary
- Pupils' Municipal Council initiative reinstated in the first two years of GCAP approval.
- At least 2 consultations per year between the Municipality and the Pupils' Municipal Council
- At least 100 pupils per year participating in proposed classes

Implementation steps

1. Creating an education and innovation cluster with the Municipality, local schools, regional universities and the two main companies activating in the gas industry – Romgaz and Transgaz, as well as other key stakeholders. Sign collaboration protocol with the Technical University in Cluj-Napoca, Babeș-Bolyai University and Lucian Blaga University and offer space for teaching and research activities to be carried out in Mediaș, for students in the city/region. Select academic profile in line with future development goals of the city, i.e. tourism services, small business sector/entrepreneurship, smart/digital transition.
2. Establish a working group between the Municipality and local school representatives and lay out a plan for including entrepreneurship and business management aimed at enhancing the local business sector and development of 'local product' type of businesses, as well as other educational initiatives that support Mediaș GCAP. Allocate resources among each stakeholder and coordinator from Municipality.
3. Issue municipal decision, assign Municipality liaison officer and organise elections for Pupils Municipal Council. Define mandate and jurisdiction, set up meetings schedule. Municipality to support Pupils Municipal Council with meeting space and admin guidance, expertise on-demand in implementation of council projects.

Key stakeholders

Municipality: Municipal Department for Culture, Sports, Tourism and Youth; Technical; Economic; Local Public Administration; - decide, design, implement. Representatives of local schools; Students in local high schools; Universities in nearby cities; Local CSOs active in social and gender-related aspects – consult, inform, design, implement.

Estimated costs (CAPEX and OPEX)

Element	CAPEX (€)	OPEX (€/y)
Setting up and operationalise the Education and Innovation Cluster - all action implementation steps to be run through the cluster	140,000	14,000

Source of financing:

Municipality budget, private funding from facilities involved in the program, EU funds, national funding programmes, crowdfunding, etc.

Social and gender aspects

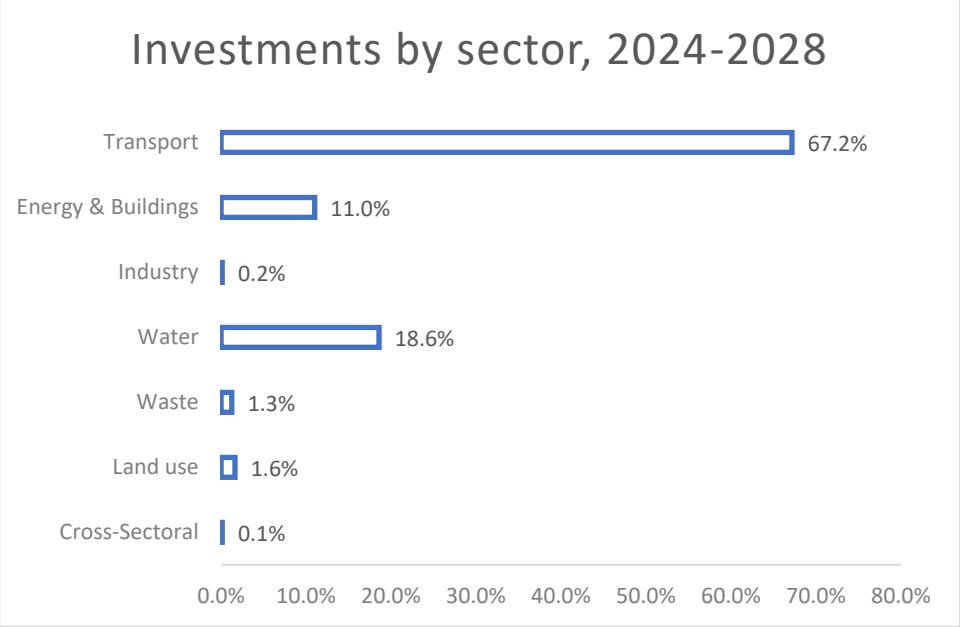
- Gender equity principles will be applied for all activities in this action in particular girls will be strongly encouraged to participate in STEM studies.
- Local social CSOs can be involved to ensure equity in participation and implementation of Education and Innovation Cluster and the Pupils' Municipal Council set-up and steer proposed projects with regard to social and gender aspects
- Awareness raising of youth on climate related topics

Smart and digital aspects

- Opportunities to use digital tools to keep parties informed and involved
- Opportunities to use smart solutions to enhance collaboration with universities
- Educational programmes need to build capacity in terms of smart and digital skills for both beneficiaries and support staff (students, teachers, coordinators from local administration, and target audience).

6. Summary of GCAP actions and financial details

Total investment needs defined by the GCAP for the period of 2024 – 2028 are estimated at the amount of approximately 318 million EUR. Allocation among sectors is presented on the following graph:



Major investment is envisaged in transport, for development of rapid transit road and bridges (~204 million EUR), funding for which is to be sought through National Recovery and Resilience Plan and/or State Budget. Concessional finance from IFIs could be accessed for replacement of public transport fleet with electric busses and for extending the trolleybus networks. Annual road rehabilitation may be financed directly by municipal budget.

Potential financing sources for actions in energy efficiency sector are National Recovery and Resilience Plan, Romanian Energy Efficiency Fund, concessional finance from IFIs, as well as Energy performance contracting with Energy Services Companies (ESCO).

Private funding, URBACT program, as well as municipal budget may provide funds for implementation of actions in industry sector.

Rehabilitation and expansion of water and wastewater networks (53.9 million EUR) is the major action within the water sector. EU funds provided via Operational Program for Sustainable Development (PODD) and IFI's concessional finance are considered as main financing sources for implementation of actions in the water sector.

Actions in improved waste management, land use and cross-sectoral require relatively small investment that can be financed by private sector and/or by the municipal budget.

There are substantial funds that can be accessed through EU funded programmes, co-funding may be secured through national and IFI's concessional loans. Average annual own municipal revenues for the last three years are of the amount of 21 million EUR and are growing and current municipal debt repayments represent less than 10% of own revenue. As ceiling for municipal indebtedness is 30%, according to art. 63 of Law 273/2006 on public finance[4], municipal additional borrowing capacity may be utilised, if needed.

The summary financial table of actions is provided below.

4 Law no. 273/2006 on Local Public Finance, article 63

	Action	Investment/ Policy	CAPEX [EUR]	OPEX [EUR]	Timetable [EUR]				
					2024	2025	2026	2027	2028
1	Optimising the public transport network	Investment	2,290,000	74,000	400,000	850,000	850,000	190,000	
2	Transforming the railway station into a multimodal hub	Investment	1,780,000	178,000	100,000	500000	500,000	680,000	
3	Development and enforcement of a coherent parking policy	Policy and Investment	655,000	14,000	55,000	100,000	100,000	400,000	
4	Road maintenance programme	Investment	5,100,000	500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,100,000
5	Comfortable and safe traffic for sustainable mobility users through investment and traffic reconfiguring	Investment	203,950,000	365,000	20,000,000	40,000,000	60,000,000	60,000,000	23,950,000
6	Smart and efficient public lighting	Investment	2,400,000	35,000	400,000	1,000,000	500,000	500,000	
7	Public buildings energy efficiency and digitalization programme	Policy and Investment	2,515,000	237,500	15,000	500,000	1,000,000	1,000,000	
8	Deep retrofit of the historic building “Casa Armatei”	Investment	5,025,000	50,000	275,000	1,000,000	1,250,000	1,250,000	1,250,000
9	Energy efficiency programme in private buildings	Investment	25,115,000	250,000		2,115,000	10,000,000	10,000,000	3,000,000
10	Promote and support local brands with tourism activities	Investment	100,000	10,000	20,000	20,000	20,000	20,000	20,000
11	Promote green industry and facilitate the development of local services and small production sector	Investment	385,000	35,000	20,000	50,000	100,000	100,000	115,000
12	Rehabilitation and expansion of water and wastewater networks	Investment	53,900,000	575,000	10,000,000	10,000,000	10,000,000	10,000,000	13,900,000
13	Improvement of the anaerobic digestion process in the WWTP	Investment	4,300,000	400,000	300,000	1,000,000	2,000,000	1,000,000	

	Action	Investment / Policy	CAPEX [EUR]	OPEX [EUR]	Timetable [EUR]				
					2024	2025	2026	2027	2028
14	Set up drinking fountains and public toilets in relevant areas of the city	Investment	540,000	50,000	140,000	100,000	100,000	100,000	100,000
15	Installation of a new meteorological station	Investment	365,000	33,500		65,000	300,000		
16	Investment in an automatic sorting line and shredder for green waste	Investment	2,400,000	230,000	100,000	500,000	900,000	900,000	
17	Investment in additional capacity for waste management	Investment	1,560,000	156,000		100,000	500,000	960,000	
18	Set up a system for the sound management of textile waste	Investment	125,000	10,000	25,000	50,000	50,000		
19	Make riverbanks more accessible and attractive	Investment	3,000,000	300,000	200,000	700,000	700,000	700,000	700,000
20	Improve and greenify schoolyards	Investment	150,000	15,000	50,000	50,000	50,000		
21	Develop sustainable touristic features connected by green routes	Investment	2,065,000	100,000		300,000	500,000	1,265,000	
22	Sustainable tourism strategy	Policy	150,000	75,000	150,000				
23	Enhance the capacity of local administration to implement the GCAP	Policy and Investment	150,000	15,000	50,000	100,000			
24	Adapt the education system to future development needs	Policy	140,000	14,000	20,000	50,000	50,000	10,000	10,000
	TOTAL		**318,160,000**	**3,722,000**	**33,320,000**	**60,150,000**	**90,470,000**	**90,075,000**	**44,145,000**

Monitoring framework, evaluation and reporting

03

7. Monitoring framework, evaluation and reporting

7.1. Monitoring framework

Monitoring and evaluation of GCAP is designed to understand and assess the results and outcomes of implementing the plan. It aims at identifying the most effective actions and informing the implementation team on how to adjust the ones that are not bringing enough results. The main purpose is to measure the impact GCAP actions have on the quality of environmental factors in Mediaș. Also, it measures the progress toward achieving the established targets for each action. Thus, both progress and impact of implementation will be monitored.

For ease of use, the monitoring framework is designed in MS Office Excel file and detailed in Annex XY. The framework includes three main parts:

- The first one, consisting of one spreadsheet illustrated below, presents overarching indicators that are aligned and relate to our vision and target for GCAP implementation. The main indicators reflecting the progressive implementation of the GCAP are represented by the number of GCAP actions/measures initiated (per different stages - feasibility studies developed, tendering process completed, ready for implementation, under implementation, completed) and an assessment of the updated the database with state and pressure indicators - see third part of the monitoring framework. The second part consists of six separate spreadsheets, referring to actions per GCAP sectors and steps to be implemented, with the Energy and Buildings sectors being grouped together. In case the implementation process starts for one action/measure, then we will use the supplementary indicators included in the spreadsheets designed for every GCAP sector. All the indicators will enable us to understand the progress and impact of each action/measure. For each indicator, we have defined the format and measurement unit in which the data should be collected and processed, referred to the timeframe for accomplishment of related targets and/or defined frequency for data collection.
- The third part, consisting of one single spreadsheet, refers to environmental indicators that have to be monitored during GCAP implementation. These include the state and pressure indicators, helping the implementation team to observe the progress towards improving the environmental conditions in the city as compared with the baseline dataset that we have collected for the GCAP

development. Please note that all the indicators included in this third part (last spreadsheet) are also impact-type indicators.

A total number of 79 indicators have been defined for monitoring the GCAP vision and the corresponding 3 strategic objectives, in addition to the environmental indicators in the GCAP database. Out of these indicators pertaining to the actions, 53 are progress indicators and 26 are impact indicators. Each overarching indicator refers to all strategic objectives due to the synergy between the vision, strategic objectives and actions defined within this GCAP.

1 Vision

3 Strategic Objectives

24 Actions

79 Indicators

The Monitoring Framework for GCAP implementation is a dynamic tool and allows tracking down the progress in the implementation of each action and corresponding measures. An example of the monitoring of the first action from the GCAP is presented in the figure below.

Action	Monitored indicators	Measurement Unit	GCAP Reference Value	GCAP Targets	Achievements - 2023
Optimising the public transport network	Number of new (or second hand but still newer) public bus fleet, per type of vehicle per year	#			
	% of public car fleet compatible with EURO 4 or higher standards	%	22	50	
	Share of diesel-powered buses in total public transport busses	%	100	< 75%	
	Commercial speed of public transport vehicles	km/h	20	Increased average travel speed for buses on the major thoroughfares by 10% (installing priority bus lanes on 2x2 roads)	
	Number of public transport users (passengers)	#passenger		Increase the number of public transport users by 30% in 5 years time, averaged by population	
	CO2 emission savings	tonnes/year CO2eq		Reducing air pollution and greenhouse gas emissions from public transport by at least 5%	

7.2. Evaluation and reporting

Within the Municipality, GCAP implementation will be closely supervised and evaluated by a Steering Committee (SC), while the daily monitoring and evaluation activities will be under direct responsibility of the Project Implementation Unit (PIU).

The PIU will compile all the data received from sectoral departments and will produce an annual progress report for the GCAP implementation period.

The monitoring and evaluation of the GCAP implementation process requires well trained and skillful personnel. The PIU team will benefit from trainings and technical support during the first monitoring exercise.

Additionally, two types of audits are foreseen during the first 5-year period of GCAP implementation:

- Internal audits – yearly, based on internal procedures. This will focus on understanding whether the internal procedures have been properly followed and if the specific established targets at the level of the municipality have been reached;

Audit – once in 5 years – this will focus on conducting a full assessment of the GCAP implementation process, taking into consideration all elements, such as technical, and financial aspects and utilization of resources.

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