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CiViTAS
 Cleaner and better transport in cities

DESTINATIONS



Evaluation Plan

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1 The Project Evaluation Plan

1.1 Executive summary of Deliverable D9.1

Based on the evaluation work of CIVITAS POINTER and CIVITAS WIKI and a first analysis of recent evaluation approaches defining indicators for urban mobility, the Project Evaluation methodology adopted is the result of an efficient cooperation between CIVITAS Satellite and the Project Evaluation Managers of the new Innovation Actions (ECCENTRIC, DESTINATIONS and PORTIS).

The focus of the evaluation work is the measures implemented in each CIVITAS DESTINATIONS site (Madeira, Elba, Las Palmas, Limassol, Rethymno and Valletta). As presented in Deliverable 9.2 “Draft Evaluation Plan” the evaluation aims to describe the impact of the implemented measures in impact categories with a qualitative assessment (Process evaluation) and quantitative elements (Impact evaluation) against quantifiable targets set in advance.

- Key to impact evaluation is the identification and measurement of appropriate performance indicators (for the 5 categories Energy, Environment, Transport, Economy and Society) which are nothing other than tools that enable a quantification of the impacts (or effects, results) of a project.
- Process evaluation supplies critical information as to the factors that played a role in sustaining or weakening the outcomes of a measure. Such assessment is particularly relevant in complex projects like CIVITAS, and it accordingly requires an ad-hoc exercise within each demonstration site

The Project Evaluation Plan is the basis of the evaluation work and takes into account all the impacts and process evaluation aspects at methodological level and for what concerns the ex-ante evaluation.

Since the CIVITAS projects implement measures in a real, complex, functioning environment the CIVITAS evaluation needs an optimal balance between scientific, precise analyses and synthetic interpretation of observations of the evolution of urban mobility.

2 Local Evaluation plan - Madeira

2.1 Island and city description

Madeira Island is part of the Madeira Archipelago, along with Porto Santo and the Desertas and Selvagens Islands. It is located in the North Atlantic and it has a population of around 240.000, 110.000 of which live in Funchal, the capital. Due to its volcanic origin, the Island is very mountainous, but the weather is always mild.

Madeira is a well-known and established tourism destination, with nearly 1.8 million visitors in 2016 (1.3 million by airplane and 0.5 million by cruise). There are tourists who come to Madeira almost every year¹ and some come more than once a year for short visits. As a result, the economy of Madeira is based on the tertiary sector, with a high weight of public administration and tourism. According to the latest Strategic Document for Tourism in Madeira produced by the Chamber of Commerce of Funchal (2015), tourism (hotels and restaurants) account for around 30% of total GDP and over 15% of the total volume of employment in Madeira. A large part (two-thirds) of the Island is a natural park. Levadas (man-made water channels with pathways) cover almost all the Island and both residents and tourists use them for taking leisure walks.

The profile of Tourists has been changing in the past years which mean that local authorities and tourism professionals has to meet new demands and habits. Tourism in Madeira is growing at a high pace and the business model is sharply changing. Growing use of the Internet has contributed to the importance that this channel currently holds to purchase directly airlines, hotels and other service providers.

On the other side, the residents in Funchal, mainly use the car in their trips to work, as a driver 53% and as a passenger 9%, and only 22% use public transport (data from census 2011).

Mobility-wise, the streets in Madeira, especially in Funchal, are very narrow and steep, hence it is not easy to walk or use bicycle². Also, due to the lack of space, most streets do not have appropriate sidewalks net, and illegal parking is a common rule in the residential areas. Around Madeira Island there is a motorway which contributes to raise the number of cars and motorbikes as this way they can be considered more appealing and convenient than public transport. According to data provided by the Portuguese Insurance Institute, motorisation rate in Madeira, in 2015, was of 422 cars per 1.000 inhabitants. This motorisation rate is slightly higher in Funchal, the city capital and where most persons live and work (nearly 439 cars per 1.000 inhabitants).

Currently, before DESTINATIONS has been implemented, the information about sustainable transportation is quite scattered and not easy to access by tourists. There are different institutions, operators and company which act in mobility field but are not connected in a unique information channels and layouts. Here lies one of the main barriers to the provision of efficient public transport and soft mobility patronage. Fragmentation of the offer and the individualist outlook of the different market players entail severe negative factors that

¹ According to the survey conducted by the SEEMORE (IEE funded project) team at the Regional Airport, in 2012, a share of 35% of tourists have already visited the Region before and thus 65% are newcomers.

² The network of cycle lanes is almost inexistent; the only dedicated lane is located in a small flat area of the Municipality of Funchal and comprises 0,8km of length.

constrain the performance of the Madeira tourism sector. For example, tourists cannot make direct bookings of public transport. Madeira comprises 5 different public transport operators, of which three are private. There is no coordination between schedules and routes of the different public transport operators.

Tourists are currently responsible for a high number of motorized trips in the region, but it is estimated that nearly 300.000 visitors per year don't use public transport to discover the Island. The latest surveys conducted by the Regional authorities in the frame of Tourism and Mobility have outlined that the increased number of trips booked on the Internet is leading to an increased number of tourists who plan their own trip, often by renting a private mode of transport. This insight is of paramount importance to raise the awareness of tourists actually before they arrive to Madeira or in the main gateways of entrance (airport and port), informing and persuading them to use less energy and environment intensive transport modes. Surveys also show that the lack of cycling lanes, street sign improvements and more connections between the airport and the centre of Funchal are key issues visitors dislike while staying in Madeira.

Another barrier lies in the lack of enforcement during major events in the Island. Football games, firework displays, musical festivals and many other kind of events, often produce bold disruptions in the traffic flow. This sort of leisure activities need to be handled and properly managed to promote local public transport as a key player to encourage soft mobility usage among visitors and locals alike.

Finally, there is a conflict observed between freight delivery and tourism. The retail sector supply in highly touristic areas is very challenging and improvements must be sought to meet tourist demand.

2.2 Strategic goals

The project partners are bound together by the will to capitalize CIVITAS-MIMOSA experience on urban mobility matters bundled with the SEEMORE project which more specifically approach the synergies between tourism and transport and all the actions these projects have put in motion.

Both aforementioned projects have created the building blocks for fostering integrated and greener surface modes of transport and a new sustainable mobility culture on the key local and regional players have arisen, together with a strong willingness to support and move towards less energy and environment intensive transport modes. This has led to drafting both the DESTINATIONS local programme and the PIETRAM³ were drafted and therefore there are a shared-sense that DESTINATIONS offers an opportunity of paramount importance for the Regional economy.

Regional tourism strategies are based upon high-quality installed capacity in terms of infrastructures and human resources. Sustainable surface modes of transport need to follow this trend. Project partners have found out that as tourism and transport relate with each other very much, a good transport experience is important for the general appraisal of the tourist

³ PIETRAM (published in 2015) is the main regional strategic document for all transport policies in Madeira within the period 2014-2020. It was prepared to frame all the required investments due to be implemented during this period and therefore entails a dedicated action plan of measures.

with regard to their holidays. In the event that the tourist has had pleasant holidays, positive word-to-mouth will be disseminated to their relatives and friends who consequently become potential tourists. Other noteworthy parallel effects rely on the assumption that DESTINATIONS bring exciting new opportunities and can give a boost to a more fluid, smart and green Region and this way contribute to reduce the disturbance that traffic jams create among tourists that look for a peaceful destination. Tourism can therefore provide a decisive contribution to the wellbeing of both locals and visitors.

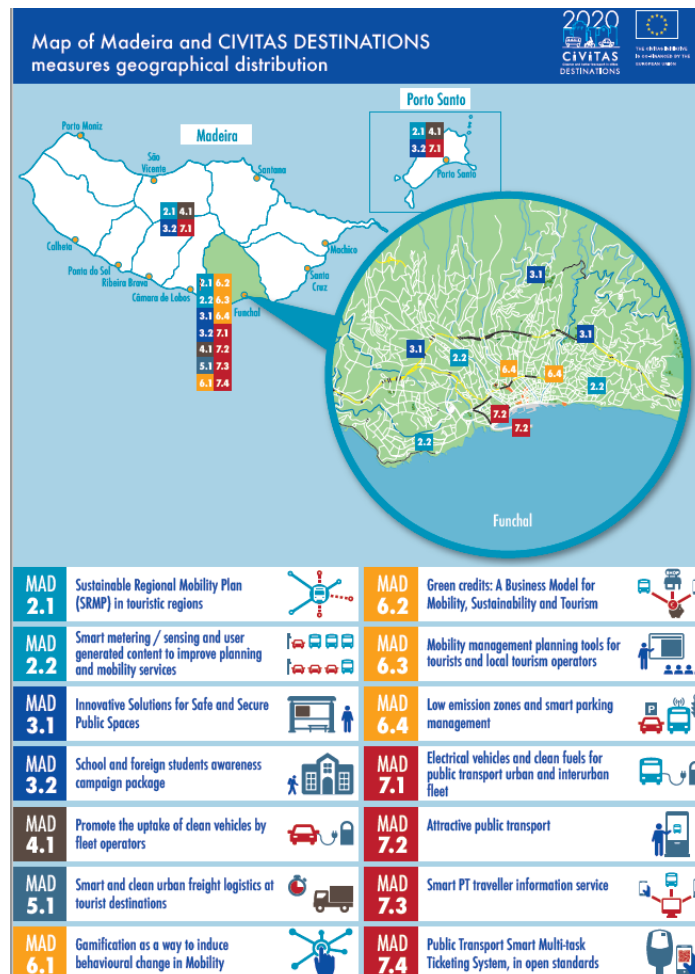
The main goal is to enhance and develop a realistic vision based upon three founding pillars:

- Madeira has to be at the forefront of information and marketing actions tailored to its visitors so as to highlight the key factors that differentiate it from other competing destinations;
- Incentives to promote sustainable mobility are required as a steppingstone to attract more visitors;
- Stretching the offer of mobility choices so as to fit each visitor needs is a precondition to have a high quality and sustainable destination.

2.3 The relation among the measures

Site map

Figure 1 - The measures in Madeira



The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2, 3, etc: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER (Measure Evaluation Results) - Satellite template
R2	Updated version of the MERs
RF	Final versions of the MERs

3 Evaluation plan at measure level

3.1 Measure MAD 2.1 - Sustainable Regional Mobility Plan (SRMP) in touristic regions

Description

This measure defines a common strategic plan for mobility, tourism and other related macro policy topics at regional level. The measure will contribute positively to shift tourists and residents to more sustainable transport modes for their leisure and every day trips. The measure will contribute to change people behaviour improving data and resource sharing between all mobility stakeholders. The objective is to focus on mobility and tourism information collection and to share resources and data between different regional actors and markets. Info touristic/mobility point will be relevant tool to provide information about touristic attraction and mobility solutions to people.

Objectives and outputs

This can be taken from the latest Measure Description form (please summarize in a couple of paragraphs).

The main objective is to develop a Sustainable Mobility Plan (SUMP) for Funchal or Madeira, taking in account the needs of residents and tourists. This exercise will also take in account the tourism flows, seasonal changes of tourism mobility patterns, the logistics processes and the distribution of goods in this tourist destination, always focussing on horizontal criteria such environmental, transport and spatial plan needs.

Macro objectives

- Improved urban accessibility;
- Improve satisfaction of the users;
- Less emissions / increased air quality;
- Less energy consumption;
- More Attractive tourist destination

Specific objectives

- Prepare a smart, participative and sustainable regional mobility plan with a long-term vision;
- Better usage of transport infrastructures according the mobility demand.
- Promotion of an attractive and high quality public transport service
- Promotion of behaviour change among tourists and residents to more sustainable transport modes
- Tourist satisfaction increase due to better mobility solution.

The expected Outputs are:

- One global tourist mobility study and at least one strategic transport network design study;
- Traffic plans for at least two annual events;

- Launch of a web based platform to a better involvement of citizen and tourist;
- One platform to collect data, control and support transport planning at regional level;
- Info tourist/mobility info point in Funchal.

Innovative aspects

The measure will include the following innovative actions in Madeira:

- Definition of a central framework and implementation of an innovative integrated system/platform to collect mobility data and to support transport planning_of all regional transport actors, modes and transport infrastructure;
- It will be carried out a Tourist Mobility Study that will analyse the mobility patterns of tourists;
- Draw up a sustainable regional tourism mobility plan in articulation with existing regional strategic framework for transport, tourism and land use;
- Evaluation of Public transport network design at local and regional level;
- Citizen participation, mobility stakeholders and tourist involvement platform for city living, with the support of an online platform for citizens make suggestions, notify problems;
- Mobility management for big events, including traffic plans, promotion of the use of sustainable modes of transports, evaluation of how tourists and residents travel to the events;
- Info mobility point will be improved to provide touristic and mobility information in Funchal.

Research and technology development

SRETC will subcontract a system to collect and integrate data from all the transport operators, public transport, taxis, tourist services, private sector. The activities included are tool definition and implementation of an integrated platform with all touristic and mobility real time data to promote sustainable mobility among visitors.

Situation before CIVITAS

In the Madeira Region, there are several mobility actors (Region and municipalities) that act in their territories, with specific objectives and delimited in the space and with different audiences.

In the Region, there is neither a regulation nor a global mobility strategy in which municipalities can rely on to outline their local strategies, based on a regional strategy. There is already a regional transport plan (PIETRAM) that will improve and optimize the whole transport network in the region, however, it is necessary to obtain information on the mobility patterns of sites and tourists in order to carry out a planning of assertive mobility measures. So, to Madeira there is a need for SUMP development and implementation / deployment. To achieve a broader goal CIVITAS-DESTINATIONS proposes a plan for an extended SUMP model that also takes into account the Tourist component. Current status is that using such type of data/information is new to SUMPs.

Inter-relationship with other measures

This measure has a relation with the following measures:

(MAD 2.2) - Smart metering / sensing and user generated content to improve urban mobility planning and services;

- (MAD 2.3) - Smart traffic management and access regulations;
- (MAD 6.3) - Mobility planning for tourism related companies;
- (MAD 6.4) - Low emission zones and smart parking management;
- (MAD 7.3) - Smart PT traveller information service;
- (MAD 7.4) - Public Transport open and smart ticketing system.

The structure/ composition of the regional partners involved in this measure already include the core stakeholders for such type of measure: the Regional Board of Tourism (SRETC), the Public Transport operator (HF), the Municipality (CMF) and The regional Agency for Energy and Environment (AREAM)

The impacts

The impact evaluation of the SUMP will be done with a different methodology, namely through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

Stakeholders involvement

Stakeholder name	Activities description
Interurban Public Transport Companies	<ul style="list-style-type: none"> - Participation in the public transport network restructuring to better serve residents and tourists; - Contributions and participation in the mobility management for big events.
Institute of Mobility and Transport (IMT)	<ul style="list-style-type: none"> - Management of the platform for the public transport network.
Other municipalities	<ul style="list-style-type: none"> - Participation in the public transport network restructuring to better serve residents and tourists; - Contributions and participation in the mobility management for big events.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Involvement of municipalities	Week involvement of the mobility stakeholders	Contacts, meetings	low

3.2 Measure MAD 2.2 - Smart metering / sensing and user generated content to improve urban mobility planning and services

Description

Cities generate huge amounts of raw data. Transition to a smart city crucially depends on harvesting and using existing urban data to support decision making and to identify trends to improve city governance. In this measure smart sensing/metering and user generated content will be used to improve planning and services related to mobility. The solution will make use of generally available devices to sense and store urban data. The infrastructure will consist of a network of low cost wireless sensors and webcams to be installed in strategic locations, for e.g. fixed at traffic lights, but also specific apps on smart phones. Information collected about traffic and environmental indicators can be collected and used by the Municipality, SRETC, HF and other relevant stakeholders.

In summary, the idea is to use smart metering / sensing data (and crowdsourcing data / user generated content) to improve the planning, monitoring and control of mobility services. Gathered data can be related to urban accessibility, traffic and environmental indicators, and users' satisfaction. It will make use of smart, low cost solutions, based on wireless networks and crowd-source data will be central resources to test and implement. At the end we aim at installing around 50 mobility sensors in the city of Funchal looking at both locals and tourists. The mobility sensors will be installed and deployed at the 4 main axes of the city along the main water streams and the waterfront.

In this context, interesting to investigate is the idea to use data of this kind to compute personalized multimodal trip planning on the basis of the user's preferences and needs.

Objectives and outputs

Improved planning and services for mobility in cities, considering both residents and tourists, by means off:

- Smart, low cost solutions, based on wireless sensor networks and crowd-source data will be central resources to test and implement.
- Innovative PT passengers counting schemes.
- Use of mobility sensor collected data for planning, monitoring and control.

The potential of new technologies such as smart metering/sensing, data capture and user generated contents will be exploited in this dynamic process.

This will contribute to:

- Develop Sustainable Urban Mobility Planning (SUMP) taking into account the needs of both tourists and residents.
- Improve planning and services for mobility in cities (Funchal for this measure), considering both residents and tourists, using innovative passengers counting schemes and mobility sensors
- Positive cost-benefit results after deploying the smart sensors network and the tool to collect near real time data about perceived PT service quality when compared to standard methodologies;
- Achieve a high sense of usefulness among decision makers with regard to the deployment of sensors.

Outputs:

- Smart sensor network consisting of fixed (50 smart sensors located in tourist areas in Funchal) and mobile (inside 20 buses + bus stops) points.
- Database of collected data for the indicators / measurements.
- Crowd sourcing tools.
- DATA report on mobility issues (inputs for SUMP model as (will be) required by SUMP developers)

Innovative aspects

The network functions will be Counting (cars, people, cyclists) and Monitoring (meteorological information, emissions and air quality). This measure will address the following areas:

- Innovative passengers counting's schemes for the PT operator: The final goal will be to match demand/offer, especially in highly touristic routes which are often more crowded. Ultimately, contributions to fine-tune the current ticketing system and decrease fraud at the local public transport service might occur and can be foreseen as an outcome of the measure. The working group should also develop an operational planning tool which will be embedded by the information provided by the sensors.
- Implement a set of smart sensors in sensible tourist areas able to screen mobility trends and environmental data;
- From collected data, reporting on mobility problems and check quality of life standards (e.g. air pollution levels);
- Address customers, citizens and tourists to collect real time data using online/mobile tool/app (such as perceived satisfaction with services). The data collected will be analyzed together with sensor network data, bus exploitation data, to continuously improve PT service, citizen and tourist experience.
- Use database of collected data/information to plan activities for the extended SUMP models.
- Development of a tool to make faster the period of collection of children by parents at the end of the classes period, using kiss and ride inverted concept (ride and kiss).

Research and technology development

Smart metering/sensing and user generated content will be applied / used. The measure will address innovative passengers counting schemes and mobility sensors for planning, monitoring and control. Smart, low cost solutions, based on wireless networks and crowd-source data will be central resources to test and implement.

ARDITI will benchmark international solutions to what passenger counting devises is concerned. Solutions taken into consideration will cover a wide range of technologies, most notably: cameras; infra-red; pneumatic springs; tourniquets; and sensors (either detecting movement/presence of passengers when bus doors close or capturing wifi signal). The main goal is to collect dynamic diagrams of the overall number of passengers during a trip and also to foster origin/destination matrixes. Solutions in the market will arguably have to be adapted to Funchal local idiosyncracies (one size does not fit all) and will also have to be integrated with several onboard systems that equip the local public transport operator fleet (HF), namely AVL system and possibly with the ticketing system. The main requirements that the sensors will have to comply with include the possibility to count passengers (hop on and hop off) with detailed information of the exact: i) bus stop; ii) route; iii) trip; iv) timeframe.

The working group should also develop an operational planning tool which will be embedded by the information provided by the sensors.

Situation before CIVITAS

At the local level, in Funchal, there is a need for SUMP development and implementation / deployment. To achieve a broader goal CIVITAS-DESTINATIONS proposes a plan for an extended SUMP model that also takes into account the Tourist component. Current status is that using such type of data/information is new to SUMPs.

Inter-relationship with other measures

This measure has a relation with the following measures: (MAD 2.1) - Sustainable Regional Mobility Plan (SRMP) in touristic regions; (MAD 2.3) - Smart traffic management and access regulations; (MAD 6.3) - Mobility planning for tourism related companies; (MAD 6.4) - Low emission zones and smart parking management; (MAD 7.3) - Smart PT traveller information service; (MAD 7.4) - Public Transport open and smart ticketing system.

The structure/ composition of the regional partners involved in this measure already include the core stakeholders for such type of measure: the Public Transport operator (HF), the Municipality (CMF), the Regional Board of Tourism (SRETC) and the Regional Agency for Research, Technological Development and Innovation (ARDITI). The regional Agency for Energy and Environment (AREAM) is not directly involved in this measure but is also contributing.

That structure ensures that the level of cooperation necessary to support the measure implementation (cooperation among the consortium/ exchanges) is already in place.

This measure will have a collaboration with measure MAD 3.2 "School and foreign students awareness campaign package" with the aim of developing a tool to make faster the period of collection of children by parents at the end of the classes period.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
There's no direct IMPACTS CATEGORY in MAD2.2 in terms of CIVITAS categories because Sensors will collect data that then will be used by third parties	There's no direct IMPACTS CATEGORY in MAD2.2 in terms of CIVITAS categories because the Sensor Network will collect data that then will be used by third parties (CMF, HF, etc). The impact is thus indirect and doesn't apply here straightforward. As a support/ancillary measure, the "the facto" quantification of success for this measure will consist in having installed all the 50 sensors and having the sensor network providing useful data. Results/outputs from this measure are the sensors, which themselves will be	Absolute number / quantity	As of the beginning of the project there are no sensors installed and no data being collected. We assume that the correct baseline for this case is	- 9 to 10 sensors under CMF requirements (8-9 fixed and 1-2 mobile); - 40 to 41 sensors under HF requirements."

(CMF, HF, etc). The impact is thus indirect and doesn't apply here.	used by CMF (8 indicators) and HF (1 indicator) to measure indicators in their measures. ARDITI contribution is to help developing, installing and operating the sensors. That is, ARDITI do not deal, in terms of impact, with the indicators for which we are creating the sensor network. We are creating an infrastructure that supports the application/use of indicators by other partners (CMF/HF), but not directly to our measure. Measure MAD2.2 actually concerns the use of sensors and smart meters to improve the planning exercise and the mobility services and thus is a typical ancillary measure for which we can provide the evaluation framework independently from the SUMP development.		"0/None" sensors installed.	
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Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
There's no direct IMPACTS CATEGORY in MAD2.2 in terms of CIVITAS categories because the Sensor Network will collect data that then will be used by third parties (CMF, HF, etc). The impact is thus indirect and doesn't apply here straightforward.	Data collection (DC), ie, counting the number of sensors installed. One site may include a sensor "box" where different sensors will be housed (e.g. CO2, Noise, etc)	BEFORE=6 DURING=20 AFTER=40	-Transport operators (HF); - municipalities / cities (CMF);	i) Demonstration area for fixed sensors; ii) City for bus passenger counting sensors;

Stakeholders involvement

Stakeholder name	Activities description
TM and ISINNOVA	TM as WP2 leader, with coordination support from ISINNOVA
"Software Development Companies" (generic)	Development of online/mobile tools and apps will require the subcontracting of software development companies to carry such work.
M-ITI (Madeira Interactive Technologies Institute)	M-ITI is a technological research institute with the know-how for designing, implementing (prototyping) or adapting custom made equipment

	such as the sensors needed in this measure, both at the level of the hardware as well as at the level of the software.
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Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
<p>Technological New potentials offered by technology, new technology available, namely low cost sensors, ubiquitous data communications associated to cloud software tools and services.</p>	N/A	N/A	N/A
<p>Positional This measure fits with and contributes to existing SUMP and Sulp policies in Funchal.</p>	N/A	N/A	N/A
N/A	<p>Institutional Regional / National laws and policies, namely at financial level, may delay the progress of the project in particular in the process for buying equipment, where an approval only may take more than 3 months.</p>	Identify, define and request approval for buying equipment as soon as possible, ie, at least 4 months in advance, considering the approval process + buying process.	Low
N/A	<p>Technological In particular for passenger counting in buses as presented in the MDF, research and trial is required before a good solution may be deployed to an entire fleet.</p>	Design, prototype, test proposed solution(s) and validate the different approaches before adopting a specific solution.	Moderate

3.3 Measure MAD 3.1 - Innovative solutions to improve safety and security public spaces

Description

The necessity to implement actions to increase attractiveness, safety and accessibility in public spaces, mostly in areas dedicated to public transport and pedestrian circulation, makes this measure relevant. This measure encompasses a vast range of actions geared towards specific target groups, including, not only tourists and residents but also people with physical and sensory disabilities. Therefore, the interventions sought will range from the deployment of a surveillance system, public lighting system to structural improvements in public transport shelters and resurfacing of public spaces in order to improve mobility.

Objectives and outputs

Objectives:

- Macro
 - Improve urban accessibility and mobility;
 - Enhance safety and security in urban areas including public transport;
 - Create more attractive destinations for tourists.
- Specific
 - Improve the pedestrian, cycling accessibility through the implementation of several actions;
 - Identify a pilot-area to remove barriers for people with reduced mobility;
 - Improve the public transport accessibility in bus stops, especially for tourists and visually impaired people;
 - Design a report focused on the main touristic attractions located in the pilot area, including the safety during the night period;
 - Implement a more efficient public lighting system in order to improve safety and security.
- Outputs:
 - Accessibility study in the target area
 - Establishment of one road safety monitoring centre between the Municipality, the PT Operator, the Police and other relevant stakeholders
 - Intervention and improvements in at least 40 bus stops
 - Deployment of new light systems and video cameras along the target street and next to 10 designated bus stops.
 - 10 surveillance cameras installed inside urban buses
 - Target street painted with innovative road markings

Innovative aspects

The sought solutions, individually tailored for specific target groups (tourists, visually impaired and disabled people, public transport users and residents) will provide better accessibility and mobility conditions, through the reconfiguration of the pavement towards a more user-friendly design. Additional innovative actions will include the installation of a more efficient urban lighting system and deployment of urban furniture and others. In addition, a throughout intervention to improve and/or deploy new bus stops will be carried on in order to foster public transport.

Research and technology development

Some actions will require specific research and technology development, namely the deployment of a surveillance system, comprised of cameras, which will be tried out for the first time in Funchal. In addition, the public lighting system sought will require specific features in order to improve their energetic efficiency. The resurfacing of specific roads, aimed at visually impaired and disabled people will also require a throughout research. In the meantime, the teamwork has already identified, at a first stage, some of the bus stops that requires specific interventions. Moreover, some areas were already identified in which pedestrian mobility will be improved very soon.

Situation before CIVITAS

The limited accessibility for people with disabilities to the services offered in urban spaces, due to the architectural obstacles that result from the built environment, was put forward as the main problem. Issues such as accessibility for people with disabilities to the physical space, using the space and leaving the space, the limitations in terms of accessibility and the problems encountered within urban spaces are problems in Funchal that requires comprehensive interventions. Due to these factors, the areas located in the public domain are gradually losing their attractiveness. In addition, the areas dedicated to public transport areas are also severely affected by these issues.

Inter-relationship with other measures

This measure is linked with measure 7.2 along with a broad plan, namely the Sustainable Mobility Action Plan (SEAP) which encompasses several actions geared towards mobility and implementation of traffic calming measures. The measure is also related to urban redesign projects, whose scope is to enhance pedestrian conditions.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Injuries inside bus (city specific indicator)	Quantitative	In 2015, a total of 31 citizens were injured inside the bus (it will be necessary to focus only on buses which will be equipped with safety cameras)	Reduction of injuries inside the bus (at least 20%);
Transport System	Public transport accessibility level (city specific indicator)	Quantitative	Summary of findings (N=22 - %) <ul style="list-style-type: none"> • Shelter <ul style="list-style-type: none"> o No (4,5) o Yes (95,5) • Bench 	Relation with expected impacts (new target) <ul style="list-style-type: none"> a)Improvement of accessibility in bus stops (at least 20%) b)Improvement of safety in bus stops (at least 20%)

			<ul style="list-style-type: none"> o No (18,2) o Yes (81,8) • Sidewalk o Yes (100) • Sidewalk width o ≤ 1,20 mt (27,3) o ≥ 1,20 mt (72,7) • Shelter condition o Reasonable (36,4) o Good (63,6) • Information o No (4,5) o Yes (95,5) • Illegal parking o No (81,8) o Yes (18,2) • Lighting o No (13,6) o Yes (86,4) • Road marks o No (13,6) o Yes (86,4) • Urban obstacles o No (72,7) o Yes (27,3) 	
Transport System	Road safety (actual) CIVITAS Core indicator 35	Quantitative	<p>Summary of findings in the target area (number)</p> <ul style="list-style-type: none"> • 2010 o Run over – 2 • 2011 o Run over – 5 o Collision – 8 o Overturning – 1 • 2012 o Run over – 2 o Collision – 5 o Overturning – 2 • 2013 o Run over – 2 o Collision – 7 o Overturning – 1 • 2014 o Run over – 3 o Collision – 26 o Overturning – 5 • 2015 o Run over – 4 o Collision – 14 o Overturning – 3 • 2016 o Run over – 3 o Collision – 11 o Overturning – 2 • 2017 (first trimester) • Run over – 1 • Collision – 3 	<p>Relation with expected impact (GA) - Decrease of traffic accidents in the target area (at least 5%);</p> <p>- Decrease security problems in the target area (at least 20%).</p>
Transport System	Personal Security (perceived) CIVITAS Core	Feeling/experience as road user: 5 points likert scale ranking options:	Data will be gathered (M19)	Increase of sense of security (at least 10%)

	indicator 34	Very high; Quite high; Neither high nor low; Quite low; Very low		
Society	Perception of accessibility level of service CIVITAS Core indicator 42	Feeling / experience of convenience of service: 5 points likert scale ranking options: Very easy; Quite easy; Neither easy nor difficult; Quite difficult; Very difficult	<p>Summary of results (N=60 - %)</p> <ul style="list-style-type: none"> • Perception about the quality and conservation status regarding the bus stops <ul style="list-style-type: none"> o Good (23,3) o Neither good/Nor bad (30) o Bad (46,7) • Perception about the accessibility level to the bus stop <ul style="list-style-type: none"> o Good (33,3) o Neither good/Nor bad (26,7) o Bad (40) • Perception about the availability of information at stops about schedules and services <ul style="list-style-type: none"> o Good (50) o Neither good/Nor bad (26,7) o Bad (23,3) • Perception about safety conditions at the shelter/bus stop <ul style="list-style-type: none"> o Good (26,7) o Neither good/Nor bad (30) o Bad (43,3) • Perception about the type of improvement/intervention at the shelter/bus stop <ul style="list-style-type: none"> o Shelter (53,3) o Cleaning (13,3) o Information services (33,3) 	Increase in perceived accessibility at public transport stops (at least 20%)
Transport system	Mobility barriers in the built environment (city specific indicator)	Quantitative	<p>Summary of the Accessibility Conditions in Public and Private Areas (%)</p> <ul style="list-style-type: none"> • Sidewalk: Public areas – 27 Private areas - 70 <ul style="list-style-type: none"> o Low traffic sign (inferior to 2,20 meters) o Narrowness (width inferior to 1,5 meters) o Inclination superior to 2% and 5% o Illegal parking • Stairs: Public areas – 5 Private areas – 16 <ul style="list-style-type: none"> o High dimension of steps 	Reduction of mobility barriers (at least in 20%)

			<ul style="list-style-type: none"> o Steps o Lack of texture and contrasting colour • Ramp: Public areas – 1 Private areas - 5 o Ramp with a slope higher than 12% o Inexistence of Ramp • Crosswalk: Public areas – 47 o Inexistence of approach ramp o Sidewalk width inferior to crosswalks o Gutter on the road surface • Other: Public areas - 19 Private areas - 9 o Tree without protective grill o Lack of maintenance o Lack of access to public transport access 	
Transport system	Non-motorized Transportation (city specific indicator)	Quantitative	<p>Summary of results – (N=7091 - %)</p> <ul style="list-style-type: none"> • Record point 1 – Connects the western part of the city to the city core. Has some hotels although the road network is more tailored for traffic circulation than pedestrian. o Pedestrians – 98,07 o Pedestrians with disabilities – 0,52 o Bicycles/electric and soft modes – 1,02 o Segways – 0,39 • Record point 2 – Segment is the core of the touristic area, encompassing an extensive HORECA. The road network is more tailored for pedestrian circulation and bicycle o Pedestrians – 97,88 o Pedestrians with disabilities – 0,41 o Bicycles – 1,71 • Record point 3 – Segment marked by the existence of several habitational buildings and a shopping centre and further connects the western part of the city to the adjoining municipality 	<p>Increase of daily circulation in the target area (at least in 10%);</p> <p>Increase in the number of cyclists circulating in target area (at least in 10%).</p>

			<ul style="list-style-type: none"> o Pedestrians – 96,33 o Pedestrians with disabilities – 0,72 o Bicycles/electric soft modes – 2,95 	
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Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
Injuries inside bus (city specific indicator)	Insurance data that will be shared by the main public transport operator (Data collection)	M11	Public transport users (local citizens and tourists)	Not spatially applicable. The intervention will be carried on public transport buses that will be equipped with cameras (most troublesome bus routes).
Public transport accessibility level (city specific indicator)	Data to perceive bus accessibility and safety (survey, likert scale) - the survey assessed several perception patterns such as the quality and maintenance status regarding the bus stops, accessibility level to the shelter/stop, availability of information at stops about schedules and services and safety perception about conditions at the shelter/stop. (Data Collection)	M14	Area dedicated to public transport stops	Demonstration area (this indicator was targeted at the 22 public transport stops that are located in the target area)
Road safety (actual) CIVITAS Core indicator 35	Data to be provided by local authorities (police records) namely road accidents by type that occurred in the target area (Data Collection)	M14	Pedestrians, cyclists and drivers involved in accidents	Demonstration area (data was gathered between 2010 and the first trimester of 2017 and specifies the type of accident, namely collision, overturning and run over. In addition, the type of injuries were also collected (light, serious injuries and deaths).
Personal Security (perceived) CIVITAS Core indicator 34	Data to perceive sense of security regarding the surveillance system inside the	M19	Service users on board of public transport (mix of residents, tourists, age, gender, disabled)	Demonstration area

	buses. (Survey)			
Perception of accessibility level of service CIVITAS Core indicator 42	Data to perceive bus accessibility and safety (survey, likert scale) - the survey assessed several perception patterns such as the quality and maintenance status regarding the bus stops, accessibility level to the shelter/stop, availability of information at stops about schedules and services and safety perception about conditions at the shelter/stop. (Survey)	M14	Respondents standing at bus stops	Demonstration area (the indicator was applied in 60 bus stops (including the 22 in the target area)
Mobility barriers in the built environment (city specific indicator)	Barriers that affects pedestrian mobility according to the national framework for accessibilities (163/2006) and the traffic road national legislation (Data collection)	M14	Urban barriers that hampers not only pedestrians circulation but also citizens with physical and sensory disabilities	Demonstration area according to the type of incidents based on the following categories: Sidewalk, Stairs, Ramp, Crosswalk and other
Non-motorized transportation (city specific indicator)	Counting of non-motorized traffic (Data collection)	M14	The data encompasses the pedestrian volume per gender, cyclists and people with disabilities, both physical and sensorial	Demonstration area divided in three segments, namely the area that connects the western part of the city to the city core; a second one that encompasses an extensive horeca and a third one marked by the existence of several habitational buildings and a shopping center that further connects the western part of the city to the adjoining municipality. As for the counting period, it was collected during morning (10h00 am to 12h00 am), afternoon (14h00 to 16h00) and at evening (18h00 to 20h00)

Stakeholders involvement

Stakeholder name	Activities description
PSP (local authorities)	Taking in account that safety plays a key role in this measure, it will be necessary to involve local authorities as a supplementary action in order to reinforce their action on the target area.
ADM – (Association for Handicapped People)	Within this measure, this entity will support the Municipality in identifying urban obstacles and other needs for disabled people.
ACAPO - (Association for Visually Impaired People)	Within this measure, this entity will support the Municipality in identifying urban obstacles and other needs for visually impaired people.
EEM (Regional Electricity Company)	This company will provide several lighting data and support the transition of the public lighting systems towards a more efficient system.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategy	Cultural	Reinforce awareness campaigns geared towards citizens and target groups;	Low
Financial	Involvement, communication	Strengthen links between local authorities and stakeholders through the establishment of protocols and pacts; Aware stakeholders for the importance of the interventions that will be carried.	Moderate
Spatial	Technological	Properly suit the surveillance system and the public lighting system to spatial features.	High

3.4 Measure MAD 3.2 - School and foreign students awareness campaign package

Description

This measure will develop the following activities:

1. Elaboration, implementation and monitoring of action plans for six schools in Funchal:
 - Selection of six pilot schools, in which sustainable mobility and security are priorities.
 - Study of mobility patterns, including energy impacts and resulting emissions for the pilot schools and surroundings.
 - Identification of main constraints and conflicts in the access to schools.
 - Participation actions involving school and mobility stakeholders, to define the action plan and to support its implementation.
 - Elaboration of action plan with chronology and articulation of actions to promote sustainable mobility to go to school, including safety measures especially for soft modes.
 - Implementation, monitoring and evaluation of action plan.
2. Implementation of safer routes in the surroundings of six pilot schools:
 - Urban public space design project around schools to choose the best integrated solution for mobility and urban design.
 - Exchange of best practice experience with consortium partners to implement safer routes in schools.
 - Preparation of sites and stakeholders involvement for the implementation of urban design project.
3. Raise awareness for sustainable urban mobility behaviours:
 - Training and awareness activities in 25 regional schools in Madeira, including the six pilot schools in Funchal.
 - Awareness raising activities include also foreign students, regarding change of behaviours and adaptation of their needs to more sustainable displacements.
4. The measure foresees to continue the implementation of the actions defined in the Mobility Pact, signed with University of Madeira in the scope of the CIVITAS Mimosa Project, and extend the Mobility Pact concept to other municipalities in the Region.

Objectives and outputs

- Sustainable mobility action plans for 6 schools in Funchal.
- Awareness raising actions in 25 schools in Madeira Island.
- 1500 students involved in the awareness raising campaign, including foreign scholarship students.
- 6 traffic calming design projects in the surroundings of pilot schools.
- Production of dissemination materials through: leaflets, brochures, posters, didactic games, social networks, media, etc.
- Mobility management tool for schools (ITS tool developed in MAD 2.2).

Innovative aspects

An integrated approach includes mobility planning and information tools, changing behaviours and public spaces adaptation, promoting public transports and soft modes within resident and foreign school community.

Research and technology development

This measure will have a close connection with measure MAD 2.2 “Smart metering and user generated content to improve urban mobility planning and services” with the aim to develop a tool to reduce the waiting time of parents when collecting children after school, using the kiss and ride inverted concept (“ride and kiss”).

Situation before CIVITAS

Identified problems: Traffic congestion surrounding in some schools during peak hours; traffic flow constrains; conflicts between different modes; pedestrians (mainly children and youth) low security.

Starting point: The municipality have made some recent interventions to tackle the congestion of traffic surrounding schools, with the kiss-and-ride solution. These schools will be used as case studies, having a complementary approach and submitted to evaluation. The best practices will be replicated in others schools.

Inter-relationship with other measures

This measure will have a close connection with measure MAD 2.2 “Smart metering and user generated content to improve urban mobility planning and services” with the aim to develop a tool to reduce the waiting time of parents when collecting children after school, using the kiss and ride inverted concept (“ride and kiss”).

This message has also a close connection with MAD 6.2 - Green credits: A Business Model for Mobility, Sustainability and Tourism in what concerns the promotion of public transport within students.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Hazard elements (<i>city specific indicator</i>)	Number	Not yet available	Reduction
Transport	Injuries and deaths caused by transport accidents	number	Not yet available	Reduction
Transport	Average modal split	%	Not yet available	Reduce private transport use 10% Increase of

				250 users in public transport in school
Transport	Peak PT average speed	km/h	Not yet available	new target (not in GA): + 10% bus commercial speed
Transport	Traffic average speed in peak hours	km/h	No	-
Environment	CO2 emissions	t		Less 23,5 t CO2
Energy	Energy consumption	MWh; kWh/vkm		Less 100 MWh
Society	Acceptance level	qualitative	Not yet available	-
Society	Perception of safety and accessibility	qualitative		Improve
Society	Population of students covered by the measure	number	Not yet available	1500

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)		Target Group	Domain (demonstration area or city)
		M19	M36		
Hazard elements (<i>city specific indicator</i>)	DC	M19	M36	Schools community	Demonstration area
Injuries and deaths caused by transport accidents	DC	M19	M36	Schools community	Demonstration area
Average modal split	S	M22	M36	Schools community	Demonstration area
Peak PT average speed	DC using the PT Operator AVL system	M19	M36	PT operator	Demonstration area
Traffic average speed in peak hours	DC		M36	Traffic	Demonstration area
CO2 emissions	S; E	M22	M36	Schools community	Demonstration area
Energy consumption	S; E	M22	M36	Schools community	Demonstration area
Acceptance level	S		M36	Schools community	Demonstration area
Perception of safety and accessibility	S	M22	M36	Schools community, in charge person	Demonstration area
Population of students covered by the measure (<i>city</i>)	DC	M12	M36	Schools community, in charge person	Madeira

<i>specific indicator)</i>					
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Stakeholders involvement

Stakeholder name	Activities description
DRE (Regional Education Authority)	Education Regional Authority
CMF (Municipality of Funchal)	Local Authority and partner
PSP (police)	Police
Schools	Beneficiary
Public transport operator (HF)	PT operator
University of Madeira	Beneficiary
School parents association	Beneficiary
School communities	Beneficiary

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political/strategy	Political/strategy	Political engagement	moderate
Institutional	Institutional	Institutional engagement	moderate
Cultural	Cultural	Awareness raising campaigns	high
Financial	Financial	Other regional funds	high

3.5 Measure MAD 4.1 - Promote the uptake of clean vehicles by fleet operators

Description

In the scope of this measure, the development of the following actions is foreseen:

1. Promotion of electric mobility:

The expansion of the electric vehicle charging network in Madeira, by promoting, among local actors and citizens, the installation of fast and slow e-charging points in public and private spaces. The e-charging network will be accessible to customers, and employees especially in tourist accommodation units, restaurants, tourist attraction points, covered and open space car parks. The measure includes the expansion of the e-charging network in residential buildings.

Creation of an information platform, available through a mobile and desktop application, regarding the location of available e-charging points to support users of electric vehicles for a better battery management.

Implement a monitoring system to measure electric vehicle consumption for transport. This information will be integrated in the study of electric transports impact in electricity production and use of renewable energy.

Promotion of electric mobility through the elaboration of a regulation to be included in municipal legal framework of urbanization and construction, to install electric vehicle –e-charging points in collective residential buildings and services.

HF will play a demonstrative role as they will deploy 4 electric vehicles that will intensively circulate in Funchal and around the city for administrative purposes, so as to showcase how reliable electric vehicles are

2. Incentive schemes for electric vehicle purchase:

Creation of a mechanism for joint procurement to obtain greater competitiveness in the final price, to promote the purchase of electric and hybrid vehicles for fleets of public and private organizations, including regional and local administration, rent-a-cars, tourist services, taxis and logistics.

Study of an incentive scheme to promote the increase electric vehicles purchase, making more affordable for final users the energy charging during night time. This action will be negotiated with local electric company to allow a more efficient usage of renewable energy sources during night periods.

Objectives and outputs

- Electrical charging points in 20 places in Madeira Island.
- 100 new electrical vehicles in private and public fleets.
- Renting of four batteries to supply four light electrical vehicles.
- 1 Light electrical vehicle.
- 1 Electrical charging points network information platform.

- 1 Evaluation report of the impact of the electrical vehicles in the electricity load diagram.
- 1 Municipal regulation for electrical charging points in new buildings.
- Incentive schemes, including 2 Joint procurement mechanisms for electric vehicles.

Innovative aspects

The introduction of electric vehicles in transport sector will contribute to ecotourism image in Madeira destination, through: improving image of rent-a-car and taxi fleets services and fuel costs operation; increase ecotourism consciousness; mitigation of the negative impacts of transport in the environment and in the economy, by reducing costs in fleet operation for the organizations and citizens, and reducing pollutant emissions and noise in urban areas.

Research and technology development

The measure foresees the development of an information platform, available through a mobile and desktop application, regarding the location of available charging points to assist users of electric vehicles for a better battery management.

Situation before CIVITAS

Identified problems: Reduced e-charging network; inexistence of e-charging points in private residential and services buildings; technological solution with little credibility by users; high investment of electric vehicle comparing with conventional vehicle; limited autonomy of batteries. On the other hand: city center with high level of pollutant emissions and noise during peak hours; high fossil fuel dependency of the transport sector, unbalanced charge diagram of electricity production.

Starting point: 11 public e-charging points in Madeira in 5 locations; about 100 electrical vehicles in Madeira; garages in buildings not equipped with e-charging points; discount parking policy in Funchal center for e-vehicles.

Inter-relationship with other measures

This measure will have a strait collaboration with MAD 5.1 “Urban Freight Solutions”, in what concerns the uptake of electric vehicles in fleet logistics operators.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Number of electric vehicles in Madeira	number	100 EV in 2016	100 new EV
Environment	CO emissions avoided by EV	kg	Not yet available	Reduction in 100% of local

				emissions per km.vehicle
Environment	NOx emissions avoided by EV	kg	Not yet available	Reduction in 100% of local emissions per km.vehicle
Environment	PM emissions avoided by EV	kg	Not yet available	Reduction in 100% of local emissions per km.vehicle
Environment	CO2 emissions avoided by EV	t; g/vkm	Not yet available	Less 197 tCO2 Redution 80% per km.vehicle
Energy	Energy consumption	MWh; kWh/vkm	Not yet available	Less 653 MWh of fossil fuel consumption
Energy	Renewable energy in the mix of electrical production	MWh; %	Not yet available	Increase 175 MWh of RES
Economy	Investment costs; energy importation costs; indirect investment costs	Eur	No	2320000 Eur
Economy	Vehicles operating costs	Eur/km	Not yet available	Less 60% of costs per km.vehicle
Society	Beneficiary organizations and citizens	number	No	60

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Year			Target Group	Domain (demonstration area or city)
		M12	2019	2020		
Number of electric vehicles in Madeira	DC	M12	2019	2020	EV users	Madeira
CO emissions avoided by EV	E	M19	2019	2020	EV users	Madeira
NOx emissions avoided by EV	E	M19	2019	2020	EV users	Madeira
PM emissions avoided by EV	E	M19	2019	2020	EV users	Madeira
CO2 emissions avoided by EV	E	M19	2019	2020	EV users	Madeira
Energy consumption	S; E	M19	2019	2020	EV users	Madeira
Renewable energy in the mix of electrical production	E	M19	2019	2020	EV users	Madeira
Investment costs; energy importation costs; indirect investment costs	E; DC		2019	2020	EV users, trade	Madeira
Vehicles operating costs	E	M19	2019	2020	EV users	Madeira
Beneficiary organizations and citizens	DC		2019	2020	EV users	Madeira

Detailed description of the indicator methodologies

- Number of electric vehicles in Madeira – 2016 is baseline year. AREAM will collect information on electric vehicles sold in 2017, 2018, 2019 and 2020. On January , information was requested the concessionaires who commercialize electric vehicles in Madeira, concerning the number of electric vehicles sold by the end of 2017.
- CO emissions avoided by EV- Data will be processed until March 2018 (M19). Calculation models adopted by the EC (Copert) will be used to estimate avoided emissions. In the reference year, avoided emissions will be estimated, considering that electric vehicles purchased until 2016 will replace gasoline and diesel internal combustion engine vehicles. AREAM will estimate this information based on electric vehicles sold for 2017, 2018, 2019 and 2020.
- NOx emissions avoided by EV- Data will be processed until March 2018 (M19). Estimate of avoided emissions using calculation models adopted by the EC (Copert). In baseline year the emissions avoided will be calculated by considering that electric vehicles purchased by 2016 will replace petrol and diesel internal combustion engine vehicles. AREAM will estimate this information based in electric vehicles sold for 2017, 2018, 2019 and 2020.
- PM emissions avoided by EV- Data will be processed until March 2018 (M19). Estimate of avoided emissions using calculation models adopted by the EC (Copert). In baseline year the emissions avoided will be calculated by considering that electric vehicles purchased by 2016 will replace petrol and diesel internal combustion engine vehicles. AREAM will estimate this information based in electric vehicles sold for 2017, 2018, 2019 and 2020.
- CO2 emissions avoided by EV- Data will be processed until March 2018 (M19). Estimate of avoided emissions using calculation models adopted by the EC (Copert). In baseline year the emissions avoided will be calculated by considering that electric vehicles purchased by 2016 will replace petrol and diesel internal combustion engine vehicles. AREAM will estimate this information based in electric vehicles sold for 2017, 2018, 2019 and 2020.
- Energy consumption- Data will be processed until March 2018 (M19). In baseline year the saved energy is based on survey addressed to electric vehicles owners.
- Renewable energy in the mix of electrical production- Data will be processed until March 2018 (M19). In baseline year the estimate energy saved by electric vehicles is based on survey for electric vehicles owners and in electricity mix production.
- Investment costs; energy importation costs; indirect investment costs- This indicator doesn't have baseline data. The indicator evaluates the investment achieved with the campaigns developed under this measure.
- Vehicles operating costs- Data will be processed until March 2018. In baseline year the energy costs avoided is calculated by considering that electric vehicles purchased by 2016 will replace petrol and diesel internal combustion engine vehicles survey for electric vehicles owners and estimate. AREAM will collect this information based in electric vehicles sold for 2017, 2018, 2019 and 2020.
- Beneficiary organizations and citizens- This indicator doesn't have baseline data. The indicator evaluates the beneficiary of the campaigns developed under this measure.

Stakeholders involvement

Stakeholder name	Activities description
DRET (Economy and Transportation Authority)	Regional authority and partner
Municipalities	Local authority and partner
Regional Electricity Company (EEM)	Electricity producer
Mobi-E	National e-charging network manager
Charging point operators (ZEEV; Factor Energia)	Energy operator
Rent-a-cars companies	Beneficiary
Private companies	Beneficiary
Taxi operators	Beneficiary
ACIF (Chamber of commerce)	Commerce representative
AITRAM (Taxi association)	Beneficiary
Electric vehicle users	Beneficiary
Citizens	Beneficiary
Local traders (hotels, parking)	Beneficiary
Private companies with fleets	Beneficiary
Public companies with fleets	Beneficiary

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political/strategy	Political/strategy	Political engagement	low
Institutional	Institutional	Institutional engagement	low
Cultural	Cultural	Awareness raising campaigns	moderate
Financial	Financial	Other regional funds	high

3.6 Measure MAD 5.1 - Smart and clean urban freight logistics at tourist destinations

Description

The measure intends to improve the delivery routes, their efficiency and subsequently, reduce the environmental impacts in the pilot zone through a Sustainable Urban Logistic Plan (SULP). To support that, organizational arrangements or relationships between local authorities and local traders will be established. In addition, a legal framework, along with the introduction of state of the art parking sensors will also prevent illegal parking and free the areas reserved for pedestrian use in the target area. In parallel, the measure will also promote safe and environmental friendly streets, foster the use of soft modes of transport and increase livability and social inclusion among tourists and locals.

Objectives and outputs

Objectives:

- Macro
 - Develop solutions to improve freight delivery services;
 - Optimize the supply in the city centre;
 - Reduce traffic overcrowding in touristic areas.

- Specific
 - Develop a Sustainable Urban Logistic Plan;
 - Identify a pilot area to monitor the loading and unloading services;
 - Adapt the current logistic offer to mobility demands through a municipal legal framework;
 - Adapt public transports to be able to transport goods;
 - Promote the use of less pollutant vehicles in order to reduce environmental impact;
 - Raise awareness concerning the negative effects of delivery services during peak hours;
 - Test the feasibility of measures to control and refine urban logistic strategies.

Outputs:

- Creation of urban logistics group with stakeholders;
- Approval and implementation of Municipal Regulation that encourages the use of less pollutants vehicles;
- Approval and implementation of a Sustainable Urban Logistic Plan (SULP);
- Real-time platform to provide assistance and support;
- Implementation of monitoring sensors in at least 10 loading and unloading parking spots;
- Encourage the use of public transports for goods;
- Acquisition of lockers.

Innovative aspects

The shift from a traditional distribution system to a planned one, leading to an improvement in efficiency constitutes the main innovative aspect within the measure. Moreover, this measure also intends to suppress a juridical void regarding illegal parking and load and unload operations. Additionally, the introduction of monitoring sensors in several parking spots is also an innovative

feature, as well as the establishment of guidelines for the implementation of a Sustainable Urban Logistic (SULP).

Research and technology development

This measure will integrate various types of technology, from sensors in parking spaces, which will accurately and in real time inform the Municipality about the availability of loading and unloading spaces throughout the pilot area, and gather the information on a database. In addition, the establishment of a SULP and an improvement in freight logistics will require a simulation in VISSIM/VISUM or other software.

Situation before CIVITAS

The city centre of Funchal suffers under the steadily increasing traffic caused by supply of shops and business, as well as by transport of large shipments. The increase of supply and freight services, reflects an increase in pollutant emissions and illegal parking, aggravating the pedestrian circulation, in particular the tourists. Currently, freight logistics is not regulated by the Municipality which leaves all the logistics to be done by the private sector distributors.

Inter-relationship with other measures

This measure has a tight relation with MAD 4.1, which aims to promote the uptake of clean vehicles by fleet operators.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO Emissions (CIVITAS Core Indicator 12)	g/km	Data will be gathered (M18 February 2018)	Reduction of air pollution (5%)
Environment	NO _x emissions (CIVITAS Core indicator 13)	g/km	Data will be gathered (M18 February 2018)	Reduction of air pollution (5%)
Environment	SO ₂ emissions (City specific indicator)	g/km	Data will be gathered (M18 February 2018)	Reduction of air pollution (5%)
Environment	Smart particulate emission (PM10 and PM2.5) (CIVITAS Core Indicator 14a)	g/km	Data will be gathered (M18 February 2018)	Reduction of air pollution (5%)
Environment	Noise (CIVITAS Core indicator 15)	Percentage	Data will be gathered (M18 February 2018)	Reduction of noise levels (5%)

<p>Transport System</p>	<p>Less-pollutant vehicles used in the distribution logistics (City specific indicator)</p>	<p>Quantitative</p>	<p>As for the type of vehicles that enters the pilot zone, the majority of the vehicles are comprised of diesel light duty vehicles with 81,5% and 20,5% of passenger vehicles. Summary of results (N-54)</p> <ul style="list-style-type: none"> • Passenger vehicles (Diesel) <ul style="list-style-type: none"> o 9 vehicles • Light-duty vehicles (Diesel) <ul style="list-style-type: none"> o 44 vehicles • Others (Gasoline) o 1 motorcycle 	<p>Relation with expected impact (GA) Decrease in the total energy consumption of logistic fleet circulating yearly in the target area (at least 5%) and Decreased number of commercial vehicles circulating in the inner city by 5%</p>
<p>Economy</p>	<p>Average Operating costs (CIVITAS Core indicator 2b)</p>	<p>€/km</p>	<p>The findings are the following:</p> <ul style="list-style-type: none"> • Costs (estimated) <ul style="list-style-type: none"> Target area (per vehicle, per distance travelled within the targeted area) – 0,08 €/Km Fuel costs (annually, per distance travelled) - (395,50 €) Maintenance costs (annually, per vehicle) - (395,50 €) Single vehicle tax (annually, per vehicle) – (150 €) • Additional information <ul style="list-style-type: none"> Energy consumption <ul style="list-style-type: none"> - Diesel (3,4 MWh) - Electric (0,8 MWh) - Comparison (-2,6) CO2 emissions <ul style="list-style-type: none"> - Diesel (0,9t) - Electric (0,4t) - Comparison (-0,5t) 8 year term <ul style="list-style-type: none"> Energy consumption <ul style="list-style-type: none"> Diesel (27,2 MWh) Electric (6,4 MWh) Comparison (-20,8 MWh) CO2 emissions <ul style="list-style-type: none"> - Diesel (5,04t) - Electric (3,2t) - Comparison (-1,84t) Costs <ul style="list-style-type: none"> Fuel <ul style="list-style-type: none"> - Diesel (3 164 €) - Electric (728,80 €) Maintenance <ul style="list-style-type: none"> - Diesel (1600 €) - Electric (640 €) Single Vehicle Tax <ul style="list-style-type: none"> - Diesel (1 200 €) - Electric (0 €) - Comparison (-4595 €) 	<p>Relation with expected impact (GA) Decrease in the total energy consumption of logistic fleet circulating yearly in the target area (at least 5%) and decrease of noise and emissions by 5%</p>

<p>Society</p>	<p>Acceptance level (CIVITAS Core indicator 40)</p>	<p>Percentage</p>	<p>Survey findings regarding distribution process (N = 74) % 47,3 are satisfied with the current distribution process. • Frequency of distribution (weekly) o 1 working day – 10,14 o ½ working days – 15,94 o 2/3 working days – 10,14 o Every day – 46,38 o Once per month – 13,04 o 2/3 per month – 1,44 • Frequency of distribution (for daily distributions) o 1 – 66,67 o ½ – 20 o 2/3 – 6,67 o > 3 – 5 o ≥ 6 – 1,66 • Time period in which the distribution is handled o 06h - 12h – 38,24 o 12h – 14h – 1,47 o 14h – 19h – 1,47 o 19h – 21h – 1,47 o 06h – 19h – 45,59 o 06h – 21h – 2,94 o 06h – 12h/19h-21h – 5,88 o 12h – 19h - 1,47 o 09h – 14h - 1,47 Distribution time < 5 min – 32,88 5-15 min – 35,62 15-30 min – 24,66 30-45 min – 5,47 > 45 min – 1,37 • Issues highlighted by respondents o Urban morphology ♣ Totally agree – 8,10 ♣ Agree – 16,22 ♣ Nor agree/nor disagree – 5,40 ♣ Disagree – 39,19 ♣ Strongly disagree - 31 o Persistent occupation of loading and unloading parking spots ♣ Totally agree – 45,95 ♣ Agree – 28,38 ♣ Nor agree/nor disagree – 6,75 ♣ Disagree – 1,35 ♣ Strongly disagree – 17,57</p>	<p>Relation with expected impact (GA) Reduction of accesses in the target area (at least 10%) and at least 80% of the participants stating that their mobility information and their satisfaction with the mobility services have improved;</p>
<p>Transport system</p>	<p>Delivery time (City specific indicator)</p>	<p>Unit of time</p>	<p>Summary of results (%) <5 minutes – 28,3 5-15 minutes – 35,9 15-30 minutes – 26,4 30-45 minutes – 1,8 >45 minutes –</p>	<p>new target (not in GA): Reduction of delivery time in the target area (at least 10%)</p>

			7,6	
Transport system	Freight entrances in the target area (City specific indicator)	Quantitative	54 vehicles were registered	new target (not in GA): Reduction of accesses in the target area (at least 10%)
Transport system	Demand in loading and unloading parking spots (City specific indicator)	Quantitative	Summary of results (%) <30 minutes – 55 30-35 minutes – 20 >60 minutes – 25	new target (not in GA): Reduction of permanence time in parking and unloading parking spaces (at least 20%)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
CO Emissions (CIVITAS Core Indicator 12)	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
NO _x emissions (CIVITAS Core indicator 13)	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
SO ₂ emissions (City specific indicator)	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
Smart particulate emission (PM10 and PM2.5) (CIVITAS Core Indicator 14a)	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
Noise (CIVITAS Core indicator 15)	A noise device will be used to collect noise levels in DB (Data collection)	M18	Motorized vehicles	Demonstration area
Less pollutant vehicles used in the distribution logistics (City specific indicator)	Inquiry geared towards traders and distributors (Data collection)	(M14)	Vehicles that enters the target zone	Demonstration area (the evaluation process will focus in an area that concentrates several commerce activities which motivates a significant pedestrian volume)
Average Operating costs (CIVITAS Core indicator 2b)	Average operating costs in the targeted area (Estimation)	(M16)	Vehicles that enters the target zone	Demonstration area

Acceptance level (CIVITAS Core indicator 40)	Survey to assess the understanding, usefulness and willingness, regarding the measure (Survey)	(M14)	Traders and distributors within the target area (N = 74)	Demonstration area
Delivery time (City specific indicator)	Average time to deliver goods (Data collection)	(M14)	Vehicles that enters the target area and handles the distribution process	Demonstration area
Freight entrances in the target area (City specific indicator)	Number of accesses in the target area (Data collection)	(M14)	Vehicles that enters the target area and handles the distribution process	Demonstration area
Demand in loading and unloading parking spots (City specific indicator)	Permanence time in parking spots dedicated to load and unload operations (Data collection)	(M14)	Vehicles that occupies the load and unload operations	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
ACIF (Chamber of Commerce)	This entity will provide the municipality with data
AITRAM (Taxi Operator)	This association will provide inputs and data related to cargo services
Local traders related to delivery of goods	These entities will provide the municipality with data

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Cultural	Conduction of awareness campaigns to point out the advantages of a new improved distribution service.	Low
Financial	Involvement, communication	Establishment of protocols between stakeholders; Realization of meetings, conferences between traders and distributors.	High

3.7 Measure MAD 6.1 - Gamification as a way to induce behavioural change in Mobility

Description

According to a study conducted throughout CIVITAS-MIMOSA project (2008-2013) in Funchal, 50,9% (2012) of the respondents were not aware of sustainable mobility concept. It means that, according to the *Seven Stages of Change Model*⁴, about half of citizens are in Stage 1 (Awareness of problem or of opportunities). In DESTINATIONS we aim at taking those users up to levels 2, 3, 4 and eventually 5 (2.Accepting responsibility or relevance; 3.Perception of options; 4.Evaluation of options; 5.Making a choice) of the behaviour change model. Usually commuters *pass/kill the time* by reading books, listening to music, playing games on their smart phones, talking to some friend or just looking around. In any case what they want is to go from a point A to a point B quickly, safely and comfortably. Part of the activities of this measure aim at changing *waste of time* perception to an *enjoyable* one and thus encouraging users to repeat it and promote it. This measure will address four types of gamification experiences, which are associated to behavioural change objectives, as follows:

Aspect to be addressed	Target group	Stage to achieve ¹	Proposed action in DESTINATIONS
i) Negative perception of waiting time at bus stop	Citizens and tourists who take bus	4/5. Evaluation of options / Making a choice	Interactive, removable, lively prototype installation at 1 bus stop
ii) Negative perception of travelling time especially in busses	Citizens and tourists who take bus	4/5. Evaluation of options / Making a choice	Identification, selection and adaptation of games that can be played while waiting and/or travelling
iii) Lack of knowledge and real experience of transport options	All citizens and tourists	3/4. Perception / Evaluation of options	Promote use of buses and public transport in general namely with <i>geocaching</i> games

A significant increase on the perception of comfort and general quality of the trip/travel experience shall be appreciated by users. The *Interactive installation at bus stops* will evaluate examples from around the world and then design and test an experiment which can be unique considering both the interaction technology and the inclusion of local/regional culture. All

⁴ The 'Stages of Change Model' [Prochaska & DiClemente, 1983] and the 'Theory of Planned Behaviour' [Ajzen & Fishbein, 1980] have been combined by the TAPESTRY project into a new model specific to transport campaigns. This is the 'Seven Stages of Change Model'.

activities will comprise a *purpose*, e.g. providing mobility related information or making some exercise to achieve a reward. It will also be integrated with the overall “Green credits” business model of measure MAD6.2, thus rewarding users for their participation and engagement. The project will identify, select and, if needed, adapt games that can be played while users wait on the bus stop or while they travel. Such games shall be adjustable to the duration of the average trip, becoming more challenging as users progress. Geographic location based games such as *Geochaging* is a popular activity which is played by many locals and tourists in Madeira. Integrating it with public transport usage is the aim of this activity, adapting and using existing popular apps/services to this purpose.

In summary, this measure will address different types of gamification experiences, which are associated to intended behavioural change objectives:

- Interactive, removable, lively prototype installation at 1 bus stop. The installation of interactive equipment at one selected central/key bus stop will be used as a mean to increase the liveliness, comfort and attractiveness of those concrete places and Public Transport (PT) as whole;
- Identification, selection and adaptation of games that can be played while waiting and/or travelling;
- Promote use of buses and public transport in general namely with gamification, taking also into account the “Green Credits” models and geographic location based games, such as Geochaging (e.g. organize a contest);
- Those tools and games will also be used for collecting user feedback and for evaluation of the measure.

Objectives and outputs

Overall objective of measure MAD6.1 is to turn sustainable mobility more appealing by means of the design and test of mobility related behavioural change games.

This measure fits in cluster “Competition to achieve behaviour change”: To design, implement and demonstrate actions able to achieve behavioural change across the sites amongst customers, visitors and stakeholders (WP6 is distributed in 3 clusters: 1- Mobility management and travel plans, 2- Competition to achieve behaviour change, 3- Mobility demand management).

Specific objectives

- Develop interactive games to relieve the burden of waiting for the bus to arrive at the bus stop, contributing to reduce “waiting and travel time” perception of users;
- Assess the impact of gamification approaches in what relates to user perception of service quality in PT;
- Increase of soft modes usage among target public, in particular for bus travelling;
- Increase of PT perceived quality of service among existing users and new/potential users (higher level of increase is expected from no users than among existing users);
- Develop a driving simulation tool with good value for money that can be replicable elsewhere
- Liaise the measure with the Green Credit scheme.

Outputs:

- 1 interactive bus stop prototype installation;

- 1 driving simulation tool for PT training activities.
- Geographic location games such as geocaching competition events (where using PT will be a key feature).
- 6 papers submitted and/or presented in related international conferences.

Innovative aspects

As a result of implementing this measure we expect an increase in the perceived quality of public transport and other mobility sustainable modes by making public transport and other mobility sustainable modes more entertaining and challenging in the sense of playing games or experimenting unexpected activities at a bus stop. It will highly contribute to reduce “waiting and travel time” perception of users. The system will also improve the overall quality of life perception of residents and tourist travelling/visiting Funchal city.

Main innovative elements of the measure are: Design and test mobility related behavioural change “games”, by means off:

- Developing interactive spots (at a bus stop), mobile and desktop games and applications;
- Those tools and games will also be used for collecting user feedback and for measure evaluation purposes.

Research and technology development

Analysing existing solutions and related work regarding measure MAD6.1 so as to address the Task 6.1.2 (Requirements Analysis), as described in the MDF. In particular, there are two main group of applications:

- Applications which use gamification and tacking to collect data about users’ mobility.
- Games related to mobility, developed in completely different contexts, including:
 - o Serious games:
 - virtual games with educations purpose (serious games);
 - o Gameful mobility:
 - physical games to play on the street/on the mean of transport;
 - social games to connect users with the same app.

Define the list of requirements resulting keeping into account the strengths that the existing solutions expose.

Analyse existing solutions and related work, keeping into not only gamification and gamified applications but also systems implementing similar approaches with the aim to induce behavioral change for a sustainable mobility. Considering the main goal the founded applications intended to achieve, they can be grouped in three main categories:

- (i) Gamification tracking apps: applications exploiting gamification to reward the participants tracking their mobility behavior, also known as “mobility behaviour change tool”.
- (ii) Serious games: games to involve users in learning concepts related to mobility.
- (iii) Gameful Mobility: games related in some way with the concept of mobility.

In overall the system will consists of a hardware and software infra-structure at different levels, as follows:

- i. Communications infra-structure (Internet based);
- ii. Content management platform;

- iii. Interactive equipment at one selected central/key bus stop, which will include information panel(s) (e.g touch screen); a computer to control the system at the bus stop; different kinds of sensors / interaction devices and specific software;
- iv. A central server to communicate with the clients and record received data on a database.

The overall platform must be able to gather, integrate and display different sources of information (e.g. to obtain and display bus timetables from bus operator; weather forecasts; tourist information; games; news headlines). It shall also be capable of getting user feedback as needed.

On another hand, the driving simulation tool will required some customized development so than it can fit local city characteristics and PT/HF requirements.

Situation before CIVITAS

Current status is that in Funchal / Madeira, the concept of gamification applied to mobility as proposed by DESTINATIONS was not tested before. Past experiences in the scope of the CIVITAS-MIMOSA project involved “Urban Orienting Contests” and “Geocaching contests/competition using PT”. Both types of events have been a big success (with increasingly number of participants on each new event) and had excellent reviews from all other partners in the project and even from the Commission. The geocaching type of events will be applied again in DESTINATIONS.

Inter-relationship with other measures

This measure has a relation with the following measures: (MAD 3.1) - Innovative solutions for safe and secure public spaces (Improve city liveability); (MAD 6.2) - Green Credits: a business Model for Mobility, Sustainability and Tourism; (MAD 6.3) - Mobility management for tourism related companies; (MAD 7.2) - Attractive public transport; (MAD 7.3) - Smart PT traveller information service; (MAD 8.2) - Service design, business model; (MAD 8.3) - Smart technologies and ITS implementation.

The structure/ composition of the regional partners involved in this measure already include the core stakeholders for such type of measure: the Public Transport operator (HF) and the Regional Agency for Research, Technological Development and Innovation (ARDITI), with the contribution of all other partners if and when required (CMF, SRETC and AREAM).

That structure ensures that the level of cooperation necessary to support the measure implementation (cooperation among the consortium/ exchanges) is already in place.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Average - Modal Split (passenger km) AND Average Modal Split (trips)]	% people that use soft modes, including modal split (check conformity	Baseline is zero as the service is new. A survey on "satisfaction of users with the PT"	10% (Review this goal made during the proposal (2015)

		with CI Units)	before (for the baseline) AND after the gamification campaign will/can be carried only after HF+ARDITI start the gamification campaign/measure. Planned to start in month 20 (April 2018). Note: private car - 59% bus - 26% walk - 13,2% bike/bicycle - 2% Source: PIETRAM / INE/DREM, Censos RAM 2011	-> now (2017) it seems too ambitious)
Transport	Citizens satisfaction with transport system can be used to evaluate the deployment of two different outputs: i) the games that will be developed and/or used; ii) and the prototype of the newly designed bus stop (which may integrate with MAD7.3 - new information panel). So, we may split core indicator 41 into two differently evaluated indicators: i) The satisfaction with the PT before/after the games, and; ii) The satisfaction with the PT system before/after testing the new bus stop (may include the information panel which part of MAD7.3.	% people that use soft modes, including modal split (check conformity with CI Units)	Baseline is zero as the service is new. A survey on "satisfaction of users with the PT" before (for the baseline) AND after the gamification campaign will/can be carried only after HF+ARDITI start the gamification campaign/measure. Planned to start in month 20 (April 2018). All analysis / surveys related to MAD7.3 will be carried by HF.	10% (Review this goal made during the proposal (2015) -> now (2017) it seems too ambitious)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
Average Modal Split (passenger km) Average Modal Split (trips)	(S - Survey)	M16, M26, M36	travellers (residents and tourists)	Demonstration area
Citizens satisfaction with transport system	(S - Survey)	M16, M26, M36	travellers (residents and tourists)	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
“Software Development Companies” (generic)	Development of online/mobile tools and apps will require the subcontracting of software development companies to carry such work.
M-ITI (Madeira Technologies Institute)	M-ITI is a technological research institute with the know-how for designing, implementing or adapting interactive devices and software (prototyping), which will be required in this measure.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological New potentials offered by new technology available, namely low cost ubiquitous data communications associated to cloud software tools and services.	N/A	N/A	N/A
Involvement, communication The PT operator and main partner, HF, is highly interested in testing gaming approaches as way to increase attractiveness of PT in Funchal.	N/A	N/A	N/A
N/A	Institutional Regional / National laws and policies, namely at financial level, may delay the progress of the project in particular in the process for buying equipment, where an approval only may take well more than 3 months.	Identify, define and request approval for buying equipment as soon as possible, ie, at least 4 months in advance, considering the approval process + buying process.	Low
N/A	Technological Using new unproven approaches may take longer (time) and successive adaptations and improvements before reaching success in reaching objectives proposed in the measure. That's an intrinsic part of research in any field.	Design, prototype, test proposed solution(s) and validate the different approaches before adopting a specific solution.	Moderate

3.8 Measure MAD 6.2 - Green credits: A Business Model for Mobility, Sustainability and Tourism

Description

With the implementation of «Green credits: A Business Model for Mobility, Sustainability and Tourism» measure, the PT Operator wishes to assume a position of major regional economic player, organizing and offering a wide number of cross services for tourists and residents alike, through their new green credits platform.

Objectives and outputs

The measure objectives are:

- **High level / longer term :**
 - Improvement of quality of life and sustainable mobility;
 - Reduction of transport related emissions;
 - Increase the market share of urban transports, supported on an effective sustainable mobility strategy
- **Strategic level objectives**
 - The creation of a cross site intelligent integrated system to account green mobility credit in the framework of the CIVITAS project is one of the final objectives of this measure.
- **Specific measure objectives**

The common platform called “CIVITAS MOBILITY and TOURISM SYSTEM (CMTS)” must entail the following main features:

- Development of a single credit system based on “green points” to reduce carbon emissions and leverage healthy habits;
 - Increase the number of public transport passengers;
 - Create and develop loyalty programs which are perceptible to the citizens and tourists of the benefits of sustainable mobility and environmental options;
 - Raise awareness towards alternative modes of transport;
 - A Green Loyalty Commuting System in some cases can be associated to a Payment system and the system should work as complementary tool to the public transport ticketing system in use;
 - Provide a system of "sustainable mobility products and tourist experiences" as well as "Information of the sustainable mobility and tourism".
-
- **Outputs:**
 - One mobile app and desktop tool to calculate green credits
 - A green credit management system working in the region of Madeira and at least more 1 city partner
 - At least 30 institutional and business partners involved in the credit scheme at local level.

Innovative aspects

- **Use of new technology/ITS** – the green credit scheme is intended to be developed above the existing mobile applications that may exist. So it is not about creating a new app from the scratch which would have neither market nor clients but to build on existing ones.
- **Targeting specific user groups** – Aside of locals, tourists can and should participate in this sustainable model and will be also able to use their credits for leisure activities. In fact, the measure scope includes promoting more demand on tourist segments towards public transports and new revenues. This action and product to be developed will encourage and will push regional actors (taxis, rental companies, hotels, and attraction spots, authorities, public and private PT operators) to actively engage themselves towards more sustainable transport.
- **New organizational arrangements or relationships** – CIVITAS is traditionally organized by measure and city, therefore lacking the implementation of a common cross-national methodologies and products. However, one of the objectives of this measure is to seek a common service for all Destination sites that can take up from Madeira experience.

Research and technology development

Within CIVITAS DESTINATIONS, the consortium will develop a “CIVITAS MOBILITY and TOURISM SYSTEM (CMTS)” - which will be an intelligent integrated system of mobility and public transports with its Business Model for "Mobility, Sustainability and Tourism", which will consider also a “Green Loyalty & Commuting System”, with integrating measures and services to be addressed by the project, across each city/region.

This integrated model should allow to define, integrate and facilitate the use of green credits/points and others commercial “loyalties points”, as a strategic tool to promote and reward sustainable behaviour of citizens and tourists.

A Web and Mobile application will be developed, so users can collect points each time a sustainable option is chosen instead of a car or a pollutant mobility vehicle.

The application will measure mobility and travel options according to the mobility mode chosen. It will calculate the right amount of credits. Each citizens and tourists will have an "account" so that it can display, in real-time, the balance between the benefits of being an "ambassador of sustainable mobility" and the direct cost.

The rationale for the users is clear: the more journeys/action are carried out with sustainable options, the more credits one can earn day after day. With this tool each daily mobility option counts to earn advantages.

Under the “CIVITAS MOBILITY & TOURISM SYSTEM ” this tool will also integrate “A system of "Information of the sustainable mobility and tourism” with all the useful information resources needed for tourist and residents such as maps, directions, events, attractions and other information needed.

As a first step the local team will develop a benchmarking analysis of the new solutions "Ticketing System" existing in the European and international market, because as we aim to create an integrated and intelligent platform, and in particular case of "Green points system” and other solutions, we were been examining the benchmarking particularly in England and Singapore.

In this preliminary phase, with the support of the CIVITAS consultancy (WP8 coordinators) will also be made the business model of " CIVITAS MOBILITY & TOURISM SYSTEM ", which will also include the "application of this measure."

After the technical and business plan phase, the measure will step into the development phase with a period and tests which should take around 12 months, before full implementation.

Situation before CIVITAS

Public transport in Madeira is steadily declining in terms of number of passengers and revenues in the past 15 years, as citizens are becoming wealthier and purchasing private modes of transport or arranging new shared mobility solutions.

In the meantime, the operational costs involving the provision of public transport services in a remote and outermost island such as Madeira is a burden and creates over costs that are reflected in the tariffs. Public transport in the island is therefore much more expensive than other similar sites. One way to transform this economical burden and to make public transport more accessible for its clients is to team up with other companies and offer structured discounts and a commuting system that can be regarded as competitive and appealing for locals and tourists alike. The Green Credit solution is therefore envisaged by the PT Operator as a core business action which can retain current passengers and attract new clients.

Inter-relationship with other measures

At working package level there is a cluster of actions that assemble green credits measures. This specific measure developed in Madeira is at the very heart of this group of measures and it is expected to have multiplier effects in other fellow cities. This is the reason why this measure is not only closely related with other measures implemented in Madeira but, as a flagship action of Destinations, also influences many other actions at project level.

Inter-relationship at local level

LPA 6.1. Green credit scheme in Las Palmas and **RET 6.3. - Green mobility card** – **MAD 6.2.** is a lighthouse for these two actions, in the sense that the work carried out in Madeira will be exchanged with eventually replicated in these two sites, which will follow similar technical guidelines and .

Inter-relationship at project level

MAD 7.2. Attractive public transport, (MAD 7.3) - Smart PT traveller information service and (MAD 7.4) Public Transport Smart Multi-task Ticketing System, in open standards – the green credit scheme is one of the cornerstone of the public transport package of actions which are complemented by these other three measures. Progresses in each other generate mutual influences. For example, the attractiveness of public transport will be reinforced by the green credit schemes, whereas the platform for commuting green points must rely on the ticketing system so synergies are drawn up.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Investment costs of the green credit scheme	€	Baseline is zero as the service is new	new target (not in GA): Foreseen to have revenues exceeding investments and operating costs
Economy	Operating costs	€	Baseline is zero as the service is new	
Economy	Revenues from PT tickets	€	Baseline is zero as the service is new	
Environment	CO2 emissions savings of green credits participants	T CO2/km	Baseline is zero as the service is new	new target (not in GA): - 49,5 tons of CO2 emitted until the end of the project
Transport	Average modal split (passengers.km made by each mode for all purposes) among green credit scheme participants	pax-km	Baseline is zero as the service is new	<i>Target as in GA</i> GA had as a target: +4.870 passengers)tourists using PT per year. To address this target we would require a different indicator, which is broader (not directly related with this single measure) and would be city-wise - number of tourists using the PT system <i>new target (not in GA):</i> transfer the number of passenger.km from private modes of transport to PT services
Society	Number of residents and tourists participating in the green credit scheme	Number	Baseline is zero as the service is new	At least 100 residents and 100 tourists actively participating in the green credit scheme
Society	Number of residents and tourists arguing that their mobility information has improved thanks to the new scheme	Number	Baseline is zero as the service is new	At least 80% of the participants stating that their mobility information and satisfaction with the mobility services have improved
Society	Number of residents and tourists with knowledge that the Green Credit scheme was available	%	Baseline is zero as the service is new	<i>new target (not in GA):</i> at least 5% of tourists and residents aware that the green credit scheme is available
Society	Money spent at designated shops involved in the scheme	€	Baseline is zero as the service is new	+10% local business transactions

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (months)		Target Group	Domain (demonstration area or city)
		During	After		
Investment costs of the green credit scheme	DC		2020	Green credit users	Region
Operating costs	DC		2020	Green credit users	Region
Revenues from PT tickets	DC	2018, 2019	2020	Green credit users	Region
CO2 emissions savings of green credits participants	S, E	2018, 2019	2020	Green credit users	Region
Average modal split (passengers.km made by each mode for all purposes) among green credit scheme participants	S, E	2018, 2019	2020	Green credit users	Region
Number of residents and tourists participating in the green credit scheme	DC	2018, 2019	2020	Green credit users	Region
Number of residents and tourists arguing that their mobility information has improved thanks to the new scheme	S	2018, 2019	2020	Green credit users	Region
Number of residents and tourists with knowledge that the Green Credit scheme was available	S	2018, 2019	2020	Tourists and residents at the airport	Region
Money spent at designated shops involved in the scheme	S	2018, 2019	2020	Green credit users	Region

Detailed description of the indicator methodologies:

- Investment costs of the green credit scheme (CIVITAS Core Indicator 2A): The responsibility for collecting this indicator lies in HF. The indicator will provide information of investment costs as if no subsidies were provided.
- Operating costs (CIVITAS Core Indicator 2B): The responsibility for collecting this indicator lies in HF. The indicator will provide information of operating costs as if no subsidies were provided.
- Revenues from PT tickets (CIVITAS Core Indicator 1): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey conducted to platform/application users to check if they are new clients thanks to this single measure

- CO2 emissions savings of green credits participants (CIVITAS Core Indicator 11): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey embedded in the mobile application which will ask tourists/residents who use the mobile application about how would they move around if it wasn't the green credit scheme. From here we will estimate green gas emission savings.
- General assumption for the ex-ante target:
- 50% of the 100 residents were car drivers and use to perform 8.000 km/year in a 120 CO2 g/km vehicle. This would represent 48 Tons of CO2 emitted per year 100 tourists, in which 50% rent a car or travel in a taxi for 250 km (50km in each of 5 days of stay) would emit 1,5 tons of CO2 (120 g/km).
- Average modal split (passengers.km made by each mode for all purposes) among green credit scheme participants (CIVITAS Core Indicator 16 - Average Modal Split - passenger.km): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey embedded in the mobile application, which will ask tourists/residents who use the mobile application about how would they move around if it wasn't the green credit scheme. From here we will passengers.km per each modal choice and estimate differences before-after).
- Number of residents and tourists participating in the green credit scheme (CIVITAS Core Indicator 35 - Acceptance level): The responsibility for collecting this indicator lies in HF. Note that participation means the number of people actually using the credit/debit scheme.
- Number of residents and tourists arguing that their mobility information has improved thanks to the new scheme (CIVITAS Core Indicator 34 - Awareness level): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey embedded in the mobile application.
- Number of residents and tourists with knowledge that the Green Credit scheme was available (CIVITAS Core Indicator 34 - Awareness level): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey at the airport asking "if people were aware that the measure exists" so to understand the reasons why some people, despite being informed about this green credit card, did not join it.,
- Money spent at designated shops involved in the scheme (CIVITAS Core Indicator 35 - Acceptance level): The responsibility for collecting this indicator lies in HF. The information will be collected through a survey targeting the participant stakeholders with which HF has negotiated a shared commuting points system and asking them to what extent their selling has improved with the implementation of this measure.

Stakeholders involvement

Stakeholder name	Activities description
Trade & Commerce sector	Select first top 20: Commercial , shopping partners and “ commuting loyalty system”
Culture, Tourism & Travel	Select first top 10: hotels, museums, tourism experiences & commuting loyalty system
Schools & Corporate & Associations	Select first top 5: Schools , Corporate companies and associations
Mobility modes of transport	Select top 5: Companies and mobility modes of transport
Health & Wellness	Select top 3 : Health and Gym wellness centres and sustainable mobility

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Planning	The measure time plan was too optimistic at first and have to be rescheduled so than it can fit in the work plan of other Destinations measures with which this measure liaison (most notably MAD 6.1. MAD 7.2. and MAD 7.3. and MAD 7.4.)	Low
Spatial	Positional	There is no scale in Madeira island for a very competitive credit scheme so the idea of the managing team is to steer the measure onto a transnational scope, involving other fellow Destinations sites in measure design and in the product development.	Medium

3.9 Measure MAD 6.3 - Mobility management planning tools for tourists and local tourism operators

Description

This measure is an essential tool to improve the regional strategy for sustainable mobility options and tourism leading to a better data sharing between the different actors. The new planning framework can assure a better sustainability of mobility market considering all the actors involved. The measure can have positive effects on long run policy interventions as well as tourist satisfaction.

Mobility management actions will be developed to promote sustainable mobility among tourists and residents. We intend to design, implement and demonstrate local measures to improve mobility, stimulate competition, better manage demand and increase awareness of sustainable mobility in tourist destinations.

Objectives and outputs

Mobility planning for tourism information and tools will implement a set of actions to promote and boost sustainable mobility options for tourists and tourism operators too. We intend to develop a set of actions, focus in tourist sector stakeholders (tour operators, operational staff, hotel staff, drivers), and give them tools to better communicate with the tourists who visit us, about mobility and transportation options. It is also intended to provide Funchal with digital information points on tourism and mobility.

Specific objectives:

- To implement capacity-building activities to share, and promote sustainable mobility transport modes within tourists and local tourism operators;
- To inform tourist about sustainable mobility options with an integrated tool, embedded in the official tourism website and in other relevant touristic platforms;
- To promote, disseminate and share mobility and touristic information within tourists and touristic operators;
- To promote public transport service and sustainable transport modes in tourism sector;
- Increase of awareness for sustainable mobility among tourists;
- Enhance Madeira as an attractive tourist destination.

Outputs:

- Launch of a web based touristic public transport info area and app for better mobility planning for tourists;
- Creation of a permanent monitoring system to check tourist's satisfaction through enquiries and focus group activities;
- At least 200 hotel, tourism front office, animation companies or PT staff will receive training about mobility options. And at least 20 trainees will change their mobility habits towards more sustainable modes (to be managed by HF);
- Drivers and operational staff of PT companies receiving training in English and service quality towards mobility.

Innovative aspects

It will be developed a specific area in the official Madeira Tourism website, with comprehensive information regarding public transports, specific and advanced mobility planning tools (such for

example route planning, real time public transports information), interrelated to touristic information regarding main events, POI's. This information and tools must also be adapted to mobile equipment's in order to deliver up to date touristic information.

In order to measure and study mobility satisfaction and understand tourists mobility needs, enquiries and focus groups with stakeholders will be implemented along the development of the project.

At a first stage, online tools, such as questionnaires, and other data collection instruments will be used to define which data is essential to build a regional specialized website area to manage and share information related to public transport and tourism. It will be collected off line essential information and real-time info about major POI's, events, schedules, itineraries, etc. Such info will be also adapted to feed other IT support/systems: apps, screens, kiosks.

E-learning tools will also be adopted in order to provide continuous improvement from hotels and other tourist professionals.

Online and offline monitoring tools (such as the focus group assembling tourists which could require social media platforms) will also be used to measure tourist and resident satisfaction throughout the implementation process as well as to promote and disseminate information.

Research and technology development

To be inserted/described in a later stage.

Situation before CIVITAS

There is an increasing demand for a public transport service and other sustainable transport modes. To follow through this trend is needed specialized and centralized information in order to increase satisfaction towards mobility, at a regional level. In such way transport sustainable network can more efficiently serve the needs of the local user as well as better meet the visitor's expectations.

To implement a sustainable mobility strategy plan it is necessary to start improving data and resource sharing between all mobility and touristic stakeholders and then develop mobility information and contents for a more efficient public transport service

Inter-relationship with other measures

(MAD 4.1) – Promote the update of clean vehicles by fleet operators;

(MAD 5.1) – Smart and clean urban freight logistic at tourist destinations;

(MAD 6.2) – Green credits: a business model for mobility, sustainability and tourism;

(MAD 7.2) – Attractive public transport.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Tourism	Awareness of mobility options among tourists	%	n.a	50%
Tourism	Ability of English speaking of drivers and other transport professionals	%	n.a	40%
Tourism	Ability of English speaking of drivers and other transport professionals covered by training	%	23%	37%
Tourism	Satisfaction of tourists regarding transport professionals support to their queries	(1 to 10)	n.a	6
Tourism	Satisfaction of tourists regarding tourism professionals support to their mobility-related queries	(1 to 10)	n.a	6
Tourism	Number of page views - "Getting Around" area at visitmadeira.pt (Madeira Tourism Official website)	N.º	5350	9000
Tourism	Percentage of hotel staff that shift their mobility options towards sustainable ones	N.º	0	20
Tourism	Level of knowledge of tourist professionals about transport options	(1 to 10)	n.a	6

n.a – not available

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
Awareness of mobility options among tourists	S	24, 48	Tourists	Region
Ability of English speaking of drivers and other transport professionals	S	24, 48	Tourists	Region
Ability of English speaking of drivers and other transport professionals covered by training	S	12, 24, 36, 48	Transport operators (HF)	City
Satisfaction of tourists regarding transport professionals support to their queries	S	24, 48	Tourists	Region
Satisfaction of tourists regarding tourism professionals support to their mobility-related queries	S	24, 48	Tourists	Region
Number of page views - "Getting Around" area at visitmadeira.pt (Madeira Tourism Official website)	DC	12, 24, 36, 48	Web user	Region
Percentage of hotel staff that shift their mobility options towards sustainable ones	S	24, 48	Hotel staff	Region

Level of knowledge of tourist professionals about transport options	S	36, 48	Tourist professionals	Region
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Stakeholders involvement

Stakeholder name	Activities description
HF	As main regional public transport operator, HF will support the region regarding the public transport information and planning
Municipality of Rethymno	Main contact point as WP leader for “Mobility demand management and awareness for sustainable mobility at tourist destinations”
Insight Innovation	Should any business model is developed thanks to combined presence of transport operators in the regional platform visitmadeira, it would be important to interact with the business model leader
Mobility actors	The cooperation with all the mobility actors at regional level will be highly relevant.
DRET	The framework of mobility management is duly followed by the regional department of economy and transports.
Madeira Promotion Bureau	The Madeira Promotion Bureau is an important partner gathering within its associates, local tourism operators, hotels, travel agencies and animation companies.
Chamber of commerce	Funchal chamber of commerce will support the creation of exchange platforms and cooperation activities in the framework of such measure
Selected hotels, animation companies as well as travel agencies	A range of selected hotels, animation companies as well as travel agencies are expected to adhere to the upcoming tourist focus panel.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Selected hotels, animation companies as well as travel agencies	Weak involvement of the tourism stakeholders	Invitation, meetings, contacts, Involvement through the Chamber of Commerce and the Madeira Promotion Bureau	

3.10 Measure MAD 6.4 - Low emission areas and smart urban traffic control

Description

The scope of this measure is geared towards the establishment of a legal framework, to improve the mobility system and thus ease down traffic jams. In addition, the Municipality will carry on several strategies to restrict road accesses, such as the implementation of traffic calming measures and other actions aimed at providing public transport transit priority. To achieve these goal, it is intended to implement a state of the art technology to improve traffic control in traffic light system.

Objectives and outputs

Objectives:

- Macro
 - Less energy consumption
 - Improved urban accessibility
 - More attractive tourist destination
 - Less pollutant emission
- Specific
 - Approve a new regulation for touristic mobility actors, defining their routes, parking space and time of service, including the licence concession for touristic operators;
 - Implement traffic calming zones, in which vehicles can coexist with pedestrians;
 - Evaluate the social and economic impact of closing streets or limit traffic in city centre to vehicles;
 - New parking policies which will reduce the traffic in the city centre, benefit the local commerce, promote public transport and make mobility solutions for tourists more user-friendly in city centre;
 - Study the feasibility of introduction of reversible lanes according to time slots;
 - Use of innovative traffic lights that will provide mobility solutions for the urban environment;
 - Develop strategies to restrict road access according to the Sustainable Mobility Action Plan;
 - Install monitoring sensors in traffic light systems to improve traffic control.

Outputs:

- One strategic traffic study for the city centre, including new regulation for touristic mobility actors;
- Creation of at least 3 traffic calming zones;
- Study and test at least 2 reverse traffic streets;

- Introduction of self organizing traffic lights in at least 3 junctions (synchronized with the PT service in the area);
- Feasibility study to extend at least 1 km of new bus line in city area.
- Innovative aspects

The lack of a touristic transport regulation at urban level is especially troubling taking in consideration the several tourism mobility agents picks up tourists and clients all at once from/to the same areas intensifying traffic congestions. Overcrowded touristic spots reduce the attractiveness of the destination and this measure will play an important role to overcome such problems through the implementation of a regulation and introduction of several actions. The legal framework is expected to improve the planning process and traffic flow and safety. Moreover, the implementation of traffic calming measures in specific segments and/or intersections is innovative in which can lead out to replications in other parts of the city. In addition, the implementation of a smart traffic light system tailored to give priority to soft modes, namely public transport is also an innovative feature.

Research and technology development

Funchal will be a testing bed for innovative and smart sensors which will be used to control vehicles access, organize traffic light systems and to monitor real-time traffic conditions through an intelligent platform, including also the introduction of a smart traffic light system suited for soft modes. This measure is also related to MAD 2.2 in which monitoring sensors will be purchased, following the development of a prototype that will be undertaken by ARDITI.

Situation before CIVITAS

The increasing car traffic undermines the quality of life into urban areas. The city of Funchal, especially the city core, is affected by heavy traffic flows, which allied with unregulated parking habits, worsen the livability condition, in particular for pedestrian. According to modal split statistics, motorized transports are still the dominant type of transport in the city which makes the implementation of the actions necessary to revert this tendency.

Inter-relationship with other measures

This measure is linked with measure 3.1, since the actions within measure 6.4 will be also complemented by an urban redesign in order to further enhance walkability conditions. Additionally, the measure is related to the Sustainable Mobility Action Plan, which encompasses several actions geared towards mobility and implementation of traffic calming measures. Some outputs are also related to the Sustainable Energy Action Plan, the Covenant of Mayors strategic plan to reduce by 2020 the CO₂ emissions in 20%. The measure is also linked to MAD 2.2, in which ARDITI may provide support to optimize the monitoring sensors.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO Emissions	g/km	Data will be gathered (M18)	Relation with expected impact (GA) decrease noise and emission pollution in the target area of at least 5%
Environment	NO _x emissions	g/km	Data will be gathered (M18)	Relation with expected impact (GA) decrease noise and emission pollution in the target area of at least 5%
Environment	CO ₂ emissions	g/km	Data will be gathered (M18)	Relation with expected impact (GA) decrease noise and emission pollution in the target area of at least 5%
Environment	Smart particulate emission (PM10 and PM2.5)	g/km	Data will be gathered (M18)	Relation with expected impact (GA) decrease noise and emission pollution in the target area of at least 5%
Environment	Noise Perception	Percentage	Data will be gathered (M18)	Relation with expected impact (GA) decrease noise and emission pollution in the target area of at least 5%
Transport System	Road safety (actual)	Quantitative	Summary of results – (Number) Collisions – 84 Run over – 11 Overturning - 12 Light injuries – 58 Serious injuries - 3	New target (not in GA): Decrease of traffic incidents in the target area (at least 5%);
Transport System	Average vehicle speed (peak and off peak)	Km/hr	Data will be gathered (M18)	Relation with expected impact (GA) Increase bus commercial speed of at least 10% Decrease number of vehicles in the target area by 5%
Transport System	Number of public transport passengers (City specific indicator)	Quantitative	19.556 passengers	New target (not in GA): +2% passengers boarding buses in the catchment area
Transport system	Traffic flow (peak and off peak)	Vehicles/hour	Data will be gathered (M18)	Relation with expected impact (GA) Decrease number of vehicles in the target area by 5%
Transport system	Parking infractions per type (City specific indicator)	Quantitative	Main results (N=487 - %) Load and unload parking spots – 5,3 Bus stop – 5,3 Reserved parking spot – 1,4 Road – 79,5 Sidewalk – 8,4	Relation with expected impact (GA) Decrease irregular parking in the target area (at least 10%)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
CO Emissions	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
NO _x emissions	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
CO ₂ emissions	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
Smart particulate emission (PM10 and PM2.5)	COPERT software will be used to estimate emissions of regulated air pollutants (estimation)	M18	Motorized vehicles	Demonstration area
Noise Perception	A noise device will be used to collect noise levels in DB (Data collection)	M18	Motorized vehicles	Demonstration area
Road safety (actual)	Data to be provided by local authorities, namely road accidents by type in the target area (Data collection)	M18	Pedestrians, cyclists and drivers involved in accidents	Demonstration area (data was gathered between 2010 and the first trimester of 2017 and specifies the type of accident, namely collision, overturning and run over. In addition, the type of injuries were also collected (light, serious injuries and deaths).
Average vehicle speed (peak and off peak)	Data collected using loop detectors that will be carried out for both peak and off peak periods. As for the public transport, data will be gathered using the AVL system. (Data collection)	M18	Motorized vehicles moving on the targeted area	Demonstration area
Number of public transport passengers (City specific indicator)	Public transport operator ticketing system (Data collection)	M12	Users that accesses, in a full week, the public transport within the targeted area (17 stops in both directional ways)	Demonstration area

Traffic flow (peak and off peak)	Traffic counting and modal split statistic (Data collection)	M18	Motorized vehicles moving on the targeted area	Demonstration area
Parking infractions per type (City specific indicator)	Direct observation of parking violations according to the National Traffic Road Regulation (Data Collection)	M14	Motorized vehicles illegally parked within the targeted area	Demonstration area
Acceptance level	Assess the acceptance levels regarding the measure (survey)	(M15December 2017)	Shoppers located in streets in which several traffic restrictions took place	Segments in the city that were shut down to road traffic

Stakeholders involvement

Stakeholder name	Activities description
ACIF	The commerce and service chamber will play an important role since it holds important data regarding local economy and satisfaction surveys.
Local traders (target area)	The economic agents will provide the Municipality with several data
DREM (Regional Statistic)	This entity can provide the Municipality with additional social and economic data

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political/strategy	Cultural	Awareness campaigns geared towards several target groups to tackle resistance to change.	Moderate
Involvement/communication	Technological	Match the technical requirements to traffic light system; Establishment of contacts with other cities that uses similar systems.	High

3.11 Measure MAD 7.1 - Electrical vehicles and clean fuels for public transport urban and inter-urban fleet

Description

This can be taken from the latest Measure Description form (please summarize in a couple of paragraphs).

1. Demonstration program for electric or hybrid vehicles in public transport fleets
 - Selection of three different routes in Madeira Region, according to the different services of main PT regional operators. The routes will allow the connection between the airport, harbor and city centers, hotel shuttle services, culture areas, environmentally sensitive tourist areas, long distance circuits and historical centers.
 - Market analysis for electrical/hybrid buses, choosing the appropriate vehicles for each circuit type (topography, number of passengers, the type of service).
 - Stakeholder's involvement and creation of partnerships with relevant players, including public and private organizations (transport operators, municipalities, hotels, leisure activities, etc.), brands and energy suppliers.
 - Pilot test of alternative vehicles, to integrate the demonstration program.
 - Implement an eco drive system in public transport busses and define a long run incentive program based on performances.
 - Eco drive training sessions for public transport drivers, to support and improve the implementation of the eco driving program.
 - Purchase of five electric or hybrid buses which will support the possible fleet renewal according to test results with alternative financing funds (to be funded with ERDF, Madeira 14-20 Operational Programme).
 - Definition of the evaluation parameters for circuit operation: passenger's transportation, energy consumption and pollutant emissions, maintenance costs and passenger satisfaction.
2. PV support system development and demonstration
 - The development and demonstration of a photovoltaic power supply solution for auxiliary electrical equipment, such as air-conditioning in interurban and tourism buses, aiming to reduce fossil fuel consumption.
 - The action includes the following tasks:
 - o Agreement with a research centre or private investor to develop a PV system.
 - o Development of the system and implementation in the bus.
 - o PV system performance monitoring and evaluation, and calculation of fuel savings generated in the operation of the vehicle and avoided emissions.
3. Tire pressure monitoring system in urban service
 - Test of tire pressure monitoring system in urban buses. The use of correct tire pressure improves buses performance and security, and contributes to reduce costs and to increase energy efficiency of PT operator.

Objectives and outputs

- 5 mini/midi electric or hybrid buses (co-financed by external funds)
- 1 feasibility study of electrical/hybrid vehicles in Madeira
- 20 busses equipped with eco-driving system

- 50 drivers involved in monitoring system and incentive scheme
- 6 training sessions and at least 200 drivers enrolled and trained
- 50 busses equipped with tire-pressure monitoring system
- 1 bus equipped with PV system
- 1 business case study for PV system

Innovative aspects

The use of alternative energy sources to fossil fuels and promotion of electric/hybrid tourist buses, improves environmental quality by reducing pollutant emissions and noise, as well as the image of the Madeira Island, strongly relates to eco-tourism and respect of natural heritage. Considering the whole amount of public and private bus fleet related to tourism in Madeira, this action has a huge potential impact to reduce fossil fuel consumption in the island and decrease the energy dependency. On another hand, eco-driving habits and techniques improve travel experience and contribute to generate positive touristic experiences.

Research and technology development

Local partners will seek control systems to monitor drive style and technical features and tire pressure monitoring systems.

Situation before CIVITAS

Identified problems: Technological solution with little credibility by users; high initial cost of electric bus comparing with conventional; low offer by the market of electric busses compared with the light vehicles; limited autonomy of batteries; urban, interurban and tourist fleets with high average age; low eco-driving habits. On the other hand: city centre with high level of pollutant emissions and noise during peak hours; high fossil fuel dependency of the sector.

Starting point: HF has an historic of training sessions in eco-driving, which has started in Civitas Mimosa project, as a complement of driver's periodic mandatory trainings.

Inter-relationship with other measures

Not applicable

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Energy	Energy mix in PT fleet	MWh; %	Not yet available	introduction of electricity in energy mix 1%

Energy	Use of RES in PT fleet	MWh	Not yet available	77 MWh
Energy	Energy consumption	MWh; kWh/km; kWh/PKT	Not yet available	Less 348 MWh
Environment	CO2 emissions avoided by EV	t; g/vkm	Not yet available	Less 105 t CO2
Environment	CO emissions avoided by EV	kg	Not yet available	new target
Environment	NOx emissions avoided by EV	kg	Not yet available	new target
Environment	PM emissions avoided by EV	kg	Not yet available	new target
Economy	Investment costs	Eur	No	2 000 000 Eur
Economy	Operation costs	Eur/km	Not yet available	new target
Transport	Perception of quality of service	qualitative	No	new target
Transport	Striking driving situations <i>(city specific indicator)</i>	number	Not yet available	new target

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))		Year	Target Group	Domain (demonstration area or city)
Energy mix in PT fleet	DC	M19	2020	PT operators	Madeira
Use of RES in PT fleet	E	M19	2020	PT operators	Madeira
Energy consumption	DC	M19	2020	PT operators	Madeira
CO2 emissions avoided by EV	E	M19	2020	PT operators	Madeira
CO emissions avoided by EV	E	M19	2020	PT operators	Madeira
NOx emissions avoided by EV	E	M19	2020	PT operators	Madeira
PM emissions avoided by EV	E	M19	2020	PT operators	Madeira
Investment costs	DC	No	2020	PT operators	Madeira
Operation costs	DC	M19	2020	PT operators	Madeira
Perception of quality of service	S	No	2020	PT passengers	Madeira
Striking driving situations <i>(city specific indicator)</i>	DC	M19	2020	Bus drivers	Madeira

Detailed description of the indicator methodologies

- Energy mix in PT fleet - Data will be collected until March 2018. The baseline data considers the energy consumption per type of energy (exemple: gasoil, electricity, etc) in HF PT fleet in 2017.
- Use of RES in PT fleet- Data will be estimated until March 2018. The baseline data considers the renewable energy in energy consumption per source of energy (exemple: biodiesel incorporated in gasoil, renewable energy in electricity consumed) in HF PT fleet in 2017.
- Energy consumption- Data will be collected until March 2018. The baseline data considers the energy consumption per km.bus before the implementation of the actions under this measure.
- CO2 emissions avoided by EV- Data will be collected until March 2018. The baseline data considers the emissions per km.bus, before the implementation of the actions under this measure, with copert support.
- CO emissions avoided by EV- Data will be collected until March 2018. The baseline data considers the emissions per km.bus, before the implementation of the actions under this measure, with copert support.
- NOx emissions avoided by EV- Data will be collected until March 2018. The baseline data considers the emissions per km.bus, before the implementation of the actions under this measure, with copert support.
- PM emissions avoided by EV- Data will be collected until March 2018. The baseline data considers the emissions per km.bus, before the implementation of the actions under this measure, with copert support.
- Investment costs- This indicator doesn't have baseline data. The indicator evaluates the investments achieved by the actions carried out under the measure.
- Operation costs- Data will be collected until March 2018. Operation costs per bus before the before the implementation of the actions under this measure.
- Perception of quality of service- This indicator doesn't have baseline data. The indicator evaluates the perception of quality of services affected by the actions carried out under the measure. The data will be collected through survey addressed to passengers to assess their perception regarding the implementation of actions: electric bus and eco-driving.
- Striking driving situations- Data will be collected until March 2018, with the internal monitoring procedures of HF.

Stakeholders involvement

Stakeholder name	Activities description
DRET (Economy and Transportation Authority)	Regional authority and partner
Municipality of Porto Santo	Local authority
Public transport operator (HF)	PT operator and partner

Other PT Operators	PT operator
Bus trade companies	Electric bus manufactures
Consortium: Siemens, CaetanoBus	Electric bus manufactures
Product and services suppliers	Manufactures
HF technicians, drivers and representatives	Beneficiary
Citizens	Beneficiary
Private sector and research organizations	Developers

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political/strategy	Political/strategy	Political engagement	low
Institutional	Institutional	Institutional engagement	low
Cultural	Cultural	Awareness raising campaigns, EV bus pilot test	moderate
Financial	Financial	Other regional funds	high
Technological	Technological	EV and hybrid bus manufactures involvement	high

3.12 Measure MAD 7.2 - Attractive public transport

Description

MAD 7.2. Attractive public transport consists in a bold program of sub-actions intending to improve public transport (PT) image and turn it more appealing for tourists and residents alike. It develops upon the areas where it is felt that PT is weaker or does not offer adequate response, such as bus stop information, digital presence and lobbying and overall image of PT itself.

Objectives and outputs

The measure objectives are:

- **High level / longer term:**
 - Promotion of an attractive and high quality public transport service;

- **Specific measure objectives**
 - To ease the access of tourists and residents alike to PT related information
 - To enhance accessibility and comfort at bus stops
 - To nurture PT staff towards a more commercial attitude
 - To boost ticketing options

Outputs:

- At least 40 bus stops information redesigned (in conjunction with the measure 3.1) and accessibility to these bus stops ought to be improved
- 5 Public transport front office restyled with interactive panels
- Installation of 1 Digital Mupi which will be the first contact of cruise liner passengers with the PT service
- Production of at least 1 video for training purposes and 3 PT commercial videos
- Launch of a new PT image
- One online platform to sell PT tickets
- Deployment of an innovative and electronically queue management system, so as to organize, engage and measure waiting times at sales and information outlets

Innovative aspects

This measure is important to push tourists to choose public transport avoiding private modes of transport for their leisure trips during their visit. Promotion of car rental and other private transport services are nowadays very aggressive, and some of them pass a wrong image of PT service, so it is essential to have a tempting public transport communication and commercial strategy, capable of being competitive with other modes.

By targeting tourists when they arrive in Madeira (either in the airport or in the port) or even before landing in Madeira (using social media for example) one assumes that the range of tourists using less energy and environment intensive modes of transport.

Research and technology development

To turn public transport into a more attractive service, a set of actions ought to be implemented, as outlined in the bullets below:

- Redesign bus stops layout, to be more comfortable and attractive in order to reduce the perception of the bus waiting time; This intervention will target three areas where local partners feel that resources will impact most, namely the touristic areas of Monte, Botanical Garden and Pico dos Barcelos (a popular viewpoints);
- Punchy/commercial videos about what to do in Funchal using public transportation; These videos will be displayed in the regional TV, in the main gateways of entrance, in the stakeholders websites and also at tourism fairs;
- Development of inspirational videos to be used at specific training campaigns targeting bus drivers. These videos are expected to guide bus drivers and other PT staff towards a more commercial approach focusing on the clients expectations and needs;
- Better image and look of public transport company "front office" to combine tourism and transport information and back-office as well (e.g. using a platform to sell tickets online);
- Use of smart marketing techniques through social media to showcase the activities implemented and also to collect opinions and suggestions;
- Promotion of touristic events on buses and bus stops;
- Installation of 5 interactive panels in the PT Operator sales and information outlets (Teleférico, Pinga; Alfândega; Marina and Anadia);
- Installation of one digital mupi in the port facilities or nearby;

Situation before CIVITAS

This measure is about carrying out a package of actions to boost PT attractiveness among residents and tourists, so that new passengers can be attracted. Also in order to retain the existing ones the whole community support the action building a positive public perception and the needed political leverage.

The PT Operator Horários do Funchal has some long-standing experience in marketing approaches. Ad Personam an EU project (2008-2010) act to test direct marketing strategies to persuade citizens to use public transport in medium-sized cities. Some years later, the first marketing-wise achievements have become evident in the CIVITAS-MIMOSA project, thanks to a tailored marketing tool which were addressed to the hotel industry and named after Tourist Kit. This Kit entailed specifically prepared information and public transport tickets for tourist's convenience. More recently, the company has been involved in a project devoted to bring together the topics of tourism and transport, the SEEMORE project, in the frame of which several outputs were produced to help tourists to move around the city of Funchal by bus, namely the Public Transport Guide, Audio-guides, videos, among many other tools.

Moreover, during the course of its own internal duties, Horários do Funchal explores commercial opportunities using bus door and often offers news-items for regional and national newspapers.

Although much work has been done already, the recent trends of tourism shows that the market is sharply growing and so the company feels that there is room left for improving the attractiveness of public transport, as the number of tourists who use public transport is estimated to be around 25% only. This measure will therefore be instrumental as a catalyst to accelerate the communication tools offered to tourists.

Inter-relationship with other measures

MAD 7.2. Attractive Public Transport is directly linked with other central measures developed under CIVITAS DESTINATIONS addressing public transport, most notable MAD 6.2. MAD 7.3. and MAD 7.4.. These measures cross-fertilities each other in the sense that they mutually seek to improve the quality of the public transport service to tourists and residents alike.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Satisfaction rate with the new queue management system targeting PT users	%	Baseline will be collected retrospectively in M 25	new target (not in GA): at least 80% of users stating that service has been improved
Society	Satisfaction rate with the new queue management system targeting PT staff	%	Baseline will be collected retrospectively in M 25	new target (not in GA): at least 80% of staff members stating that service has been improved
Transport system	Percentage of tourists arriving with cruise liners and taking the public transport service	%	In 2017, 3% of tourists arriving with cruise liners have taken PT during their stay	new target (not in GA): increase the share of tourists taking the PT up to 5%
Society	Satisfaction rate with the new information supports (digital panels and mupi)	%	No baseline will be available as the information supports are new	new target (not in GA):
Economy	Revenues of touristic tickets (daily ones)	€	In 2016 HF sold 26.886 daily ticket, representing a revenue of 247.106,45€	+ 10% revenues of daily tickets
Transport system	Number of PT user (tourists and residents)	pax (derived from n ^o of tickets sold)	In 2016 HF sold 26.886 daily ticket	+ 10% tourist PT users
Society	Acceptance level of the new training videos	%	Baseline is zero as the product is new	new target (not in GA): At least 80% of drivers stating that videos are useful or very useful (likert scale) for their profession
Society	Number of views of the promotional videos	n. ^o	Baseline is zero as the product is new	new target (not in GA):

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		Bef.	Dur.	Aft.		
Satisfaction rate with the new queue management system targeting PT users	S			M 25	PT users (both tourists and locals)	Demonstration area
Satisfaction rate with the new queue management system targeting PT staff	S			M 25	PT front office staff	Demonstration area
Percentage of tourists arriving with cruise liners and taking the public transport service	S	M11		M 25	Tourists arriving at Funchal Port	Demonstration area
Satisfaction rate with the new information supports (digital panels and mupi)	S	M22		M 34	PT users (both tourists and locals)	Demonstration area
Revenues of touristic tickets (daily ones)	DC	2016	2017 2018	2019	PT users	City
Number of PT user (tourists and residents)	DC; E	2016	2017 2018	2019	Tourists using PT service	City
Acceptance level of the new training videos	S			M 36	PT drivers	Madeira
Number of views of the promotional videos	DC; E		2017 2018	2019	Tourists / PT users	Wider

Detailed description of the indicator methodologies:

- 1 – Satisfaction rate with the queue management system targeting PT users (CIVITAS Core Indicator 41 - citizen satisfaction with transport system): HF is responsible for collecting data for this indicator. Survey conducted in Anadia (the main sales outlet of HF) to analyse how satisfied are people with HF customer service. This indicator corresponds to specific objective 1.
- 2 – Satisfaction rate with the queue management system targeting PT staff (CIVITAS Core Indicator 41 - citizen satisfaction with transport system): HF is responsible for collecting data for this indicator. This survey/interview will target PT staff and be conducted only after implementation, to understand if the new queue system has ease their work. This indicator corresponds to specific objective 1.
- 3 – Percentage of tourists arriving with cruise liners and taking the public transport service (CIVITAS Core Indicator 40 - acceptance level): HF collects this data though a survey conducted at Funchal Port, in which the interviewees (tourists) are asked about which mode of transport they use during their (short) stay in Madeira. This indicator corresponds to specific objective 3 and 4.

- 4 - Satisfaction rate with the new information supports (digital panels and mupi) (CIVITAS Core Indicator 41 - citizen satisfaction with transport system): HF is responsible for collecting data for this indicator. Survey conducted at the Port for the mupi and at vending and HF sales outlets. This indicator corresponds to specific objective 1.
- 5 - Revenues of touristic tickets (daily ones) (CIVITAS Core Indicator 1 - average operating revenue): HF is responsible for collecting data for this indicator. The indicator will be calculated by the sum of all the daily tickets sold in all the sales outlets and in the new online selling platform as well. This indicator corresponds to specific objective 3 and 4.
- 6 - Number of PT user (tourists and residents) City specific indicator: HF is responsible for collecting data for this indicator, which will be calculated by the number of tourist passengers (derived from the number of tickets sold) using a daily ticket per year. One must estimate the average number of trips performed by tourists. This indicator corresponds to specific objective 3 and 4.
- 7 - CIVITAS Core Indicator 40 - acceptance level of the new training videos: HF is responsible for collecting data for this indicator. This indicator will measure the usefulness of the videos, according to driver's testimonials (in a 1 to 5 likert scale). This indicator corresponds to specific objective 3.
- 8 - Number of views of the promotional videos (CIVITAS Core Indicator 39 - awareness level): HF is responsible for collecting data for this indicator. This indicator will entail information about You tube views and also an estimation of the number of people targeted in place where the videos are displayed (e.g. fairs, etc). This indicator corresponds to specific objective 1.

Stakeholders involvement

Stakeholder name	Activities description
M-ITI	The project partners will seek to involve creative students in the measure planning process, namely to what interactive bus stops and digital panels is concerned,
University of Madeira	The project partners will seek to involve creative students in the measure planning process, namely to what the definition of the image of the company is concerned.
APRAM	One digital mupis will be installed in APRAM facilities so their authorisation and support is essential.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Positional	Relationship between this measure and others can delay the purchase of some equipment's that can be used for more than one measure (e.g. surveillance cameras) or that severely rely on other measures (e.g. the online platform to sell tickets).	Low

3.13 Measure MAD 7.3 - Smart PT traveller information service

Description

Intelligent transport systems drive innovation in public transport and the public transport industry. The core of this measure is to take up from this assumption and develop and implement a touristic and mobility information system that can be more effective than the one previously existent. It will allow a better access to integrate information about tourism and public transport in a unique tool box and platform.

Objectives and outputs

The measure objectives are:

- **High level / longer term**
 - Improve the mobility information for all types of users
 - Improvement of quality of life
 - More attractive tourist destinations and PT satisfaction
- **Specific measure objectives**
 - Deployment of intelligent transport systems in the PT Operator
 - Promotion of an attractive and high quality public transport service
 - Raise awareness towards alternative modes of transport
- **Outputs:**
 - 1 new PT information website
 - 1 travel planner tool including information of all the PT operators in the Island
 - 1 scheduling optimization software for public transportation
 - 10 new on-street information panels and 2 test panel in HF headquarters
 - 1 new mobile app. specially designed for mobility impaired users
 - 3 new ticket selling kiosks

Innovative aspects

Use of new technology/ITS – The measure represents the perfect instrument to promote modal share to public transport among tourist but will also boost public transport system control and monitoring at regional level.

Research and technology development

The smart PT traveller information service at regional level will include:

- Better information about public transport and others sustainable modes in the websites, such as the Madeira Tourism portal and other mobility and tourism stakeholders, including improved description of how to access points of interest or events.
- Include the public transport service of other public transport companies in the journey planners (google maps for example).
- New internal and external information website and tools to improve public transport customer information. The website will adapt the service experience and information platforms to personal needs.

- Fleet control system with information for drivers about their schedule and 2 information panels.
- Real-time information panels that also offers assistance to travellers whilst they are on their journeys, anywhere and at any time.
- Information and ticket selling Kiosk for tourist with PT and tourist paper information.
- Implement an app, especially dedicated to visually impaired users, with real time information about when the bus is coming and where to leave the bus.

Situation before CIVITAS

HF has an outdated and not user-friendly company website. Moreover, the real time information is not reliable and HF would like to overcome this issue and start providing this relevant information to PT clients. HF and another regional PT company have their off line service information available in Moovit app and other platforms. HF also provides this information (GTFS) in Google Transit. In 2015/2016 HF has also installed several on street panels throughout Funchal interesting points with information about bus passages (planned schedules, not real-time data).

Inter-relationship with other measures

This measure is linked with other measures that are in motion in the frame of the Destinations project and that are managed by the PT Operator as well, most notably:

MAD 7.2, Attractive Public Transport – the reorganization of the PT management system, provided by MAD 7.3., will enable new customer oriented products (such as redesigned bus schedules and better information to PT clients)

MAD 7.4. Public Transport Smart Multi-task Ticketing System, in open standards – if MAD 7.3. is the head of the public transport, MAD 7.4. is the tails and represents the other side of PT service. These two measures will impact positively in antiquated AVL and ticketing systems and will therefore jointly redesign PT services, making it more tourism friendly and effective.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Number of visitors to HF website	n.º	In 2015 the PT operator website received a total of 1.081.722, whereas in 2016 the website received 1.294.440 visits	>10%
Society	Number of downloads and usage of the mobile App.	n.º	In 2015, the HF BUS received 608.988 visits. In 2016 the app. has had problems and was turned off	new target (not in GA): >10%
Economy	Ratio PT operational revenues and costs	€	In 2015 HF had 1.4 Million Euros of positive cash flow (revenues related with PT service)	+2% of PT operational revenues

			In 2016 HF had 0.56 Million Euros of positive cashflow (revenues related with PT service)	
Society	Quality assessment of the new mobile app. among mobility impaired users using PT	%	No baseline is available. Questionnaire will ask about quality assessment in a retrospective perspective	new target (not in GA): +10%
Society	Quality assessment of HF mobile app. among tourists	%	No baseline is available. Questionnaire will ask about quality assessment in a retrospective perspective	new target (not in GA): +10%
Society	Satisfaction rate (with the available options to purchase tickets)	%	2014 (SEEMORE survey) 54% of tourists have received/seen information about travel options other than by car (93,4% of which rank it as good or very good). In 2017, 50% of tourists departing Madeira airport have seen information about travel options other than by car. Among these, 81% said that this information was good or very good.	+10% tourists aware of mobility options
Transport	Reliability of the new AVL system (measured in terms of number of times the system crashes and number of hours required to retrieve the system)	Nº	In 2016, the AVL system crashed 156 and the average number of hours necessary for the problem to be solved was of 600	new target (not in GA): decrease the number of times the system crashes in 10%
Economy	Maintenance costs related with the AVL system	€	In 2016, HF had 185,500.00€ costs related with maintenance of the AVL system	new target (not in GA): - 10%
Society	Satisfaction rate (with the available options to purchase tickets) of cruise ship tourists	%	In 2017, 33% of tourists have seen information about where to but PT tickets and 26% of tourists have seen information about what they could do with PT	new target (not in GA):

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (months)			Target Group	Domain (demonstration area or city)
		Bef	Dur	Aft		
Number of visitors to HF website	DC	2015, 2016	2018	2019	PT users	Wider
Number of downloads and usage of the mobile App.	DC	2015	2018	2019	PT users (both tourists and locals)	Wider
Ratio PT operational revenues and costs	DC	2015, 2016	2018	2019	PT operator	City
Quality assessment of the new mobile app. among mobility impaired users using PT	S	M9		M24	Mobility-impaired citizens	City
Quality assessment of HF mobile app. among tourists	S	M9		M24	Tourists	City
Satisfaction rate (with the available options to purchase tickets)	S	2014, M10		M36	Tourists	Region
Reliability of the new AVL system (measured in terms of number of times the system crashes and number of hours required to retrieve the system)	DC	M9		M24	PT users	City
Maintenance costs related with the AVL system	DC	2016		2018	PT Company	City
Satisfaction rate (with the available options to purchase tickets) of cruise ship tourists	S	M 10		M36	Cruise ship visitors	City

Detailed description of the indicator methodologies:

- 1 Number of visitors to HF website (CIVITAS Core Indicator 39 - awareness level): HF is responsible for collecting data for this indicator. Data source is Google analytics and data will be presented in annual series. This indicator corresponds to specific objective 3.
- 2 Number of downloads and usage of the mobile App. (CIVITAS Core Indicator 39 - awareness level): HF is responsible for collecting data for this indicator. Data source is Google analytics and play store/apple store and will be presented in annual series. This indicator corresponds to specific objective 3.

- 3 Ratio PT operational revenues and costs (CIVITAS Core Indicator 1 - average operating revenues): HF is responsible for collecting data for this indicator. One assumes that the new AVL and GIST systems will impact favourably in the PT Operator business area. This indicator corresponds to specific objective 1.
- 4 Quality assessment of the new mobile app. among mobility impaired users using PT (CIVITAS Core Indicator 40 - acceptance level): HF is responsible for collecting data for this indicator using a questionnaire which will target mobility-impaired people (selected by a local NGO), asking people about ease-of-use and usefulness of the newly designed mobile app. This indicator corresponds to specific objective 3.
- 5 Quality assessment of HF mobile app. among tourists (CIVITAS Core Indicator 40 - acceptance level): HF is responsible for collecting data for this indicator by deploying a questionnaire at Madeira airport, asking people about ease-of-use and usefulness of the newly designed mobile app. This indicator corresponds to specific objective 3.
- 6 Satisfaction rate (with the available options to purchase tickets) (CIVITAS Core Indicator 39 - awareness level): HF is responsible for collecting data for this indicator by deploying a questionnaire at Madeira airport to investigate the reasons why some people, despite being informed about the travel planner tools/mobility options, have chosen other mobility options. Questions of the survey is: "have you received/seen information about travel options other than by car? And, if yes, how good were they?" This indicator corresponds to specific objective 2.
- 7 Reliability of the new AVL system (measured in terms of number of times the system crashes and number of hours required to retrieve the system) City specific indicator: HF is responsible for collecting data for this indicator by making a query in the online SIGO platform owned by the company. This indicator corresponds to specific objective 1.
- 8 Maintenance costs related with the AVL system (CIVITAS Core Indicator number 2B): HF is responsible for collecting data for this indicator. This indicator corresponds to specific objective 1.
- 9 Satisfaction rate (with the available options to purchase tickets) of cruise ship tourists (CIVITAS Core Indicator 41 - citizen satisfaction with transport system): HF is responsible for collecting data for this indicator by deploying a questionnaire targeting cruise liner tourists (should the new kiosks which will sell tickets are installed near the Port). One will access the accessibility to the PT system through the degree to which tourists find the purchase of tickets easy. Concrete questions posed to tourists are the following: "have you seen information about where you could buy a ticket? And Have you seen information about what you could do using PT?" This indicator corresponds to specific objective 2.

Stakeholders involvement

At site level	
Stakeholder name	Activities description
Public transport companies	To provide information in the online system integrating all transport options.

Taxi association	To provide information in the online system integrating all transport options.
Hotels	The hotels receptionists could test the new information tools.

List of other partners in the project that can contribute to this measure:

At project level	
Stakeholder name	Activities description
GUAGUAS	WP7 leader
LTC and LIMA	Partners involved in the measure (LIM 7.3) - PT traveler information system
LTC	Partner involved in the measure (LIM 7.4) - Mobility application and travel planner for smart phones to provide real time information
RM, PF, and MEMEX	Partners involved in the measure (ELB 7.3) - APP for user real time information
GUAGUAS, LPGC, SAGULPA, CINESI	Partners involved in the measure (LPA 7.3) - Real time mobility and tourism information services

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Position	The measure is considered to be a cornerstone of HF strategy in order to provide better services to the general public. However, it is strictly linked with other Destinations projects and even with other external cofounding opportunities (e.g. ERDF).	Moderate
	Organizational	It might be difficult to integrate the information with other public transport companies and other services such as taxis.	Moderate

3.14 Measure MAD 7.4 - Public Transport Smart Multi-task Ticketing System, in open standards

Description

The lack of detailed public transport information and communication among transport operators was one of the main identified barriers already identified by the local authorities which hinder the quality of the overall island as a major high-quality touristic destination.

This situation creates a hurdle, especially for tourists who come to Madeira for the first time (the so called «new comers») who find difficult to plan travels and to access to different operators and interrelated services, including public transports and other touristic services. This measure will expectably impact favourably in trying to streamline and facilitate the access of tourists to the public transport system, taking advantage of the fact that tourists are receptive to smart technologies and are, therefore, excellent to test and give feedback for the improvement process.

Objectives and outputs

The measure objectives are:

- **High level / longer term**
 - Enhance smart ticketing solutions
 - Contribute to turn Madeira into a more attractive touristic destination
- **Measure specific objectives**
 - To integrate in one tariff tool mobility and touristic services;
 - To improve public transport attractiveness and demand;
 - To test reliable new ticketing options
- **Outputs:**
 - Creation and implementation of smart ticketing interoperable scheme;
 - Evaluation guide lines of the different ticketing solutions;
 - Complete pilot ticketing system tested and implemented in between 15 and 50 buses.
 - Multi-services Platform
 - Revenue Split Centre and Web Services Farm

Innovative aspects

Use of new technology/ITS – As the main goal of this measure is to increase the convenience of paying and using public transport, the PT Operator will explore several new technologies and try to adapt them during the pilot tests. RFID, QR Code, Beacons are among the technologies that will be explored.

Targeting specific user groups – The smart ticketing system will focus on tourists of all modes (land, air and water) to whom information and services must be easy and friendly, as they have limited time to understand and to use public transports. If the smart ticketing is effective with tourists, it will work as well with the local population, who will be, in the end, a strategic long run

beneficiary. In such way it will be effective the shift from private cars to public transports with a more attractive integrated tariff scheme.

Research and technology development

This measure aims to develop a Smart Ticketing Interoperable System to make public transport more user-friendly to travel on the different public transport and touristic services in Madeira.

The measure comprises the following tasks:

- To carry on focus group surveys and communication campaigns to tourists, residents and students to identify the needs and the acceptance of smart ticketing solutions. The surveys will be performed in high-schools, universities, airport, harbour and hotels. This approach will help to address the modal shift to more sustainable transports.
- To involve and engage the main operators of public transports to reach an agreement for a unique smart ticketing system, to meet the aims of all stakeholders, namely users, companies and regional and local authorities. The measure is strongly related to business strategies and commercial options.
- To adapt the contactless system in use and develop and implement a new Smart and Dematerialized Ticketing System combining several selling options (internet, mobile, virtual wallet) and ticket validation (NFC, QR codes). To have a system that is transparent for operators and regulator, and also attractive and friendly to the users. The smart ticketing will be designed to minimize the costs to the operators and create the opportunity to an external partnership with a specialized ticketing service provider.
- To develop a Multi-services Platform to do the match between the Contactless, the Printed and the Dematerialized Ticketing forms and a Revenue Split Centre to manage the sales between the different operators of public transport and tourist related services ticketing sellers.
- To develop a mobility management tool integrated in the smart ticketing system, aiming to collect relevant information regarding the public transport needs, user profile and satisfaction. To help operators to design the services according to the real needs and trends of residents and tourists. Moreover, the data collected will feed a coherent database and will therefore be the basis to a more dynamic and adaptive mobility planning system in urban area to support the Smart City Management System in Funchal and Madeira.
- To Exchange experiences within the consortium to promote a better knowledge on existing ticketing systems and their strength and weaknesses. This is the foundations to support the transition to effective smart cities.

Situation before CIVITAS

Horários do Funchal, regional public bus operator, owns a contactless ticketing system based on the Calypso standard. The contactless ticketing system in use is sometimes a barrier for new comers, especially tourists, which are not used to different rules and schemes. The modernization of the actual ticketing system is essential to introduce a more user friendly way to use public transports.

However, the new system should be prepared to integrate other services such Sightseeing Buses, Cable Cars, Bike Rental, etc., and for cultural and entertainment places, e.g., museums,

theaters, etc, using plastic or paper contactless cards, printed optical codes and dematerialized tickets.

To prepare the system to deal with such features it is needed to build-up a Multi-services Platform, and a Revenue Split Centre.

Furthermore two specific features of the ticketing system are essentials for the integration of other DESTINATIONS measures: Green Credits MAD 6.2 and Smart PT Traveller Information Service MAD 7.3. More in detail a Multi-services Platform, a Revenue Split Centre and a Web Services Farm are crucial for the success of the other complementary measures above referred. The Ticketing platform will be integrated with the green credit system to assure the integration of users data and mobility habit to attribute rewards to users.

Inter-relationship with other measures

MAD 7.4. has a strong relationship with all other measures steered by HF (6.2. 7.1. and 7.3.).

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Usability of public transport tickets	%	In 2017, average satisfaction rate with ease to use public transport tickets in Madeira was of 3,87	new target (not in GA): +10%
Transport	Reliability of the new ticketing system <i>City specific indicator</i>	%	In November 2017, ticketless system stored data with an accuracy of 85,7%	new target (not in GA): increase reliability in 10%
Transport	Reliability of the new ticketing system (measured in terms of number of times the system crashes and number of hours required to retrieve the system) <i>City specific indicator</i>	Nº	In 2016, the ticketing system crashed 587 and the average number of hours necessary for the problem to be solved was of 24	new target (not in GA): decrease the number of times the system crashes in 10%
Transport	Reliability of the new ticketing system (number of passengers with information of route number and bus stop where they board the bus) <i>City specific indicator</i>	%	In 2017, a sample of validations between 01.01.2017 and 15.01.2017 show us that 87,0% of passengers have information of the route number and 86,6% have information of the bus stop where they get on board	new target (not in GA): increase reliability in 10%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (months)			Target Group	Domain (demonstration area or city)
		Bef	Dur	Aft		
1 – Usability of public transport tickets	S	M12		M36	PT users (tourists)	Region
2 - Reliability of the new ticketing system <i>City specific indicator</i>	DC	M15		M39	PT users	City
3 - Reliability of the new ticketing system (measured in terms of number of times the system crashes and number of hours required to retrieve the system) <i>City specific indicator</i>	DC	M9		M24	PT users	City

Detailed description of the indicator methodologies:

- 10 Usability of public transport tickets (CIVITAS Core Indicator 41 - citizen satisfaction with transport system): HF is responsible for collecting data about usability of the PT tickets through a survey targeting tourists that have used the regional PT service and that have actually been involved in the pilot. Survey is conducted at departure lounge in Madeira airport. This indicator corresponds to specific objective 2.
- 11 Reliability of the new ticketing system (City specific indicator): HF is responsible for collecting data for this indicator which is intended to check the degree to which the new pilot ticketing system is more reliable than the contactless existing one (reliability will be measured by crossing electronic ticketing information about overall number of passengers with manual data collection a board of a sample of buses/trips). Spot monitoring actions to check its functioning on the field will be carried out. This indicator corresponds to specific objective 3.
- 12 Reliability of the new ticketing system (measured in terms of number of times the system crashes and number of hours required to retrieve the system)
City specific indicator: HF is responsible for collecting data for this indicator by making queries in the online SIGO platform that the company owns. This indicator corresponds to specific objective 3.
- 13 Reliability of the new ticketing system (number of passengers with information of route number and bus stop where they board the bus)
City specific indicator: HF is responsible for collecting data for this indicator by making queries in the digital platform which records ticketing information to assess to what extent the information of the number of validated passengers includes route number and bus stop where the passenger board the bus. This indicator corresponds to specific objective 3.

Stakeholders involvement

The main stakeholder with whom Horários do Funchal will establish dialogue will be the local chamber of Commerce.

Stakeholder name	Activities description
Chamber of Commerce	The chamber of commerce will be involved in several development phases to grant the participation of the relevant economic actors at regional level

In addition to the above, considering that this measure is breakthrough, it will benefit from the exchange of knowledge from other partners that are involved in the Destinations project, as follows:

At project level	
Stakeholder name	Activities description
WP8 consultants	MEMEX for the technology option and integration and business models.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Position	The measure is considered to be a cornerstone of HF strategy in order to provide better services to the general public. However, it is strictly linked with other Destinations projects and even with other external cofounding opportunities (e.g. ERDF).	Moderate
Problem related	Technological	Open solutions and standards are not yet the mainstream in PT companies and	Low
Problem related	Physical/spatial	Regulation (EC) No 1370/2007 is a major opportunity to develop new software and hardware solutions for the public transport companies, making them compulsory in the frame of contract agreements. However, this measure is highly dependent of external suppliers but Madeira might use some expertise in human/computer interaction to cope with this barrier.	Low
	<i>Financial</i>	Incentives are required to involve other regional partners and make the ticketing system really multi-task	

4 Local Evaluation plan – Elba

4.1 Island and cities description

Elba Island is located around 10 km far from the Tuscan coast and is the 3rd biggest Italian Island, with an overall area of 223 square km. It is the main Island of the Tuscan Archipelago (that also includes Pianosa, Capraia, Gorgona, Montecristo, Giglio and Giannutri Islands) and it is part of the Tuscany Archipelago National Park.

Elba features a very heterogeneous territory:

- on the western side of the Island there is a mainly mountain area overlooked by Mount Capanne (1,018 m);
- the central and narrowest part of the Island (4 km wide) is mainly flat and is the area where the major urban centres (Porto Ferraio and Campo Elba) are located;
- the eastern side is the most ancient part of the Island, dating back to over 400 million years ago, and has a hilly territory with Mount Calamita (413 m) on the South and Cima del Monte (516 m) on the North. In this area the well-known Elba iron fields are located.

ELBA counts a total of around 33.600 residents (2009), which almost double during the tourist season. Most significant tourist flows are during the period June-September, especially in July and August, in 2009 for instance peaks of daily presences amounted to 26.375(Jul.) and 28.750 (Aug.). Tourist flows from June to September are around 85% of presences registered during the year. These numbers only refer to tourists accommodated in “official” structures (hotel, B&B, camping, etc.), but do not include daily tourists, people owning a summer house and staying at “non-official” facilities. So, the total number of daily presences in summer months can be estimated to around 30.000 people.

Elba territory is divided into 8 Municipalities, which all belong to the Province of Livorno. These are: Portoferraio, Campo nell’Elba, Capoliveri, Marciana, Marciana Marina, Porto Azzurro, Rio Marina and Rio nell’Elba.



Although only two municipalities Portoferraio and Rio Marina are partners of the CIVITAS Destinations project (since they are ports connected to the continent and are therefore most concerned with mobility problems) most of the measures concern the entire island of Elba

Elba road network is suitable for residents' needs, but it is not sufficient and it is overcrowded during peak season, where a total of around 43.000 cars circulating along island's roads has been registered. Road network is structured along two main axes, connecting Portoferraio with Procchio and Campo nell'Elba Municipalities, on one side, and with Porto Azzurro and Capoliveri Municipalities, on the other side.

In the tourist season these road axes are crowded both by tourist cars and freight vehicles arriving at Portoferraio ferry terminal and going to the different parts of the island.

The main problems affecting island mobility and accessibility are:

- concentration of arrival/departure traffic flows in Portoferraio (where the main ferry terminal is located) resulting in a congestion of the central part of the island and in a general de-qualification of tourist centres and reduction of island accessibility;
- very high percentage of people using private vehicles for island mobility (private car is used by 80% of tourists), resulting in significant congestions in the summer period, that cause difficulties in mobility, high level of pollution and several other related issues;
- very high traffic flows concentrate in the inner city centres of the different Municipalities due to the peculiar characteristics of the island road network;
- low use of public transports services (only 14% of the PT offer). The mobility offer is fragmented in terms of ticketing, info, marketing, accessibility and cooperation and ineffective in providing integrated solutions able to comply with the emerging needs and requirements.

It is clear that the problems mentioned above produce a wide range of related issues that negatively impact on the overall quality of the environment, citizens life and tourists stay, such as, among the others:

- traffic congestion in the city centres of the 8 Municipalities;
- parking difficulties and consequent unauthorized parking in the areas of the most important beaches;
- noise pollution;
- road safety issues;

Furthermore, public transport services (mainly the extraurban ones) have often to deal with significant passenger increase in the summer period (over 30% increase during the peak season) and may be inadequate to duly respond to the increased demand, thus pushing passengers to make use to different (private) means of transportation.

4.2 Strategic goals

The objectives of the Elba Island Destinations project include the integration of sustainable mobility solutions for the needs of both residents and tourists in order to improve mobility and living on the island.

In summary, the overall objectives of the project are:

- improve local mobility particularly in the summer with reduced use of private vehicles and greater use of environmentally friendly forms of mobility;
- emission reductions / increased air quality;
- reduction of energy consumption;
- increase of the overall urban accessibility;
- improvement and increase of the use of public transport.

4.3 The relation among the measures

Site map

Figure 2 - Elba island and its accesses



- Elb 2.1 SUMP: All the island
- Elb 2.2 Elba data layer: all the island
- Elb 3.1 Increase level of safety of pedestrian crossing in PF and RM
- Elb 3.2 Sustainable and safe accessible bike and pedestrian route design in PF and RM
- Elb 3.3 Requalification of main taxi station area in PF

- Elb 4.1-4.4 Shared mobility agency in Elba: all island
- Elb 4.5 EV legislation revision and charging infrastructures in Elba: in PF
- Elb 5.1 Island freight logistics for tourist services: all the island
- Elb 5.2 Sustainable ELBA Logistic Plan (SULP): all the island
- Elb 6.1 Combined products for tourist and mobility: all the island
- Elb 7.1 Improve PT services for tourist: all the island
- Elb 7.2 Integrated PT payment: all the island
- Elb 7.3 APP for users information: all the island

The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2, 3, etc: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER (Measure Evaluation Results) - Satellite template
R2	Updated version of the MERs
RF	Final versions of the MERs

5 Evaluation plan at measure level

5.1 Measure ELB 2.1 - Common Elba SUMP for residents and tourists

Description

The main purpose of the Sustainable Urban Mobility Plan (SUMP) is the increasing of overall Elba accessibility and life quality with the reduction of the private cars flow towards a sharing sustainable mobility and an efficient and affordable Public Transport backbone services for the tourists and residents. This in line with what is expected in the “Sustainable ELBA Mobility Covenant” among the 8 different ELBA municipalities (SEMC).

Objectives and outputs

The specific objectives of this measure is the development of the Sustainable Urban Mobility Plan (SUMP) for the all Elba island taking into account the needs of tourists and residents. The aim is to have a mobility plan that favour the PT services and the sustainable and active modalities both for residents and for tourists (as sharing mobility schemes) guaranteeing the overall internal and external island accessibility. Moreover, the ITS and ICT framework with essential part of the SUMP as the regulation framework (access town rules, parking policy, logistics windows, etc). Finally, the SUMP will be integrated in the Regional Mobility Plan.

Outputs:

- Sustainable Urban Mobility Plan for the whole Elba island to be approved by all Elba municipalities

Innovative aspects

The peculiarity of this measures is the development of a “PoliSUMP” aggregating the different needs and requirements of the 8 Municipalities as a un unique entity

Research and technology development

No technologies is necessary to implement this measures. A specific database and tools will be set up and operated for information and document collection and management

Situation before CIVITAS

No general mobility plan at the whole ELBA level is present. There is a regulation framework inside each municipality that primarily concerns the access and parking within cities. Different municipality documents will be the base of the start up the SUMP activity including also the Sustainable Energy Action Plan at Elba level that has some sections focused on the possible mobility solutions.

Inter-relationship with other measures

This measure is connected with the other measures planned in Elba site and in particular with Elb 4.1-4.4 Shared mobility agency in Elba and with Elb 5.2 Sustainable ELBA Logistic Plan (SULP)

The impacts

The impact evaluation of the SUMP will be done with a different methodology, namely through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

Process evaluation

The evaluation process will be based on the results of the questionnaires relating to the assessment of citizens and tourists regarding the measures envisaged by SUMP.

Also, even if the final version of the SUMP will be made taking into account the modifications and suggestions of the various municipalities of Elba, the timing of approval by the same will be considered as sharing and validity index of SUMP itself

Stakeholders involvement

The following table provides information about involved stakeholders. Many others are reported in the SUMP Portoferraio meeting of 10-11 May 2017

Stakeholder name	Activities description
Blablaelba facebook page	Future Search groups
Elba environmental association	Future Search groups
Elba Foundation	Future Search groups
Italia Nostra	Future Search groups
Municipality of Portoferraio	SUMP Political approval and adoption
town police of Portoferraio	SUMP Political approval and adoption
Municipality of Rio Marina	SUMP Political approval and adoption
Municipality of Porto Azzurro	SUMP Political approval and adoption
Municipality of Capoliveri	SUMP Political approval and adoption
Municipality of Marciana	SUMP Political approval and adoption
Municipality of Campo nell'Elba	SUMP Political approval and adoption
Municipality of Rio nell'Elba	SUMP Political approval and adoption
Municipality of Marciana Marina	SUMP Political approval and adoption

Elba National Park	Future Search groups
Car Rent CHIAPPI	Future Search groups
CTT Nord	Future Search groups
Taxi Service in Portoferraio	Future Search groups
Confcommercio	Future Search groups
Confesercenti	Future Search groups
Infoelba webpage	Future Search groups

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Institutional	Involvement, communication	Meeting with the stakeholders so to obtain shared plan	Low
Organizational	Financial	The more expensive measure can be made step by step	High
	Cultural	A large dissemination activities of the Sulp will be made	moderate

5.2 Measure ELB 2.2 - Elba open data layer

Description

The different mobility and transport services operated in Elba Island provide a set of data and information that could be useful both for info services and for providing transport services (as the ones coordinated by the “SHARED ELBA MOBILITY” Agency). Moreover, these data could be useful to different IT service providers for implementing specific mobile or web applications related to ELBA mobility situation. This measure is the implementation of an integrated base information layer composed by Elba mobility data generated by different devices/services. This information will be accessible in an easy way by service providers and citizens for different objectives (i.e development of an app showing mobility situation).

Objectives and outputs

The Elba mobility common data layer that, on one side, integrates the different information and data (like the time arrival of the bus at the next stop) and, on the other side, homogenizes these data in order to allow the different service providers to acquire the data in a simple way (“plug in”). This “ELBA open data layer” will allow to increase opportunities to promote the Elba Island services and infrastructures. This layer will be designed and developed in the T4.3.

Innovative aspects

This measure will increase the visibility of ELBA offer allowing the integration of data in a common layer on which the different IT services provider can develop their applications/App. The different IT provider could easily access the data on mobility fostering their capability to offer integrated services (service typology, covered area, etc.).

Research and technology development

The technology of the measure is strictly linked to the measures Elb 4.1 – 4.4

Situation before CIVITAS

There are many web sites reporting data of Elba mobility services (as timetable ferry boats and TPL bus services). But these data are not homogenized in order to allow the different service providers to acquire the data in a simple way (“plug in”).

Inter-relationship with other measures

As said above this measure is strictly linked to the measures Elb 4.1 – 4.4

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Mobility data availability - (new indicators)	n° of data access requests for web development	0	5

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Mobility data availability - (new indicators)	S	10, 24, 44	SW development companies	Elba Island

Stakeholders involvement

Stakeholder name	Activities description
PTO	Supply all data related to the services
Taxi Service in Portoferraio	Supply all data related to the services

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological	Problem related	Tight control of the company that will have to implement the system	low

5.3 ELB 3.1 - Increased level of safety for pedestrian crossings

Description

Increase of safety of any dangerous pedestrian crossings in Portoferraio and in Rio Marina

Objectives and outputs

Improving the safety of pedestrian crossings, as well as being an important measure for residents (who use them throughout the year) represents a significant intervention also for tourist pedestrian flows that, during peak summer, are often in conflict with high car traffic. Furthermore, the measure will also cover specific suburban pedestrian crossings, used by tourists to reach locations such as beaches, camping, etc., that are now totally unsafe.

Outputs: detailed design of increased safety in Portoferraio and in Rio Marina

Innovative aspects

The methodology for the identification of dangerous pedestrian crossings on the basis of statistics of accidents involving pedestrian on the road network of the Elba Island and with the involvement of citizen associations;

Research and technology development

No specific technology needs

Situation before CIVITAS

In Rio Marina and Portoferraio and in other island suburban pedestrian crossings there are no specific safety installations/devices beyond the normal white stripes painted on the road.

Inter-relationship with other measures

This measure is connected with Elb 3.2

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance level	% of population favourable		"60% Vs
Transport System	Road Safety	near accidents number/year	30% S	
Transport System	Road Safety (perceived) by cars and users	perception of safety	10% n"	

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance level	S	7, 37, 44	Citizens / Tourists	Rio Marina and Portoferraio
Road Safety	DC	7, 37, 44	Citizens / Tourists	Rio Marina and Portoferraio
Road Safety (perceived) by cars and users	S	7, 37, 44	Private car drivers	Rio Marina and Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	Design and implementation planned measure
Municipality of Rio Marina	Design and implementation planned measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Institutional	Municipality technical department will design the safety pedestrian crossing	low
Involvement, communication	Financial	The implementation would be made step by step	moderate

5.4 Measure ELB 3.2 - Sustainable and safe accessible bike and pedestrian route design

Description

Portoferraio:

- Design and implementation of specific measures to improve the accessibility and safety of pedestrian and bikers along the panoramic “Cammino di Rada” route.

Rio Marina:

- Design the renewal of the port back areas aimed at eliminating any architectural barrier. The implementation will be carried out in the framework of the current “Design renewal of the back stage harbor areas “ project founded with other already secured financial sources.

Objectives and outputs

Outputs:

- Design and accessibility implementation of the “Cammino di rada” route
- Design of elimination of the architectural barrier in the back harbor area

Innovative aspects

Improving the mobility of pedestrian and bikers by dedicated safe routes, as well as being an important measure for residents, represent a significant intervention also for tourist flows that, during peak summer season, are often in conflict with car traffic flows.

Furthermore, the measure will also cover specific suburban pedestrian/bikers paths, used by tourists to avoid crowded roads and to discover the natural environment of the island.

Research and technology development

No specific technology for these measures

Situation before CIVITAS

The “Cammino di rada” is a historic and scenic route located in the municipality of Portoferraio. It is currently hardly accessible to pedestrians and cyclists. Its safe accessibility would allow a major attraction for tourists and residents.

A ferry service could also be designed to transport people from S.Giovanni to the centre of Portoferraio avoiding significant private car traffic.

In Rio Marina a large architectural barrier prevents a safe landing from the ferry boats both for citizens and especially for disabled people, forcing pedestrians to a long and quite dangerous path to reach the centre of the town.

Inter-relationship with other measures

These measure are linked to the SUMP measure

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Opportunity of cycling	number of users/week peak season	0	280
Society	Acceptance level	% of population favourable		80% Vs 10% s 10% n
Transport System	Opportunity of walking	number of users/week peak season	30	140

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Opportunity of cycling	DC	7	Citizens / Tourists	Rio Marina
Acceptance level	S	7	Citizens / Tourists	Rio Marina
Opportunity of walking	E	7	Citizens / Tourists	Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	Design and implementation planned measure
Municipality of Rio Marina	Design and implementation planned measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Institutional	Municipality technical department will design the safety pedestrian crossing	low
Involvement, communication	Financial	The implementation would be made step by step	moderate

5.5 Measure ELB 3.3 - Requalification of the main taxi station area in Portoferraio

Description

Increasing the accessibility and quality of the main taxi station area in Portoferraio

Objectives and outputs

Promoting the use of taxi by tourists and residents.

Outputs:

Design and implementation of the already identified new area for the new taxi station in Portoferraio

Innovative aspects

The qualifying aspect of this measure is the choice of the area and its conception by the taxi operators

Research and technology development

No technologies

Situation before CIVITAS

Currently the taxi station covers a small area with reduced accessibility, not allowing the presence of adequate number of vehicles

Inter-relationship with other measures

This measure is linked with Elb 3.2

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance level	% of population favourable		10% Vs 50% s 40% n
Society	Perception of accessibility level of service	Feeling / experience of service		60 % Vs 20% s 20% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance level	S	7, 37, 44	Citizen/Tourist / taxi owner	Portoferraio
Perception of accessibility level of service	S	7, 37, 44	Citizens / Tourist	Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	Design of the new taxi station
Taxi Service in Portoferraio	Collaboration in the design

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Involvement, communication	Financial	The implementation would be made step by step	moderate

5.6 Measure ELB 4.1 - Shared ELBA Mobility Agency

Description

The “Shared mobility Agency” is the main element for planning, booking, providing, coordinating and controlling different flexible mobility services based on demand and ride sharing approach for both tourist and residents. The sharing and agency concept will not be limited only to transport and mobility services but it can be open, if possible, also to a wider range of added-value tourist service.

Objectives and outputs

Increase the attractiveness of Elba Island for tourists and quality of life for residents by provision of a wide range of mobility services able to comply with needs arisen from different demand segment. Integration of sustainable transport modes with Public Transport. Reduction of car trips in a favor of more sustainable and active transport modes

Outputs: A Shared Mobility Agency in operation

Innovative aspects

The Shared Mobility Agency will be based on an ICT platform and on the dialogue among the new mobility services schemes

Research and technology development

The platform will be developed using ICT tools as reported in the Elb 4.3 description

Situation before CIVITAS

Regarding Elba island there are several web sites reporting ferry and TPL timetable, hotels, houses cars, scooters and bikes renting

Inter-relationship with other measures

This measure is strictly linked to the Elb 2.2, Elb 4.2, Elb 4.3 and Elb 4.4. Also the measure Elb 2.1 should also be taken into account

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance level	stakeholders favourable		50% Vs 20% s 30% n
Transport System	Sharing cars and stations per capita	Number of vehicles offered in peak season	120	20.000
Society	Utilization level - (new)	Contacts/summer season		1.000
Society	Acceptance level	tourists and citizens involved/month		10.000
Transport System	Traffic flow by vehicle (peak)	Car travel time in summer Portoferraio - Rio Marina	70 minutes	40 minutes

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance level	DC	7, 30, 44	Stakeholder group	Elba island
Sharing cars and stations per capita	S	7, 30, 44	Renting companies	Elba island
Utilization level - (new)	DC	7, 30, 44	Renting companies	Elba island
Acceptance level	S	7, 30, 44	Citizens / Tourists	Elba island
Traffic flow by vehicle (peak)	S	7, 30, 44	Citizens / Tourist	Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
Blablaelba facebook page	Collaboration in the Agency service definition
Elba environmental association	
Elba Foundation	
Italia Nostra	
Municipality of Portoferraio	Management of the Agency
Municipality of Rio Marina	
Elba National Park	Collaboration in the Agency service definition
Car Rent CHIAPPI	
CTT Nord	
Taxi Service in Portoferraio	
Confcommercio	
Confesercenti	
Infoelba webpage	

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic	Cultural	Meetings with stakeholders and citizen	moderate
Technological	Problem related	Deep analysis of the planned services and meetings with stakeholders	moderate

5.7 Measure ELB 4.2 - Car/scooter/bike/boat (CSBB) sharing

Description

Overall “sharing service” framework to be managed for some pillars (booking, info, etc.) by “SHARED ELBA MOBILITY” Agency (Measure ELB4.1).

Objectives and outputs

Coordination of already existing rental services (Cars, Scooters, Bikes and Boats, etc.) with reduction of car trips and related traffic congestion and emissions.

Outputs: Integration of rental service providers into the "SHARED ELBA MOBILITY" Agency

Innovative aspects

See Elb 4.1 and Elb 4.3

Research and technology development

See Elb 4.3

Situation before CIVITAS

In the 8 Elba Municipalities there are a large number of “rental operators”, working as single operator without any coordination

Inter-relationship with other measures

Strictly linked to Elb 4.1, Elb 4.3 and Elb 4.4

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Utilization level - (new)	Number of rented or pool way vehicles/summer month	750	390.000

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Utilization level - (new)	DC/E	7, 34, 44	Renting companies/citizen /tourists	Elba island

Stakeholders involvement

See Elb 4.1

Drivers and barriers

See Elb 4.1

5.8 Measure ELB 4.3 - Ride Sharing Platform

Description

Realization of a specific ICT tool as kernel element the "SHARED ELBA MOBILITY" Agency in order to make this management structure fully operative with the objective to provide a set of main services (i.e info, booking, etc.) to the tourists and the residents. This measure is even more relevant being able to coordinate the different mobility services offer both individual and collective to reduce the traffic congestion and to increase the overall Elba accessibility.

Objectives and outputs

Increase the accessibility and attractiveness of Elba Island for tourists by the coordination of different mobility services based on a ride sharing approach.

Offer of mobility services integrated with Public Transport able to answer to different needs and to provide different mobility options in order encourage tourists to not taking their vehicles to the island or to not use the car for trips in the inland.

Outputs: 1 Fully implemented Ride Sharing Platform ready to be managed by the "SHARED ELBA MOBILITY" Agency. 1 Ride sharing Platform functional specification.

Innovative aspects

This measure will provide the tourists with a coordinated and consistent offer of mobility services integrated with Public Transport able to answer to different needs and to provide different mobility options in order encourage tourists to not taking their vehicles to the island or to not use the car for trips in the inland.

Research and technology development

The ICT platform will support the "SHARED ELBA MOBILITY" Agency in managing different functionalities - from customer booking to service planning, monitoring and control – operating as a unique entity, through a dedicated ride sharing Centre leaving the operation to the local actors. The platform will be the ICT backbone for the Agency in order to achieve the objective of improving service accessibility and transport information both for final users and citizens.

Situation before CIVITAS

Presence of a number of web portals/app masters dedicated to the tourist services in Elba Island, providing also information on some mobility services (i.e. ferries, public transports). These currently works as "single" web portals in non-coordinated network.

Inter-relationship with other measures

Strictly linked to Elb 4.1, Elb 4.2 and Elb 4.4

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Awareness level	% of awareness		10% Vs 40% s

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Awareness level	S	7,44	Citizens / Tourists	Elba island

Stakeholders involvement

See Elb 4.1

Drivers and barriers

See Elb 4.1

5.9 Measure ELB 4.4 - Increasing feeling of security among Elba sharing users tracking for ELBA-sharing service users: app

Description

Specific App managed by the ELBA-sharing platform that will allow users to be tracked (after enabling GPS on their mobile phones) during their trips, thus enhancing their safety feeling and making them more willing to largely use the ELBA-sharing services.

Furthermore, in the case of “certified hitchhiking”, the system will also allow the user to “validate” the ID number of the pick-up vehicle and to make sure that it is among the registered sharing vehicles. An alert message would be sent at the same time to all the users in case a non-registered car is trying to offer a ride.

Objectives and outputs

Planning, development and operation of a tracking services to increase the security feeling of ELBA sharing mobility service users.

Outputs: Elba sharing services users tracking system fully operative and managed by the Ride Sharing Platform of the “SHARED ELBA MOBILITY” Agency.

Innovative aspects

The key element will be a GPS system allowing to identify the position of the vehicle (including bikes, cars, boats, etc.) with respect to the point of origin and to track the itinerary made.

Research and technology development

See Elb 4.3

Situation before CIVITAS

There are several GPS devices that identify the position of a vehicle with respect to the point of origin and to track the itinerary made but no one in Elba site with the coordination in a web platform

Inter-relationship with other measures

This measure is strictly linked to Elb 4.2, Elb 4.2, Elb 4.3

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Utilization level - (new)	Number of people registered/year		20.000
Transport System	Personal security (perceived/actual)	% of users that perceives security		80% Vs 10% s 10% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Utilization level - (new)	DC	7, 37, 44	Citizens / Tourists	Elba island
Personal security (perceived/actual)	S	7, 37, 44	Citizens / Tourists	Elba island

Stakeholders involvement

See Elb 4.1

Drivers and barriers

See Elb 4.1

5.10 Measure ELB 4.5 - EV legislation revision and charging infrastructures in Elba

Development of a common (among the 8 Municipalities) regulation fostering the use of clean vehicles, in particular EV and PHEV. This rules will include several aspects, i.e.: free parking in the blue line parking lots, free circulation in the LTZ, free charge of the batteries at dedicated "green" reserved parking lots, etc.

Moreover some charging stations (at no equipment and operational costs for the project) will be installed in some key points.

Objectives and outputs

Increase the attractiveness of Elba Island for tourists by creating support conditions for the adoption of clean vehicles. Reduction of pollution /noise emissions and energy consumption for a better environment quality

Outputs: New regulation for the EV use in the 8 Elba municipalities

Innovative aspects

New municipality regulation to foster the EV use

Research and technology development

The new regulation must benefit Ev in compliance with Italian Road Code

Situation before CIVITAS

In the Elba island there are not any regulation regarding EV

Inter-relationship with other measures

This measure is linked to Elb 2.1

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance level	Citizens/ Tourists satisfaction index (%)		80% Vs 10% s 10% n
Energy	Fuel mix	number of EV owned by Elba citizen in 2020	0	1000
Energy	Energy consumption	KWh /year consumption for charges		1.110 KWh

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance level	S	7, 24, 44	Citizens / Tourists	Rio Marina Portoferraio
Fuel mix		7,44	Citizens	Elba island
Energy consumption	DC	7,44	Citizens / Tourists	Rio Marina Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	New road EV regulations in city centre
Town police of Portoferraio	New road EV regulations in city centre
Municipality of Rio Marina	New road EV regulations in city centre

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Cultural	Institutional	Similar existing regulations of other municipalities will be taken into account	moderate

5.11 Measure ELB 5.1 - Island freight logistics for tourist services

Description

Realization of freight distribution services for improving the overall logistics processes in Elba territory.

Moreover other services for tourist will be defined and operated in order contribute to foster the “car independent lifestyle”

Objectives and outputs

Improve the overall quality of ELBA island by reducing air and noise pollution, guaranteeing at the same time the efficiency of good delivery to shops and tourist facilities.

Outputs: Some logistic services to help the tourist and citizen to receive the freight in a eco sustainable way

Innovative aspects

The innovative aspect is the creation of logistics services with the use of environmentally friendly commercial vehicles

Research and technology development

The “Shared Elba Mobility Agency” could coordinate the logistic services

Situation before CIVITAS

In the past, some specific low energy impact services have been designed and operated during a short period under the LIFE ELBA project. The results of this demonstration will be the base for defining, designing and operating a specific freight distribution services.

Inter-relationship with other measures

This measure is linked to the Elb 5.2 (SULP)

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Awareness level	Citizens/Tourists awareness index		50% Vs 10% s 40% n
Society	Satisfaction level	Citizens/Tourists satisfaction index		80% Vs 10% s 10% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Awareness level		10, 37, 44	Citizens / Tourists	Elba island
Satisfaction level	S	10, 37, 44	Citizens / Tourists	Elba island

Stakeholders involvement

Stakeholder name	Activities description
Hotels and accommodation services	Organisation of the supply freight delivery service for tourists
Transport Operators	Supply freight delivery for tourists

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Institutional	Meeting with interested stakeholder	moderate

5.12 Measure ELB 5.2 - Sustainable ELBA Logistics Plan

Description

Production of the Sustainable ELBA Logistics Plan including the definition of a common normative framework and the identification of specific solutions for freight consolidation and delivery.

Objectives and outputs

Reduction of the number of commercial vehicles trips and improvement of the efficiency of freight delivery processes; reduction of freight transport environment impacts; improvement of overall Elba Island accessibility and quality for residents and tourists with reduction of commercial vehicles congestion and pollution emissions.

Outputs: Sustainable logistic plan for all the island

Innovative aspects

The improvement of freight processes generates significant benefits in traffic flows, both on roads network linking the villages with urban areas, with positive effects for tourist circulation. Moreover the summer pedestrian zones, during the hours with high tourists presence, will be free from commercial traffic.

In addition, a more organized freight distribution guarantees a timely and adequate supplies to all tourist facilities such as hotels, restaurants, bars, beaches, etc.

Research and technology development

The development of the SULP for the overall Elba Island is based on the consolidated methodology developed by ENCLOSE Project (IEE Programme 2012-2014), coordinated by MemEx. This methodology foresees a cooperation among the different actors and the policy level involvement with a bottom-up approach based on users needs, operators/associations requirements and cities objectives.

Situation before CIVITAS

The Elba SEAP has been defined with some logistics measures identified only at macro level. . Each Municipality has its specific rules for goods delivery (i.e time windows, rules for the commercial vehicles access, etc.)

Inter-relationship with other measures

This measure is linked with Elb 2.1

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Freight Movements (data collected)	Number of collected data (goods vehicle) during one day in the peak season		4000
Society	Awareness level	Optimized freight distribution modality awareness		60% Vs 30% s 10% n
Society	Acceptance level	Authorities acceptance level		50% Vs 10% s 40% n
Transport System	Freight load level (new)	Average % load factor of vehicles	0,4	60% Vs 10% s 30% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Freight Movements (data collected)	S/E	7, 37, 44	Freight distributor operators	Elba island
Awareness level	S	7, 37, 44	Freight distributor operators	Elba island
Acceptance level	S	7, 37, 44	Elba Municipality Authorities	Elba island
Freight load level (new)	S	7, 37, 44	Freight transport operators	Elba island

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	SULP Political approval and adoption
town police of Portoferraio	
Municipality of Rio Marina	
Municipality of Porto Azzurro	
Municipality of Capoliveri	
Municipality of Marciana	
Municipality of Marciana Marina	
Municipality of Campo nell'Elba	
Municipality of Rio nell'Elba	
Confcommercio	Collaboration in the provision of data related to users' needs for the SULP elaboration
Confesercenti	Collaboration in the provision of data related to users' needs for the SULP elaboration

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Organizational	Deep analysis of the logistics activity in Elba	moderate

5.13 Measure ELB 6.1 - Combined products for tourism and mobility: the accommodation and mobility package

Description

The measure is based on several steps and actions to be implemented in an interrelated way in order to develop the integrated “tourism + mobility” package. The core aspect is that tour operators/hotels/camping shall make an agreement with transport operators for offering special packages that include accommodation and, i.e., PT passes, taxi, bikes, shared vans etc. in order to reduce tourists' use of their own car to move on the island.

Objectives and outputs

Significant increase of the number of tourists coming at ELBA without car or, at least not using the car for the inside island trips. This will lead to an overall reduction of pollution (air and noise), emissions, traffic congestion and energy consumptions.

Outputs: several integrated “tourism + mobility” package to be agreed with the hotels owners

Innovative aspects

An innovative aspect of this measure is the “safety option”: tourists shall be sure to be able to leave the island at whatever time they want, in case of need even if they do not have their car. This can be achieved by a specific agreement with transport operators or, better, taxi providers offering, i.e., rides at special prices for tourists with the “accommodation + mobility” package.

Research and technology development

No technology

Situation before CIVITAS

In Elba island no package accommodation/mobility exists. Some hotels bought electrical bikes to be rented to their guests in very limited range

Inter-relationship with other measures

This measure can be linked to Elb 7.1 and Elb 7.3

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Satisfaction level	Accommodation owners satisfaction index		70% Vs 10% s 20% n
Society	Satisfaction level	tourists satisfaction index		70% Vs 10% s 20% n
Society	Utilization level - (new)	Number of packages delivered to the tourists in peak season		64000

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Satisfaction level	E	7,44	Tourists	Elba island
Satisfaction level		7,44	Tourists	Elba island
Utilization level - (new)	S	7,44	Tourist/ Accommodation owners	Elba island

Stakeholders involvement

Stakeholder name	Activities description
Unione albergatori	Tourists needs information and tourists package adoption
Associazione albergatori	Tourists needs information and tourists package adoption
PTO	Transport offers to hotels for tourists
Byke/cars/scooters renting companies	Transport offers to hotels for tourists

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic	Political / strategic	Meetings with stakeholders to agree on integrated packages	Moderate
Facilitating cultural circumstances and life style patterns			

5.14 Measure ELB 7.1 - Improved Public Transport services for tourists

Description

The measure interests two interrelated aspects:

- Definition of new PT service plan for answering the tourist and residents needs and making the service more efficient resulting in an increase of the bus occupancy index;
- Definition, procurement and implementation of some specific collective services for tourist during summer period.

Objectives and outputs

To improve PT services for tourists and Elba Island accessibility, and to expand and enhance the quality of tourist services offer, reducing the use of cars and related emissions. Definition of specific collective services focused on tourists needs.

Outputs: 1 Plan for PT services for tourists; some specific summer collective services implemented.

Innovative aspects

The innovative aspect of this measure is the agreement to increase the TPL service between the municipalities of Portoferraio and Rio Marina with the public transport companies CTT Nord operating on the island of Elba and TIEMME operating in connection to the mainland port and railway station.

Research and technology development

No technologies

Situation before CIVITAS

Currently, the public transport service are designed taking into account the resident needs (not fully complied) without specific solutions for the needs of tourists. Moreover it is clear at level of Local Administrations and Transport operator that only the 14% of the overall PT offer is exploited. Some ideas for restructuring the PT services are provided by the Local Transport Operator.

Inter-relationship with other measures

This measure is linked to Elb 7.2 and Elb7.3

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport System	Utilization level - (new)	Public transport users/ year	700.000	77.000.000
Transport System	Accuracy of time keeping	Bus fleet control level to verify the regularity of the rides		9.800
Society	Citizens satisfaction with transport system	Users satisfaction level	30	50% Vs 10% s 40% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Utilization level - (new)	DC	7, 37, 44	Citizens and tourists	Elba island
Accuracy of time keeping	S	7, 37, 44	Public transport provider	Elba island
Citizens satisfaction with transport system	S	7, 37, 44	Public transport users	Elba island

Stakeholders involvement

Stakeholder name	Activities description
Municipality of Portoferraio	Agreement and collaboration with local PTO to improve the PT services
Municipality of Rio Marina	Agreement and collaboration with local PTO to improve the PT services
TIEMME	Agreement and collaboration with local Municipalities to improve the PT services
CTT Nord	Agreement and collaboration with local Municipalities to improve the PT services

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Financial	Agreement within Elba municipalities and PT companies	moderate

5.15 Measure ELB 7.2 - Integrated payment for mobility and other services on Elba

Description

Analysis of the Integrated Payment system operated by the PT company in other basins to the specific ELBA situation identifying the main pillars and constraints for the possible extension to the Elba.

Verifying the possibility to implement this extension with the PT company and identification for the main organization/operation and clearing aspects

Identification of some alternative/complimentary solutions for buying the ticket through SMS or/and with specific smart phone app for two or three tariff typology

This measure (SMS solution for buying the PT ticket) has been implemented

Objectives and outputs

To increase the accessibility of the PT services also from the tourists' point of view.

Outputs: 1 SMS system to buy tickets

Innovative aspects

App system to buy tickets

Research and technology development

ICT system to develop the web platform and related App

Situation before CIVITAS

At the moment only the paper ticket is used with different typology of tariff mainly focused on the residents scheme.

Inter-relationship with other measures

This measure is linked with Elb 7.1

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Citizens satisfaction with transport system	Users satisfaction level		50% Vs 10% s 40% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Citizens satisfaction with transport system	S	7, 44	Public transport users	Elba island

Stakeholders involvement

Stakeholder name	Activities description
CTT Nort (PTO)	Implementation of the SMS ticketing and agreement with the municipalities on the ticket fares
Municipality of Portoferraio	Agreement with PTO on the ticket fares
Municipality of Rio Marina	Agreement and collaboration with local Municipality to improve the PT services

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Technological	measure implemented	

5.16 Measure ELB 7.3 - APP for user real time information

Description

ICT devices for the validation of PT service performance and real time information of the bus position to the supplier.

Objectives and outputs

The objective of the measure is the validation of the technical and operational viability of the adoption of such AVL system together with an innovative "knowledge-based" certification module and supporting procedures for the validation of PT service performances and the provision "real time" info services

Outputs: 1 tested device for PT service validation and bus position information (certainly to the provider with the possibility to extend to the users

Innovative aspects

The innovation element is the introduction of a "light" localization systems (AVL) as alternative technical solution to replace the standard AVM system adopted for PT fleet monitoring and management.

This IT system is operating in independent way from the WP4 sharing platform

Research and technology development

The technological solution will be based on the following tools/modules:

- a mobile APP on tablet for providing the positioning data of the vehicles and the events notification by the driver;
- a "knowledge base" certification module for the collection and the validation of data generated by APP;
- a mobile APP on tablet for the provision of bus location.

Situation before CIVITAS

The private bus used by Elba municipalities for people transport in summer season to the beaches do not have any control on their service efficiency (number of the effective trips /day, timetable respect, real time bus position)

Inter-relationship with other measures

This measure is linked to Elb 7.1

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Providers satisfaction with transport system	Provider satisfaction level	40	70% Vs 10% s 20% n
Society	Citizens satisfaction with transport system	Users satisfaction level	40	70% Vs 10% s 20% n

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Providers satisfaction with transport system	S	7, 34, 44	Public transport users	Rio Marina Portoferraio
Citizens satisfaction with transport system	S	7, 34, 44	Public transport providers and users	Rio Marina Portoferraio

Stakeholders involvement

Stakeholder name	Activities description
CTT Nord	APP for PT users with real time information on bus services (linked to AVM)
Municipality of Rio Marina	Agreement with CTT on bus information service
Municipality of Portoferraio	Agreement with CTT on bus information service
PTOs (seasonal)	Additional seasonal transport in peak (summer season)
MemEx	Supply of the monitoring system (CELISO) on the additional seasonal transport

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related	Technological	Memex is deeply studying the prototype	low

6 Local Evaluation plan - Las Palmas de Gran Canaria

6.1 City description

Administrative and geographic description

Las Palmas de Gran Canaria is one of the cities with the best climate in the world thanks to its location, next to the Tropic of Cancer, and also thanks to the trade winds coming from northwest Atlantic. The result is an average temperature of 17°C in winter and 25°C in summer.

The wonderful geographical location of Las Palmas makes the city also the European Capital of Mid-Atlantic and a cultural and financial bridge between Europe, Africa and America. It is the capital city of the island (Gran Canaria), and shares the status of the capital of the Canary Islands with Santa Cruz de Tenerife (Tenerife).

The city is located in the Northeast of Gran Canaria, only 18 kilometres away from the International Airport of Gran Canaria, making it easy to reach by plane in only two and a half hours from Madrid, four hours from the main European cities, and only at a six-hour flight from the American continent.

The geographical conditions that characterize Las Palmas are particular, finding the city divided into two different areas: the “lower” and the “upper” areas. On the one hand, the lower area is completely flat and the most inhabited neighbourhoods are settled down there. On the other hand, the upper zone – which surrounds the lower zone –, is hilly and has slopes, terraces and an irregular distribution of streets and buildings. This complex territory led to an irregular development of the road network and to some accessibility restrictions for pedestrians, cyclists and handicapped people.

Whereas the municipality of Las Palmas de Gran Canaria has an area of 100,55 Km², the island of Gran Canaria has a total area of about 1.560,1 Km². According to the Spanish National Institute of Statistics (INE, <http://ine.es/>), the population of Las Palmas de Gran Canaria was 378.998 inhabitants in 2016. Moreover, it is also important to highlight that the metropolitan area of Las Palmas is ranked amongst the top 10 ones in Spain, with an overall population of 600.000 inhabitants. Las Palmas de Gran Canaria represents the 45% of the overall population of the island of Gran Canaria (845.195 inhabitants in 2016) and the 18% of the Canary Islands (2.101.924 inhabitants in 2016).

Tourism

Regarding tourism, Las Palmas de Gran Canaria beat all the records in 2016 with over 400.000 tourists spending at least one night in the city (over 1.300.000 overnight stays). There are more than 7.000 beds available in the hotels of Las Palmas, as well as some other touristic accommodations (apartments, etc.).

Besides these 400.000 overnight stays, over 650.000 tourists made a one-day trip to the city every year, although they are usually accommodated in touristic resorts located in the south of

the island. Therefore, Las Palmas receives around 1.000.000-1.200.000 visitors per year, which accounts for more than 30% of the overall arrivals at the Canary Islands.

It is also important to point out the increasing significance of an emergent market such as the cruises. Las Palmas is becoming, year after year, one of the hotspots in the Atlantic Ocean. For instance, Las Palmas de Gran Canaria gathered almost 700.000 cruise tourists in 2014, boosting ship supply services and events-related business.

Tourism is one of the top priorities for the city. It is an opportunity to encourage the development of the area, leading to an economic recovery under the premises of sustainability and new technologies.

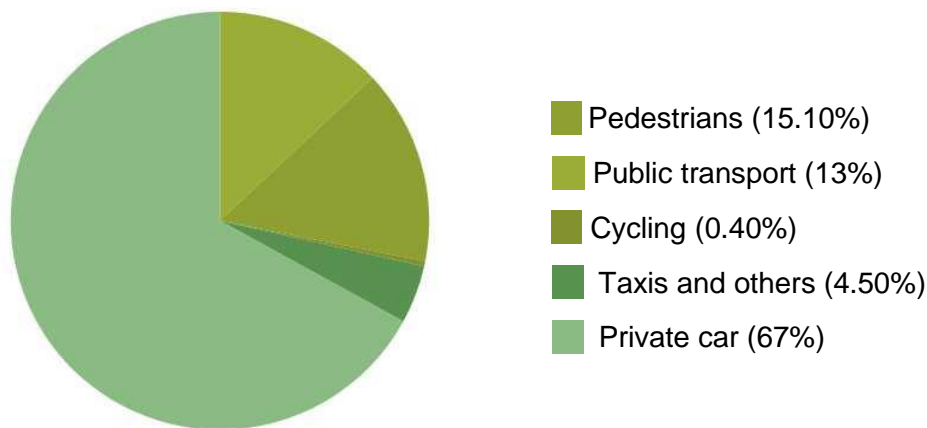
Local authorities are well aware of the importance that the tourism sector has and its influence on all municipal areas. In fact, one of our objectives is to consider the tourist as a local citizen and user of local services and infrastructures. Thus, understanding and taking care of tourists' needs is a key variable to consider in the decision making process of each policy area.

Mobility

Despite Las Palmas de Gran Canaria approved its Sustainable Urban Mobility Plan (SUMP) in 2012 there are still some important barriers to reach a sustainable mobility system in the city.

- There is a lack of an integrated approach in all the mobility policies.
- There is a lack of social awareness about the benefits of sustainable mobility, instead of over-using of cars (and car-rental for tourists).
- Some issues were not addressed in the SUMP, such as walking, urban freight management, scholars' mobility and tourists' mobility.

The current modal split of Las Palmas the Gran Canaria is the following:



In the framework of the CIVITAS DESTINATIONS project, mobility strategies and relevant technical measures will be developed & carried out in order to encourage and allow the use of alternative sustainable modes of transport by tourists and citizens.

6.2 Strategic goals

The strategic goals that the city of Las Palmas de Gran Canaria strives to achieve during the CIVITAS DESTINATIONS project lifetime are the following:

- (1) Increase the use of sustainable urban mobility modes between tourists and citizens.
- (2) Reduce energy consumption, emissions and increase air quality.

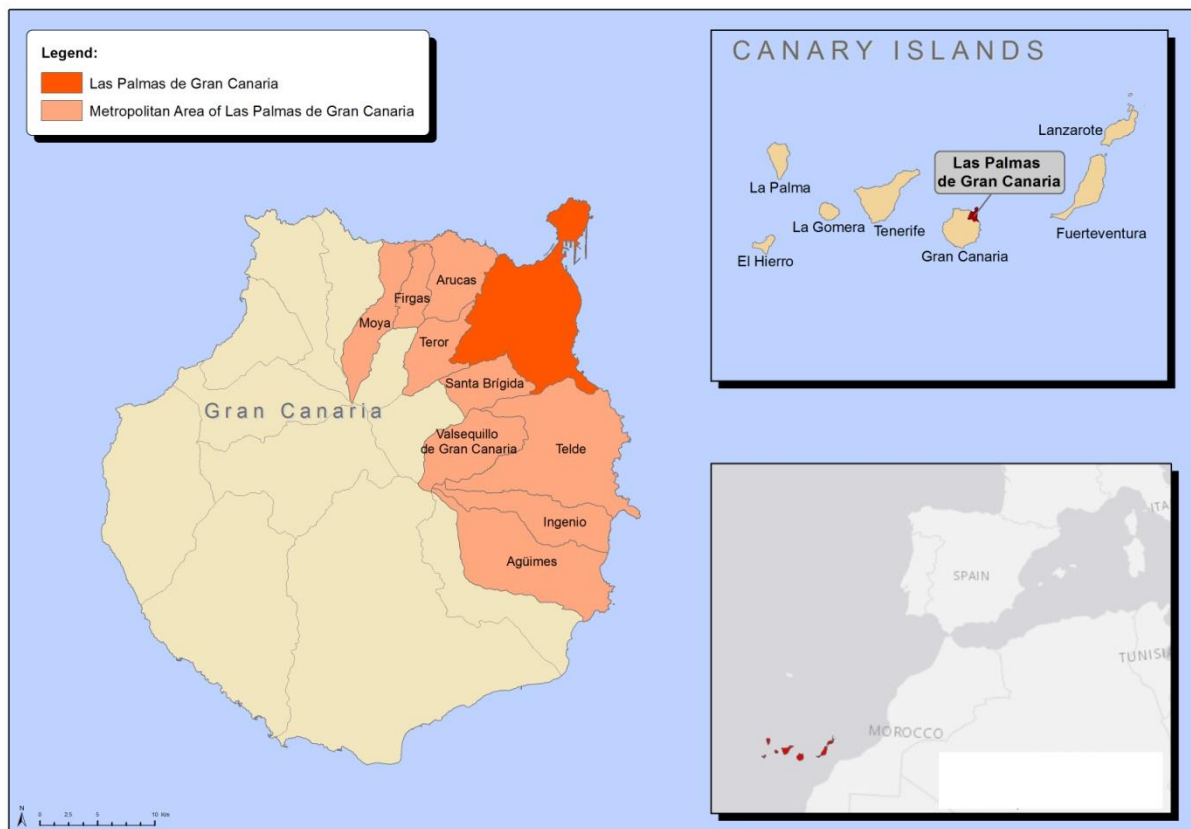
- (3) Improve cost effectiveness and integration of transport and mobility services.
- (4) Regulate and decrease number of freight vehicles in the inner city.

6.3 The relation among the measures

6.3.1 Site map

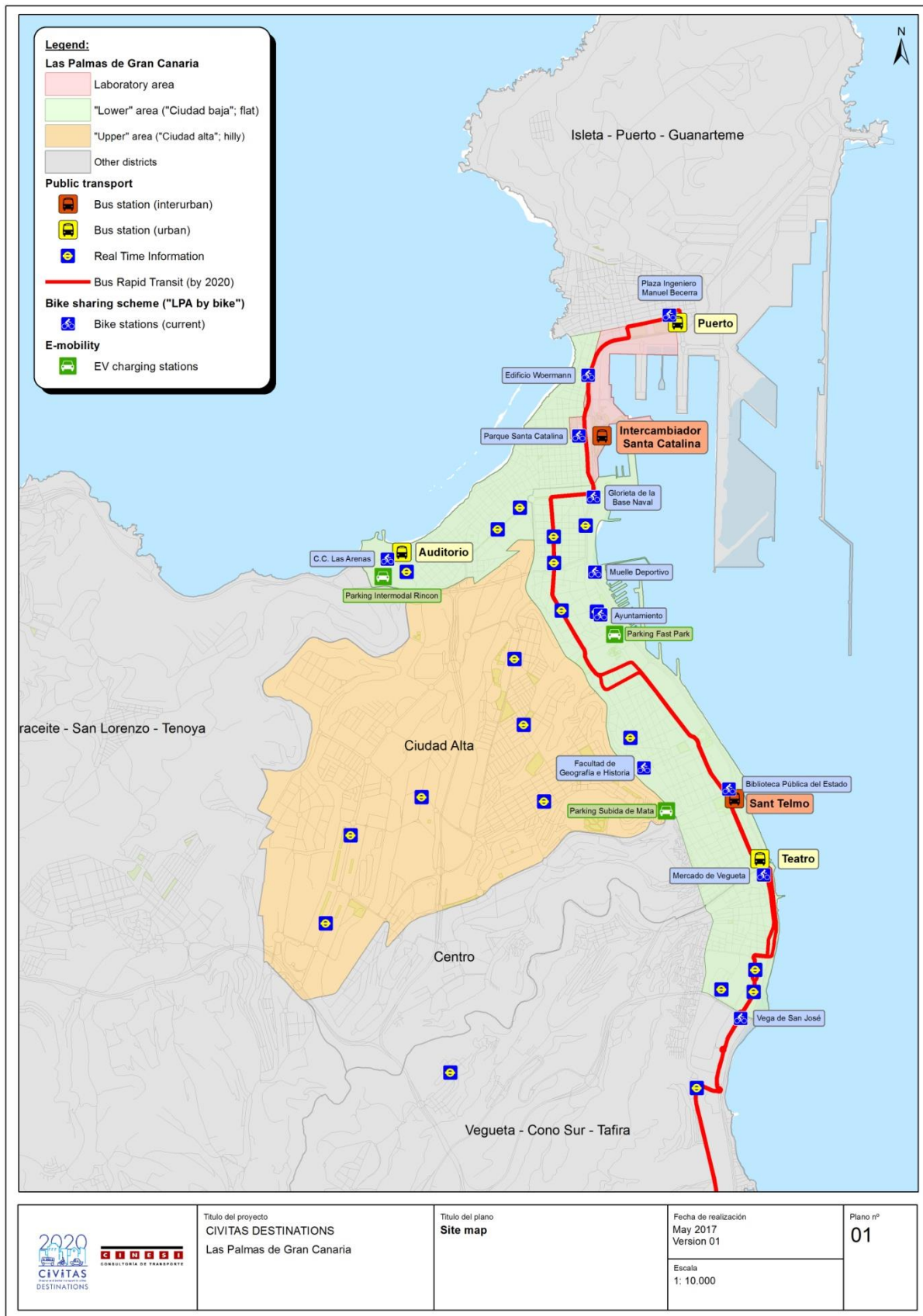
Las Palmas de Gran Canaria is located in the Northeast of the Gran Canaria Island.

Figure 3 - Map of Gran Canaria island and Las Palmas area



The following map shows the impact of all CIVITAS DESTINATIONS measures in the city of Las Palmas de Gran Canaria:

Figure 4 - Map of the DESTINATIONS area where the measure are located



The measures of the CIVITAS DESTINATIONS Action Plan can be classified depending on their impact in the site. First of all, some measures will only have an impact in a specific area of the city – called “Puerto Ciudad” in Spanish – that comprises the northern part of the promenade and gathers some of the most important touristic and leisure hotspots of the city: the “Castillo de la Luz” castle, the “Mercado del Puerto” (restaurants and bars), the “El Muelle” shopping mall, the Santa Catalina Park, the Elder Science and Technology, the Cruise Terminal and the upcoming new Aquarium.

This area will be the Laboratory Area for testing some innovative measures regarding mobility management and to carry out some pilot actions, such as:

- (LPA 2.2) - SMART destination
- (LPA 3.1) - Attractive, safe and accessible public space at major attraction

Secondly, the improvements of the cycling conditions will have their main impacts in the lower area of the city. The Municipality of Las Palmas is working on a Bike Master Plan that will improve the cycling network during the CIVITAS DESTINATIONS project lifetime. Despite this measure is not included in the CIVITAS DESTINATIONS Action Plan, it is strongly linked to the improvement of the bike sharing scheme of Las Palmas (measure LPA 4.1).

Thirdly, the other measures will spread their impact in all over the site:

- (LPA 2.1) - SUMP observatory and participation
- (LPA 4.2) - Fast charging EV
- (LPA 5.1) - D4 Service: The Smart Distribution System
- (LPA 5.2) - Urban Freight Solutions into SUMP
- (LPA 6.1) - Green credits scheme
- (LPA 7.1) - Communication for the introduction of the Bus Rapid Transit (BRT)
- (LPA 7.2) - Electric/ Hybrid buses in the urban bus fleet
- (LPA 7.3) - Real time mobility and tourism information services
- (LPA 7.4) - Integrated payment solutions for mobility and tourism

The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2, 3, etc: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER (Measure Evaluation Results) - Satellite template
R2	Updated version of the MERs
RF	Final versions of the MERs

7 Evaluation plan at measure level

7.1 Measure LPA 2.1 - SUMP observatory and participation

Description

Despite the broader monitoring and evaluation arrangements were defined before the SUMP's adoption in 2012, there is no Department within the Municipality or Public body that keeps track of progress towards achieving the objectives.

Therefore, the SUMP Observatory – or Mobility Office – is intended to monitor and evaluate the implementation of the current SUMP, to update mobility patterns information and to carry out different mobility studies.

Objectives and outputs

The main objectives of this measure are the following:

- Carry out communication and information campaigns about sustainable mobility issues.
- Raise awareness amongst citizens about sustainable mobility benefits.
- Increase the awareness amongst visitors about sustainable mobility options.
- Widely share and communicate the sustainable mobility experiences and outcomes with the citizens and the key local stakeholders.
- Foster key local stakeholders involvement in the decision making process regarding mobility issues.
- Support the Mobility Department of the Municipality of Las Palmas de Gran Canaria when implementing the measures defined in the Action Plan of the city's SUMP.
- Monitor and evaluate the performance indicators of the local SUMP.
- Identify and analyze the mobility patterns of different targets groups (students, tourists, commuters, etc.).
- Identify room for improvement areas for public transport and propose innovative measures.
- Promote innovative approaches to the growing transportation problems such as shared mobility initiatives (car sharing, car pooling, etc.).
- Shift of travel behaviour of tourists towards more sustainable modes.

The outputs of this measure will be the following:

- A new "SUMP Observatory / Mobility Office"
- A document to evaluate the current SUMP of Las Palmas

Innovative aspects

The subcontracting company that will be awarded for operating the Mobility Office in Las Palmas will have to use traffic modelling software to assess the mobility system of the city.

Moreover, the Mobility Office will have to coordinate with the already existing traffic control center.

Research and technology development

It is no necessary to develop any new technologies to implement this measure.

Situation before CIVITAS

Despite Las Palmas de Gran Canaria approved its Sustainable Urban Mobility Plan (SUMP) in 2012 there are still some important barriers to reach a sustainable mobility system in the city, such as:

- The level of coordination between the different Departments within the Municipality is very poor.
- There is a lack of an integrated approach for all mobility policies.
- It is difficult to engage and involve the key local stakeholders in the decision making processes.
- There is no monitoring or evaluation of the SUMP implementation.
- There is a lack of social awareness about the benefits of sustainable mobility.

Inter-relationship with other measures

This measure is related to measure (LPA 3.1) - Attractive, safe and accessible public space at major attraction and (LPA 5.2) - Urban Freight Solutions into SUMP.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Awareness	Index of "awareness" about the measures of the SUMP (Likert scale)		Increase of citizens' awareness on the measures of the SUMP
Society	Satisfaction	Index of "satisfaction" (Likert scale)		Increase of citizens' satisfaction about the quality of the mobility system (transport infrastructure and service by mode)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)

Awareness	S	8	16	40	citizens	city
Satisfaction	S	8	16	40	citizens / tourists	city

The impact evaluation of the SUMP will be also addressed through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

Stakeholders involvement

Stakeholder name	Activities description
FET - Federación de empresarios de transportes	Definition of the urban freight strategy.
AUVA – Asociación de usuarios de vehículos eléctricos	Foster the uptake of e-mobility initiatives.
Cluster Canario de Transporte y Logística	Definition of the urban freight strategy.
Asociaciones de usuarios de bicicletas	Improvement of the bike lanes network. Assessment of the current situation for cycling mobility.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Positional	-	The Mobility Office is an output of the SUMP.	Moderate.
Cultural	-	Citizens of Las Palmas have a strong participatory will.	High.
-	Political / strategic	To involve local politicians in all the urban mobility projects.	High
-	Institutional	During the CIVITAS DESTINATIONS project lifetime the Mobility Office will be managed by a private company that will have to develop and implement the right procedures and routines to avoid the complex administrative structures of the Municipality.	High
-	Involvement, communication	It will be necessary to adopt the SUMP co-creation approach defined by ISINNOVA to foster the involvement of the key local stakeholders and citizens.	Moderate

7.2 Measure LPA 2.2 – SMART destination

Description

The main aim of this measure is to deliver information about tourists' needs by collecting data on where and how tourists are moving around and to clearly identify their favourite walking, cycling and public transport routes. To do that it is planned to use new technologies such as 'Smart metering' systems.

Objectives and outputs

The main objectives of this measure are the following:

- Increase the total share of tourists that use sustainable modes of transport.
- Shift of travel behaviour of tourists towards more sustainable modes.
- Identify and analyze the mobility patterns of different targets groups (students, tourists, commuters, etc.).
- To achieve a more attractive destination for tourists.

The main output of this measure will be the following:

- A new "smart metering" system.

Innovative aspects

Initially, the term smart meters only referred to electronic devices that recorded consumption of energy and communicated that information at least daily back to the utility for monitoring and billing. Nowadays, smart metering devices are also used to enable citizens and organisations to make well informed decisions in a timely fashion. As the value of information can fall rapidly, smart city services need to be capable of capturing relevant information in real-time and distributing it in a format that citizens and organisations can act on immediately.

Research and technology development

Situation before CIVITAS

Nowadays, the city of Las Palmas de Gran Canaria is facing a new kind of tourism, permanently connected, with new needs, and that wants more integration with their travel destinations before, during, and after the visit. Unfortunately, currently there is no way to monitor the mobility trends and travel behaviour patterns of the tourists that visit the city of Las Palmas de Gran Canaria.

This is a clear gap for the decision makers of the Municipality that have to address solutions to this growing mobility without any reliable information.

Inter-relationship with other measures

On the one hand, the kind of information that will be accessible for citizens and tourists has still to be decided because it should be aligned with the Mobility Office' responsible (LPA2.1). For instance, both citizens and tourists will be able to use their mobile devices to plan their travel routes based on real time traffic information, or use maps to see when the next bus is due or find out what concerts are coming up at the city hall. Some other added-value information for tourists could be integrated into the system, such as point history of the local landmarks.

On the other hand, this measure is also related with the measure LPA 3.1 because the smart metering system will be tested in the Laboratory Area of Las Palmas.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Society	Satisfaction	Index of "satisfaction" (Likert scale)		Increase of tourists' satisfaction about the quality of the mobility system (transport infrastructure and service by mode)
Transport	Average modal split (trips)	% of trips	Car: 67% PT: 13% Active modes: 15% Other: 5%	Car: 65% PT: 17% Active modes: 16% Other: 2%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Satisfaction	S	8	16	40	citizens / tourists	city
Average modal split (trips)	S	6	18	42	citizens	city

Stakeholders involvement

Stakeholder name	Activities description
F.E.H.T. – Federación de empresarios de Hostelería y Turismo de Las Palmas.	Definition of the key topics to be monitored by the smart metering system.
Tour operators	Definition of the key topics to be monitored by the smart metering system.
Patronato de Turismo de Gran Canaria	Information about cultural and entertainment events.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Positional	-	The Municipality is willing to improve the so called Laboratory Area.	High
Technological	-	The smart metering systems are an innovative solution.	High
-	Institutional	To involve all key stakeholders within the Municipality since the beginning of the measure definition in order to make it easier to implement the smart metering system.	High

7.3 Measure LPA 3.1 - Attractive, safe and accessible public space at major attractions

Description

The goal of this measure is to create a Laboratory Area for sustainable urban mobility around the “Puerto Ciudad” area (close to the new Aquarium and the Cruise Terminal.) The Aquarium will be a new tourist attraction that expects to have 500.000 annual visitors. Besides, it is important to outline that the annual number of cruise passengers passing through Las Palmas is expected to grow to 1 million by 2020.

The measure will include the following actions:

- (1) To assess the impact of the new Aquarium in the current mobility system of the northern area of the city. This Mobility Plan will have the following steps:
 - Step 1. Identify and analyse the key planning documents, procedures and policies relevant to your local planning process.
 - Step 2. Data collection: surveys, questionnaires, counting, etc.
 - Step 3. Diagnosis. To prepare a baseline analysis to identify and prioritise key problems to be addressed by the Plan. As far as possible, try to quantify the current status of mobility and transport.
 - Step 4. Develop a common vision of mobility and beyond. Set a list of priorities and measurable targets.
 - Step 5. Develop an effective package of measures and clearly define an implementation programme.
 - Step 6. Definition of a set of KPI's, as well as a Monitoring and Evaluation Plan.
- (2) Set up a Laboratory area. To design the public space and to foster universal accessibility solutions within the Laboratory Area.
- (3) Design and implementation of two new bus stops in this area. This new bus stops will be designed in an innovative basis and will be an example of the new BRT stops that will be in place on 2020. The idea is to make them both more useful and more of a social space.
- (4) Design and develop a communication and information campaign of the improved area.

Objectives and outputs

The main objectives of this measure are the following:

- Improve accessibility for the physically impaired people.
- Carry out communication and information campaigns about sustainable mobility issues.
- Raise awareness amongst citizens about sustainable mobility benefits.
- Increase the awareness among visitors about sustainable mobility options.
- Widely share and communicate the sustainable mobility experiences and outcomes with the citizens and the key local stakeholders.
- Foster key local stakeholders involvement in the decision making process regarding mobility issues.

- Support the Mobility Department of the Municipality of Las Palmas de Gran Canaria AND THE Mobility Office (LPA 2.1) when implementing the measures defined in the Action Plan of the city's SUMP.
- Identify and analyze the mobility patterns of different targets groups (students, tourists, commuters, etc.).
- Shift of travel behaviour of tourists towards more sustainable modes.

The main outputs of this measure are the following:

- A Mobility Plan for the Laboratory Area around the new Aquarium ("Puerto Ciudad" in Spanish).
- Two new bus stops (a pilot of the new BRT' bus stops that will be implemented in 2020).
- Stations of the public e-bike system (LPA 4.1).
- Charging stations for electric vehicles (LPA 4.2).

Innovative aspects

There are some innovative aspects related to this measure. First of all, to set up a Laboratory Area in the city to implement pilot measures to foster a sustainable mobility system in the city and to evaluate their effectiveness.

Secondly, we are going to use a traffic modelling software to assess the current mobility situation in this area. This software will also be used to assess the impact analysis of the future scenarios (do-nothing-scenario, business-as-usual scenario, BRT scenario, etc.).

Research and technology development

We will also use Scout cameras for the traffic data collection of this measure. Scout cameras are the industry leading traffic counting devices, built for reliable, unattended field operation for days at a time. They provide the optimal setup for a variety of traffic studies, and are easy and safe to setup and operate at the roadside.

Situation before CIVITAS

Nowadays, plenty of touristic and leisure attractions are organized in the "Puerto Ciudad" area (which is the Laboratory Area for the CIVITAS DESTINATIONS project), and a lot of events are held around all year long.

Inter-relationship with other measures

Elements from other measures will be combined in the Laboratory Area:

- Bus stops with real time information panels (LPA 7.3).
- Stations of the public e-bike system (LPA 4.1)
- Charging stations for electric vehicles (LPA 4.2)
- Integrated payment solutions to combine mobility and visit to the tourism attraction (LPA 6.2)

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Society	Physical accessibility towards transport	Index of "accessibility perception" (Likert scale)	-	Increase of citizens' perception of physical accessibility of the transport services.
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)
Transport	Congestion levels	Average vehicle speed over total network	-	10% reduction of the average speed
Transport	Traffic levels	Average vehicles per hour by vehicle type (peak hour)	The Annual Average Daily Traffic (AADT) of the GC-1 motorway is around 150,000 vehicles/day (≈ 15,000 vehicles at peak hour).	5% reduction of the AADT
Transport	Opportunity for walking	Length of the traffic calmed and car-free/pedestrianized streets	25.989,09 meters: – Zone 30: 18.329,97 m – Living streets / Shared spaces: 945,73 m – Pedestrian zones: 6.713,37 m	20% increase of the length of traffic calmed streets
Transport	Opportunity for cycling	Length of roads and streets with bike lanes and 30 km/h speed limit	31.342,97 meters: – Length of bike lanes: 5.353,88 m – Zone 30: 18.329,97 m – Living streets / Shared spaces: 945,73 m – Pedestrian zones: 6.713,37 m	20% increase of the length of bike lanes and traffic calmed streets

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Physical accessibility towards transport	S	8	16	40	citizens / tourists	demonstration area
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city
Congestion levels	DC	6	18	42	citizens	demonstration area
Traffic levels	DC	6	18	42	citizens	demonstration area
Opportunity for walking	E	6	18	42	citizens / tourists	demonstration area
Opportunity for cycling	E	6	18	42	citizens / tourists	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Las Palmas Port Authority	It is responsible for the part of the harbour next to the city downtown. Therefore it is a key local stakeholder when planning to implement urban changes in this part of the city.
“El Muelle” shopping mall	It is the main commercial mall of the area. Information and dissemination contribution.
New Aquarium “Poema del Mar”	This will be the main hotspot of this area. We are looking for a close collaboration with them to promote sustainable mobility measures amongst tourists. Information and dissemination contribution.
F.E.H.T. – Federación de empresarios de Hostelería y Turismo de Las Palmas.	It is important to strengthen relationship with this key local stakeholder because their associates are in close contact with tourists during their stay in Las Palmas de Gran Canaria. Information and dissemination contribution.
Gran Canaria Tourism Board	Collaboration in the information and disseminations campaign about the Laboratory area.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic	-	The key political stakeholders agree on the need of improving this area of the city.	High
Positional	-	The Municipality is willing to improve the "Puerto Ciudad" area.	High
-	Financial	To involve some other Public Administrations in all the decision making process.	Moderate.
-	Spatial	An important part of the "Puerto Ciudad" area is located within the Las Palmas harbour, which depends directly from the National Government. Therefore, it is necessary to involve Las Palmas Port Authority in all the decision making process.	High.

7.4 Measure LPA 4.1 – Public e-bike system

Description

The aim of this measure is to improve the existing bike sharing system of Las Palmas (“**LPA by bike**”: <http://www.bybikepa.com/>) by purchasing 20 e-bikes, 400 conventional smart bikes and 2 bikes accessible for the physically impaired. Moreover, the number of stations will increase with the implementation of 40 new stations with 520 anchor points. Five of these forty new stations will be “smart totems” and will be placed at the main touristic hotspots of the city (for instance, at the Laboratory Area of the measure LPA 3.1).

The main tasks of this measure will be:

- Develop tender documentation.
- Award tender process.
- Study of the new locations, linked to the main touristic hotspots.
- Development of a business model.
- Definition of the communication strategy.
- Development of a software platform for the improved system (stations, App, website, etc.). This platform will be available for visitors and residents to show in real time the available bikes, location of the bike stations, etc.
- Purchase of the equipment.
- Installation and introduction of the system.
- Demonstration of the system and evaluation of its use.

Objectives and outputs

The objectives of this measure are the following:

- Increase the use of cycling by reducing the use of private vehicle.
- Improve accessibility for the physically impaired.
- Introduction of innovative biking systems and vehicles.

The expected outputs of this measure are the following:

- 40 new stations (5 of them will be smart totems that will be placed at touristic areas);
- 520 anchor points;
- 20 e-bikes;
- 400 conventional smart bikes;
- 2 bikes for handicapped people;
- A new software platform for the "LPA ByBike" system.

Innovative aspects

There are some innovative aspects regarding this measure.

Firstly, those aspects related to kind of bicycles and stations that will be purchased. As described above, SAGULPA will purchase a mix of different bicycles – e-bikes, smart bikes

and bikes for disabled people – in order to meet the needs of a wide range of target groups: students, tourists, seniors, etc. Electric bikes are an alternative form of urban transportation that provide all the advantages of a regular bicycle: fun exercise, free parking, zero emissions, and freedom from gridlock, while eliminating one of the bicycle's more serious drawbacks, lack of power. Smart bikes are conventional bikes that could easily transformed into e-bikes.

Secondly, another innovative aspect is that SAGULPA will analyze different management alternatives for the bike sharing system under the WP8 of the CIVITAS DESTINATIONS project. While up to now the service is free of charge, one objective of this measure is to find new ways of generating revenue (advertising, day tickets for visitors, yearly fee for residents) in order to ensure the viability of the service on the mid and long term.

Research and technology development

The development of a new software platform will be the main technological development of this measure. This new software platform will feed the official mobility website and app of Las Palmas to offer real time information to the users (closest stations, free anchor points, type of bikes available, etc.). The information will be shown in several languages considering the main tourists groups that visit the city.

Situation before CIVITAS

Nowadays, the bike sharing system of Las Palmas de Gran Canaria has 150 bikes and 13 stations. The Municipality of Las Palmas is currently working on a Bike Master Plan that will improve the cycling network during the CIVITAS DESTINATIONS project lifetime. Despite this measure is not included in the CIVITAS DESTINATIONS Action Plan, it is strongly linked to the improvement of the bike sharing scheme of Las Palmas (LPA 4.1).

Inter-relationship with other measures

This measure is related to the measure LPA 3.1 because some of the new “smart totems” stations will be placed in the Laboratory Area. It is related too with the measure LPA 2.1.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)

Society	Satisfaction	Index of "satisfaction" (Likert scale)	-	Increase of citizens' satisfaction about the quality of the mobility system (transport infrastructure and service by mode)
Society	Bike availability	Bikes owned per 1000 population	-	5% increase of the bicycle availability
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)
Transport	Average modal split (trips)	% of trips	Car: 67% PT: 13% Active modes: 15% Other: 5%	Car: 65% PT: 17% Active modes: 16% Other: 2%
Transport	Bike sharing availability	Number of bike share bikes / total population	SAGULPA	20% increase
Economy	Operating Revenues	Revenues per pkm or vkm	SAGULPA	20% increase

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Satisfaction	S	8	16	40	citizens / tourists	city
Bike availability	E	8	16	40	citizens	city
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city
Average modal split (trips)	S	6	18	42	citizens	city
Bike sharing availability	DC	6	18	42	citizens	city
Operating Revenues	DC	6	18	42	ByBike LPA users	city

Stakeholders involvement

Stakeholder name	Activities description
Bike users' associations	User needs information that would be important during the design and implementation processes of the system.
Neighbourhood associations	Offer feedback and inform of needs from users and neighbours to keep in mind during the designing and implementation of the system.
F.E.H.T. – Federación de empresarios de Hostelería y Turismo de Las Palmas.	Support to identify the best locations to install the new bike stations and information about tourists travel behaviour and mobility trends.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Cultural	-	The weather conditions are perfect for fostering the daily use of the bicycle in Las Palmas.	High
Positional	-		Moderate
	Organizational	The enlargement of the bike sharing scheme will mean a complete operational and management change.	

7.5 Measure LPA 4.2 - Fast charging EV

Description

SAGULPA will implement 6 charging points in their public parking facilities. Besides that, SAGULPA will also provide information to private operators about the available technologies in order to encourage them to install charging points as well.

The main actions planned are:

- Organize an event for private operators to explain the available technologies for fast charging.
- Purchase of 3 electric mini-vans for SAGULPA to show other fleet operators that e-mobility is a realistic option.
- Communication campaign about electric vehicles and existing fast charging possibilities.
- Demonstration and evaluation of the use of the fast charging points.

Objectives and outputs

The objectives of this measure are the following:

- Increase the use of electric vehicles.
- Introduction of new e-mobility technologies.
- Raise awareness amongst citizens about sustainable mobility benefits.
- Increase the awareness among visitors about sustainable mobility options.
- Widely share and communicate the sustainable mobility experiences and outcomes with the citizens and the key local stakeholders.
- Shift of travel behaviour of tourists towards more sustainable modes.

The expected outputs of this measure are the following:

- 6 electric charging points.
- 3 electric mini-vans for SAGULPA.

Innovative aspects

Provide the possibility to visitors and residents of Las Palmas de Gran Canaria to charge their electric vehicles while they are shopping, working, sightseeing, etc.

In the promotion campaign special attention will be paid to the car rental companies in order to encourage them to include EV's in their fleets and to promote the existing fast charging infrastructure among their clients.

Research and technology development

Situation before CIVITAS

Nowadays, Las Palmas de Gran Canaria has 3 fast charging points at one of its public parking facilities. Moreover, Sagulpa has an electric van and a Twizy within its fleet.

Inter-relationship with other measures

This measure is related to the measure LPA 3.1 because at least one of these fast charging points will be implemented in the Laboratory Area.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Environment	Noise	Index of people troubled by noise (Likert scale)		
Society	Awareness	Index of "awareness" about electric mobility (Likert scale)		Increase of citizens' awareness on the measures of the SUMP
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Noise	DC	12	26	40	citizens	city
Awareness	S	8	16	40	citizens	city
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city

Stakeholders involvement

Stakeholder name	Activities description
AUVA – Asociación de usuarios de vehículos eléctricos	Help promoting the use of electric vehicles
Rental Car companies	Help promoting the use of electric vehicles
Car dealers	Help promoting the use of electric vehicles

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic	-	The Municipality of Las Palmas wants to foster e-mobility.	High
	Spatial	Involve the decision makers of the Municipality in order to identify the best urban spaces for these physical projects.	Moderate

7.6 Measure LPA 5.1 - D4 Service: The Smart Distribution System

Description

INELCAN will design a Transport Management Software (the “D4Service”) to improve the urban freight management in the city of Las Palmas. The D4Service will contribute in the last stage of supply chain (execution) and will help local freight companies to take a business global through effective management of freight flows and increased efficiency throughout the distribution network.

Objectives and outputs

The objectives of this measure are the following:

- Decrease number of freight vehicle in the inner city.
- Optimizing distribution within urban area.

The expected outputs of this measure are the following:

- A new ITS tool for freight management available for freight operators of Las Palmas.

Innovative aspects

The D4Service will provide the most optimal routes for carriers. It will at once manage to plan and execute routing for hundreds of shipments either by consolidating, pooling, and even for multimodal transportation.

The D4Service will allow real-time exchange of shipment information between carrier, distributor, and customer thanks to its track & trace feature. Moreover, this new service will allow regular and competent sharing of shipment information across the organizations through web-based access, increases visibility, accuracy rate of tracking and monitoring, and efficient management & reporting.

Research and technology development

Situation before CIVITAS

The growth of the amount of freight circulating within Las Palmas de Gran Canaria has increased congestion in the past recent years.

Inter-relationship with other measures

This measure is related to measure LPA 5.2 as the D4Service will be an output of the Sustainable Urban Logistics Plan (SULP) that will be drafted in this measure.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Environment	Noise	Index of people troubled by noise (Likert scale)		
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)
Transport	Freight Movements	Daily number of goods / vehicles moving in the area		
Economy	Operating costs	Average operating costs (¿per delivery?)		

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Noise	E	12	26	40	citizens	city
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city
Freight Movements	E	6	18	42	freight operators	city
Operating costs	E	6	18	42	freight operators	city

Stakeholders involvement

Stakeholder name	Activities description
Cluster Canario de Transporte y Logística	Cluster that brings together the leading companies in transport and logistics in the Canary Islands
FET - Federación de empresarios de transportes	The FET is the most representative of land transport in the Canary Islands business organization. The FET is composed of industry associations that include companies of regular passenger transport, school transport, tourist transport, freight transport, machinery and construction, medical transport, taxis, rent a car and limousines.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological	-	Transport Management Systems (TMS) are mature technologies.	Moderate
-	Organizational	Involve key local stakeholders since the beginning of the project.	High

7.7 Measure LPA 5.2 - Urban Freight Solutions into SUMP

Description

Cities experience high impacts (due to pollutant emissions, noise, vibrations, safety hazards, etc.) and consequently high direct and external costs of urban freight operation. The Sustainable Urban Logistics Plan (SULP) of Las Palmas de Gran Canaria will develop a set of efficient measures for facing different and conflicting interests of the various stakeholders involved (Municipality, citizens, shopkeepers, carriers, etc.).

- To improve the existing regulations, being flexible to the changing needs of the different target groups (route optimisation, time windows season adapting, load / unload regulations, traffic planning, etc.).
- Minimize the interference between logistic operations and the rest of traffic or activities.
- Set up of specific partnership agreements between shopkeepers, transport companies and other stakeholders aimed at improving the efficiency of town delivery services.
- Raise enforcement levels of loading bays within the city centre. Minimize the illegal occupation of loading / unloading parking spaces.
- Minimize the illegal occupation of the bus stop bays by urban freight vehicles.
- Decrease of the negative external costs due to logistic operations (emissions, noise, vibrations, safety hazards, occupancy of the public space, etc.).
- Freight operations integrated with leisure mobility: dedicated delivery programmes providing services for tourists and travellers, luggage transport to/from hotels, etc.

Objectives and outputs

The objectives of this measure are the following:

- Integrate logistics operations within the overall urban mobility system.
- Improve the efficiency and cost-effectiveness of the transportation of goods (e.g. increase load factor, decrease the number of trips, less mileage, less delays, empty runs reductions, etc.).
- Enhancing local economic development by promoting new business opportunities.
- Better urban environment and better living conditions (city attractiveness, etc.).
- Improve city access regulations.

The expected outputs of this measure are the following:

- A Sustainable Urban Logistics Plan (SULP).

Innovative aspects

Increasing the liveability of the urban environment is a key factor for attracting tourists. The uptake of a SULP will be an opportunity to promote innovative solutions such as electric mobility (green vehicles and low/zero emission technologies, ICT platform, communication systems, innovative vans/vehicles, web services, etc.) and value added services (home delivery services, reverse logistics, etc.).

Research and technology development

Situation before CIVITAS

Despite Las Palmas de Gran Canaria has already developed a SUMP (2009-2012) there is a need for analysing urban freight solutions in the city. Thanks to CIVITAS DESTINATIONS a Sustainable Urban Logistics Plan (SULP) will be integrated into the existing SUMP.

Inter-relationship with other measures

This measure has a strong link with the measure LPA 5.1. As a consequence of the uptake of a Sustainable Urban Logistics Plan (SULP), the city of Las Palmas de Gran Canaria will promote the use of a smart distribution system to improve the efficiency of urban freight.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Environment	Noise	Index of people troubled by noise (Likert scale)	-	
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)
Transport	Freight Movements	Daily number of goods / vehicles moving in the area	-	

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Noise	E	12	26	40	citizens	city
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city
Freight Movements	E	6	18	42	freight operators	city

Stakeholders involvement

Stakeholder name	Activities description
Cluster Canario de Transporte y Logística	Setting requirements and logistics baseline and definition of the local urban freight strategy.
FET - Federación de empresarios de transportes	Meetings and focus groups leading, interviews, briefings to a project advisory group.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
-	Involvement, communication	Carriers are not used to collaborate between them. Therefore, we should involve them since the beginning of the project.	Moderate
Positional	-	The Sulp is directly linked with the Sump of Las Palmas.	High

7.8 Measure LPA 6.1 - Green credits scheme

Description

The Municipality of Las Palmas de Gran Canary and Guaguas Municipales will introduce a Green credit scheme to encourage citizens to adopt more sustainable lifestyle patterns by providing tangible economic rewards. For instance, public transport users will accumulate points as rewards for using a sustainable mode of transport. These accumulated points can be used like cash to purchase products and services at a variety of places, such as shops, museums and theatres. The scheme is envisaged to contribute towards reducing the greenhouse gas emissions.

The green credit scheme will be supported by a website and a mobile App. The rationale for the users is clear: the more journeys carried out with sustainable options, the more credits one can earn. With this tool each daily mobility option counts for earning advantages. This scheme could also integrate all the useful information resources needed for tourist and residents such as maps, directions, events, attractions and any other useful information.

This new/improved app will have three essential purposes:

- Real time information about the main events, shopping discounts and other highlights for residents and tourists.
- Become a tool to change mobility behaviour.
- Provide a positive impact in order to promote local commerce.

This new system will be tested first in a restricted pilot group. After fine-tuning of the beta test, the tool will be extended to a wider scale at a local level together with the official launching for the bigger public.

7.8.1 Objectives and outputs

The objectives of this measure are the following:

- Introduction of an innovative green credit scheme at local level, based on a mobile application and web platform.
- Involvement of at least 10 institutional and business partners.
- Raise the awareness towards sustainable modes of transport.

The expected outputs of this measure are the following:

- A Green credits scheme.

Innovative aspects

The green credits scheme is an innovative approach to attract both citizens and tourists towards sustainable modes of transport. On the one hand it will promote sustainable mobility for both locals and tourists. On the other hand it will boost local economy by pushing users to purchase products and services at a variety of places, such as shops, museums and theatres.

Research and technology development

Situation before CIVITAS

Nowadays, Las Palmas de Gran Canaria has a contactless smart card system that can be used to pay for the urban public transport trips. The urban public transport company (Guaguas) has already developed a website and an App, and all the travel data is stored in a database that could be improved and developed in order to integrate the green credits scheme.

Inter-relationship with other measures

No.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Satisfaction	Index of "satisfaction" (Likert scale)		Increase of citizens' satisfaction about the quality of the mobility system (transport infrastructure and service by mode)
Transport	Average modal split (trips)	% of trips	Car: 67% PT: 13% Active modes: 15% Other: 5%	Car: 65% PT: 17% Active modes: 16% Other: 2%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		8	16	40		
Satisfaction	S	8	16	40	citizens / tourists	city
Average modal split (trips)	S	6	18	42	citizens	city

Stakeholders involvement

Stakeholder name	Activities description
Local commerce and shops	These stakeholders could collaborate offering discounts, gifts and promotions that make attractive the use of the green credits scheme.
Shopping centres	
Leisure and tourism attractions	
Other local institutions	They will contribute in the design and specifications of the green credits scheme.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
-	Institutional	To involve all the key local stakeholders in order to overcome the regulations' barriers.	High
Technological	-	This kind of loyalty programs have successfully been implemented in other cities.	Moderate

7.9 Measure LPA 7.1 - Communication for the introduction of the new Bus Rapid Transit (BRT)

Description

The Bus Rapid Transit (BRT) will provide a modern transit service connecting major employment, education and recreation destinations through Las Palmas de Gran Canaria (historical centre of 'Vegueta', the shopping area of 'Triana', museums, the cruise terminal, the new Aquarium or two intermodal stations). The BRT would provide improved access to the city's most vital, most travelled and most congested corridor (the lower area of the city).

The BRT construction works might cause some inconveniences to neighbours and visitors. For this reason, the main focus of this measure is to carry out a communication campaign in order to raise awareness amongst citizens and tourists about the benefits of this new transit service.

Therefore, the core of this measure is to record a 3D video simulating a real BRT trip (of about 4 minutes). The video will also be available in other versions like full or ultra high definition (Full HD o 4K).

Besides this, dedicated information sessions for target users as elder people, journalists, students or neighbourhood associations will be carried out within the LPA 7.1 measure.

Objectives and outputs

The objectives of this measure are the following:

- Raise awareness of the benefits and impact of Bus Rapid Transit (BRT) system.
- Achieve an effective introduction and public acceptance of a new transport system that must become fully integrated in the mobility patterns of the city.

The expected outputs of this measure are the following:

- A communication and information campaign about the new BRT

Innovative aspects

In order to deliver a high quality 3D production, a comprehensive and multidisciplinary team will be needed. Moreover, technical equipment as camera cars, HD drones, movie set, etc. will be used.

Research and technology development

Situation before CIVITAS

Despite the BRT project has already been adopted by the Municipality, Guaguas Municipales is currently working on the final versions of the construction projects. It is planned that the

BRT construction will begin in a few months and to end by the end of the CIVITAS DESTINATIONS project lifetime. The BRT is expected to be fully operative in 2020.

Inter-relationship with other measures

This measure is related to measure LPA 7.3 because real time information services devices will be installed at BRT stops. It is also related to measure LPA 7.4.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Awareness	Index of "awareness" about the new BRT (Likert scale)		Increase of citizens' awareness on the new BRT
Society	Acceptance	Index of "acceptance" about the new BRT (Likert scale)		Increase of citizens' acceptance of the new BRT

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		8	16	40		
Awareness	S	8	16	40	citizens	city
Acceptance	S	8	16	40	citizens	city

Stakeholders involvement

Stakeholder name	Activities description
LPGC	Promotion of the BRT and carry out the construction work
Geursa	Elaborate the BRT project and carry out the construction work
Gran Canaria Film commission	Prepare tender documentation for the BRT 3D film
Journalist	Attend information sessions and communication
Neighbourhood associations	Attend information sessions
Schools	Attend information sessions

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Planning	-	The BRT service is the most important project of the city for the next 5 years.	High

7.10 Measure LPA 7.2 - Hybrid buses in the urban bus fleet

Description

Three hybrid buses will be purchased in order to replace the oldest Diesel vehicles. The aim of this measure is to contribute to a reduction of fuel consumption and greenhouse gas emissions.

The measure will include the following actions:

- Definition of specifications and preparation of tender documentation. Market analysis for hybrid buses, choosing the appropriate vehicles for each case (orography, number of passengers, type of service, etc)
- Identification of the oldest diesel units to be replaced.
- Selection of routes. These routes will have their origin/ending near attractive, safe and accessible public space (LPA 3.1 measure).
- Purchasing of 3 hybrid buses.
- Testing and demonstration of the new vehicles in normal operation.
- Promotion of clean vehicles.

Objectives and outputs

The objectives of this measure are the following:

- Renewal of the urban bus fleet with more ecologic vehicles.
- Promotion of a vision of the city committed with sustainable mobility.

The expected outputs of this measure are the following:

- 3 hybrid buses.

Innovative aspects

The hybrid buses will reduce noise and air pollution and thus contribute to a cleaner and more attractive destination. The promotion on the local level will raise the interest for clean buses among other bus fleet operators in the Canary Islands regions.

Research and technology development

Situation before CIVITAS

Currently Guaguas Municipales only has 1 hybrid bus amongst an overall fleet of 244 buses.

Inter-relationship with other measures

No.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	CO2 toe	139,621 ton of CO2/year for private cars 2,868 ton of CO2/year for public transport vehicles (buses)	130,877 ton of CO2/year for private cars 2,535 ton of CO2/year for public transport vehicles (buses)
Environment	Noise	Index of people troubled by noise (Likert scale)		
Society	Awareness	Index of "awareness" about the new hybrid buses (Likert scale)		Increase of citizens' awareness on the new hybrid buses
Society	Satisfaction	Index of "satisfaction" (Likert scale)		Increase of citizens' satisfaction about the quality of the mobility system (transport infrastructure and service by mode)
Energy	Vehicle fuel efficiency	Toe	54,757 toe (tonne of oil equivalent) for private cars 11,975 toe (tonne of oil equivalent) for public transport vehicles (buses)	51,328 toe (tonne of oil equivalent) for private cars 10,586 toe (tonne of oil equivalent) for public transport vehicles (buses)

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	40		
CO2 emissions	DC	12	26	40	citizens / tourists	city
Noise	E	12	26	40	citizens	city
Awareness	S	8	16	40	citizens	city
Satisfaction	S	8	16	40	citizens / tourists	city
Vehicle fuel efficiency	E	12	26	40	citizens / tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Hybrid buses suppliers & maintenance	These stakeholders will offer the technical resources needed in order to succeed in the purchasing and later maintenance of the vehicles.
AUVE (Asociación de Usuarios de Vehículos Eléctricos)	Testing and demonstration of the new vehicles in normal operation
Plataforma para el Desarrollo del Vehículo Eléctrico en Canarias	This Foundation of the regional Government of the Canary Islands aims to minimize the existing barriers and enhance the benefits of electric vehicles and to promote and disseminate the advantages of e-mobility. Testing and demonstration of the new vehicles in normal operation.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic	-	The Municipality of Las Palmas wants to foster e-mobility.	High
-	Financial	To involve the Municipality to guarantee the availability of public funds.	Moderate

7.11 Measure LPA 7.3 - Real time mobility and tourism information services

Description

Guaguas Municipales will extend the real time information system at 20 bus stops with screens powered by solar energy. These screens will be provided with new and innovative functionalities such as devices that allow customer to read the current balance of their contactless smart cards, and electronic devices to allow visually impaired to know the updated arrival time by a voice system.

Objectives and outputs

The objectives of this measure are the following:

- Improvement of accessibility to public transport for the visually impaired.
- Implement new communication channels to improve users' experience.
- Improvement of the quality and effectiveness of the information that the tourists and citizens receive about the transport systems.

The expected outputs of this measure are the following:

- 20 real time information equipment at bus stops powered by solar energy.

Innovative aspects

Real time mobility information services at bus stops will be accessible for all target groups (commuters, tourists, disabled people, etc.) and will allow tourists and citizens to know the expected arrival times at the bus stop. Furthermore, current mobility and tourism App in Las Palmas de Gran Canaria will be improved to add these new functionalities.

Research and technology development

Situation before CIVITAS

Las Palmas de Gran Canaria has 809 urban public transport stops, of which 81 of them offer real time information.

Inter-relationship with other measures

This measure is related to measure LPA 3.1 because some bus stops of this area will be supplied with this technology.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Service reliability	Number and percentage of services arriving / departing on time	91,5%	-

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		8	16	40		
Service reliability	DC	8	16	40	citizens / tourists	city

Stakeholders involvement

Stakeholder name	Activities description
CAPMAR	Real time information equipment supplier

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological	-	GUAGUAS already has some bus stops equipped with real-time information devices.	High
-	Financial	To involve the Municipality to guarantee the availability of public funds.	Moderate

7.12 Measure LPA 7.4 - Integrated payment solutions for mobility and tourism

Description

The measure LPA 7.4 will have the following stages:

Stage 1: Development of pricing strategies:

- Development of pricing strategy with Smart Card system that combines two public transport trips with the entry to specific tourist attractions, leisure activities or events.
- Development of a 1 day ticket (24-hour) for tourism and mobility that provides access to urban public transport.

Stage 2: Purchase and installation of ticketing equipment:

The existing contactless smart card system will be extended to the new BRT system. The contactless Smart card system works with MifareDesfire MF3 IC D 41 chips. As part of this measure, the following equipment will be installed on the buses of the new BRT network, in order to keep the current ticketing system. In addition, the new pricing strategies that will be developed during Civitas Destinations, which will be used in the BRT system, will be accompanied by:

- 1 ALMEX-Optima ticket machine installed next to the bus driver.
- 2 points for contactless cancellation (RFID of VIX) at each door of the vehicle.

Stage 3: Promotion of the new combined ticket options to the visitors and residents:

- Launching of the new tickets.
- Promotion actions, public demonstrations and evaluation.

Objectives and outputs

The objectives of this measure are the following:

- Increasing of the number of tourists that use sustainable modes of transport by facilitating the way of payment.
- Introduction of new ways of payment solutions better adapted to users' needs, either tourists or neighbours.

The expected outputs of this measure are the following:

- 102 points for contactless cancellation (RFID of VIX).
- 17 ALMEX-Optima ticket machine installed next to the bus driver.
- 1 day (24-hour) tourist and mobility ticket that provides access to urban buses.
- Public transport 2 ways ticket with entry to tourist attraction or events.
- Business case integrating pricing strategies that combine leisure and touristic trips.
- Meetings with tourist partners and stakeholders.

Innovative aspects

This measure aims at integrating pricing strategies that combine leisure and touristic trips into the current pricing strategies of Las Palmas de Gran Canaria's urban public transport.

Research and technology development

The contactless smart card system works with MifareDesfire MF3 IC D 41 chips. The following equipment will be installed on new buses of the BRT network:

- 1 ALMEX-Optima ticket machine installed next to the bus driver.
- 2 contactless cancellation devices (RFID of VIX) at each door of the vehicle.

Situation before CIVITAS

The public transport operator of Las Palmas de Gran Canaria (GUAGUAS) uses the same payment equipment and contactless card system in its fleet. For that reason, the pricing strategies that will be developed during CIVITAS DESTINATIONS project will be implemented based on the current technology.

Inter-relationship with other measures

This measure is related to measure LPA 6.1, where a green credits scheme will be developed.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance	Index of "acceptance" about the new BRT (Likert scale)		Increase of citizens' acceptance of the new BRT

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		8	16	40		
Acceptance	S	8	16	40	citizens	city

Stakeholders involvement

Stakeholder name	Activities description
Tourist attractions	Collaborate to develop a new ticket that combines two public transport trips with the entry to specific tourist attractions, leisure activities or sport events.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
-	Financial	To involve the key local stakeholders right at the beginning of the project to raise their to contribute financially.	High
-	Organizational	To involve the key local stakeholders right at the beginning of the project.	High
Technological	-	This technology is already mature.	Moderate

8 Local Evaluation plan - Limassol

8.1 Cyprus island and Limassol city

Cyprus is a small island located in the Mediterranean Sea. It is located south of Turkey, west of Syria and Lebanon, northwest of Israel, north of Egypt and east of Greece. It is the third largest island in the Mediterranean sea. It has an area of 9,251km² and a population of 840,407 (according to the Statistical Service of Cyprus for the 2011).

Limassol is located in the south coast of Cyprus. It is the second largest city in population in Cyprus with 235,330 (according to the Statistical Service of Cyprus for the 2011) inhabitants and an area of 1,396 km². Limassol is a year round tourist destination that attracts 13% of the total arrivals of Cyprus.

The Limassol region consists of six municipalities and many community boards. The main and bigger local authority is the Limassol Municipality. The regional municipalities are organised in a body called the Union of Limassol Municipalities, the Chairman of which is the Mayor of Limassol. The Municipalities operate independently but when needed they come together on certain issues to promote political positions or exploit synergies.

Tourism is a major industry for Limassol and Cyprus in general. It has an increasing contribution to the country's Gross Domestic Product, especially with the downturn of the Banking and Financial Services sectors during the last years. Even though the country has gone through very difficult financial conditions, the tourism industry managed to maintain its arrivals with minimum losses under 5 %.

The majority of residents mainly travel by car. This is due to the lack of a convenient public transport system for decades which led people to lose faith in it. The increasing number of cars also made it difficult for cycling to grow. This trend is now changing. In 2010 the public transport system was redesigned. The Limassol bus company has modernized its buses and service and PT is becoming increasingly popular especially with students and retired people. Limassol experienced a 250% increase in passenger traffic in public transport since 2012 (350% increase from 2010). Nowadays cycling is also growing fast mostly as a hobby and for leisure travelling (rather than for going to work, etc).

The biggest problem faced at the moment for the provision of efficient public transport is red tape. The connection of Limassol with 104 communities in the region includes mainly non-viable routes. Urban routes on the other hand serve 4 million passengers annually compared to ½ million for rural routes. Communication between the Limassol bus company and hoteliers should strengthen even further. In many areas it is impossible to add bus lanes due to the existing road design. The lack of punctuality for some routes has negative effects on passenger traffic. There is no hop-on hop-off bus for a tour of the town.

Tourists and their needs were not considered at all when the PT service was initially designed, therefore changes are required to make the service efficient and therefore attractive for them. Limassol is at the first stages of creating the appropriate infrastructure with a few cycling paths in place as well as a few cycling lanes (not properly used at the moment) and a number of cycling routes designed for people to follow. The infrastructure for cyclists inside and outside the city need to be upgraded, along the cycling routes.

Walking paths have also been developed and have become extremely popular especially along the coast. Difficulties for people trying to travel around on foot are evident at the traffic lights, where cars do not respect the crossing areas leaving no space for pedestrians.

Other existing problems include, traffic congestion especially during pick hours, lack of parking spaces leading to cars travelling around in circles trying to find a place to park, noise and pollution. The number of electric vehicles in Limassol is limited. There is a need to work towards increasing the number of electric cars and electric bicycles for rental purposes. This measure will assist in the further decrease of traditional car rentals in favour of more sustainable modes of transport.

Research shows increasing numbers of visitors moving away from car rental towards the use of more sustainable modes of transport. Limassol aims to provide visitors and locals with better services, better infrastructures and appropriate information to be able to use these modes more.

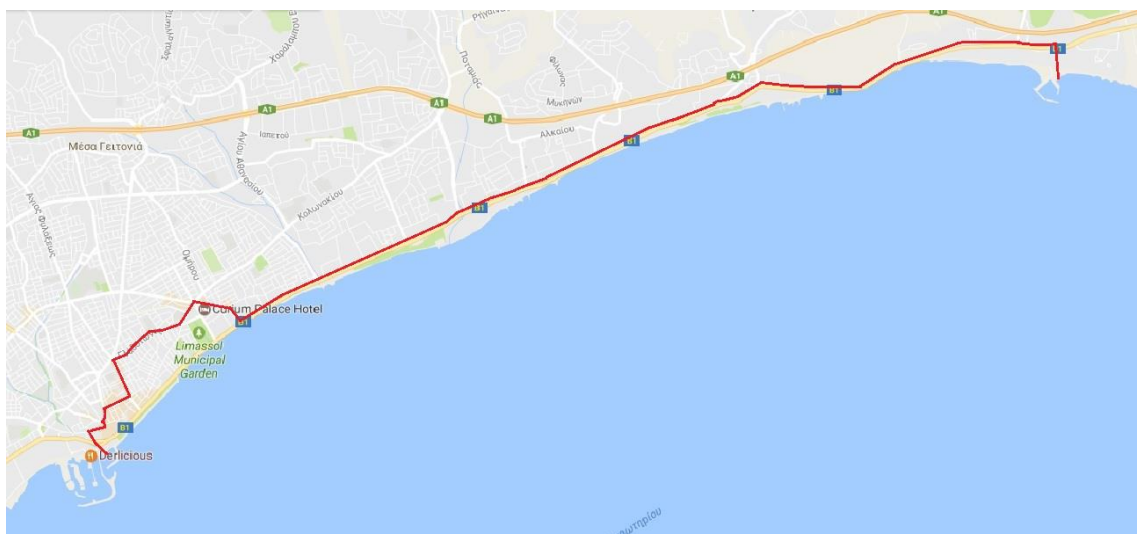
8.2 Strategic goals

The strategic goal is to satisfy the mobility needs of tourism and citizens for a better quality of life. A new planning concept will be able to address transport related challenges and problems of urban areas in a more sustainable and integrative way. The measures will focus mainly on tourists needs for a better quality and sustainable life at the SMTAP area. This action will evolve the area to a more attractive destination for tourists. Tourists will enjoy their vacations with less noise, less CO2 emissions, free space, less traffic, healthier and safer environment and enjoy the SMTAP area of Limassol by using sustainable modes for their transportation.

8.3 The relation among the measures

Site map

Figure 5 - Map of Limassol with the SMTAP area highlighted in red. The SMTAP area will be the area where all the measures will take place.



The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2, 3, etc: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER (Measure Evaluation Results) - Satellite template
R2	Updated version of the MERs
RF	Final versions of the MERs

Measure code	Measure description	Level	Timeline																																																			
			2016				2017												2018												2019												2020											
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
UM 2.1	Sustainable mobility tourist action plan	stages data collection reporting	DE				MS1	MS2	IM	MS4	MS5	MS6	OP	MS7	MS8	MS9	MS10																																					
UM 3.1	Increase cycling and walking in combination with special interest tourist activities as an integrated	stages data collection reporting	DE	MS1	MS2	MS3	IM	MS4	MS5	MS6	MS7	MS8	MS11	R1																																								
UM 3.2	Accessibility for disabled and visually, hearing impaired	stages data collection reporting		DE	MS1	MS2	MS3	IM	MS4	MS5	MS6	MS7	MS8	MS9	MS11	R1																																						
UM 3.3	Safe routes to school	stages data collection reporting	DE				MS1, MS3	MS4	IM	MS5				R1																																								
UM 3.4	Attractive and accessible public spaces to promote intermodal leisure trips	stages data collection reporting	DE	MS1	MS2	MS3	MS4	IM	MS5	MS6	MS7	MS8	MS11	R1																																								
UM 4.1	Electric car rental connecting Limassol town with airport and port	stages data collection reporting		DE	MS1	MS2	IM	MS3	MS4	MS5	MS7			R1																																								
UM 4.2	Expansion of public bike sharing system, include e-bikes	stages data collection reporting		DE	MS1	IM	MS3	B	MS4					R1																																								
UM 4.3	Promote the uptake of electric vehicles, campaign on e-mobility	stages data collection reporting		DE	MS1, MS3	MS4	IM	MS5	MS6	MS7	MS8	OP		R1																																								
UM 5.1	Limassol city centre Urban Freight Logistic Action Plan	stages data collection reporting			DE	MS1	MS2	MS3	IM	MS4	MS5	MS6		R1																																								
UM 5.2	Promotion and creation of network for collecting of used cooking oil	stages data collection reporting			DE	MS1	MS1	MS2	MS3	IM	MS4			R1																																								
UM 6.1	Awareness on the use of sustainable mobility modes for leisure trips	stages data collection reporting		DE	MS1	MS2	MS3	IM	MS4	MS5	MS6			R1																																								
UM 6.2	Combined tourist and mobility products: Green Label Award and Tourist Mobility Card	stages data collection reporting	DE	MS1, MS2			MS3	MS4	IM	MS5	MS6	MS7		R1																																								
UM 6.3	Bicycle challenge: competition between employees of companies	stages data collection reporting		DE	MS1	MS2	MS3	IM	MS4	MS5	MS6			R1																																								
UM 6.4	Smart parking guidance system	stages data collection reporting	DE	MS1, MS3			MS4	MS5	IM	MS6	MS7	MS12	MS7	R1																																								
UM 7.1	Improvement of PT routes, time tables, ticket procedure and bike transportation on buses to make the	stages data collection reporting		DE	MS1	MS2	MS3	IM	MS4	MS5	MS6			R1																																								
UM 7.2	Creation of an electric bus hop on hop off service in the old town	stages data collection reporting	DE	MS1	MS2	IM	MS3	MS4	MS5	OP	MS6	MS7	MS8	R1																																								
UM 7.3	PT traveller information system	stages data collection reporting	DE	MS1	MS2	MS3	IM	MS4	MS5	MS6	MS7	MS8	MS9	OP	R1																																							
UM 7.4	Mobility application and travel planner for smart phones to provide real time information	stages data collection reporting	DE	MS1	MS2	IM	MS3	MS4	MS5	MS6	MS7	MS8	MS9	OP	R1																																							

9 Evaluation plan at measure level

9.1 Measure LIM 2.1 - Sustainable mobility tourist action plan

Description

Stratagem will cooperate with the Limassol Municipality and other relevant stakeholders in the related sector in order to develop a Sustainable Mobility Tourist Action Plan according to the needs. The plan will be focused on tourists needs for a better quality life using sustainable mobility modes. The plan will foster a balanced development of sustainable mobility modes and will minimize the traffic flow of Limassol city centre, which is the centre of tourism.

The Sustainable Mobility Tourist Action Plan will include the following:

Tourists' mobility study to analyse the current situation of the city centre, focussing on roads network, mobility demand and modal split, road safety, traffic, public transport, parking, pedestrians and bicycle services.

Citizens and local stakeholders' involvement in common forums in order to share their suggestions for the Sustainable mobility of the city. Collection of tourists' inputs from questionnaires.

The plan will support the strategic planning and selection of locations of the following DESTINATIONS measures that will be implemented during the project:

Extension and integration of the existing ramp beach access points network for disable. The access points will integrate the PT services and deaf and blind traffic light crossings.

Extension and integration of the existing E-V charging station networks. The network will connect the city centre with the main island getaways of Limassol port and Larnaca and Paphos airports.

Self-ticketing machines for PT service in attractive locations for tourists and residents.

Bike parking stations.

Smart bus stops with electronic signs in touristic points of the Limassol centre.

For the evolution of our city we will approach and work with regional and national municipalities in order to train them and inform them about the sustainable solutions for our city, focusing on the leisure transport of tourists. At the end of the development of the Sustainable Mobility Tourist Action Plan, a training session for regional and national urban planners of municipalities will take place in order to implement our future plans for the development of a more sustainable mobility city.

Objectives and outputs

Objectives

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption

- Increase the total share of citizens that use PT
- Free space
- Public health and safety
- Change habits of local people and tourists

Specific objectives: The Sustainable Mobility Tourist Action Plan will be developed for Limassol city centre. The plan will satisfy the mobility needs of tourism and citizens for a better quality of life. A new planning concept will be able to address transport related challenges and problems of urban areas in a more sustainable and integrative way. The urban mobility plan will be developed by Stratagem Energy Ltd with a cooperation of Limassol Municipality and other relevant stakeholders.

This measure is related with the integrated tourism and mobility planning (SUMP taking leisure trips into account) and will integrate services for tourism and mobility sector for the leisure trips of visitors and residents. This plan also includes electro mobility solutions for visitors and residents as well as co-operation between tourism and mobility sector and other behavioural techniques in order to change the behaviour of locals and visitors, focusing on the leisure of tourists. A training of regional and national urban planners of Municipalities will be organized regarding mobility management in Limassol city centre, in order to guide them through the Sustainable Tourist Mobility Action Plan and provide leisure trips to visitors.

Outputs

At least one regional training session for Municipalities urban planners, at least two common forums for the local stakeholder's involvement and the Tourists Mobility Study.

The calculated impact for this measure, is to achieve savings of 322.05 tCO₂, 855.83 MWh and €109352.

Innovative aspects

This measure is strategic and its development lives inside other measures. The main concept of this, is to use a combination of other Destinations measures, and reach its goals by taking individually each measure and attain the demanded plan.

Research and technology development

No Budget for ITS for this measure, as this measure is strategic and its development lives inside other measures. The main concept of this, is to use a combination of other Destinations measures, and reach our goals by taking individually each measure and attain the demanded plan.

Situation before CIVITAS

Limassol is a busy city that is visited by many tourists every year. The tourists are tend to be found along the coastline and in the central part of Limassol where there are touristic attractions.

The central part of Limassol is heavy in traffic during rush hours with a lot of congestion in the roads.

This creates an unpleasant environment for tourists and residents altogether. Apart from the traffic, there is also concentrated pollution. Noise pollution and CO2 emissions from the many vehicles.

Due to the very busy central part of Limassol, finding a parking space is almost impossible as there are not many parking spaces available.

Apart from the private vehicles, tourist can use public transport such as buses as well that run along the coast line and the city center. The bus lines are convenient but the schedule many time is not known.

There is no use of any electric cars either. But there is a cycling road along the coast with bikes for rent.

Inter-relationship with other measures

Other DESTINATION measures that are inter-related to this measure are:

- Extension and integration of the existing ramp beach access points network for disable. The access points will integrate the PT services and deaf and blind traffic light crossings.
- Extension and integration of the existing E-V charging station networks. The network will connect the city centre with the main island getaways of Limassol port, and Larnaca and Paphos airports.
- Self-ticketing machines for PT service in attractive locations for tourists and residents.
- Bike parking stations.
- Smart bus stops with electronic signs in touristic points of the SMTAP area.
- An urban freight logistic plan for the Limassol City Center.

The impacts

The impact evaluation of the SMTAP will be also done with a different methodology, namely through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	Co2 emission	Ton		Reduction of 732.60 ton
Environment	Traffic noise	dB		Reduction of 22dB

Environment	Energy consumption	MWh		Reduction of 1515.64MWh
Economy	Save money	€		€ 208.823
Transport	Save fuel	L		168406L
Transport	free space	M2		2187 000m2
Society	Awareness level	% of population with knowledge of the measure	0% is aware of this measure through media publications	At least more than 40% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	Almost all have approved this measure, after explaining to them	At least more than 40% will approve this measure
Society	Perception of accessibility level of service	index of "accessibility perception" on a 5-point scale	3	5

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	10	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	10	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	10	26	45	Vehicles in the area	Demonstration area
Save fuel	E	10	26	45	Vehicles in the area	Demonstration area
free space	E	10	26	45	Vehicles in the area	Demonstration area
Awareness level	S	8	26	47	general public	city
Acceptance level	S	8	26	47	general public	city
Perception of accessibility level of service	S	11	26	45	Service users	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Public Works Department	Provision and access on Limassol's data

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Positional	Organizational	Communication	Low

9.2 Measure LIM 3.1 - Increase cycling and walking in combination with special interest tourist activities as an integrated product

Description

The measure will include:

- creation of new bike lanes and bike routes
- four bicycle parking facilities will be installed in the region
- signage for cycling lanes, paths and routes as well as for walking paths and routes will be placed
- Map panels will also be in place for cycling lanes/routes/paths, walking paths and hiking routes.
- Efforts will be made, in cooperation with the Cyprus Cycling Association, the Limassol Cycling Club and Limassol Members of the Parliament to introduce for the first time a law regarding cycling, cycling lanes, cycling paths and cyclists responsibilities and rights to ensure the safety of the increased number of cyclists.
- To promote the increase of cycling, walking and hiking and special interest tourist products, maps will be created, guides in electronic and printed format, positive cycling images will be produced, and substantial presence in the local press will be ensured.
- Dissemination will take place in hotels, travel agencies, CTO tourist information offices, port of Limassol, Limassol Chamber, local authorities' offices, etc. In addition to these promotional tools, the application created under a different measure will also support the increase of cycling, walking and hiking.

Objectives and outputs

Macro objectives:

- Less CO2 emissions, cleaner more attractive public spaces
- Less traffic noise in the city centre and increased tourist attractiveness
- Less energy consumption
- Public health and safety and improved quality of life
- Change habits of local people and tourists towards more sustainable mobility modes
- More attractive tourist destination
- Increase the total share of citizens that use smarter and more fuel-efficient mobility modes

Specific objectives:

- increase in the interest for cycling, walking and hiking
- increase in guided tours by bike or on foot and enriching the tourist experience
- creation of cycling, walking and hiking routes that will enhance special interest tourism (wine, gastronomy, bird watching, history)
- promotion of cycling, walking and hiking in relation to special interests
- encouraging tourists and locals to combine sustainable mobility modes to leisure trips and special interest tourism

Outputs:

- Four bike parking facilities
- At least two new bike lanes/routes will be created
- Signage for cycling lanes, paths and routes and walking paths and routes
- Map panels for cycling walking and hiking paths and routes
- Maps will be created and printed
- (tourist) Guides in electronic and printed form
- Photographic material useful in promotion

Innovative aspects

The new bike lanes and routes, nearby points of interest and the new tools i.e. parking facilities, will be included in the mobile app included in measure LIM 7.4

Research and technology development

The new bike lanes and routes, nearby points of interest and the new tools i.e. parking facilities, will be included in the mobile app included in measure LIM 7.4

Situation before CIVITAS

The SMTAP area has cycling road and a walking route running along the coast line to the city center. In some cases both the cycling road and the walking route discontinue forcing the users to alter their path, walk or cycle on the sidewalk next to the main road until they reach the other point where the cycling road or the walking route continues.

Inter-relationship with other measures

Interrelation with measure LIM 7.4 (Mobility application and travel planner), LIM 6.1 (Awareness on the use of sustainable mobility modes for leisure trips) and measure LIM 4.3 (Increase the uptake of electric vehicles)

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	Co2 emission	Ton		Reduction of 325.2 ton
Environment	Traffic noise	dB		Reduction of 30dB

Environment	Energy consumption	MWh		Reduction of 864MWh
Economy	Save money	€		€119040
Transport	Save fuel	L		96000t
Transport	Bike sharing bikes and stations per capita	No of bike share bikes	172 no of bikes	292 no of bikes
Society	Extent of on-street cycle network	Length of urban roads with segregated cycle facilities	263.9 Km	265.9 Km
Society	Awareness level	% of population with knowledge of the measure	At least 5% is aware of this measure through media publications	At least more than 75% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	0% has approved this measure, since it hasn't been implemented yet	At least more than 75% will approve this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
C02 emissions	CD/E	10	26	45	vehicles in demonstration area	demonstration area
Traffic noise	CD/E	10	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	10	26	45	Vehicles in the area	Demonstration area
Save fuel	E	10	26	45	Vehicles in the area	Demonstration area
Extent of on-street cycle network	E	9	26	47	residents and tourists	city
Bike sharing bikes and stations per capita	DC	9	26	47	freight transport service	city
Awareness level	S	8	26	47	general public	city
Acceptance level	S	8	26	47	general public	city

Stakeholders involvement

Stakeholder name	Activities description
Local authorities	To identify locations for new bike lanes and routes and ensure their long term maintenance and cleaning
Cyprus Tourism Organisation	To promote the new lanes and routes in combination with special interest tourism through their media
Members of the Parliament	To support the new legislation for cyclists' safety and rights
Ministry of Communications and Works	To support the new legislation for cyclists
Bike rental companies	To encourage their customers to use the bike, walking and hiking routes in combination with special interests
Bike sharing company	To encourage their customers to use the bike, walking and hiking routes in combination with special interests
Cyprus Cycling Association	To support the new legislation for cyclists
Limassol Cycling Club	To support the new legislation for cyclists
Hotels, travel agencies, tourist information offices	To disseminate the promotional material and encourage their customers to use the bike, walking and hiking routes in combination with special interests

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Political / strategic			
Involvement, communication			

9.3 Measure LIM 3.2 - Accessibility for disabled and visually, hearing impaired

Description

At the first stage a strategy planning will be developed by Stratagem Energy Ltd with the collaboration of Limassol Municipality according to the measure, Sustainable Tourist Mobility Action Plan, where the location of the access points will be indicated as well as the signage information for people with disabilities regarding the locations of the blind and deaf people systems at traffic light crossings, public transport services for people with disabilities and route accessibility. For this measure we will be advised and collaborate with organizations of people with disabilities located in Cyprus. We will develop and integrate the accessibility points of the existing blind and deaf people systems at the main traffic light crossings in the tourist area (1 main crossing). This is very important for the safety and security especially for people with disabilities. Limassol will become a more attractive and safer place for tourists with disabilities. For the safety and leisure, the number of access points to the beaches will be increased (by one) and subsequently connected to the PT system (with step-free bus stops at the specified spot). The budget for this, has already been included in the budget declared for this measure. Proper signage will be installed. The places where the access points will be installed, they will be mentioned also in a new application that will be developed in another measure of DESTINATIONS. Limassol will add at least one point in the tourist area where the proper integrated mobility solution mentioned above (for accessing and using beaches) will be installed.

Objectives and outputs

Macro objectives:

- Improved Urban accessibility for people with disabilities
- Enhancement of social cohesion
- More Attractive tourist destination
- Further safety and security for people with disabilities
- Attract more tourists with disabilities (our current arrival numbers are low)

Specific objectives:

- Equipment for accessibility to beaches for people with disabilities will be installed in Limassol tourist area (1 ramp)
- The blind and deaf people systems at traffic light crossings (one system on the main traffic lights in tourist area)
- An integrated mobility solution will be included with signage and information services for people with disabilities who access public beaches.
- The destination will become more attractive to people with disabilities.
- The safety of people with disabilities in approaching and accessing beach areas will be increased.

Outputs:

Development and integration of the accessibility points of the existing blind and deaf people systems at the main traffic light crossings in the tourist area (at 1 main crossing).

Increase by one the number of access points to the beaches for achieving safety and leisure and subsequently connected to the PT system (with step-free bus stops at the specified spot).

Proper signage will be installed.

Limassol will add one point in the tourist area where the proper integrated mobility solution mentioned above (for accessing and using beaches) will be installed.

A new sign will be placed to the referred bus stop .

Overall, the signalization system of Limassol will be improved and a safer and more secure environment for people with disabilities will be created and people with disabilities will be able to easily access more places.

Innovative aspects

Signage information for people with disabilities regarding the locations of the blind and deaf people systems at traffic light crossings.

Signalization system for people with disabilities.

Accessible places will be added to the PT system.

Research and technology development

Signage information for people with disabilities regarding the locations of the blind and deaf people systems at traffic light crossings.

Signalization system for people with disabilities.

Accessible places will be added to the PT system.

Situation before CIVITAS

In the SMTAP area there is some accessibility for disabled and visually, hearing impaired people but it is not satisfactory and is limited. Although there is one ramp for disabled people next to the beach which they can use to access the sea.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Citizens satisfaction with transport system	% of people satisfied with the public transport system	5% (low season) 15% (peak season) perceive PT	At least 30% (low season) 60% (peak season) to perceive PT
Society	Perception of accessibility level of service	index of "accessibility perception" on a 5-point scale	1	4
Transport	Road safety audit	Road safety perception on scale of 1-5	not existing - 0	3

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		11	26	45		
Citizens satisfaction with transport system	S	11	26	45	general public, (residents and visitors), PT customers	demonstration area
Perception of accessibility level of service	S	11	26	45	Service users	demonstration area
Road safety audit	S	12	26	45	Cyclists, pedestrians	city

Stakeholders involvement

Stakeholder name	Activities description
Disabled people organization	Promotion of the measure, indicate location of access points.
Chamber of Commerce	Promotion of the measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Planning			

9.4 Measure LIM 3.3 – Safe routes to school

Description

Initially a feasibility study will take place in order to organize and find which schools could be able to be visited according to a timetable that will be also prepared. An approach to the parents teachers association for providing them a survey for children and parents in order to be able to collect even more data about the most common ways of transport (and also info about number of pupils and total number of schools in the city). Also a visit to the Police Authority of Cyprus is considered to be essential, as it is the best way for retrieving some data regarding the number of accidents around schools during the peak hours and explanations about the traffic jam caused by schools. This would be helpful for comparing the before-and-after analysis that we are going to do during the implementation of this measure, and to help us check potential follow-ups to other schools and finally succeed to engage the whole city.

Simultaneously we will prepare material that will be shared to pupils and parents for the training sessions and workshops that will take place. At least 10 schools will be a part of this plan. The workshops are aimed to educate and train parents and elementary school pupils on road safety. For the training sessions cooperation with the police authorities of Limassol will take place.

A video will be created with actors in order to attract pupils and parents in order to behave safely when they use sustainable mobility modes as well as when the parents driving and when the pupils are going to their schools. For their convincement examples of car accidents will be shown to the parents and to the pupils in order to aware them to drive and use the sustainable modes safely. For this measure questionnaires will be prepared in order to evaluate the impacts of the training sessions to pupils and parents.

Succeed model shift to parents and pupils through separate workshops to each participating school, increase the safety during peak hours in order to reduce the accidents and increase of sustainability awareness for children. A natural impact on the public health can also be achieved regarding obesity among young children, which can be used for motivation about cycling and walking.

Objectives and outputs

Macro objectives

- 5.96 tCO₂ less CO₂ emissions
- 2% less traffic noise in the city centre
- 15.84 kWh less energy consumption
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive and safer roads
- Change habits of local people and elementary school pupils

Specific objectives: This is not just a safety measure but it's also a measure for changing the modal split. Workshops at 10 schools to educate and train parents and elementary school

pupils for road safety will be organized in order to aware and keep safe pupils from roads. This aims to train pupils and parents to use sustainable mobility modes with safety as well as to help pupils to know how to get safely to their schools with an alternative transport way. Furthermore, these workshops will not only inform pupils and parents for sustainability modes, but also to educate them in order to be more aware (as parents are the main drivers around schools). 50 students from each school are going to be informed (and by extension their families). The goal for this measure is to have an impact of active mobility and increase by 2% the number of pupils that will walk, cycle or take the bus to go to school instead of using a car. Also, an objective on the reduction of the traffic noise will be achieved due to traffic impacts that occur around schools during the peak hours.

Outputs:

To involve 10 schools in this plan and inform approximately 50 students (families) from each school. The objective would be to increase by 2% the students that walk to school, cycle to school or use the bus instead of car.

Innovative aspects

Elementary school students will learn how to go to school safely using sustainable clean methods such as their bikes or by walking instead of using a private car.

Research and technology development

No specific technology requirements besides the video material to be prepared.

Situation before CIVITAS

Most of the students are usually taken to school by their parents with their private cars which creates congestion around the school roads as well as a more dangerous environment for the pedestrians that use the same roads to go to school or passing by.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton		Reduction of 71.21ton
Environment	Traffic noise	dB		Reduction of 10 dB
Environment	Energy consumption	MWh		Reduction of 189.22MWh
Society	Awareness Level	% of population with knowledge of the measure		At least more than 40% (low season) and 60% (peak season) will be aware of the measure
Economy	Save money	€		26069€
Transport	Save fuel	lt		21024lt

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
C02 emissions	DC/E	10	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	10	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	10	26	45	Vehicles in the area	Demonstration area
Save fuel	E	10	26	45	Vehicles in the area	Demonstration area
Awareness Level	S	10	26	44	General public, operators (residents and visitors), PT customers	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Limassol schools	In order to arrange workshops
Parents Teachers Association	In order to arrange workshops and ensure parents participation
Police Authority of Cyprus	To support in planning and with material

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Cultural			

9.5 Measure LIM 3.4 - Attractive and accessible public spaces to promote intermodal leisure trips

Description

The measure consists of an action/business plan that will introduce integrated services for tourists within the city of Limassol who nowadays, mainly use taxis or large public buses or rented cars to go around the city.

The measure aims, at first, to create an overall study including an action plan for an ecological route, (through sea and land) in the city of Limassol which will allow tourists to visit the most attractive spots of the city. After the completion of the study certain suggestions will be implemented in the current measure as well as for other measures submitted.

For a part of the route of approximately 2 km within the city center, appropriate marking and signage will be applied and necessary facilities will be developed at collection points (points where one can change from one mobility mode to another) in order to make tourists able to move around with bicycles and electric scooters and other electric vehicles.

At the collection points, all necessary works and infrastructure will be developed / constructed in order to serve users. This points will be planned to have all necessary infrastructure for people waiting for transport (covered waiting area, message systems, toilets, etc.), places for parking of electric cars/bicycles/ scooters etc., as well as infrastructure for transport means (charging units etc.). Smart message systems (smart/electronic and conventional), sensors in the route, variable message panels and suitable software will be installed in “collection points” in order to inform users about the availability of all transport means – thereby increasing sharing and inter-sharing. The use of the facilities by small electric cars as well as by hop on / hop off electric busses will be promoted. The distance between the collection points will be approximately 600 – 700 meters.

The main objective of the current measure is the combination of use of all transport means within the city center using integrated systems. To achieve this there is the clear need for “collection points” that will combine all means of sustainable transport and a smart message system. New routes as well as maps and guides will be developed in order to promote ecological awareness.

Within the framework of the present measure a study will be carried out concerning an ecological route in the city of Limassol. The present measure is considered to be a case/strategy with main innovative elements the promotion of electro-mobility and shared mobility, shared electric cars, integrated services through smart systems and promotion of using public bicycles and electric scooters. An electric hop on / hop off bus will allow tourists for an ecological city sightseeing whereas facilities for hiring small electric cars will be developed in a certain route. Smart electronic devices will inform users for time frames and sharing availability.

Objectives and outputs

Macro objectives

- Improved urban accessibility
- Enhancement of social cohesion
- Less energy consumption
- Mobility management of the city
- More attractive tourist destination

Specific objectives

- Promotion of an attractive and high quality public transport service to increase the number of passengers (both residents and visitors)
- Create an overall study including an action plan for an ecological route in the city of Limassol which will allow tourists to visit the most attractive spots of the city
- The combination of use of all transport means within the city centre using integrated systems.

Outputs:

Purchase of leaflets and brochures for the communication campaign

Use of the media and social networks

4 e-cars purchased

4 stations fully completed with necessary information and equipment

Charging points for e-cars in the stations

Innovative aspects

This measure aims to use upgraded electronic information systems on the ecological path and generating electric vehicle refueling stations. This measure will apply also to the preparation of SMTAP for Limassol.

Research and technology development

This measure aims to use upgraded electronic information systems on the ecological path and generating electric vehicle refueling stations. This measure will apply also to the preparation of SMTAP for Limassol.

Situation before CIVITAS

There are not many public places currently in Limassol that inspire for intermodal leisure trips.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Save money	€	-	Reduction of 31.500€
Environment	CO2 emissions	ton	not existing - 0	Reduction of 86.05ton
Environment	Noise perception	% people troubled by transport noise	not existing - 100%	At least 15% (low season) and 40% (peak season) people to be relieved from noise
Environment	Traffic noise	dB	-	Reduction of 15dB
Environment	Energy consumption	MWh	-	Reduction of 228.64MWh
Transport	Save fuel	L	-	254042L

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service operators	city
CO2 emissions	DC/E	10	26	45	vehicles in demonstration area	demonstration area
Noise perception	CD/E	10	26	45	Inhabitants and visitors	demonstration area
Traffic noise	CD/E	10	26	45	Inhabitants and visitors	Demonstration area
Energy consumption	E	10	26	45	Vehicles in the area	Demonstration area
Save fuel	E	10	26	45	Vehicles in the area	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Chamber of Commerce	Promotion of the measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Planning			low

9.6 Measure LIM 4.1 - Electric car rental connecting Limassol town with airport and port

Description

In cooperation with car rental companies and their association, an organized effort will be made to increase the number of e-vehicles available for rent. This will be supported by Limassol Municipality free parking offer for e-vehicles, the increase of EV-chargers by at least 7 points in the region and its main getaways (Larnaca and Pafos airports, Limassol port) in cooperation with the Cyprus Electricity Authority, and the promotional campaigns to tourists of the Limassol region. Knowledge of this measure will be transferred to other Cyprus regions in order to also upgrade available infrastructure by adding EV- chargers.

The above will be included in the integrated Sustainable Mobility application.

At the first stage efforts will made to convince car rental companies to create an e-car rental system which will connect the airports, port and Limassol tourist area. The idea is for the visitor to be able to get an e-car, use it and pay just for the time between the e-car was taken from the station and parked to the next one.

Green stations will be created including shelters for car parking, key safe boxes, EV chargers and signage.

When an interested investor is identified to proceed with this project, we will provide signage and maps designed and produced for this purpose. Maps will serve as the promotional material for the service and will be placed in the e-cars and also at hotels, tourist information offices and other high traffic points.

The e-car rental system will be included in the Sustainable Mobility Application to be designed under another measure. The app will be used to find the nearest e-car rental station. It will also provide the option to reserve a car for up to 30 minutes before it's needed. The app will also be used to unlock the car and grab the keys.

The service will also be promoted through the e-mobility promotional campaigns planned under a different measure.

We expect that this mobility mode will attract a number of car rental and taxi customers, who will prefer to travel in a greener way.

The free parking policy for electric cars in the Limassol Municipality will be supportive to this measure.

Objectives and outputs

Macro objectives

- Less CO2 emissions and cleaner more attractive environment
- Less traffic noise in the city centre and increased attractiveness for tourists and locals
- Less energy consumption
- Public health and safety
- Change habits of local people and tourists

- Increase the total share of citizens that use sustainable mobility modes
- Increase the uptake of electric vehicles

Specific objectives

- increase tourists' options by adding e-car sharing
- offer the alternative of renting an electric car from the airport or port of arrival to get to the tourist area and back, instead of a taxi or rented car
- Promotion of shared mobility
- Increase the number of electric car chargers by 7 at least

Outputs:

- seven double e-car stations with shelters
- seven double EV chargers
- relevant signage
- 20,000 maps produced

Innovative aspects

This is an innovative idea since people will be able to travel from Limassol to the airports and port by using an electric car with no emissions instead of using their private cars or even the bus. New EV charging technology will be used. Car keys safe boxes will be installed, that will open with a unique code provided electronically.

Smart sensors for starting the car will provide information on the e-car usage by each user.

Research and technology development

New EV charging technology will be used. Car keys safe boxes will be installed, that will open with a unique code provided electronically.

Smart sensors for starting the car will provide information on the e-car usage by each user.

Situation before CIVITAS

Currently there are not any electric cars in use in Limassol.

Inter-relationship with other measures

There is also interrelation with measures LIM 3.4, 4.3, 6.1, 6.2, 7.4.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Save money	€	-	9052€
Environment	CO2 emissions	ton	-	Reduction of 24.73t
Environment	Traffic noise	dB	-	Reduction of 15dB
Environment	Energy consumption	MWh	-	Reduction of 65.7Mwh
Transport	Save fuel	L	-	7300L
Society	Awareness level	% of population with knowledge of the measure	At least 5% of the population is aware of this measure through media publications	At least more than 80% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	unknown- this measure has not been implemented	At least more than 80% will accept this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	10	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	10	26	45	residents and tourists	Demonstration area
Energy consumption	E	10	26	45	Vehicles in the area	Demonstration area
Save fuel	E	10	26	45	Vehicles in the area	Demonstration area
Awareness level	S	8	26	41	residents and tourists	city
Acceptance level	S	8	26	41	residents and tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Hermes airports	Cooperation to establish e-car stations at Larnaca and Pafos airports
Cyprus Ports Authority	Cooperation to establish e-car station at Limassol port
Cyprus Electricity Authority	Cooperation to install EV Chargers in the Limassol region, Larnaca airport, Pafos airport and Limassol port
Local authorities	Cooperation to establish e-car stations at the tourist area and old town area and free parking policy for e-cars in Limassol Municipality
Car rental companies	To find interested investor to set up this service
Hotel industry	To promote the service to their guests

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.7 Measure LIM 4.2 - Expansion of public bike sharing system, include e-bikes

Description

The public bike system will be expanded in cooperation with the bike sharing company which will increase the number of stations (3) and bikes (30) available in the region.

New bike sharing stations will be created to serve the new cycling paths available in the region.

Other bike rental companies will also be encouraged to increase the number of bikes and add electric bikes for rental, so as to cover the needs of less athletic people or senior citizens.

Objectives and outputs

Macro objectives

- Less CO2 emissions and cleaner more attractive environment
- Less traffic noise in the city centre and increased attractiveness for tourists and locals
- Less energy consumption
- Public health and safety
- Change habits of local people and tourists
- Increase the total share of citizens that use sustainable mobility modes
- More attractive tourist destination

Specific objectives

- support the investor to expand the bike sharing network. The bike share provider has committed to
- expand the network given we provide support through the application, promotional campaigns,
- competitions, etc and through receiving the necessary permits from local authorities.
- add new stations
- increase the number of bikes available for sharing
- obtain licensing for additional stations

Outputs:

three new bike sharing stations

thirty new bikes for bike sharing

twenty new bikes available for rent

10 new e-bikes available for rent

Innovative aspects

E-bikes will be used for the first time.

Research and technology development

No IT.

Situation before CIVITAS

There are not many public bike sharing systems in the SMTAP area and also there are not any e-bikes. There are only a few public bike renting stations.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Save money	€	-	€ 43449
Environment	C02 emissions	ton	-	Reduction of 118.70 t
Environment	Traffic noise	dB	-	Reduction of 30dB
Environment	Energy consumption	MWh	-	Reduction of 315.36MWh
Transport	Save fuel	L	-	35040L
Transport	Extent of on-street cycle network	Length of urban roads with segregated cycle facilities	263.9 Km	265.9 Km
Transport	Opportunity for active mobility	Length of roads and streets with sidewalks and bike lanes	263.9 Km (cycling lanes)	265.9 Km (cycling lanes)
Transport	Bike sharing bikes and stations per capita	No of bike share bikes	172	292
Society	Awareness level	% of population with knowledge of the measure	At least 5% of the population is aware of this measure through media publications	At least more than 75% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	unknown- this measure has not been implemented	At least more than 75% will accept this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Extent of on-street cycle network	E	9	24	34	residents and tourists	city
Opportunity for active mobility	E	9	24	34	residents and tourists	city
Bike sharing bikes and stations per capita	DC	9	24	34	freight transport service	city
Awareness level	S	8	24	34	residents and tourists	city
Acceptance level	S	8	24	34	residents and tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Bike sharing company	To work together in order to increase stations by three and bikes by thirty
Bike rental companies	To increase number of available bikes for rent and e-bikes for rent
Local authorities	To provide license for new bike sharing stations
Cycling clubs and association	To promote to their members
Hotels	To promote cycling to their guests

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.8 Measure LIM 4.3 - Promote the uptake of electric vehicles, campaign on e-mobility

Description

Limassol Tourist Board and Stratagem Energy Ltd will cooperate for the preparation of the material of the electro-mobility campaigns. Electro-mobility campaigns will be designed firstly to provide the necessary information in the form of a printed and electronic brochure. Advertorials in hotel and other lifestyle magazines will promote this idea as a new sustainable way of life. Billboards and electronic advertisements will also support this effort. Competitions will be organized to create awareness about the existence of e-vehicles to travel around. In the campaigns the people will be informed about and will be guided as to where and how they can use electric vehicles.

The campaign will also ensure publicity in the local and tourist media about the CIVITAS project and implemented actions in Limassol region.

Evaluation of this action will be possible via internet views and likes as well as through research carried out by car rental companies among their customers.

Objectives and outputs

Macro objectives

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists
- Save fuel/ money
- Public health and safety

Specific objectives

- Support car rental companies in increasing the number of rental electric vehicles and through promotional campaigns to increase awareness and interest in renting e-vehicles. This is further supported by the relevant infrastructure included in other measures.
- Increase awareness and interest in electromobility
- encourage the usage of e-vehicles, emphasizing the relevant benefits, including free parking in Limassol Municipality.
- Support bike rental companies to increase number of electric bikes.
- Free parking for electric cars to be offered by Limassol Municipality
- E-mobility campaigns to create awareness, interest and use among tourists and residents for more sustainable mobility options such as e-vehicles and e-bikes
- Two national seminars to encourage other cities to follow

Outputs:

Production of leaflets and brochures for the communication campaign
 10 new electric bikes available for rent
 At least 20 new electric cars available for rent
 Two national seminars, participation of at least three other regions

Innovative aspects

The measure aims to use upgraded electronic information systems on electric vehicle refuelling stations.

Research and technology development

The measure aims to use upgraded electronic information systems on electric vehicle refuelling stations.

Situation before CIVITAS

There are not any electric vehicles used in Limassol for the time being.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emission	ton	-	Reduction of 37.58 t
Environment	Traffic noise	dB	-	Reduction of 18dB
Environment	Energy consumption	MWh	-	Reduction of 99.86MWh
Transport	Save fuel	L	-	11096L
Economy	Save money	€	-	€13759
Society	Citizens satisfaction with transport system	% of people satisfied with the public transport system		At least 50% satisfied with PT services

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Citizens satisfaction with transport system	S	8	26	41	general public	city

Stakeholders involvement

Stakeholder name	Activities description
Chamber of Commerce	Promotion of the measure
Automotive companies	Promotion of electrical vehicles
Car rental companies association	Promotion of electrical vehicles
Cyprus Electricity Authority	Promotion of electrical vehicles
Cyprus Solar Energy providers	Promotion of electrical vehicles

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.9 Measure LIM 5.1 - Limassol city centre Urban Freight Logistic Action Plan

Description

Develop an Urban Freight Logistic Plan for Limassol city centre. This plan will introduce innovative solutions regarding the traffic flow from the freight logistics, the efficient distribution of the goods, the environmental pollution and noise, hazards for the pedestrians due to freight logistic services and road disturbances.

The plan will evolve the city centre of Limassol and it will change the behaviour of the relevant stakeholders and key actors.

The measures that will be implemented will include:

- Study of the economic activities based on commerce, services and tourism sectors within the city centre. It will include the tourist flow of city area and the impacts of freight traffic.
- Organize a logistic plan and implementation on-going access control system for mobility management. This will include type of goods, area and time tables with limitations.
- Development of online platform to manage freight transportation key actors for more efficient freight distribution.
- Set up forums with the participation of local stakeholders (Professional Association, Municipalities, Transport operators, local companies, etc) to define solutions for freight logistics.
- Examine incentives opportunities for transportation companies to renew their fleet with electric vehicle.

Objectives and outputs

Macro objectives

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Free sidewalks
- Safety and security of pedestrians
- Urban freight logistic awareness

Specific objectives

- Develop an Urban Freight Logistic Plan for Limassol city centre.
- Introduce innovative solutions regarding the traffic flow from urban freight logistics, the efficient distribution of the goods, the environmental pollution and noise, hazards for the pedestrians due to freight logistic services and road disturbances.
- Evolve the city centre of Limassol
- Change the behaviour of the relevant stakeholders and key actors.

- Introduce local policy strategy for the development of the Urban Freight Logistic Plan.
- Develop tools according to the needs of the plan to organize efficiently the relevant stakeholders and key actors.

Outputs:

- A Sulp for Limassol city centre (task 5.3.5). This plan will introduce innovative solutions regarding the traffic flow from the freight logistics and the efficient distribution of the goods.
- The development of an online platform (task 5.6.5) for managing manage freight transportation key actors for more efficient freight distribution. This platform will provide access control system for mobility management.
- Incentive opportunities for operators will be designed to renew their fleet with electric vehicle.
- Involvement of 100 shops and achieve the decreasing of the routes for each shop by 2km every month.
- Creation of a going access control system for mobility management (area and time tables with limitations).
- Development of online platform to manage freight transportation key actors for more efficient freight distribution and setting up one forum with the participation of local stakeholders (Professional Association, Municipalities, Transport operators, local companies, etc) to define solutions for freight logistics.

Innovative aspects

Implementation of a going access control system for mobility management (containing time tables with limitations). Development of online platform for managing manage freight transportation key actors for more efficient freight distribution. Contact different providers to find out what's the most suitable APP in the market about reaching our goals and develop our platforms.

Research and technology development

Implementation of a going access control system for mobility management (containing time tables with limitations). Development of online platform for managing manage freight transportation key actors for more efficient freight distribution. Contact different providers to find out what's the most suitable APP in the market about reaching our goals and develop our platforms.

Situation before CIVITAS

There is not a Sustainable Urban Freight Logistics plan in the SMTAP area. This creates a lot of traffic problems such as congestion, noise and air pollution in the area as well as hazards for pedestrians due to freight logistic vehicles being parked on sidewalks and pedestrian routes for unloading.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	Ton	-	Reduction of 6.5t
Environment	Traffic noise	dB	-	Reduction of 25dB
Environment	Energy consumption	MWh	-	Reduction of 17280 MWh
Transport	Free sidewalks	% of the number of free sidewalks	-	Increase of 2%
Society	Acceptance Level	% of the population who receive and approve the measure	Almost all people agree/accept the measure after it was explained to them	At least more than 40% (low season) and 60% (peak season) of the population to agree with the measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
CO2 emissions	DC/E	10	26	45	Logistic vehicles in demonstration area	demonstration area
Traffic noise	DC/E	10	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	10	26	45	Logistic vehicles in the area	Demonstration area
Free sidewalks perception	S	10	26	45	Logistic vehicles in the area	Demonstration area
Acceptance Level	S	8	26	45	General public, operators (residents and visitors), PT customers	city

Stakeholders involvement

Stakeholder name	Activities description
Chamber of Commerce	Promotion of the measure
Limassol City Centre Shops	Promotion of the measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related			

9.10 Measure LIM 5.2 - Promotion and creation of network for collecting of used cooking oil

Description

Stratagem Energy Ltd with the co-operation of Limassol Tourist Board and the Cyprus Destination Partnership will create a network for collecting the used cooking oil (UCO) of the hotels and restaurants in Limassol in order to recycle the used cooking oils and used them as a sustainable biodiesel production in the mobility sector. The hotels that implement this measure will be awarded as green hotels as it is described in another measure. For this measure a feasibility study will be carried out first including an analysis of best practices of the oil collection, local potential of the stakeholders and economic aspects of the system. Collaboration with experts in the field will be carried out for the success of the measure. This measure will be also promoted in the eco-driving campaigns of CIVITAS for a further awareness to local people as described in another measure. We expect to introduce 3 hotels and at least 10 restaurants.

The principle behind bio-dieseling is to take cooking oil and process it into a fuel that's thin enough to spray from a regular diesel engine's fuel-injection system. This is done chemically, by converting the oil into two types of compounds: biodiesel, which shares the original oil's combustibility, and glycerin, which retains the oil's thick, viscous properties. Drain away the glycerin, and you're left with a fuel that you can pour into any diesel vehicle with no further modification. The chemical reaction will not proceed to completion if the temperature is too low, thus we need to prepare the biodiesel in a room-temperature (70 F).

Objectives and outputs

Macro objectives:

- Reduce the environmental pollution
- Introduce a large number of stakeholders who recycle cooking oil
- Decrease the price of the fuels
- Awareness of the recycle cooking oil
- Increase the total share of citizens that use smarter and more fuel-efficient mobility modes
- Change habits of local people and tourists

Specific objectives:

- create a network for collecting the used cooking oil of the restaurants and hotels in Limassol.
- Reduce pollution through the use of recycled bio fuel.
- change behaviour and work together with local businesses for a common vision, for a friendlier and cleaner environment.
- establish co-operation between tourism and mobility sector.

Outputs:

- The concept is to involve 5 hotels and 10 restaurants.
- An average of 30 litres used cooking oil from each hotel and 5 litres from each restaurant is calculated to be collected monthly in order to recycle and use it as biodiesel.
- The outcome for this measure will be the creation of this network for collecting the used cooking oil of hotels and restaurants in Limassol.

Innovative aspects

The creation of the network for the collection of used cooking oil and the turning of the used cooking oil into biofuel.

Research and technology development

No ITS for this measure.

Situation before CIVITAS

There are some companies that currently collect used cooking oil in Limassol but there is not an established network.

Inter-relationship with other measures

No inter-relation with other measures

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Energy	Used Cooking Oil Collection	Total volume of UCO collected - m ³		At least more than 5 litres collected
Society	Awareness Level	% of population with knowledge of the measure		At least more than 40% (low season) and 60% (peak season) will be aware of the measure
Society	Acceptance Level	% of the population who receive and approve the measure		At least more than 40% (low season) and 60% (peak season) of the population to agree with the measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		16	28	40		
Used Cooking Oil Collection	DC	16	28	40	Population of demonstration area	demonstration area
Awareness Level	DC/S	9	24	43	General public, operators (residents and visitors), PT customers.	demonstration area
Acceptance Level	DC/S	9	24	44	General public, operators (residents and visitors), PT customers.	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Restaurants Association	Provide the list and the network of Restaurants to be involved in the measure
Hotels Associations	Provide the list and the network of Hotels to be involved in the measure

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological			

9.11 Measure LIM 6.1 - Awareness on the use of sustainable mobility modes for leisure trips

Description

This measure aims to increase awareness about how to travel around for leisure trips using sustainable mobility modes, such as bikes, electric vehicles, public transport services, vehicle sharing and walking. For this purpose campaigns and competitions will be designed to attract people and aware them about the available sustainable mobility solutions for their leisure transportation, environmental and for their personal health. The campaigns will include publicity, outdoor banners, advertising in local magazines and hotel magazines, radio, events/participation in existing events, creation of promotional material to be available at tourist information offices, hotels, local authority offices and also distributed at popular events. Both tourists and residents will be targeted through the chosen media and through the distribution points selected for the promotional material. The messages will be designed as to target residents, local trade and visitors. Competitions will be planned to encourage tourists to become interested in sustainable mobility modes. The Competitions will be internet based so as to increase exposure through social media.

Objectives and outputs

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists
- Public health and safety

Specific objectives:

- increase awareness of locals, tourists and urban planners
- promote integrated products and services in the mobility and tourism sectors
- promote shared mobility and e-mobility
- promote environmental and personal health
- increase the use of sustainable mobility modes
- organise competitions for tourists

Outputs:

- two promotional campaigns
- two competitions among tourists
- seminar for urban planners

Innovative aspects

Sustainable mobility modes for leisure trips.

Research and technology development

No IT for this measure.

Situation before CIVITAS

In Limassol, and Cyprus in general, there is not much awareness about the sustainable mobility modes for leisure trips.

Inter-relationship with other measures

No inter-relation with other measures

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 32.52t
Environment	Traffic noise	dB	-	Reduction of 25dB
Environment	Energy consumption	MWh	-	Reduction of 86.4MWh
Transport	Save fuel	L	-	96000L
Economy	Save money	€	-	€11904
Society	Awareness level	% of population with knowledge of the measure	A few are aware of this measure through the implementation of competitions	At least more than 85% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure		At least more than 80% will accept this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Awareness level	S	8	26	45	residents and tourists	city
Acceptance level	S	8	26	45	residents and tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Hotels	To allow material in their properties and promote to their guests
Local media	Publicity and advertising
Local authorities	For urban planners to attend training
Urban planners	To commit in greener planning

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Cultural			low

9.12 Measure LIM 6.2 - Combined tourist and mobility products: Green Label Award and Tourist Mobility Card

Description

The Green Label will be awarded to hotels that commit to encourage the use of sustainable mobility modes by their guests, share links with sustainable mobility information, offer sustainable mobility promotional material in their lobby, provide cooking oil for recycling as bio-diesel, offer bike rentals at hotel, promote the sustainable mobility application and require their front office employees to participate in sustainable mobility training sessions, organised by the Limassol Tourism Board. The awarded hotels will be proud owners of the Green Label logo to use in their communication material and will demonstrate the Green Label logo on a crystal trophy placed on the Reception desk. Small flags will also be given to the hotels to demonstrate at different locations within their premises. An official award ceremony will take place and a lot of publicity by the local press will be ensured.

The Tourist Mobility Card will enable visitors and residents to buy one ticket for the duration of their stay, for all their PT transfers (urban and rural) and at the same time be allowed to have discounted entrance to museums and other places of interest as well as on bike sharing. Five self-service ticket machines will be installed in the tourist area and the Limassol city. Promotional material will be prepared and disseminated both in printed and electronic form.

Objectives and outputs

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists
- Public health and safety

Specific objectives:

- encourage hotels to support sustainable mobility
- Award hotels for their support
- enable visitors to buy one ticket for the duration of their stay for all PT transfers to earn discounts at tourist attractions
- promote tourist attractions such as museums and theme parks through the Tourist Mobility Card
- integrate services for tourism and mobility.
- establish cooperation between the tourism and mobility sectors

Outputs:

- half the hotels in Limassol to participate in the Green Label Award

- Introduction of the Tourist Mobility Card with incentives to use PT and bike.
- participation of at least 20 businesses that will offer incentives to travellers that use the Tourist Mobility Card.

Innovative aspects

Green Label Award and Tourist Mobility Card.

Research and technology development

No IT for this measure.

Situation before CIVITAS

There is not much promotion of sustainable transport methods from hotels to tourists. This forces tourists to rent private cars and not use the bus or the bikes too much as they are not aware of the area very well.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 162.6t
Environment	Traffic noise	dB	-	Reduction of 15dB
Environment	Energy consumption	MWh	-	Reduction of 43.2MWh
Transport	Save fuel	L	-	4800L
Economy	Save money	€	-	€5952
Society	Awareness level	% of population with knowledge of the measure	0% are aware of this measure since it hasn't been implemented yet	At least more than 85% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	0% have approved this measure since it hasn't been implemented yet	At least more than 85% will accept this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		10	26	45		
Save money	E	10	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Awareness level	S	8	26	45	residents and tourists	city
Acceptance level	S	8	26	45	residents and tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Hotels	To participate in the Green Label effort supporting sustainable mobility, and to promote the Tourist Mobility Card to their guests
Limassol bus company	To offer incentives to Tourist Mobility Car users
Bike sharing company	To offer incentives to Tourist Mobility Car users
Bike rental companies	To offer incentives to Tourist Mobility Car users
Tourist attractions	To offer incentives to Tourist Mobility Car users
Cyprus Tourism Organisation, tourist information offices	To support the efforts and encourage business to participate and visitors to use the card

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.13 Measure LIM 6.3 - Bicycle challenge: competition between employees of companies

Description

With the cooperation of Limassol Cycling Club a framework campaign will be established. This campaign will include visits at workplaces where the benefits of bicycle commuting will be presented and advice about issues such as safety, weather, gear, suggested routes and technical workshops on a basic cycling gear will be held. Through the project the participants will acquire the knowledge and experience to Cycle the Distance from home to work or in general from point A to B. The participants will be keeping a logbook where they will record their daily cycling activity. The data will be analysed on a weekly basis, placing emphasis on the health and environmental benefits as well as money savings. At the end of the campaign, the participants who covered the longest distance from each company/organization will win a prize and all participants will be given a certificate of participation. This campaign endurances 7 months and will be demonstrated for 3 times during the project life time.

Objectives and outputs

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Public health and safety
- Change habits of local people and tourists
- More attractive tourist destination

Specific objectives

- A bicycle challenge between employees of companies will be organized during the project.
- Behaviour of participants will be changed totally towards an environmental behaviour.
- Increase cycling to work by employees.

Outputs:

- 100 employees persuaded to use bicycles to go to their work instead of a car. Aim to make them using bicycle after the end of this challenge and continue cycle in the future. This will be achieved using a series of promotional activities (not yet precisely decided). The number of employees is set to be 100, as 10 people through of the ten selected companies will participate.
- A number of meetings is going to be held in various companies in order to achieve end up in the selection of ten, and after that, meetings are going to be held to each companies for providing their feedbacks and data collection. For this procedure including the feedback

meetings, we estimate a number of three meetings for each company (plus the meetings in the beginning for the selection period).

Innovative aspects

Creating a healthier and more sustainable mindset by using the bicycle as an alternative transport to move from how to work and back, and around the city instead of using a car.

Research and technology development

No development of own ITS tools for this measure, but use existing apps instead for promoting the bike uptake instead. Already existing apps like “Strava”, “Cyclemeter”, “Bike Gear Calculator”, “Viewranger”, “Map My Ride” and “Endomundo” can be utilized for this promoting. Also, in order to motivate the cyclists to cycle the furthest, a use of behaviour change mechanisms will be presented and special prizes would be awarded to the cyclists for achieving their cycling goals.

Situation before CIVITAS

Most people use their private cars to go to work increasing the traffic and the noise and air pollution in the area.

Inter-relationship with other measures

No inter-relation between other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 42.92t
Environment	Noise perception	% of traffic noise deduction	-	Reduction of 15%
Environment	Energy consumption	MWh	-	Reduction of 114Mwh
Transport	Save fuel	L	-	12672L
Economy	Save money	€	-	15713€
Society	Awareness Level	% of population with knowledge of the measure	...	At least more than 40% (low season) and 60% (peak season) will be aware of the measure

Society	Acceptance Level	% of the population who receive and approve the measure	...	At least more than 40% (low season) and 60% (peak season) of the population to agree with the measure
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Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
Save money	E	12	26	45	transport service providers	demonstration area
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Noise perception	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Awareness level	S	8	26	45	General public, operators (residents and visitors), PT customers	city
Acceptance level	S	8	26	45	General public, operators (residents and visitors), PT customers	city

Stakeholders involvement

Stakeholder name	Activities description
Chamber of Commerce	Promotion of the measure
Limassol Cycling Club	Promotion of the measure, motivation for using bicycles

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Cultural			

9.14 Measure LIM 6.4 - Smart parking guidance system

Description

In the center of Limassol, a considerable number of parking spaces exist. There are more than 10 municipally owned parking spaces with their capacity exceeding 2000 cars and about the same number of places of private ownership.

The majority of parking spaces can be reached through the narrow roads of the city center. The everyday situation is cars moving around the city center trying to locate a free empty space, something that causes unnecessary traffic congestion.

The present measure aims to make available parking guidance to drivers before reaching the parking spaces, by providing information for real-time parking availability, which can be visually displayed on mobile phones/computer devices/etc. through a smart application as well as on variable message systems that will be located around city center.

Due to a limited budget, smart sensors will be installed only in about 7 municipally owned spaces, which will be able to transfer real time data regarding spaces availability to a central server.

The server will collect all the data and through appropriate software it will forward the data to a smart application, available for public use via internet. The whole application will also be available for private parking owners in order to include their spaces in it. The development and the management of the application will be provided by a private company who will manage the parking places as well.

The application, except for the real time availability, it will include information like type of parking (public/private, covered/uncovered, etc.), parking rates and proximity of parking to areas of interest. For immediate use, availability will be presented on a map with distinct colours and GPS navigator instructions will be at hand for users.

Objectives and outputs

Macro objectives

- Improved urban accessibility
- Less energy consumption
- Mobility management of the city
- Less emissions

Specific objectives

- Reduce unnecessary traffic congestion in the city centre
- Improve the whole mobility system
- Improve leisure level of tourists visiting city centre due to lower traffic
- Improve road efficiency through reduced cruising traffic

Outputs:

Purchase of leaflets and brochures for the communication campaign
 Use of the media and social networks
 As many as possible public parking to get involved
 To serve the largest possible number of cars searching for a free parking place in the centre.
 Implementation of info signs in the main entrances of the centre
 A mobile information application about traffic in general
 To encourage the owners of private parking spaces to participate in the info platform by financing their own equipment and their involvement in the soft ware
 To influent on the citizens traffic culture

Innovative aspects

This measure aims to use the upgraded electronic information signs on each main entrance of the city center, so that the drives gets the guidelines which direction to follow to the near free parking space.

Research and technology development

This measure aims to use the upgraded electronic information signs on each main entrance of the city center, so that the drives gets the guidelines which direction to follow to the near free parking space.

Situation before CIVITAS

There are not many parking spaces in Limassol. This forces drivers to drive around the area until they find a free space. This increases the traffic congestion in the area along with the emissions of CO2 and noise pollution.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 42.11t
Environment	Energy consumption	MWh	-	Reduction of 69.93 MWh
Environment	Traffic noise	dB	-	Reduction of 20dB
Transport	Save fuel	L	-	7770 L

Economy	Save money	€	-	€ 9712
Transport	Use of space for parking	Count of parking spaces	not existing - 0	90% successful real-time counting and monitoring
Society	Awareness Level	% of population with knowledge of the measure	not existing - 0%	At least 75% of population to be informed about the measure
Society	Acceptance Level	% of the population who receive and approve the measure	not existing - 0%	At least 45% (low season (and 65% (peak season) of population to approve the measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Save money	E	12	26	45	transport service providers	demonstration area
Use of space for parking	DC	10	26	45	Passenger cars	demonstration area
Awareness Level	S	11	26	45	General public, operators (residents and visitors), PT customers	demonstration area
Acceptance Level	S	11	26	45	General public, operators (residents and visitors), PT customers	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Chamber of Commerce	Promotion of the measure
Tourist Organization	Promotion of the measure
Parking owners	Collaboration and promotion
Police Traffic Department	Collaboration and promotion

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.15 Measure LIM 7.1 - Improvement of PT routes, time tables, ticket procedure and bike transportation on buses to make the service more attractive

Description

Based on the information collected by the tourist information offices that try to consult visitors on how to travel around using PT and the barriers and issues identified, we will make suggestions to the Limassol Bus Company and the Ministry of Communications and Works to improve routes, time tables, ticket procedures and bike transportation on buses. Information will also be collected from the hotel guest relation offices that consult their guests in a similar manner. Bike racks will be installed on buses.

After the needs are identified specific suggestions will be discussed and finalised with the Limassol Bus Company. The suggested changes need to be approved by the local inspector of the department of Road Transport Department and finally by the Ministry of Communications and Works. The improvement of ticket procedure (currently tickets are issued by the bus driver delaying departure from each bus stop) will be achieved in cooperation with the Ministry of Communications and Works. Cooperation with Limassol Municipality, the Limassol Chamber, Limassol MPs and other parties will be required to lobby for the changes' acceptance.

Objectives and outputs

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Save fuel/money
- Public health and safety
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists

Specific objectives:

- improve PT routes and time tables
- improve PT ticket procedure
- Increase use of PT
- enable bike transportation on buses (20)

Outputs:

- at least 10 improved PT routes and time tables
- improved PT ticket procedure
- 20 bike racks on buses

Innovative aspects

Bikes will be allowed on the bus.

Research and technology development

No IT for this measure.

Situation before CIVITAS

The bus routes and timetable in Limassol are limited and not very consistent so it needs a lot of improvement so for more people to use it. No bikes are allowed on buses.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 21.68 t
Environment	Traffic noise	dB	-	Reduction of 25dB
Environment	Energy consumption	MWh	-	Reduction of 57.6MWh
Economy	Save money	€	-	7936€
Transport	Save fuel	L	-	6400L
Transport	Accuracy of time keeping	no and % of PT services arrival time per year		At least 55% arrived on time
Society	Awareness level	% of population with knowledge of the measure	0% is aware about this measure since it hasn't been implemented	At least more than 65% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	0% has approved this measure, since it hasn't been implemented	At least more than 65% will accept this measure
Society	Citizens satisfaction with transport system	% of people satisfied with the public transport system	0% of people satisfied with the public transport system	At least 50% will be satisfied
Society	Perception of accessibility level of service	index of "accessibility perception" on a	1	2

		5-point scale		
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Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Save money	E	12	26	45	transport service providers	demonstration area
Accuracy of time keeping	DC	12	26	47	PT services	city
Awareness level	S	10	26	47	residents and tourists	city
Acceptance level	S	10	26	47	residents and tourists	city
Citizens satisfaction with transport system	S	10	26	47	general public	city
Perception of accessibility level of service	S	10	26	47	service users	city

Stakeholders involvement

Stakeholder name	Activities description
Limassol bus company	To support the change of PT routes, timetables and permit installation of bike racks on buses
Department of road transport	Inspectors of the department to support the change/improvement of PT routes, timetables and assist in determining specifications for bike racks on buses
Ministry of Communications and Works	To support the efforts at a higher, political level in order to assist in future improvements in the Limassol PT system and the Cyprus PT system in general
Cyprus Tourism Organisation, tourist information offices	To provide information on visitors complaints and comments regarding the use of the PT system, problems, needs for improvement.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Involvement, communication			
Political / strategic			

9.16 Measure LIM 7.2 - Creation of an electric bus hop on hop off service in the old town

Description

Two hop on hop off buses will offer the chance to visitors and residents to follow a route and visit a significant number of museums, archaeological sites and other landmarks in the town. Travellers will be able to get off the bus, spend time at the places of interest and get on the next bus to continue the tour using the same bus ticket. The buses will be accessible to people with disabilities. Audio guides available in the buses will provide a full tour in a number of languages for the traveller to choose from. Promotion of the service will take place in hotels, tourist information offices, urban buses, airport shuttle service and other points. Tickets will be purchased from the driver and will also be available from the driver of urban bus nr.30 serving the tourist area. Income from tickets will be used to cover part of the operational expenses. Integrated services will offer the traveller the opportunity to use other sustainable mobility modes such as public transport (bus nr. 30) to get to the hop on hop off bus at a single price. Hotels that are located further away from the Limassol city and old town will be approached to start their own shuttle service in order to transfer their guests to the old town. For this purpose cooperation the Limassol Bus Company and hotels will be essential. The implementation of promotional campaigns will also be necessary to ensure the awareness and success of this service.

This service will be an added value to Limassol as a destination since it will provide for the first time a chance to visit the most interesting places with a single price, combining sustainable mobility modes in a very easy manner. The experience of visitors is expected to be enriched by this service.

Objectives and outputs

Macro objectives:

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Save fuel/money
- Public health and safety
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists

Specific objectives

- introduce a hop on hop off service for a tour in the Limassol town
- provide audio guides with a choice of five different languages
- reduce traffic in the old town
- reduce parking problems in the old town
- introduce electric/hybrid vehicles

Outputs:

- two electric/hybrid buses
- hop on hop off bus service in the Limassol town
- audio guides in the buses providing the tour in five different languages
- Promotion of the service including flyers, adverts and banners

Innovative aspects

Electric or hybrid buses to be purchased for the hop on hop off service

Audio guides providing a choice of five languages

Mechanism for accessibility of people with disabilities on the buses

Research and technology development

Electric or hybrid buses to be purchased for the hop on hop off service

Audio guides providing a choice of five languages

Mechanism for accessibility of people with disabilities on the buses

Situation before CIVITAS

So far there is not any hop on hop off service in the old town. There are not any companies that tour tourists around Limassol landmark's in a bus or in any other modes.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	C02 emissions	ton	-	Reduction of 74.18t
Environment	Traffic noise	dB	-	Reduction of 30dB
Environment	Energy consumption	kWh	-	Reduction of 197.1kWh
Transport	save fuel	L	-	21900L
Economy	Save money	€	-	€27156

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Save money	E	12	26	45	transport service providers	demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Limassol bus company	To support in determining the specifications for buses and determining the stops in the route.
Department of road transport	To support in determining the specifications for buses and provide necessary permits for the service.
Ministry of Communications and Works	To support this effort and encourage other regions to do the same.
Tour guides association	to assist in designing the tour including interesting places to visit and to assist in the audio tour text
Hotels and tourist businesses	To promote the service to their guests

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.17 Measure LIM 7.3 - PT traveller information system

Description

Twenty five 'Smart' bus stops will include electronic signs that advise people about the waiting time for the next bus. A central system will be in place to provide the relevant information based on GPS sensors on the buses and the necessary software. The central system will be located at the Limassol Bus Company offices, and will be operated and maintained by this company.

Twenty five 'Smart' buses will include electronic strolling signs inside the bus, informing the PT users about the following stops, so that they (especially tourists) know where to get off the bus, the end of route, bikes on buses, ticket purchasing, etc. Visible and noticeable signs noting the bus stop name will be placed at bus stops.

These systems will be applied along the sea-side road which connects the tourist area to the city and old town. Many local authorities are involved, which are in agreement with this measure. The Ministry of Communications and Works was also advised about this possible action and is willing to assist.

We expect that this measure will significantly upgrade the quality of the PT service and increase its attractiveness both for tourists and residents that travel along the sea-side road (20 km), so as to reduce private/rental car usage or taxi hiring in favour of PT.

The Smart Stops signs and the electronic signs in buses will also provide tourist information about nearby attractions and events. The system will be designed with both tourists and residents in mind, making their travelling around using PT more efficient in terms of time and comfort. PT information provided will be user friendly for visitors, since along with the PT information, tourist information will be provided enabling visitors to plan accordingly and make the best of the PT routes available.

Objectives and outputs

Macro objectives

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Save fuel/money
- Public health and safety
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists

Specific objectives

- upgrade urban PT services
- increase interest and use of PT service

- provide travelling information to people waiting for the bus
- provide tourist information to people waiting for the bus
- provide travelling information while on the bus
- provide tourist information while on the bus
- Provide sustainable mobility information while on the bus (i.e. bike racks on buses, nearest bike sharing station to the next stop)

Outputs:

- 25 electronic strolling signs in buses serving the tourist area
- 25 electronic signs at bus stops serving the tourist area toward the old town
- GPS sensors on buses
- 25 name signs at bus stations

Innovative aspects

- Information will be collected from GPS sensors on urban buses
- A central system will be in place to manage information sent to electronic signs at bus stops
- Electronic signs at bus stops will provide arrival times and tourist information about nearest attractions, events/festivals etc
- Electronic signs in buses will provide information about next stop, end of the route, sustainable mobility information and tourist information

Research and technology development

- Information will be collected from GPS sensors on urban buses
- A central system will be in place to manage information sent to electronic signs at bus stops
- Electronic signs at bus stops will provide arrival times and tourist information about nearest attractions, events/festivals etc
- Electronic signs in buses will provide information about next stop, end of the route, sustainable mobility information and tourist information

Situation before CIVITAS

Currently there are timetables on the bus stops that indicate the time that the bus arrives. But sometimes it does not have the timetable making it impossible to know when the next bus will arrive and where does it go. On the outside front of the bus there is an electronic label that indicates the destination of the bus but there is not one inside the bus so for the tourists to know when they have reached their destination. Usually the driver says the next stop out loud.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	Co2 emissions	Ton	-	975.6t
Environment	Traffic noise	dB	-	30dB
Environment	Energy consumption	MWh	-	259.2MWh
Transport	Save fuel	L	-	288000L
Economy	Save money	€	-	€357120
Society	Citizens satisfaction with transport system	% of people satisfied with the public transport system		At least 50% will be satisfied

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Save money	E	13	26	45	transport service providers	demonstration area
Citizens satisfaction with transport system	S	8	26	45	general public	city

Stakeholders involvement

Stakeholder name	Activities description
Limassol bus company	The traveller system will be installed with their cooperation and assistance and the system will be maintained in the long run by them
Department of road transport	to provide the necessary specifications and permits
Ministry of Communications and Works	To approve and support this effort and encourage expansion of the system all over Limassol and in other regions of Cyprus as well.
Local authorities	to provide support in determining the bus stops to be upgraded, provide electricity, technical service and other support to materialise this measure starting from the tourist area to the old town.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)

9.18 Measure LIM 7.4 - Mobility application and travel planner for smart phones to provide real time information

Description

The application will be available for i-phone and android free of charge. It will be downloadable and user friendly for both smart phones and tablet users. The app will be tailored to both residents and tourists focusing on the effective use of sustainable mobility modes by both target groups. For residents, it will enable people to plan their travelling using PT and other sustainable mobility modes better, so as to include these modes in their everyday life and leisure trips. For the visitor, it will be a tool to plan their travelling around the town and the different attractions using sustainable mobility modes and enriching their experience. Real time information will be provided on the nearest bus stations, airport shuttle service, intercity buses, urban and rural bus routes and itineraries, bike rental stations, bike sharing stations, bike maintenance stations, electric car sharing stations, EV chargers. It will also provide information and maps for cycling lanes and routes, walking paths and routes, hiking paths and routes. Information will include description regarding places of interest along the routes (or nearby), distance, level of difficulty, kind of bicycle required, kind of equipment required if any, etc. The application will also feature information on access points to the beach for disabled people.

Travellers will be able to make their travel plans using sustainable mobility modes. They will also be able to determine the total emissions of their trip. Additionally, they will be able to write comments and rating of different products and services used, guiding new users in their decisions.

The application will be promoted in the airport shuttle, buses, at e-car sharing stations, in hotels, in high traffic areas etc. Promotion will take place in printed, broadcast and electronic media. Printed material will be prepared, as well as electronic promotions and radio advert.

Objectives and outputs

Macro objectives

- Less CO2 emissions
- Less traffic noise in the city centre
- Less energy consumption
- Save fuel/money
- Public health and safety
- Increase the total share of citizens that use sustainable mobility modes
- More Attractive tourist destination
- Change habits of local people and tourists

Specific objectives

- provide a tool for people to make their travel plans more efficient
- provide real time information to travellers
- promote sustainable mobility modes through the app

- Promote integrated products / services for tourism and mobility
- Collect visitor comments and rating for sustainable mobility services to improve
- Improve the visitors' experience

Outputs:

- Interactive Application providing real time information
- downloadable maps
- emissions calculator
- Travel planner
- Feedback and ratings from users

Innovative aspects

- Interactive application providing real time information
- GIS mapping
- Travel planner technology will be incorporated

Research and technology development

- Interactive application providing real time information
- GIS mapping
- Travel planner technology will be incorporated

Situation before CIVITAS

There is not a way to determine the nearest bus stations, bike rental stations, bike sharing stations, electric car stations and EV chargers at the current time. All these are difficult to find for tourists that do not know the area. There are not much information about them and there are not much information about their relevant routes either or the distances. Which makes it very inconvenient and unreliable for someone that does not know the area.

Inter-relationship with other measures

No inter-relation with other measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	ton	-	Reduction of 81.3t
Environment	Traffic noise	dB	-	Reduction of 12dB
Environment	Energy consumption	MWh	-	Reduction of 216MWh
Transport	Save fuel	L	-	24000L
Economy	Save money	€	€0,00	29760€
Society	Awareness level	% of population with knowledge of the measure	A few are aware of this measure through the media publications	At least more than 65% will be aware of this measure
Society	Acceptance level	% of the population who receive and approve the measure	unknown- this measure has not been implemented	At least more than 65% will accept this measure

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)			Target Group	Domain (demonstration area or city)
		12	26	45		
CO2 emissions	DC/E	12	26	45	vehicles in demonstration area	demonstration area
Traffic noise	DC/E	12	26	45	Inhabitants and visitors	demonstration area
Energy consumption	E	12	26	45	Vehicles in the area	Demonstration area
Save fuel	E	12	26	45	Vehicles in the area	Demonstration area
Save money	E	13	26	45	transport service operators	demonstration area
Awareness level	E	13	26	45	transport service operators	demonstration area
Acceptance level	S	8	26	45	residents and tourists	city

Stakeholders involvement

Stakeholder name	Activities description
Limassol bus company	Bus stop and routes information to be included in the app
Bike sharing company	Bike sharing stations and information to be included in the app
Bike rental companies	Bike rental points and information to be included in the app
Local authorities	Available parking areas to be included on the app
Ministry of Interior	Acquire maps
Airport express	Airport shuttle service information to be included in the app
Intercity buses	Intercity bus service information to be included in the app
Bike maintenance stations	Bike maintenance stations to be included in the app
e-car sharing	e-car sharing stations and info to be included in the app
Electricity authority of Cyprus	EV chargers locations to be included in the app
Limassol Cycling Club and Cyprus Cycling Association	To determine information such as level of difficulty for cycling routes, kind of bicycle required, kind of equipment required, etc
Hiking tour guides	To determine information such as level of difficulty for hiking routes, kind of equipment necessary (if any) etc
Local authorities	Information on accessibility of people with disabilities will also be included, such as access points to the beach. Information about parking places will be included in the app.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technological			

10 Local Evaluation plan - Rethymno

10.1 City description

The Municipality of Rethymno was established in 2011 by the unification of 4 pre-existing municipalities (Rethymnon, Arkadi, Lappa, Nikiforos Fokas), which are now municipal units. It has an area of 397,48 square meters and a population of 62.886 inhabitants; most of them commuting daily to the main city. The seat of the Municipality is the city of Rethymno the 3rd biggest city of Crete with 32.468 inhabitants.

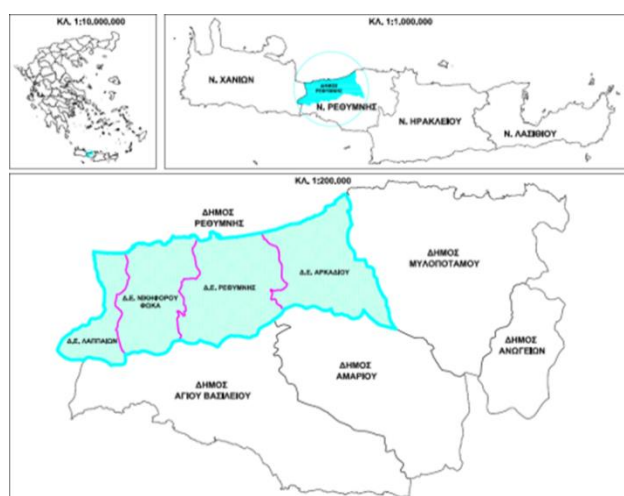


Figure 6 - Administrative organization of Rethymno

The main touristic “gates” for the whole island are Chania (airport and port, around 60 km to the west of Rethymno) and Heraklion (airport and port, around 80 km to the east). Additionally, the city has its own port mainly used by cargo ships and cruisers and a marina. The city is linear, between mountains and coastline, is consisting of the historical center and the “new” one and has very close to its center a beautiful sandy beach with a length over 2.5 km. Inland has a lot of points of interest and great nature as well. The old town is one of the largest historic city centres in Greece with high visit ability.

The municipality has approx. 30.000 beds available for the tourists, while the touristic season is mainly from April to October. As an average, 500.000 tourists are accommodated at the municipality every year which is around 10 times its population. The economic result of tourism is around 350 M€, which is around 50% of the regional GTP. Tourists are from all over Europe, the majority is coming from Germany, Scandinavia and UK; and recently with increasing pace French, Italians, Russians and Chinese. Visitors are also coming from USA, Australia and Canada. Mainly families are visiting Rethymno municipality and most of the tourists are looking to explore the municipality beaches, inland nature and civilization.

Rethymno is the hub of the prefecture of Rethymno which attracts almost a million visitors per year, all transportation means are involving the municipality’s infrastructure. Also, Rethymno is visited by a greater number of visitors, due to its central location in the island, its archaeological

importance, spectacular beaches and city's monuments as it consists a pass from the west to east part of Crete (around 5 million tourists per year visit Crete).

There is no differentiation between residents and tourists mobility patterns. Mainly private vehicles are used for transportation purposes. Buses (private sector) and taxis are covering the rest of the transportation needs. Bicycles use is steadily increasing, due to the increase of the existing bicycle path network. The city has a strong cross-party sustainable planning philosophy; Rethymno is a member of the Covenant of Mayors initiative since 2011, and include Sustainable mobility as a priority in their SEAP.

During the touristic period, the municipality population is dramatically enlarged. As a result, significant problems are created to the city "operation". Problems regarding traffic jam, freight distribution, parking facilities and noise are increasing. The public buses and taxis are struggling to cover the extended transportation needs. The lack of an extensive information system for the tourists is also increasing the problems of the municipality transportation scheme (limited access choices to main attractions; limited attractiveness of PT services). A significant problem is the lack of adequate public transportation from/to airports and inter-regional coordination. Finally, the existing public parking handling scheme should be rearranged, due to the lack of information given to drivers and the limitation of space during the touristic period.

Rethymno aims to address the unique challenges posed by the seasonal fluctuations of tourist numbers and the consequent strain on public transport and mobility services. Therefore, through Destinations the Municipality builds up an integrated approach to face the rising challenges of both growing sectors -mobility and tourism, introducing sustainable and reliable mobility solutions.

10.2 Strategic goal and objectives

The strategic goals of Rethymno within the DESTINATIONS project are to enhance a sustainable, liveable, healthy urban environment, to enable social inclusion, to strengthen the equality of all transport users and to stimulate economic growth and social development.

The main objectives are to:

- reduce fuel consumption, GHG emissions, traffic congestion and noise
- improve the attractiveness, accessibility and cost-effectiveness of transport service
- Increase transport safety and security
- offer and optimise alternative mobility options in the entire city
- strengthen the behavioural change towards more sustainable, car-free transport modes; reduce private car dependency and increase cycling, walking and use of PT
- design greener, safer and more accessible public spaces
- engage key stakeholders and citizens to a sustainable growth model
- strengthening the municipality's image as a sustainable and green tourist destination.

10.3 The relation among the measures

Site map

The map below presents the SUMP area of influence of the city of Rethymno.

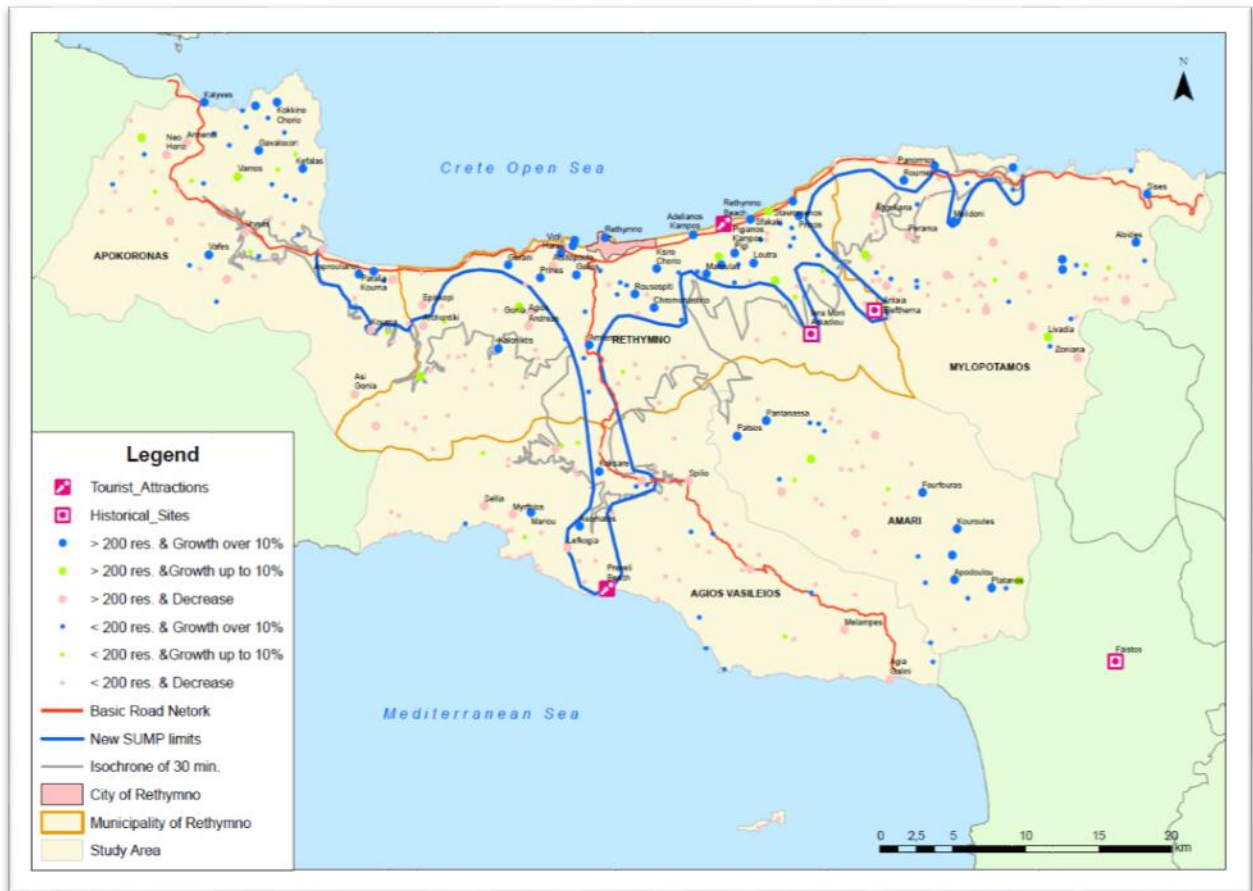


Figure 7 - Rethymno SUMP area

The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2,3,...: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER[1] (Measure Evaluation Results) and PER (Process Evaluation results) - Satellite templates
R2	Updated version of the MERs and PERs
RF	Final versions of the MER and the PERs

11 Evaluation plan at measure level

11.1 Measure RETH 2.1 - SUMP Integrating Tourist Mobility-SUMP WATCH

Description

This measure will refine and implement a pioneering but feasible Sustainable Urban Mobility Plan for the city and the Greater Rethymno area combining needs of visitors and residents alike, taking into account inter-regional mobility and public transport services. Furthermore, it will enhance economic growth, job creation and environmental sustainability at its core. SUMP will put the strategic approach for key demonstration projects within Destinations.

Citizen groups, residents, tourists and key public and private sector local actors will be engaged via focus groups, questionnaires and public consultations for a 360-degree stakeholder engagement process. Public dialogue at the level of neighbourhoods most affected by touristic load will be encouraged.

Objectives and outputs

The **objectives** of the measure are:

- Upgrade the existing SUMP to integrate tourist need and serve better the citizens through participative decision making
- Define a SUMP baseline and data gathering/monitoring system to support decision making
- Improve city's accessibility, PT services and parking infrastructures
- Introduce low emission zones
- Reduction of congestion and cars use
- Enable alternative - sustainable mobility modes combined with efficient PT service
- Increased capacity at regional urban planners and PT operators
- Enhance key local stakeholders' involvement in the decision-making process regarding mobility issues

Outputs:

- Revised pioneering SUMP for Rethymno approved
- Mobility Action plan, integrated for residents and visitors taking into account the seasonality
- Package of SUMP guidelines/ template for other municipalities in greater area
- CBW for public authorities, transport planners, hoteliers, and other actors; training materials
- Local Working Group in operation with at least 8 local stakeholders involved and including at least 3 stakeholder working meetings
- Public consultation events with 200+ citizens involved
- Mobility study performed
- Safe road masterplan - analysis of road accidents for the past decade and action plan of prevention measures

Innovative aspects

The updated SUMP integrating tourist mobility presents a holistic approach to be compiled in direct consultation with the involved actors. The SUMP will address the unique challenges posed by the seasonal fluctuations of tourist numbers and the impact on the transport infrastructure, especially around sites such as beaches, hotels, historic monuments and other attractions. Economic, social/well-being and environmental goals for the city will be incorporated in the SUMP development and will be monitored to drive improvements as a main innovative element.

Research and technology development

The SUMP will be built on the EC guidelines and experience in SUMP research, using the EC SUMP platform and networks. Research foreseen also includes best practices in small city SUMP development.

Situation before CIVITAS

The existing SUMP addresses partially the city's needs and is limited to the municipality area. To be functional and effective, the upgraded SUMP needs to consider the links within the prefecture area and inter-regional PT services.

Tourism influence should be evaluated, including seasonal fluctuation, access to main touristic attractions around prefecture, cross-region/airport transportations. Currently, during the 5-6 months touristic period there is a lack of parking, noise, heavy traffic. These factors are not taken into account in the existing SUMP but the new holistic approach will incorporate them.

Inter-relationship with other measures

There is a series of measures that will be strongly linked to SUMP. One of the main measures is RET 2.2 is strongly linked with the upgraded SUMP concerning the monitoring process incorporated in SUMP. Also, the measures RET 3.1, RET 3.2, RET 6.2 and RET 7.2 include studies that will be developed along with SUMP development.

The impacts

The impact evaluation of the SUMP will be done with a different methodology, namely through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process. (Self-assessment questionnaire).

Stakeholders involvement

Stakeholder name	Activities description
Regional Unit of Rethymno	Contribution to the development of strategic approach, linking to regional mobility planning. Contribution to the development and implementation of policies.
PT operator - KTEL	Participation in the consultation process. Engagement to provide data and needs to contribute to the sufficient design of SUMP.
Union of car rental enterprises Taxi operators Bike sharing providers	Participation in the consultation process. Engagement and facilitation of SUMP development.
Chamber of Commerce and Industry of Rethymno Technical Chamber of Rethymno	Facilitation of stakeholders' engagement and participation. Participation in the Local action group. Contribution to the general sustainable development of the Municipality. Support training and capacity building events.
Retailers and Traders Association of Rethymno Rethymno Hoteliers Association	Support the SUMP development contributing also for the tourist's needs and requirements. Promotion of sustainable mobility modes amongst tourists.
Rethymno's association of disabled people	Contribute to the inclusion of measures for mobility needs and the accessibility of disabled people
Regional Governor Vice governor-Rethymno	Support SUMP development and facilitate citizens' engagement. Participation in consultation events. Support replication to other prefectures in the island and other regions.
SYNPOLIS Association of Active Citizens Voluntary Groups Network of Rethymno Union of Rethymno Old Town residents ATLAS	Taking part to the consultation events, contribute to the local action group. Contribute to the development of a strategic action plan for road safety and accidents prevention.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Constructive and open involvement of policy key stakeholders	Lack of funding (austerity)	Actively identify new/ alternative funding opportunities	Low
Accurate technical planning and analysis to determine needs for SUMP progress	Change of priorities/policies during the implementation	Concrete engagement of high-level political actors to secure implementation	Low
Strong relation with others measures and future policies			

11.2 Measure RETH 2.2 – Smart systems for urban planners, PT operators and users

Description

There are numerous data/indicators that should be monitored and analysed in order to monitor the SUMP actions and mobility trends in each city/area. To support decision making to monitor, assess and improve the SUMP action plan it is necessary to collect, monitor and analyse numerous data sets.

Objectives and outputs

The specific **objectives** of the measure are:

- Provision of reliable information to monitor SUMP and deliver more efficient PT services
- Promotion of PT and increase use
- Reduction in congestion events
- Increase comfort and satisfaction with transport system/options
- Development of an efficient central monitoring system to manage and monitor traffic

Outputs:

- Central monitoring system & IT platform
- Smart sensors installed, monitoring equipment purchased
- SMART Car Parking Management System study

Innovative aspects

The measure involves the implementation of IT systems/ smart applications to monitor, supervise and analyse the mobility patterns, traffic load, PT use, user's feedback, environmental indicators etc. as a monitoring tool of the mobility services in order to be able to improve transportation and mobility options. It also involves the study of a smart parking management system.

Research and technology development

Within this measure, smart sensors and surveillance cameras will be purchased for proper monitoring. An IT application/platform to facilitate the collection of real-time data/mobility and environmental data and potentially data from surveys/crowdsourcing input, storage to a central server database and cross data analysis will be developed. Monitoring equipment, cameras, smart signage will be used to increase safe driving behaviours.

Situation before CIVITAS

In Rethymno, there is no monitoring system at the time. There is a lack of raw data to build a baseline for future evaluation and improvement of SUMP actions. The infrastructure is limited and the required data for efficient planning are unavailable. Furthermore, the tourism actual

impact to traffic load and PT infrastructures cannot be evaluated due to the lack of relevant data. There is a need of more efficient parking management system and attractive ticketing options for PT, combining attractions and other facilities.

Inter-relationship with other measures

There is a tight relation with the SUMP evaluation activities concerning the assessment of environmental and transportation impacts by the integrated IT tools that are featured in this measure. The infrastructure will support the data gathering required also for WP9 (Evaluation) tasks. The measure is linked with 2.1 SUMP development, 6.2 Low emissions zone, 7.2 Improved PT services.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Capital Costs	€		
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm	-	
Economy	Average operating revenues	€/pkm or €/vkm	-	

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Month	Target Group	Domain (demonstration area or city)
Capital Costs	E	46	City (transport service provider)	Demonstration area
Average Operating Costs	E	24, 46	City (transport service provider)	Demonstration area
Average operating revenues	E	24, 46	City (transport service provider)	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Urban planners	Integration of the monitoring systems in the city's transport infrastructure. Collection of data.
PT operator – KTEL	Engagement to provide valuable data and contribute to the transport baseline
Traffic Police Department	Provide important data and monitoring
Tour operators, tourism agencies and car rentals	Engagement to provide valuable tourism – related data

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Monitoring and evaluation of the existing mobility condition	Substantial lack of data which makes it difficult to finalise the SUMP Data Framework and the SUMP Monitoring tool	Appropriate monitoring systems will be installed	Low
Accurate technical planning and analysis to determine needs for SUMP progress	Potential operational damages of equipment	Contract with supplier including guarantee	Low

11.3 Measure RETH 3.1 - Active healthy and inclusive mobility for all - Enhancing and promoting systems and services for the physically impaired

Description

This measure will increase attractiveness, provide sustainable mobility options and motivate citizens and visitors to adopt a car-free lifestyle. The scope is to increase walking and cycling in the city, rather than an over reliance on private car mobility.

Additionally, this measure will increase accessibility and improve transport options for disabled people. Thus, this measure can transform the municipality of Rethymno to a contemporary city, friendly to the physically impaired.

Objectives and outputs

The specific **objectives** of the measure are:

- Expansion of existing walking/cycling network, new infrastructure
- Upgraded links between PT and other mobility modes
- Promotion of the “car free” lifestyle
- Increased use of public spaces for walking and cycling
- Reduction of CO₂ emissions, noise and fuel consumption
- Improved services and facilitate leisure trips of disabled
- Increase the number of disabled tourists
- Reduction of accidents of disabled persons in the area

Outputs:

- Study for new walking/cycling routes,
- Study on behaviour change
- Workshops to design behaviour change actions towards citizens and visitors
- 2 new routes including new/improved signage
- Map of cycling/walking main routes including links to PT
- Study for beaches accessibility
- 3 Traffic lights systems for blind and deaf people
- Day route designed for disabled people
- Stakeholders consultation meetings

Innovative aspects

The new provision of walking and cycling infrastructure will be in accordance to the peak and troughs of demand resulting from the fluctuating tourist numbers.

Also, new infrastructure will be launched for the connection of mobility for disabled people with main attraction points, including infrastructure for the accessibility to beaches and the introduction of touristic day routes and tailor made maps, especially for disabled people.

Research and technology development

The research will be conducted on user needs, profiles and motivations to steer infrastructure design. Based on research findings, best practices will be identified on behaviour change approaches to promote active mobility and inclusion along with a study on solutions/services for accessible attractions for disabled people, as part of the planning process for infrastructure for impaired people. The technology and infrastructure within this measure include the installation of traffic lights systems for blind and deaf people, with countdown indicators.

Situation before CIVITAS

Rethymno has some developed infrastructure and activities in the field, to improve mobility and safety for pedestrians and cyclists, along with actions to improve mobility and accessibility for disabled people. The city already provides bike lanes, a limited number of public bikes, and stations, etc., through previous investments. However, there is a need for the expansion and better signage of the existing bike lanes network, the improvement of safety for bicyclists and the improvement of existing infrastructure and services for disabled.

Inter-relationship with other measures

This measure's planning will be integrated to 2.1 SUMP. It is also strongly linked with RETH 4.2 Building a sharing mobility platform which will exploit the results of the user's analysis and will introduce e-bikes for disabled people to the existing bike sharing network and also, to RETH 7.1 Introducing e-vehicles for PT which includes the operation of electric mini buses accessible to people with disabilities.

The impacts

Measure 3.1 A

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Opportunity for active mobility	%		
Society	Awareness level	%		50%
Society	Acceptance level	%		
Society	Bike ownership	number of bikes/capitaX1000		
Society	Car ownership	number of cars/capitaX1000		
Society	Perception of accessibility level of service	Survey scale		
Society	Personal security (perceived)	Survey scale		
Society	Road safety (perceived)	Survey scale		

Measure 3.1 B

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Capital Costs	€		
Society	Awareness level	%		
Society	Citizens satisfaction with transport system	Survey scale		20% of satisfied
Society	Perception of accessibility level of service	Survey scale		
Society	Perception of accessibility level of vehicle	Survey scale		

Method of measurement**Measure 3.1 A**

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Awareness level	S	30, 46	Residents	Demonstration area
Acceptance level	S	30, 46	Residents	Demonstration area
Bike ownership	S	30, 46	Residents	City
Car ownership	S	30, 46	Residents	City
Perception of accessibility level of service	S	30, 46	Service users	Demonstration area
Personal security (perceived)	S	30, 46	Service users	Demonstration area
Road safety (perceived)	S	30, 46	Cyclists, Pedestrians	Demonstration area

Measure 3.1B

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Capital Costs	E	12, 36	authorities - transport service provider	Demonstration area
Awareness level	S	12, 36	General public, demonstration area	Demonstration area
Citizens satisfaction with transport system	S	12, 36	Service users	Demonstration area
Perception of accessibility level of service	S	12, 36	Service users	Demonstration area
Perception of accessibility level of vehicle	S	12, 36	Service users	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Regional Unit of Rethymno – Region of Crete	Contribution to the development and implementation of policies. Facilitate the sustainable mobility policies to improve accessibility in the municipality.
Municipal Tourism Office	Facilitation of tourism stakeholders' engagement. Promotion of new cycling/walking routes to tourists. Dissemination of promotional material.
PT Operator - KTEL	Contribution to the development and implementation of policies and the sufficient link of public transport with alternative transport modes.
Chambers of Commerce	Facilitation of stakeholders' engagement and participation.
Association of Active Citizens	Participation in workshops and ambassador's team and competition of "car free" life best story.
Traffic Police Department	Facilitate the sustainable mobility policies to improve accessibility and safety.
Atlas Cycling Union	Participation in workshops. Volunteers in activities promoting cycling/walking.

Rethymno's Association of disabled people	Collaboration on impaired needs analysis, evaluation of interventions, dissemination activities
Association of Travel and Tourist Agencies - Hoteliers Association	Promotion of sustainable mobility modes amongst tourists. Contribute by improving their facilities for disabled.
Initiative of Citizens for Road Accident Prevention and the Promotion of Road Safety	Collaboration on road accident prevention and road safety activities (awareness, training, events)

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Facilitating behavioural change and the car-free life style	Insufficient design of new routes and infrastructure.	Plan in conjunction with SUMP development, in an integrated approach	Low
Create grounds for further investments in alternative transport modes and accessibility infrastructure.	Poor promotion and low awareness of citizens and tourists	Development of strong promotional material and planning of dissemination activities in advance	Low
Increased accessibility and satisfaction for tourists and citizens	Citizens opposition/inertia to leave car	Development of strong promotional material	Moderate

11.4 Measure RETH 3.2 - Mobility Plan for schools and university communities

Description

This measure aims to address the traffic congestion surrounding schools during peak hours, which constrains traffic flow and pedestrians' safety. The creation of viable mobility plans for students and pupils will improve urban mobility, build the capacity of the young generation and offer a safe and environmental friendly everyday experience to children and young people of the municipality. Training, awareness and behaviour change activities engaging the schools communities will support the shift towards more environmental friendly mobility modes.

Objectives and outputs

The specific **objectives** of the measure are:

- Improve schools/University's communities' accessibility and PT services
- Increased awareness for safe driving and sustainable modes of transport
- Reduction of traffic and accidents close to schools and the University
- Increase of users of public bike stations in the area
- Increase in students walking and cycling to university /school
- Less traffic noise in the city centre

Outputs:

- Mobility plans for 10 schools and the University
- Improved PT routes for the selective schools
- University bus stop redesigned
- Feasibility study on intervention projects of surrounding public areas
- 1 workshop with parents' associations;
- 1 informational event for school communities
- Schools competition
- Road safety training session

Innovative aspects

The development of sustainable mobility plans for schools and the University of Rethymno will be combined with the improvement of PT routes in order to decrease traffic load in the city and improve the mobility experience for both residents and tourists.

Research and technology development

Analysis of mobility patterns of pupils, students and parents is foreseen within this measure, with regard to safe transfers towards schools and other educational activities during the day, in order to identify the specific needs and drivers. The research will also focus on best examples of other CIVITAS cities and successful implementation of mobility plans to schools and road safety actions.

Situation before CIVITAS

Currently, there is significant congestion in the areas around the schools during the schools' starting and ending lessons time slots, also during the afternoon when parents drive their children to different activities (language/music lessons, athletic activities). The increased traffic due to schools schedules increase delays, other drivers' anxiety and potential accidents.

There is a lack of convenient PT services in some schools and reduced endorsement of cycling/walking options that generate significant extra car journeys that add to the already large numbers of extra vehicular movements. The University campus is situated 4km from city centre, serving more than 6.000 students that the majority lives close to the city centre; their transportation also adds significant load. The increased traffic due to schools schedules increase delays, other drivers' anxiety, and potential accidents

Inter-relationship with other measures

This measure has a direct link to the sustainable development of the city which is addressed by the upgraded SUMP (RET2.1).

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Average modal split (passengers km)	%		10%
Transport	Average modal split (trips)	%		10%
Transport	Average modal split-passengers	trips/mode		10%
Transport	Average occupancy	p./vehicle		40%
Society	Awareness level	%		
Society	Acceptance level	%		
Society	Citizens satisfaction with transport system	Survey scale		
Society	Personal security (perceived)	Survey scale		
Society	Road safety (actual)	No. Killed, Seriously Injured and collisions annually		
Society	Road safety (perceived)	Survey scale		

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Average modal split (passengers km)	S	18,46	transport service provider	Demonstration area
Average modal split (trips)	S	18,46	transport service provider	Demonstration area
Average modal split-passengers	S	18,46	transport service provider	Demonstration area
Average occupancy	S	18,46	PT users	Demonstration area
Awareness level	S	18,46	Parents, teachers, general public	Demonstration area
Acceptance level	S	18,46	Parents, teachers, general public	Demonstration area
Citizens satisfaction with transport system	S	18,46	Parents of students	Demonstration area
Personal security (perceived)	S	18,46	General public, authorities, visitors	Demonstration area
Road safety (actual)	DC	18,46	General public, authorities, visitors	Demonstration area
Road safety (perceived)	S	18,46	General public, demonstration area	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Pupils and students community	Participation in activities for the redesign of public spaces (surroundings, bus stop), in educational/promotional events and school competition)
Initiative of Citizens for Road Accident Prevention and the Promotion of Road Safety Atlas Cycling Union	Assistance during promotional activities, as volunteers. Promotion and support of the road safety policies.
Traffic Police Department	Contribution to road safety trainings and workshop with material
PT Operator - KTEL	Collaboration to improve PT routes according to students and pupils needs.
Parents and Students Association of Rethymno Municipality	Engagement and participation in the workshop concerning road safety and behavioural change towards sustainable

	mobility modes.
University of Crete	Participation in activities for the redesign of the University bus stop.
Directorate of Primary Education Directorate of Secondary Education	Facilitate collaboration and communication with teachers, students and parents' association. Support of the educational activities.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Increase capacity in young generation towards sustainable mobility	Limited staff in schools to monitor and support	Strengthen collaboration with Education Authorities for support	Low
Constructive and open involvement of teachers and parents	Limited response of students and parents to the suggested changes.	Attractive and playful training session and material to engage students.	Low

11.5 Measure RETH 4.1 - Uptake of electric vehicles by fleet operators

Description

This measure promotes electric vehicles uptake and introduces charging infrastructures as a mean to integrate electric vehicles in the private fleets, reduce air pollution and noise and increase public awareness towards a low carbon emissions economy.

Objectives and outputs

The specific objectives of the measure are:

- Introduction of the first EVs charging points in the region
- Create awareness, interest and use among tourists and locals of e-vehicles and e-bikes
- Facilitate procurement of electric vehicles by fleet operators
- Unlock public / private funding for extra charging points installed in the city and the region
- Decrease emissions due increased share of clean fuels
- Noise reduction
- Creation of municipal incentives to support e-vehicles use

Outputs:

- 4 EV charging points
- Campaign to promote electric vehicles to citizens
-
- Informational event
- Free EV parking card for electric cars in all public parking sites
- Car rental companies informed
- Stakeholders' CBW.

Innovative aspects

The innovative aspect of this aspect of this measure is the launch of the first EV charging points in the region for clean vehicles. Unlocking the demand for EVs can give vast potential to improve air quality and reduce noise pollution to residents and the annual visitors. Rethymno will make available public charging stations in the area and lead as a lighthouse example for other Greek cities.

Research and technology development

The research within this measure aims at wider impact and interest and successful integration of EVs' infrastructure. Rethymno will install charging station and the research conducted will focus on the appropriate charging infrastructure options, taking into account tourists and citizens' mobility needs. Additionally, a study conducted will indicate the appropriate points for the launch of the first EV charging stations in the regional unit, in hotel areas and in the main parking sites of the Municipality. Potential economic incentives will also be explored for the uptake of e-vehicles

from rental cars and private car owners defining long-term benefits for the different stakeholders/actors

Situation before CIVITAS

Currently charging infrastructure is unavailable and there are limited electric vehicles in the whole region/island of Crete; incentives to use e-vehicles are not available. There is limited awareness and interest for electric vehicles and advantages.

Inter-relationship with other measures

This measure is linked with RETH 7.1 concerning the introduction of e-vehicles for PT and measure RETH 4.2 which includes the introduction of e-bikes.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	GHGs emissions	g/vkm + total annual tns GHG saved		3%
Economy	Capital Costs	€		
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Society	Awareness level	%		30%
Society	Acceptance level	%		

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Capital Costs	E	46	fleet operators	Demonstration area
Average Operating Costs	E	24, 46	fleet operators	Demonstration area
Awareness level	S	12, 46	citizens, car rental operators	Demonstration area
Acceptance level	S	12, 46	citizens, car rental operators	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Union of Car Rental Enterprises of Rethymno Taxi operators	Involvement of car rental and taxi companies. Integration of EVs into their fleet.
Hellenic Institute for Electric Vehicles (H.I.E.V)	Cooperation on communication campaign, informational event concerning EVs. Support to the design phase
Technical Chamber of Greece, West Crete division	Support to the design phase and the uptake of electromobility within the region.
Association of Travel and Tourists Agencies Hoteliers Association	Information to tourists concerning EV rental option, cooperation with involved car rental companies.
Region of Crete -Directorate of environment and spatial planning Region of Crete	Expanding the charging stations network in the island. Support campaign for EV uptake. Supporting policies provision
Parking operators	Ticket incentives to EVs

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Innovation and implementation of new technology in the transport sector	Inefficient operation and maintenance of the EVs infrastructure.	Cooperation with H.I.E.V for capacity building and knowledge transfer	Low
Acceptance and involvement of citizens and tourists	Lack of cooperation of the relevant actors	Informational and consultation events to strengthen engagement	Low
Environmental benefits of EVs			

11.6 Measure RETH 4.2 - Building a sharing mobility culture

Description

The sharing approach will be launched in local/ regional level. Rethymno provides the key ingredients to demonstrate the potential of a car and taxi sharing scheme thanks to the local community culture across the generations. The bikes stations network will be expand and the sharing bike fleet will be increased including e-bikes. Initiatives towards sharing mobility culture will be welcomed by the young millennial generation who build communities via the internet and social media and are familiar with mobile phone apps and web applications.

Objectives and outputs

The specific objectives of the measure are:

- Optimisation of the existing bike sharing system and infrastructure
- Increase biking, by increasing bike stations and bikes available for sharing
- Introduce e-bikes to the public operated bike stations
- Reduction in Single Occupancy Vehicle
- Increase of the citizens using sustainable mobility modes
- Launch car/ taxi sharing practice

Outputs:

- Study on mobility sharing with recommended bike, taxi and car sharing scheme
- 16 new public bike stations, signage redesigned/installed
- 40 new bikes, 10 e-bikes and 1 e-bikes for disabled people Promotional campaign; social media campaign, 10.000 postcards
- Pilot operation of web-based sharing platform;
- 1 car sharing mobile phone application (web based) demonstrated

Innovative aspects

This measure offers two levels of sharing, including the extension of the bike sharing scheme and coordinated taxi and car sharing offers to achieve maximum benefit in terms of car occupancy and demand responsive options. This measure will be a flagship project for the region and will challenge the use of shared modes of transport in the whole island.

Research and technology development

The research within this measure will focus on the appropriate software to be used in car-sharing schemes, for the implementation of the sharing mobility platform. The design of taxi, car and bike sharing services will take into account the visitor and residential needs, as result of studies on the users' profiles. Rethymno will replicate locally the SocialCar app and other apps being developed in DESTINATIONS Cities in order to demonstrate a web-based car sharing mobile phone application.

Situation before CIVITAS

In Rethymno, there is already a public bike sharing system with a limited number of stations and bikes. However, the stations require relocation, expansion and improved signage and ticketing system. Furthermore, a more aggressive informational – promotional campaign is required to motivate locals and make tourists aware. Currently, e-bikes and other modes of sharing mobility, including car sharing service, are not available in Rethymno or in the rest of the island.

Inter-relationship with other measures

The measure is linked with RETH 3.1 (Active, healthy and inclusive mobility for all), taking into account studies results for the visitor and residential needs. This measure is also linked to RETH 6.1 Sustainable Mobility Agency for tourists/visitors and thus offering an integrated service; also to 4.1 Uptake of e-vehicles as concerns the charging stations. The acceptance and uptake of the sharing scheme will have a very positive impact on the region's mobility evolution.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	GHGs emissions	g/vkm + total annual tns GHG saved		880
Economy	Capital Costs	€		
Economy	Average Operating Revenues	€/pkm or €/vkm		
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Transport	Average modal split-passengers	trips/mode		25%
Transport	Use of space for parking	%		
Transport	Average occupancy	p./vehicle		
Transport	Bike sharing bikes and stations per capita	%		60%
Society	Awareness level	%		50%
Society	Acceptance level	%		50%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
GHGs emissions	E	20, 36, 46	citizens and visitors	Demonstration area
Capital Costs	E	46	sharing modes operators	Demonstration area
Average Operating Revenues	E	36, 46	sharing modes operators	Demonstration area
Average Operating Costs	E	36, 46	sharing modes operators	Demonstration area
Average modal split-passengers	S	20, 46	authorities, transport planners	Demonstration area
Use of space for parking	E	20, 46	parking operators, citizens	City
Average occupancy	S	20, 46	sharing modes operators	City
Bike sharing bikes and stations per capita	E	20, 46	citizens and visitors	City
Awareness level	S	20, 46	citizens and visitors	Demonstration area
Acceptance level	S	20, 46	citizens and visitors	Demonstration area
Perception of accessibility level of service	S	20, 46	citizens and visitors	City

Stakeholders involvement

Stakeholder name	Activities description
Regional Unit of Rethymno – Region of Crete	Engagement and support towards planned activities.
Municipal Tourism board	Promotion of the shared mobility modes, support of sharing campaign towards tourists
Taxi Unions, Union of Car Rental Enterprises of Rethymno Bike Rental Operators	Participation in the sharing mobility scheme
Association of Active Citizens Atlas Cycling Union	Promotion of the sharing mobility culture.
Voluntary Groups Network of Rethymno Schools communities	Acceptance and use of the sharing services and shared transport modes.
Hoteliers Association Hotel Employees Association	Promotion of the shared mobility modes, informing their guests, engaged in the sharing miles competition for their employees

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
New available sharing solutions	Insufficient involvement of key stakeholders	Consultation meetings and strong informational activities with involved stakeholders	Low
Introduction and endorsement of the sharing culture	Low participation of tourists and citizens in car sharing scheme	Continuous motivational actions.	Moderate
Growing demand for new bikes, e-bikes and bike stations			

11.7 Measure RETH 5.1 - Sustainable freight logistics plan

Description

This measure will develop a Freight Logistic Plan for Rethymno with an emphasis on logistics management for hotels, beach commercial areas and the old city center with the involvement and consensus of stakeholders.

The implementation of a Pilot Logistics System aims to establish a unified freight system in the historic centre limiting the circulation of half load heavy vehicles.. The potential benefit on reduced freight movements, improved efficiency of goods supply, reduced noise and improved air quality is substantial.

Objectives and outputs

The specific **objectives** of the measure are:

- Improvement of freight distribution operation to optimise the goods supply in the city centre
- Involvement of SMEs in the old town of Rethymno.
- Decrease of noise and air pollution
- Decrease of logistics fleet circulating in the city center, reduction of traffic congestion
- Test of a new approach for freights delivery, through a unified planning of routes
- Raise awareness and capacity of freight drivers

Outputs:

- Urban Freight Logistic Plan for Rethymnon approved
- Urban logistics advisory group, freight logistic companies involved
- Action plan for a unified freight system in the historic center
- An online platform to coordinate freight operators, hotel suppliers, and retailers. Launch of a 6-month pilot project
- Safe and eco driving training materials and session delivered to freight drivers

Innovative aspects

The innovative element of this measure is the coordination of the freight distribution processes among the different actors with an online ITS system. The online platform will manage the schedule of freight delivery according to the demand and supply of goods in the targeted area (historic city centre).. The approach tested could be expanded to more areas, with high demand for goods delivery.

Research and technology development

The measure research will explore a viable business model for the operation/ continuation of the system and platform after the pilot ends by private operators. Additionally, an action plan for the unified freight system will define the suitable approach to coordinate demand and supply of goods in the city centre and schedule freight delivery services.

Situation before CIVITAS

The freight distribution adds to the congestion and increases air and noise pollution in the historic centre. Large and heavy polluting vehicles circulate the heavy traffic roads to cover the supply demands. At the moment this problem is not addressed sufficiently.

There is only a restriction on entry to the historic centre for few hours during the day but there is not an efficient logistic plan that can solve the problem and at the same time to ensure that shops have efficient supply system to run their business. Organising better the freight routes in the city centre is necessary to optimise the goods delivery routes and reduce environmental and other impacts in the city.

Inter-relationship with other measures

The measure will be linked to the SUMP development in RET 2.1. It will promote collaboration of interested stakeholders to improve urban logistics operations and reduce overall negative externalities.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	GHGs levels	ppm or g/m ³		35%
Environment	CO ₂ emissions	g/vkm + total annual GHG saved		
Environment	CO emissions	g/vkm + total annual		
Environment	NO _x emissions	g/vkm + total annual		
Environment	VOC emissions	g/vkm + total annual		
Environment	Small particulate emissions	g/vkm + total annual		
Environment	Noise Perception	%		10% less people troubled
Energy	Vehicle fuel efficiency	MJ/vkm		
Transport	Freight movement	number of movements per day		- 8%
Society	Awareness level	%		50%
Society	Acceptance level	%		50%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
GHGs levels	DC	29, continuous monitoring, 46	citizens and visitors	Demonstration area
CO2 emissions	E	29, 36, 46	citizens and visitors	Demonstration area
CO emissions	E	29, 36, 46	citizens and visitors	Demonstration area
NOx emissions	E	29, 36, 46	citizens and visitors	Demonstration area
VOC emissions	E	29, 36, 46	citizens and visitors	Demonstration area
Small particulate emissions	E	29, 36, 46	citizens and visitors	Demonstration area
Noise Perception	S	29, 46	citizens and visitors	Demonstration area
Vehicle fuel efficiency	E	29, 36, 46	Logistics companies	Demonstration area
Freight movement	S	29, 46	Logistics companies	Demonstration area
Awareness level	S	29, 46	Logistics companies	Demonstration area
Acceptance level	S	29, 46	Logistics companies	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Region of Crete -Directorate of environment and spatial planning Municipal services	. Support the Sulp development, the implementation of the proposed action plan. Define and support new efficient regulations regarding the freight system.
Freight logistic companies / HORECA suppliers	The main providers for freight deliveries. Provide relevant data, contribute to the development of the Sulp. Member of the urban logistics advisory group. Participation in the online platform for the optimisation of freight distribution. Participation of freight drivers in the eco-driving training.
Chamber of Commerce and Industry	Participation as a member of the urban logistics advisory group. Facilitate all relevant

	actors' engagement and cooperation in the consultation process.
Retailers Association of Rethymno Association of Restaurants, Rethymno Hoteliers Association, Union of Tourist Settlements of Rethymno Prefecture XENIOS ZEYS	Provide relevant data. Member of the urban logistics advisory group. Facilitate all relevant actors' engagement and cooperation, as the main representative of local retailers and traders, local restaurants and hotels owners.
Retailers, shop and restaurant owners	Participation to consultation process. Engagement and collaboration, as key actors of the freight distribution chain.
Hellenic Institute of Transport (H.I.T.)	Support the development of freight management action plan, as a national transport-related institute. Advise on the new regulations regarding the freight system.
Traffic Police Department	Support during the development of traffic regulations and access restrictions. Responsible for the inspection and the implementation of the traffic regulations regarding freight movement.
Municipal Port Authority Trust of Rethymno	Support the development of freight management action plan, as the municipal department responsible for administering and maintaining the facilities of Rethymno's port and the marina.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Facilitate strategic policies	Low quality of data selected as concerns the logistic models.	Definition of IT systems to support data collection	Moderate
Enhance capacity of freight drivers and freight companies	Lack of cooperation between the involved parts.	Consultation process to secure engagement	Low

11.8 Measure RETH 5.2 - Cooperative mobility - Business case on UCO to biodiesel chain-demonstration on an urban waste collection truck

Description

The measure will define and set up a cooperative business model on UCO to biodiesel chain, so that the UCO produced locally to be transformed and exploited locally to the benefit of the municipality and to the benefit of the local economy and environment. It also involves a demonstration project on a municipal urban waste collection track, the expansion of the current collection sites network, including smart collection tanks and engagement and behavioural change campaigns with regard to proper UCO disposal addressing both citizens and HORECA SMEs.

Objectives and outputs

The specific **objectives** of the measure are:

- Expansion of existing UCO collection network
- Increase the amount of UCO collected
- Engagement of hotels and restaurants to participate
- Less environmental pollution in the municipal water supply and sewage company
- Raise awareness and change behaviour about the improper disposal of UCO
- Become a lighthouse example to other municipalities

Outputs:

- Feasibility study for a local cooperative to run the whole chain of UCO to biodiesel and a business case analysis.
- Demonstration project of UCO to biodiesel chain in place, waste collector truck using locally produced biodiesel, labelled with a full cover sticker to promote the UCO collection
- Expansion of the collection points network/system: 50 UCO collection containers of which 25 smart ones,
- Promotional campaign towards schools and HORECA

Innovative aspects

The innovative aspect of the measure is the full UCO to biodiesel chain operation, along with the engagement of hotels and restaurants to increase the amounts of UCO collected. The biodiesel produced will fuel a municipal truck to be exploited as a demonstration project. Overall, this measure will contribute to the existing research of UCO exploitation and will provide useful insights on the implementation of the full UCO to biodiesel chain.

Research and technology development

One of the main tasks is the development of a feasibility study for a cooperative business case (private-public-crowdfunding) involving the whole chain, the expanded collection network and

transformation plant to feed the municipal fleet. The study will define an operational business model to motivate investment in transformation plant in the island to make feasible the exploitation of this energy source in local level.

Situation before CIVITAS

In the city of Rethymno, a pilot project for the UCO collection was launched in 2014 with a limited number of collection points in the city centre. An educational campaign regarding the advantages of UCO collection for biodiesel production was conducted involving the school community showing that, with proper informational campaigns and citizens' motivation, there is a big potential.

However, in Crete, the collected UCOs have to be transferred from the island of Crete to biodiesel producers located to the mainland, via sea and this leads to high costs for the collection and additional environmental impacts. There is an obvious opportunity for a local transformation plan, serving the region, and making the biodiesel transformation and transportation more sustainable

Inter-relationship with other measures

This measure doesn't have any links with other demonstration measures.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	GHGs emissions	g/vkm + total annual tns GHG saved		54%
Energy	Used cooking oil collection	m ³ /year		54%
Economy	Capital Costs	€		
Economy	Average Operating Revenues	€/pkm or €/vkm		
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Society	Awareness level	%		30%
Society	Acceptance level	%		20%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
GHGs emissions	E	26, 36, 46	citizens and visitors	City
Used cooking oil collection	DC	26, 36, 46	UCO collectors - biodiesel producers	City
Capital Costs	E	46	UCO collectors - biodiesel producers	Infrastructure for pilot vehicles
Average Operating Revenues	E	36, 46	UCO collectors - biodiesel producers	Demonstration area
Average Operating Costs	E	36, 46	UCO collectors - biodiesel producers	Demonstration area
Awareness level	S	26, 46	Residents, schools communities, Horeca	Demonstration area
Acceptance level	S	26,46	Residents, horeca	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Region of Crete - Directorate of Industry, Energy and Natural Resources Region of Crete -Directorate of environment and spatial planning	Facilitate the expansion of the UCO collection network. Support the design and implementation of the complete transformation chain.
Association of Restaurants Hoteliers Association	Supporting the engagement process of local hotels and restaurants. Promoting the environmental aspects to visitors. Participation in the collection system, providing the used cooking oil from the restaurants.
Restaurant and hotels owners	Contribution to the UCO collection, potential involvement in a cooperative.
Chamber of Commerce and Industry of Rethymno	Facilitate stakeholders' engagement and promotional actions and the development of the cooperative.
Municipal Enterprise of Water and Sewage	Supporting the campaign with leaflet

	insertions in water bills
Hellenic Association of Biofuels producers	Support the design and implementation of the complete transformation chain
Directorate of Primary Education of Rethymno Directorate of Secondary Education of Rethymno Parents and Students Association of Rethymno Municipality	Contribute and facilitate the educational activities within the school's community (students-parents-teachers). Expansion of the existing network of bins in schools and increase of the collected amount with the engagement of students and parents.
Municipal Waste Management and Environment Department	Responsible for waste management in the municipality to undertake the operation and management of the system after the project's end

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Environmental benefits of alternative fuels	Collection of inappropriate types of oil that would demote the biodiesel quality	Adequate informational activities toward citizens to avoid inappropriate collection	Low
Political endorsement to promote sustainable profile of site	Change in the administration rules in UCO handling	Engagement of high-level authorities to support the pre-existing procedures	Moderate
Enhanced environmental consciousness of young generation			

11.9 Measure RETH 6.1: RET 6.1.a: Sustainable mobility agency for tourists/visitors, Sustainable Mobility campaign & Eco-drivers capacity building & RET 6.1.b: New products combining tourism and mobility

Description

RET 6.1.a

This sub-measure focuses on the design and provision of quality services for tourists by offering accurate information related to alternative sustainable mobility options, new products/services combining tourism and mobility and raising awareness on environmental friendly transportation through a dedicated Sustainable mobility agency that will coordinate all transport activities / stakeholders and will initiate/promote relevant services. The agency will serve a dual function of transport information provision as well as the engagement of hoteliers and other tourist stakeholders to develop improved travel plans.

RET 6.1.b

This sub-measure will provide alternative mobility options and new products combining tourism and mobility for tourists and residents, in order to encourage more sustainable commuting choices and achieve modal shift away from single occupancy car use.

Objectives and outputs

The specific **objectives** of these sub measures are:

- Successful coordination of all sustainable mobility initiatives and transport services
- Improved mobility options and services for tourists and citizens
- Introduction of the Sustainable Mobility Agency, as an integrated mobility services info hub
- Raise awareness towards sustainable modes of transport in the site
- Reduce car use in the specific designed new routes
- Increase the share of visitors that use sustainable modes of transport during their vacations, instead of car hire
- Promote eco and safe driving amongst drivers
- Increased satisfaction of citizens and tourists

Outputs:

6.1a

- 1 Sustainable Mobility Agency operation
- 1 Online platform
- 2 Sustainable mobility information hubs
- 1 Tourist satisfaction survey
- 1 Training session for hotel staff

Eco- driving campaign; 500 Drivers reached 1 electronic version of guidebook6.1b

- 1 Sustainable mobility travel planner
- 20 hotel / tour operators involved
- 3 new thematic car-free routes

Innovative aspects

The innovative aspect of the measure is the introduction of the Sustainable Mobility Agency, as a designated service for tourists that will provide all the necessary information to encourage a more sustainable travel choice and take up of the new mobility services offered by the municipality. Attractive promotional activities along with eco-driving training will strengthen the environmental friendly profile of Rethymno amongst tourists. This will, therefore, act as a catalyst for the economic success of EU and municipal investments.

Research and technology development

This measure focuses on the study of mobility patterns of visitors/tourists, which will be analysed and monitored. The data gathered will justify the initialisation of new travel plans at tourist hotels and main attractions, for both hotel personnel and guests. As a result of this research, sustainable mobility travel plans will be developed, targeting the connection towards main tourist installations and the links between hotels and the fortress theatre, city center and old harbour.

The technological aspects of the measure include the development of an online platform for promoting sustainable mobility plans for selected routes, accessible from web/mobile along with the launch of sustainable mobility information hubs (before and after arrival).

Situation before CIVITAS

Currently, the initiatives of Rethymno to promote a more environmentally friendly profile and information about sustainable mobility options are limited. An agency that could monitor the tourists' mobility patterns and needs or to promote tourists' tailor-made mobility services is not available in the region. Within this context, it is important to work towards the engagement of tour operators, hotel booking services, PT operators and other Tourism stakeholders in order to promote a sustainable travel choice through the Sustainable Mobility Agency. Rethymno will enrich the existing tourist experience, targeting the mobility sector to encourage further the sustainable transport of the visitors.

Inter-relationship with other measures

This measure is highly related to products combining tourism and mobility described in measures 3.1 and 4.2, as well as other mobility services and products that can be offered as an integrated solution, included in 7.1 & 7.2.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Average Operating Revenues	€/pkm or €/vkm		
Economy	Capital Costs	€		
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Society	Awareness level	%		100%
Society	Acceptance level	%		
Society	Citizens satisfaction	Survey scale		20%
Society	Road safety (actual)	No. Killed, Seriously Injured and collisions annually		
Society	Road safety (perceived)	Survey scale		

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Average Operating Revenues	E	36, 46	Municipal / tourism authorities	Demonstration area
Capital Costs	E	46	Municipal / tourism authorities	Demonstration area
Average Operating Costs	E	36, 46	Municipal / tourism authorities	Demonstration area
Awareness level	S	19, 46	visitors/tourism stakeholders	Demonstration area
Acceptance level	S	19, 46	visitors/tourism stakeholders	Demonstration area
Citizens satisfaction	S	19, 46	citizens and visitors	Demonstration area
Road safety (actual)	DC	19, 46	citizens and visitors/authorities	City
Road safety (perceived)	S	19, 46	citizens and visitors/authorities	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Regional Unit of Rethymno – Region of Crete Region of Crete -Directorate of Tourism	Support the development of appropriate services and the operation /promotion of the agency
PT Operators - KTEL West/East Crete Bus Services Taxi Unions and Private Transport services Union of car rental enterprises Bike Rental Operators Parking operators	Engagement in the Sustainable Mobility travel planner scheme.
Association of Active Citizens Streetpanthers ATLAS Cycling Union	Use of the Sustainable Mobility travel planner and promotion to other citizens. Participation in satisfaction surveys. Promote eco/safe driving approaches
Chamber of Commerce and Industry of Rethymno Municipal Tourism Board Association of Restaurants Traders Association of Rethymno	Promote the Sustainable Mobility agency services. Cooperation for the development of new mobility services and sustainable/eco tourism packages
Hoteliers Association Hotel Employees Association Association of Travel and Tourist Agencies, Tour operators	Promote the Sustainable Mobility agency services. Cooperation during the hotel employees' training session to ensure sufficient participation.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Enhanced profile for the city as tourist destination	Lack of long-term financing.	Business case scenarios will be explored that will ensure that the agency will be self-sustained.	Moderate
Attractive services for tourists	Proper personnel recruitment	Careful selection of personnel with experience in the tourism sector to ensure staff' capacity	Low
Boost of local economy	Weak cooperation with the tourism market actors	Strong engagement activities and consultation meeting to highlight the expected benefits	Low

11.10 Measure RETH 6.2 - Low Emission Zone Study

Description

This measure is intended to study how a Low Emission Zone works and gather important data to shape future policies on the introduction of Low Emission Zones in areas which are negatively affected by heavy traffic congestion, particularly in areas where there is a considerable influx of tourism.

Objectives and outputs

The specific **objectives** of the measure are:

- Introduction of a Low Emission Zone (LEZ) to limit the access of vehicles
- Assessment of the social and economic impacts of Low Emission Zones
- Parking regulations assessment and revision
- Improved air quality
- Involve citizens and stakeholders to the decision-making process

Outputs:

- Strategic study for the implementation of car-free zone in the historic city centre,
- Public consultation process involving residents, business operating in the area, or affected by the restrictions.

Innovative aspects

Within the study, the identification and proposal of new parking regulations are foreseen.

Research and technology development

This measure will deliver a strategic study for car free zone in the historic city centre and LEZ around. It includes the assessment of the social and economic impact of restricting access to the surrounding area, parking capacity, alternative transport modes, introduction of a new circle bus lane, location of taxi parks, new regulation and ensuring that provision will be taken to exclude negative impacts on vulnerable road user groups. The study will draw from successful examples and best practices and, having gained the consensus of the community, is expected to entry the implementation phase

Situation before CIVITAS

Currently, cars have access to the historic city centre and the surroundings, causing congestion and air pollution while occupying areas where tourist influx is high. Unregulated parking habits make worse the experience of pedestrians. The increase of noise and pollution affects the residents of the city centre and reduces the attractiveness of the area which is overwhelmed of monuments, leisure attractions, shops.

Inter-relationship with other measures

The LEZ study will be linked to the SUMP development (RET 2.1) and the proposed regulation changes can be incorporated in future transportation policies.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	CO2 emissions	g/vkm + total annual tns GHG saved		estimation only
Environment	CO emissions	g/vkm + total annual		estimation only
Environment	NOx emissions	g/vkm + total annual		estimation only
Environment	VOC emissions	g/vkm + total annual		estimation only
Environment	Small particulate emissions	g/vkm + total annual		estimation only

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
CO2 emissions	E	Estimation only, 46	citizens and visitors	Demonstration area
CO emissions	E	Estimation only, 46	citizens and visitors	Demonstration area
NOx emissions	E	Estimation only, 46	citizens and visitors	Demonstration area
VOC emissions	E	Estimation only, 46	citizens and visitors	Demonstration area
Small particulate emissions	E	Estimation only, 46	citizens and visitors	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
Traders Association of Rethymno Chamber of Commerce and Industry Hoteliers Association Association of Restaurants Retailers, Restaurants PT Operator - KTEL Parking operators Taxi Unions	Participation to consultation events and stakeholders workshops
Region of Crete -Directorate of environment and spatial planning	Contribute to the study development, provide insights and data

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Facilitate new rules and regulations and their application	Citizens opposition to new parking regulations and prevention of implementation.	Public consultation event to provide sufficient information	Moderate
Create grounds for future implementation of complementary measures	Reaction of the professionals as concerns parking.	Highlight of the benefits and strong engagement process	Moderate

11.11 Measure RETH 6.3 – Green Mobility Card

Description

This measure aims to develop a Green Mobility awarding scheme, through a Green Mobility Card for payment and incentives to award tourists and residents for choosing sustainable mobility options. Users can collect green credits/points when using PT, public bike stations, the sharing platform, parking facilities at the city limits or other sustainable mobility services in the area/region.

Objectives and outputs

The specific **objectives** of the measure are:

- Design an attractive, self-sustained Green Mobility awarding scheme at regional level
- Define a green credit scheme, promoting sustainable mode of transportation and providing benefits both to visitors/tourists and local/regional businesses

Outputs:

- Feasibility study of setting up and maintain a Green Mobility awarding scheme in regional level

Innovative aspects

The Green Mobility Card scheme will be studied for the first time in order to develop a viable implementation plan and introduce it to citizens and tourists in the near future.

Research and technology development

The measure is about the feasibility study of a Green Mobility Card scheme that could be used to gather credits awarded from sustainable transport use. Business case scenarios will be studied to assure a self-sustainability of the scheme.

Situation before CIVITAS

Not a single credit system for mobility services in the region. There is not yet a smart card system that allows customers to pay for the urban public transport trips and benefit from prepaid and discount tickets.

Inter-relationship with other measures

This measure doesn't have any links with other demonstration measures.

The impacts

Measure RET 6.3 is a feasibility study, therefore it will not be possible to evaluate the impacts.

Stakeholders involvement

Stakeholder name	Activities description
PT Operator - KTEL Bike Rental Operators Chamber of Commerce and Industry	Contribute to the definition of tickets and point systems.
Local shops/ restaurants Traders Association of Rethymno Association of Restaurants Association of Travel and Tourist Agencies Hoteliers Association Travel and Tourism Agencies	These stakeholders could collaborate offering discounts, gifts to promote the use of the green credits scheme.

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Accurate technical planning and analysis			
Accurate economic planning and market analysis to determine requirements for future implementation			

11.12 Measure RETH 7.1 - Introducing electric vehicle for PT

Description

This measure will introduce clean vehicles in the municipal and PT fleet, through the design and launch of a new route of high interest connecting points of interest site around the city for visitors and citizens aiming to improve mobility services, to reduce private and rent cars circulation and to challenge the replacement of old vehicles with clean ones. The use of cleaner, alternative fuels and the uptake of electromobility will improve urban environment by reducing pollutant emissions and noise and the image of the city in respects of sustainable destination.

Objectives and outputs

The specific **objectives** of the measure are thus:

- Launch clean vehicles to the municipal fleet
- Reduce car use, congestion and parking problems
- Change habits of locals and visitors – Promote sustainable mobility modes
- Test a cycle route along city beach road which can lead to a significant reduction of private cars/taxi circulation

Outputs:

- 1 Electrical mini bus & 1 electric car
- New seasonal route serving the city beach line (pilot tested for one season)
- Attractive signage to properly promote the electromobility and the new route
- Users' satisfaction survey. Evaluation of replication potential in more routes/services/areas.

Innovative aspects

This measure will launch the first public e-vehicles in the region, 1 electrical mini bus and 1 electric car and introduce to the citizens the benefits of electromobility. The electric mini bus operated will be also accessible to people with disabilities.

The demonstration aims to have a multiplier effect on similar tourist services and cities in Europe, but mostly it could be a good practice example for other Greek cities and could be replicated inspiring other municipalities.

Research and technology development

Research foreseen in this measure aims at the proper design and implementation of the new route, as a result of the consultation process with the relevant stakeholders and the successful promotion of the new routes and the vehicles to citizens and tourists. The route of the e- bus will be planned in conjunction with the SUMP or a fully integrated approach.

Additionally, in order to assure that the new route will continue operating after the pilot period, a business plan will be developed for the PT operator to undertake the operation, improvement and maintenance of the route and vehicles. Replication potential will be evaluated for more

routes/services/areas and investment options will be sought to finance additional e-shuttles upon analysis of pilot.

This measure also includes the development and integration of a smart audio guide for users of the bus and handsets.

Situation before CIVITAS

No electric buses in the whole region. Rethymno will lead as an example and promote replication for other Greek cities.

Inter-relationship with other measures

The route of the e- bus will be planned in conjunction with the SUMP for a fully integrated approach. This measure has also a tight relation with the measure RETH 4.1, concerning the introduction of EV in the region and the introduction of charging points and the RETH 6.2 Low Emission Zone. The service will be also advertised within the Mobility Agency RETH 6.1 and directly by hotels and tourist agencies.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Energy	Vehicle fuel efficiency	MJ/vkm		10%
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Economy	Capital Costs	€		
Transport	Public transport service per head of population	departures/capita		
Society	Awareness level	%		60%
Society	Acceptance level	%		20%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Vehicle fuel efficiency	E	12, 24, 36	Bus operator	Demonstration area
Average Operating Costs	E	24, 36	Bus operator	Demonstration area
Capital Costs	E	36	Bus operator	Demonstration area
Public transport service per head of population	E	12, 36	Bus operator	Demonstration area
Awareness level	S	12, 36	PT users (demonstration area)	Demonstration area
Acceptance level	S	12, 36	PT users (demonstration area)	Demonstration area

Stakeholders involvement

Stakeholder name	Activities description
PT Operator – KTEL	Collaboration on the introduction of e-bus and the proper incorporation into the PT fleet after the pilot project end. Planning and evaluation of new route and services.
Hellenic Institute for Electric Cars	Provide advice when necessary, support communication activities, promote Rethymno example nationally.
Association of Travel and Tourist Agencies Hoteliers Association	Information/Promotion to tourists concerning the beach route, emphasising the environmental benefits. Promotional material displayed.
Chamber of Commerce and Industry of Rethymno	Support campaign for E-vehicles introduction to the public fleet
SYNPOLIS Association of Active Citizens Union of Rethymno Old Town residents	Promote the use of the beach route to citizens challenging car-free lifestyle

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
New potentials offered by technology in the EV sector	Limited charging infrastructure at the beginning	Cooperation and engagement of regional stakeholders to increase charging points	Low
Environmental benefits for the site	Lack of capacity for operating and maintaining	Cooperation with supplier and exchange with experienced partners throughout implementation	Moderate
Availability of CIVITAS funding			

11.13 Measure RETH 7.2 - Improved PT for tourists and citizens

Description

This measure will constitute a concrete endeavour to upgrade PT services in order to facilitate an increase in the transported users and satisfied visitors. The measure will improve the PT service in the area, with better-designed routes, schedules and comfort.

Objectives and outputs

The specific **objectives** of the measure are thus:

- Improve PT routes and time tables, improved comfort and satisfaction of the PT users
- Increased use of PT by tourists and residents
- Enable bike transportation on selective PT routes
- Offer thematic routes to specific groups of visitors
- Behavioural change of visitors to change from rent car /taxi to PT
- Increased capacity of PT operators
- Improved skills and attitude of PT drivers

Outputs:

- PT users' satisfaction survey (samples of citizens and of tourists)
- PT improvement study (routes and service); rescheduled PT time plan during touristic season
- Attractive - 'Smart' bus stop
- 2 new routes to key Pols for cruises visitors, info package, info panels
- 2 new thematic PT routes, including proposal for ecological walks and bio food alternatives, info package with routes, time tables, tips
- Safe and eco driving training sessions of PT drivers. Guidebooks distributed to professional drivers of PT, municipal and private fleets

Innovative aspects

By reviewing and rescheduling services according to real seasonal need, operational savings can be found during off-peak periods, whilst providing more capacity on the peak. The potential impact of rerouting buses to and from hotels offers a large potential modal shift away from more polluting modes and hired cars. Smart bus stops will also be introduced to the area.

Research and technology development

This measure includes an assessment study of the existing PT routes and the inclusion of tourists' interest/ needs. Study on the transport needs of the guests from cruises in the pols is also foreseen for the design of thematic routes. The redesigning of appropriate itineraries will be based on the assessment of current sitting of PT / bike/ EV charging /parking stations, bike/walking paths and new insight on linkages with hotel transport needs.

In terms of technology, this measure includes the installation of attractive “smart” bus stops, including electronic signage with real time information, to inform waiting time and expected line service in selective routes.

Situation before CIVITAS

Existing PT service is not flexible or attractive enough and there is a lack of time punctuality and long waiting time for connecting routes. The PT services are mainly designed for citizens and don't cover the tourist interests. Cruises visitors and one day visitors are increasing and currently, the only way of visiting the key attractions of the area, outside the city centre is hiring a taxi or a car.

Inter-relationship with other measures

This measure is linked with RETH 6.1 the Mobility Agency for the offer of integrated mobility products to tourists.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Environment	GHGs emissions	g/vkm + total annual tns GHG saved	5475, 5475	994
Economy	Average Operating Costs	€/pkm or €/vkm or €/tkm		
Economy	Average Operating Revenues	€/pkm or €/vkm		
Economy	Capital Costs	€		
Transport	Average occupancy	p./vehicle		
Transport	Accuracy of timekeeping	number and % (on time)		
Transport	Public transport service per head of population	departures/capita		
Society	Awareness level	%		10%
Society	Citizens satisfaction with transport system	Survey scale		10%
Society	Perception of accessibility level of service	Survey scale		5%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
GHGs emissions	E	19, 36, 46	citizens and visitors	City
Average Operating Costs	E	36, 46	PT operator	City
Average Operating Revenues	E	36, 46	PT operator	City
Capital Costs	E	46	PT operator	City
Average occupancy	S	19, 46	PT operator	City
Accuracy of timekeeping	E	19, 46	PT users - PT operator	City
Public transport service per head of population	E	19, 46	PT operator	City
Awareness level	S	19, 46	PT users	City
Acceptance level	S	19, 46	PT users	City
Citizens satisfaction with transport system	S	19, 46	PT users	City
Perception of accessibility level of service	S	19, 46	PT users	City

Stakeholders involvement

Stakeholder name	Activities description
PT Operator – KTEL	Contribute to the design of new routes and schedules, and to redesigning the bus stops. Operate the new routes. Participate in the safe eco driving sessions
Municipal Tourism Board	Support promotional activities towards tourists. Facilitate engagement of tourists stakeholders.
University of Crete Parents and Teachers associations - School boards	Acceptance and increased use of PT services from their communities
Association of Travel and Tourist Agencies Hoteliers Association Travel and Tourism Agencies Tour Operators	Provide insights for tourist's interests / needs to support the improvement of the PT services. Promote the new routes/services.
Association of Tourist Bus Drivers	Support and participate in safe and eco driving training sessions

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Facilitating behavioural change and the car-free life style	Existing behavioural inertia and car dependency	Upgraded and attractive services to enable change	Moderate
Strong engagement of PT operator – common vision			

12 Local Evaluation plan - Valletta

12.1 Island and region description

The Republic of Malta is the smallest European Union Member State which lies in the middle of the Mediterranean Sea, 80 km (50 mi) south of Sicily, 284 km (176 mi) east of Tunisia, and 333 km (207 mi) north of Libya. The country, comprising an archipelago of three main islands, covers just over 316km² (122sq mi). The capital of Malta is Valletta, which is also, at 0.8 km², the smallest capital in the European Union. The population density is extremely high with more than 1,320 inhabitants per km² that is, over 10 times the EU country average, making it one of the smallest and most densely populated countries in the world. Indeed, in terms of urban development and infrastructure, Malta is often referred to as a “city state” insofar as nearly 50% of the population lives in the north and south harbour areas in the conurbation of Valletta.

Due to its geographic location in the Mediterranean and temperate climate with sunny and warm periods all year round, Malta, like similar islands lying on the same axis is a tourist destination and resort all year round. According to the latest figures published by the National Statistics Office the total inbound trips for 2013 was estimated at 1,582,153, a 9.6% increase over the previous year.

Malta has only one international airport which is situated 10km to the South of Valletta and hence one cannot ascertain with certainty the number of tourists visiting Valletta, although such data can be obtained from the number of hotels and boutique hotels situated inside the walled city.

In 2013, the number of tourists arriving in Valletta through the cruise liner industry accounts to 431,397 a good percentage of which takes city tours inside Valletta. In line with the Tourism Policy for the Maltese Islands for 2012-2016, the Government is planning to continue to promote Malta as an ideal destination for cruise companies looking for a Mediterranean stop as part of their itinerary. With respect to the classification of tourists according to type of travels, 737,000 of the visitors come on package holidays while the remaining 843,153 makes individual arrangements.

Tourism is a major economic pillar in the Maltese economy, although it is not the major one since Malta has diversified in other economic sectors over the last few decades especially since Malta become an attractive destination for those in the finance industry interested in an EU-compliant domicile.

According to The National Household Travel Survey which was carried out in 2010 it was concluded that 74% of all trips by members of a household were being undertaken using private passenger cars, either as a driver or a passenger. This represents a modal share increase of private cars more than 5% when compared with the findings of the 1998 National Household Travel Survey. This change in the modal share was mainly due to a modal transfer of trips from public transport and walking.

Despite having a fiscal regime that imposes comparatively high taxation levels for car registration, above EU average fuel costs and levies an annual circulation tax that is aimed to discourage the purchase of high polluting cars, the traffic and environmental impacts of the private motor car ownership and usage have been growing in proportion to our desire for increased mobility. Today, Malta has one of the highest per capita car ownership levels in the EU with the number of households possessing with 3 or more cars currently standing at 19.4%.

The annual increase in the motor vehicle national fleet in recent years has, in turn, been exerting great pressure on national transport infrastructure both in terms of the high demand for parking space and motorist demand for increased road capacity. Capacity problems and bottlenecks now exist at a number of critical locations on the 2,350 km of road network, particularly at major traffic intersections located on the 260km main strategic road network.

The traffic bottlenecking problems are starting to spread from the traditional peak hours associated with morning and evening commuting into other hours of the day and night. Whilst many of the bottlenecks have been alleviated where feasible through recent investment into the upgrade of parts of the strategic road network, the high level of urbanisation and environmental constraints at certain critical sections prove to be an insurmountable barrier to the provision of new links road or widening of existing infrastructure.

12.2 Strategic goals

The overall strategic goal for Malta is the development of a regional SUMP. The project objectives provide the necessary support and the necessary testing of measures which contribute to the development of the SUMP. To this end, the strategic goals of the Malta projects are:

- Stakeholder and public engagement (how many people have been reached)
- Piloting of a number of innovative projects in sustainable mobility
- The number of measures developed into a regional SUMP
- Effective communication of SUMP framework (how many have been engaged as users, participants, people affected)

12.3 The relation among the measures

12.3.1 Site map

The Valletta Region selected for the purpose of the DESTINATIONS project include the Northern Harbour and Southern Harbour Regions of the Islands.

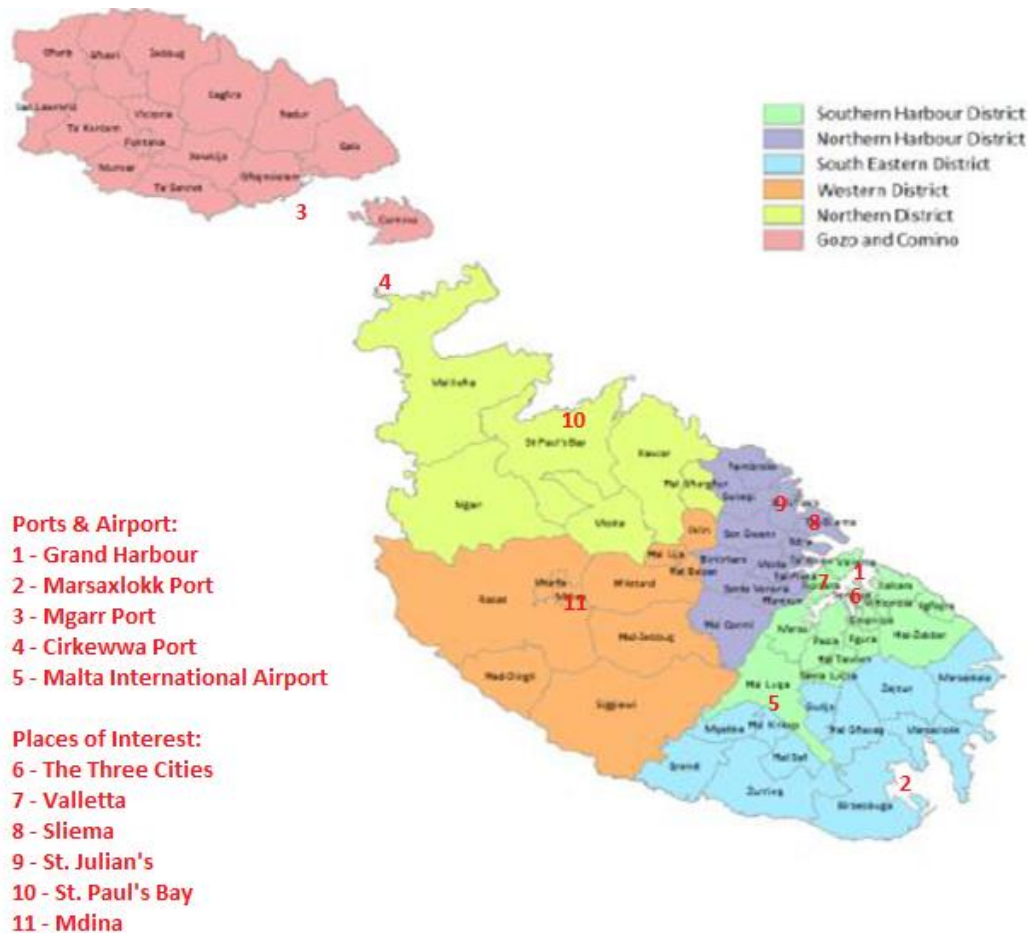


Figure 8 - The Valletta Region comprising Northern Harbour District (purple) and Southern Harbour District (green). Critical tourist transport infrastructure is also highlighted.

12.3.2 The GANTT

Abbreviation used in the scheme	
DE	start of design, planning phase
IM	start of implementation, construction phase
OP	start of operational phase (if relevant)
MS1	milestone 1: explain in comments
MS2-3-	milestone 2, 3, etc: explain in comments
B	baseline data
I1	1st intermediate data
I2-3-	intermediate data 2-3-
F	final data: data at the end of the CIVITAS operational period
R1	Intermediary version of the MER (Measure Evaluation Results) - Satellite template
R2	Updated version of the MERs
RF	Final versions of the MERs

13 Evaluation plan at measure level

13.1 Measure MAL 2.1 - Sustainable Urban Mobility Plan for the Valletta Region

Description

The SUMP for the Valletta Region shall promote sustainable mobility for both citizens and visitors by providing specific, tried and tested solutions to improve the mobility system of the region and attract both residents and visitors to sustainable modes of transport and practices.

The measure consists of a series of previous studies and stakeholder consultations, an evaluation and data collection phase. This data will be used to compile a draft SUMP document which will then be communicated to the various stakeholders for consultation. The measure will end with the publication of the final SUMP document.

Objectives and outputs

The main objectives of measure 2.1 are the improvement of quality of life of residents of the Valletta Region, the reduction of transport related emissions within this region and to make the region more attractive to tourists via better planning. The measure will also be a means of introducing the SUMP concept in Malta.

The measure will imply the publication of a SUMP for the Valletta Region. A minimum number of ten measures will be proposed within this SUMP, and three stakeholder meetings will be conducted as a part of the process.

Innovative aspects

A series of innovative measures never tested within the Maltese context will be introduced in the context of this SUMP.

Research and technology development

Research will be conducted in the development of the SUMP as well as into the piloting of measures intended for inclusion in the SUMP.

Situation before CIVITAS

The Strategy for Valletta (2006) included a number of integrated actions aimed at restraining non-essential car use and promoting alternative green modes of travel. The effect of these actions resulted in a modal shift of 10% away from the car onto public transport and included among others road pricing and pedestrianisation.

Inter-relationship with other measures

This measure is strongly related with WP5 through which the Sustainable Urban Logistics Plan shall be compiled and later integrated within the final SUMP document. The measures to be implemented as part of WP4, 5, 6 and 7 shall be monitored and analysed and the data collected shall feed into the final SUMP document.

The impacts

The impact evaluation of the SUMP will be done with a different methodology, namely through two qualitative questionnaires. The first questionnaire (attached) will be used to evaluate the old transport plan or the existing transport planning process, and the second will be used to evaluate the SUMP. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

Stakeholders involvement

Stakeholder name	Activities description
All the local Councils falling within the region under study	Consultation during SUMP compilation
The Grand Harbour Regeneration Cooperation	Consultation during SUMP compilation
Valletta 2018 Foundation	Consultation during SUMP compilation
Projects Malta Ltd	Consultation during SUMP compilation
Malta Hotels and Restaurants Association	Consultation during SUMP compilation
Lands Department	Consultation during SUMP compilation
Planning Authority	Consultation during SUMP compilation
Environment and Resources Authority	Consultation during SUMP compilation
Malta Tourism Authority	Consultation during SUMP compilation
General Retailers and Traders Union	Consultation during SUMP compilation
Chamber of Commerce	Consultation during SUMP compilation
Department for Local Government	Consultation during SUMP compilation
Local Councils' Association	Consultation during SUMP compilation
Association of Car Importers	Consultation during SUMP compilation
Rent a Car Association	Consultation during SUMP compilation
Taxi Licensed White Amalgamated	Consultation during SUMP compilation
Malta Public Transport	Consultation during SUMP compilation
Co-operative Services (minibuses)	Consultation during SUMP compilation
Unscheduled Bus Services (UBS)	Consultation during SUMP compilation
Malta Hotels and Restaurants Association	Consultation during SUMP compilation
Ministries: – Ministry for Transport and Infrastructure – Ministry for Sustainable Development, Environment and Climate Change	Consultation during SUMP compilation

<ul style="list-style-type: none"> – Ministry for Tourism – Ministry for Finance and Investment 	
Directorates within Transport Malta to be consulted: <ul style="list-style-type: none"> – Integrated Transport Strategy Directorate – Traffic Management Unit – Public Transport Unit 	Consultation during SUMP compilation

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem Related			
Involvement Communication			
	Political /strategic	Actively seeking political stakeholder engagement	High
	Planning	Support institutional skill base for transport planning	Low
	Cultural	Effective communication on the benefits of sustainable mobility	Moderate

13.2 Measure MAL 2.2 - Sustainable Urban Mobility Plan Award

Description

This measure deals with the dissemination of SUMP methodology among Local Councils in touristic impact areas, incentivizing involvement and participation through a Grant awarded to the winning measure among those proposed by the different Councils. Transport Malta will compile documentation to be shared with the Local Councils as to what measures are expected within the frame of a SUMP. A series of workshops will be organized in which the underlying principles related to the SUMP will be communicated to the Local Councils. The terms and conditions for the Grant Competition will be explained at this stage.

The submissions for the Competition will be evaluated and the best measure will be carried out during the Lifetime of Destinations. Transport Malta will assist the winning Local Council/s in the implementation of their measure.

Objectives and outputs

The main objectives of measure 2.2 are the improvement of quality of life of residents of the Valletta Region, the reduction of transport related emissions within this region and to make the region more attractive to tourists via better planning. The measure will also be a means of introducing the SUMP concept in Malta, through the involvement of Local Councils and other authorities over the workshops and through the Grant Competition for the best measure.

The measure will include the elaboration of a SUMP methodology template for Local Councils in Malta that have not yet been involved in a SUMP. Two workshops with the participation of the involved Local Councils will be organized, and a winning measure will be implemented during Destinations.

Innovative aspects

This award can potentially lead to new and innovative ideas which have not yet been tested within the Maltese context. These actions would be beneficial for both tourists and residents.

Research and technology development

The research and possible technological development regarding this measure will be assessed at a later stage, since it will relate to the measures proposed by the Councils involved in the workshops and the Award.

Situation before CIVITAS

Previous efforts related to engagement by Local Councils in European Mobility Week activities.

Inter-relationship with other measures

This measure is highly related to MAL2.1, as it deals with the dissemination and possible echoes of the developments for the Valletta Region throughout the rest of the country.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance Level	%	Not yet Available	50%
Society	Awareness level	%	Not yet Available	50%
Transport	Traffic flow by vehicle (peak)	avg. Vehicles per hour	Not yet Available	5%
Economy	Capital Cost	€	Not yet Available	€ 50.000

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance Level	S	20, 26		Local Councils
Awareness level	S	20,26		Local Councils
Traffic flow by vehicle (peak)	DC	33, 42		citizens
Capital Cost	E	33, 42		Local Councils

Stakeholders involvement

Stakeholder name	Activities description
All Local Councils	SUMP dissemination workshops and Grant Competition
Department for Local Councils	SUMP dissemination workshops
Local Council's Association	SUMP dissemination workshops
Planning Authority	SUMP dissemination workshops
Environment and Resources Authority	SUMP dissemination workshops
Ministry for Transport and Infrastructure	SUMP dissemination workshops
Ministry for Sustainable Development, Environment and Climate Change	SUMP dissemination workshops
Ministry for Tourism	SUMP dissemination workshops

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Instutional			
Organisational			
	Organisational	Involve many Local Councils to ensure participation in the Award	Low

13.3 Measure MAL 4.1 - Promoting e-bike sharing and car sharing

Description

The MAL 4.1 measure consists of an Information and Awareness raising campaign that will be launched to promote the services of e-bike and car sharing (currently being installed or projected throughout the Island) and to educate the public on cycling safety. An initial gathering of data (desk top research, surveys, etc.) will be carried out in order to be able to measure the success of the campaign.

The formulation of the message to be spread through the campaign will highlight the virtues of shared car or bike when compared to the costs, both economic and environmental, of owning a car.

Objectives and outputs

The objectives of this measure comprehend the encouragement of sustainable transport behaviour among tourists and residents. It also deals with the education of the public on alternative modes of transport and its success would imply a reduction in emissions emanating from road transport and subsequent improvement of air quality.

The more specific objectives would be the launching of the Information and Awareness raising Campaign on e-bike and car sharing; the encouragement of cycling as a viable mode of commuting; the encouragement of a modal shift from private owned cars to alternative modes of transport and the reduction of traffic congestion and journey delays.

The proposed outcomes of this measure would thus be the Study to assess costs of owning a vehicle (to be used to compare with other more sustainable options); the Design and formulation of a Marketing Plan, based on the message to be disseminated and target audiences and the Information and Awareness Raising Campaign on e-bike and car sharing and Cycling safety.

Innovative aspects

Both car sharing and e-bike sharing services are new in Malta. While residents may have encountered this kind of systems abroad, the majority of the population need to be educated as to how these services work. Hence the Awareness Raising and education campaign.

Research and technology development

Not applicable

Situation before CIVITAS

Two concessions have been recently launched by the government to introduce E-bike and car sharing services on the island. The stations will be located at main transport hubs as well as at

strategic locations in order to encourage intermodal transport. Cycling is considered a leisure activity in Malta and very few people consider it as an alternative to the use of car.

Following the concession of the car-sharing services, parking spots will be specifically reserved for these vehicles, that will be identified and marked accordingly. Fifty percent of this car sharing fleet will be electric in order to encourage energy-efficient transport.

Inter-relationship with other measures

This measure is strongly linked with MAL 2.1 and MAL 2.2 as it will contribute to the development of the SUMP for the Valletta region and, if successful, go on to reduce transport related emissions and lower congestion problems related to motor vehicle traffic.

The measure may also be linked with MAL 6.3 as a good way to promote sustainable mobility among tourists and introduce them to bike and car sharing systems when they get to the island.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Acceptance Level	No.	Not yet Available	10%
Society	Awareness level	%	Not yet Available	10%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Acceptance Level	S	17, 22, 26	citizens	area
Awareness level	S	17, 22, 26	citizens	area

Stakeholders involvement

Stakeholder name	Activities description
Valletta 2018 Foundation	
Malta Hotels and Restaurants Association	
Malta Tourism Authority	
Ministry for Transport and Infrastructure	

Ministry for Finance and Investment	
Transport Malta: Licensing and Testing Directorate	
Transport Malta: PR Unit	
E-bike sharing operators	
Car sharing operators	

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
	Cultural	Campaign to remove any myths about cycling and car sharing	Moderate
Political / strategic			

13.4 Measure MAL 5.1 - Last Mile Delivery of Goods

Description

This measure consists of the study and implementation of a Last Mile delivery of goods pilot system for Valletta. The presence of hotels and restaurants that need delivery of fresh goods daily leads to an increased morning traffic problem. The implementation of a Last Mile delivery service can potentially help alleviate morning traffic and reduce transport related emissions. The measure will also involve the elaboration of a Sustainable Urban Logistics Plan for Valletta.

Objectives and outputs

The measure will contribute to reduce the congestion caused by freight transport in the Valletta Region. It will also potentially reduce the impact on air quality caused by heavy goods vehicles within the Valletta Region. Furthermore, the implementation of the Last Mile delivery pilot system will allow testing the feasibility of last mile delivery of goods within the local context.

Innovative aspects

Last mile delivery using energy-efficient vehicles has not been tested in Malta; nor has the transport of goods been given much attention. The SULP will therefore be a very important tool in understanding the current state of affairs and to propose ways how to make freight transport more sustainable.

Research and technology development

This measure includes the data collection and research into the feasibility of logistics planning for the City.

Situation before CIVITAS

At the moment the region of Valletta generates 18,076 trips/km²/hour inbound and 12,709 trips/km²/hour outbound during the morning peak only. Congestion within the region is worsened by the fact that deliveries to hotels, shops and restaurants coincides with the peak hours of morning traffic. Negative effects are felt by commuters who are hampered by heavy goods vehicles on the road, as well as by the distribution chain which is delayed by congestion and lack of parking spaces for unloading.

Main distributors have shown interest in the concept of last mile delivery in recent years, however there has yet to be the right opportunity to give impetus to the concept locally, and that is why this measure is of such value

Inter-relationship with other measures

The data to be gathered during the pilot will be integrated within the final SUMP document as part of WP2 (measure MAL 2.1).

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Transport	Freight movements	no.	Not yet Available	5 trips
Transport	Service Reliability	%	Not yet Available	20%
Economy	Capital Cost	€	Not yet Available	€ 27.880
Economy	Average Operating Costs	€	Not yet Available	Not available yet
Energy	Vehicle Fuel Efficiency	Fuel use / vkm	Not yet Available	Not available yet
Environment	CO2 Emissions	CO2/vkm/type	Not yet Available	0
Transport	Goods carried	Kg	Not yet Available	500kg
Society	Awareness level	%		20%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Freight movements	DC	19, 26, 31	Transport Operator	city
Service Reliability	DC	19, 26, 31	Transport Operator	city
Capital Cost	E	19	TM	city
Average Operating Costs	DC	19, 26, 31	Transport Operator	city
Vehicle Fuel Efficiency	DC	19, 26, 31	Transport Operator	city
CO2 Emissions	DC	19, 26, 31	Transport Operator	city
Goods carried	DC	19, 26, 31	Transport Operator	city
Awareness level	S	19,31	Operators	area

Stakeholders involvement

Stakeholder name	Activities description
Main suppliers who distribute goods within the city	Key stakeholders and operators
Key businesses within the city	Stakeholder Forum, Stakeholder Consultation
General Retailers and Traders Union	Stakeholder Forum, Stakeholder Consultation
Malta Hotels and Restaurants Association	Potential stakeholder in the pilot
Transport Malta's Land Transport Directorate	Stakeholder Forum, Stakeholder Consultation
Valletta Local Council	Stakeholder Forum, Stakeholder Consultation
Lands Department	Stakeholder Forum, Stakeholder Consultation
Malta Tourism Authority	Stakeholder Forum, Stakeholder Consultation
Ministry for Transport and Infrastructure	Stakeholder Forum, Stakeholder Consultation
Ministry for Finance and Investment	Stakeholder Forum, Stakeholder Consultation
Ministry for Sustainable Development, the Environment and Climate Change	Stakeholder Forum, Stakeholder Consultation
Integrated Transport Strategy Directorate (TM)	Stakeholder Forum, Stakeholder Consultation
Traffic Management Unit (TM)	Stakeholder Forum, Stakeholder Consultation
Licensing and Testing Directorate (TM)	Stakeholder Forum, Stakeholder Consultation

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related			
	Organisational	Lack of skills – assist in the organisation	Moderate
	Involvement, communication	Lack of interest by operators – promote activity benefits	Moderate

13.5 Measure MAL 6.1 - Green Mobility Hotel Award

Description

The main concept behind this measure is to stimulate the design of a “Green Mobility Plan” for Hotels, similar to a SUMP for a locality. The implementation of the Green Mobility Hotel Award will contribute to engage Hotels with this measure.

The starting point of the measure will be defined via stakeholder consultation and desktop research. This baseline will help with the design of the specifications which will guide the design and implementation of the pilot. This pilot will include award criteria and the submissions to the competition will be evaluated by an external company. The measure will involve an awareness and dissemination process and an award event for the distribution of the prize to the winning measure.

Objectives and outputs

The objectives of this measure are in the line with improving guest experiences and travel behaviour. It will also contribute to safeguard the environmental assets which attract tourists to the Maltese Islands and the Valletta Region. The impacts are not restricted to the tourism industry but would also improve the quality of life of residents via the mitigation of tourism carbon footprint.

The measure seeks to raise awareness about sustainable urban mobility practices amongst tourist operators and related stakeholders. Its implementation will try and incentivize the hotel industry to adopt practices related to Green Mobility and encourage efficiency among tourist operators.

The expected outcomes of the measure include: the development of the Award Scheme; the elaboration of a Green Mobility Plan model, to be used by hotels and operators; organization of at least one workshop to explain and launch the competition; proposal of at least one Green Mobility Plan; the carrying out of Hotel Audits; the implementation of the Awarded measure during the Lifetime of the project making use of the grant and the organization of the Award event.

Innovative aspects

By creating awareness through an unprecedented award, amongst tourist operators, this measure will encourage the hotel industry to implement sustainable urban mobility measures intended for guests, the business community, employees and society at large. The data gathered during the implementation of this measure will also contribute towards the positive development of both the tourism and transport strategic policy development.

This is a pilot initiative which shall focus on the hotel sector and efforts shall be undertaken, following project completion, to possibly extend this initiative for other operators in the tourism industry.

Research and technology development

Not applicable.

Situation before CIVITAS

The green mobility hotel award and labeling scheme which will be established through the implementation of this pilot project is complementary to other initiatives that are currently in place for the sector, e.g. EU eco-label, managed by the European Commission and the national eco-certification managed by the Malta Tourism Authority (MTA) which focuses on ensuring the environmental, socio-economic and cultural sustainability of hotels on the Maltese Islands and has been recognized by the Global Sustainable Tourism Council as fully reflecting GSTC criteria. Currently 22 hotels are eco-certified and these represent 16% of hotel accommodation in the Maltese Islands.

Inter-relationship with other measures

Not applicable

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Awareness level	%		20%
Society	Acceptance Level	%		10%
Economy	Number of Audits	no.		
Society	Satisfaction	%		20% completely satisfied
Society	Awareness level	%		20%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Awareness level	S	29, 42	Operators	area
Acceptance Level	S	29,42	Operators	area
Number of Audits	DC	29	Operators	area
Satisfaction	E	29,42	Operators	area
Awareness level	S	29,42	Operators	area

Stakeholders involvement

Stakeholder name	Activities description
SEWCU	Technical consultancy
MTA	Advising MOT on the planning and development of the award
MHRA	Promotion of the initiative and consultations

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related			
	Involvement, communication	Lack of interest by hotel operators – promote activity benefits	Moderate

13.6 Measure MAL 6.2 – Introducing Low Emission Zone

Description

This measure will implement the establishment of a Low Emission Zone and the introduction of an Emissions alert app, and it will allow to evaluate the benefits of this kind of measures. The key stakeholders will be involved through a series of consultations and the gathering of feedback once the measures are implemented.

Building on stakeholder consultation and the development of GAP analysis, a pilot will be designed and implemented during the lifetime of DESTINATIONS, for both the LEZ and the emissions alert app. A marketing campaign and a dissemination plan will be drawn up in order to communicate the objectives and achievements of the project.

Objectives and outputs

The macro objectives of this measure include the improvement of the quality of life of residents living in the Valletta Region. A substantial reduction of transport related emissions within the region should also be produced via the implementation of the project. Another objective is the encouragement of sustainable transport behaviour.

Among the more specific objectives of the measure, it will allow to test the feasibility of LEZs within the context of the Valletta region. The measure will also involve the public in curbing high-emission vehicles by launching an automated app which reports high-polluting vehicles. It will also help reduce high-polluting vehicles from the Valletta.

The expected outputs of the project are the piloting of one Low Emission Zone, the installation of two ANPR cameras and the development and launch of the Emissions Alert App.

Innovative aspects

Low emission zones have never been tested in Malta. The LEZ system will be built on an already existing road pricing system within the inner city walls of Valletta. The system shall be geographically extended and modified to charge vehicles based on their emissions level.

An App will also be developed to allow the public to report high-polluting vehicles. These vehicles will be called in for testing and may be either ordered to be sent for maintenance or scrap depending on the state of the vehicle.

Research and technology development

The LEZ shall be created by extending and modifying the existing Controlled Vehicular Access system which is operated within the city of Valletta. Infrastructure present on the approach roads towards the city shall be used to monitor the vehicles going in and out of the city. However, additional equipment will be required to enable the system to also operate as a LEZ. This will include ANPR cameras and CCTVs.

In terms of the Emissions Alert App, the design of the APP itself will greatly rely on the stakeholder consultation to be undertaken and the gap analysis which will assess the current system's failures and find solutions how the App can overcome these failures.

Situation before CIVITAS

At the moment a road pricing scheme called the Controlled Vehicular Access System is operational in Valletta. The system charges vehicles for the duration of their stay within the city boundary. This system shall be extended to the suburb of Floriana to cover the approach roads leading to the city. The system on the approach roads shall be modified so as to charge vehicles depending on their emissions – the higher the emissions, the higher the fee. During the project, since this is a pilot, a system of phantom billing will be adopted.

Inter-relationship with other measures

This measure is related to MAL2.1 and will contribute significantly to the inclusion or otherwise of this measure within the Valletta Region SUMP.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Operating Costs	€		Not available yet
Economy	Investment Cost	€		€ 89.500
Economy	Investment Cost	€		€ 51.800
Economy	Operating Costs	€		Not available yet
Health	No. of polluting vehicles reported	No.		to estimate upon launch
Society	Awareness level	%		to estimate upon launch
Society	Acceptance Level	%		to estimate upon launch

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Operating Costs	E	16, 22, 28		city
Investment Cost	DC	16, 28		city
Investment Cost	DC	21		area
Operating Costs	E	21, 32		area
No. of polluting vehicles reported	DC	21, 26, 36		area
Awareness level	S	16, 32	citizens	area

Acceptance Level	DC	16, 32	citizens	area
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Stakeholders involvement

Stakeholder name	Activities description
Planning Authority	Permitting
Environment and Resources Authority	Stakeholder Forum, Stakeholder Consultation
CVA Operators	Technology integration for LEZ and data analysis
Ministry for Transport and Infrastructure	Stakeholder Forum, Stakeholder Consultation
Ministry for Sustainable Development, Environment and Climate Change	Stakeholder Forum, Stakeholder Consultation
Transport Malta Internal Directorate: - Integrated Transport Strategy Directorate - Traffic Management Unit - Public Transport Unit - Licensing and Testing Directorate	Development of App; data analysis for LEZ
Valletta and Floriana Local Council	Stakeholder Forum, Stakeholder Consultation
Grand Harbour Regeneration Corporation	Stakeholder Forum, Stakeholder Consultation
Valletta 2018 Foundation	Stakeholder Forum, Stakeholder Consultation
Chamber of Commerce	Stakeholder Forum, Stakeholder Consultation
Malta Hotels and Restaurants Association	Stakeholder Forum, Stakeholder Consultation
Projects Malta Ltd	Stakeholder Forum, Stakeholder Consultation
Malta Tourism Authority	Stakeholder Forum, Stakeholder Consultation
General Retailers and Traders Union	Stakeholder Forum, Stakeholder Consultation
Rent a Car Association	Stakeholder Forum, Stakeholder Consultation
Taxi Licensed White Amalgamated	Stakeholder Forum, Stakeholder Consultation
Malta Public Transport	Stakeholder Forum, Stakeholder Consultation
Minibuses Cooperative	Stakeholder Forum, Stakeholder Consultation
Unscheduled Bus Services	Stakeholder Forum, Stakeholder Consultation

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technology			
	Political /strategic	Actively seeking political stakeholder engagement	High
	Planning	Support institutional skill base for transport planning	Low
	Cultural	Effective communication on the benefits of sustainable mobility	Moderate

13.7 Measure MAL 6.3 - Promoting sustainable mobility among tourists

Description

TM, UoM and MOT will test and launch a mobile application providing useful and interesting information to encourage a change in the travel behaviour amongst tourists towards more green mobility options.

Transport Malta will compile a list of Stakeholders who will be directly/indirectly impacted by the measure. Stakeholder consultations will be carried out in order to compile and analyse user needs and assist with baseline data collection about tourism transport. This will help with the design of the specifications for the App. Through stakeholder consultation, desktop research and on-the-spot data collection, baseline data will be collected which will in turn help with the design of the specifications for the system. Based on the stakeholder consultations and baseline data analysis, the system will be designed.

The University of Malta will develop the App and a testing and verification period will follow in order to fix any issues in the APP. Then the app will be launched with a marketing campaign and the data will be monitored in order to do a post-pilot evaluation.

Objectives and outputs

The objectives of this measure are to encourage sustainable transport behaviour among tourists and set up data collection systems to assess tourist mobility which will help in long term tourism transport infrastructure planning.

The outputs include an app which informs tourists of the location of the main tourist attraction and how to get there using sustainable mobility options. A credit scheme for sustainable mobility for tourists is also envisaged in the design.

Innovative aspects

At the moment there is one App (tallinja) which provides travellers information about scheduled bus services, routes and schedules. However, no App exists which integrates different transport information. The App to be created by DESTINATIONS is innovative and will be interoperable, i.e. linking existing public transport services and any similar Apps to be created in the future.

Research and technology development

The design of the App itself will greatly rely on the stakeholder consultation to be undertaken during the design process, its end objectives and the proper application of data protection laws.

Situation before CIVITAS

Two of the most popular tourist destinations are within the Valletta Region - Valletta and Cottonera. Moreover, two of the most popular tourist resorts are also located within the Valletta Region. Scheduled bus services, Hop-on hop-off buses and a network of ferry services offer

options which connect the tourist resorts to the most popular tourist attractions, and yet 22% of all tourists still opt to hire vehicles during their stay on the island. The App will make it easier for tourists to travel around the island using sustainable transport options.

Inter-relationship with other measures

Not envisaged, even though the success of transport information provision could feature in the SUMP as developed under MAL2.1.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Investment Cost	€		€ 47.400
Social Interaction	No. of users	no.	0	€ 1.000
Transport	Modal Split of users	%	Not yet available	5%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Investment Cost	E	25		area
No. of users	DC	25, 35, 43	tourists	area
Modal Split of users	DC	19, 31, 43	tourists	area

Stakeholders involvement

Stakeholder name	Activities description
Valletta 2018 Foundation	Stakeholder Forum, Stakeholder Consultation
Projects Malta Ltd	Stakeholder Forum, Stakeholder Consultation
Malta Hotels and Restaurants Association	Stakeholder Forum, Stakeholder Consultation
Malta Tourism Authority	Stakeholder Forum, Stakeholder Consultation
Minibuses Cooperative	Stakeholder Forum, Stakeholder Consultation
Unscheduled Bus Services	Stakeholder Forum, Stakeholder Consultation
Malta Public Transport	Stakeholder Forum, Stakeholder Consultation
Marsamxetto Ferry Service	Stakeholder Forum, Stakeholder Consultation
Hop-on Hop-off Bus Operators	Stakeholder Forum, Stakeholder Consultation
Taxi and City Cab Companies	Stakeholder Forum, Stakeholder Consultation
Ministry for Transport and Infrastructure	Stakeholder Forum, Stakeholder Consultation
Ministry for Finance and Investment	Stakeholder Forum, Stakeholder Consultation
Transport Malta Directorates: - Integrated Transport Strategy Directorate - Traffic Management Unit - Public Transport Unit - Licensing and Testing Directorate	Development of App

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technology			
	Technological Problems	Engage widely with stakeholders to avoid technical problems	Low
	Organisational	Involvement of stakeholders	Moderate
	Involvement and Communication	Engagement and wider publicity for tourists to use the App	Moderate

13.8 Measure MAL 6.4 - Smart parking management system for Valletta

Description

The measure includes the installation of sensors in specific off-street and on-street parking areas in the city of Valletta to manage the demand and supply of parking in the city. Data will be collected remotely. A parking management plan for the city will be compiled including the software and infrastructure necessary to implement the smart parking management system.

The preparation of the pilot will involve:

- Procurement of sensors and software to be used in pilot
- Installation of equipment
- System testing and verification

Objectives and outputs

The objectives of this measure include the potential for reduced congestion in the city of Valletta and improvements in the energy efficiency in transport (through reduction of cruising), improving travel awareness amongst road users.

The measure aims to deliver a smart parking management system, which through sensors is about to inform drivers and authorities about parking. This has the potential to reduce journey times in the city and improve air quality.

Innovative aspects

Parking sensors are not used in any centre in the island of Malta. This innovative parking management solution has the potential to inform the driving public as well as reduce the impacts of transport through parking management.

Research and technology development

The measures envisages the implementation of an overall solution with sensors, wireless technology, and servers and software able to handle the parking management of the city parking spaces.

Situation before CIVITAS

Valletta is a walled city with limited parking infrastructure. Access to the city by car is therefore limited by road pricing, extensive pedestrianisation and relatively few parking spaces. Car drivers today access the city and cruise for a long time to try and find a space. This causes congestion, pollution and excessive waste of resources and time.

Inter-relationship with other measures

This measure can relate strongly to the SUMP development in MAL 2.1.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Economy	Operating Costs	€	Not yet available	Not available yet
Economy	Investment Cost	€	Not yet available	€ 129.000
Transport	use of space for parking	no.	Not yet available	to estimate upon publishing of tender
Transport	Traffic levels	vehicles/hr	CVA	5%
Society	Satisfaction	%	Not yet available	20% completely satisfied

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Operating Costs	E	26, 37	Local Councils	city
Investment Cost	DC	26, 37	Local Councils	city
use of space for parking	DC	24, 31, 37	Local Councils	city
Traffic levels	E	24, 31, 37	Local Councils	city
Satisfaction	S	–		

Stakeholders involvement

Stakeholder name	Activities description
Valletta 2018 Foundation	Stakeholder Forum, Stakeholder Consultation
Malta Hotels and Restaurants Association	Stakeholder Forum, Stakeholder Consultation
Ministry for Transport and Infrastructure	Stakeholder Forum, Stakeholder Consultation
CVA Operator	Review of technology integration with CVA system
Malta Tourism Authority	Stakeholder Forum, Stakeholder Consultation

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Technology			
Problem related			
	Political /strategic	Stakeholder involvement to mitigate concerns	High
	Institutional	To check current regulatory frameworks for parking	Low
	Planning	Limited understanding of user requirements at the early stages	Low

13.9 Measure MAL 7.1 - Integration of ferries into the Public Transport

Description

TM will coordinate the piloting of a new public transport route to connect the ferry landing sites situated on both sides of the Valletta peninsula, the main bus terminal outside the city gate and the Park and Ride facility outside Valletta. The route will be served through one minibus retrofitted to LPG or dual fuel.

Objectives and outputs

The objectives of this measure are to encourage sustainable transport behaviour among tourists and instigate a modal shift from private to public transport. The measure will improve accessibility and the attractiveness of public transport, improve inter-modality and increase public transport links. This has the potential to reduce congestion by shifting traffic from the road to the sea. The measure will deploy one new PT route and one bus converted to LPG for use in the pilot

Innovative aspects

The introduction of LPG bus in the provision of PT services in the island is new. It is also offering a new service to support the shift from road based travel to sea ferry travel.

Research and technology development

One VMS will be purchased and installed at the ferry landing site to show in real time the departure and arrival time of both the ferry and the bus. The VMS will be backed by the Management and Monitoring System available at the Transport Malta National Traffic Control Centre which will come into effect in the medium term as part of an ERDF funded project.

Situation before CIVITAS

The ferry service at Marsamxetto Harbour is heavily under utilized and the current infrastructure does not support increased patronage due to the topography and the steep hill from the ferry landing site to the City centre.

Inter-relationship with other measures

The data to be gathered during the pilot will be integrated within the final SUMP document as part of MAL2.1.

The impacts

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante
Society	Satisfaction	%	Not yet available	20% completely satisfied
Energy	Fuel mix	%	Not yet available	100%
Society	Awareness level	%	Not yet available	10%

Method of measurement

Impact indicator	Method (Data collection (DC), Estimation (E), Survey (S))	Frequency (Months)	Target Group	Domain (demonstration area or city)
Satisfaction	S	32, 36, 41	citizens	city
Fuel mix	DC	28, 36, 41	Transport Operator	city
Awareness level	S	32, 36, 41	citizens	city

Stakeholders involvement

Stakeholder name	Activities description
Valletta 2018 Foundation	Stakeholder Forum, Stakeholder Consultation
Projects Malta Ltd	Stakeholder Forum, Stakeholder Consultation
Malta Hotels and Restaurants Association	Stakeholder Forum, Stakeholder Consultation
Malta Tourism Authority	Stakeholder Forum, Stakeholder Consultation
Minibuses Cooperative	Stakeholder Forum, Stakeholder Consultation
Unscheduled Bus Services	Stakeholder Forum, Stakeholder Consultation
Malta Public Transport	Stakeholder Forum, Stakeholder Consultation
Marsamxetto Ferry Service	Stakeholder Forum, Stakeholder Consultation
Ministry for Transport and Infrastructure	Stakeholder Forum, Stakeholder Consultation
Ministry for Finance and Investment	Stakeholder Forum, Stakeholder Consultation
Transport Malta Directorates: - Integrated Transport Strategy Directorate - Traffic Management Unit - Public Transport Unit - Licensing and Testing Directorate	Stakeholder Forum, Stakeholder Consultation

Drivers and barriers

Potential Drivers	Potential Barriers	Activities to be taken to mitigate the barriers	Risk assessment (low, moderate, high)
Problem related			
	Political / Strategic	Active involvement of stakeholders, particularly politicians	Moderate
	Institutional	Active involvement of related stakeholders and institutions	Low
	Planning	Limited understanding of user requirements – data collection structures in place during measure piloting	Low

14 Annexes

Annex G:

SUMP questionnaire Funchal

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review EXISTING transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
X	

Comments – please give example of at least three objectives:

Strategic Objective: Improve the conditions of intraregional mobility of people and goods
Specific objectives:
 - secondary ports rehabilitated and prepared to respond to the specificities and dynamics of demand;
 - Improved inter-island mobility conditions;
 - Strengthening of the regional and local road network connectivity.

Strategic Objective. Ensure the adequacy of the transport system to the needs of urban mobility
Specific objectives:
 - Guidelines for the organization of urban mobility established and effective;
 - Mobility management measures implemented as part of an integrated approach to the transport system;
 - Use of soft modes in urban mobility encouraged;
 - Efficiency of supply operations and improved urban distribution of goods.

Strategic Objective: Improving energy and environmental efficiency and safety in the transport sector
Specific objectives:
 - Enhanced energy system and environmental efficiency of the transport system;
 - Increased safety levels and protection of the transport system

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment	x		
Congestion			X
Local Economy		X	
Provision for Tourist Travel	x		
Road Safety	x		
Health		X	
Social		X	
Sharing economy			X
Inclusion	x		
Integration with other policy areas	x		

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

YES. The problems have been identified at regional level and the defined objectives are aimed to solve the fragilities identified. A regional characterization of territorial framework and analysis was carried out, as so, a characterization of the terrestrial transport system, air and maritime transport and a characterization of the regional logistics system. In addition to its characterization, vulnerabilities and problems have been identified.

The strategic objectives outlined were identified, taking into account, the identified vulnerabilities and the regional strategy to be followed. The specific objectives were then defined, much correlated with the problems identified in the characterization. In this part you can easily identify the problems, the objectives and the measures.

As an example,
Specific objective 1 - At the port infrastructure, in the Region there remain risks and inefficiencies, both at the infrastructural and logistical levels, which must be mitigated. To this end, it is important to ensure, on a permanent basis, the existence of adequate levels of service and operation in the ports of Funchal, Caniçal and Porto Santo, proposing the following actions / projects:

4. In general, objectives are:
Please tick only one of the following alternatives

Very clearly linked to problem analysis	<input type="checkbox"/>
Clearly linked to problem analysis	<input type="checkbox"/>
Linked to problem analysis	<input checked="" type="checkbox"/>
Not clearly linked to problem analysis	<input type="checkbox"/>
Not at all linked to problem analysis	<input type="checkbox"/>

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

It was defined a strategic goal, more macro, where it is defined what is intended to achieve.
 Within each "specific objective" has identified the problem / vulnerability, the concrete objective to be reached, the actions to be developed to solve the problem and accomplishment of the objective.
 Then the action is described in detail.

For example in Strategic Objective:

Strategic Objective 3 - Improve the conditions for intraregional mobility of people and goods

Objective - In relation to road transport, two dimensions of intervention were identified, whose continuation is of great relevance for the improvement of accessibility and internal mobility conditions.

Problem - in some territories that have manifest weaknesses in connectivity, as is the case in the northern sector of Madeira Island.

For example in Specific Objectives:

Specific Objective 2.4 - Performance and attractiveness of the improved public transport system

Problem: The analysis of the regional TPR network developed in the diagnosis revealed some weaknesses in *the out-of-work time coverage, service sizing, physical and functional articulation between careers, information to the public, and ticketing and tariff integration*. It is also important not to overlook the weakness of *the conditions of support waiting*, often not providing any shelter to the user, *not providing information about the service* (eg careers that serve the stop and its itinerary, network diagram, tariff), nor ensuring safety conditions In the access to the bus stop.

These aspects reflect an offer that don't satisfies the levels of service considered appropriate for the interregional TP network. In order to overcome such weaknesses, the following set of measures is proposed:

- Hierarchy of the TPR network;
- Establishment of the bases for the contracting procedures of the TPR network;
- Implementation of an integrated tariff system;
- Implementation of an integrated ticketing system;
- Improvement of transshipment conditions at key points in the TPR network;
- Improved passenger comfort conditions at TPR stops, ensuring safe access to these equipment;
- Implementation of an integrated information system for the public, contributing to the intelligibility of the TP system and enhancing its attractiveness (for residents and for tourists / visitors);
- Creation of accessibility conditions for all to the TP system;
- Creation of a brand image for the RAM PT network.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

The Action Plan is part of PIETRAM itself.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure	√	3	5
Planning for walking infrastructure	√	3	5
Measures to encourage the use/rental of low carbon vehicles	√	4	4
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport	√	4	3
Encourage car sharing initiatives (maybe also bike sharing)	√	3	3
New rail and/or tram system	X		
Bus rapid transit or extensive bus priority measures	X		
Public transport related measures, including improved interchanges and park and ride.	√	3	3
Measures to manage negative impacts of freight	√	3	3
Access management, shared space, reallocation of space to pedestrians	X		
Mobility management (“soft measures” to influence people’s travel behavior)	√	3	3
Road safety measures	√	3	5

Measures to improve travelers personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.	√	3	3
Parking management – new blue zones for example.	X		
Maximum (limited) parking standards for new buildings	X		
Speed management and traffic calming	X		
Extent to which new internet technologies, social media, Web 2.0 etc., are built into the measures listed above	√	4	4
Measures to guide the modal choice of tourists	√	3	3

1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

62 output indicators

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
-----	--

Most	
Some	
A few	
None	X

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
1.1 Efficient and well integrated main ports in the regional transport system	Yes
1.2. Reinforced maritime connectivity for freight and passenger transport	Yes
1.3. Airport system capable for the challenges of strengthening regional economic competitiveness	Yes
2.1. Secondary ports rehabilitated to respond to the specificities and dynamics of demand	Yes
2.2. Improved inter-island mobility conditions	Yes
2.3. Strengthening the Connectivity of the regional and local road network	Yes
2.4. Improved performance and attractiveness of the public transport system	Yes

3.1. Guidelines for the organization of urban mobility effectively	Yes
3.2. Mobility management measures implemented as part of an integrated approach to the transport system	Yes
3.3. Encouraged the use of soft modes in urban mobility	Yes
3.4. Efficiency of supply operations and improved urban freight distribution	Yes
4.1 Improved energy system and environmental efficiency	Yes
4.2. Increased levels of security and transport system protection	Yes
5.1. Permanent updating of the legal framework of the transport sector	Yes
5.2. Strengthening the capacity of the Autonomous Region to act in the regulation, supervision and monitoring of the transport system	Yes
5.3. Improved sector financial sustainability	Yes
5.4. Effective planning tools for the transport system and mobility management articulated with policies in border areas	Yes

Measures – List here	Monitoring of impacts (Yes/No)
1.1.1 Review / update of the development strategy and investment programs of the ports of Funchal, Caniçal and Porto Santo	Yes
1.1.2 Inspection of the port infrastructures of Funchal, Caniçal and Porto Santo	Yes

1.1.3 Elaboration of conservation and maintenance plans for the ports of Funchal, Caniçal and Porto Santo	Yes
1.1.4 Operation of the “Janela Única Portuária”	Yes
1.1.5 Rehabilitation of the Pavement of the embankment of the Port of Caniçal	Yes
1.2.1 Study of the economic feasibility for reducing the value and simplifying port charges	Yes
1.2.2 Feasibility / sustainability assessment of a mixed maritime transport service between the RAM and the Portuguese Mainland	Yes
1.2.3 Promotion of Madeira as a tourist destination in the cruise sector	Yes
1.3.1 Incentives to open new air transport routes	Yes
1.3.2 Encouraging the establishment of partnerships between the airport infrastructure manager, airlines and tour operators	Yes
1.3.3 Improvement of passenger comfort conditions at Madeira Airport	Yes
1.3.4 Update and eventual revision of the subsidy model for air travel	Yes
2.1.1 Study of the management model of the secondary ports of the RAM	Yes
2.1.2 Carrying out expert inspection of secondary port infrastructures	No
2.1.3 Rehabilitation of damaged secondary port infrastructures	Yes
2.1.4 Create conditions to support the operation of maritime-tourist activities in the secondary and marine ports of the RAM	Yes
2.2.1 Ensuring the regular operation of the inter-island shipping line	Yes
2.2.2 Reinforce of the regular air transport connections between the islands of Madeira and Porto Santo	Yes
2.3.1 Construction of regional road network infrastructures	Yes
2.3.2 Construction / improvement of road network to strengthen the connectivity between the regional network and the local network	Yes
2.3.3 Implementation of an infrastructure maintenance program that integrates the regional road network	Yes

2.4.1 Hierarchy of the public road transport network	Yes
2.4.2 Establishing the bases procedures for contracting the public road transport network	Yes
2.4.3 Implementation of an integrated tariff system	Yes
2.4.4 Implementation of an integrated ticketing system	Yes
2.4.5 Improvement of transshipment conditions at key points in the public transport network	Yes
2.4.6 Improving passenger comfort conditions at public transport stops	Yes
2.4.7 Implementation of an integrated public information system	Yes
2.4.8 Creating the accessibility conditions for all to the RAM public transport system	Yes
2.4.9 Creation of a brand image for the RAM public transport network	Yes
3.1.1 Elaboration of technical guidelines for urban mobility	No
3.2.1 Creation of “Lojas da Mobilidade” and a “Loja Virtual da Mobilidade”	Yes
3.2.2 Support for the implementation of innovative mobility management solutions	Yes
3.2.3 Implementation of awareness campaigns	Yes
3.3.1 Support for the qualification and expansion of the pedestrian network	Yes
3.3.2 Encouraging the creation of cycling routes with support equipment	Yes
3.3.3 Encouraging the creation of accessible routes in urban areas	Yes
3.4.1 Improving accessibility to logistics platforms and industrial areas	Yes
3.4.2 Encouraging the implementation of urban logistics pilot projects	Yes
4.1.1 Renewal of the fleet of public road transport vehicles and freight road transport	Yes
4.1.2 Adoption of energy and environmental efficiency criteria in the acquisition of transport vehicles	Yes
4.1.3 Monitoring the energy performance of public road passenger transport companies	Yes

4.1.4 Implementation of an active environmental awareness and civic education policy	Yes
4.2.1 Elaboration of a regional strategy for the reduction of road accidents	Yes
4.2.2 Implementation of an active road safety awareness and prevention policy	Yes
4.2.3 Adoption of international, Community and national rules on safety and security	No
5.1.1 Permanent updating of the legal framework of the transport sector	Yes
5.2.1 Definition of a new organizational model for the transport sector	Yes
5.2.2 Reinforcement of human and technological resource of Autonomous Region	No
5.2.3 Creation of a Regional Mobility and Transport Observatory (Observatório Regional da Mobilidade e Transportes)	Yes
5.3.1 Creation of the public account of the regional transport system	Yes
5.3.2 Study of the models and sources of financing of the regional transport system	Yes
5.3.3 Contracting of public road transport services	Yes
5.3.4 Restructuring of APRAM	Yes
5.4.1 Establishment of mechanisms that guarantee an effective articulation between the policies of transport, territory planning, energy and environment	no
5.4.2 Elaboration of Sustainable Mobility Plans	Yes

10. Will the planned monitoring provide the data to measure whether targets are achieved?

Please tick one answer only.

No targets	<input type="checkbox"/>
Yes, monitoring will provide data to measure targets	<input checked="" type="checkbox"/>
Not clear that monitoring data will relate to targets	<input type="checkbox"/>
No monitoring envisaged	<input type="checkbox"/>

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning		X
Environment	X	
Health		X
Economic development		X
Tourism industry		X
Other policy area		X
Geographical areas	Yes	No
Surrounding municipalities	X	
Other levels of government e.g. provincial, national		X

Comments – Explain briefly how any links are (planned to be) made

Jointly with the PIETRAM, a strategic environmental assessment was carried out, that means, that it was made a evaluation of environmental impact of the implementation of the Plan.

The PIETRAM is a regional plan for transports covering the 11 municipalities of Madeira.

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

Yes, equally	x
No, very unequally	
No information	

Comments:

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city’s existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
Walking	4%
Cycling	4%

<i>Public transport</i>	49%
<i>Car</i>	39%
No budget plan	4%

1.5 Stakeholders engagement

14. How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>	X	5
Economic development	X	4
Land use (spatial) planning department	X	3
Transport and roads department	X	4
<i>Other</i>		
Chamber of commerce	X	1
Public transport companies	X	5
Hotels, house/room rental and related trade associations	X	1
Car, bike, boat rental companies and individuals	X	1
Shopkeepers and groups representing shopkeepers in local areas	X	1

Residents' groups	X	1
NGOs (cyclists, environmentalists etc)	X	1

15. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings	X	1
Exhibitions	X	1
Leaflets		
Website	X	5
Social media	X	3
Focus groups of 10-15 selected people		
Expert groups		
Other (please state)	X	5

16. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

The final document is accessible to the public in: <https://www.madeira.gov.pt/dret/Estrutura/Transportes/ctl/Read/mid/3285/Informacaoid/12741/UnidadeOrganicaId/17>

As you can see, there is a summary.

There is a paper version available at:

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Contacts:
Phone: (+351) 291 207 350
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2) Regional Directorate of Economy and Transport, at Rua do Seminário, nº21, Funchal

Contacts:
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17. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
X	

If yes – please explain how.

An inter-administrative contract was signed with the municipalities, stipulating how municipalities share competences with the Regional Government in the field of public passenger transport.

SUMP questionnaire Elba

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review **EXISTING** transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
	x

Comments – please give example of at least three objectives:

There isn't a general mobility plan for the whole Elba Island. Despite this, municipalities have produced on their own other kind of Documents (“Piano Strutturale”, “Regolamento Urbanistico”, for example), that cover, among other items, mobility theme at local level. Through those documents they promote actions to improve viability in the main roads, to implement low-impact transport and to create a better flowing and more efficient transport, reducing air pollution.

There is also an island PAES strategic plan prepared in 2014 by the Province of Livorno and accepted by the Covenant of Mayors for the purpose of reducing CO₂ and fossil fuel emissions to an oil free island.

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment	x		
Congestion	x		
Local Economy			

Provision for Tourist Travel			
Road Safety	x		
Health	x		
Social			
Sharing economy			
Inclusion			
Integration with other policy areas			

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

Island towns have identified that traffic in some parts of the island in summer time during peak hours are a problem. The solution could be the lesser use of individual cars (sharing of travels) and greater use of public transport, bicycles and shuttles for specific routes.

Another solution (based on Portoferraio situation) could be the realization of some parking area and create suitable bus connection to the city center. In particular a parking area could be a solution nearby the Port zone.

Another problem of Elba Island is that freight transport is for the 80% based on the Port of Portoferraio; a solution could be the realization of some urban infrastructure, for example traffic circle

4. In general, objectives are:

Please tick only one of the following alternatives

Very clearly linked to problem analysis	
Clearly linked to problem analysis	
Linked to problem analysis	

Not clearly linked to problem analysis	X
Not at all linked to problem analysis	

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

The CO₂ reduction objective (mainly due to private car traffic) is not related to specific analyzes but to objective verifications of the summer traffic.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the "Link to objectives" column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure	X	2	Traffic reducing
Planning for walking infrastructure	X	4	Accessibility
Measures to encourage the use/rental of low carbon vehicles	X	4	CO2 reducing
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport			

Encourage car sharing initiatives (maybe also bike sharing)	X	3	Traffic/Co2 reducing
New rail and/or tram system			
Bus rapid transit or extensive bus priority measures			
Public transport related measures, including improved interchanges and park and ride.	X	4	Traffic/CO2 reducing
Measures to manage negative impacts of freight			
Access management, shared space, reallocation of space to pedestrians	x	5	Quality of life
Mobility management (“soft measures” to influence people’s travel behaviour)			
Road safety measures	X	4	Safety
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.	X	5	Citizen safety
Parking management – new blue zones for example.	X	4	Traffic reducing
Maximum (limited) parking standards for new buildings			
Speed management and traffic calming	X	4	Road safety
Extent to which new internet technologies, social media, Web 2.0 etc, are built into the measures listed above			
Measures to guide the modal choice of tourists			

1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

2020 CO ₂ reduction 30% versus 2004
--

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	X
Most	
Some	
A few	
None	

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
Improving energy efficiency in the civil sector	No
Improving energy efficiency in the	No

transport sector	
Sustainable tourism	No
Production and use of energy from renewable sources	Yes
Reduction of fossil fuels energy consumption	No

Measures – List here	Monitoring of impacts (Yes/No)
Building regulations for thermal insulation	No

10. Will the planned monitoring provide the data to measure whether targets are achieved?
Please tick one answer only.

No targets	<input type="checkbox"/>
Yes, monitoring will provide data to measure targets	<input type="checkbox"/>
Not clear that monitoring data will relate to targets	<input type="checkbox"/>
No monitoring envisaged	<input checked="" type="checkbox"/>

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning		x
Environment	x	
Health	x	
Economic development		x
Tourism industry	x	
Other policy area		x
Geographical areas	Yes	No
Surrounding municipalities	x	
Other levels of government e.g. provincial, national		x

Comments – Explain briefly how any links are (planned to be) made

The island strategic plan PAES with the purpose of reducing CO2 and fossil fuel emissions to an oil free island is the only plan that affects all the municipalities of the island.

Some measures to reduce private car traffic have been taken jointly between different municipalities (i.e. Realization of a taxi bus service from Portoferraio and Bagnaiia and back in cooperation with Rio Elba)

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

<i>Yes, equally</i>	
<i>No, very unequally</i>	X
<i>No information</i>	

Comments:

All the plans of the Elba municipalities focuses to the private cars

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city’s existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
<i>Walking</i>	10
<i>Cycling</i>	10
<i>Public transport</i>	45
<i>Car</i>	35
No budget plan	

1.5 Stakeholders engagement

How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>		
Economic development		
Land use (spatial) planning department		
Transport and roads department		
<i>Other</i>		
Chamber of commerce		
Public transport companies	X	4
Hotels, house/room rental and related trade associations	X	2
Car, bike, boat rental companies and individuals	X	2
Shopkeepers and groups representing shopkeepers in local areas		
Residents' groups	X	2
NGOs (cyclists, environmentalists etc)	X	2
Storekeeper	X	3

14. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings	X	2
Exhibitions		
Leaflets		
Website	X	3
Social media		
Focus groups of 10-15 selected people	X	2
Expert groups		
Other (please state) i.e.: private meetings with merchants and transport companies	X	2

15. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

The PAES strategic Elba plan is very accessible to everyone

16. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
	X

If yes – please explain how.



SUMP questionnaire Las Palmas

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review EXISTING transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
X	

Comments – please give example of at least three objectives:

The current SUMP of Las Palmas (2012) define three strategic goals:

1. To promote sustainable mobility.
2. To foster intermodality in order to improve the efficiency and attractiveness of sustainable transport modes.
3. To reduce car use (less congestion, increase energy-efficiency, etc.).

These 3 strategic goals are the basis for the specific objectives of the SUMP:

1. To promote sustainable mobility.
 - Pro-actively provide facts about the planning process and inform about outcomes of important steps.
 - Establish the planning of mobility and transport as a shared policy domain.
2. To foster intermodality in order to improve the efficiency and attractiveness of sustainable transport modes.
 - To improve the attractiveness of the public transport network.
 - To improve the public transport information.
 - To improve the public transport infrastructure.
 - To promote the use of the public transport.
 - To promote workplace sustainable mobility.
 - To promote schools sustainable mobility.
 - To introduce traffic calming schemes.

- To improve the attractiveness of the bicycle as a daily mode of transport.
3. To foster intermodality in order to improve the efficiency and attractiveness of sustainable transport modes.
- To reduce congestion.
 - To introduce parking management in the city.
 - To reduce the traffic volume.
 - To reduce parking search traffic.

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment		X	
Congestion	X		
Local Economy		X	
Provision for Tourist Travel		X	
Road Safety	X		
Health		X	
Social	X		
Sharing economy		X	
Inclusion		X	
Integration with other policy areas	X		

Despite some issues / themes are not directly covered by the SUMP's objectives, some of them are included in the set of key performance indicators such as:

Environment:

- Energy-efficiency of the transport system (Toe);
- Greenhouse gas emissions (CO emissions);
- Pollutants released by the transport system (Tons of particular matter and NOx);
- Noise pollution (dB(A));
- Electric vehicles (% of electric vehicles and hybrid vehicles).

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

The SUMP of Las Palmas analyses the mobility situation in the city by assessing the strengths, weaknesses, opportunities and threats of each mode of transport (walking, cycling, public transport and car). Besides this analysis there is also an assessment of some other key issues: accessibility to services, traffic safety, external costs and energy consumption.

However, there is not a clear link between the problems identified of the baseline scenario and the expected impact of each measure proposed.

4. In general, objectives are:
Please tick only one of the following alternatives

Very clearly linked to problem analysis	<input type="checkbox"/>
Clearly linked to problem analysis	<input type="checkbox"/>
Linked to problem analysis	<input checked="" type="checkbox"/>
Not clearly linked to problem analysis	<input type="checkbox"/>
Not at all linked to problem analysis	<input type="checkbox"/>

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

The package of measures does not ensure that the defined objectives and targets will be met. Most of the measures are very general and not clearly linked to the weaknesses and threats of the Diagnosis part.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure	Yes	4	4
Planning for walking infrastructure	Yes	2	2
Measures to encourage the use/rental of low carbon vehicles	No	-	-
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport	Yes	2	2
Encourage car sharing initiatives (maybe also bike sharing)	Yes	4	3
New rail and/or tram system	No	-	-
Bus rapid transit or extensive bus priority measures	Yes	5	4
Public transport related measures, including improved interchanges and park and ride.	Yes	4	3
Measures to manage negative impacts of freight	No	-	-
Access management, shared space, reallocation of space to pedestrians	Yes	1	2

Mobility management (“soft measures” to influence people’s travel behaviour)	Yes	3	3
Road safety measures	Yes	3	3
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.	No	-	-
Parking management – new blue zones for example.	Yes	4	4
Maximum (limited) parking standards for new buildings	No	-	-
Speed management and traffic calming	Yes	2	2
Extent to which new internet technologies, social media, Web 2.0 etc, are built into the measures listed above	No	-	-
Measures to guide the modal choice of tourists	No	-	

1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

0

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
Most	X
Some	
A few	
None	

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
1. To promote sustainable mobility.	No
2. To foster intermodality in order to improve the efficiency and attractiveness of sustainable transport modes.	No
3. To reduce car use (less congestion, increase energy-efficiency, etc.).	No

Measures – List here	Monitoring of impacts (Yes/No)
Measure 1. Improvement of the public transport network	Yes.
Measure 2. Infrastructures to implement a Bus Rapid Transit (BRT)	No.
Measure 3. Bike lane network	No.
Measure 4. Parking management scheme	Yes.
Measure 5. Improvement of the walking infrastructures	Yes.
Measure 6. Raise public awareness about the results and outcomes of the SUMP	No.

10. Will the planned monitoring provide the data to measure whether targets are achieved?
Please tick one answer only.

No targets	<input checked="" type="checkbox"/>
Yes, monitoring will provide data to measure targets	<input type="checkbox"/>
Not clear that monitoring data will relate to targets	<input type="checkbox"/>
No monitoring envisaged	<input type="checkbox"/>

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning	X	
Environment	X	
Health		X
Economic development		X
Tourism industry		X
Other policy area		X
Geographical areas	Yes	No
Surrounding municipalities		X
Other levels of government e.g. provincial, national		X

Comments – Explain briefly how any links are (planned to be) made

The SUMP includes an assessment of the current land use planning documents and tries to ensure the integration of these documents’ policies (e.g. new housing developments, etc.) into the Plan.

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

<i>Yes, equally</i>	X
<i>No, very unequally</i>	

No information	
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Comments:

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city’s existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
Walking	37%
Cycling	30%
Public transport	32%
Car	0% (*)
No budget plan	

() The budget of the SUMP estimates that those measures related to motor vehicle traffic and parking will generate revenue thanks to the new Parking management scheme. Therefore, there are no costs linked directly linked to car or parking measures.*

1.5 Stakeholders engagement

How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved on a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>		
Economic development	1	Nda
Land use (spatial) planning department	3	When it is required
Transport and roads department	3	When it is required
<i>Other</i>		
Chamber of commerce	1	Nda
Public transport companies	4	On a monthly basis
Hotels, house/room rental and related trade associations	1	Nda
Car, bike, boat rental companies and individuals	1	Nda
Shopkeepers and groups representing shopkeepers in local areas	1	Nda
Residents' groups	1	Nda
NGOs (cyclists, environmentalists etc)	1	Nda

14. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings	X	2
Exhibitions	X	3
Leaflets	X	4
Website	X	4
Social media	X	4
Focus groups of 10-15 selected people	-	-
Expert groups	-	-
Other (please state)	-	-

15. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

The SUMP of Las Palmas is available on the Municipality’s website. There is also a document available on this website with a monitoring assessment of the implementation of the measures 3 years after the SUMP’s adoption by the Municipality: <https://www.laspalmasgc.es/export/sites/laspalmasgc/.galleries/documentos-otras-secciones/LPA-GC-Movilidad.pdf>

16. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
X	

If yes – please explain how.

As explained below, 3 years after the SUMP's adoption there was an assessment of the measures implementation but not about the Plan's performance.

2 Ex-post Evaluation Questionnaire

Questionnaire to be used to review NEW SUMP after it has been adopted

2.1 The objectives

1. Are there clearly stated objectives in in the SUMP, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)?

Yes	No

Comments – please give example of at least three objectives:

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment			
Congestion			
Local Economy			
Provision for Tourist Travel			
Road Safety			
Health			

Social			
Sharing economy			
Inclusion			
Integration with other policy areas			

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

4. In general, objectives are:

Please tick only one of the following alternatives

Very clearly linked to problem analysis	<input type="checkbox"/>
Clearly linked to problem analysis	<input type="checkbox"/>
Linked to problem analysis	<input type="checkbox"/>
Not clearly linked to problem analysis	<input type="checkbox"/>
Not at all linked to problem analysis	<input type="checkbox"/>

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

2.2 The measures

5. What kinds of measures are listed in the plan for implementation?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure			
Planning for walking infrastructure			
Measures to encourage the use/rental of low carbon vehicles			
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport			
Encourage car sharing initiatives (maybe also bike sharing)			
New rail and/or tram system			
Bus rapid transit or extensive bus priority measures			

Public transport related measures, including improved interchanges and park and ride.			
Measures to manage negative impacts of freight			
Access management, shared space, reallocation of space to pedestrians			
Mobility management (“soft measures” to influence people’s travel behaviour)			
Road safety measures			
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.			
Parking management – new blue zones for example.			
Maximum (limited) parking standards for new buildings			
Speed management and traffic calming			
Extent to which new internet technologies, social media, Web 2.0 etc, are built into the measures listed above			
Measures to guide the modal choice of tourists			

2.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan?

Please count the number of targets and write it in the box. Write zero if there are no targets.

--

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
Most	
Some	
A few	
None	

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)

Measures – List here	Monitoring of impacts (Yes/No)

10. Will the planned monitoring provide the data to measure whether targets are achieved?
Please tick one answer only.

No targets	
Yes, monitoring will provide data to measure targets	
Not clear that monitoring data will relate to targets	
No monitoring envisaged	

2.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No

Land use planning		
Environment		
Health		
Economic development		
Tourism industry		
Other policy area		
Geographical areas	Yes	No
Surrounding municipalities		
Other levels of government e.g. provincial, national		

Comments – Explain briefly how any links are (planned to be) made

12. Does the plan look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

<i>Yes, equally</i>	
<i>No, very unequally</i>	
<i>No information</i>	

Comments:

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city's existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
Walking	
Cycling	
Public transport	
Car	
No budget plan	

2.5 Stakeholders engagement

14. How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?

<i>Other related departments within the municipality</i>		
Economic development		
Land use (spatial) planning department		
Transport and roads department		
<i>Other</i>		
Chamber of commerce		
Public transport companies		
Hotels, house/room rental and related trade associations		
Car, bike, boat rental companies and individuals		
Shopkeepers and groups representing shopkeepers in local areas		
Residents' groups		
NGOs (cyclists, environmentalists etc)		

15. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings		
Exhibitions		

Leaflets		
Website		
Social media		
Focus groups of 10-15 selected people		
Expert groups		
Other (please state)		

16. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

17. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No

If yes – please explain how.

SUMP questionnaire Limassol

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review EXISTING transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
x	

Comments – please give example of at least three objectives:

<ul style="list-style-type: none"> - Reduce traffic noise in the study area - Reduce CO2 emissions - Increase the total share of citizens that use public transport
--

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment	x		
Congestion	x		
Local Economy			x
Provision for Tourist Travel	x		
Road Safety	x		

Health	x		
Social	x		
Sharing economy			x
Inclusion			x
Integration with other policy areas			x

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

Yes, the objectives are linked to the transport-related problems. The traffic jams in the study area is due to freight logistic vehicles parked and unloading on the road or on a sidewalk. The traffic jams are also caused by the constant use of private cars. The objectives are to create a freight logistics plan that will help manage the traffic flow of the freight logistic vehicles, and the improvement of the public transport system, the cycling roads and walking paths to promote alternative and more sustainable methods of transport than the private car.

4. In general, objectives are:

Please tick only one of the following alternatives

Very clearly linked to problem analysis	
Clearly linked to problem analysis	
Linked to problem analysis	x
Not clearly linked to problem analysis	
Not at all linked to problem analysis	

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

The problem is linked to the analysis. But it has not been implemented yet to know the results.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure		4	4
Planning for walking infrastructure		4	4
Measures to encourage the use/rental of low carbon vehicles		4	3
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport		3	3
Encourage car sharing initiatives (maybe also bike sharing)		4	3
New rail and/or tram system			

Bus rapid transit or extensive bus priority measures			
Public transport related measures, including improved interchanges and park and ride.			
Measures to manage negative impacts of freight		3	3
Access management, shared space, reallocation of space to pedestrians			
Mobility management (“soft measures” to influence people’s travel behaviour)			
Road safety measures		4	4
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.		3	3
Parking management – new blue zones for example.		4	4
Maximum (limited) parking standards for new buildings			
Speed management and traffic calming			
Extent to which new internet technologies, social media, Web 2.0 etc, are built into the measures listed above		2	2
Measures to guide the modal choice of tourists		2	2

1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

No

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
Most	x
Some	
A few	
None	

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
Less CO2 emissions	No
Less traffic noise in the study area	No
Less energy consumption	No
Increase the total share of citizens that use public transport	No
Change habits of local people and tourists	No

Measures – List here	Monitoring of impacts (Yes/No)
<ul style="list-style-type: none"> - Extension and integration of the existing ramp beach access points network for disable. The access points will integrate the PT services and deaf and blind traffic light crossings. 	Not yet
<ul style="list-style-type: none"> - Extension and integration of the existing E-V charging station networks. The network will connect the city centre with the main island getaways of Limassol port, and Larnaca and Paphos airports. 	Not yet
<ul style="list-style-type: none"> - Self-ticketing machines for PT service in attractive locations for tourists and residents. 	Not yet
<ul style="list-style-type: none"> - Bike parking stations. 	Not yet
<ul style="list-style-type: none"> - Smart bus stops with electronic signs in touristic points of the Limassol City Center 	Not yet
<ul style="list-style-type: none"> - An urban freight logistic plan for the Limassol City Center. 	Not yet

10. Will the planned monitoring provide the data to measure whether targets are achieved?
 Please tick one answer only.

No targets	
Yes, monitoring will provide data to measure targets	x
Not clear that monitoring data will relate to targets	
No monitoring envisaged	

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning		X
Environment		X
Health		X
Economic development		X
Tourism industry		X
Other policy area		X
Geographical areas	Yes	No
Surrounding municipalities		X
Other levels of government e.g. provincial, national		X

Comments – Explain briefly how any links are (planned to be) made

N/A

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

Yes, equally	<input checked="" type="checkbox"/>
No, very unequally	<input type="checkbox"/>
No information	<input type="checkbox"/>

Comments:

The plans looks equally to public transport, cycling and walking

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city’s existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
------	------------

<i>Walking</i>	<i>15</i>
<i>Cycling</i>	<i>35</i>
<i>Public transport</i>	<i>45</i>
<i>Car</i>	<i>5</i>
No budget plan	x

1.5 Stakeholders engagement

How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>	X	2
Economic development		
Land use (spatial) planning department		
Transport and roads department		
<i>Other</i>	x	2
Chamber of commerce		
Public transport companies		
Hotels, house/room rental and related trade associations		
Car, bike, boat rental companies and individuals		

Shopkeepers and groups representing shopkeepers in local areas	x	1
Residents' groups		
NGOs (cyclists, environmentalists etc)	x	1

14. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings		
Exhibitions		
Leaflets	X	5
Website		3
Social media		4
Focus groups of 10-15 selected people		2
Expert groups		2
Other (please state)		

15. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

Accessible to public. It can be found in the involved companies websites.

16. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
	x

If yes – please explain how.

SUMP questionnaire Rethymno

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review EXISTING transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
X	

Comments – please give example of at least three objectives:

Reduce congestion and car-dependency Increased use of sustainable transport modes Increased shared mobility (Park and Ride Facilities, Bike Sharing Facilities) Public Transport Service Enhancement Improve public spaces (Pedestrianization of the historic city and the creation of zones 30 in the modern part of the center and in the neighborhoods)
--

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment	X		
Congestion	X		
Local Economy	X		
Provision for Tourist Travel		X	
Road Safety			X

Health	X		
Social	X		
Sharing economy	X		
Inclusion			X
Integration with other policy areas	X		

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?
(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

Previous Sustainable Transport Plan has identified that transport-related problems in the city are the result of urban sprawl into areas not covered by public transport facilities and out of walking range. This causes in the long term a rise in car use. The objective is linked to the problem but there also are other objectives linked also to transport as to reduce the impacts of traffic on the quality of public spaces, on the conditions for walking and cycling etc.

4. In general, objectives are:
Please tick only one of the following alternatives

Very clearly linked to problem analysis	X
Clearly linked to problem analysis	
Linked to problem analysis	
Not clearly linked to problem analysis	
Not at all linked to problem analysis	

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

The proposed measures of existing Transportation Plan try to develop alternative transportation solutions in the wider metropolitan area, like cycling facilities and public transport service. At the same time proposed measures try to improve urban environment conditions in the urban core a) to reduce urban sprawl and b) to liberate sum roads and public spaces from the car. Therefore, the objectives are very clearly linked to problem analysis.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure	X	5	5
Planning for walking infrastructure	X	4	5
Measures to encourage the use/rental of low carbon vehicles	X	2	2
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport	X	3	2
Encourage car sharing initiatives (maybe also bike sharing)	X	4	5
New rail and/or tram system	X	3	3
Bus rapid transit or extensive bus priority measures	X	3	3

Public transport related measures, including improved interchanges and park and ride.	X	5	4
Measures to manage negative impacts of freight	-	-	-
Access management, shared space, reallocation of space to pedestrians	X	5	5
Mobility management (“soft measures” to influence people’s travel behaviour)	X	4	3
Road safety measures	X	4	3
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.			
Parking management – new blue zones for example.	X	3	3
Maximum (limited) parking standards for new buildings			
Speed management and traffic calming	X	4	4
Extent to which new internet technologies, social media, Web 2.0 etc., are built into the measures listed above			
Measures to guide the modal choice of tourists	X	2	2
Measures to Fund Sustainable Mobility Facilities			
Land Use Planning Measures to Foster Sustainable Mobility	X	5	5.

1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

0

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
Most	
Some	
A few	
None	X

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
Bicycle Use	No
Walking	No
Public Transport Use	No
Urban Sprawl Control	No
Enhanced Mobility	No
Better Traffic Flow	No

Air Quality	No
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Measures – List here	Monitoring of impacts (Yes/No)
Extending Area Served by Public Transport	No
Extending Area Covered by Cycling Facilities	No
Building Mobility Centers	No
Shape Green Routes in the Urban Core	No
Develop On-Demand Public Transport	No
Improving Public Transport Facilities	No
Bike Sharing	No
Pedestrianization of city center	No

10. Will the planned monitoring provide the data to measure whether targets are achieved? *Please tick one answer only.*

No targets	<input type="checkbox"/>
Yes, monitoring will provide data to measure targets	<input type="checkbox"/>
Not clear that monitoring data will relate to targets	<input type="checkbox"/>
No monitoring envisaged	<input checked="" type="checkbox"/>

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning	X	
Environment	X	
Health		X
Economic development		X
Tourism industry		X
Other policy area		X
Geographical areas	Yes	No
Surrounding municipalities	X	
Other levels of government e.g. provincial, national		X

Comments – Explain briefly how any links are (planned to be) made

Specific Land Use measures are proposed to control urban sprawl which threatens sustainable mobility. In the existing Strategic Transport Plan sustainable mobility targets are correlated to environmental protection, improved health and economic development fostered by an improved touristic product, namely a sustainable city. Sustainable mobility soft measures and citizen’s participation in planning procedures are also analyzed.

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

<i>Yes, equally</i>	X
<i>No, very unequally</i>	

No information	
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Comments:

The existing Sustainable Transport Plan proposes measures to reduce car traffic and to enhance alternative transportation modes.

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city's existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
<i>Walking</i>	
<i>Cycling</i>	
<i>Public transport</i>	
<i>Car</i>	
No budget plan	X

1.5 Stakeholders engagement

How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>		
Economic development		
Land use (spatial) planning department		
Transport and roads department		
<i>Other</i>		
Chamber of commerce	X	2
Public transport companies	X	3
Hotels, house/room rental and related trade associations	X	2
Car, bike, boat rental companies and individuals		
Shopkeepers and groups representing shopkeepers in local areas	X	2
Residents' groups	X	2
NGOs (cyclists, environmentalists etc)	X	2

14. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings	X	3
Exhibitions	X	3

Leaflets		
Website	X	2
Social media	X	1
Focus groups of 10-15 selected people		
Expert groups		
Other (please state)		

15. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

The document can be found in the Engineering Department of the Municipality in hard copy and it is also uploaded in the municipality’s site. A presentation is also uploaded presenting a summary of the final document. However these documents cannot easily be found when using keywords like “Transport Plan Rethymno” in search engines.

16. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
	X

If yes – please explain how.

SUMP questionnaire Malta

Introduction

To evaluate the impact that the SUMP will have on the DESTINATIONS sites, the project follows the methodology developed by a previous CIVITAS project, DYN@MO.

The first questionnaire (Baseline Evaluation Questionnaire) will be used to evaluate the old transport plan or the existing transport planning process, and the second (Ex-post Evaluation Questionnaire) will be used to evaluate the SUMP that will be developed within the project. The results of the two questionnaires will be compared to see what impact the new SUMP has had on the planning process.

If there is no existing transport plan then the questionnaire should be completed based on interviews at least 3 key staff in the city authority – preferably those who have been working there for a minimum of 5 years – to answer these questions to form the baseline. In the following list of questions, “plan” therefore refers in the baseline to the “way of doing things” in the before situation, if there is no existing plan. Interview results can be compared to the new plan once this is developed.

1 Baseline Evaluation Questionnaire

Questionnaire to be used to review EXISTING transport plan or transport planning approach (not new SUMP)

1.1 The objectives

1. Are there clearly stated objectives in the plan, expressed in terms such as “Reduce congestion” and NOT in terms such as “Widen road X” (the latter is a measure, not an objective)? If there is no plan, are there any objectives for transport planning written down anywhere?

Yes	No
	X

Comments – please give example of at least three objectives:

There exists a National Transport Strategy which was published in 2016. The Strategy considers challenges, goals and targets in mobility at NATIONAL level.

No plans exist at regional level, specifically for the study area.

For the purposes of this baseline, no current (regional) plan exists.

2. Do objectives cover the following themes?

Theme	Yes	No	Unsure
Environment	X		
Congestion	X		
Local Economy			
Provision for Tourist Travel	X		

Road Safety			
Health			
Social			
Sharing economy	X		
Inclusion			
Integration with other policy areas			

3. Are the objectives linked to a clear analysis of the transport-related problems in the city?

(e.g. The city has identified that traffic jams in some parts of the city during traffic peak hours are a problem. The objective is to have a change in modal share from car to public transport, biking and walking. But the modal share is for the whole city, therefore it is possible to have a positive change in the modal share without reducing the local traffic jams. The objective is linked to the problem, but not clearly linked.)

No. The projects were reacting to specific challenges related to modal split, public transport reform and overall network congestion.

4. In general, objectives are:

Please tick only one of the following alternatives

Very clearly linked to problem analysis	
Clearly linked to problem analysis	
Linked to problem analysis	X
Not clearly linked to problem analysis	
Not at all linked to problem analysis	

Please describe why you think the link is – or isn't - clear between the objectives and the transport related problem in the comment box below.

While a National Transport Strategy analysis the problems and challenges at national level, it does not go into detail when it comes to the problems at regional level as concerning the study area. However, considering the fact that the study area is the highest populated region and the most congested region in terms of mobility, the challenges identified at national level are similar to those found at the study area level.

1.2 The measures

5. What kinds of measures are listed in the plan for implementation, or if there is no existing plan, what kind of measures have been implemented by the city generally?

Tick each measure that appears and, if it appears, rate its relative importance in the plan on a scale of 1-5 where 1 is unimportant and 5 is very important by writing the number (1 to 5) in the significance-column. If the plan contains measures other than the ones listed, you can write them in the empty rows of the bottom of the table.

6. Is it easy to see how implementing a measure is linked to the achievement of (objectives)?

Please write a number (1 to 5) in the “Link to objectives” column in the table below where 1 is no clear link and 5 is Clear link.

Possible measure	Appears	Significance 1-5	Link to objectives
Planning for cycling infrastructure	X	2	1
Planning for walking infrastructure	X	3	2
Measures to encourage the use/rental of low carbon vehicles			
New ITS systems, traffic management to reduce congestion, encourage mode shift to public transport	X	2	1
Encourage car sharing initiatives (maybe	X	2	1

also bike sharing)			
New rail and/or tram system			
Bus rapid transit or extensive bus priority measures			
Public transport related measures, including improved interchanges and park and ride.	X	4	3
Measures to manage negative impacts of freight			
Access management, shared space, reallocation of space to pedestrians	X	1	1
Mobility management (“soft measures” to influence people’s travel behaviour)			
Road safety measures			
Measures to improve travellers’ personal security (reduced risk of attack/robbery) especially for PT users, pedestrians and cyclists.			
Parking management – new blue zones for example.			
Maximum (limited) parking standards for new buildings			
Speed management and traffic calming	X	2	1
Extent to which new internet technologies, social media, Web 2.0 etc, are built into the measures listed above	X	3	2
Measures to guide the modal choice of tourists			

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1.3 The targets and the monitoring

7. Are there quantified targets (e.g. to reduce deaths on the roads in the city by 20% by 2020) in the plan, or used by the city in any other way to inform transport planning?

Please count the number of targets and write it in the box. Write zero if there are no targets.

0

8. How many of the targets have a timescale for achieving them?

Please tick one answer only.

All	
Most	
Some	
A few	
None	0

9. Is there monitoring built into the plan – both monitoring of implementation, and monitoring of impacts? If there is no existing plan, does the city do any type of monitoring of the impacts of its transport activities (e.g. traffic counts, surveys of travel patterns)?

For each objective, yes/no to whether it has monitoring of impacts.

For each measure, yes/no as to whether there is monitoring of its implementation.

Objectives – List here	Monitoring of impacts (Yes/No)
Modal shift	Yes (national household travel survey)
Network performance	Yes (traffic counts)

Measures – List here	Monitoring of impacts (Yes/No)
Public Transport Reform	Patronage figures

10. Will the planned monitoring provide the data to measure whether targets are achieved?
Please tick one answer only.

No targets	<input type="checkbox"/>
Yes, monitoring will provide data to measure targets	<input type="checkbox"/>
Not clear that monitoring data will relate to targets	<input checked="" type="checkbox"/>
No monitoring envisaged	<input type="checkbox"/>

1.4 Policy area and modes of transport

11. Does the plan look beyond administrative and policy boundaries (e.g. to other cities, to policy areas like health and environment and land use planning)? If there is no existing plan, is there any informal work to link up with other policy areas, or across boundaries?

For each other policy area, and for geographical boundaries, yes/no as to whether plan links transport to these other policy or geographical areas, and a comment.

Policy Area	Yes	No
Land use planning		X
Environment	X	
Health		X
Economic development		X
Tourism industry	X	
Other policy area		
Geographical areas	Yes	No
Surrounding municipalities	X	
Other levels of government e.g. provincial, national	X	

Comments – Explain briefly how any links are (planned to be) made

Given Malta’s Island State geography, any intervention at regional level will have a national impact. Moreover, the implementation of transport measures and tourism related measures are overseen and regulated at Government level where the potential for policy integration happens.

12. Does the plan (or if there is no existing plan, the city’s transport planning approach) look at all modes and their contribution relatively equally, or does it concentrate mainly on motor vehicle traffic?

Please tick one only.

Yes, equally	
No, very unequally	X
No information	

Comments:

Motor vehicle mobility is still considered as the main mode of travel for both residents and visitors.

13. Estimate how the money is divided between different modes of transport in the plan - what proportion is planned to be spent on what? If there is no plan or no budget in the plan, how is the city’s existing transport budget allocated?

As far as possible, please list the approximate percentage of money planned to be spent on measures for each mode. (e.g. Money spent on making car lanes more narrow has a negative impact on cars.

Mode	% of money
Walking	
Cycling	
Public transport	
Car	
No budget plan	X

1.5 Stakeholders engagement

How wide is stakeholder engagement/collaboration in the transport planning process (including other related departments within the municipality)? Who is involved and how often?

Please tick if the stakeholder is engaged in the planning. If so – please rate how often the stakeholder is involved one a scale from 1 to 5, where 1 is “only involved once” and 5 is “involved during the whole planning process, including its review”.

Other stakeholders engaged in the planning process	Involved	How often?
<i>Other related departments within the municipality</i>		
Economic development		
Land use (spatial) planning department		
Transport and roads department	X	
<i>Other</i>		
Chamber of commerce		
Public transport companies	X	
Hotels, house/room rental and related trade associations	X	
Car, bike, boat rental companies and individuals	X	
Shopkeepers and groups representing shopkeepers in local areas		
Residents’ groups	X	
NGOs (cyclists, environmentalists etc)	X	

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14. What methods are used to seek their engagement (e.g. just public meetings and leaflets, or more innovative methods such as internet, social networking etc)?

Please tick if the method listed is used in developing and reviewing the plan. If so – please rate how much it is used on a scale from 1 to 5, where 1 is “used once” and 5 is “used very frequently”

Method	Appears	Frequency of use
Public meetings	X	1
Exhibitions		
Leaflets		
Website		
Social media		
Focus groups of 10-15 selected people		
Expert groups	X	4
Other (please state)		

15. How accessible is the final document to the public – who can see it, and who can understand it? Where can the document be found? Is there a non-technical summary?

Public consultation is carried out with various sectors of society (including the general public) in certain cases where the measure is expected to have a very high impact such as the Public Transport Reform (2011) and the Valletta Strategy (2004). Both documents were made publically available.

16. Is the city’s transport plan or transport planning work ever formally reviewed to see whether it is meeting its objectives and performing well?

Yes	No
	X

If yes – please explain how.

No formal monitoring was carried out.