



MISKOLC



European Union | European Regional Development Fund



TRAM Project

*Towards new Regional Action plans for sustainable urban
Mobility*

Index Number: PGI00208

Municipality of Miskolc - City on County Rank's Action Plan

March 2019

General information

Project: TRAM - Towards new Regional Action plans for sustainable urban Mobility

Partner organisation: Municipality of Miskolc City on County Rank – PP4

Other partner organisations involved (if relevant):-

Country: Hungary

+NUTS2 region: Northern Hungary

Contact person: Árpád Horánszky

email address: horanszky.arpad@miskolc.hu

phone number: + 36-46-500-276

Policy context

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument**

Name of the policy instrument addressed: Integrated Territorial Program of Miskolc

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About the TRAM project

One of the greatest environmental challenges we face today lies in mobility. People need a seemingly infinite network of vehicles and transportation systems to uphold societies and economies. Traditional transportation modes leaving their indelible mark on the environment.

European cities face environmental and health problems, such as congestion, air pollution, noise or lack of traffic free public spaces. In line with the new guidelines in transport policy of the European Union, changes in the mobility model towards more sustainable modes, the use of alternative fuels and the development of new technologies, can contribute significantly to achieving more livable cities.

Sustainable urban mobility requires a mind shift: where transport in private cars and trucking give way to different modes of public transport. Like bicycle and pedestrian lanes, electric vehicles, car sharing and rail freight. More and more cities in Europe are rising to the challenge. Creating solutions that ensure the vital flow of people, goods and services. While mitigating climate change and creating climate-safe cities. So there are already plenty of experience which accessible to share and utilize the benefit from that.

TRAM project is designed to strengthen the urban dimension of regional and local policymaking, contributing to the implementation of EU Transport White Paper, Urban Agenda and the EU 2020 strategy and facilitating the shift to low carbon economy. In this sense, TRAM project contributes to the development of a competitive, resource-efficient and low-carbon oriented European transport system by improving the efficacy of regional and local policies on urban mobility of EU 5 partners which will benefit from cooperation by the exchange of experience and the identification of measures to be included in their urban mobility policies.

The objectives of the TRAM project are the following:

- To promote the exchange of experiences and best practices among five European regions, related to sustainable urban mobility, paying particular attention to the most innovative solutions, and involving a lower consumption of fossil fuels.
- To consolidate the implementation of regional urban mobility policies that allow the knowledge acquired in the development of the project to be put into practice, reinforcing the skills and knowledge of the technical personnel involved in the project.
- To encourage cooperation between regions, through administrations, seeking the involvement of all users, associations and relevant groups in this area.
- To contribute to adopt less intensive, more efficient and less carbon-intensive mobility systems, in cooperation with the most relevant initiatives of the European Union in this area (such as CIVITAS or ELTIS).

This project, in which the Municipality of Miskolc on County Rank participates, together with the Marche Region (Italy), Region Blekinge (Sweden), North-West Regional Development Agency (Romania) and the Regional Ministry of Public Works and Housing of Andalusia (Spain); it has a duration of 5 years with a budget of 1,264,078.00 euros.

TRAM project is structured in two main phases; the first one is related to the *Interregional Learning Process* (from April 2016 to March 2019), the second one is for the implementation and monitoring of the Action Plans of each Partner (from April 2019 to March 2021).

In that regard, the first part of the project has focused on an interregional learning process in the five partner organisations and their local/regional stakeholders, with the purpose to identify accumulated practice within the following three thematic areas of sustainable urban mobility:

- **Transport policies:** measures/actions and plan aiming at reducing demand for emission intensive transport modes in urban areas, thus allowing a shift from more energy intensive and environmentally harmful to less polluting and more efficient modes of transport. This includes the shift toward the use of public and alternative transport modes and environmentally friendly distribution of freights.
- **Intelligent Transport Systems for urban areas:** technical solutions aiming at exploiting smart technologies and ITS as key enabler for urban mobility planning to create new opportunities for sustainable mobility by harnessing the intelligence of urban mobility system.
- **Low emission and green transport** (improved vehicles and fuels): projects and technologies for the introduction of new types of zero and low emission public and private transport; renewable fuels; electric vehicles; eco – friendly passengers and freights transport modes.

Part one of TRAM project covered the selection of Good Practices (GP) which were the main outcome of the exchange of the experiences activities (Interregional Thematic Workshops and Study Visits) The aim of Part one was:

- i) to ease the process of exchange of experiences through the standardization of the information flow related to the Good Practices
- ii) to set a minimum standard of quality of the different steps in order to enable the exchange of experiences
- iii) to set common routines for involvement of Local Stakeholders (LSGs) and for the exchange of experience activities (SVs and ITWs).

In the second part of the project each Project Partner has identified a set of limited practices, namely the Best Practices, which are expected to contribute to the improvement of the policy instruments of each partner, and whose implementations will occur through the action plan.

More specifically, part two of TRAM project includes a first phase of evaluation of GPs and the identification of Best Practices, and a second phase consist of an Action Plan (AP) where several actions coming from the BPs already selected are described and the elements for their implementation. Moreover, there are planned five peer-review workshops (PRW) where the drafts of the Action Plans are validated and delivered for the actual implementation.

Introducing Miskolc

Miskolc is the seat of Borsod-Abaúj-Zemplén County in Hungary. As the most populated city of the largest county of the North-Hungarian Region, it plays a central role in the administration, economic, educational and cultural life of the region. Miskolc is the fourth largest city of the country (with population about 160 000).

Miskolc has favourable logistic situation in regard to 3 countries are available within a distance of 150 km (Slovakia, Ukraine, Romania). This gives a great opportunity for connecting neighbouring countries in respect to commercial purposes.

Miskolc will be part of „Via Carpathian” transport corridor to be implemented by 2026. The city was known is a heavy industrial city long ago but we could said that this formerly “characteristic” has now been overcome. The engineering-and chemical industry and the service sector furthermore the trade and tourism are very important economic sectors in the region.

The main importance of public transport take the east-west axis in particular in which the tramway plays a significant role. On the axis of tramline respectively with parallel relief roads are operates buses. The axis of north-south just operate buses.

In the major determining urban development concepts of Miskolc was lay down the key objectives and aims to become more liveable, attractive, health and human focused city with rebounding an increasing level of life for its citizens keep up sustainability in general living conditions.

Group of Local Stakeholders

The beneficiary partner (Municipality of Miskolc) intended to involve all the main institutions, organizations which have significant influence on operation, organization of city mobility or even may provide professional support in the project implementation.

The main aim was to set them around a table with a certain frequency to share knowledge, information, and experience, collide of interests and different points of view about required sustainable mobility system of the city and surroundings. The representatives of the group members monitored the project implementation, as far as possible took part on international workshops, study visits organized in the framework of the TRAM project and acted as experts of their professional supporting the project.

The group was involved into the AP creating process as confirmative and approval in the drafting stage and the finalization stage as well.

The member of the Local Stakeholders Group are the followings:

Miskolc Public Transportation Company Plc. – City owned company provide public transportation service in Miskolc and suburb. The company currently operates 36 bus services on a total line length of 152.9, and 2 tram services on a total line length of 11.6 km. Of those who live in the inner parts of the city, 76% have the nearest stop no farther away than 300 meters. Of those who live in the suburbs, 91% can reach the nearest stop walking no more than 500 meters. MVK Zrt. transports nearly 380,000 people every day. The company successfully executed several significant mobility development projects in the latest years which were included of the Miskolc Good Practice „basket”.

Miskolc Holding Plc. - Miskolc Holding Local Government Asset Management Corporation is one of the most capital-intensive companies in Miskolc. The mission of the organization is to improve the quality of life in Miskolc through urban and economic developments. Miskolc Holding Plc. manages 11 independent companies which provide public services such as district heating-, water- and sewage services, waste management, public transportation and urban parking management. Moreover the corporation fulfil the role of project management of all the city development projects like mobility development financed by own-, national or EU resources. The organization is fully owned by the Municipality of Miskolc City on County Rank.

Miskolc Communication Non-profit Ltd. – The company provide communication services for the Municipality and Miskolc Holding and its' member companies. Operate local TV channel, publish local weekly (Miskolci Napló), edit online magazine (minap.hu), highly involves in local events organization and advertisement mediation. It operate the Giant LCD Monitors of Miskolc as well.

North-Hungarian Public Transportation Centre Plc. – State owned company provide road-, public transportation service on regional level. Operate 20 bus stations and 1.100 buses in the North-Hungarian Region.

Hungarian State Railway Plc. Miskolc Regional Directorate – Regional representative of state owned company operate and develop railway system, fixed track, interurban public transportation and cargo in Hungary. The Regional Directorate performs as regional representative of the company.

MGL Creative Ltd. – Local, micro company represents the SME sector in the LSG provide expertise in visual communication, IT development and technology and creative consulting. Highly experienced in smart solutions and city smartification.

Bay Zoltán Non-profit Ltd. - Bay Zoltán Non-profit Ltd. for Applied Research aims to contribute to the competitiveness and efficiency of Hungarian companies by providing services in innovation and technology transfer in cooperation with Hungarian and foreign partner institutions. We offer our customers – currently more than 200 companies – complex scientific and technological solutions in several areas of expertise, devised in a way to enhance their competitiveness

City Maintenance Company Non-profit Ltd. – fully municipality owned company, providing urban management services like operate parking system, bridges-, roads maintaining, gardening, cemeteries and markets.

Chapter 1. – Identification of Best Practices

Selection of the Good Practices (GP) and Best Practices (BP)

The Methodological guidelines for selection of the good and best practices (Part one) and for the development of the Action Plans (Part two) is a product of the International Team of Regional Experts (ITRE Panel) of TRAM Project. The methodological guidelines are approved in joint sessions with Project Partners, so that the methodological guidelines fit with other logistic and organizational aspects and needs coming from the other activities of TRAM Project.

The process starts with the compilation of 9 GPs from each partner areas is a joint process engaging the project partners, owners/promoters of ideas for GPs, the ITRE experts and the SG. In the second semester each PP delivered a list of 9 GP cases. The collected GPs fall into the three pre-determined categories: (1) transport policies; (2) ITS for urban areas; (3) low emission and green transport.

The Methodological guidelines for selection of the good practices includes a form for each GP to be fulfilled by each Project Partner; and the definitions when a good practice template is properly filled and can be accepted for scientific revision by ITRE panel.

In this part of the project the transferability of a good practice to another partner has been evaluated, in order to understand how a good practice can become a best practice.

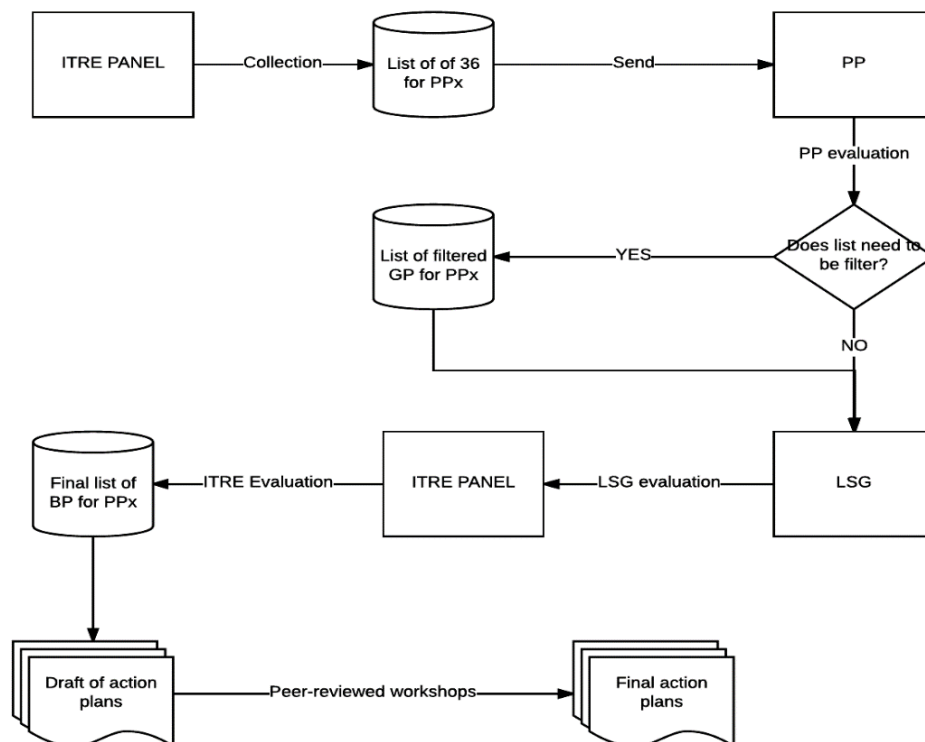


Figure 1 The process of selecting BPs

As a result, this is the list of 9 GPs selected by PP4, some of them have been presented through the TRAM exchange activities (ITW and SV):

ID	Name of Good Practice	Policy	ITS	Low Carbone	EU Project	SV	ITW
28	Intelligent traffic management system at city scale		X		NO		
29	Smart intersections: intelligent traffic lights giving priority to late public transportation vehicles		X		NO	Miskolc	Karlskrona
30	Real-time passenger information system for public transportation (stop displays, touch screen info boards, route planning, smartphone app)		X		NO	Miskolc	Karlskrona
31	Demand-responsive public transportation scheme (Zoo bus in Miskolc)		X		NO		
32	Procurement and introduction of CNG-fuelled public bus fleet			X	NO	Miskolc	
33	CNG fuel station open for public			X	NO	Miskolc	
34	Green Arrow project (extension of tramway, new vehicles, citizen engagement in designing phase)	X		X	NO		Karlskrona
35	Comprehensive development of bike road infrastructure at city scale	X		X	NO		Seville
36	Biker-friendly trams and narrow gauge railways (supporting the accessibility of vulnerable mountainous areas by means of soft mobility)			X	NO		

Figure 2 The nine GPs selected by ITP

The selection of Best Practices (See Figure 1) includes two main activities: the identification of the lively issues and gaps of each partner’s policy instrument in order to indicate the target of the process of evaluation of good practices (the so-called Gap Analysis), and the evaluation process through which the good practices are assessed in respect to the previously identified issues.

The Gap Analysis produces a selection of good practices potentially able to address lively issues for each Project Partner according to this diagram:

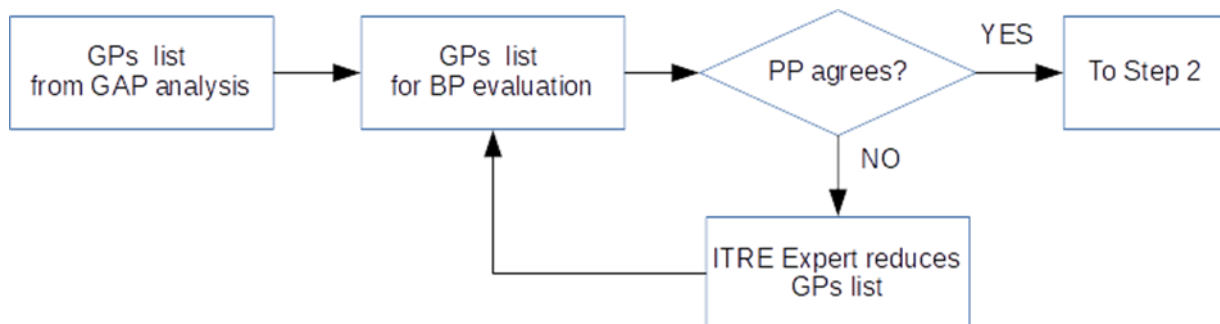


Figure 3 The exchange of experience activities

The resulting list of Good Practices (See Figure 2), selected through the gap analysis, are evaluated in order to identify the best practices to be included in the Action Plan of each project partner. The GPs¹ selected in the previous phase of Gap Analysis are evaluated from two different points of view:

- The **sustainability dimension**, which refers to the three aspects (economic, environmental, social) already used in the GPs to evaluate each GP in its original context;
- The **complexity of implementation**, which refers to the expected changes required by the implementation of a GP.

The documentation explaining the GP, all the relevant elements gathered through the GP template and the ITW and SV exchange of experience materials, have been shared with the LSG². ITRE Expert has collected and merged the evaluations from the LSG and proposed to project partner those which could be identified as BPs³.

The identification of the BPs is the result of a qualitative multi-criteria selective process which includes:

- The assessment of the sustainable impacts for the relevant issues. A good practice here included shall be assessed at least in respect to an issue.
- The assessment of the sustainable impacts for the overall context.
- The assessment of the complexity dimensions.

¹ Good Practices

² Local Stakeholder’s Group

³ Best Practices

As a result a SWOT analysis for each BP is used to identify actions that either exploits strengths and opportunities or overcomes weaknesses and threats.

Each action in the AP⁴ could be a transposition of a Best Practice selected in the previous steps, coming from the GP Database of TRAM Project (GPs of other regions); or a mix of several experiences and specific aspects developed by more Best Practices regarding to a specific theme.

The AP produced by each region defines the details on timeframe beneficiaries and costs. The action plan is a document providing details on how the lessons learnt from the cooperation will be exploited in order to improve the policy instrument tackled within that region. It specifies the nature of the actions to be implemented, their time frame, and the players involved, the costs (if any) and funding sources (if any).

⁴ Action Plan



1.1 – GAP Analysis

The GAP Analysis does not aim to identify the extent that GPs might provide solutions to the issues, it defines the lively issues of the current policy instruments, linking the lively issues to the GPs and suggesting a first way to prioritize GP (short list).

The project management, with the support of the internal ITRE Expert, has defined what the lively issues of the Sustainable Urban Mobility Program (SUMP) based on Territorial and settlements development Operative Program (TOP) that are addressing among the themes covered by TRAM project. Like „*Support developments of urban sustainable mobility for reducing impact of climate changes and CO2 emission, creating liveable urban environment and facilitate to comply requirements of EU 2020 and National Mobility Development Strategy*”

The analysis has started from the issues indicated in the original Application Form, and it has been updated with the needs and the knowledge coming from either the Exchange of Experience activities of TRAM Project, or the evolution over the time of the issues of the policy instrument, since the original identification of issues dates back up to 3 years.

After the implementation some really remarkable developing projects in the field of sustainable public transportation (e.g. Green Arrow project GP N° 37 and CNG bus fleet GP N° 32) Miskolc's air quality significantly had improved. But, as it is defined in the City's **Integrated Settlement Development Strategy** (2014-2020) as strategic goal of *Protection of natural environment* (C2); and operative goals of *Decrease environmental impact* (C2.2) and *Provide sustainable living in the City* (C2.3), the leaders of the City engaged to pass on the process of making Miskolc a green and smart city. Aiming the goals of the above mentioned strategic papers, into the City Mobility Development Concept appeared the planned developments concern even individual transport modes (cars, trucks, cycles, pedestrians etc.) as well.

The city's transport system is a complex and sensible network under the continuously increasing pressure of the growing traffic. To maintain the existing infrastructure and facilities is not enough to achieve the required less polluting, less noisy, more comfortable and fluent traffic making our city more liveable. The road network and traffic organization must adjust to the new challenges of the changing circumstances (e.g. industrial restructuring), extended and connected bicycle pathway network needs to support modal split change toward healthier and more sustainable transport modes. Inevitable to apply state of art ICT solutions for providing new services in public transportation and advanced traffic management to make easier and more permeable the traffic system throughout the city.

1.1.1 – Defining the lively issues

As a result, six lively issues have been defined and their weighting according to their degree of importance (table 1). The link between these issues and the good practices analysed are shown in the following tables.

Nr. of the Issue	Title of the issue	Description of the issue	Evaluation of importance (1/2/3)	Linked GPs
I	Missing connections in the bicycle network	The bicycle infrastructure is incomplete, therefore the existing bicycle network has a reduced value.	2	7, 12, 13, 18, 45
II	Missing public spaces in the city center	Motorized ways of transport dominate in the city center, unmotorized ways are not supported enough. There is a shortage of public spaces in the downtown.	3	14, 39, 41
III	Capabilities of the Szinva creek is barely utilized	Public spaces along the Szinva creek are missing, recreational and leisure activities have a limited access.	2	14, 41
IV	Weak collaboration in the field of public transport	Weak collaboration between different systems and different public transport companies on both local and regional level. Complicated ticket system, barely connected routes.	3	5, 11, 26
V	The community is not well-informed of the sustainable forms of transportation	Sustainable ways of transport and sustainable lifestyles don't have the expected popularity. A part of the population doesn't get the required public information, especially children and elderly people.	2	6, 7, 10, 42
VI	The coordination of the individual transport and the public transport system is insufficient	The needs of the public transport users, car users, cyclists and pedestrians are hardly fulfilled all at the same time. There are unrevealed opportunities in collaboration among the involved parties in the field of intelligent transport system.	3	1, 15, 18, 37, 44

Table 1 Listing and prioritization of the lively issues.

1.1.2 – Linking the issues to the GPs

The internal ITRE Expert linked the list of lively issues with the whole database of good practices and produced a table for each issue. In this section are determined the linkings of the selected lively issues to the GPs towards how could return a GP for one issue. Each table includes the practices which might be useful, a brief description indicating why it might help.

Issue nr. I	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.7	Fully connected bicycle network that fits the existing structure of the city.
GP nr.12	Uniform designed bicycle roads segregated from motorized traffic.
GP nr.13	Development in regional and intercity cycling traffic connections. Supporting the use of bicycles for sport and pleasure.
GP nr.18	Ensure the continuity of the cycling routes using the tools of traffic management.
GP nr.45	Creating a bicycle core network between significant towns in the region.

Issue nr. II	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.14	Promoting underground car parking facilities in the center of the city instead of the above-ground parking. Improving the bicycle network in the central areas and implementing a bike-sharing system.
GP nr.39	Car sharing reduces the parking space requirement on public spaces.
GP nr.41	Extending the pedestrian network, creating public spaces near the main institutions and tourist destinations. Reducing the car parking opportunities in the downtown streets, creating new parking facilities outside the central areas.

Issue nr. III	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.14	Promoting underground car parking facilities in the center of the city instead of the above-ground parking. Improving the cycling routes along the Szinva creek fitting the main bicycle network.
GP nr.41	Extending the pedestrian network, creating public spaces along the river, connecting the institutions and tourist destinations. Reducing the car parking opportunities near the riverside.

Issue nr. IV	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.5	Using a single mobile application for getting directions, buying tickets, paying for parking.
GP nr.11	Developing an integrated electronic ticketing system using travel cards in public transport (local and regional level, railways, buses, trams, etc.)
GP nr.26	Creating regional, national, even international action plans for the harmonization of the different public transport modes (timetables, coordinated tariff system).

Issue nr. V	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.6	Collaboration between the public transport companies on both local and regional level to make the public transport more attractive and popular.
GP nr.7	Fulfilling the needs of people in different ages, from different social classes with different motivations. Promoting the sustainable lifestyles.
GP nr.10	Motivating the companies to support their employees to use a sustainable form of transport. The program is financially supported by the city administration.
GP nr.42	Collaborating between employers and the local transport company, creating mobility plans and timetables synchronized with shift changes.

Issue nr. VI	Why the actual GP might help solving this issue? <i>(short description)</i>
GP nr.1	Implementing a fully developed and complex intelligent transportation system.
GP nr.15	Implementing a coordinated traffic management on superior roads (traffic-light controlled junctions and traffic signal systems), according to the current traffic.
GP nr.18	Ensure the continuity of the cycling routes using the tools of traffic management.
GP nr.37	A mobile application displays the empty parking lots and it can be also reserved using the application. This way the traffic looking for empty lots can be reduced.
GP nr.44	Developing a traffic management system that satisfies the current traffic needs – changing the traffic-light controlled junction programs.

Table 2 – Linking Issues to Good Practices, a table for each Issue

1.1.3 – Evaluating the potential value of the GPs

This table summarizes the potential importance of each GP. The ITRE Expert reviewed the full list of 36 Good Practices (45 Good Practices minus the 9 presented by the PP itself) to check whether the actual GPs might address any predefined issues. The following table reports the final sorting, presenting only those GPs that can be considered in the following parts.

GP ID	Nr. Of issues addressed by importance			Nr. Of issues not addressed
	1	2	3	
GP nr. 1			1	5
GP nr. 5			1	5
GP nr. 6		1		5
GP nr. 7		2		4
GP nr. 10		1		5
GP nr. 11			1	5
GP nr. 12		1		5
GP nr. 13		1		5
GP nr. 14		1	1	4
GP nr. 15			1	5
GP nr. 18		1	1	4
GP nr. 26			1	5
GP nr. 37			1	5
GP nr. 39			1	5
GP nr. 41		1	1	4
GP nr. 42		1		5
GP nr. 44			1	5
GP nr. 45		1		5

Table 3 - Potential relevance of the Good Practices.

1.2. Identification of Best Practices

1.2.1 – Evaluating Good Practices

The evaluation of the short list of GPs selected in the previous phase has been carried out from a double point of view, on the one hand; economic, environmental and social sustainability. On the other hand, the complexity of its implementation through the identification and assessment of the main barriers to its transferability and implementation in our particular context.

Criterion 1: The sustainability dimension

The next tables show the sustainability evaluation of the expected impacts of each GP on both the lively issues and the overall sustainability dimensions in the local context. Value: 1 Negative, 2 Neutral, 3 Positive, 4 Very Positive.

Description: Textual description with a reasoned motivation on the given evaluation.

Criterion 2: The complexity of implementation

Criterion two assess the complexity of implementation. Three sub-dimensions are identified:

- **CUL** - Social and cultural acceptance – evaluated by LSG - focusing on the wide cultural and social elements which might influence the diffusion of a practice in the local context.
- **CAP** - Presence of relevant capabilities and players – evaluated by LSG - focusing on the
- existence of local players (business and not) holding the needed competences to fully develop the GP
- **INS** - Institutional integration – evaluated only by PP - focusing on the institutional organizations, and the current targets, aims, procedures internal to the public body

GP ID: 1 (RITS-NET)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	4 Implementing a fully developed and complex intelligent transportation system.
Impacts on sustainability	Economic	4 ITS solutions come with economic advantage.
	Environmental	4 Reducing congestion, especially on side roads helps to also reduce Co2 emission.
	Social	3 People benefit from shorter travel times.

GP ID: 1	Typology	Value. Description
Barrier 1	CUL	2 - Social and cultural acceptance needs to be reached
Barrier 2	CAP	1 - Finding the players holding the needed competences to develop the practice
Barrier 3	INS	1 - Difficulties in institutional integration
GP ID: 5 (MyCicero)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	4 Using a single mobile application for getting directions, buying tickets, paying for parking.
	Issue 5	2
	Issue 6	3
Impacts on sustainability	Economic	4 MyCicero decreases the rate of evasion.
	Environmental	3 MyCicero makes public transportation more accessible.
	Social	4 The purchase of tickets get simplified.

GP ID: 5	Typology	Value. Description
Barrier 4	CUL	2 - People need time to get used to electronic and smart solutions
Barrier 5	CAP	2 - Hard to find the players holding the needed competences to develop the practice
Barrier 6	INS	1 - Integrating the technology into existing institutions can be difficult

GP ID: 6 (ATTAC - Attractive Urban transport, accessible cities)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	3
	Issue 3	2
	Issue 4	2
	Issue 5	4 Collaboration between the public transport companies.
	Issue 6	2
Impacts on sustainability	Economic	2 Urban mobility can have a positive economic impact.
	Environmental	4 Reducing the use of private cars have a direct impact on the reduction of CO2 emissions.
	Social	4 Limiting the use of the private cars and increasing the use of public transportation.

GP ID: 6	Typology	Value. Description
Barrier 7	CUL	2 - Social and cultural acceptance needs to be reached
Barrier 8	CAP	4 - Finding the players holding the needed competences to develop the practice
Barrier 9	INS	4 - Difficulties in institutional integration

GP ID: 7 (Biciplolitana Pesaro)		Value. Description
Impacts on issues	Issue 1	4 Fully connected bicycle network that fits the existing structure of the city.
	Issue 2	3
	Issue 3	3
	Issue 4	2
	Issue 5	4 Fulfilling the needs of people in different ages, from different social classes with different motivations. Promoting the sustainable lifestyles.
	Issue 6	2
Impacts on sustainability	Economic	2
	Environmental	4 The increase of cycling modality in urban area, and the related reduction of car use, contributes to reduce noise and air pollution.
	Social	4 Social and recreational activities benefit from the spread of cycling.

GP ID: 7	Typology	Value. Description
Barrier 10	CUL	3 - Construction work will cause some inconvenience to the citizens
Barrier 11	CAP	2 - Difficult to find all the construction companies with the needed skills in time
Barrier 12	INS	4 - Takes a lot of time to collect all the construction permits

GP ID: 10 (Rewarding sustainable mobility)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	3
	Issue 3	2
	Issue 4	2
	Issue 5	4 Motivating the companies to support their employees to use a sustainable form of transport. The program is financially supported by the city administration.
	Issue 6	2
Impacts on sustainability	Economic	3 Rewarding system allows companies to save absentee costs.

	Environmental	3	There is a reduction in pollution, noise and CO2 emission.
	Social	4	The benefits associated to the use of the bicycle as a mean of transport have been scientifically proven in many studies.
GP ID: 10	Typology	Value. Description	
Barrier 13	CUL	4 - Construction work will cause some inconvenience to the citizens	
Barrier 14	CAP	2 - Difficult to find all the construction companies with the needed skills in time	
Barrier 15	INS	4 - Takes a lot of time to collect all the construction permits	

GP ID: 11 (Travel card of Andalusia)		Value. Description	
Impacts on issues	Issue 1	2	
	Issue 2	2	
	Issue 3	2	
	Issue 4	4 Developing an integrated electronic ticketing system using travel cards in public transport (local and regional level, railways, buses, trams, etc.)	
	Issue 5	3	
	Issue 6	2	
Impacts on sustainability	Economic	3 Easier purchasing methods come with greater revenues.	
	Environmental	3 The reduction of private vehicles has a positive environmental impact.	
	Social	4 The possibility to make public transport more attractive to potential travelers.	

GP ID: 11	Typology	Value. Description	
Barrier 16	CUL	3 - People need time to get used to electronic and smart solutions	
Barrier 17	CAP	2 - Hard to find the players holding the needed competences to develop the practice	
Barrier 18	INS	1 - Integrating the technology into existing institutions can be difficult	

GP ID: 12 (Cycling plan of Seville)		Value. Description	
Impacts on issues	Issue 1	3 Uniform designed bicycle roads segregated from motorized traffic.	
	Issue 2	2	
	Issue 3	2	
	Issue 4	2	
	Issue 5	2	
	Issue 6	2	
	Economic	2 Small businesses related to bicycle can be created.	

Impacts on sustainability	Environmental	3	The decrease of Mobility in private vehicle motivated by the use of the bicycle improves the quality of the air in the city.
	Social	3	A culture of sustainable mobility, well rooted in society can be created.

GP ID: 12	Typology	Value.	Description
Barrier 19	CUL	4	- Social and cultural acceptance needs to be reached
Barrier 20	CAP	2	- Finding the players holding the needed competences to develop the practice
Barrier 21	INS	3	- Difficulties in institutional integration

GP ID: 13 (Cycling plan of Andalusia)		Value.	Description
Impacts on issues	Issue 1	3	Development in regional and intercity cycling traffic connections. Supporting the use of bicycles for sport and pleasure.
	Issue 2	2	
	Issue 3	3	
	Issue 4	2	
	Issue 5	2	
	Issue 6	2	

Impacts on sustainability	Economic	2	Small businesses related to bicycle can be created.
	Environmental	3	The decrease of private vehicles use motivated by the bicycle improves the air quality.
	Social	3	The city is accessible to cyclists and a culture of sustainable mobility is created.

GP ID: 13	Typology	Value.	Description
Barrier 22	CUL	3	- Social and cultural acceptance needs to be reached
Barrier 23	CAP	2	- Finding the players holding the needed competences to develop the practice
Barrier 24	INS	3	- Difficulties in institutional integration

GP ID: 14 (Plan of Seville Downtown)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	4
	Issue 3	4
	Issue 4	2
	Issue 5	2
	Issue 6	3
Impacts on sustainability	Economic	2 The tourist interest of the area increases.
	Environmental	4 The decrease of private vehicles use improves the air quality.
	Social	4 The downtown area can turn into a meeting place for pedestrians.

GP ID: 14	Typology	Value. Description
Barrier 25	CUL	3 - There might be some resistance on behalf of the residents of the affected area
Barrier 26	CAP	3 - Difficult to find all the construction companies with the needed skills in time
Barrier 27	INS	4 - The complexity of city traffic system make it sensitive for any small changes

GP ID: 15 (Cooperative Traffic Network)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	4
Impacts on sustainability	Economic	4 Allowing a maximum of vehicles to use the network in a shorter time, which has the impact of reducing fuel consumption and travel time.
	Environmental	3 The optimization of traffic flows reduces queuing next to intersections so it has the impact of reducing emissions.
	Social	3 The benefits will be seen as the number of cooperative cars increases.

GP ID: 15	Typology	Value. Description
Barrier 28	CUL	4 - Social and cultural acceptance needs to be reached
Barrier 29	CAP	3 - Finding the players holding the needed competences to develop the practice
Barrier 30	INS	3 - Difficulties in institutional integration

GP ID: 18 (Priority for cyclists in Aarhus)		Value. Description
Impacts on issues	Issue 1	3 Ensure the continuity of the cycling routes using the
	Issue 2	3 tools of traffic management.
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	2 (can be positive or negative)
Impacts on sustainability	Economic	2
	Environmental	2 The project will increase the number of cyclist so it generates benefits in terms of pollution, greenhouse gases and noise.
	Social	2 The project allows cyclist to bike faster, making the bike a more attractive mean of transport.

GP ID: 18	Typology	Value. Description
Barrier 31	CUL	3 - Social and cultural acceptance needs to be reached
Barrier 32	CAP	3 - Finding the players holding the needed competences to develop the practice
Barrier 33	INS	4 - Difficulties in institutional integration

GP ID: 26 (Macroregional Transport Action Plan by TransBaltic)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	4 Creating regional, national, international action plans for the harmonization of the different public transport modes (timetables, coordinated tariff system).
	Issue 5	3
	Issue 6	2
Impacts on sustainability	Economic	3 Easier purchasing methods with greater revenues.
	Environmental	3 The reduction of private vehicles has a positive environmental impact.
	Social	4 The possibility to make public transport more attractive to potential travellers.

GP ID: 26	Typology	Value. Description
Barrier 34	CUL	4 - Social and cultural acceptance needs to be reached
Barrier 35	CAP	2 - Finding the players holding the needed competences to develop the practice
Barrier 36	INS	1 - Difficulties in institutional integration

GP ID: 37 (Routing application to find nearest available parking place)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	3 A mobile application displays the empty parking lots and it can be also reserved using the application. This way the traffic looking for empty lots can be reduced.
Impacts on sustainability	Economic	2 Speeding up transports made for economic purposes by terrestrial means.
	Environmental	3 Dramatically reducing traffic-generating harm.
	Social	3 Decrease in traffic jams which increase harmony in the interactions between the individuals of the urban society.

GP ID: 37	Typology	Value. Description
Barrier 37	CUL	4 - Social and cultural acceptance needs to be reached
Barrier 38	CAP	3 - Finding the players holding the needed competences to develop the practice
Barrier 39	INS	3 - Difficulties in institutional integration

GP ID: 39 (Pony - Car sharing system)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	3 Car sharing reduces the parking space requirement on public spaces.
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	3
Impacts on sustainability	Economic	2
	Environmental	4 Due to its potential to reduce congestion, the environmental impact of the project is definitely positive.
	Social	3 It helps increase the mobility in the city by decreasing the number of personal cars in use.

GP ID: 39	Typology	Value. Description
Barrier 40	CUL	1 - Social and cultural acceptance needs to be reached
Barrier 41	CAP	2 - Finding the players holding the needed competences to develop the practice
Barrier 42	INS	3 - Difficulties in institutional integration

GP ID: 41 (Baia Mare central area - pedestrian zone)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	4
	Issue 3	4
	Issue 4	2
	Issue 5	2
	Issue 6	2
Impacts on sustainability	Economic	2 The tourist interest of the area increases.
	Environmental	3 Banning cars from the city center has a great impact on reducing Co2 emissions and preserving built environment.
	Social	4 The rehabilitation of the squares starts an urban regeneration process benefiting the inhabitants of the central area.

GP ID: 41	Typology	Value. Description
Barrier 43	CUL	3 - There might be some resistance on behalf of the residents of the affected area
Barrier 44	CAP	4 - Difficult to find all the construction companies with the needed skills in time
Barrier 45	INS	3 - The complexity of city traffic system make it sensitive for any small changes

GP ID: 42 (Mobility packages to attract employees to use public transport)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	3 Collaborating between employers and the local transport company, creating mobility plans and timetables synchronized with shift changes.
	Issue 6	2
Impacts on sustainability	Economic	4 The project brings great economic benefits for the employees of the companies participating.
	Environmental	3 Increasing the attractiveness of public transport, convince more people to leave their car behind.
	Social	2

GP ID: 42	Typology	Value. Description
Barrier 46	CUL	3 - Social and cultural acceptance needs to be reached
Barrier 47	CAP	4 - Finding the players holding the needed competences to develop the practice
Barrier 48	INS	3 - Difficulties in institutional integration

GP ID: 44 (Traffic management system)		Value. Description
Impacts on issues	Issue 1	2
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	4 Developing a traffic management system that satisfies the current traffic needs – changing the traffic-light controlled junction programs.
Impacts on sustainability	Economic	3 Increased travel speed and decreased congestion support a better accessibility of the central area.
	Environmental	4 Reducing congestion, especially on side roads helps to also reduce Co2 emission.
	Social	3 People benefit from shorter travel times.

GP ID: 44	Typology	Value. Description
Barrier 49	CUL	4 - Some people are often afraid of new technologies
Barrier 50	CAP	2 - Hard to find the proper technology companies with the needed skills
Barrier 51	INS	2 - Integrating the technologies into existing institutions can be difficult

GP ID: 45 (Cycle path construction)		Value. Description
Impacts on issues	Issue 1	4 Creating a bicycle core network between significant towns in the region.
	Issue 2	2
	Issue 3	2
	Issue 4	2
	Issue 5	2
	Issue 6	2
Impacts on sustainability	Economic	2 The project creates value in the target area, it has a long term effect.
	Environmental	3 The development improves traffic safety, strengthens connections and improves economic competitiveness of the participants.
	Social	3 The development generated by common needs involves local communities, may induce a cooperation in the future.

GP ID: 45	Typology	Value. Description
Barrier 52	CUL	4 - Social and cultural acceptance needs to be reached
Barrier 53	CAP	3 - Finding the players holding the needed competences to develop the practice
Barrier 54	INS	4 - Difficulties in institutional integration

1.2.2 – Identifying Best Practices

The following summary identifies, among the evaluated GPs, those which are going to be identified as BPs. The evaluative process is based on the following information, gathered in the previous steps:

- Identification of relevant lively issues, and their evaluations in terms of importance
- Selection of GPs which deal with at least one lively issue
- Evaluation of the expected impact of each GP in terms of resolution of lively issues, overall sustainability performance, and complexity of implementation.

The identification of the BPs is the result of a qualitative multi-criteria selective process represented in the table below. For each Good Practices, the evaluation includes:

- The assessment of the **impacts for the relevant issues**. The good practices here included shall be assessed at least in respect to an issue.
- The assessment of the **sustainable impacts** for the overall context
- The assessment of the **complexity dimensions**

ITRE expert indicated a first suggestion of the identified Best Practices, according to specific criteria of selection. The following general criteria have been already identified:

- The importance of the lively issues (higher is better)
- A positive overall evaluation of the sustainability dimensions
- The lack of predominant negative evaluations on a specific issue
- The complexity of the implementation (lower is better)

ITRE expert and the PP evaluated the BPs according to the criteria. The selection process included the Local Stakeholder Group. A LSG workshop was arranged in Miskolc to finalize the suggested selection of BPs, all the options were discussed on the workshop. Table 8 on the next two pages shows the final table for identifying Best Practices. The orange rows highlight the selected Best Practices based on the common agreement of PP, ITRE, and LSG.

The final table for identifying Best Practices:

GP nr.	Impacts on lively issues						Overall sustainability assessment			Barriers by complexity level			
	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6	ECO	ENV	SOC	1	2	3	4
1	2	2	2	2	2	4	4	4	3	BAR 2: CAP BAR 3: INS	BAR 1: CUL		
5	2	2	2	4	2	3	4	3	4	BAR 6: INS	BAR 4: CUL BAR 5: CAP		
6	2	3	2	2	4	2	2	4	4		BAR 7: CUL		BAR 8: CAP BAR 9: INS
7	4	3	3	2	4	2	2	4	4		BAR 11: CAP	BAR 10: CUL	BAR 12: INS
10	2	3	2	2	4	2	3	3	4		BAR 14: CAP		BAR 13: CUL BAR 15: INS
11	2	2	2	4	3	2	3	3	4	BAR 18: INS	BAR 17: CAP	BAR 16: CUL	
12	3	2	2	2	2	2	2	3	3		BAR 20: CAP	BAR 21: INS	BAR 19: CUL
13	3	2	3	2	2	2	2	3	3		BAR 23: CAP	BAR 22: CUL BAR 24: INS	
14	2	4	4	2	2	3	2	4	4			BAR 25: CUL BAR 26: CAP	BAR 27: INS

Table 8 a (first part) – The final table for identifying Best Practices

GP nr.	Impacts on lively issues						Overall sustainability assessment			Barriers by complexity level			
	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6	ECO	ENV	SOC	1	2	3	4
15	2	2	2	2	2	4	4	3	3			BAR 29: CAP BAR 30: INS	BAR 28: CUL
18	3	3	2	2	2	2	2	2	2			BAR 31: CUL BAR 32: CAP	BAR 33: INS
26	2	2	2	4	3	2	3	3	4	BAR 36: INS	BAR 35: CAP		BAR 34: CUL
37	2	2	2	2	2	3	2	3	3			BAR 38: CAP BAR 39: INS	BAR 37: CUL
39	2	3	2	2	2	3	2	4	3	BAR 40: CUL	BAR 41: CAP	BAR 42: INS	
41	2	4	4	2	2	2	2	3	4			BAR 43: CUL BAR 45: INS	BAR 44: CAP
42	2	2	2	2	3	2	4	3	2			BAR 46: CUL BAR 48: INS	BAR 47: CAP
44	2	2	2	2	2	4	3	4	3		BAR 50: CAP BAR 51: INS		BAR 49: CUL
45	4	2	2	2	2	2	2	3	3			BAR 53: CAP	BAR 52: CUL BAR 54: INS

Table 8b (second part) – The final table for identifying Best Practices

Chapter 2. Selected Best Practices

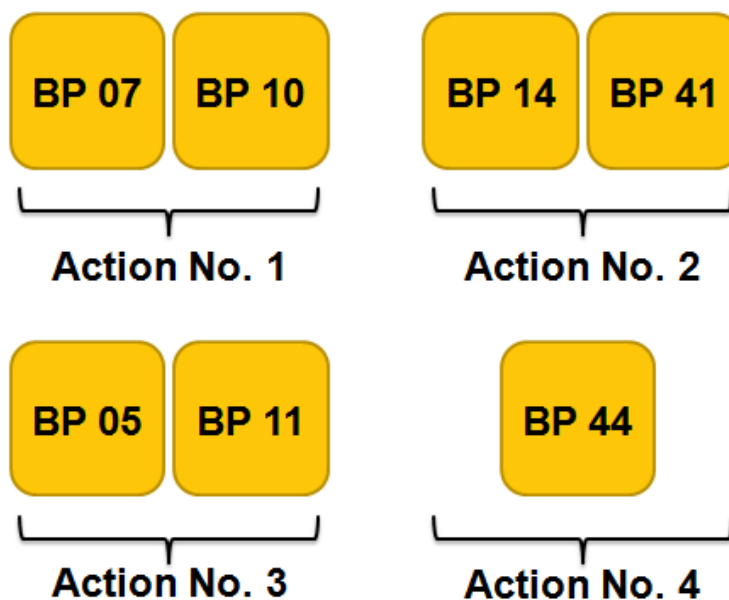
This chapter identifies, among the evaluated GPs, those which are going to be identified as BPs. The evaluative process is based on the following information, gathered in the previous steps:

- Identification of relevant lively issues, and their evaluations in terms of importance
- Selection of GPs which deal with at least a lively issue
- Evaluation of the expected impact of each GP in terms of resolution of lively issues, overall sustainability performance, and complexity of implementation

Scheme of the sorting steps:



Scheme of the selected Best Practices:



2.1 - Final Selected Best Practices:

As the result of the evaluation process PP4 decided to move on with seven final best practices, grouping these into four „packages” as following:

- **ID 07. Bicipolitana Pesaro / ID 10. Rewarding sustainable mobility**
 - Actions to achieve a fully connected bicycle network that fits the existing structure of the city. Promoting the sustainable lifestyles. Fulfilling the needs of people in different ages, from different social classes with different motivations.
 - Motivating the companies to support their employees to use a sustainable form of transport. The program is financially supported by the city administration.

- **ID 14. Pedestrianisation Plan of Seville Downtown area / ID 41. Baia Mare central area - pedestrian zone (Piața Cetății, Piața Libertății and nearby streets)**
 - Redirecting the above-ground parking into the existing underground parking facilities in the center of the city. Improving the bicycle network in the central areas and along the riverside. Implementing a bike-sharing system.
 - Extending the pedestrian network, creating public spaces near the main institutions and tourist destinations. Reducing the car parking opportunities in the downtown streets, creating new parking facilities outside the central areas.

- **ID 05. MyCicero / ID 11. The travel card in the metropolitan areas of Andalusia**
 - Using a single mobile application for getting directions, buying tickets, paying for parking.
 - Developing an integrated electronic ticketing system using travel cards in public transport (local and regional level, railways, buses, trams, etc.)

- **ID 44. Traffic management system (municipality of Zalău)**
 - Developing a traffic management system that satisfies the current traffic needs – changing the traffic-light controlled junction-programs.

2.2 - SWOT analysis of GPs

A SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) for each BP is used to identify actions that either exploits strengths and opportunities or overcomes weaknesses and threats. The Methodological Guidelines sets that the identified Actions need to be linked to at least one of the elements in the SWOT analysis: either to a helpful or a harmful element. **PP4 created four SWOT analyzes**, one for each pair of BPs:

GP ID: 07 & 10 (Action No. "1")

ID 07. Bicipolitana Pesaro / ID 10. Rewarding sustainable mobility

Action No. "1" GP ID: 07 &10	Helpful	Harmful
Internal origin	Strengths	Weaknesses
	S1 - There is a strong cycling community in the city of Miskolc	W1 - BAR: CAP - Because of geographical reason there is lack of space for separated cycling pathes
	S2 - Some parts of the bicycle network already exist	W2 - BAR: INS - Takes a lot of time to collect all the construction permits
	S3 - The city administration is committed to improve the bicycle infrastructure	W3 - There are difficulties in reaching the different social classes with promotions
External origin	Opportunities	Threats
	O1 - Cycling in the city is getting more attractive and popular these years	T1 - BAR: CUL - Construction work will cause some inconvenience to the citizens
	O2 - The university students can give a boost to the cycling practice in Miskolc	T2 - Hard to harmonize the different needs of different players in the everyday traffic
	O3 -The geographical conditions are ideal for cycling at the flat areas of the city	

GP ID: 14 & 41 (Action No. "2")

ID 14. Pedestrianisation Plan of Seville Downtown area / ID 41. Baia Mare central area - pedestrian zone

Action No. "2" GP ID: 14 & 41	Helpful	Harmful
Internal origin	Strengths	Weaknesses
	S1 - The city administration is committed to improve the public spaces and move the car traffic towards the periphery	W1 - BAR: CAP - Difficult to find all the construction companies with the needed skills in time
	S2 - The changes are environmentally friendly, air pollution is going to reduce	W2 - BAR: INS - The complexity of city traffic system make it sensitive for any small changes
External origin	Opportunities	Threats
	O1 - The citizens require more public spaces than what they currently have	T1 - BAR: CUL - There might be some resistance on behalf of the residents of the affected area
	O2 - Existing underground parking facilities in the centre of the city	T2 - Important to get all the funding needed in time
O3 - The Szinva creed flows through the city centre, giving a lot of opportunities for public spaces	T3 - Car users will miss the removed parking lots	

GP ID: 05 & 11 (Action No. "3")

ID 05. MyCicero / ID 11. The travel card in the metropolitan areas of Andalusia

Action No. "3" GP ID: 05 & 11	Helpful	Harmful
	Strengths	Weaknesses
Internal origin	S1 - Existing connection points between public transport routes	W1 - BAR: CAP - Hard to find the players holding the needed competences to develop the practice
	S2 - The city administration is committed to advanced technologies	W2 - Bar: INS - Integrating the technology into existing institutions can be difficult
	S3 - The local public transport company already have a mobile application	W3 - To integrate local, regional and national systems may have difficult and time consuming.
	Opportunities	Threats
External origin	O1 - Most people already own a smart device	T1 - BAR: CUL - People need time to get used to electronic and smart solutions
	O2 - Public transport becomes more attractive and popular these years	T2 - Important to get all the funding needed in time
	O3 - Financing is accessible in the domestic Modern Cities Program	T3 -Changes in national regulations can affect the local implementation

GP ID: 44 (Action No. "4")

ID 44. Traffic management system (municipality of Zaláu)

Action No. "4" GP ID: 44	Helpful	Harmful
	Strengths	Weaknesses
Internal origin	S1 - Some traffic management system already exist in the city	W1 - BAR: CAP - Hard to find the proper technology companies with the needed skills
	S2 - The city administration is committed to advanced technologies	W2 - Bar: INS - Integrating the technologies into existing institutions can be difficult
	S3 - Most of the junctions are already traffic-light controlled	W3 - Implementing the new devices can be complicated and takes some time
	Opportunities	Threats
External origin	O1 - Most of the people support these actions	T1 - Bar: CUL - Some people are often afraid of new technologies
	O2 - A better traffic system can make the city centre more accessible	T2 - Integrating different systems can have legal obstacles
	O3 - Financing is accessible in the domestic Modern Cities Program	T3 - A faster route is more attractive, there might be even more cars on the main roads after the development

Chapter 3 – Defining Action Plan

This chapter further describes the list of actions that were identified in chapter 1 by the TRAM methodology - starting from a Gap analysis.

It specifies the nature of the actions to be implemented, their time frame, the players involved, the costs and funding sources.

3.1 – Details of the actions envisaged

3.3.1 Action 1

ACTION 1

Name of the action: **Bicycle pathway network development**

1. **Relevance to the project** *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

As a preliminary point in spite of the fact that in Miskolc modal split (by a survey in 2016) the cycling as a mode of local transportation is still not significant, this activity is quite popular in some part of the society (mainly young and active people) as sport or fun. The success of yearly organized cyclist events and already settled big companies concrete demand for accessibility by bike prove the undeniable need for further development of the City's bicycle pathway network.

The inspiration of this action derives from the presented good practices in Seville and Pesaro (GP No. 12, 13, 7) made it clear that only the infrastructure won't be enough to achieve the main goal, have to convince the citizens to use biking as local transportation mode not only for fun. Among those who already use bikes at least sometimes, the developments will respond an existing needs, and probably will be welcomed. But those layers of the local society who would be able to biking but only bad habits, lack of infrastructure (or information about existing infrastructure), insufficient motivation restrain from ride on bike, a massive, well prepared and complex awareness raising campaign must be implement with perfect timing.

In Miskolc has already been built approximately 17 km long bicycling lane. These development establish the „backbone” of the north-east connection inside the city, and the accessibility of the university campus. But there are still districts (most of them with peripheral and rural character), touristic district and industrial fields without bike line connection.

The geographical conditions of the city, located in a valley, doesn't allow in all cases to create separated bike line, but as in other GPs be proved, „commonly used” roads can give a satisfactory solution for the limited space, even in downtown area.

Recently there is no bike path connection to neighbourhood settlements and planned regional, interregional bike path network.

2. Nature of the action (please describe precisely the content of action 1. What are the specific activities to be implemented?)

2.1 Describe the action

Linked to the aims established in the Integrated Urban Development Concept, Integrated Settlement Development Strategy and Sustainable Urban Mobility Program a long term bike-path network development concept must be prepared. In this document should be establish the main direction of bike path developments to respond the needs of the stakeholders (citizens, business, local transportation company, authorities and neighbouring settlements) considering the possibilities, physical/technological obstacles. Very important to give timing priority for the different new sections of the network because of the limited resources.

Based on the Concept must be identify of the creating sections by matching the requirement of the territorial and Settlements development Operative Program, which can finance the investments. The next phase of the network development should close till 2022 end the total expansion should 30, 43 km.

The infrastructure development must accompany awareness rising campaign and information spreading actions like bike races, biking days, road safety promotion days in schools etc.

Similar (or same) application would be useful to complement the campaign like the Rewarding system in GP No.10 for informing the citizens about the bike pathway network, to offer additional services for bikers higher satisfaction (rout planner, service points, bike storage points etc.) and motivate non bikers to use this transportation mode. This activity identified as Action 5 in this document.

2.2 Action Justification (Why?)

Because of the air pollution and the increasing mass of car traffic and load of inner road system there is a strong need to change the modal split of Miskolc toward the less polluting and more sustainable transportation modes, like biking.

The active citizens and the big companies, established in the industrial areas, provide significant demand for developed bike pathway network and accompanying services.

With the increasing share of biking in the modal split goes the tangible improving health status of the citizens which leads less expenditure of health care system

Connection with the surrounding cycling way network and creating the accessibility of the most popular touristic destinations inside the city (Diósgyőr Castle, Lillafüred, Miskolctapolca) may give a boost of its visitors and make easier for commuters from nearby settlements to reach their job in Miskolc in the warm period of the year.

2.3 How to implement the action (e.g. how to Guarantee key success factors, prevent difficulties encountered and reflect on lesson learnt)

It is highly important to involve the cycling society of Miskolc (Miskolc Bike Club) into the preparation of the development and even into the awareness raising campaign to maximize the chance of the satisfaction. The citizen engagement can be crucial in urban development projects as experienced in Seville's Pedestrianisation project GP No 14.

Experienced and well prepared experts needed, first of all in the planning phase, because of the totally different situations of the different districts of the city, facing with big challenges in choosing the suitable technology (like tight bridge, heavy traffic on the roads, wooded area etc.)

2.4 Effects of the action (what happens if the action is implemented?)

Well designed and constructed cycling pathway network in Miskolc will increase residents' and tourists' satisfaction, will influence the modal split of the city towards more sustainable transport mode.

More probably will have a positive effect on the average health conditions of the citizens through better air quality and more active life.

Better accessibility of industrial and touristic areas may eventuate economic growth.

Miskolc will be more attractive for potential investors and their employees, meanwhile its population retention ability will increase.

2.5 Case of no action (what happens if the action is not implemented? or potential risks)

The existing cycling pathways remain partly separated, no network effect will appear. The biking society of the citizens and the big companies will be disappointed. Active (biker) tourists cannot reach Miskolc and its popular destinations. The advantages listed in 2.4 won't turn up in the city.

3. Stakeholders involved (please indicate the stakeholder organizations in the region who are involved in the implementation of the action 1 and explain their role)

Miskolc Biker Club

Miskolc Transportation Company

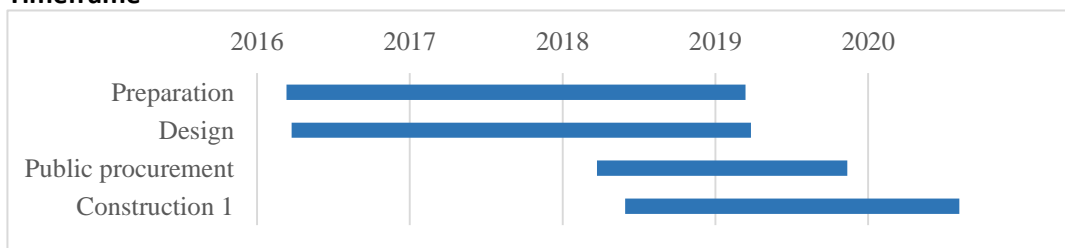
Municipality of Miskolc, Municipalities of neighboring settlements

PR Service Agency

Authorities

Ministry of Finance

4. Timeframe



Outcomes & indicators of the activities:

Preparation: City Bike-road Network Plan, hired project management team

Design: Detailed Technical Drawings of the Bike-road Sections, Regulatory approvals

Public procurement: Complete PP documentation, Contracts for construction

Construction: 28.7 km long bike-pathway

Costs *(please estimate the costs related to the implementation of action 1)*

5.468.000 Euro

5. Funding sources (if relevant):

Territorial and settlements development Operative Program

3.3.2 Action 2

ACTION 2

Name of the action: **Pedestrianisation, green space in the downtown**

- 1. Relevance to the project** *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

This action is like than other good practices presented by Seville (GP 14) and Baia Mare (GP 41) because these cities face to similar problems related to missing public spaces in the downtowns and aiming at improving safety for pedestrians, the air-quality and noise of environment.

There is a strong need to change the main public space in the downtown of Miskolc, to make it more multi use, increase its capacity for social events, increasing the green and blue surface to diminish of heat-isle effect, decrease road traffic in the downtown and create an organic contact between the downtown and the historical Slope of Avas hill.

The square actually used for main city events, but usually these are too crowded and messy because of the recent size of the space.

In a former project a big digital screen was establish in the square for public information and support of the local events.

An underground parking facility, close to the square (Europa Square) average utilization doesn't reach the 60% of its capacity.

Next to the square a private investment has launched parallel with the rehabilitation project with a significant effect on it.

2. Nature of the action *(please describe precisely the content of action 2. What are the specific activities to be implemented?)*

2.1 Describe the action

Defining the required role of the reorganized square (events venue, meeting point, public park, cooling point etc.)

In a certain section, the actually covered Szinva creek, will be opened and its will be approachable by pedestrians via terraced formation. A city owned building, next to the square will be renovated and open for businesses (restaurants, bistros). One road and an open-air public parking area will be changed for green surface! The traffic system of the square must be reorganized because of the less road, 1 was road must be change for 2 ways, etc.

Underground utilities must be reallocate and renovate.

New street furnitures, smart pillars will be purchased and installed on the reorganized square.

Before the construction works, a comprehensive information campaign needed to convince the citizens (all of the city) about the aims and positive outcomes of the changes.

2.2 Action Justification (Why?)

There is not enough space for central city events.

The more traffic required to move from the downtown to the bypass roads in the city, because of the noise and air pollution.

The increased green surface (with woods) and the opened Szinva creek provide an appropriate place for the residents and visitors to have a rest in a cool and friendly environment, enjoying the free WIFI and Big Screen facility.

The square give a „harmonic connection” between the downtown and the historical Avas slope district.

2.3 How to implement the action (e.g. how to Guarantee key success factors, prevent difficulties encountered and reflect on lesson learnt)

The summary of the process is the following: the first thing is about the requirements of the citizens, experts, local transportation company and city leaders, then comes the permissions, every project in the public space requires an authorization by the city council, but because of the Szinva creek, the Government office’ permission is needed, just like electricity supplier’s permission. The change of utilities and the construction works must be complied with parallel (private) investment on the square.

Because of the complexity of the development, the experienced and skilled project management and technical team availability is crucial.

Landscaping works can be made between April and October.
Information campaign must prevent of the resistance of the car drivers because of the changes in the traffic system and diminish of surface parking facility.

2.4 Effects of the action (what happens if the action is implemented?)

The main square became more full of life, more suitable for bigger events, became multitask public space. Out of the events, the green and blue surface provide a smooth, quiet, joyful place for meeting, spending free time for the citizens and visitors. The local businesses (restaurants, bistros etc.) income will increase.

The St. István square become a favorite and frequently visited open space in Miskolc.

The traffic load, noise and air pollution of the downtown reducing.

The utilization of underground parking facilities increase.

The availability of the Avas historic slope (with wine cellars and pathways) and the visitors' number will increase as well.

Some bypath road's traffic load will increase on the south and north part of the city.

2.5 Case of no action (what happens if the action is not implemented? or potential risks)

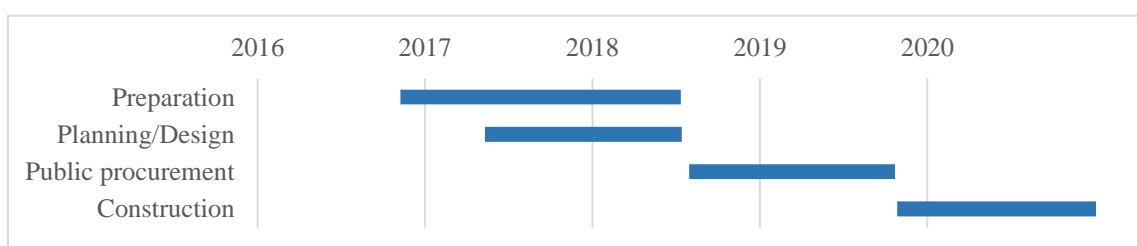
The popular events organized on the St. István square remain overloaded/crowded. In summer time the heat on the square is too high and there are insufficient shadow for the visitors.

A wide and heavily loaded road divide the square and the Avas slope, so the visitors rarely choose to walk up to the hill on the stairs and pathways. The noise and air pollution in the downtown slightly increase.

3. Stakeholders involved (please indicate the stakeholder organizations in the region who are involved in implementation of the action 2 and explain their role)

Municipality of Miskolc, Miskolc Holding Plc., Miskolc Transportation Company, Private Company (office building investor), civil engineers, authorities, Ministry of Finance.

4. Timeframe



Outcomes & indicators of the activities:

Preparation: Master Plan, hired project management team

Design: Detailed Technical Drawings of St. István Square, Regulatory approvals

Public procurement: Complete PP documentation, Contracts for construction

Construction: Reconstructed square with 305 m² new blue surface and 8700 m² new green surface by decreasing public road, rearranged traffic system next to the square.

5. Costs *(please estimate the costs related to the implementation of action 2)*

9.374.000 €

6. Funding sources *(please describe how action 2 will be financed. Is it through the policy instrument(s) indicated in part II):*

Territorial and settlements development Operative Program

3.3.3 Action 3

ACTION 3

Name of the action: **E-ticketing**

1. Relevance to the project *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

This action deal with a similar issues and matters linked to the GP 5 & GP 11 (& GP 26) relating to the creating and harmonizing the different e-ticketing system in regional or national level to ensure the best solution for that.

Miskolc has a relatively well developed public transportation system with modern facilities and fleets. The use of the public transportation in the modal split already quite significant (40 %) among the citizens.

In the development strategies of the city (ITS, ITP, Mobility Development Concept) have been formulated the aims of increase the share of public transportation over 50 % among the other modes, implement smart solutions in public services to make them more effective, efficient, cost effective and satisfy on a higher level of consumer expectations. The leaders of the city willing to extend the range of the existing city-card services towards the public transportation payment/ticketing system, in a way to be compatible with other, non-city owned, public transport companies, if it is possible even on national level. This aim meets with a governmental project which blaze a trail for a national E-payment system.

The aim of the required E-ticketing system is, among above the mentioned ones, to support decision makers and dispatchers, with real time data about the passengers number of each line.

The E-ticketing solution should be expandable on other public services in the city (like parking, museums, spas, etc.), for the future.

2. Nature of the action *(please describe precisely the content of action 3. What are the specific activities to be implemented?)*

2.1 Describe the action

A feasibility study should be made which contains the precise requirements of the city leaders, the possible solutions/systems meet with those, the time frame and estimated budget.

It is crucial the city level system must be suited to the national system which is still under development! A continuous cooperation must be carried out with governmental institutions, national transport companies and authorities.

One of the biggest challenges to find a solution for the easy check-out of the passengers, for the real time data of utilization of the vehicles.

There is no experience mentioned in the connected GPs but a well-designed communication campaign is needed to inform the passengers about the changes and convince them about the advantage of the changes!

2.2 Action Justification (Why?)

Smart solutions may increase the use of public transportation, the use of smart devices are more and more popular. The new service decreases the cost of cash use, provides real time data, about utilization of vehicles and lines.

Makes more comfortable of local transportation and increases the level of life of the citizens. Even can contribute to the change of modal split.

2.3 How to implement the action (e.g. how to guarantee key success factors, prevent difficulties encountered and reflect on lessons learnt)

As it is learned in GP Nr 11 it is necessary to coordinate and standardize strategies and technological solutions in order to ensure interoperability between the different transportation companies and authorities.

Chipped cards or mobile application, the selected solution should be extendable in the future for integration of more services.

Original ticketing system should run parallel with the new E-ticketing system at least for a certain period.

2.4 Effects of the action (what happens if the action is implemented?)

Better, real time data based decision preparing processes in local transportation.

More comfortable use of public transportation (PT). Increasing use of PT method, change of modal split.

Lower operation costs of PT.

More coordination between different transport companies and means of transport.

Higher consumer/passenger satisfaction.

2.5 Case of no action (what happens if the action is not implemented? or potential risks)

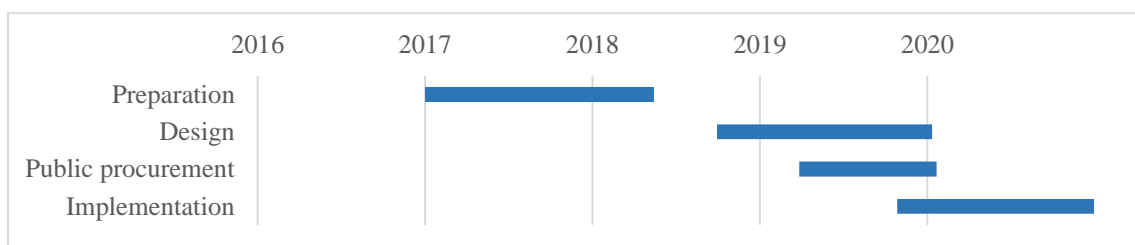
Fail of positive effects mentioned in 2.4.

The operational and maintaining costs will be more significant than the positive outcomes of the development.

3. Stakeholders involved (please indicate the stakeholder organizations in the region who are involved in implementation of the action 3 and explain their role)

Regional bus transportation company, National Railways Company, Citizens, Miskolc Public Transportation Company, Ministry of Economy, Citizens

4. Timeframe



Outcomes & indicators of the activities:

Preparation: feasibility study, hired project management team

Design: Detailed Technical Specification

Public procurement: Complete PP documentation, Contracts for equipments purchasing and installation and software

Implementation: Installed and tested E-ticketing system (on-board, off-board equipments) harmonized with the national system

5. Costs (please estimate the costs related to the implementation of action 3)

Total budget approximately 4.600.000 Euro

6. Funding sources (please describe how action 3 will be financed. Is it through the policy instrument(s) indicated in part II):

Government support from Modern Cities Program

3.3.4 Action 4

ACTION 4

Name of the action: **Intelligent Traffic Management**

1. Relevance to the project *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

This action handle the main issues of the crowded streets and junctions the cities facing today and need to superior roads with intelligent transport system.

There are lot of junction with traffic lights in Miskolc. There is already operating a tram preference traffic management system along the tram line which is a modern and smart solution. In spite of the north-east bypass road around the town, the traffic on the inner roads still heavy which is source of the significant air and noise pollution.

The tram priority system managed by the Miskolc Transportation Company.

Because of the complexity of a development for a whole city traffic/road network – included non-city owned roads and transportation lines as well - the GP N° 44 point out the need of a highly experienced „dedicated expert” or team who is able to see through all the aspects of the development.

2. Nature of the action *(please describe precisely the content of action 4. What are the specific activities to be implemented)*

2.1 Describe the action

The aim is to implement a road measurer and adapter ITS system based on an integrated GIS database. The new system should make easier the progression and decrease the travel time for the private and public actors also. It is crucial if on the existing posts owned by governmental or private companies can be used to install the sensors.

The sensors’ energy supply should be solved from the posts wires.

The centre of the system should be the so called Adaptive Traffic Control System (ATCS). The system should be able to provide and receive traffic data on standard interface. Even from public transport companies, authorities and other companies (e.g. WASE)

2.2 Action Justification (Why?)

Because of the need to diminish travel/running time, fullness of roads, air and noise pollution of the city, diminish the costs of inner transportation.

To provide data for further traffic/mobility related decision making processes.

Increase citizens’ satisfaction.

2.3 How to implement the action (e.g. how to Guarantee key success factors, prevent difficulties encountered and reflect on lesson learnt)

The development is so complex - require knowledge of ICT, traffic management, electricity supply, regulation of transport and traffic etc. – that an experienced specialist (more probably a team) involvement is crucial for the technical support of the design and implementation of the project.

In the frame of a communication campaign the citizens should be informed about the changes (temporary obstacles during the implementation phase) and the expected (but realistic) results, outcomes.

2.4 Effects of the action (what happens if the action is implemented?)

See 2.3 paragraph.

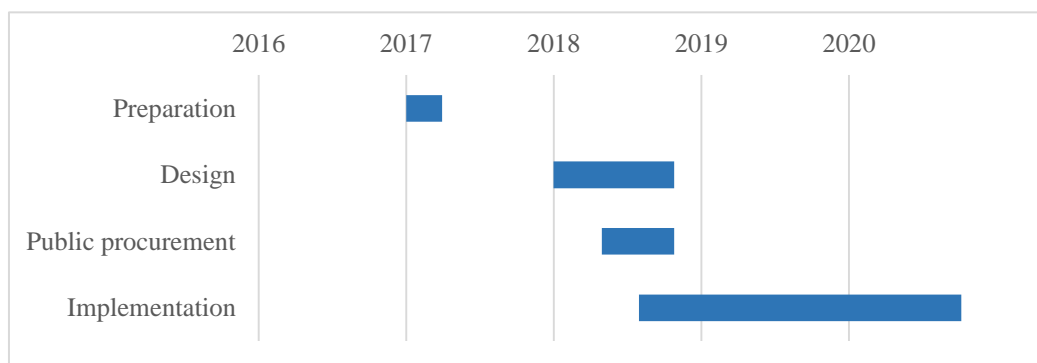
2.5 Case of no action (what happens if the action is not implemented? or potential risks)

The traffic network of the city can't bear with the increasing individual traffic load of the road network. The pollution will increase. The running time and the costs of transportation won't decrease which goes to competitive disadvantage for the local businesses.

3. Stakeholders involved (please indicate the stakeholder organisations in the region who are involved in the implementation of the action 4 and explain their role)

Miskolc Public Transportation Company, Regional Public Transportation Company, Electricity Supplier Company, Traffic/Road Maintaining Authority, Ministry of Technological and Innovation Development, Citizens, PR Service providers, City ICT Unit, Project Management Unite

4. Timeframe



Outcomes & indicators of the activities:

Preparation: feasibility study, hired project management team

Design: Detailed Technical Specification

Public procurement: Complete PP documentation, Contracts for equipment, purchasing and installation and software

Implementation: Installed and tested traffic management system

5. Costs (please estimate the costs related to the implementation of action 4)

Total budget: 2.5 Million Euro



- 6. Funding sources** *(please describe how action 4 will be financed. Is it through the policy instrument(s) indicated in part II):*
 Governmental support (Modern Cities’ Program) and EU support Territorial and settlement development Operative Program

3.3.5 Action 5

ACTION 5

Name of the action: **Gamification platforms for scaling-up sustainable mobility in Miskolc**

- 1. Relevance to the project** *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

The inspiration of this action derives from the good practice presented in Seville for project partners. This excellent online platform give a great possibility to private and public companies as well as city administration to reward employees and citizens with gifts or different promotions for using sustainable and eco-friendly means of transport for their daily urban travel.

The main idea behind the ICT “tool” is to promote a healthy lifestyle by motivating citizens to choose the bike or travel on foot through incentives (challenges and prizes), using an online platform and app which, on one hand enables the user to calculate distance travelled, burned calories, money saved and the reduction of emissions, while at the same time providing local authorities with valuable information on the most frequently used routes (in the form of heat maps).

- 2. Nature of the action** *(please describe precisely the content of action 5. What are the specific activities to be implemented)*

2.1 Describe the action

The aim is to develop or rent a mobile application which contribute one hand to the tracking of the cycling or walking routes of the users and reward them by different and various bonuses from local ‘donators’ like shops, cafes, sport stores, cultural places, etc. and, on the other hand open to door to get information from cyclist and pedestrians behaviour by the used routes for the city planners.

2.2 Action Justification (Why?)

Because there is a shift to detect the frequently used cycle and pedestrian lines and in order to give input on where need to develop new pedestrian and bicycle pathways in

the future and this give a basis for the broadened vision and contributing to upgrade the local sustainable urban mobility plans.

In addition it is a good occasion to foster the communication with citizens towards the digital transition in the city and inform them from the developments of bike path works by this platform. In Miskolc there will be cycling infrastructure developments in the next years as mentioned in Action 1 and applying this application and platform can provide possibility keep citizens informed from existing and future lines and after benchmark the data which available from platform.

2.3 How to implement the action (e.g. how to Guarantee key success factors, prevent difficulties encountered and reflect on lesson learnt)

A tender should be elaborated to find a service provider able to develop/rent the application using specificities from the analysed gamification platform. After a service provider is chosen should be match the requested functions with the local needs in order to gain the best benefits from it. Thereafter should be map and discuss with organisations/partners – as possible sponsors, donators – to join the program.

In the frame of a targeted communication campaign the potential citizens and prospective users should be informed about this possibility.

PP4 has submitted a Pilot Action within the Interreg Europe Programme for testing the replicability of the selected action.

2.4 Effects of the action (what happens if the action is implemented?)

The gained benefits derived from this action are multiple if we are thinking not only of the awareness-raising of the healthy lifestyle but motivate, involve and inform the citizens and additional advantages for local administration to extract by the monitoring real mobility patterns of cyclists and pedestrians and draw conclusion for the bicycle roads used.

Last but not least, is not negligible the impacts of the air and noise pollution as it from the reducing the car using and enhance the healthy lifestyle for citizens.

2.5 Case of no action (what happens if the action is not implemented? or potential risks)

If this action would not been realised there will be a shortage of the data that derives from the mapping of the cycle pathways analysed by platform for the local administration to obtain more real information regarding the cyclist and pedestrians to develop further the local mobility plans and would not be a targeted awareness-raising to promote healthy lifestyle and perhaps influence the citizens behaviour.

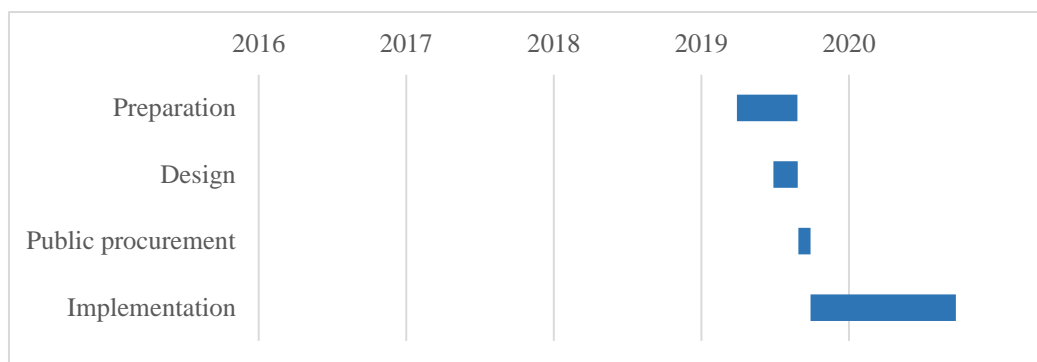
The air pollution would be increase. The travel time and the costs of transportation won't decrease which contribute to disadvantages for the local population.

3. Stakeholders involved (please indicate the stakeholder organisations in the region who are involved in the implementation of the action 5 and explain their role)

Municipality of Miskolc will coordinate the project, the implementation will be done at local level in the pilot phase, and the solution will be tested in two pilot municipalities in the framework of TRAM project.

The potential donators who connected to this action and local bikers' clubs and associations would be the involved stakeholders.

4. Timeframe



Outcomes & indicators of the activities:

Preparation: Document refer to elaborated specifications and needs of local beneficiaries'

Design: Detailed Technical/IT Specification

Public procurement: Complete PP documentation, Contracts for purchasing/renting the software

Implementation: Realised and tested application

5. Costs (please estimate the costs related to the implementation of action 5)

Total budget: 29.750 Euro by realized a pilot action in the framework of the TRAM project.

6. Funding sources (please describe how action 5 will be financed. Is it through the policy instrument(s) indicated in part II):

Interreg Europe Programme - Pilot Action.