SUMMARY OF INTEGRATED ACTION PLAN FOR URBAN FREIGHT TRANSPORT IN THE CITY OF SPLIT

SUMMARY OF INTEGRATED ACTION PLAN FOR URBAN FREIGHT TRANSPORT IN THE CITY OF SPLIT

Split, December 2017.

COMMISSIONED BY:

City of Split, Obala kneza Branimira 17, 21 000 Split

SERVICE PERFORMER:

cooperation of

URBANEX ltd., Boktuljin put 26, 21 000 Split

and

PROMEL PROJEKT ltd., Budmanijeva 5, 10 000 Zagreb.

Integrated action plan for urban freight transport in the City of Split is the product of FREIGHT TAILS project, on which Westminster (UK) is the lead partner, with other partners being Bruxelles (Belgium), Maastricht (Netherlands), Gdynia (Poland), La Rochelle (France), Parma (Italy), Split (Croatia), Suceava (Romania), Tallinn (Estonia), Umea (Sweden).

URBACT III programme is financed by the European Commission for the period 2014.-2020.

CONTENTS

1. INTRODUCTION

The implementation of sustainable urban mobility solutions for public and freight transport across the Mediterranean cities has revealed a number of options to develop contemporary solutions tailored to the features of local transport policies. By participating in the URBACT network programme, the City of Split has identified problems and established main guidelines for the future development of urban freight transport.

The Integrated Action Plan for urban freight transport in the City of Split (IAP) aims to support City transport policy and its implementation through the mobilization of involved actors and stakeholders. The objective is to achieve a better quality of the traffic system in the City of Split which will contribute to strengthening economic and social urban development. The IAP is a strategic document which aims to contribute to the goals of integrated urban development in accordance with Europe 2020 strategy. The IAP is developed through the FREIGHT TAILS project (within the URBACT III programme) and is aimed at strengthening freight transport policies. The process of preparing the Integrated Action Plan is based on the URBACT Guidelines to produce an Integrated Action Plan and the URBACT Guide - Applying the Results Framework to Integrated Action Plans. The area this plan relates to is the area of the City of Split as defined by the General Urban Plan of the City of Split.

2. TRAFFIC ANALYSIS IN THE CITY OF SPLIT

The City of Split is the largest city in Dalmatia and the second largest in the Republic of Croatia. It is the administrative seat of Split-Dalmatia County, as well as the Urban Agglomeration Split (UAS). In 2011. the City of Split had 178,102 citizens, surface area of 79.68 km^2 and population density of 2,235 citizens/km^2.

The City of Split is positioned in the middle of South Croatia on the coast of the Adriatic Sea, which makes it a hub for local and international land, sea and air transport. Connection to Zagreb by the A1 highway connected it to the European network TEN-t. It is positioned on the Vb traffic corridor, for which it provides the important port connection.

The road system in the City of Split consists of 69.6 km of roads. State roads D1 and D8 along with the A1 highway connect the City of Split to the European mainland. Parts of those roads pass through the city centre, thus creating a confrontation local and freight traffic. The National route D8 has the densest traffic in Croatia on the section between Solin and Stobreč with 40,000 vehicles per day, 3 % of those being transport vehicles.

Ports in the city consist of a passenger port (City port) and freight port (North port). The city port is located next to the main bus and railway stations, making the traffic very heavy in the area. This port is the primary connection of many islands to the mainland, having transferred 4,263,913 passengers in 2015. and also 880,735 trucks, the traffic flows generated put a great burden on traffic and distribution in the rest of the city. This traffic is strongly seasonal, with June and July having 137 % of traffic compared to January. Most of the cargo is transferred in the North port. 89.9 % of TEU units arriving by ships are transported by trucks, followed by 10.1 % transported by the railway. The

current port infrastructure is obsolete and future development of the North port facility is planned in the Kopilica area.

Figure 1. Important routes and locations in the City of Split

Railway transport is present for both passenger and freight transport, with the important marshalling station of Split-Predgrađe, which connects the city centre and North port with the hinterland. It is planned to move this activity closer to the North port in the future.

Public transport is organized by a network of urban and suburban bus lines which have transported 36,485,828 passengers in 2015. The bus lines are an additional pressure on the road network, the most congested streets being: Zbora narodne garde – Domovinskog rata, Poljička – Kralja Zvonimira and Vukovarska on the longitudinal axis and Velebitska and Vukovarska on the transversal axis.

There is a chronic lack of parking space in Split. There are 15,900 regular parking spaces (out of which 45.5 % are in the public domain payment system) with 10,000 more in garages and various other buildings. Additionally, 13,000 vehicles are parked every day on non-regular parking spaces, and 6,300 are illegally parked.

The traffic is heaviest in the area of the City port, where many of the city administration buildings, service providers and touristic attractions are concentrated. Freight transport is also concentrated in this area (and passes through the residential districts). For the purpose of delivery in the city

centre eleven supply points exist. The supply services for the city centre are limited to vehicles of less than 3.5 t and for certain time periods in the day. Some additional limits are also set for heavy goods vehicles. Delivery vehicles may enter the city centre between 5 am and 10 am, and in the afternoon between 14 pm and 17 pm, with maximum 1 hour staying time allowed. In the so called *last mile* delivery electric carts and delivery by foot are often being used. Some of the main problems regarding the delivery system are linked to an insufficiently elaborated parking system for freight and delivery vehicles, and inadequate organizational and infrastructural capacity of the transport system to increase the quality of delivery system.

Heavy traffic in the city also causes major noise problems, which reaches up to 60-65 db on the main routes. Air pollution is also present. Finally, road safety is at risk, with most accidents happening on the most congested streets (Poljička, Domovinskog rata, Vukovarska and Velebitska).

3. EXISTING STRATEGIC FRAMEWORK

The existing strategic policy framework for the IAP includes a wide variety of documents on EU, national (Republic of Croatia), regional (Split-Dalmatia County) and local level (City of Split). Some documents touch upon urban freight transport only partially, while others are paying more attention to this type of transport.

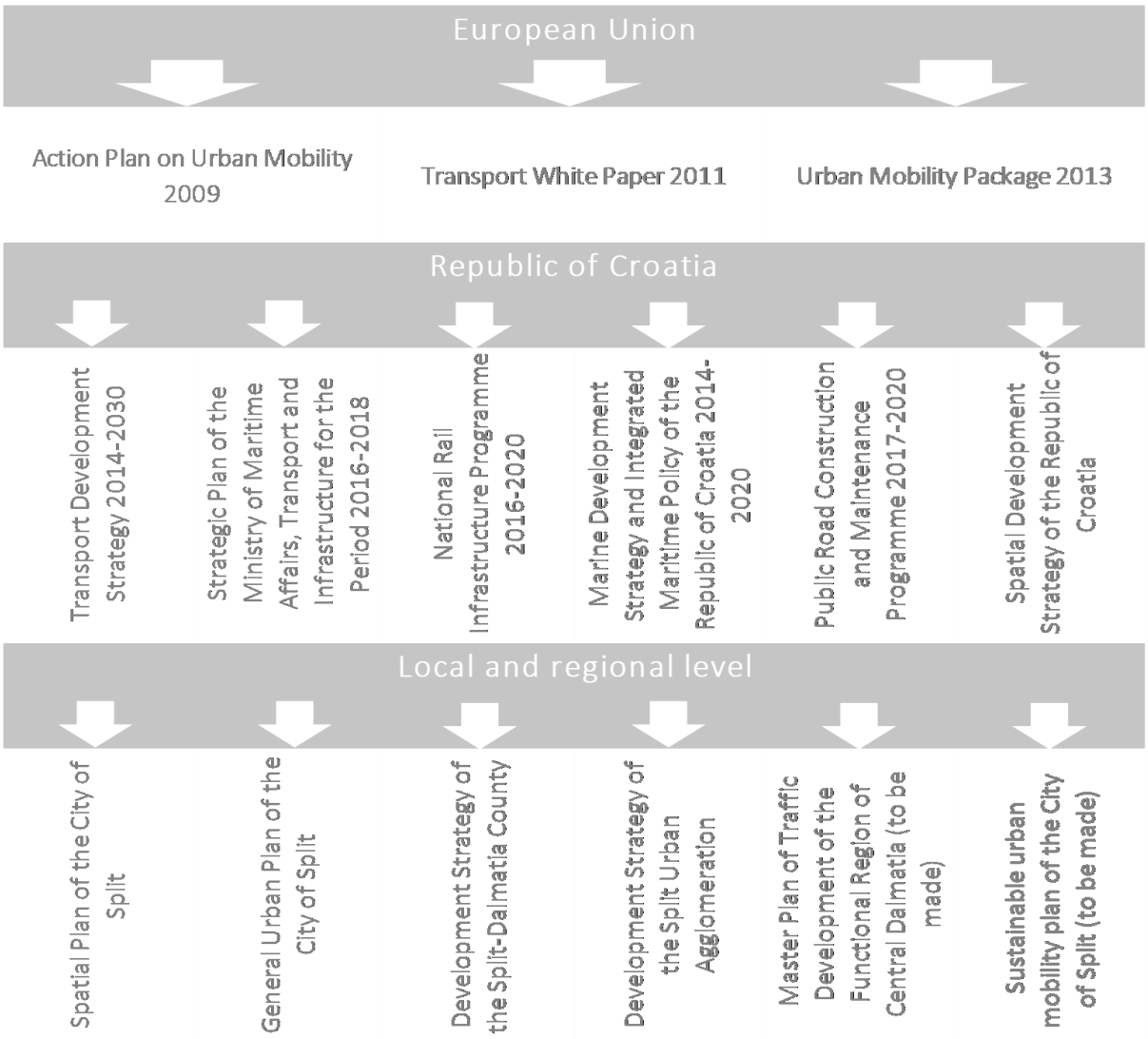

Figure 2. Strategic framework for IAP

The competent authorities for various transport areas on the national level are Ministry of Regional Development and EU funds, Ministry of the Sea, Transport and Infrastructure, Ministry of Environment and Energy and The Environmental Protection and Energy Efficiency Fund. On the local and regional level County road administration Split, County roads Split, Port of Split d.d., Port authority Split and Police department of Split-Dalmatia County have exclusive authorities. Members of the URBACT local group include the City of Split, Faculty of Economics of Split

University, Croatian Chamber of Commerce, RERA SD Regional Development Agency, Split-Dalmatia county, Port authority Split, Association of craftsmen Split and Traffic Split ltd.

4. POLICY CHALLENGE, PROBLEM ANALYSIS AND SOLUTIONS

Split is an important traffic hub where intensive freight transport is taking place (delivery and freight vehicles). Within the existing spatial planning development, Split has problems with inadequate organization of freight transport due to limited technical and organizational capabilities. This is why difficulties arise in the entire transport (and supply) system, especially during the summer (intensive tourism season). Despite the clear burden on the city's transport system, it has so far proved difficult to establish a clear transport policy in the city.

As part of the project, the URBACT local group conducted a questionnaire on the characteristics of urban freight transport. The survey found that there is a lack of relevant data and information on the characteristics of delivery systems as well as limited and unadjusted data on the issue of urban freight transport. Lack of concise information reduces the possibility of improving city freight transport development. It has been established that freight transport is organized in such a way that the traffic flow and the regulation of idle traffic for its needs are locked in to the existing traffic system characteristics, with the dominant role of cars and public transport. This is the result of the: limited road infrastructure capacity, particularly in terms of providing parking areas for (un)loading; poor implementation of a modern vehicule pool based on the use of renewable energy sources; non-compliance with regulatory planning and policy documents regulating movement of vehicles, and; poor use of intelligent transport solutions. Accordingly, the identification of these problems for development, indicates that the City of Split is in the initial stage of urban freight planning, which means that addressing issues related to urban freight transport is solved within general traffic planning.The main traffic issues identified in the City of Split are addressed in Figure 3.

The main focus of the Split IAP is based on solving key problems that prevent the establishment of an efficient city transport and freight management system. In accordance with the defined problems, the IAP is structured to encourage the development of logistics infrastructure and clean vehicle fleets, improve the regulatory-planning framework for freight transport in the city, develop intelligent information systems, and strengthen the structure of co-operation between operators and stakeholders in the development of urban freight transport policy. The IAP wants to solve the problem of lack of local policies by promoting effective solutions related to this issue and addressing the lack of specific organizational, financial, technical, spatial-planning, management, administrative and infrastructure support, for the implementation of effective solutions for urban freight transport activities.

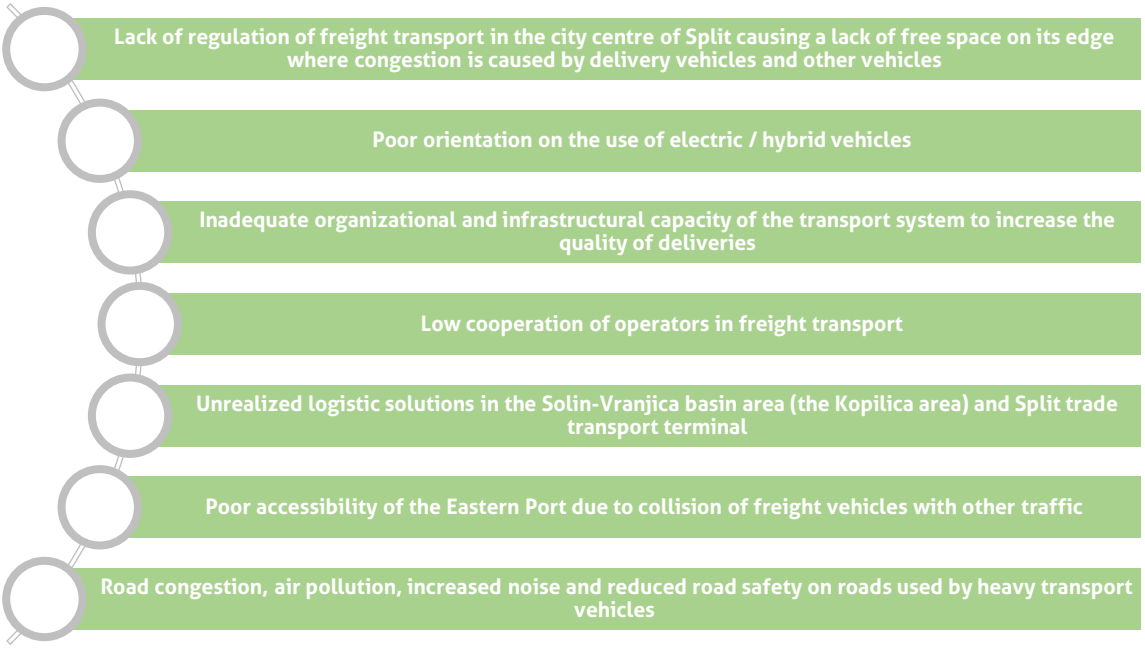

Figure 3. Main traffic problems in Split

According to the problem analysis and in cooperation with the URBACT local group, a strategic, vision-based, development framework is defined as:

Development of a sustainable urban freight transport system based on the optimization of logistics and transport activities that contribute to the protection of the environment and the strengthening of the economic and social development of the City of Split.

Based on the vision and development needs, a set of practical actions are planned for the purpose of planning eligible costs, creating concrete results, strengthening the City of Split's cooperation with partners during project implementation, and strengthening the capacity of the competent city body for the purpose of monitoring and evaluating the IAP. To achieve this vision, the IAP has defined the following strategic framework, which is listed in Table 1.

Table 1. Strategic framework of IAP

Objective	Specific goals	Activities	Brief description
1. Improvement of logistics infrastructure and vehicle fleet management	1.1. Develop an integrated traffic hub for commodity and freight terminals in the Kopilica area	1.1.1. Creation of a pre-feasibility Study of integrated cargo transport solution in the Kopilica Region	In the northern part of Split (Kopilica), the city is planning to developan appropriate network of road infrastructure and the accompanying logistic infrastructure with the aim of ensuring greater mobility of cargo and improving the functioning of freight transport. In the vicinity of the North port, there are also areas of Split's cargo railway station that are not functionally linked to the corresponding intermodal traffic junction. The mid-term strategic solution for the City of Split logistics system is the introduction of centralized distribution of goods through the construction of a logistics distribution centre.
	1.2. Increase in use of hybrid / electric vehicles in delivery	1.2.1. Procurement of electric / hybrid vehicles in delivery services - pilot project	One of the most effective models for implementing environmentally sustainable practices in urban freight transport is related to the implementation of electric freight transport. The main problem is generally poor distribution of electric charging points currently available in only two locations in Split. Since the use of such vehicles is not a widespread practice, it is necessary to determine the business model of the vehicle purchase, after consultation with all potential stakeholders. By providing support for the procurement of electric vehicles and the development of infrastructure, noise and CO_2 emission will be reduced.
	1.3. Development of other transport and logistics infrastructure	1.3.1. Implementation of the weigh in motion system in the City and North Port	Road traffic counting in Croatia does not include the total weight of traffic loads and the load schedule. Systematic monitoring of data through *weigh in motion* found that 31% of the vehicles exceeded the mass of the vehicle, axle load or vehicle dimensions. This results in multiple damage to the traffic system that is reflected in road damage, resulting in a reduction in quality and traffic safety. According to the Program for the Construction and Maintenance of Public Roads for the period 2017 to 2020, the introduction of a *weigh in motion* station to control the loads on state roads is planned. This activity includes the selection of locations to accommodate such devices, their installation and the establishment of a database for tracking the movement of freight vehicles.
		1.3.2. Construction of natural gas filling stations	The national policy framework for infrastructure development and the development of alternative fuels markets foresees the use of natural and petroleum gas for heavy freight vehicles. During 2016 and 2017, in the area of the City of Split, construction of a medium pressure gas network has started, which is the starting point for the development of such infrastructure. The activity envisages the determination of filling locations on important roads (A1, D1, D8) and the placement of natural gas fillers.

		1.3.3. Replacement of existing road construction with silent road construction	According to the latest noise assessment study in the area of the City of Split, the noiselimits on certain sections of the main city streets were exceeded. This activity involves measuring the acoustic characteristics of the existing condition of the road construction and replacing the existing road construction with silent road construction.
2. Strengthening of the regulatory and planning framework for urban freight transport	2.1. Develop a parking space system for delivery vehicles	2.1.1. Regulation of the mobility of delivery vehicles in the City of Split	The existing system of *last mile* delivery is organized through designated delivery points at the edge of the city centre where parking is foreseen for the delivery vehicle, after which the cargo is loaded onto corresponding vehicles that carry the load to the end user. Accordingly, a more detailed elaboration of the relevant regulation is envisaged and changes will be introduced to regulate the manner and conditions of delivery and types of delivery vehicles in the l*ast mile*.
		2.1.2.Management of freight traffic in the City of Split	One of the key problems of Split's transport system is the inability to organize parking space. The current organization of the parking of delivery vehicles is arranged in several locations with a limited number of parking spaces which serve a larger number of delivery vehicles without a fixed schedule. Such a way of organizing parking places is established only at the supply points in the restricted traffic zone at the edge of the city centre. The basis of this activity is the development of an appropriate survey of the existing provisionenabling decision-making on defining new parking areas for the needs of the delivery vehicles, and after the analysis, to allow zoning of parking spaces, unloading/loading times and other prescriptions.
	2.2. Increase the quality of last mile delivery to the city centre of Split	2.2.1. Implementation of a pilot project of installing a collection facility in the city centre and the development of a communication-information platform for service delivery	In the city centre there is a large number of shops, restaurants, bars and other users who have specific delivery needs. Such delivery features are particularly suitable for the realization of the *collect point*, i.e. containers for packages. The paying service is based on registration through a corresponding mobile application or website through which the operator provides the service and notifies the user that the package has arrived at the destination. This mode of cargo transport in *last mile* delivery has proved to be successful in several European cities as an efficient way to increase the service quality and efficiency to end users.
		2.2.2. Establishment of a vehicle sharing system for delivery services	The concentration of delivery on some days points to the potential of introducing a car sharing system. Adoption of a vehicle sharing system as a simple and accessible service will be governed by the payment of the usage time or the number of kilometres travelled, and by prior registration via the internet or smartphone. This can lead to a reduction in the number of vehicles traveling to the city centre, thus contributing to ensuring air quality and reducing traffic jams. In this regard, consideration will be given to the possibility of a public call for tender or a cost-benefit analysis for interested companies and crafts that will use the joint motor pool.

	2.3. Increased driver skills in deliveries to achieve environmental and energy savings	2.3.1. Implementation of eco-driving training for drivers in freight transport	Implementing eco-driving standards is one of the most effective forms of fuel-efficient transport. This enables drivers to acquire efficient driving skills that contribute to the protection of the environment and reducing emissions of harmful gases. Consequently, the City of Split and the County of Split-Dalmatia could provide support for companies driver training with a view to increasing energy efficiency and environmental protection.
3. Implementation of the ITS system in freight traffic	3.1. Preparation of the study documentation for the development of ITS system of the City of Split	3.1.1. Commission of a Study of traffic counting in the wider area of the City of Split	Traffic counting in the Split area was conducted in 2009 through the study of Traffic Counts in the wider Split area, so a new follow-up study is proposed. Consideration will be given to locations for setting up a traffic counting device.
	3.2. Create an information system for freight traffic to be implemented in the future ITS system of the City of Split	3.2.1. The introduction of an information-technology platform for the automatic use of parking areas at the edge of the city core	The activity includes the identification of areas for the introduction of automatic parking and design of the appropriate technical description and system components consisting of: 1. Installation of electrical cables with sensors installed below the parking area; 2. Realization of a parking sensory unit consisting of parking sensors connected to a cable that detect the presence of the vehicle above and has the ability to identify the vehicle via smartphone or device in the vehicle; 3. A control panel which manages the sensor units and monitors the movement of the vehicle and the parking session powered by a solar panel or by installation on the street lighting pillar; 4. Installation of detection and guidance devices; 5. Connect users to a common application that allows to control each parking space in real-time.
		3.2.2. Establish an information system for tracking movement of delivery vehicle	The basis of this activity is the creation of a freight transport management system that will be implemented as component of the future Split ITS system. The ITS project envisages the development of the following systems: traffic management and control; services in public transport of passengers; services in commercial vehicles; management in emergency situations; electronic parking and driving services; information services and security systems. The emphasis is placed on monitoring the freight traffic system, tracking cargo movements, organizing logistics for collecting and delivering freight within the city. The basis of this activity is: 1. Forming a system for dynamically managing freight transport; and 2. Connecting the information system in freight traffic with other traffic systems with the aim of creating a coherent entity with certain integrated technical characteristics.
		3.2.3. Introduction of the ITS system in the Split area - pilot project	The "East coast" area is of strategic importance for the urban regeneration of the City of Split where the main passenger terminals of road, maritime and railway traffic are located, as well as public transport. However, this area has intense movement of cars and freight vehicles embarking on the ferry lines. For this purpose, it is necessary to develop initial activities regarding the introduction of the ITS system by setting up cameras and control devices on access roads, enabling the monitoring of traffic flow allocation to the port.

		3.2.4. Procurement of software and tracking devices for freight transport vehicles - pilot project	Financing and installation of real-time delivery vehicle tracking devices; connecting the delivery operator with a common database; development of an information system (database) for the monitoring of delivery vehicles.
4. Strengthening institutional support for the development of urban freight transport	4.1. Establishment of a working body with the aim of identifying and resolving issues and other work related to city freight traffic	4.1.1. Institutional support for the improvement of urban freight traffic	Based on URBACT network methodology, a Freight Transport Council will be formed, which will meet on a regular basis for the purpose of monitoring the activities/projects related to freight transport. The main purpose of this body will be to raise awareness of the possibilities of solving problems in urban freight transport, informing stakeholders about the regulations and laws, etc.

The IAP is the base document for preparation of technical documentation for the projects and implementation of the other pre-investment activities, and for the development of the future traffic model in the City of Split. The City of Split has a key role in the implementation and coordination of various actors.

5. FINANCIAL PLAN, MONITORING AND EVALUATION

The City of Split budget is the basic source of financing, under the "Building roads and objects" budget item. However, with the Plan of Sustainable Urban Mobility and the Masterplan of the functional region of Central Dalmatia coming soon, the activities of the IAP are expected also to be implemented with contribution from the regional and state level budgets. ESI funds are also available, especially the European fund for regional development and the Cohesion fund, as well as the various programs such as JASPERS, INTERREG Europe 2014.-2020., „Innovative actions in sustainable urban development", JESSICA, Horizon 2020. and others. There is also the potential of financing through regional, UNDP, World Bank grants as well as the donations from various private companies and banks.

Activities of the IAP are designed with the provisions of the Operational programme "Competitiveness and cohesion 2014.-2020." in mind, or more specifically under the priority axis 7, the priorities 7a, 7b1 and 7ii2, under the priority axis 4, specific goals 4b1 and 4b2 and under the priority axis 6, specific goal 6e1.

The fulfilment of the IAP will be monitored by the Freight Transport Council after the end of support from the URBACT network. This body will set up the mechanism for tracking of indicators, the operative plan for each year, the evaluation of implemented work and implementation of the communication plan. Key performance indicators are defined to address the following aspects: Consolidation centre in the North harbour, parking places for loading/unloading of cargo, amount of pollutant emissions on the total city surface area, noise, permits for the entrance of delivery vehicles to the restricted traffic zone in the centre of Split, drivers training in eco-driving, accident levels, hybrid and electrical delivery vehicles, implementation of the freight traffic ITS.

Activity	Authority	Funding	Implementation timeline						Indicator	Target value
			2018.	2019.	2020.	2021.	2022.	2023.		
1.1.1.	City of Split, MTMAI	City of Split, ERDF, CF							Increase of operational surfaces in intermodal freight transport in Northern Port (Sjeverna luka)	5%
1.2.1.	City of Split	EPEEF							Electric filling stations	5
									New electric/hybrid delivery vehicles	10
1.3.1.	City of Split	Republic of Croatia, CF							Number of set *weigh in* motion devices	2
									Road length (km) on which the technical regulation of heavy commercial vehicles movement was carried out	10
1.3.2.	City of Split	Republic of Croatia, CF							Reduction of the amount of pollutants emitted in the City of Split	
1.3.3.	City of Split	City of Split, CF							Reduction of noise in certain road sections	45 dB
2.1.1.	City of Split	City of Split, CF							Organizational regulation for *last mile delivery* to the city core	1
2.1.2.	City of Split	City of Split, SD County, R. of Croatia, ERDF, CF								
2.2.1.	City of Split	City of Split, CF, donations							Number of users who use package delivery services through the *collect point*	100
									An information platform established to provide *collect point* service	1
2.2.2.	City of Split	City of Split, R. of Croatia, EPEEF							Reduction of the number of delivery vehicles	
2.3.1.	City of Split	City of Split, R. of Croatia							Trainees who received a certificate and passed eco-driving training	200
3.1.1.	City of Split	City of Split, ERDF, CF							A study for traffic counting in the wider area of the City of Split	1
3.2.1.	City of Split	City of Split, CF							Number of delivery parking spaces with built-in devices for detection and movement tracking	5
3.2.2.	City of Split	Republic of Croatia, CF							Number of companies involved in the information database for monitoring the freight traffic in the City of Split	100
3.2.3.	City of Split	Republic of Croatia								
3.2.4.	City of Split	City of Split, enterprises, crafts							Number of companies included in the information database	20
4.1.1.	City of Split	City of Split							Number of meetings of the Council for Freight Transport (annually)	2

Table 2. Financial plan of IAP

6. COMMUNICATION STRATEGY

The goals of the communication strategy are: informing the public about the contribution of IAP to the other strategies and development of the area, informing the stakeholders and potential users about the possibilities of financing projects/activities suggested in the IAP, transparency of the implementation of the IAP, coordination of all the communication activities implemented by the partner institutions. The target audience of the communication plan are the potential users, citizens, media and regional, national and international institutions.

Potential project/activity beneficiaries are the main target group for the implementation of the communication plan. Therefore, it is necessary to enable continuous cooperation with partner institutions in implementation, to work on continuous information sharing and communication, and to educate potential users – enterprises, crafts, public institutions. For the purpose of quality dissemination of IAP information to target groups, adequate communication channels will be provided for the transmission of information through the production of brochures, flyers and the like, thereby providing timely information.

Stakeholders of the URBACT local group will have a key role in encouraging cooperation and raising public sensibility to the issues during the implementation of the Action plan. For full effectiveness there is a lack of financial resources, and also the problem of mobilizing all the relevant stakeholders. The URBACT local group will therefore concentrate on: securing the integrated and participative access to activities/information of IAP, encourage the involvement of all the relevant stakeholders, establish the effective system of tracking and evaluation of the suggested actions and encourage the foundation of the Freight Transport Council after the end of support from the URBACT network.

By participating in workshops and meetings and exchanging knowledge and experiences the members of the URBACT local group are increasing their capacity for implementing projects and activities. Experiences from the other cities, such as those drawn from the CIVITAS programme, can be used to bypass obstacles which have been encountered in the past.

7. RISK ANALYSIS

Identification of risks in relation to defined IAP goals is the basis for an effective implementation of activities taking into account the specific requirements of all stakeholders. Accordingly, potential external and internal risks have been analysed, which may affect the realization of the anticipated activities, or affect the failure to achieve the goals defined by the IAP. In this respect it is necessary to identify the risks with the relevant stakeholders and to predict their occurrence during implementation. External risks include economic factors, socio-political factors, law changes, technological innovations, and natural and anthropogenic risks while internal factors relate to the risks arising from managerial, financial and information-technological constraints on executives and users who cannot respond to the specificity of activities, or the type of intervention envisaged.

Type	Name	Level of risk
External risk	Changes in legal regulations at national and EU level	HIGH
	Extending the duration of the project due to the impossibility of providing funds for the realization	HIGH
	Changes in consumer behaviour and habits	MIDDLE
	Fear of change of the local population	MIDDLE
	The inexperience of the main stakeholders in implementing activities / projects related to freight traffic	HIGH
	Increase of taxes in the transport sector	HIGH
	Increase in costs and maintenance of infrastructure, superstructures and vehicles	HIGH
	Underdeveloped traffic infrastructure not intended for freight traffic	MIDDLE
	Failure to maintain traffic infrastructure due to lack of public funds	MIDDLE
	Poor adoption and use of information technology	MIDDLE
	Natural risks	LOW
	Anthropogenic risks	LOW
Internal risk	Inability to integrate co-operation between stakeholders from different sectors	MIDDLE
	Bureaucratic difficulties	MIDDLE
	Lack of interest from stakeholders for which activities are planned	MIDDLE
	Non-inclusion of development of freight traffic strategic goals into strategic documents	HIGH
	Lack of knowledge and skills needed to carry out activities	MIDDLE
	Poor cooperation and participation of stakeholders in the planning of the implementation of activities	HIGH
	Not implementing a communication strategy	MIDDLE
	Inability to fund projects / activities due to lack of funds	HIGH
	Interruption in financing	MIDDLE

Figure 4. Types and levels of risk