

Transfer Strategy Plan

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

WP4 – Transferring
Activity 4.2 Transfer Strategy Plan
Deliverable 4.2.1 transfer Package

Circe – Area - All partners

Work package 4

Deliverable D4.2.1

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1. Introduction

1.1 Objective of the activity

Activity 4.2 represents the key achievement of WP4, devoted to prepare the transferring of WP3 achievements to the replication framework. The main aim of WP4 is to consolidate results achieved in WP3, to facilitate the transferring of methodology and outputs in the countries where partners are established, and to pave the way for the implementation of capitalization activities envisaged in WP 5 Capitalization in partner and new countries in the MED area and beyond.

The WP4 objective is double:

- Producing an evaluation procedure complete with a set of standard parameters to evaluate LCTPs and secure quality and consistency;
- Setting the ground for capitalization activities with a transfer strategy complete with a transfer pack valorizing outputs and results from WP 3 Testing.

Within the WP, Activity 2 defines the transfer strategy plan and methodology, along with the construction of a transfer package including methodologies and tools developed in activity 3 (evaluation pack, quality standards and procedures, modular packages) tested in WP3 Testing while finalizing the 7 LCTPs.

The transfer package is the basis for transferring and capitalizing. It valorizes WP3 and activity 4.3 outputs designed to foster replication (7 complete and evaluated LCTPs, 21 modular packages, quality parameters) focusing on new plans. The activity encompasses: assessing the lessons learnt during the development of the 7 LCTPs in the partners' territories, minimum quality standards for new LCTPs, evaluating potential financing sources and procedures suitable to support LCTP implementation, drafting a strategic action plan with milestones and key performance indicators.

Under WP 5 Capitalizing, the transfer plan will drive the accomplishment of additional 5 LCTPs in new territories in partner countries and 6 new LCTPs in MED Program Area countries other than those where project partners are established. The capitalization strategy for the second stage of project development, relies on the operational model, developed tools, expertise and know-how accrued in the testing phase, collected and organized through activity 4.2 to foster the transferring of similar actions in new MED territories (cruise destination cities) in original and new MED countries.

The strategy sets the objectives and operational methodology, whereas the transfer pack provides the tools and materials to implement the actions: these are essential to foster the new urban plans/strategies including low-carbon transport and multi-modal connections soft actions and their actual implementation.

1.2 Deliverable description

Deliverable 4.2.1 represents the final form of WP4 activity 4.2 achievements and, therefore, is it based in four main parts which have been designed to support new LCTP implementation in other cities within the partner countries and other belonging to the MED area, and guide the steps to be taken in an efficient, clear and fulfilling manner.

- First part is devoted to introduce LOCATIONS project, objectives and design, synthetized on the notion of Low Carbon Transport Plans (LCTPs), including its description and goals.
- Second part focuses on the presenting the particular approach chosen for the project, which brings to the front line the active participation of stakeholders (participatory processes) and key actors (capitalization activities).
- Third part presents the guidelines to follow when designing and adopting an LCTP, after the lessons learnt through WP3 Testing activities.
- Fourth part is the Transfer Pack itself, composed of the tools developed during the project and which shall be supporting tools for other LCTPs development: Operational Guidelines, the Capacity Building Manual, LOCATIONS' 7 LCTPs and Evaluation reports.

The following chapters are meant to be a synthetized version of the Transfer Pack contents, so any further detail or in-depth description can be found in the corresponding pack, as shown in point 6.5 index.

2. Low Carbon Transport Plans

2.1 Description

The prosperous tourism economy of most MED territories is strongly connected to the cruising phenomena, which is growing at an increasing pace. Such fast growing specific sector is dramatically driving a wide range of impacts and externalities (both positive and negative) on destinations, affecting, among others, the natural environment, urban mobility and accessibility, and sometimes triggering significant multifold repercussions on cultural heritage and local communities. Departure ports and ports of call are impacted by sudden, often seasonal, heavy traffic of cars and coaches in connection with incoming and outgoing flows of passengers embarking or disembarking cruise ships, and with deliveries of goods, waste collection and provision of a range of other services. As low carbon economy is a key issue for the territorial sustainable development and for achieving the EU2020 targets, it is necessary to assist public policy makers and private operators in setting up respectively innovative coordinated programs and effective tools able to better manage the urban mobility and improve attractiveness of cruise ports.

Steps forward in that sense have been already taken in the MED area, involving public and private actors, which have already developed SEAPs and SUMP as well as other international initiatives to put in place positive territory spill-over effects.

Cruise tourism represents an appealing way to visit coastal areas providing a significant boost in their economy and international reputation. Facing the need to increase income from cruise tourism and to preserve territorial natural assets, cities are called to adopt low carbon transport systems and multimodal connections, which find a proper balance of development and preservation.

Within this framework, LOCATIONS' (Low Carbon Transport in Cruise Destination Cities) overall objective is to support local public administrations in drafting Low-Carbon Transport and mobility Plans (LCTPs) with measures dedicated to cruise-related passengers and freight flows, contributing to decongest the city traffic and to lower the production of greenhouse gases.

A methodology has been duly tested to respond to specific mobility-related issues in the seven cities involved, targeting both, citizenship and cruise passengers through raising awareness campaign, encouraging participation and responsibility in enhancing cities' quality of life.

The LCTP definition adopted within the project is:

In a long term perspective, an LCTP fosters the use of low carbon transport systems and multi modal connections for cruise-related passengers, goods and services flows in the frame of wider sustainable traffic and mobility policies (SUMP's and SEAP's/SECAP's)

Therefore, the LCTP for any specific city, will not only include those objectives, activities and indicators designed to promote a Low Carbon approach for cruise related mobility, but should also be designed so as to fit and complement the already existing plans and policies looking to foster sustainable mobility and low carbon cities (namely SUMP's and SEAP's, among other).

2.2 Objectives

The first objective of the LCTP is to bring in the necessary strategies and actions to meet the challenges set by cruise-related traffic flows, find a balance between positive and negative externalities, respond to the need to provide sustainable connections among city and port and preserve natural, cultural and environmental heritage and identity.

Consequently, every LCTP will require a local focus which takes into account the particular conditions of the city adopting it, in what regards traffic, port infrastructures and function, medium and long term council strategies, culture, citizens' behavioral patterns, available resources, etc.

Despite these local particularities, a common framework and model for LCTPs development can be applied, highlighting the steps and cornerstones of the process, and serving as guide and lighthouse to those cities willing to walk the path to sustainability.

LOCATIONS main output to this point is contributing to the following specific objective: "Port, local and regional public authorities in cruise destination cities are enabled to plan and implement low-carbon transport plans for cruise-related passengers and freight flows". To this end, the design of the LCTP will be based on the following sequential objectives:

1. Design of the Operational model for LCTPs
2. Preparation of a Capacity Building Manual to facilitate LCTPs development
3. Development of the LCTPs (in two phases)
4. Evaluation report of the first LCTPs

A transversal objective of the LCTP, common to any city adopting LOCATIONS methodology, will be to develop a Plan which is compatible and synergic with already existing or about to exist related policies for sustainable mobility and development in the city. Therefore, two approaches are merged within the LCTPs design, one

based on the technical aspects linked to cruise related mobility in the city, and another one on the social and political factors which shall be part of the Plan.

The two approaches are presented next, starting by the Replication Guidelines, which include the steps and actions to be taken throughout the LCTP design process, and following by the capitalization and participation strategy, which brings in the necessary initiatives to extend the Plan to the city stakeholders and maximize the chances of success.

3. Replication Guidelines

LOCATIONS promotes sustainable growth and low-carbon strategies in MED cruise destination cities by acting on the capacity of port, local and regional authorities to jointly develop planning tools for sustainable mobility of people and goods related to cruise flows, integrated with the mobility chapter of SEAPs or the cities' SUMP.

The project fosters innovative concepts, practices, governance, technologies, services, a more reasonable use of resources and a territorially-based approach, reducing impacts on environmental, natural and cultural assets, and improving accessibility and quality of life for tourists and local populations.

The model proposed through LOCATIONS is based on an easily replicable operational model to develop Low Carbon Transport Plans (LCTPs) in MED cruise destination cities, aiming to produce short-term results and to transfer them to other ports through the use of its particular methodology. To that end, a set of replication guidelines are presented, with the following sequential rationale:

- Approach, main principles and areas of work
- Steps to follow
- Participants to get on-board
- Milestones and indicators
- Tools and resources

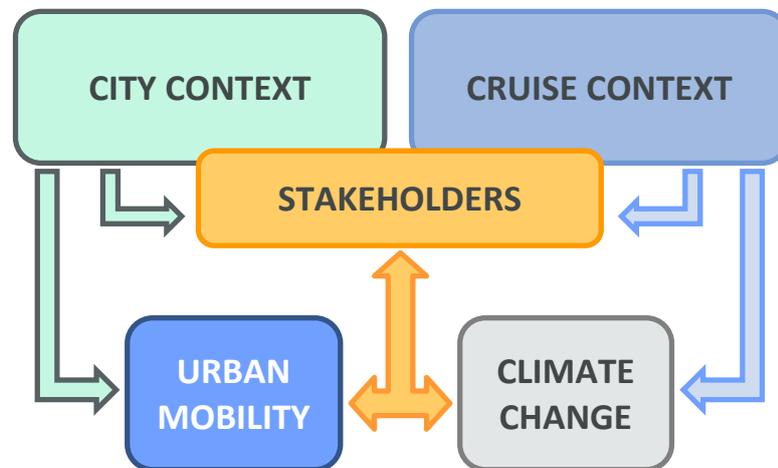
The replication guidelines are actually based on the methodology design, as well as on the experience gained throughout the project, thus refining and adjusting ex-ante assumptions which proved subject to improvement.

3.1 Approach, main principles and areas of work

The biggest challenge linked to the development of a sound LCTP comes from the fact that it involves many different elements, stakeholders and activities, thus having a significant impact in the city in various ways and degrees. The LCTP must be designed in such a way it integrates in a synergic manner all relevant cruise-related flows, needs and conditions of the city, so as to serve as a tool for sustainable development and citizens' wellbeing.

Understanding which the main topics to address are, and the best approach to do so, is of paramount importance, since it will define and influence the whole process. When referring to areas of work, we are

considering more or less wide topics which could be treated separately and imply specific conditions. Without discounting the existence of other topics in particular cases, the most relevant areas of work which will be concerned are the following:

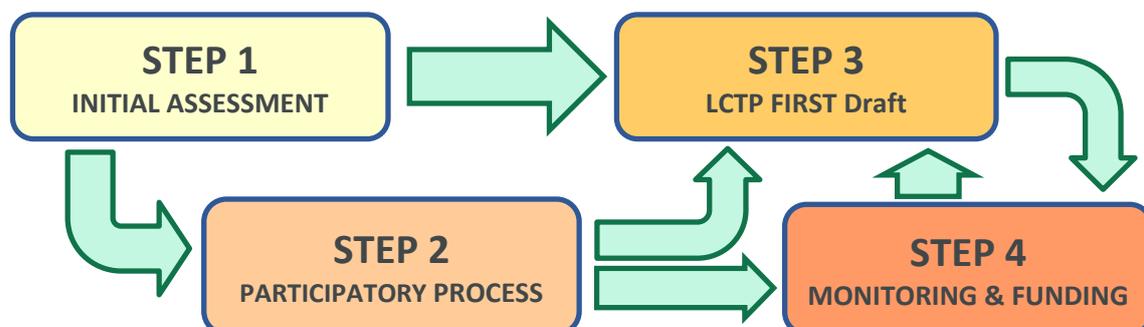


Every one of these main topics involves specific elements, limits, needs, etc., which must be considered and assessed before drafting the LCTP. The transport infrastructures, the economic activity, the energy use behavior, the sensitiveness of citizens towards sustainability, the business model of cruise and tourism operators, or the existence of previous related plans such as SUMP or SEAPs, are, among many others, some of these elements.

The contextualization and definition of the large areas affected sets the necessary ground to start up with the process itself, determining the workflow structure, steps to follow and the related activities.

3.2 Methodology and Steps to Follow

The general Operational model described as guidance for LOCATIONS, which shall be adapted to a specific local operational plan when actually using it in a specific territory and conditions, presents the following **workflow structure** responding to a logical sequence shown below:



Once the workflow structure has been defined, thus establishing the phases and range to consider throughout the process, the proposed methodology may be applied. A key element to tackle before actually applying the methodology, however, is the definition of the scope and principles which will frame the project.

3.2.1 LCTP definition, scope and principles

The large and heterogeneous number of elements to consider, together with the strong implications which the LCTP may have on the city and its inhabitants could lead to conflicting visions and decisions, linked to different short term goals and interests. In order to avoid unsolvable discrepancies, and to establish a criterion to balance the different options which may come through, the following main principles shall be applied and used as guidance to assess the preferred option in any case:

- 1. Sustainability:** The ultimate goal of the LCTP and other related plans such as SUMP, SEAP, etc., is the promotion and adoption of sustainability as a model for development in Europe. Therefore, it is a key principle which may prevail when conflicting options arise.
- 2. Holistic approach:** The mere fact that many elements and stakeholders are affected by the LCTP, requires a holistic approach looking to integrate all visions and expectations, so as to design a useful, resilient and comprehensive plan.
- 3. Participatory focus:** No ambitious and relevant project for the city may be successful if it is not fully accepted, interiorized and fostered by most of its stakeholders. A participatory focus is therefore required from the very beginning, so as to involve all relevant stakeholders and make them 'owners' of the outcomes.
- 4. Long term vision:** The LCTP is meant to be a tool which will guide and facilitate the city sustainable development in years to come. A long term vision, foreseeing different scenarios and making room for further developments is essential to achieve a truly useful LCTP. In this sense, looking for political commitment, as inclusive and extensive as possible, is a parallel activity which should be considered and wisely conducted along the whole process. Proposing the establishment of a local mobility roundtable which includes representatives of the main political parties, has proved to be a very useful and efficient initiative.

The main principles and values which will guide the LCTP development already determined, it is time to start the process itself, following a series of five major steps (and a prior step 0).

3.2.2 LCTP Development Methodology

The LOCATIONS complete methodology with detailed description of the steps to be followed is included in the Operational model for Low Carbon Transport Plans for cruise destination cities document, which makes part of the Transfer Package included together with this document. The following description is only a summary of those steps, aiming at providing the reader with an overview of the methodology.

Step 0: Work plan and team

Before actually starting with the definition of the Operational Plan's activities, it is highly recommended to set up a team of people responsible for the project, and schedule one or more meetings so as to define the work plan, milestones, people involved and duties, deadlines, etc. This preliminary step may result of great help in avoiding misunderstandings, overlapping and frustration, while it also helps to establish common ground about the project rationale, goals and available resources.

Step 1: Initial assessment

- Context analysis: A thoughtful assessment of the context in which the LCTP will act is totally essential since it will determine the baseline as well as the relevance of the measures and objectives proposed. A list with different topics and elements which will help to characterize the context of the studied cruise city must be produced. The selected topics may then be characterized through a SWOT matrix, so as to determine the best strategy to pursue.
- Stakeholders' involvement: Besides being essential to grant a successful participatory process, the action of identifying the stakeholders may be very useful to access unknown sources of data.

Step 2: Participatory process

- Participatory process design: A correct identification of the stakeholders and their expectations is as important as a correct design of the participatory process (PP). A number of different techniques, tools and formats can be used for the purpose.
- Participatory Process development: Counting with a good design for the participatory process may avoid or minimize issues linked to the always uncertain progress of participatory actions.

Step 3: Draft of the operational model

- Definition of current scenario: Summary of the information collected through the previous phases, so as to present the current context, including the main issues, opportunities and resources.
- Definition of vision and objectives: Definition of the main goals of the LCTP. At this stage, vision and main objectives must be shared and participated by all, or most of all, in order to reach good expectations of duration and success for the LCTP.
- Definition of actions and indicators (modular): More specific goals are defined, together with the corresponding measures and actions, the time span, the expected results and the indicators/source of data stated to their assessment. The modular approach is meant to facilitate the independent implementation of measures, as well as its replication by other cities/ports.
- Development of future scenarios: The complexity of the context together with the many factors intervening, imply the likely possibility of deviations and relevant changes in the context. At least three potential scenarios should be drafted for a medium/ long term future (5 to 10 years' time)

Step 4: Monitoring, assessment and sources for funding

- Definition of the process for monitoring: The potential success of the LCTP largely depends on keeping constant track of its development and evolution. Defining an effective monitoring process is a must, which should be agreed and shared by all relevant stakeholders, together with its calendar and milestones.
- Assessment and evaluation of LCTP development: After monitoring, the evaluating of indicators results and feedback will permit to assess the current situation at all stages of implementation.
- Funding: Funding shall be planned and tracked through a predefined strategy developed by all relevant stakeholders, so as to secure the LCTP successful implementation.

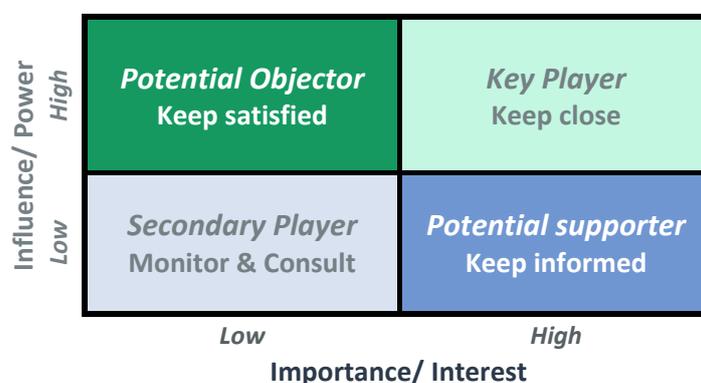
3.3 Participants to get onboard

A long term plan such as an LCTP, involving economic activities, cultural behavior and environmental repercussions, as well as a range of social implications, shall consider the question of participation as a key part of the project. The identification and involvement of stakeholders is a crucial question which will have a major influence in the future acceptance of the Plan. A sound identification and engagement of stakeholders is of paramount importance in order to successfully establish a participatory approach.

From a general standpoint, the targeted stakeholders shall be all those individuals or groups which affect or are affected by the project which is being conducted. This definition includes present and future actions derived from the plan, so a wide scope must be considered when selecting potential stakeholders. Once there, three main questions shall define the relevance of every group of stakeholders, as well as the strategy to involve them in the project:

- How important the stakeholder is to the project?
- How influential/powerful the stakeholder is towards the project?
- What contribution/feedback do we expect from the stakeholder?

The first two questions are the ones determining the way in which the stakeholders will be approached by the project team. A frequent tool to assess both variables, importance/interest and Influence/power, consists in drawing a four cells matrix combining both variables in their two possible levels (low – high), and thus obtaining four different categories of stakeholders:



Those stakeholders identified which are considered *Key Players* must be involved and engaged in the project as soon as possible, so as to count on their support and contribution. For those included in the *Potential Objector* and *Potential Supporter* cells, the strategies to be followed imply establishing efficient lines for communication, as well as large predisposition to receive feedback, suggestions and advises. Finally, those included in the least relevant cell, considered as *Secondary Players* should still be monitored and consulted, so as to gain their support and avoid them upscaling to the *Potential Objector's* cell.

The third question, related to the expected contribution from every identified stakeholder, will determine the moment and mechanism linked to their involvement. The project process includes designing the plan, gaining political support, involving local authorities, securing human, technological and financial resources, transmitting the plan to the citizenship, etc. The potential contribution of every stakeholder may be linked to one or more of these project phases, and shall be planned accordingly. Therefore, it is convenient to define a coordinated stakeholder engagement process, i.e., a stakeholder engagement strategy. Once defined the engagement strategy, the Dialogue with Stakeholders phase begins.

The identification process shown, together with the establishment of dialogue channels and participatory techniques; are duly explained in further detail in the Capacity Building Manual included in the Transfer Package.

3.4 Milestones & Indicators

Any long term plan as ambitious and relevant as the LCTP is, requires an ex-ante design of milestones, indicators and verification sources which will provide both, the work team and stakeholders, with a reliable picture of the project development, performance and degree of achievement. A monitoring plan is therefore essential, stating milestones and indicators, as well as the information verification sources.

Monitoring means 'supervising activities in progress to ensure they are on-course and on-schedule in meeting the objectives and performance targets'.¹ In other words, monitoring means taking a snapshot of a given situation (or a series of snapshots) in the implementation of activities and pinpoint where we are, how much we achieved, how many resources we used and how well in comparison with our work-plan.

Through the LCTP adoption process by any city, two main phases will require monitoring actions:

- Performance in the production of the LCTP:
- Performance in the implementation of the LCTP

Quantitative as well as qualitative parameters shall be used for monitoring processes, which may vary depending on the individual features and choices made in the design of each LCTP. The main elements to be considered in monitoring actions are: timing and deadlines; indicators; methodology for data gathering and elaboration; reliable sources of data; accountability or definition of responsibilities.

For an efficient use of resources and for LCTPs to be effective, it is paramount to align them with the most relevant plans affecting traffic and mobility in the city (typically a SUMP, a SEAP, a traffic plan, city

¹ Source: Businessdictionary.com

development plans, etc.). Since these plans are likely to have a monitoring plan of their own, it is recommendable to harmonize monitoring actions in order to achieve synergies and economies of scale. In this respect, the definition of LCTPs' milestones and the general timing of operations will enhance their feasibility and applicability if broadly in line with actions and measures contained in the other plans of reference.

Detailed information about the monitoring process is provided in the Capacity Building Manual.

3.5 Funding, Resources & Tools

3.5.1 Funding

Without a sound estimation of the financial resources needed to go from planning to doing, any plan, no matter how well designed, remains a book of dreams. Defining where funding shall come from is an essential element of the work-plan and needs to be indicated by each action, identifying an estimation of the needed resources and the potential sources.

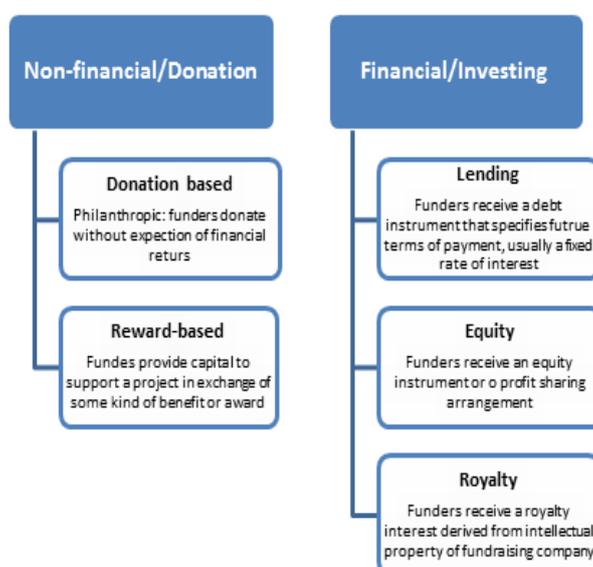
Resources may be made available, partly or entirely, for instance by

- the institution designing the plan through its own budget;
- external EU, national, regional, local institutional donors;
- revolving funds originally public, later becoming self-sustaining;
- public support to leverage commercial financing;
- commercial financing (loans from banks, municipal bonds)
- mix of the abovementioned measures.

Moreover, innovative funding opportunities include:

Crowdfunding: Funding a project or venture by raising monetary contributions from a large number of people. Several types of crowdfunding models exist, which can be grouped in two categories:

- Non-financial crowdfunding, where contributions are not associated with a financial return;
- Financial crowdfunding, where there is a relation to companies' assets and financial performance.



Public-private partnership (PPP): Funding model for a public infrastructure project, where the private partner can be a privately-owned business, public corporation or consortium of businesses with a specific area of expertise. Different models of PPP funding are characterized by which partner owns and is responsible for maintaining assets at different stages of the project. Examples of PPP models include:

- **Design-Build (DB):** The private-sector partner designs and builds the infrastructure to meet the public-sector partner's specifications, often for a fixed price. The private-sector partner assumes all risk.
- **Operation & Maintenance Contract (O & M):** The private-sector partner, under contract, operates a publicly-owned asset for a specific period of time. The public partner retains ownership of the assets.
- **Design-Build-Finance-Operate (DBFO):** The private-sector partner designs, finances and constructs a new infrastructure component and operates/maintains it under a long-term lease. The private-sector partner transfers the infrastructure component to the public-sector partner when the lease is up.
- **Build-Own-Operate (BOO):** The private-sector partner finances, builds, owns and operates the infrastructure component in perpetuity. The public-sector partner's constraints are stated in the original agreement and through on-going regulatory authority.
- **Build-Own-Operate-Transfer (BOOT):** The private-sector partner is granted authorization to finance, design, build and operate an infrastructure component (and to charge user fees) for a specific period of time, after which ownership is transferred back to the public-sector partner.
- **Buy-Build-Operate (BBO):** This publicly-owned asset is legally transferred to a private-sector partner for a designated period of time.
- **Build-lease-operate-transfer (BLOT):** The private-sector partner designs, finances and builds a facility on leased public land. The private-sector partner operates the facility for the duration of the land lease. When the lease expires, assets are transferred to the public-sector partner.
- **Finance Only:** The private-sector partner, usually a financial services company, funds the infrastructure component and charges the public-sector partner interest for use of the funds.

3.5.2 Resources & Tools

A large number of available tools and techniques can be used to facilitate and optimize the outcomes of the LCTP process. Many of them are already accessible through internet, since they were designed and publicly offered by European Union institutions and funded projects.

The following list refers some examples of useful references classified after the area in which they relate to the LCTP Operational plan:

Urban mobility

- [Urban Mobility Package \(EU\)](#)
- [The urban mobility observatory](#)
- [SUMP guidelines](#)
- [CIVITAS: cleaner and better transport in cities](#)
- [CIVITAS Guide for the Urban Transport Professional](#)
- [European platform on mobility management](#)

Climate Change

- [Climate Action: transport](#)
- [Covenant of Mayors for Climate and Energy](#)
- [Planning for Adaptation to Climate Change](#)
- [Guide To Community Energy Strategic Planning](#)

Stakeholders' involvement & participatory techniques

- [Involving Stakeholders: Toolkit on Organizing Successful Consultations](#)
- [Citizens' involvement in planning](#)
- [The use of social media for participatory processes](#)
- [Co-deciding with Citizens: Towards Digital Democracy at EU Level \(ECAS\)](#)
- [e-Participation Best Practice Manual \(EU\)](#)

Funding

- [CIVITAS EU financing opportunities for urban mobility](#)
- [Guidelines for successful Public – Private – Partnership \(EU\)](#)
- [Resource Book on PPP Studies \(EU\)](#)

Project development

- [Project cycle management and logical framework approach \(EU\)](#)
- [The guide to the LFA approach \(Republic of Serbia, EU Integration Office\)](#)

4. Capitalization and Participation Strategy

Sustainable transport models are likely not sufficiently spread at transnational level, hindering the chances of success. With this in mind, LOCATIONS project set up a project approach meant to test improved Low Carbon Transport Plans in the partner's territories and, through a targeted transferring and capitalizing action, involving a significant number of cruise destinations players located in the MED area in the adoption of the same approaches and methodologies.

Looking to contribute at creating a common platform to innovative LCTPs on a transnational level, LOCATIONS undertook capacity building actions among different regional/national experiences with the aim of stimulating new sustainable mobility concepts and knowledge exchange mechanisms. The experience acquired by partners in past EU projects was a crucial resource only fully exploited by merging them in a common transnational approach to be tested in the partners' cities and then transferred to other MED territories. Knowledge transferring actions based on feasibility studies and guidelines on the sustainable urban planning were ensured for almost the entire MED area (9 countries out of 13). As a result LOCATIONS

contributes to decongest the cruise destination city traffic and to lower the production of greenhouse gases in all the territories involved through a larger use of the innovative sustainable transport programs and tools.

Despite some experiences already achieved within existing SEAPs and SUMP programs, MED territories still need to further test such quite new initiatives enlarging the plateau of key stakeholders potentially interested in taking an active part in the change adoption process for sustainable mobility planning deployment.

One of LOCATIONS main objective is increasing institutional and operational capacity to foster the use of existing low-carbon transport systems and multi-modal connections for cruise-related passengers and freight flows in the frame of wider sustainable traffic and mobility policies in MED cruise destinations. Therefore, capitalization workshops were considered as an essential way to secure a significant leverage effect, involving financing institutions and regional authorities for a synergistic integration with ESI funds and other EC programs.

A two-fold approach should be considered so as to maximize involvement of stakeholders, public authorities, key actors, groups and institutions affecting or being affected by cruise mobility. In that respect, LOCATIONS project established a framework defined by the close involvement of key partners from the beginning of the project, as well as a participatory scheme designed to engage as many stakeholders as possible along the LCTP development.

4.1 Active Involvement of Key Partners

Urban mobility, climate change and sustainability make part of most cities plans and long term strategies in MED territories, partly or completely included in city plans such as SUMP, SEAP, Agenda 21, etc. Most of these plans have already involved a number of actors and stakeholders which should not only be considered out of respect and reconnaissance of the work performed, but most of all due to the precious know-how they have acquired through the process.

The Transfer Package Capacity Building Manual devotes a whole section to involving key partners and stakeholders, and mentions a number of important references which may be of help in the process of designing the participatory process.

As for LOCATIONS project, the key stakeholders were engaged in the project in two different ways. Regarding those stakeholders considered as absolutely essential to the project success, they were invited to participate in an active way in the project as associate partners, thus making part of activities and discussion and, most of all, bringing in their experience, perspective and know-how to the capitalization meetings organized throughout the whole project. Secondly, all other stakeholders considered relevant to the project, were engaged in the project activities and the LCTP design through the two-round participatory process undertaken in every partner territory.

4.2 Capitalization meetings

Based upon MED principles of territorial relevance, result-orientation, transnationality, capitalization and transferability, LOCATIONS has counted upon a sound partnership (technical organizations, port authorities, local and regional public authorities cooperating transnationally and acting locally) merging the knowledge

and institutional competences needed to foster low-carbon mobility solutions for cruise-related flows in the frame of wider local and regional transport and mobility policies.

Throughout the phase of designing, developing and testing the 7 LCTPs, several capitalization meetings took place, involving technical partners and associate partners. These capitalization workshops, organized in the countries where LCTPs took place in the frame of project activities, involved relevant institutions and organizations, other projects dealing with similar issues active locally, regional authorities, agencies and bodies, financing institutions etc.; to look for cooperation opportunities, concrete synergies for the implementation of actions envisaged in the LCTPs and integration with ESI funds managing authorities.

First capitalization meeting: A two-day workshop with all partners and associated partners within the Kick-off meeting to establish common ground and define bone-structure and main contents, including a protocol for participatory processes for stakeholders and population in each involved territory.

The meeting was the opportunity to present potentially synergic projects (SUMPORT), and assess potential ways to cooperate with sustainable mobility in MED port cities, with a specific focus on integrating city and port related traffic flows in the sustainable public transport planning.

Several interactive sessions with technical and associate partners took place during the meeting. The first one, analyzing stakeholders' involvement, was focused on the following challenges:

- How can we win support of cruise companies and agencies for LOCATIONS LCTPs.
- Engaging cruise passengers in the design of LCTPs.

The whole discussion for the first challenge could be summarized in the sentence: "Cruise touristic packages should be easier to sell". The main conclusions for winning cruise companies and agencies support being:

- Better and high quality sustainable services will be offered in the city to the passengers;
- Low carbon excursions (Segway, bikes, electric boats etc.) possibly locally or at regional level will be offered adding new opportunities for new customers.
- Better and more comfortable terminals with improved connections with transport infrastructure (so improving passengers experience);
- Green marketing. Greener cruise voyages can be sold to new passengers;
- More 'infomobility' available for passengers on ground (not on board). A specific app shared among ports could be considered;
- High level companies pay more attention on the quality of the services offered by the port rather than to their costs.

While for the topic of engaging cruise passengers in the design of LCTPs, considered as paramount by all participants, highlighted the following items:

- First and foremost, there is a need to define why we want to engage passengers, what we want to know and how we can get the information.
- The first issue raised is a likely gap in information, since passengers do not typically know much of the port city, be it a home port or a port of call. Passengers most probably do not want to be interviewed while on holiday and a cruise may be a rare or unique experience to them. They are unlikely to visit the same city twice, however some of their feedback is likely

to be useful for other passengers. They typically spend little time in the port city and may not have sufficient time or capacity to opt for low-carbon mobility solutions.

- One working option may be to develop a questionnaire (in a large number of languages), which should have a minimum size and meaningful questions (mostly 'yes or no', perhaps 1 open question). They should be asked to highlight mobility-related advantages and disadvantages in their cruise experience, and to report their priorities when choosing among mobility options.
- A particularly effective solution would be to involve cruise liners as an indirect target group to access passengers and gain their support to gather passengers' feedback. They are also likely to provide useful advice on the best methodologies and timing to gather the feedback. The question raised is thus: 'Why should cruise liners help us?' They should be presented with benefits and opportunities offered by this activity, for instance considering mobility solution offered on land as part of the overall cruise experience, considering that cruise liners themselves are often directly involved in providing mobility solutions (e.g. shuttles to city centers). It is possible that some cruise liners already gather this feedback as part of general customer satisfaction questionnaires, in which case the possibility may be investigated for cruise liners to share the data with project partners, again being presented with some benefit in return for their cooperation.
- In terms of form, the questionnaire/survey should be both online and on paper, since the mixed approach ensures a wider scope, without excluding anyone beforehand. A suggestion is made to gather feedback at the end the cruise to get an overall impression of experienced mobility solutions.
- If we want to influence mobility choices in a home port city (supporting sustainable modes, suggesting convenient or cost-effective solutions for passengers to avoid congesting port cities' transport networks, etc.), passengers should be intercepted when booking a cruise - cruise liners' sales networks being the prime channel for this type of action. A similar approach applies to the choice of mobility options in ports of call, where passengers could be engaged and their awareness raised through direct actions devised together with cruise liners.
- As for timing, feedback from passengers should be gathered before developing an LCTP to respond to a primary target group's needs and when measures are implemented, to assess impact.

The second interactive session within the capitalization meeting addressed contextualization, with the following points to be investigated by each territorial table:

- Is your port a transit or home port? Describe passenger behavior, freight flow related to cruise ships, future trends in cruise tourism in your port
- Which elements should be considered in the context analysis
- Which data are required and how could they be retrieved?
- Main plans to be considered (SEAP/SUMP, regional, national, relevant plans, etc.)
- Main perceived critical points
- SWOT analysis
- Draft an operational plan of actions for context analysis
- Stakeholders to consider in every port/city and ways to engage them

Among the suggestions and conclusions: considering mobility issues related to crews. They are also going to the city center in their free time for fun and shopping, in home ports also crew families could be considered since they often spend some time in the city before the departure of the ship.

Second capitalization meeting: A transnational technical event to evaluate the 7 LCTP drafts produced in the previous months, share and compare effective and critical approaches and solutions to learn mutually and accrue elements for the improvement of drafts and set the ground for the future LOCATIONS model for the definition of LCTPs.

Every territory presented the LCTP draft, jointly developed by the technical partners and the associate partners, so as to discuss with the whole partnership the challenges found along the way, the opportunities and the following steps to look for. Open and fruitful discussion led to advices, suggestions and potential synergies between LCTPs, as well as to recommendations to fine tune the Plan and come up with the definitive LCTP.

Further detail on the contents of the meeting can be found on the 7 LCTPs included in the Transfer Package.

4.2 Participatory Process

The participatory character of LOCATIONS project has already been stated in several occasions. Only through active participation of stakeholders a comprehensive plan such as a Low Carbon Mobility one can be developed and adopted by the city.

A participatory process implies, therefore, the involvement of “public” in decision making processes. The definition of “public” depends on the topic to be addressed. Participatory processes can target several kinds of “public” such as citizens, the stakeholders of a project or policy, experts and even members of government and private industry. Generally, policy making processes like the decisions required for LCTP, implicate a three-step cycle of planning implementation, and evaluation for which the participatory processes can be used in some of these steps.



Considering that the development of a LCTP implies a continuous decision making process, the involvement of several types of stakeholders should be considered according to the stage of the plan. We highlight that in the case of a decision making process it is generally recommended to involve policy-makers as much as possible and in an early stage of the process which will increase the likelihood of their support to the process and to the outcome.

Along LOCATIONS LCTPs development, regional workshops were organized in the participating territories in the frame of project activities, involving relevant institutions and organizations, other projects dealing with similar issues and locally active, regional authorities, agencies and bodies, financing institutions, etc.; so as to look for cooperation opportunities, concrete synergies for the implementation of actions envisaged in the LCTPs and integration with ESI funds managing authorities. Some of the most relevant stakeholders targeted in the participatory process are:

- **Local, regional and port authorities:** actively involved as partners and associated partners in the testing stage with integrated institutional competences and know-how for the development of LCTPs.
- **Cruise passengers and cruise lines:** both benefit from solutions devised in LCTPs to make transport in destinations more sustainable and preserve natural and cultural heritage, improving a cruise tourist's experience, their feedback is essential respond to their needs.
- **Suppliers of freight and services to cruise ships:** cooperation is essential to design reliable plans taking into account the impacts of cruise-related logistics.
- **Local populations, NGOs for environment, cultural heritage, sustainable transport.** Territories need to be actively involved to foster ownership of results and ensure integration and active involvement in policy and decision-making.

The participatory methodology implemented within the project entailed two phases in which different techniques and participatory initiatives took place (semi-structured interviews, surveys, phone calls, focus groups, etc.) looking to maximize the return of the process in terms of feed-back and commitment:

- The first phase took place short after setting the common ground, objectives and techniques to work with among all partners (mainly after the Capacity Building Seminar), and targeted as many stakeholders as possible in every territory, looking to gain the largest overview about cruise mobility in every city, as well as to engage as many actors and stakeholders as possible on board.
- The second phase started just after the first draft of the LCTP was concluded, aiming at sharing its contents to the most relevant stakeholders, looking to advice, feed-back, potential threats, etc. The end of this second phase led to the definitive LCTP for every participating city.

An extensive revision over participatory processes design and implementation can be found in the Transfer Package Capacity Building Manual.

5. Lessons Learnt

This chapter is meant to share the outcomes and lessons learnt throughout the implementation of LOCATIONS project, both in terms of participation and specific goals to progress towards a Low Carbon Cruise related Mobility in MED cities.

Taking into consideration the relevant differences existing among the cities participating in the project, and the replication character they may have for other cities willing to engage themselves in LCTP development, a brief summary of the process followed in every particular city will be presented, instead of a general one which could hide relevant details and particularities.

5.1 Progress of Participatory processes

5.1.1 Ravenna

The LCTP was developed as part of a broadly participated process, in which several actors were involved from the early stages of analysis. Indeed, cruise tourism includes a series of issues, in addition to transport, which could not be left behind in the preparation of the Plan and for which it was necessary to involve sector operators and stakeholders, who also hold information and data which otherwise would not have been possible to access.

The process of identifying stakeholders began from the work done during the kick-off meeting with other partners of Project LOCATIONS, and was integrated during the first phase of the participatory process. Previously considered or partially considered issues emerged during the course of a variety of meetings, which is why we constantly supplemented the list of actors to be involved. On the basis of our meetings, a stakeholder “interest vs. power” matrix was developed for the purpose of classifying their relevance in the development of the Plan. The matrix classifies stakeholders according to their power and interest, rather than in terms of their nature, in relation to results that the Plan aims to achieve.

Given the plurality and diversification of players involved, it became necessary to structure the participatory process at different times, involving specific stakeholders in a different way. Among those identified, we can distinguish two types of actors:

1. *Institutional or representative stakeholders representing an institution or group of people who are interested in the mobility of cruise passengers*
2. *Individual subjects who are directly affected by the Plan, namely, cruise passengers and citizens of Ravenna.*

1. PARTICIPATORY PROCESS WITH REPRESENTATIVE STAKEHOLDERS

- I. A first phase of analysis, during which focus groups or face-to-face meetings were held. Stakeholders were separately invited to some meetings in order to collect what were deemed issues of critical importance regarding the transfer of cruise passengers. The focus group mode was chosen to allow each actor expressing his or her opinion, thus preventing some subjects from prevailing over others and shifting attention only on certain problems. Furthermore, especially for tourism sector operators, the confidentiality of information and data regarding cruise tourism is of fundamental importance; it was therefore necessary to provide a confidential and favorable environment for dialogue.
- II. In the second phase, in which the roles of various stakeholders became clearer, a variety of actors were brought together in groups based on the interest-power matrix. Actors with high interest and low power met in an initial meeting; a second meeting was held with stakeholders with high power and low interest and a third gathering was reserved for actors with high power and high interest. During the first two meetings, time was dedicated to the presentation of cruise tourism in and around Ravenna, as well as of main constraints in short- and long-term opportunities. After building a common knowledge base, the stakeholders with low power/high interest and high power/low interest were invited to present a priority system with a set of actions and objectives that the

Municipality of Ravenna had formulated in the previous phase analysis. All actors were invited to raise issues and topics not included in the themes proposed by the Municipality of Ravenna.

- III. After drawing up an LCTP draft, stakeholders were once again involved in a single meeting to gather any observations and further opportunities for developing the Plan.

2. PARTICIPATORY PROCESS WITH SINGLE SUBJECTS

As end users, cruise passengers were interviewed during the last 2017 docking in Ravenna, and were asked to respond to a questionnaire to assess the quality of mobility services from the terminal to the city, as to allow understanding what deficiencies are most perceived by cruise tourists.



The citizens of Porto Corsini, as people more directly interested in the effects of the mobility of cruise passengers, were directly involved in a process that accompanied the development of a Detailed Traffic Plan, which, taking account of sustainable mobility, aims to define works that can be implemented in the short/medium term to improve pedestrian and cycle mobility, accessibility, road safety, as well as parking and vehicular traffic. A claim and a dedicated logo were created for the citizen involvement path, which accompanied the entire process, from the analysis to the evaluation scenarios, and to final design.

The activities related to the participatory process with Porto Corsini's citizens took place at different times:

1. An initial meeting structured as a "group interview" to so-called "opinion leaders", who, by role and/or activities carried out in the hamlet, have a bird's eye view of problems at hand and are able to convey the perception of part of local residents and economic operators;
2. A public meeting opened to all interested parties, during which the local population was informed of the objectives of the LCTP and the PPTU and, through the "geotagging" technique. Prior to the meeting, 6 categories of critical issues were identified, with a symbol being associated to each one of them. Each participant was provided with stickers with the six symbols representing the critical categories. Everyone was asked to identify critical issues by affixing stickers on a large printed aerial photograph. Moreover, through the distribution of A4 size "mute" floor plans of the LOCATIONS, it

was possible to identify and mark additional points and critical sections related to issues that are meant to be addressed by Plan tools. Finally, some initial roadmap proposals were collected, ensuring that the results of reports could be identified and discussed in a collegial environment;

3. The publication of an on-line questionnaire addressed to the Porto Corsini residents, aimed at getting to know basic mobility habits, gathering summary opinions on some issues concerning local mobility and traffic patterns, as well as opinions and more structured proposals
4. A public meeting focused on informing citizens about “traffic-calming” strategies, on the measures that can be implemented in Porto Corsini and on the comparison between the different possibilities and implications of each, integrating technical aspects with residents’ suggestions and observations
5. A meeting in which the Plan proposal was submitted to residents; the proposal was formulated on the basis of contributions by locals, as well as contacts entertained with entities involved, and includes works that can be largely anticipated by reversible and low-cost experiments which can provide suggestions and serve as references for the future.
6. A final meeting in which the Plan proposal was submitted to the local political Committee that has to approve the Plan.



3. MAIN RESULTS

► PARTICIPATORY PROCESS WITH REPRESENTATIVE STAKEHOLDERS

The analysis of the critical issues that emerged from the stakeholders during the focus groups is reported in detail in paragraph “List of negative impacts linked to cruise flows”. A system of different priorities for the actions and strategies of the Plan, depending on the type of stakeholder considered, has emerged during the identification of solutions. What all the representative stakeholders consider as priority is the enhancement of local tourism offer in order to increase the positive impact of cruise tourism in the area, and the reduction of the length of routes to reach the excursion destinations, thus encouraging the use of sustainable mobility (bike and feet).

► PARTICIPATORY PROCESS WITH SINGLE SUBJECTS

During the process, citizens identified two most relevant issues: the improvement of routes and safety for pedestrians and bicycles. Most of citizens confirmed their consensus on improvement of the quality of public space, reduction of vehicle speed and mitigation of impacts related to the transit of cruise passengers' buses. The improvement of the cruise terminal area and of public transport stops are considered important and a large part of public opinion. The participation to the Public Assemblies was good: about 30 people joined the

meetings and moreover were proactive showing interests in the project and proposing solutions for a better and sustainable mobility.



Concerning cruise passengers, in general, the assessment of the quality of the transfer is perceived positively, as the level of accessibility is considered good enough even among people with reduced mobility. The main reported problems are about the absence of public toilets at the tourist platform where they get off the coaches.

5.1.2 Durres

The Participatory process undertaken in Durres was divided in three phases: Stakeholders identification, Participatory process design and implementation:

1. Stakeholders identification:

The stakeholders were divided in groups based on relevance and impact they had in the development of the LCTPs activities and future scenarios. Also in account was taken their potential influence in the development of Transfer and Capitalizing activities.

Group 1: Local and Regional Stakeholders (Very High Importance). This group is directly involved, affected and interested in the development of the LCTP for cruise passengers. It identifies as follows:

- Durres Municipality (Ass. Partner)
- AFTO – Albanian Passenger Terminal Operator
- Durres Regional Political Authorities
- Municipality Association of Albania

Group 2: National Authorities (High Importance). This group consists in the national political and development national authorities, which are important to the project in both phases, development of LCTP and during the Transferring and Capitalizing phase. It identifies as follow:

- Ministry of Infrastructure and Energy;
- Ministry of Finance and Economy;
- Ministry of Environment
- National Agency for Territorial Planning
- National Monuments Directorate
- Albanian Railways

Group 3: Economic Operators and Associations (Medium Importance). These groups consist in SMEs like Travel Agencies, Touristic Operators and related Associations which are highly interested in the improvement of the services offered for Cruise Passengers. Also they view the LCTP as a tool to raise the attractiveness of the Durres Region. It identifies as follow:

- Travel Agencies and Touristic Operators
- Durres Trade Chamber
- ATA and Touristic Operator Association

For each Group and stakeholders, the impact, interest and involvement was firstly analyzed. The participatory process was organized in four phases and for each phase at least one meeting was planned to be organized.

Phase One: Identification and First Contact. Identification and establish contact with all relevant stakeholders mostly with informal meetings.

- Establishment of the Project Stakeholders Mailing List (Names, Organization, Function Contact Details, etc.)
- Travel Agencies Mailing List
- National Authorities Mailing List
- Regional and Local Authorities Mailing List

Phase Two: Involvement of relevant stakeholders in identifying the main bottlenecks and issues. The interviews intended to deepen the knowledge of the current situation and gather actions and measures that the interviewees found necessary to be included in the plan.

- Questionnaires were developed and provided to all stakeholders.
- Semi Structured Interviews (58 interviews conducted)
- Questionnaires (86 questionnaires completed)
- Info Events for Stakeholders
- On- Line Questionnaires Was apply to the AIT and APD official Web.

1st Participatory Meeting, held in Tirana, on 17th June 2017. During this session attended by circa 30 people, where participants were invited to offer their comments and proposals, from main stakeholders were presented:

- Project objectives
- Project Methodology and WP
- Expected results.

Main outcomes

- Different option of Vision for Durres LCTP
- Additional Stakeholders to be involved
- Different future scenario related tourist traffic flow
- First indications of measures proposed and free discussions.

2nd Participatory Meeting, held in Durres, on 10th October 2017

Organized in Durres, in this meeting were discussed the main issued identified. Also during this meeting the municipality representatives proposed the integration of the LCTP with the SUMP which is being currently developed. Also the agencies contributed on drafting the final touristic attractions list.

LESSONS LEARNED AND CHALLENGES FACED

1. The Durres citizens are not worried from the cruise and daily tourists
2. The Durres LCTP will consider daily tourist using ferry ships and arriving at Ferry Terminal
3. All stakeholders support introducing e-bike Rent/sharing
4. Suggestion for free e-minibus service within the port area for cruisers
5. The Challenge, E- bus introducing for cruisers, (skeptical for implementation)
6. Integration of Durres SUMP with LCTP
7. Info point, Web and application, most important
8. Creating conditions for increasing the number of cruise ships for the future.
9. Balancing of the future demand mobility with Low Carbon transport modes.
10. Easy access for tourist to the city center and attractive places.
11. Low mobility, old user need to get attention

Phase Three: Finalization of the Action List

3rd Participatory Meeting, held in Durres. Meeting to present the first draft of the LCTP and receive comments and feed-back about it.

5.1.3 Lisbon

To involve all relevant stakeholders in the entire process, two moments for participation were planned in Lisbon, an initial presentation of the project and a second one for gathering of information. In the first phase the objective was to present the project to potential partners and gather their support. In these meetings some information was gathered; other relevant partners were identified, and invitations were made for partners to participate in the next phase. The second phase consisted of individual interviews to key people within the organizations that were considered to have relevant information. These interviews intended to deepen the knowledge of the current situation and gather actions and measures that the interviewees found necessary to be included in the plan.

First Meetings with stakeholders

Stakeholders were first engaged through cell phone calls or email from which meetings were arranged. At these meetings the project was presented and the expected role and contributions from the stakeholders laid out. Information about the target organizations had been previously gathered to know what could be expected from them and what kind of information they would have available. This preparation was useful since it allowed the meetings to go beyond the presentation of the project to collection of resources that were used in the diagnosis of the situation.

Interviews with key people of stakeholder's organizations

Before preparing the questions for the interview, and after the first round of meetings, information regarding cruise tourism in Lisboa was gathered from published studies, surveys and resources made available by stakeholders. From here information gaps were identified and the questions for the interviews tried to cover these gaps. The number of participants in these interviews and the organizations which they represent are listed below:

- 8 people from different departments of the Municipal Directorate of Mobility and Transport.
- 1 person from the Institute for Mobility and Transport
- 1 person from Lisboa's public bus company – CARRIS
- 1 person from Lisbon Cruise Terminal
- 1 person from Tourism of Portugal

Lessons Learned and challenges faced

Meetings with stakeholders should always be prepared beforehand to fully understand the role that the organizations being contacted play in the relevant scenario. In the first meeting the team had not done its "homework" and misunderstood the role of the first organization contacted. In the following meetings this did not happen since the project team prepared better beforehand. Rapidly we realized that meetings and interviews had to be set-up some time in advance to ensure availability and account for changes in the participants' agendas.

The main issue with which the Lisbon team was faced was the little support within the city council which led to slow progress in the first year of the project. Only after the election (1 year into the project) did Lisbon City Council start to collaborate heavily in the project. This led to delays in the participatory process since many of the original contacts were made through city council's contacts.

Main outcomes

A proper diagnosis was formed with concrete data collected by the project team which was complemented with the inputs from participatory process. The tables bellow summarise the main conclusions reached from the participatory process:

Participants	Main conclusions
Port Authority of Lisboa (Porto de Lisboa) – 2 representatives Lisbon Cruise Terminal – 1 representative LCTP Team – 4 Representatives	Identification of studies about cruise tourism activities in the Port of Lisboa. Clarification of typology of cruise tourism in Lisboa, the scale of the it, the area of influence of the terminal, the main season. The strategy of the Port of Lisboa for the cruises was presented to the LCTP team. Impacts of the new cruise terminal were discussed. Identification of further stakeholders to be involved.
Tourism of Portugal (Turismo de Portugal) – 3 representatives LCTP Team – 4 representatives	Identification of studies made my Tourism of Portugal relevant to the plan. Identification of areas of common interest between the LCTP and the Strategy for Tourism 2027 and how the LCTP can contribute to reach its goals. Identification of further stakeholders to be involved.
Lisbon Cruise Terminal – 3 representatives LCT Team – 3 representatives	It was a guided visit to the new terminal which allowed the team to understand better the project at its features. Clarification of data regarding cruise tourism and future scenarios. Better understanding of how the industry works, what are its
Lisboa Tourism Association (Turismo de Lisboa) – 1 representative LCT Team – 3 representatives	Explanation of purpose of the Association. Strategic Plan for the region of Lisboa explained. Identification of potential financial instrument of implementation of LCTP actions.
Lisboa City Council (Câmara Municipal de Lisboa) – 1 representative from Urban Planning Department LCTP Team – 4 representatives	Detailed description of the new cruise terminal of Lisboa and the neighbouring area was given. Mobility related features of the new cruise terminal project were clearly identified. Important stakeholders to consider were identified.
Lisboa City Council (Câmara Municipal de Lisboa) – 7 representatives from Mobility Management department LCTP Team – 4 representatives	This meeting was to present the project to the people that work directly on the “ground” and have more practical knowledge of the city. Many gaps were identified mainly related to touristic coaches. Gaps in the information and sources to fill them were identified.
Lisboa City Council (Câmara Municipal de Lisboa) – 2 representatives from Pedestrian accessibility team LCTP Team – 3 representatives	Relevant studies made by this department were identified. Layers of information were request regarding pedestrian mode. Articulation with other projects being carried by this team was also discussed.

Topic	Remark
Cruise Tourism	Typology of operation doesn't imply accommodation (95% transit) Tourist arrive in large numbers in narrow window of time Seasonal activity for which seasonal measures should answer. Substantial changes in the industry foreseen for next 5 years Limited time (from dawn to dusk)
Cruise Tourist	No longer only the typical, low mobility, old user. The absolute number of this users has not decrease but been diluted in other user profiles. Normally wants to go directly to the highlights of the city (related with limited stay).
New Cruise Terminal of Lisboa	Gives the possibility to influence the tourists' choices before they enter the city. It's uncertain the impact it will have on the cruise tourist flux but: <ul style="list-style-type: none"> ➤ It's expected turnaround will increase ➤ Number of cruises and tourists expected to rise Cruise tourism might become less seasonal
Areas of interest for cruise passengers	Lisboa: <ul style="list-style-type: none"> ➤ Downtown and historical neighbourhoods on the hills: Alfama, Castelo, S. Vicente and Bairro Alto, ➤ Belém, ➤ Parque das Nações. Lisboa Metropolitan Area: <ul style="list-style-type: none"> ➤ Cascais and Sintra. Fátima
Other potential areas	The concentration of tourist in the typical areas can be alleviated by potentiating other areas: <ul style="list-style-type: none"> ➤ Sintra and Cascais (even further) ➤ Palmela (wine area) ➤ Area around Fátima (Alcobaça e Batalha) ➤ Monsanto This can be successful if aimed mainly at second time comers (about 50%)
Information	Most of the people interview believed that a crucial element is the information that reaches the tourist. How to inform them, where and when, will be crucial to influence their choices of transportation in the city
Mobility Constraints	Main constraints caused by touristic coaches are due to lack of regulated parking mainly in: <ul style="list-style-type: none"> ➤ Praça do Comércio ➤ Rossio ➤ Sé ➤ Belém (Torre de Belém, Padrão dos Descobrimentos, Mosteiro dos Jerónimos)
Modes of transport	Pedestrian <ul style="list-style-type: none"> ➤ Improve walkability conditions ➤ Create and publicize urban touristic routes ➤ Complement this mode with Touristic Coached and public transport Public Transport <ul style="list-style-type: none"> ➤ Facilitate the access to tickets and have dedicated ones Touristic Coach <ul style="list-style-type: none"> ➤ Use this mode for longer trips to out of Lisboa ➤ Regulate parking and routes Create mobility packages that include all these modes of transport

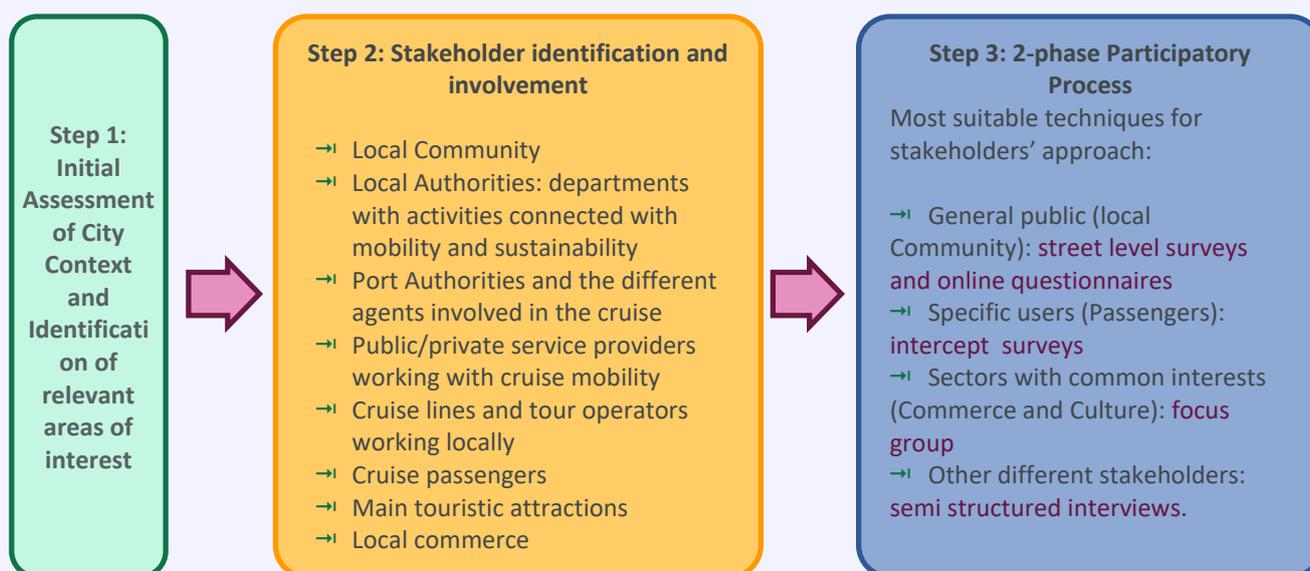
5.1. 4 Malaga

Integrating the mobility of cruise tourists in a sustainable way, while allowing a smooth traffic for residents requires the contribution of a wide variety of stakeholders, and input from all of them is required to elaborate a plan that encompasses the needs and expectation of every agent. Participants agreed that it is an issue that does not currently have a negative impact on the city, however, they welcome this initiative to ensure that the problem does not take place in the city of Malaga, even with the foreseen growing cruise tourism flow for the next years.

In Malaga case, potentially affected areas in the city were easily identified and outlined, this allowed a wide participation process for citizens, through surveys, that allowed the participation of residents in said areas and local owners or managers, with a deep insight of the main issues to address in each location. This information was completed with a platform for online surveys, to also gather opinion from residents in other areas of the city, in addition, to the extensive process carried out with stakeholder representatives through interviews and focus groups. A joint use of different tools allowed grasping Malaga context in the most effective way.

The goal of the participatory process in Malaga was to involve relevant stakeholders, including public administration, cruise business and citizenship, in taking responsibility in enhancing cities' quality of life by taking part in activities specifically designed to collect crucial data for the development of the LCTP, contributing to decongest the City traffic and to lower the production of greenhouse gases. A wide dissemination campaign of the process will be taken into account in each action planned to ensure the participation of stakeholders. By retrieving expectations and needs of all agents involved, the project aims at achieving a higher level of social acceptance in the measures proposed for the LCTP implementation.

Outline of the Participatory Process and stakeholders involved:



Several participation techniques were implemented to approach different stakeholders and collect relevant information about their perception and expectations.

- Initiatives involving Local Community: Surveys and questionnaires were selected as the most wide-disseminating tool to reach a varied range of citizens and opinions.
 - Street level in-person questionnaires: three campaigns were designed according to the areas with more cruise tourists visits and addressed different target groups according to the characteristics of the touristic attractions offered in the particular spot
 - Residents and local commerce in two areas that receive the majority of tourists and are susceptible of experiencing crowding in cruise days.
 - Pedestrians and local commerce in the most visited avenue by tourists in Malaga: Larios Street
 - Local commerce workers have been included in order to find out the effects on obligated mobility (working purposes) in the selected areas.
 - Online survey: launched by the end of July, collects information from the general public and includes the same questions as the face-to-face questionnaires. Promoted by the City Council and Malaga port, but also relevant neighborhood associations invited to inform citizens about the initiative and encourage them to participate in the process.
- Initiatives involving Cruise Passengers: The technique selected to gain insight about the perception of tourists was intercept surveys. They are conducted in person and interviewers approach all participating passengers at the same spot, the terminal, right before the boarding, after they have already visited the City.
- Initiatives involving sectors and agents with common interests: The tool selected was the focus group, as it allowed the interaction of entities that could face common challenges, towards achievable solutions that could benefit all the integrating parts of the dialogue.
- Initiatives involving other different stakeholders: The semi-structured interview allows a more in depth conversation with the agent to reach a deeper understanding of its main concerns.

Participatory Process Phase 1: Towards a Low Carbon Transport Plan

The overall summary on how urban mobility linked to cruise vessels is perceived by Malaga inhabitants responds to the following sentence:

Urban Mobility in Malaga, regarding cruise activities, is not perceived as a problem to be solved but as an opportunity for the development of the touristic sector in the City.

Urban Mobility

- **Minimizing the environmental impact**, improving the quality of life, **can boost an improvement in the City image** for cruise tourism.
- The **excess of private road traffic in the City Centre is the main challenge to tackle** with more clean energy, pedestrian zones and public transport use, and less traffic on the Centre and polluting vehicles.
- A **joint effort and coordinated planning** is essential.
- The **lack of environmental awareness among citizens** risks the long-term sustainability of in-place or foreseen initiatives.

- Passengers mentioned the lack of information to the cruise vessel with regard to the touristic, gastronomic and commercial offer, and that **better signaling** would contribute to making traffic and circulation in general more efficient and effective.
- A significant number of cruise tourists stated that they would use **bicycles** if only infrastructures and facilities were adequate to do so.

Impact of Cruise Tourism in the City

- Local Community's interviewees agree that cruise tourists cause a more invasive perception and they appear to residents as less careful with the City. Their expenditure is concentrated in trade and restoration, within a limited area and with **very limited time**.
- Cruise passengers demand promptness and efficiency in transportation services. This type of tourist is perceived as more culture-oriented and less likely to cause trouble for the security authorities.
- Most interviewees think that **cruise tourism has a positive impact on the City**. However, balance with citizens' needs is stressed, addressing both tourist and citizens' interests.
- More than half the residents interviewed in the city centre claim that their **daily trips are influenced totally or partially by cruise tourists**, with congestion in pedestrian areas and traffic jams.
- Focus group of tourist and commercial sector propose the following **initiatives**

Touristic attractions and transport alternatives

- The **majority of the visitors move to the Centre and to the same attractions**. Congestion is being handled adequately. It is necessary to come up with a solution to avoid uncomfortable future situations, also including diversifying the areas of attraction.
- The improving of **bike lanes connections and safety of bike users** is also expressed in the survey. Making public transport more sustainable by introducing electric and hybrid vehicles, and offering tourists the possibility of taking those vehicles or bike from the very same terminal.
- Most residents believe that **it is necessary to design plans that integrate in a more sustainable way the cruise tourism**. All the agents should be involved, the Public Administrations (City Council, Malaga Port, Junta de Andalucía, Andalusian Tourism, Ministries ...), as well as other civil actors affected.

It may be necessary to design plans that integrate in a more sustainable way the cruise tourism in the City. Furthermore, interviewees believe that all the agents should be involved, the Public Administrations (City Council, Malaga Port, Junta de Andalucía, Andalusian Tourism, Ministries, ...), as well as other civil actors involved, to coordinate the design and implementation of tourism initiatives such as access to the port by all means of transport.

Participatory Process Phase 2: Revision of the LCTP

The contribution of the **30 experts** that attended participatory sessions, allowed the refining of measures with a higher rate of validation from all agents involved.

- 1) Session 1: Cruise, Tourism, Commerce and Hostelry Sector
- 2) Session 2: City Council and Observatory of Urban Environment
- 3) Session 3: Citizenship

It is worth highlighting the **consensus about the opportuneness of the project vision towards sustainable growth and low carbon strategies**. The main identified barrier is finding out balance among different stakeholders' interests at stage. Cruise lines and citizenship, being two opposite poles of this stakeholder network. The most embraced measures were the promotion of walking to attractions and the provision of cruise integrated touristic cards. Cycling connection and infrastructure was also highlighted, especially by the residents. They express the need to work in some areas of the city, specifically in La *Malagueta*. Shuttle services raised some concerns by the authorities.

5.1.5 Trieste

The Port Network Authority of the Eastern Adriatic Sea has identified and has afterwards interviewed the following actors in order to draft its Low Carbon Transport Plan:

1. City of Trieste – as the only entity competent for developing mobility plans and options for citizens and tourists alike;
2. Trieste Terminal Passeggeri (TTP) – the cruise terminal operator;
3. Chambers of Commerce of Venezia Giulia – gathering companies and enterprises constantly in contact with tourists and cruisers;
4. Italian General Confederation of Enterprises, Professions and Self-Employment – gathering local SMEs.

The interviews were held in June, July and September 2017, the outcome of which are summarized here below. As indicated above, within the framework of the CIVITAS PORTIS project, the City of Trieste tendered the elaboration of the SUMP in the 3rd quarter of 2017.

Against this background, the City of Trieste welcomes the cooperation with the Port of Trieste within LOCATIONS, as it can provide useful suggestions for low-carbon mobility options for the cruise passengers to be better studied and analyzed within the SUMP. As far as possible actions to be taken, the City of Trieste suggested the following:

- Increasing the number of bike sharing stations;
- Upgrade of the existing coach station currently located next to the railway station;
- Dedicated public transport connections between the railway station and the cruise terminal;
- Smartphone APP with way finding options (already foreseen in the CIVITAS PORTIS project);
- Constant exchange of information on the arrival of cruise ships between TTP and the City's government and the upload of the relevant information on the City's web portal.

In addition, with the perspective of new opportunities to valorise culture-related activities, the City of Trieste suggested the creation of a collaborative framework with cruise ship-owners in order to promote guided walking tour packages involving the existing local tourist guide associations.

The company managing the cruise terminal, TTP, highlighted the result of recent surveys, revealing that around 150.000 cruise passengers visited Trieste in 2016 bringing a positive impact on the local economy estimated in 20 million euros.

As far as the impact on the city's mobility patterns is concerned, TTP assessed it as sustainable, since the current administration is able to prevent and manage the normal flow of passengers, and all requirements in terms of mobility are previously scheduled: the majority of passengers arrive by plane or by car and they can easily find a parking dedicated area with a shuttle connection to the departure terminal.

There are a few passengers coming by train with no impact on urban mobility thanks to the proximity of the Trieste railway station to the cruise terminal. The only case that could negatively affect mobility occurs in case of emergencies, when the administration is not able to foresee and thus properly organize the arrival of the ship. In this regard, one critical aspect to be considered is climate change effects, with the persistence of high winter temperatures causing frequent fogs on the Northern Adriatic Sea, determining cruise vessels delays and re-ordering of the ports of destination. The increased number of emergency calls during 2017

turned into an everyday issue in the TTP management – in fact, the port of Trieste is less affected by fog than Venice, causing last minute rescheduling of cruise calls to Trieste. In particular, critical issues and challenges arise due to weak connectivity to key rail transport services, determining the use of buses and coaches affecting the city centre to transfer cruise passengers.

Moreover, from January 2017 until October 2017 occurrence of dense fog laying on the Venetian lagoon forced more than six cruise ships to change itinerary and sail to Trieste. This ‘last minute’, unpredicted arrival of cruise vessels in Trieste reached the number of around 5,000 passengers in transit managed by the terminal, demonstrating how TTP is efficiently responsive during these critical situations and how Trieste is acknowledged as port of reference for emergency calls in the Adriatic.

TTP outlined the need to identify a more stable, dedicated policy line agreed between key institutional and private actors, building on the already existing collaborative approach. Indeed, stronger cooperation and a common understanding of key challenges and long-term objectives are crucial, because a cruise destination change or a large delay puts everything behind schedule affecting severely passengers’ and ship companies’ plans as well as Trieste urban mobility framework and tourist infrastructures capacity.

More specifically, as regards LC mobility options, one of the major problems faced by cruise passengers in these situations is linked to the lack of a direct transport connection to the nearest international airport, located in Ronchi dei Legionari. In this respect, the Industrial Plan 2016-2020 of Friuli Venezia Giulia Autonomous Region has ensured from March 2018 the connection of the airport to the Trieste-Venice railway line; the implementation of the new railway station of Trieste – Ronchi dei Legionari will indeed help tourist to better organize their movements on the local territory.

At the same time, TTP underlined that a potential opportunity may be the idea of creating a new way for the tram of Opicina in the proximity of the seafront and other type of solutions valorising the less-known touristic sites that can be reached by low carbon transport means.

In general, it was highlighted that fairs and promotional events are not enough to pave the way for the growth of this sector, but a coordinated local marketing action involving stakeholders from the public and private sectors is needed. The Chambers of Commerce convened with TTP in considering the impact of the cruise passengers on the city’s economic development as positive.

As far as mobility is concerned, LC mobility solutions have to be thought according to the different profile of the cruise passenger. Moreover, the characteristics of the port itself affect the type of solutions that can be suggested (i.e. a shuttle bus for passengers arriving at Ronchi Airport and dedicated parking areas for cruise passengers arriving by car). For this reason, there is the need to enhance the integration between the urban mobility framework and the connections with the most important touristic and logistic nodes. In the first case, more attention should be paid to the relevance of intelligent traffic signs in order to provide users with clear information on entrance and exit ways. Particular attention should be given to inter-modality based connections for routes that are currently not fully exploited by passengers.

In general, the dialogue between the shipping companies and the economic stakeholders is of great importance ending up in mediation and agreements in order to make Trieste an even more attractive cruise destination city. A recent example of this type of collaboration is represented by the development of an APP including 100 different tourist destinations that is addressed to different users with the aim to valorize less-known touristic sites.

Following this approach, a network between minor ports could be implemented to enhance the tourism seasonal adjustment, thus bringing new opportunities for the local population living in less known sites.

The last interview with the Italian General Confederation of Enterprises, Professions and Self-Employment - Trieste city division, was conducted in September 2017. During this interview session, a substantial agreement to the previous interviewed stakeholders' considerations and suggestions was underlined; in particular regarding the identified LCT possible, further initiatives and the necessity to achieve a better coordination between stakeholders to implement effective and integrated LCT solutions.

At the same time, although the high level of difficulty in achieving formal agreements between cruise shipping operators and local public/private actors appeared fully recognized, stakeholders from the Italian General Confederation of Enterprises, Professions and Self-Employment - Trieste city division outlined two great opportunities in establishing this type of partnerships:

- Promote ad hoc cruise tours offering Italian culture based experiences, where the cruise passengers can choose to join different tours destinations using LCT based trips to less known travel LOCATIONS and discover their offerings in terms of historical traditions.
- Empower synergies in information services on existing LCT solutions and Trieste city tour plans dedicated to different cruisers profiles on-board.

Summary of the participatory process for the elaboration of the LCTP

Project Name	Objectives	Topic*				Participants	Time		€
		Knowledge	Maturity	Complexity	Controversial		Event	Total	1-4
Trieste	To gather the inputs of relevant stakeholders for the elaboration of the LCTP: 1) gather information; 2) suggestions of potential LC mobility options.	+/-	-	m	+/-	<ul style="list-style-type: none"> • City of Trieste; • Trieste Cruise Terminal; • Chambers of Commerce; • Italian General Confederation of Enterprises, Professions and Self-Employment 	May-July 2017; September 2017		

5.1.6 Rijeka

The participatory process followed in Rijeka included the stakeholders included in the following table, which also states their specific contribution to the process:

Participatory process	
Participants	Contribution
Port of Rijeka Authority	Main responsibility for designing the plan, implementation and monitoring of the measures
REA Kvarner	Participating in the design of the plan. Collect data from all stakeholders. Survey of tourists and citizens
Rijeka Tourist Board	Information and data on tourists' flows from the cruisers are given
Waste disposal company, Čistoća ltd.	Provision of information and data on collecting municipal waste from cruise ships
Public transport company, Autotrolej ltd.	Provide information and data
Taxi service	Provision of information and information on the use of taxi services by tourists
Tourist agencies (Adriatic DMC, Guliver, Applicon Tours)	Provide information and information about the number of excursions per individual cruise ships
SME: Dezinskcija ltd., IND-EKO ltd.	Provision of information and data on acceptance of wastewater and oily water from cruise ships
Passengers and crew members	There are 226 questionnaires from tourists and crew members
Citizens	Questionnaire on local community views on cruise tourism has been conducted
Participatory process (second round)	
Participants	Contribution
Rijeka Tourist Board	Signing the support letter for the implementation of the measure/plan
External expert in urban traffic and mobility: Rijeka Traffic Company	Signing the support letter for the implementation of the measure/plan
Waste disposal company, Čistoća ltd.	Signing the support letter for the implementation of the measure/plan

Main conclusions (lessons learnt, main problems faced and most relevant outcomes):

The road traffic congestion is emphasized at the Passenger Terminal during the exit of the bus for organized excursions on the D 404 road. Because of the narrow road and the fact that the road passes around the market, a bottleneck is created.

The problem of new road is with the occupation of terrain with the existing facilities. It is anticipated that the new road will partly go through the area of an existing parking lot and the existing warehouse.

Air pollution and noise is currently not a major influence, but with the anticipation of increased traffic this negative impact may have a tendency for growth.

It is estimated that road safety has a moderate priority because sometimes there is interaction between buses and pedestrian in the part of the exit from the breakwater and there is a problem of the safety of cyclists on the city roads. Bicycles are not equal in traffic with the motor vehicle.

The survey provided a contribution to the production of statistical data related to the mobility of passengers and crew members.

The survey of satisfaction of citizens showed that there is no tension in the local community that occurs when a cruiser arrives in the city.

The projection of passenger and vehicle traffic was made on the basis of existing data. Parallel to the projection, measures are identified which will result in implementation by achieving set goals.

The biggest obstacle we faced in implementation of project activities concerns gathering data from tourist agencies. It was necessary to remind and urge them continually in order to obtain the information we needed. Ultimately, data was provided after some delay.

The most relevant outcomes of participatory process are signing the support letters for the implementation of the measure/plan by the participants.

5.1.7 Zadar

For the purpose of defining the LCTP's strategy, goals and measures, during the preparatory phase of the LOCATIONS project the stakeholders for which the connection with the cruise tourism in the Zadar area was established were identified. In addition to the City of Zadar with the accompanying administrative departments (Department of EU funds, Department of Urban Planning and Construction and the Department of Utilities and Environmental Protection), as the main project holder, the project stakeholders are: Port of Zadar Authority, concessionaires who carry out the transport service of tourists between the terminal and the narrow center of the city, Liburnija as a public transport service provider (PT – public transportation), ZADRA NOVA as the holder of development activities and projects related to the City of Zadar and the Zadar County and DRIOPE company as an expert in implementing EU projects and providing consulting services in the field of transport. In order to gain a better insight into the existing state of the system and its perception by cruise tourists, their survey was conducted. The stakeholders' descriptions are presented below, and the assessment of their importance is shown in the table (table 1.).

Participatory process meetings structure (timetable and conclusions)

PARTICIPANTS	DATE	CONTRIBUTION/CONCLUSIONS
<i>First Round</i>		
City of Zadar (COZ), Zadar Port Authority (ZPA)	11/05/2017	Initial local meeting; Defining baseline for LCTP; Public procurement for external expertise
COZ, ZPA, REA Kvarner (REAK)	19/07/2017	Presentations of possible stakeholders; review of available transportation system data
Cruise Tourists	10/09/2017 10/10/2017	Interviewing process; Acquisition of input data
COZ, ZPA, Liburnija	01/10/2017	Defining current system state regarding PT lines and future plans between terminal and inner city center
COZ, DRIOPE	06/10/2017	Initial meeting with external expert; Presenting gathered data; Setting baseline objectives, actions and indicators for LCTP
COZ, ZPA, Terra Travel	10/10/2017	Acquiring additional data regarding shuttle bus concessionaire and their business model
<i>Second Round</i>		
COZ, DRIOPE, ZPA, Terra Travel, ZADRA	31/01/2018	Presenting draft of LCTP and gathering stakeholders' feedback
COZ, DRIOPE	06/02/2018	Finalizing LCTP draft and fine-tuning – strategy, objectives, actions, and indicators.
COZ, DRIOPE, ZADRA	10/04/2018	Insight into ongoing and planned projects related to LCTP
COZ, DRIOPE, REAK	02/05/2018	Final check on LCTP synthetic report
COZ, ZPA, Terra Travel	04/05/2018	Presenting final LCTP and informing about its implementation in concessionaire business model

Zadar Port Authority has been a relevant stakeholder that has given the most data from research as they have given a permission to ask their passengers about their view on transport and Zadar in general. This data

has been the starting point for all further analysis of LOCATIONS project. Liburnija Zadar has already shown initiative in acquiring new set of low-carbon emission busses, which will make an immediate impact on low-carbon emissions as well as it will increase the general effectiveness of public transport in Zadar. Bus connecting Gaženica and inner city center remains under monitoring process to achieve its optimization. Terra Travel has been resourceful stakeholder for providing access to tourist data regarding their current position as commissionaire in Port of Zadar. Zadar Tourist Board, Puntamika Ltd. and Čistoća Zadar have been resourceful stakeholders in process of providing input data for state-of-the-art analysis as well as providing insight into future trend predictions. DRIOPE was involved regarding traffic and transportation expertise.

5.2 LCTPs main results

The process of designing, testing and developing the LCTPs in every one of the participating cities, has also rendered interesting lessons in terms of results, outcomes and key activities.

This section presents a brief summary of every city process, highlighting the most relevant aspects and results as for the respective partners implementing the LCTP. The actual full LCTPs are available in the Transfer Package.

5.2.1 Ravenna

Ravenna cruise terminal is located at Porto Corsini, a hamlet with 1517 inhabitants 15 km away from the city center, and was inaugurated in 2011. To date, it includes two landing docks able to accommodate ships up to 330 m, although the terminal is still under development. In the last few years, cruise passengers are about 50.000 per year, even if the Port Authority aims in the long run to reach 200,000 units per year. The main tourist attractions of Ravenna are its 8 UNESCO monuments, 7 of which are located in the historic center, or its immediate vicinity.

In addition to traffic related to cruise flows, Porto Corsini is affected by seasonal flows due to the presence of an equipped camper area and beach resorts that attract tourists on a daily basis. The cruise terminal is also in the immediate vicinity of several naturalistic areas included in the Po Delta Regional Park.

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The current scenario of the mobility of cruise passengers on the ground is summarized here:

- about 50,000 cruise passengers per year;
- the bus is the only mode of transport available to cruise passengers;
- 40% of buses belong to a category equal to or better than EURO 3;
- during disembarkation days, there is a 45% increase in heavy traffic at Porto Corsini;
- Cruise passengers with reduced mobility have difficulties in moving about the municipal territory.

The most urgent problems of the current scenario are the following:

- Porto Corsini residents have to reckon with a considerable increase in heavy traffic during the disembarkation days;
- Porto Corsini residents perceive only the negative impacts of cruise tourism;
- stakeholders report the poor enhancement of tourist attractions near the cruise terminal;

The LCTP is integrated with the local SUMP to address these problems and was developed as part of a broadly participated process, in which several actors were involved from the early stages of analysis.

The Municipality of Ravenna aims to become one of the reference destinations for the sustainable mobility of cruise passengers in the Mediterranean area. Specifically, the City aims to excel in the issue of accessibility to ensure everyone the opportunity to move in a sustainable manner in the port and in Ravenna with the least possible number of architectural barriers. We decided to develop a Plan that includes feasible actions, trying to overcome scepticism of citizens and stakeholders that in previous year were shown high-cost projects that were never realized. LCTP is a Plan integrated with other territorial and urban plans already approved (or being-approved) by the Municipality or other Public Bodies. For this reason, actions included in

LCTP do not need to get special permissions (as Environmental Impact Assessment or other authorization) with long and complicated process and not certain results.

► DETAILED OBJECTIVES

According to this vision, three detailed objectives have been identified

1. Increase the number of cruise passengers (even those ones with reduced mobility) who visit with a sustainable mode of transport the point of interest near cruise terminal
2. Mitigate negative effects derived from cruise passengers' mobility in Porto Corsini, the place most affected by cruise traffic externalities.
3. Increment low carbon transport solution for cruise passengers (even those ones with reduced mobility)

For each objective a strategy has been developed. Strategies and actions are illustrated in the next paragraphs.

STRATEGY 1 | IMPROVING TOURIST ACCESSIBILITY TO POINTS OF INTEREST IN THE PROXIMITY OF THE TERMINAL

The improvement of the local tourist offer, especially referred to the naturalistic areas near the terminal tend to decrease distances travelled by cruise passengers on land with the double effect of reducing emissions produced by road trips and incentivizing more sustainable modes of transports, such as cycling, as these destinations become more attractive to cruise passengers.

This strategy includes these actions:

- Improvement of accessibility to points of interest near the cruise terminal:
- A wayfinding draft plan designed to foster cycling for cruise passengers.
- Activation of a new service of e-bike rent in collaboration with MOSES project

STRATEGY 2 | IMPROVING URBAN QUALITY IN PORTO CORSINI

The improvement of urban quality in the area most affected by the negative effects of cruise tourism will result, on the one hand, in actions aimed at improving accessibility and usability of cycling and pedestrian routes, and, on the other hand, increasing the quality of public spaces to compensate for inconvenience caused by the inevitable passage of buses in the town of Porto Corsini.

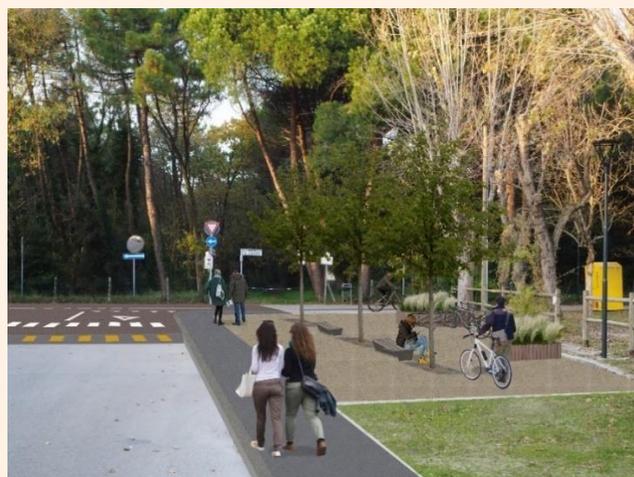
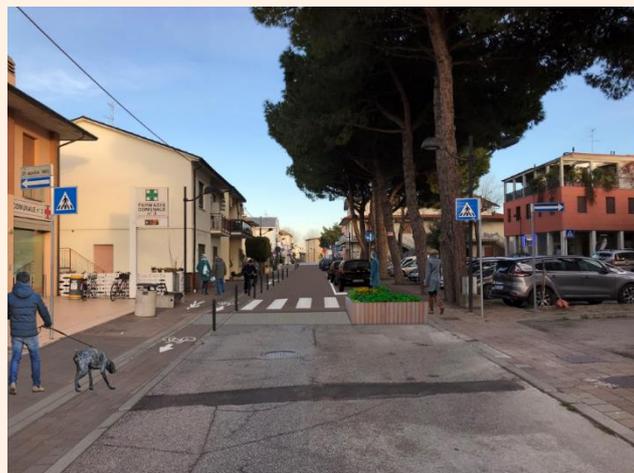
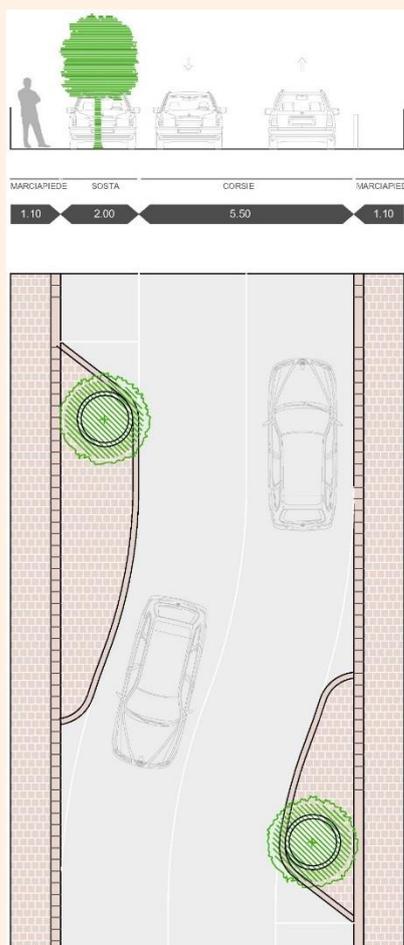
This strategy includes 2 actions:

- The elaboration of a detailed mobility plan focused on Porto Corsini
- The preparation of a feasibility study for an intermodal platform at the entrance of Porto Corsini

The **Detailed Urban Mobility Plan** aims to outline a series of works that can lead to a tangible improvement in the liveability and safety of the centre's public spaces

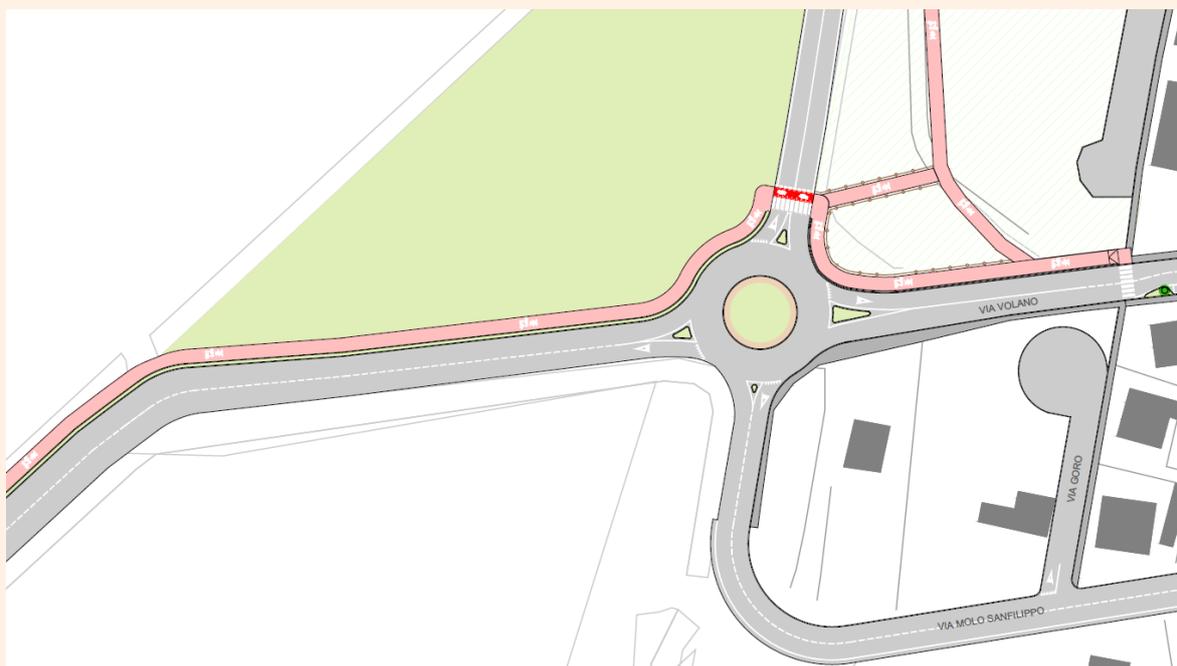
- Traffic calming actions in order to reduce vehicles' speed to 30 km/h and increase road safety especially for pedestrians and cyclists;
- New cycle and pedestrian paths in the village

- Interventions to improve some road intersections perceived as unsafe by citizens;
- Re-design of public spaces and roads in order to improve the urban quality in some crucial points
- Modification of coach and bus routes in order to avoid the passage in critical points and streets of the town.



The second action envisages a multimodal parking hub outside the built area of the town where the cruise terminal is located. The idea is to create a platform where coaches can wait and access the cruise terminal

through a system designed to avoid congestion in the town. This hub should be carefully designed together with bus and cruise operators.



STRATEGY 3 | TO IMPROVE THE ENVIRONMENTAL QUALITY OF CONNECTIONS BETWEEN THE CRUISE TERMINAL AND THE CENTRE OF RAVENNA

This strategy aims at the environmental improvement of the connections between the terminal and the centre of Ravenna through both the upgrade of the vehicle fleet used for the transfer of cruise passengers on land, and the creation of new services and infrastructures to increase the share of low-emission transfers. This is a medium-long term strategy that seeks to combine synergies with other projects concerning the Ravenna area.

This strategy includes several actions:

- Limitation of circulation to polluting vehicles; a Low Emission Zone will be gradually established in the village where the cruise terminal is located
- green ferry connection between the cruise terminal and the city center through the Candiano Canal
- new cycle paths to increase bike trips towards Ravenna city centre thanks
- Installation of infrastructure for charging e- bicycles at the cruise terminal
- Improving accessibility for people with reduced mobility with a specific transfer service from the cruise terminal to the city centre

Given that the LCTP is a first implementation of the actions of the SUMP, the same future scenarios have also been adopted here, which are summarized below:

- **“Business as usual” scenario**
- **The short-term scenario**
- **The medium-term scenario**
- **The long-term scenario**

In the long term, we estimated a reduction of 21% of CO₂ thanks to the implementation of the LCTP, with a total budget of the Plan is about 6.800.000 euro.

	CURRENT SCENARIO	SHORT TERM			MEDIUM TERM			LONG TERM		
		BAU	LCTP SCENARIO	REDUCTION	BAU	LCTP SCENARIO	REDUCTION	BAU	LCTP SCENARIO	REDUCTION
<i>Cruise passengers</i>	50.000	50.000			150.000			200.000		
<i>CO₂ [t]</i>	31,000	30,65	30,64	-	30,5	28,16	-8%	123,03	96,79	-21%
<i>PM₁₀ [kg]</i>	5,61	11,09	8,57	-22%	10,01	4,5	-55%	20,18	4,39	-78%
<i>NO_x [kg]</i>	227	448	362	-19%	444	127	-71%	895	35	-96%

STRATEGY	COSTS
IMPROVING TOURIST ACCESSIBILITY OF INTEREST IN THE PROXIMITY OF THE TERMINAL	2.850.000 €
IMPROVING URBAN QUALITY IN PORTO CORSINI	1.310.000 €
IMPROVING THE ENVIRONMENTAL QUALITY OF CONNECTIONS BETWEEN THE CRUISE TERMINAL AND THE CITY	2.662.000 €

5.2.2 Durres

Prepared by: Albanian Institute of Transport in collaboration with Durrës Port Authority, and with Contribution of Durrës Municipality Development Directory, and main involved Stakeholders.

Based on: LOCATIONS Project Operational model for Low Carbon Transport Plans for cruise destination cities; Capacity Building Manual and in reference of EU, national, regional and local framework of reference.

The current state of things: Durres Port and city tourist's mobility is characterized by:

- Low number of cruise ships and missing the Cruise Terminal (14,700 tourists by 25 cruise ships for 2016)
- Considerable number of daily tourist arriving in Ferry Terminal by regular scheduled lines (33,000 or 4% of total passengers by 2016 year)
- The future projection is optimistic for increasing the number of Cruisers and daily tourists (5 fold approximately).
- Lack of urban mobility related studies like SUMP and SEAP.
- Most urgent issues relate to Heavy traffic and Road congestion in Durres port and city entrance; Lack of rationalization of the touristic spaces; Lack of well-defined walking tourist paths infrastructure and information; Lack of Cruiser liners and operators' business coordination; Low spending time of cruiser tourists, etc....
- The best of things: Territorial Strategy of Municipality Durres 2015 – 2030

Analyzing the current situation with the data and information collected, shared and discussed with main stakeholders, it is a clear current situation and an opportunity to define the main working areas:

- Mitigation of Environmental impacts in the better way using the Demand Management Strategies
- Mitigation of Climate impacts introducing "Clean transport and fuels" like: e-bike; e-bus; e-taxi.
- Make positive economic impacts by optimization of accessibility level of City and Port.

Based on the current scenario, a strategic vision and a set of objectives is defined to guide the development of the LCTP. ***The specific target groups are not only cruise passengers but daily tourists and other visitors.***

Vision: Draw up the development vision of Durrës City as cruise destination that use of low-carbon transport systems and multi-modal connections in the frame of wider sustainable traffic and mobility policies.

Objectives:

1. To improve the mobility and quality of visit for cruise passengers, Durres citizens and the nearby areas, by fostering a complete and comprehensive plan. This requires developing a LCTP to meet the mobility needs of cruise passengers, residents, businesses, and the region for decades to come.
2. To attract more tourist using cruise ships to visit Durres and nearby areas of interest, by making the visiting experience as comfortable as possible.
3. To reduce the GHG emissions by developing the LCTP, this will promote the use of friendly environmental transport modes.

Actions and indicators: Following the strategic vision and objectives, detailed actions are chosen and indicators to measure the performance in their implementation towards the objectives.

In terms of Demand Management Strategies, the actions proposed are:

- Improving the mobility pathway of the cruise passengers from the Cruise Terminal (Western Terminal) and Ferry Terminal to the city.
- Establish touristic info points along the touristic paths within the city and the port areas.
- Develop an application for cruise tourists with all attraction points and activities.

The Specific Goal is to simplify the pedestrian transit through the Port areas. Reduce of traffic in Durres port and city entrance by 20% in one year. For each measure/action, the indicators are defined.

In terms of Mitigation of Climate impacts, the actions as follow introduce The Clean transport and fuels vehicles:

- Establish an e-biking rental service in the cruise terminal and ferry terminal.
- Extend the e-taxi services in the cruise terminal and Ferry Terminal.
- Establish an electrical bus shuttle service from the Cruise Terminal and Ferry Terminal to the regional touristic areas

Introducing e-bike service is based on Territorial Strategy of Municipality Durres 2015 – 2030 already completed and according to the strategy a bike-separate line network was forecast.

Extend the E-taxi services that already has started in Durres city with two other station to be establish at the Passengers Terminal of the Durres port through the pedestrian bridge pathway to the railway Station and also at the main entrance of the port near the Cruise terminal, increasing the number of electric taxis, and making it possible for them to use by tourists who come with cruisers, as well as daily tourists.

E-bus service is proposed to serve all the tourists who come with Cruise, as well as for day-to-day tourists. The proposal to this action is to offer:

- Free service from the Port Authority by establishing a e-minibus line from the cruise terminal to the Exit Gate near the beach touristic area and with a another stop to the Ferry Terminal linked with the pedestrian bridge that connects with the Railway Station.
- E-bus line that will have the starting point at the Railway Station area and the destination will be the Castle of Kruja, within the Prefecture of Durres. This measure, envisages the deployment of 2 e-bus with 4 hours of departure and return

Those measures (e-bike; e-taxi; e-bus line) have to consider the service to offer for all other tourist visiting the city, arriving by other mode of transport.

The Specific Goal is to promote the use of Electrical Vehicles by the cruise passengers

Regarding to the vision and one the main objective, making Durres city and Port more attractive and having a positive economic impacts for the Region, three actions are included to the LCTP:

- Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.
- Promotion of facilitating policies for cruisers
- Improve accessibility for disabled low mobility passengers.

A website with updating information about the benefits of the touristic activity is one of measure that must implement at a local level. “Discover Durres city and more...” must be the local web with information about History (City history, Archaeological Sites); Culture, (Museums, architecture, music tradition); Exploring (Beaches, flora, fauna) Enjoy (Activities and Events); Travel Stay (accommodations and useful travel information); Taste (Local Products and Gastronomic destinations); Alternative Tourism and Interactive Maps. Focusing on this specific target group and supply with all relevant information make them possible to be prepared to enjoy the city attractions.

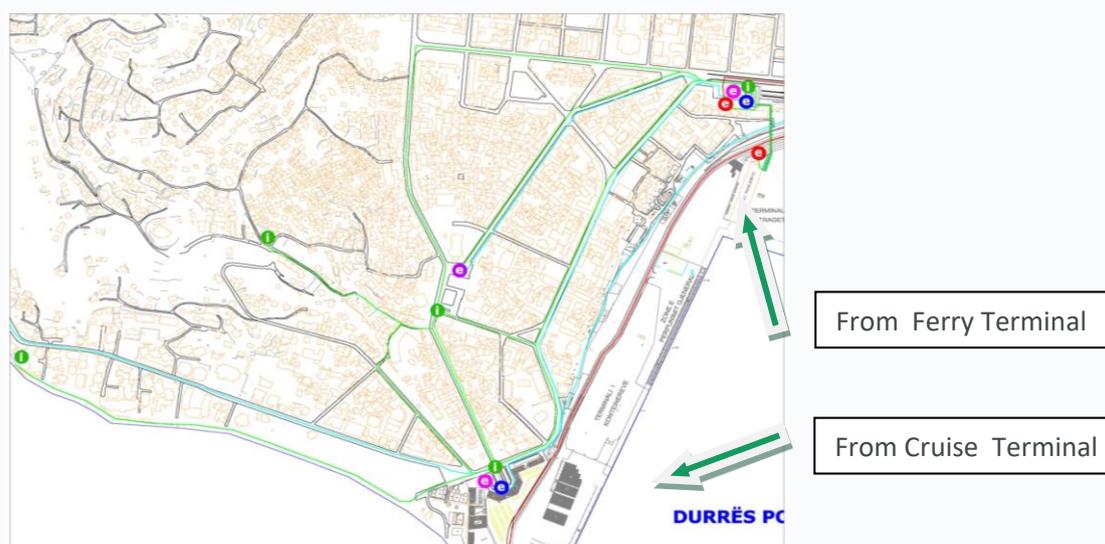
Durres City and Port has to respond proactively to the national cruise tourism developments. The chance for Durres city to be Albania's showcase for the visitors of the cruise ships is attention of Cruise operators and liners that are more than ever searching for new destinations and itineraries. New facilitating policies for cruisers are necessary to apply:

- Create the policy to support the development of Cruise Tourism in Durres.
- Clearly demarcate roles and responsibilities of each agency/department in different aspects of cruise tourism development.
- Address tax related issues. In addition to tourism related taxes, a cruise vessel & its passengers are also subject to several charges and fees
- Simplification of payment procedures for dues and charges would create a favorable environment with the cruise tourists.

“Improve accessibility for disabled low mobility passengers” is another measure proposed on Durres LCTP. This measure takes in consideration that a large part of cruise passengers are senior citizens usually with low mobility. This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city.

The Specific Goals are:

- Increase the number of cruise ships calls by 25% per year.
- Increase the staying time to 24h per cruise visit.



Future scenarios:

Base Line: Current situation (Year 2016).

BCS Scenario: Normal Trend without project implementation (“Business as usual scenario”);

Scenario 1: “Most positive possibilities foreseen actually occur” In this Scenario all the Action/measures will be implemented.

Scenario 2: “Unexpected events or circumstances”: *In this scenario, we expect that only 3 actions will be implemented. Those actions do not need too much investment, as well as the 2 first could be the part of SUMP. Two other action/measures are expected partially completed.*

Scenario 3: “Most likely scenario”: In this scenario, the most actions/measures will be implemented (5 of them) and 4 other will be partially implemented as in table below.

MEASURE	BSC	S1	S2	S3
Action 1.1.1 Establish touristic info points along all touristic paths within the city	x	✓	✓ PARTIALLY IMPLEMENTED	✓
Action 1.1.2 Develop an application for cruise tourists with all attraction points and activities.	x	✓	x	✓
Action 1.1.3 Improving the mobility pathway of passengers/tourist at the ferry/cruise terminal in/out	x	✓	✓	✓
Action 2.1.1 Establish an e-biking rental/sharing service in the cruise terminal, (linked to the city service)	x	✓	✓ PARTIALLY IMPLEMENTED	✓ PARTIALLY IMPLEMENTED
Action 2.1.2 Extend the E-taxi services in the cruise terminal.	x	✓	✓	✓
Action 2.1.3 Establish an electrical buss shuttle service from the Passenger’s Terminal to the regional touristic spots.	x	✓	x	✓ PARTIALLY IMPLEMENTED
Action 3.1.1 Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.	x	✓	✓	✓
Action 3.1.2 Promotion of facilitating policies for cruisers.	x	✓	x	✓ PARTIALLY IMPLEMENTED
Action 3.2.1 Improve accessibility for disabled low mobility passengers.	x	✓	x	✓ PARTIALLY IMPLEMENTED

Monitoring LCTP implementation:

The LCTP Implementation monitoring will follow the steps:

- Acceptance of the plan from the Durres City and Durres Port Authority
- Create the Co-working team responsible for implementation
- Pre-decision for funding from Port Authority and City Council possibility from their own resources.
- Involving the key stakeholders for funding support.
- Appointment of the coordinator for the implementation of the plan
- Monitoring and control of the measures by the pre- management
- Monitoring of the results

Work-plan complete with deadlines and responsibilities are developed.

Funding: Pre-Estimation of the needed resources and where funding comes from.

Item	Start / Deadline	Funding	Cost Category				Total
			Investments	Description	Sub-contracting	Description	
Action 1.1.1: Establish touristic info points along all touristic paths within the city	09/18-10/19	Amount (€)	50,000 €	Purchase of 5 Kiosk suitable for info-point	10,000 €	Web - update and maintain for 5 years	60,000 €
		Source of Funding	Durres Port Authority Private Companies Municipality of Durres				
Action 1.1.2: Develop an application for cruise tourists with all attraction points and activities.	09/18-10/19	Amount (€)	5,000 €	App Development	15,000 €	Update and Maintain for 5 years	20,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 1.1.3: Improving the mobility pathway of passengers / tourist at the ferry / cruise terminal	09/18-10/19	Amount (€)	150,000 €	Purchase of all equipment	30,000 €	Construction works	180,000 €
		Source of Funding	Durres Port Authority Albanian Ferry Terminal Operator Municipality of Durres				
Action 2.1.1: Establish an e-biking rental/sharing service in the cruise terminal, (linked to the city service)	09/18-10/20	Amount (€)	200,000 €	Purchase of 400 e-bike and equipment	70,000 €	Construction work for two stations	270,000 €
		Source of Funding	Private Companies Municipality of Durres PPP				
Action 2.1.2: Extend the E-taxi services in the cruise terminal.	09/18-10/20	Amount (€)	250,000 €	Purchase of 20 e-taxi and equipment	30,000 €	Construction work for two stations	280,000 €
		Source of Funding	Private Companies Municipality of Durres PPP				
Action 2.1.3: Establish an electrical buss shuttle service from the Passengers Terminal to the regional touristic spots.	09/18-10/21	Amount (€)	360,000 €	Purchase of 2 e-bus (>40seat); 3 e-minibus, (<20seats); and equipment	70,000 €	Construction work for two stations	430,000 €
		Source of Funding	Durres Port Authority Private Companies PPP				
Action 3.1.1: Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.	09/18-05/20	Amount (€)	2,000 €	Website developing	6,000 €	Website update and maintain for 5 years	8,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 3.1.2: Promotion of facilitating policies for cruisers.	09/18-05/20	Amount (€)	50,000 €	Cruise Tourism Potential Strategy Study	0 €	n/a	50,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 3.1.3: Improve accessibility for disabled low mobility passengers.	07/18-05/22	Amount (€)	300,000 €	Purchase of equipment	50,000€	Construction works	350,000 €
		Source of Funding	Durres Port Authority Municipality of Durres				

5.2.3 Lisbon

The Low Carbon Transport Plan (LCTP) of Lisbon aims to reduce the carbon impact on the mobility of cruise tourists in the city of Lisbon and, simultaneously, to protect and increase the quality of life of their inhabitants. These objectives are embedded in the vision envisaged by the LCTP which states that ***“Lisbon should become a destination of excellence where the available options of mobility have a reduced impact on the environment and on the city residents’ quality of life, contributing to potentiate opportunities and balance the coexistence between residents and tourists.”***

The LCTP of Lisbon is fully aligned with the European and National policies that traces the routes for the decarbonization of the economy by 2050. The LCTP of Lisbon is a planning tool that contributes for the city government program – *Grandes Opções do Plano para a Cidade de Lisbon-* (2018-2021). In this context the LCTP emphasizes the need for promoting the clean mobility, the development of shared services and the improvement of public transport, favoring intermodal transport and, when possible, active modes such as walking and cycling. Lisbon has been at the forefront of efforts to decrease CO₂ emissions, placing Climate and Energy concerns at the center of its agenda. Lisbon’s administration created a cross-cutting program to mitigate and adapt to climate change and recently Lisbon was the first European Capital to subscribe the new Covenant of Mayors for Energy and Climate.

The city of Lisbon is facing several challenges regarding the ageing and loss of their residents, the decrease on public transport demand, the increased number of vacant dwellings, the rise of renting and real estate market prices, the increasing number of tourists and the high number of daily commuters.

Notwithstanding the current implementation of an integrated package of local policies regarding urban planning, climate change and transport, the city of Lisbon remains high dependent on individual transport (48% modal share for inner trips and 54% modal share for trips with origin on other councils of the metropolitan area, in 2011) with more than 370 000 vehicles coming into the city and getting out every day (2016).

The tourism in Lisbon has been intensified during the last decade, representing a prosperous and crucial sector for the local economy but also bringing new challenges. From 2001 to 2016, the number of nights spent by tourists in Lisbon increased 63% reaching the number of 11 million-night stays. With the increase of tourism and attractiveness of the city, also the cruise tourism business grew. The increasing demand of cruise tourism and the number of cruise ship calls, combined with the need to receive ships with large size, triggered the construction of a new cruise terminal in the city centre that is operating since September 2017. In this context, new challenges should be tackled to overcome the negative impact of the growing cruise tourism that due to its characteristics (short stays, touristic buses excursions, seasonality of cruises and easily changeable routes) and its location in a congested historic area of the city will require the implementation of specific measures.

The LCTP of Lisbon was developed following a participatory methodology in order to diagnosis the current situation regarding the mobility of cruise tourists. In this context several meetings and interviews were conducted with key stakeholders with different roles as regulators and operators in the cruise tourism industry.

SWOT Matrix	
Strengths	Weaknesses
<ul style="list-style-type: none"> ➤ Public bus connecting to main touristic attractions in front of terminal. ➤ Future tram line passing in front of terminal which takes you to main touristic attraction. ➤ Subway station 400 m from terminal. ➤ Train station reachable by bus/subway. ➤ Main airport 5 km and reachable by public transport. ➤ Possibility to know, months in advance, which cruises will be in port. ➤ Cruise Terminal located in city centre and with dedicated capabilities. ➤ New bike sharing system with two terminal stations. ➤ City Policy aligned with the increase of green and collective transport modal share. 	<ul style="list-style-type: none"> ➤ Disinvestment on public transport sector in recent years (less capacity). ➤ Limited amount of time to visit Lisbon. ➤ Tourists desire to visit the only main attractions. ➤ Arrival/ departure times coincident with rush hour. ➤ High share of locals use car for commuting causing traffic congestions. ➤ Lack of touristic buses parking regulation. ➤ Centralized touristic destinations. ➤ Decentralized destinations accessible by train but not viable due to time constraint. ➤ Low quality pedestrian network. (lack of accessible infrastructure and touristic pedestrian routes). ➤ Increase of the number of non-sustainable touristic options (e.g. tuk-tuks and increase in the share of touristic buses excursions).
Opportunities	Threats
<ul style="list-style-type: none"> ➤ Possible to influence tourists before they enter the city through the terminal capabilities. ➤ Increase of turnaround cruises from 2018 forward. ➤ Profile of cruise tourist changing (younger and more diversified). ➤ High education level which allows for ICTs. ➤ Ongoing intervention around the new terminal. ➤ Multiple municipality programs from which the plan can beneficiate. ➤ Existence of a touristic fund from touristic tax. ➤ 50-60 % of cruise passengers don't buy excursions inside the cruise. ➤ Cruise high season not matching touristic high season. ➤ Half of the cruise passengers have already visited Lisbon in the past. ➤ Cruise Tourism might become less seasonal (with increasing turnaround share). 	<ul style="list-style-type: none"> ➤ Cruise terminal located in city centre. ➤ Number of tourists increasing (cruise and otherwise). ➤ Size and capacity of ships increasing. ➤ Loss of identity and residents in the city centre. ➤ Lack of an integrated PT authority. ➤ Seasonal activity with 4 busy months (April, May, September and October) and the other eight quiet. ➤ Cruise operators and port agents' possible defensive attitude. ➤ Change of cruise routes with resulting reduced flow. ➤ Climate change and natural disaster. ➤ Global economic-political instability. ➤ Unable to "control" information passed to the tourist before arrival to Lisbon.

The main results of the participatory process were analyzed according the CAME₁ matrix that systematizes measures already existent but require to be corrected or maintained, and identifies new measures that need to be explored or adapted. The CAME matrix assessment allowed the identification of critical challenges that lead to the design of the four main strategies proposed in the LCTP:

1. To promote the exploration of the city by active modes of transport;
2. To promote the use of public transport when distance and mobility conditions of tourists justify;
3. To balance the number of tourists at points of interest, reducing impact, enhancing their experience, and spreading opportunities;
4. To reduce touristic transports impact on historical center and main touristic areas;

In order to support the implementation of the LCTP, the strategies designed are disaggregated into eleven actions and thirty-four activities that will be monitoring by specific indicators.

A fifth crosscutting strategy was considered to promote the integration and dissemination of the foreseen activities and actions.

Diagram laying out the challenges and the strategy to be followed

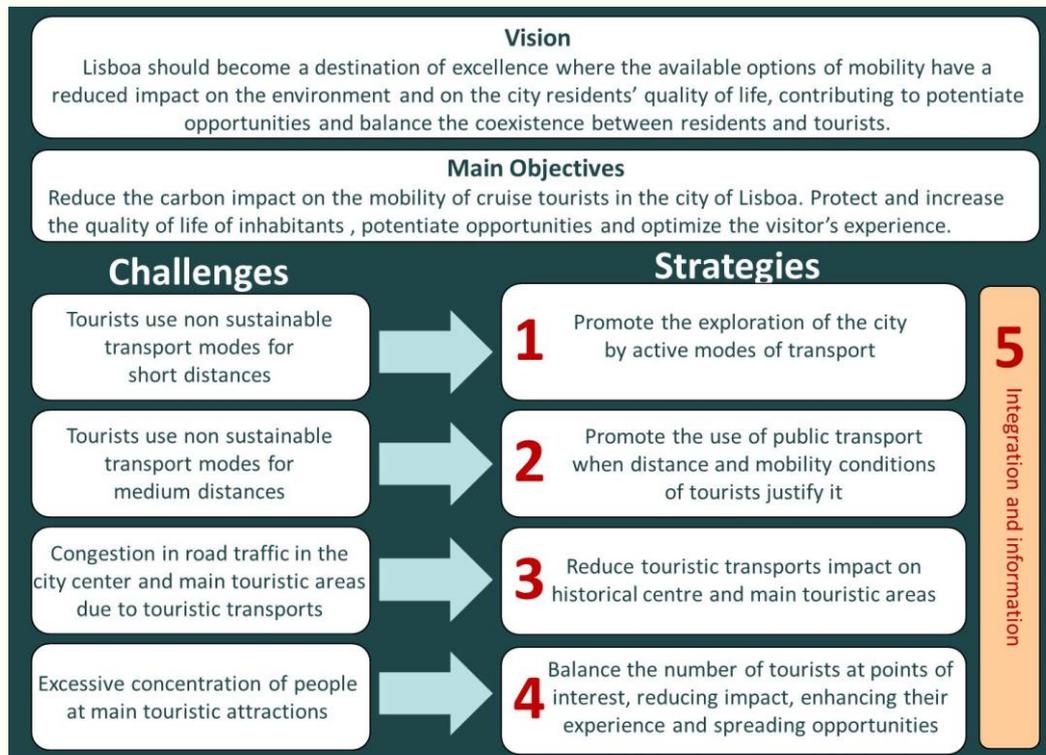


Diagram laying out the strategy and related actions



The successful implementation of LCTP of Lisbon will require the creation of synergies across different sectors and policies in the city. This approach will assure the articulation with the main ongoing programs oriented to public spaces: Uma Praça Em Cada Bairro (One Plaza in Each Neighborhood), Pavimentar Lisbon 2015-2020 (Paving Lisbon 2015-2020) and Plano Geral de Intervenções da Frente Ribeirinha de Lisbon (Lisbon River Front General Intervention Plan), as well as with other planning tools as it is the case of the recently approved Municipal Strategy for Climate Change Adaptation of Lisbon (November 2017).

The LCTP of Lisbon will contribute for the operationalization of the current city government program (2017-2021) and for the local implementation of European Urban mobility policy. Therefore, it is expectable that strategies and actions proposed in the LCTP of Lisbon would be integrated in the Sustainable Urban Mobility Plan (SUMP) of Lisbon that is currently being developed by the Lisbon city council.

5.2.4 Malaga

The **Low Carbon Transport Plan for Malaga (LCTP)** aims to support authorities to adopt and implement the necessary measures to progress towards a sustainable and healthy urban mobility in the city. In other words, the LCTP intends to offer support and advice to the authorities in what regards cruise related mobility, in the framework of the plans and strategic lines already adopted and in place in Malaga.

Context analysis

The LCTP has been created taking into account the following framework of reference, from EU to local:

EUROPEAN COMMISSION

- White Paper 'Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system' (2011)
- Delivering on low-emission mobility: A European Union that protects the planet, empowers its consumers and defends its industry and workers (COM/2017/0675)

MALAGA CITY COUNCIL

- Agenda 21 2020-2050
- SUMP for Malaga, 2015

The 2015 SUMP and the Agenda 21 include a whole set of indicators, which fit to LCTP initiatives.

Cruise-sector mid- to long-term (5 to 10 years) development trends

Given that cruise lines itineraries are planned in 1 to 2 years in advance, it is predictable that in **2018, the number of stops would be around 300**. In the same way, the city expects around half a million passengers offloading cruisers during 2018.



Annual cruise passengers and future trends

The development of port traffic is a main goal within the strategic management in the Port of Malaga. Facilities have grown in capacity, so as the destination. The latest data show that Malaga has become a relevant multi-purpose, as hub to reach other touristic areas in Spain (Granada, Seville, Cordoba, etc.) and as touristic attraction by itself.

Currently, urban mobility in Malaga, regarding cruise activities, is not perceived as a problem to be solved but as an opportunity for the development of the touristic sector in the City. In this sense, the development of port traffic is a main goal within the strategic management in the Port of Malaga. Facilities have grown in capacity, so as the destination. The latest data show that Malaga has become a relevant multi-purpose, as hub to reach other touristic areas in Spain (Granada, Seville, Cordoba, etc.) and as touristic attraction by itself.

However, authorities and residents alike look forward to a sustainable exploitation of the city's attraction in respect with the tourism made by cruise passengers. Nearly 80% of residents believe that is necessary to design plans that integrate in a more sustainable way the cruise tourism in the City (nearly 60% state that it could improve the satisfaction with their experience in Malaga). Furthermore, interviewees believe that all the agents should be involved, the Public Administrations (City Council, Malaga Port, Junta de Andalucía, Andalusian Tourism, Ministries, ...), as well as other civil actors affected, so as to properly coordinate the design and implementation of tourism initiatives and access to the port by all means of transport.

SWOT Analysis

	STRENGTHS	WEAKNESSES
INTERNAL CONTEXT	Public transport use has remained stable over the years. A good management by the responsible entity is perceived. 10% of travels are made by bus.	Motorized means represent 50% of travels. Car is the dominant mean of transport in the city (31%). Motorcycles contribute with an extra 6.7%.
	Pedestrian mobility has been consolidated over the last years, reaching 50% of the global mobility within the city. Travels by foot increased 2.3% from 2008 to 2014.	Congestion issues on city centre, main mobility attractor area. It attracts 17% of total travels, 40% using private means. 60% of centre residents walk, and only 13% drive.
	Malaga possesses a highly valued reputation among tourists (8.6/10). Trends show a gradual increment on cruise visitors, who recommend Malaga as a good destination (8.9/10).	Cruise passengers identify traffic and mobility related issues in Malaga as the weakest factors. Satisfaction degree is set around 6.5/10 for traffic and parking, and 7.8/10 for public transport.
	OPPORTUNITIES	THREATS
EXTERNAL CONTEXT	City traffic has decreased as consequence of the financial crises and the actions developed by the city council. From 2008 to 2014, private car use decreased 4.2% and traffic has decreased 32.5%.	Exposure to vehicles' gas emissions is likely to be more harmful to citizens. Concentration of Particulate Matter and Ozone are above the recommendations of the WHO.
	Bicycle trips have grown by four (2008-2014), but still represents only 1.7% of total trips. Still, this trend reflects a higher awareness by citizens.	Cruise liners may consider other destinations preferable to Malaga and shift their vessels to those other destinations.
	From 2006 to 2014, number of motorcycles has increased 63.8%, reducing problems related to parking space.	Malaga citizens feeling of cruise tourists as source of inconveniences could show up if mobility measures are not taken.

Current scenario

We need to face the following main challenges, to avoid future problems in the destination:

- Traffic in the city, not only caused by cruise flows.
- Congestion caused by vehicles and by large groups of people (mostly tourists)
- Lack of infrastructure to allow or help alternative means of transport, such as walking or cycling.

Vision, objectives and initiatives

The LCTP vision is to foster the use of low carbon transport systems and multi modal connections for cruise-related passengers. It is important to highlight three main strategic axes:

STRATEGIC AXIS 1: CRUISE TOURISM CONTRIBUTES TO EASE MOVEMENTS & COHABITATION IN MALAGA.
Objective 1.1 Increase the number of cruise passengers walking to attractions.
Initiative 1.1.1 Promote alternative touristic interesting points.
At cruise arrival, distribution of specific information points for cruise passengers, highlighting tailored alternatives points of interests in the city to be reachable from the port.
Initiative 1.1.2 Walking time & distance information.
Setting up a network of signals around the port and touristic areas, indicating, in a multilingual way, the distance (in meters) and walking time (in minutes) to reach nearby attraction.
Initiative 1.1.3 Foster walking tourism for cruise passengers.
Provide useful permanent information to foster cruise passengers to plan their visit before arriving to destination , as well as to encourage cruise passengers to reach attractions on foot.
<i>Indicator: Cruise passengers walking to attractions.</i>
<i>Data source: Cruise passenger surveys and tourist attractions' records.</i>
Objective 1.2 Decrease traffic congestion around the port.
Initiative 1.2.1 Optimization of excursion buses routes from Terminals.
Reduce the congestion by optimizing the routes of excursion buses, especially in narrow street lanes often reduced to one.
Initiative 1.2.2 Specific traffic protocol prior to cruise arrivals.
To develop a comprehensive traffic protocol considering, both, citizens and visitors' profiles and necessities.
<i>Indicator: Traffic congestion in main streets around the port - Average Daily Traffic (ADT)</i>
<i>Data Source: Local police, plus survey to terminal operators and citizens living in the neighbourhood.</i>
STRATEGIC AXIS 2: CRUISE TOURISM CONTRIBUTES TO LOCAL ECONOMY IN A STABLE, LONG TERM AND RISING WAY.
Objective 2.1 Increase the use local facilities and low carbon mobility services by cruise passengers.
Initiative 2.1.1 Cruise Mobility integrated into the Touristic Card
A customized package within existing touristic smart cards specifically designed for cruise passengers, that facilitates access to all public transport means.
Initiative 2.1.2 Tool development tailored to cruise passengers' mobility
Integrating an existing app or design a new tool that includes basic information regarding navigation with public transport. This includes GPS navigation, bus network (with intervals and stops).
<i>Indicator: Cruise passengers using local facilities and services</i>
<i>Data source: Records provided by tourist attractions, services operators and passengers' survey.</i>

Objective 2.2 Increase cruise passengers reaching touristic and leisure options distant from the port.
Initiative 2.2.1 Shuttle services to reach distant attractions.
A shuttle service is offered to cruise passengers interested to visit distant tourist attractions in Malaga and its surroundings. The service might be contracted through an app or similar means.
Initiative 2.2.2 Promoting distant touristic offers for cruise tourists.
In order to encourage cruisers to visit touristic and leisure options distant from the port it is important to set more abundant and precise information.
Initiative 2.2.3 Development of integrated packages for distant touristic attractions.
Promoting integral visit offers to options distant from port, including comprehensive experiences, tourist attractions, meals and shopping, to increase visits outside the city centre.
Indicator: <i>Cruise passengers' visits to distant touristic and leisure options</i>
Data Source: <i>Records provided by tourist attractions, services operators and passengers' survey.</i>

STRATEGIC AXIS 3: CRUISE TOURISM CONTRIBUTES TO DECREASING CARBON EMISSIONS AND ACOUSTIC POLLUTION IN MALAGA.

Objective 3.1 Increase the number of cruise passengers cycling to attractions.
Initiative 3.1.1 Port2City Cycling Connection.
Complement the existing bicycle infrastructure (lanes & parking) with safe connections to the port terminals and tourist areas.
Initiative 3.1.2 Extend the bike sharing system to cruise tourists
In order to increase cruise passengers using bikes when visiting the city, existing services for bicycle rental (both public and private) have to be reinforced.
Initiative 3.1.3 Improve signalling/priority/safety & awareness from citizens
Increase the use of bicycles by cruisers visiting the city, it is important to reinforce safety perception.
Indicator: <i>Increase the number of cruise passengers cycling to attractions.</i>
Data source: <i>Sharing system and rental bikes records, passenger and local police survey.</i>
Objective 3.2 Increase the use of low carbon motorized means from and into the port.
Initiative 3.2.1 Promoting the use of electric personal transporters
Promote rental and other sharing schemes of electric personal transporters (electric bicycles, kick scooters, self-balancing scooters, etc.), working in association with private companies offering this service...
Initiative 3.2.2 Promote the use of electric vehicles throughout the port
Design a mid-term plan to replace the port fleet with electric vehicles gradually, for both people and goods transportation and other services offered by the port...
Initiative 3.2.3 Foster the use of electric vehicles around city centre
A master program for the consolidation of electric mobility in Malaga, ratifying the pioneer actions adopted in the last decade. Setup incentives to foster the use of electric vehicles among residents, visitors and companies. Cars, scooters, bicycles, kick scooters and other innovative personal transporters included.
Indicator: <i>Increase the use of low carbon motorized means from and into the port</i>
Data source: <i>Records from rental services and cruise passengers' survey. Information regarding port operation should be provided by MalagaPort and Port authority.</i>

Conclusions

Finally, the LCTP of Malaga was aligned with greater strategies that are being carried on in the city. Specifically, these are the Sustainable Urban Mobility Plan (PMUS) and the Agenda 21 (A21). A set of indicators was identified in order to contribute from the LCTP to the achievement of the PMUS and the A-21 own objectives. The indicators were compared among three possible future scenarios:

- **Do-nothing scenario:** No changes are brought in by the project and, therefore, the current trends in economic, social and environmental terms continue to be the same.
- **Adequate scenario:** Minor positive changes are brought in by the project, responding to more sustainable behaviours, but still not very significant. The limited effect of actions targeting mostly port activities is also constrained by the partial achievement of goals.
- **Best possible scenario:** Significant changes brought in by the project, boost a behavioural change along the city, multiplying its effects and creating a positive trend with utter implications along the city.

From a learnt lessons perspective, the most advantageous task was the involvement of the citizenship and local stakeholders in order to improve the quality of the final product. Also, the effective coordination between *MalagaPort*, the local expert, and *Fundación CIRCE*, the technician expert, resulted in a LCTP tailored to the city expectative. On the other hand, the requirement of updated data was identified as crucial for the justification of the designed measures. This is, stablishing the expected impact that the LCTP will have in the future and identifying possible sources of investment to make it happen.

5.2.5 Trieste

Introduction

The Low Carbon Transport Plan for the city of Trieste is drafted within the LOCATIONS project, co-funded by the Interreg MED Programme.

The LOCATIONS project - Low Carbon Transport in Cruise Destination Cities - aims to support public administrations of MED cruise cities in defining Low Carbon Transport Plans (LCTPs) tackling the impact of cruise passengers on the city mobility, envisaging low carbon mobility options and measures.

The LCTP concerning the city of Trieste was elaborated by the Port Network Authority of the Eastern Adriatic Sea - Port of Trieste as LOCATIONS project partner with the support of the Municipality of Trieste with the role of Associated Partner in the project and of being the actor responsible for planning the city's mobility.

As far as the cruise-related facilities are concerned the cruise terminal of the city is located directly within the city centre, on the main square and near most of the city's touristic attractions.

On one side, this is positive, since cruise passengers wishing to visit the city can walk through it as they disembark. On the other side, such a central LOCATIONS impacts on the residents, since cruisers wishing to arrive to the terminal or departing from it for local excursions mainly use private vehicles and buses, respectively.

Main strategies and measures

Given this scenario, through *ad hoc* interviews with the competent stakeholders, the Port of Trieste has identified the following set of measures able to contribute to the specific goal of reducing the traffic congestion in the city centre and consequent environmental downsides caused by cruise passengers:

Action no. 1	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Analysis of the PT (train) options available for reaching Trieste	M1 - M12	Analysis on PT options to reach Trieste and the cruise terminal	number of cruise passengers using PT options	Port of Trieste	Port of Trieste	M12	Within LOCATIONS, the Port of Trieste will develop an analysis for PT options for cruisers as a technical report supporting the implementation of the LCTP

Action no. 2	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Bike sharing stations	M12 - M24	bike sharing stations available	bike sharing station	Municipality	Municipality	M24	The increase of bike sharing stations strategically located in the city and near the cruise terminal would provide additional LC mobility options for cruisers visiting the city. This action is already foreseen in the CIVITAS PORTIS project.

Action no. 3	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Study on dedicated public transport service between the train station and the cruise terminal	M12 - M24	study on dedicated PT services for cruise passengers	number of cruise passengers using PT options	Municipality	Municipality	M24	The cruise terminal is close to the train station (1 km). A study may analyse the potential for dedicated PT services between the train station and the cruise terminal, including financial viability

Action no. 4	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
APP for way finding (already foreseen in the CIVITAS PORTIS project)	M12 - M24	APP for way finding	number of downloads of the APP	Municipality	Municipality	M24	Way finding is a useful tool to guide tourists, providing information on the cultural heritage of the city as well as LC mobility options available to reach them

Action no. 5	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Webpage on the city portal with information for cruise passengers, suggesting LC transport options	M12 - M24	webpage on the city portal	number of visits to the webpage	Municipality	Municipality	M24	The city portal may be endowed with a page dedicated to cruise passengers, providing touristic and LC accessibility information

Conclusions

Finally, after the identification of these five measures, the Port of Trieste has followed a scenario-based approach that allows examining the potential impacts of the above-mentioned actions, providing three different scenarios for the city of Trieste in a systematic way.

For the specific purpose of the LCTP of the city of Trieste, three different scenarios were envisaged:

- **Business as usual (BAU):** none of the actions is implemented;
- **Likely:** only actions 1, 3, and 5 implemented;
- **Best:** All actions implemented.

The effective implementation of the measures is going to be deployed by the Municipality of Trieste with the identification of potential funding schemes and with the support of the Port of Trieste. The only action which is fully implemented by the Port of Trieste is the analysis on the railway capacity of the FVG Region, to be carried out with LOCATIONS funds.

5.2.6 Rijeka

Context analysis

The LCTP is based on LOCATIONS Project Operational model and the Capacity Building Manual and in accordance with main EU, national, regional and local plans, strategies and policies.

- **Current cruise-related flows features, trends, etc., in the city/port**

The port of Rijeka is a port of call. The number of cruisers and passengers is shown below.

Year	Cruise ships	
	No. of arrivals	No. of passengers
2015	7	9.082
2016	15	13.874
2017	16	15.000

At destination, cruiser is taking approximately 10 hours. According to that, about 35% of tourists stay on board. Tourists are offered with 3 to 7 trips, ranging from 2 to 164 kilometres, that last 4 to 7 hours and using 5 to 20 buses which are 16 to 50% full in capacity. For the tourists that remain in destination, a shuttle bus is organized (only Brajdica), starting at least every 30 minutes.

Moreover, tourists are using the following mean of transport in the city: the bus service 13%, 6% taxi service, 2% bicycle, 1% motorcycle, and 78% walking.

Municipal waste is transported by the vehicles with an absorbing capacity of 5 m³ at a distance of 17 km. Approximately 2-8 waste discharges are carry out. The oily waters are conveyed at a distance of 10 km, while all other waters at a distance of 1 km.

- **Cruise-sector mid- to long-term (5 to 10 years) development trends**

The forecast is given for a period of 10 years, for different scenarios as follows:

1. **Worst-case scenario** in which no measure from this Plan is anticipated to be implemented.
2. **The best possible scenario** in which all measures from this Plan are anticipated to be implemented in their best versions.
3. **The most probable scenario** in which all measures from this Plan are anticipated to be implemented but in their initial versions.

PASSENGER TRAFFIC

Year	Scenario 1		Scenario 2			Scenario 3			
	No. of passengers	Index	No. of calls	No. of passengers	Index	No. of calls	No. of passengers	Index	No. of calls
2018	15.000		16	15.000		16	15.000		16
2019	20.000	33%	20	20.000	33%	20	20.000	33%	20
2020	28.000	40%	27	28.000	40%	27	28.000	40%	27
2021	30.800	10%	28	30.800	10%	28	30.800	10%	28
2022	33.880	10%	30	35.420	15%	30	33.880	10%	30
2027	47.518	7%	46	71.242	15%	45	68.145	15%	34

Year	Scenario 1	Index	Scenario 2	Index	Scenario 3	Index
2017	1.113		1.113		1.113	
2018	1.157	4%	1.157	4%	1.157	4%
2019	1.203	4%	1.203	4%	1.203	4%
2020	1.251	4%	1.251	4%	1.251	4%
2021	1.302	4%	1.302	4%	1.302	4%
2022	1.354	4%	1.380	6%	1.354	4%
2027	1.647	4%	1.846	6%	1.811	6%

Beside the passenger traffic the following estimation was given:

- The average bus travel time from the passenger terminal to Road D404 and vice versa, expressed in minutes;
- The average number of shuttle bus rounds per one cruise ship call at Rijeka;
- The percentage of cruise ship calls per pier;
- The average number of waste disposal service rounds per one cruise ship call at Rijeka;
- The average number of oily water disposal service rounds per one cruise ship call at Rijeka;
- The average number of other water disposal service rounds per one cruise ship call at Rijeka;
- The median number of passengers per one call using electric scooters.

• Cruise berths and related infrastructure

BREAKWATER BERTH

- located 300 metres from the city centre;
- no need to arrange a shuttle service from the ship to the city centre.;
- the distance between the pier and the high speed Road D404 is 300 metres;
- depth 7,0 m.



Picture 1. Breakwater – transport flow

BERTH AT THE CONTAINER TERMINAL

The cruise berth on the container terminal is located 800 meters from the city centre and the shuttle service is organised to transport tourists to the city centre.



Picture 2 Brajdica Container Terminal

Positive characteristics of the container terminal:

- depth 11,2 - 14,2 m;
- operational pier length 623 m;
- direct access to Road D404.

Negative characteristics of the container terminal:

- the look of the pier;
- need for a shuttle bus;
- container ships have a priority

• Stakeholders' identification

Stakeholders	Stakeholder's importance in the project (low/high)	Stakeholder's influence on the project (low/high)
Port of Rijeka Authority	High	High
REA Kvarner	High	High
Rijeka Tourist Board	Low	High
Experts from the fields of mobility and transport: Rijeka promet d.d.	High	High
Public city carrier: Autotrolej d.o.o.	Low	Low
Utility company: Čistoća d.o.o.	Low	High
Bus operator: Autotrans d.o.o.	Low	Low
Taxi service	Low	Low
Tourist agencies: ID Riva Tours	Low	Low
Tourists	High	Low
Citizens	High	Low
Private companies: Dezinskcija d.o.o., IND-EKO d.o.o.	Low	Low

- **Participatory process design and implementation**

Methodology used	Who, when and how?	Results
Interview	An interview with Mr. Rajko Jurman, President of the Commission for the Development of Cruise Ship Tourism in Rijeka, was held in April 2017 at the premises of the Port of Rijeka Authority.	Based on the information and documentation obtained, a foundation for the development of the Plan context was laid.
“Face to face” meetings	This type of meeting was held with the following stakeholders: the Rijeka Tourist Board, tourist agency ID Riva Tours, utility company Čistoća d.o.o., private companies: Dezinsekcija d.o.o., IND-EKO d.o.o.	Based on the information received, detailed statistics for development of the Plan context were obtained.
Surveying	The survey of tourists was carried out personally on the ground, while the survey of citizens was carried out via a digital poll.	Detailed survey results are presented in the Plan context .
PAME	After each meeting with individual stakeholders, a meeting between the Port of Rijeka Authority and REA Kvarner.	Analysis of information and data obtained from various stakeholders presented in the Plan context .
Delphi method	This type of method was applied to transport and mobility specialists after the Plan context was defined.	Definition of goals and specific measures .
Scenarios	This type of method was applied to transport and mobility specialists in order to define a vision and different scenarios of the Plan.	Definition of the vision and different measure scenarios .

- **Definition of the current scenario**

The existing state and statistic of the passengers and goods flows related to cruise activity is detailed described in STEP 1, chapters 2 and 3.

- **Definition of vision and objectives**

VISION

As a new destination, Rijeka is aware of all negative impacts brought by the flow of tourists/goods related to cruise ships and looks into the future with the aspect of a sustainable way of developing the cruise ship tourism. A new berth is defined for cruise ships on the breakwater by the passenger terminal which will accept more than 90% of all cruise ships calling at this destination, and in a sustainable way transport all passengers to destinations all over the city, county and wider area. Sustainable way of transport is the lowest possible interaction of vehicles for transportation of passengers with the local traffic and promotion of cleaner, alternative types of transportation of cruise ship passengers/cargo.

GENERAL GOALS:

To reduce the pollution and accelerate the flow of vehicles used for the transport of passengers/goods connected to cruise ships in order to reduce the jams at the connection point between the breakwater and Road D404;

To promote alternative means of transport to the main destination attractions.

- **Definition of actions and indicators**

1). Increasing the capacity of cruise berth at the breakwater

This measure is a prerequisite for the implementation of all measures except M2. With the increase of the capacity of the breakwater pier, further development of cruising tourism in Rijeka will be ensured. By ensuring the acceptance of cruise ships at that LOCATIONS, multiple benefits are achieved:

- Use of the Brajdica Container Terminal as a pier for cruise ships is reduced,
- No interference with cargo traffic,
- Pier availability of 24 hours and reception of cruise ships at any time,
- Proximity of the city centre (walking distance),
- Attractive LOCATIONS (views of the whole city),
- Proximity of Road D404,
- Proximity of the passenger terminal.

There are two versions of implementation of this measure:

- a. Deepening of the pier on the inner side of the breakwater, which would enable the berthing of ships with a draught of 9 metres;
- b. Instalment of 'distancers' to keep the cruise ship away from the pier, which would enable the berthing of ships with a draught of 8 metres.

2). Introducing the CNG drive into the municipal waste trucks

The existing vehicles for collection of waste are diesel vehicles. With the introduction of the CNG drive in vehicles for collection of waste which service cruise ships as part of regular activities, **the emission of greenhouse gases will be reduced.**

A CNG filling station already exists and it is mostly used for supplying the public transport vehicles.

Procurement of one vehicle to be used for collecting waste from cruise ships is anticipated.

3). Removal of bottleneck between the breakwater and the road D 404

There are two versions of implementation of this measure:

- a. A road that involves a reconstruction of the existing (rotating) bridge and a construction of a bridge next to the existing one in order to allow two-way traffic. The road is anticipated to pass over the existing halls on Delta to the intersection on D404.
- b. A road that involves a reconstruction of the existing bridge with alternating traffic. The road is envisaged to further pass Grobnička riva to the existing intersection on D404.

4). Introducing the electro scooters with charging station

This measure envisages a point with electric scooters and a charging station at the passenger terminal as well as at other points in the city. The aim is to offer cruise ship passengers an option to use simple personal means of transport for two persons to distances within 10 km from the rental point. In this way, an adventurous dimension of the tour of the city and its surroundings is opened to passengers, while simultaneously using an ecologically acceptable means of transport without CO2 emissions, which contributes to a better overall traffic situation.

Two variants of implementation of this measure are anticipated:

- a. Variant with a fixed battery in the scooter and two charging stations with two connectors;
- b. Variant with a replaceable battery in the scooter with one charging station and a module for charging 30 batteries.

5). Traditional shuttle boat on hybrid drive

This measure involves the examination of the interest of potential concessionaires for introducing traditional shuttle boats for local transportation Breakwater - Adamić Pier or Karolina Riječka Pier, or for sightseeing tours of the city and the surrounding coastal area (Port of Rijeka – Kantrida – Volosko - Opatija). Such a boat would be powered by a hybrid or a steam engine.

The aim is to offer cruise ship passengers an alternative aspect of maritime traffic via a traditional boat used at the end of the 19th and beginning of the 20th century for the carriage of passengers.

6). Installing the informative panel board at the Port Passenger Terminal

Two variants of implementation of this measure are anticipated:

- a. Installation of one interactive information panel on the passenger terminal;
- b. Installation of three interactive information panels on Trsat, complex Benčić and on the passenger terminal.

- **Development of future scenarios**

MEASURE		SCENARIO 1	SCENARIO 2	SCENARIO 3
M1	a	x	✓	x
	b	x	x	✓
M2		x	✓	✓
M3	a	x	✓	✓
	b	x	✓	x
M4	a	x	✓	x
	b	x	x	✓
M5		x	✓	✓
M6	a	x	✓	✓
	b	x	✓	x

Monitoring and funding

Monitoring LCTP implementation

The implementation of the plan is defined in three parts:

1. Acceptance of the plan by the Port of Rijeka Authority;
2. Implementation of measures with the given timeframe. The Port of Rijeka Authority is responsible for the implementation of the Plan within the given time frame in coordination with key stakeholders who have supported the implementation of measures (support letter). This Plan proposes the coordinator is a person from the Port of Rijeka Authority responsible for the development of cruise ship tourism in Rijeka;
3. Monitoring and control of the implementation of measures. The monitoring and control of the implementation of measures and their results differs in this part. The body in charge of monitoring and controlling the implementation of measures is the Port of Rijeka Authority i.e. its management. Its main task is to monitor the work of the coordinator and support the implementation of measures.

Funding

MEASURE 1	INCREASE OF THE PIER CAPACITY FOR CRUISE SHIPS AT THE LOCATIONS BREAKWATER		
Activity	Design documentation	Building permits	Works
Amount (V1)	20.000,00 €	/	1.000.000,00 €
Amount (V2)	10.000,00 €	/	400.000,00 €
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority	Port of Rijeka Authority
Source of financing	Port of Rijeka Authority's resources	/	Port of Rijeka Authority's resources

MEASURE 2	INTRODUCTION OF THE CNG DRIVE IN WASTE DISPOSAL VEHICLES
Activity	Services of the introduction of CNG drive in waste disposal vehicles
Amount	65.000,00 €
Responsibility of	Čistoća d.o.o.
Source of financing	Čistoća d.o.o., Regional funds, IEE programme

MEASURE 3	ELIMINATION OF THE BOTTLENECK BETWEEN THE BREAKWATER AND ROAD D404		
Activity	Design documentation	Building permits	Works
Amount (V1)	20.000,00 €	/	850.000,00 €
Amount (V2)	8.000,00 €	/	160.000,00 €
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority	Port of Rijeka Authority
Source of financing	Port of Rijeka Authority's resources		Port of Rijeka Authority's resources

MEASURE 4	INTRODUCTION OF ELECTRIC SCOOTERS AND CHARGING STATIONS			
Activity	Concession tender	Installation of charging station	Procurement of electric scooters	Connection, arrangement of LOCATIONS
Amount (V1)	/	12.000,00 €	30.000,00 €	3.000,00 €
Amount (V2)	/	9.000,00 €	30.000,00 €	3.000,00 €
Responsibility of	Port of Rijeka Authority	Concessionaire	Concessionaire	Concessionaire
Source of financing	Port of Rijeka Authority's resources	Concessionaire, Regional/national funds, IEE programme	Concessionaire, Regional/national funds, IEE programme	Concessionaire, Regional/national funds, IEE programme

MEASURE 5	TRADITIONAL SHUTTLE BOAT	
Activity	Eol for concession	Production of the concession tender
Amount	/	/
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority
Source of financing	/	/

MEASURE 6	INFORMATION PANEL ON THE PASSENGER TERMINAL
Activity	Installation of the panel
Amount (V1)	6.600,00 €
Amount (V2)	19.800,00 €
Responsibility of	Port of Rijeka Authority, Grad Rijeka
Source of financing	Port of Rijeka Authority, Grad Rijeka

5.2.7 Zadar

Prepared by: City of Zadar (EU Funds Administration Department; Administrative Department for Spatial Planning and construction and Administration Department for Utility activities and protection of the Environment) and outer experts: for the implementation of EU projects - DRIOPE Ltd. and transport – assistant professor Dino Županović, PhD, and main involved Stakeholders.

Based on: LOCATIONS Project Operational model for Low Carbon Transport Plans for cruise destination cities; Capacity Building Manual and in reference of EU, national, regional and local framework of reference.

The current state of things:

With the construction of Zadar passenger port Gaženica with all the inner roads, terminal buildings and car lots conditions have been acquired for passenger and car embarking and disembarking according to the following capacities:

- 7 ferryboats on local lines length 50-150 meters in length;
- 2 ships of international navigation 150-200 meters in length;
- 3 ships on cruising trips 200-350 meters in length as well as the possibility of accommodating RO-RO ships on the same moles.

The data on the number of arrivals, passengers and crew members on cruise ships for the period from 2010 to 2018 are illustrated in the following table.

Number of arrivals, passengers and cruiser crew members in Zadar port in the period from 2010 to 2018

Year	Arrivals	Passengers	Crew members
2010.	80	17.157	11.224
2011.	72	28.667	20.176
2012.	57	20.958	11.171
2013.	69	33.647	15.024
2014.	77	53.791	20.247
2015.	92	70.366	30.513
2016.	114	136.462	53.400
2017.	105	140.000	55.000
2018.*	139	180.000	72.000
* projections according to announcements			

The port of Zadar is at a distance of approx. 3.5 km from the historical nucleus of the City of Zadar in southeastern direction. A fast road connects the port directly to highway A1 and the nearby airport as well as state road D8 connection with the City of Zadar and its city traffic network. There is also a railway track between the port and the city (there is no infrastructure for passenger reception in the port). It was closed to traffic in mid-2014 and it is foreseen for the route to be arranged as a new cycling trail tower the inner-city center. It is possible to reach the city on foot from the port following the attractive walkway by the sea or the sidewalk that follows the state road. The geospatial position of the port of Zadar is illustrated in Figure 1. There is a taxi and PT station the port area. The most frequent means of transport of cruising tourists between the terminal and the inner-city center are shuttle buses managed by concessionaires (the concession granted by Zadar Port Authority).

The geospatial position of the historical nucleus of the City of Zadar and the port of Zadar (terminal)



Weighted list of negative impacts linked to cruise-related flows

With the relocation of the sea port from the inner-city center of the City of Zadar to Gaženica Port, great relief of the city road network has been achieved whereby the main negative consequences have disappeared – congestions, the reduction in the number of vehicles entering the city area, particularly the inner-city which also resulted in a reduction of gas emission as well as noise level. Albeit to a much smaller extent, problems have, however, appeared in connection with the transport of cruising tourists between Gaženica Port and the inner-city center in terms of optimal route choice of shuttle buses, and primarily the LOCATIONS – terminal of passenger exchange (embarking / disembarking) in the inner-city center. The appearance of shuttle buses in the inner-city traffic undoubtedly influences the reduction of the level of service, and, as such, the increase in the congestion of the mentioned network. A list of negative influences of cruising tourism thus arises from the aforesaid:

1. Congestion of the road traffic network caused by shuttle buses entering the inner-city center
2. Congestion of the road traffic network caused by inadequate stopping of shuttle buses in the inner-city center area

Existing road network, transport services and infrastructure in the city/ port

The port of Zadar is connected with the inner-city center by the following modalities: public bus transport – PT, taxi, shuttle buses, pedestrian zone, while the introduction of bicycles is in process. Considering the specific and international character of cruising tourists (reception in the limited traffic zone), the most frequent form of their transport between the terminal and their destination is represented by shuttle buses managed by concessionaires (concession granted by the Zadar Port Authority). In leaving the international terminal, it has been made possible for cruising tourists to use all modalities but it is necessary to emphasize

that the city public transport timetable is not adapted to the arrival /departure of cruiser ships but completely subject to the timetable of local ferry lines connecting the nearby islands with Zadar. Due to this, shuttle buses represent the primary means of cruising tourist transport to the inner-city center. Taxi transport (located outside of the international terminal) is mostly used by the crew members due to the speed and easy accessibility to most destinations.

Vision: The main vision is to focus on establishing a sustainable transport system for the future between the Port and the City of Zadar based on synergic effects of three objectives: state-of-the-art analysis, decreasing shuttle bus/PT vehicle emissions, altogether making a plausible reduction of inner city traffic congestions, especially during the summer/tourist season.

Objectives:

4. Objective 1.- State-of-the-Art Analysis
5. Objective 2.- Decreasing shuttle/PT vehicle emissions
6. Objective 3 - Reducing inner city traffic congestions caused by shuttle/PT vehicles

Actions and indicators: The definition of actions and indicators within the LOCATIONS project fall under three main objectives: *State-of-the-art analysis, decreasing of shuttle/PT vehicle emissions and reducing inner-city traffic congestions caused by shuttle/PT vehicles.* The first objective was set to provide state-of-the-art system analysis based upon which the second objective with accompanying set of actions and indicators was set. The third objective was set as a logical result of the second objective's action implementation.

Definition of objectives, actions and indicators within LOCATIONS project

	Implementation (Month)	Output	Indicators
Objective 1 - State-of-the-Art Analysis			
<i>Action 1.1</i> State-Of-The-Art System Analysis	6-13	Acquiring data defining current process state	Nbr. Passengers and their transportation modalities
Objective 2 - Decreasing shuttle/PT vehicle emissions			
<i>Action 2.1</i> Shuttle bus capacity optimization	13-21 (24+)	Shuttle bus number optimization	Average number of passengers per shuttle bus
<i>Action 2.2</i> Defining primary and alternate shuttle bus routes	13-21	Travel time optimization between port and inner city center	Duration of travel times on designated travel routes
<i>Action 2.3</i> Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	13-21 (24+)	Proposal/ acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	Number of submitted legislative acts
<i>Action 2.4</i> Defining LOCATIONS for shuttle bus terminals	13-21	Defined LOCATIONS of shuttle bus terminals	Number of defined shuttle bus LOCATIONS

<i>Action 2.5</i> Defining new cycling/walking routed between port and inner city center	13-21 (24+)	Defining new cycling/walking routes	Length of newly introduced cycling/walking routes
Objective 3 - Reducing inner city traffic congestions caused by shuttle/PT vehicles			
<i>Action 3.1</i> Inner city center traffic congestion decrease	13-21 (24+)	City center traffic congestion decrease	Number of shuttle busses entering inner city

Future scenarios:

The “Do-nothing” scenario implicates retaining the current state of the system which is not probable as certain measures, LCTP measures at least, in the experimental mode have been implemented (provisory inner-city terminal).

The most probable scenario is based upon defining the shuttle bus terminal within the inner-city center and defining legislative regarding the allowed vehicle exhaust emissions within the inner-city center.

The best possible case of improvement of the existing state implies the implementation of multiple solutions of reducing exhaust emissions in the inner-city center and the wider area of the City of Zadar. The primary goal should be directed towards the construction of a shuttle terminal in the inner-city center of the City of Zadar aimed at reducing the negative influence of traffic congestions. The following activity implies the determining of the shuttle bus route between the port of Gaženica and the inner-city center of the City of Zadar, whereby it is important to determine the accurate route distribution (determine the primary and secondary routes) taking into consideration that it most often concerns convoys (platoon) of shuttle buses. It is important, at the same time, to monitor the full capacity of the shuttle bus during passenger/visitor boarding in the port of Gaženica, in order to achieve the optimal capacity of the shuttle bus, achieve the optimal quantity of emission gases according to mileage per transported passenger respectively.

With the goal of achieving maximum ecological acceptability, it is necessary for the City of Zadar to determine through legislature the limits – minimum value of emission gases (EURO norms) for vehicles trafficking in the City of Zadar area. It is additionally necessary to encourage the use of ecologically acceptable propulsion units in vehicles trafficking in the City of Zadar area, particularly in the port of Gaženica route – inner-city center in the form of hybrid (gasoline-electric) and / or gasoline units with LPG (liquid petroleum) installment. The best possible case is the use of only shuttle buses on electricity.

The following goal is the conversion of the existing railway route lines into cycling trails on the attractive and geographically suitable (flat) coastline area between the port of Gaženica and the inner-city center of the City of Zadar, as well as from the inner-city center towards the north-western parts of the city (Borik, Puntamika, Nin), with direct influence on the expansion of the Zadar City tourist offer contributing directly to its tourist attractiveness by paying particular attention to the rising trend of cycling tourism.

Review of implications regarding possible LCTP action(s)/scenario implementation

Objective 1 - State-of-the-Art Analysis			
Scenario	"Do-nothing"	Most probable	Best possible
<i>Action 1.1</i> State-Of-The-Art System Analysis	YES	YES	YES
Objective 2 - Decrease of shuttle/PT vehicle emissions			
<i>Action 2.1</i> Shuttle bus capacity optimization	NO	NO	YES
<i>Action 2.2</i> Defining primary and alternate shuttle bus routes	NO	NO	YES
<i>Action 2.3</i> Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	NO	YES	YES
<i>Action 2.4</i> Defining LOCATIONS for shuttle bus terminals	NO	YES	YES
<i>Action 2.5</i> Defining new cycling/walking routed between port and inner city center	NO	NO	YES
Objective 3 - Reducing inner city traffic congestions caused by shuttle/PT vehicles			
<i>Action 3.1</i> Inner city center traffic congestion decrease	NO	YES	YES

Cruise-sector mid- to long-term (5 to 10 years) development trends

Development trends on the number of cruise ship arrivals and their passengers in the port of Zadar have been drawn up during 2015 and 2016 and have shown to be correct for they followed the real trend of their number. A detailed overview is illustrated in Table 3 where it is visible that continuous increase of cruiser calls is expected in the port of Zadar, and in line with this and increase in the number of passengers. In comparison with year 2018, an increase of 22.25% is foreseen by 2020, 36.78% between 2020 and 2025 after which the trend foresees a decreasing percentage in the number of passengers to 17.97% by 2030, and 15.48% by 2035.

Forecast in the number of cruise ship and passenger arrivals in the period from 2018-2035

	Cruise traffic			Number of calls			
	Total	Pax transit	home port	Total	large	medium	small
2018	169 421	144 741	24 680	289	23	57	210
2020	217 907	179 697	38 210	350	30	72	249
2025	344 690	279 920	64 770	532	52	103	377
2030	420 215	335 681	84 534	634	69	112	452
2035	497 181	389 146	108 035	729	88	118	524

Monitoring LCTP implementation:

The foreseen monitoring and implementation of defined objectives, actions and indicators belongs solely to the City of Zadar regarding its jurisdiction. The presentation and detailed overview of the monitoring and funding process is available in Table 5.

Monitoring and funding process overview

City of Zadar = COZ	Start-End (Month)	Amount Source	Costs Classification					
			Staff	Description	External Expertise	Description	Investments	Description
Activity 1.1 State-Of-The-Art System Analysis	6-13	-	City of Zadar, Zadar Port Authority, Terra Travel, DZ	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by LOCATIONS and COZ
Activity 2.1 Shuttle bus capacity optimization	13-21 (24+)	-	City of Zadar, Shuttle bus concessionaires, DZ	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by LOCATIONS and COZ
Activity 2.2 Defining primary and alternate shuttle bus routes	13-21	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.3 Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	13-21 (24+)	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.4 Defining shuttle bus terminal LOCATIONS	13-21	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.5 Defining new cycling/walking routed between port and inner city center	13-21 (24+)	-	City of Zadar, Zadar Tourist Board	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ, LOCATIONS and other/future EU projects
Activity 3.1 Inner city center traffic congestion decrease	13-21 (24+)	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ, LOCATIONS and other/future EU projects

* The term "Not needed" is referring that all planned actions represent "soft" measures whose planned implementation is through the City of Zadar departments and will not require additional funding.

Funding

Since the planned “soft” measures within the LOCATIONS project should at a certain point of time lead to the implementation of “hard” measures in order to improve the overall system usability, planned funding for implementation of such measures is through the following institutions and projects:

- City of Zadar
- City of Zadar participating EU projects
- EU projects: ITU; CB-GREEN; Urban Green Belts; MOBILITAS; IRENE; OptiTrans; LivingStreets; CHESTNUT
- Future EU Projects
- Zadar Port Authority
- National funding (OP Competitiveness and cohesion)

Regarding the varying complexity and combinations of possible implementations (i.e. e-buses and charging infrastructure), costs could vary in-between 1,000,000.00 EUR to several million EUR regarding the number of e-buses purchased and not counting possible subsidies for concessionaires operating shuttle bus lines between the Port of Zadar and the inner-city center to support them in the acquisition of zero-emitting shuttle buses.

6. Transfer Package

6.1 Operational Guidelines

The operational guidelines are included in the Operational Model, which is a description of the methodology, subsequent stages and a protocol for participatory processes.

6.2 Capacity Building Manual

The Capacity Building Manual is developed to support the joint transnational capacity building, provides partners and interested parties with a more detailed, hands-on approach to the operational model and know-how for its implementation with practical tutorials held by experts in specific fields (data gathering and processing, setting goals and choosing indicators, drafting scenarios, organizing participatory processes, etc.).

6.3 LOCATIONS' 7 LCTPs

Definitive Low Carbon Transport Plans for cruise related cities are presented, including objectives, actions, indicators and financing solutions for the seven territories participating in the project. Most LCTPs are available in national language, and a summary in English is available in this document:

• <i>Ravenna (It)</i>	• <i>Lisbon (Pt)</i>
• <i>Durres (Al)</i>	• <i>Trieste (It)</i>
• <i>Rijeka (Cr)</i>	• <i>Zadar (Cr)</i>
• <i>Málaga (Sp)</i>	

All LCTPs have been revised and evaluation through an exhaustive process of peer review conducted by the projects partners, so as to guarantee the quality, usefulness and reliability standards of the documents.

6.4 Modular Packages (14)

The 14 modular packages, essence of the produced LCTPs, perform the function of bricks for prospective LCTPs to be produced in the capitalizing and in future operations. They present individual actions, ready to be replicated, with all relevant data and processes required to its implementation. The modular packages are individual parts of a general solution based on the seven cities experiences, conforming different solutions which can be individually or jointly applied to other cities. Using them a city can build up its own LCTP by selecting, adapting and implementing the most appropriate actions to their local context. In this sense, the modular packages represent the specific solutions applicable to the needs and requirements of different local contexts, framed within a general promotion of sustainable urban mobility and low carbon economies.

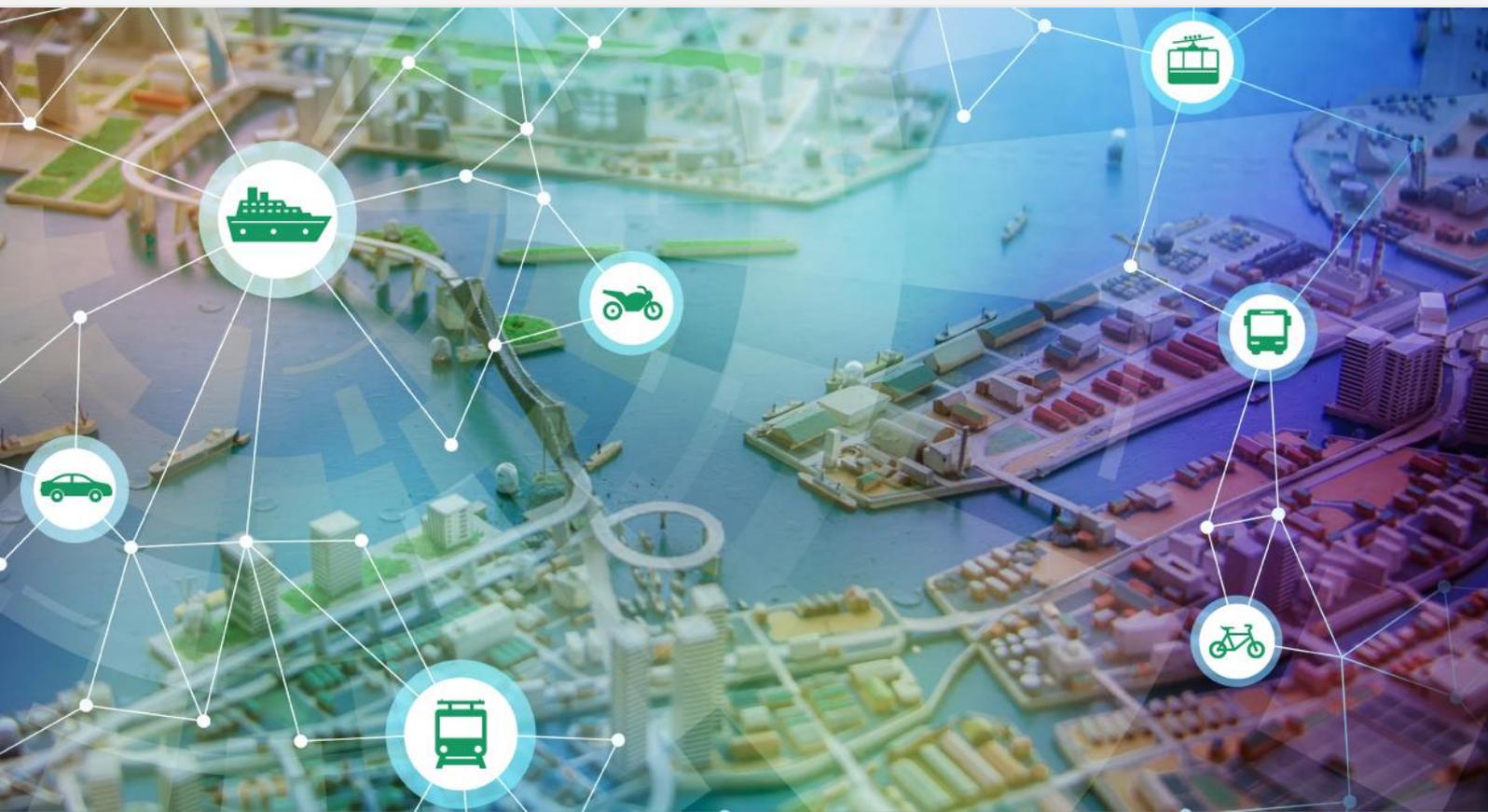
6.5 Replication Guidelines Detail index

<i>Detailed description of topics</i>	Operational Guidelines	Capacity Building Manual	7 local LCTPs	14 Modular Packages
Low Carbon Transport Plans		Pg.3		
• Description		Pg.3		
• Objectives		Pg.3		
Replication Guidelines	Pg.3	Pg.4		
• Approach, main principles and areas of work	Pg.3			
• Methodology and Steps to Follow	Pg.5	Pg.4		
→ LCTP definition, scope and principles	Pg.5			
→ LCTP Development Methodology	Pg.7			
• Participants to get onboard		Pg.7		
• Milestones & Indicators		Pg.22		
• Funding, Resources & Tools	Pg.8	Pg.26		
→ Funding	Pg.9	Pg.26		
→ Resources & Tools	Pg.9	Pg.28		
Capitalization and Participation Strategy		Pg.10		
Participatory Process		Pg.10		
• Active Involvement of Key Partners		Pg.11		
Low Carbon Transport Plans			ANNEX 1	
Ravenna (It)			Annex 1.1	
Durres (Al)			Annex 1.2	
Rijeka (Cr)			Annex 1.3	
Málaga (Sp)			Annex 1.4	
Lisbon (Pt)			Annex 1.5	
Trieste (It)			Annex 1.6	
Zadar (Cr)			Annex 1.7	
Modular Packages				ANNEX 2
MP1 - Electric mobility for cruise destinations				Annex 2.1
MP2 - Sharing mobility solutions for cruise destinations				Annex 2.2
MP3 - CNG and LNG solutions for cruise destinations				Annex 2.3
MP4 - Low carbon water transport				Annex 2.4
MP5 - Improving port accessibility				Annex 2.5
MP6 - Traffic and bus flow management in cruise destination				Annex 2.6

<i>MP7 - Sustainable options for people with reduced mobility</i>				<i>Annex 2.7</i>
<i>MP8 - Fostering passenger intermodality</i>				<i>Annex 2.8</i>
<i>MP9 - Integrated tourist card</i>				<i>Annex 2.9</i>
<i>MP10 - Improving walking route offer for cruise passengers</i>				<i>Annex 2.10</i>
<i>MP11 - Improving cycling route offers for cruise passengers</i>				<i>Annex 2.11</i>
<i>MP12 - Low emissions zones, Congestion charge schemes</i>				<i>Annex 2.12</i>
<i>MP13 - Improving parking management</i>				<i>Annex 2.13</i>
<i>MP14 - ICT solutions and wayfinding systems for cruise passengers</i>				<i>Annex 2.14</i>



Annex 1.
Low Carbon Transport Plans



Report on Ravenna LCTP final draft

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

WP3 - Testing

Activity 3.5 Mid-way stock-take

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1. Introduction

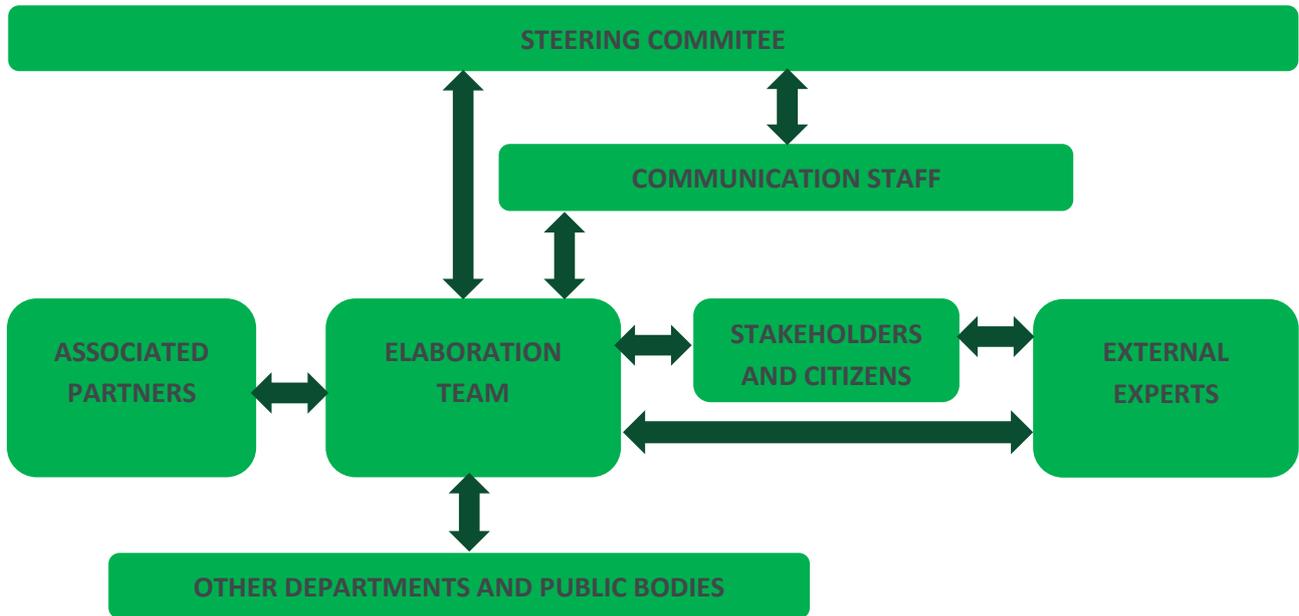
The cruise terminal is located at Porto Corsini, and was inaugurated in 2011. To date, it includes 2 landing docks able to accommodate ships up to 330 m, although the terminal is still under development.

The main tourist attractions of the city of Ravenna are its 8 UNESCO monuments, 7 of which are located in the historic centre, or its immediate vicinity.

Porto Corsini is a hamlet with 1517 inhabitants. It is located about 15 km from the historic centre of Ravenna and is crossed by three main streets. In addition to traffic related to cruise passengers' flows, Porto Corsini is affected by seasonal flows due to the presence of an equipped camper area and beach resorts that attract tourists on a daily basis. The village is also in the immediate vicinity of several naturalistic areas included in the Po Delta area that is a Regional Natural Park.

2. Low Carbon Transport Plan

2.0 Step 0: Work plan and team



► WORK TEAM

The work team involved in the development of the LCTP included several people with different positions and responsibilities. The diagram above represents the different groups that had supported the elaboration of LCTP and the relationship between them.

Steering Committee | It includes both a technical and political part and it took strategic decisions

Elaboration Team | they are in charge of the elaboration of the Plan, including collection and analysis of data. They are the core team, since all other groups relate with them and they report directly to the Steering Committee

Stakeholders and citizens | they are the players that hold any kind of interest to the LCTP

External Experts | two external experts had been identified to support the elaboration of the LCTP.

Associate partners | Ravenna Port Authority and Emilia Romagna Region, have been involved in the elaboration of the Plan

Other Department and Public Bodies | Several Departments of the Municipality and other Public Bodies that must give permissions in the implementation phase have been involved in the design of the LCTP.

Communication Department | they have worked with the elaboration team in the definition of the communication strategy

► WORK PLAN

	SEMESTERS						YEARS									
	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10
Collection and analysis of data																
Design of participatory process																
Implementation of participatory process																
Elaboration of first draft of the Plan																
Elaboration of final Plan proposal																
Approval of LCTP																
Implementation of strategy 1 - improving tourist accessibility to points of interest in the proximity of the terminal																
Implementation of strategy 2 - improving urban quality in Porto Corsini																
Implementation of strategy 3 - improving the environmental quality of connections between the cruise terminal and the city																

DEVIATIONS / POSSIBLE DEVIATIONS

The main deviations we faced during the elaboration of the Plan concerned the participatory process and the collection of data. Indeed, it was not possible to collect all data about cruise passengers' mobility during the first semester as foreseen in the original work plan, mainly because data belong to stakeholders that could not participate in the first phase of our participatory process. For example, due to some organizational changes, we could not meet the company that manages the cruise terminal before the end of the second semester of 2017. Moreover some stakeholders, as the Po Delta Park Authority, the State Forestry Corps and the Superintendence, were contacted involved only when the first ideas were drafted in order to obtain suggestions and opinions in relation to specific actions that required their suggestions and the issue of opinions. Some possible deviations may occur even in the implementation phase, since administrative procedures related to road works and public procurements might cause some delay.

2.1 Step 1: Initial assessment

2.1.1 Context analysis

1. EU, national, regional and local framework of reference.

► EUROPEAN REGULATORY FRAMEWORK

In 2016, the European Commission adopted a low-emission mobility strategy. By 2050, the emissions of greenhouse gases produced by the transport sector will have to drop by at least 60% compared to 1900. The city of Ravenna fully shares the EU's urban mobility policies also by joining the CIVITAS network.

► SUMP REGULATORY FRAMEWORK

The *Low Carbon Transport Plan* is the first implementation of the SUMP. National guidelines for Sustainable Mobility Urban Plans, which refers to ELTIS Guidelines approved in 2014 and already adopted by the Municipality of Ravenna, have been published in 2017. The national guidelines have been developed by a working group where the Municipality of Ravenna were also involved. The Municipality is currently engaged in the SUMP-adoption phase.

► CITY PLANNING

The City Plan in force was approved on 2007 when the cruise passenger terminal had not yet been completed. The Plan provides for the construction of a golf facility about 8 km from cruise terminal and a cycle route that connects the town of Porto Corsini with one of the main industrial area of the city. The SUMP now being adopted envisages the completion of bike trails between Porto Corsini and the centre of Ravenna. This cycle connection has been included as part of a national bike network.

► PORT PLANNING

The 2007 Port Plan includes the **realization of the current specialized cruise dock**. The latest Triennial Operating Plan define a strategic programme, including LOCATIONS as part of the actions that Port Authority is implementing to define a road map for the sustainable development of the Port. A Global Project – ‘Hub Development Plan of Ravenna’ – was developed and aims at maximising the port’s capacity, at pace with the evolution of maritime traffic, through infrastructure development. Interventions are then required to guarantee all necessary conditions (e.g. space, water depth, facilities, access and connections) to handle larger vessels and higher traffic volumes, even for cruise tourism. Moreover, Port Authority is preparing a project for a new harbour front in Porto Corsini. The project includes the creation of parking stalls for buses and vehicles and the construction of equipped green areas. The Municipality of Ravenna will collaborate with Port Authority for a project development consistent with LCTP goals.

► DOCK DEVELOPMENT - SQUARE ON THE CITY SEA

The Municipality of Ravenna has developed a project, already financed, aimed at constituting a single territorial system from city to sea. The project consists of 12 interventions, 3 of which could have a strong influence on the transfer of cruise passengers:

- the construction of a floating jetty without architectural barriers,
- the purchase of a hybrid boat for passenger transport to and from the coast line,
- the extension of the current station underpass with ascent near the floating jetty

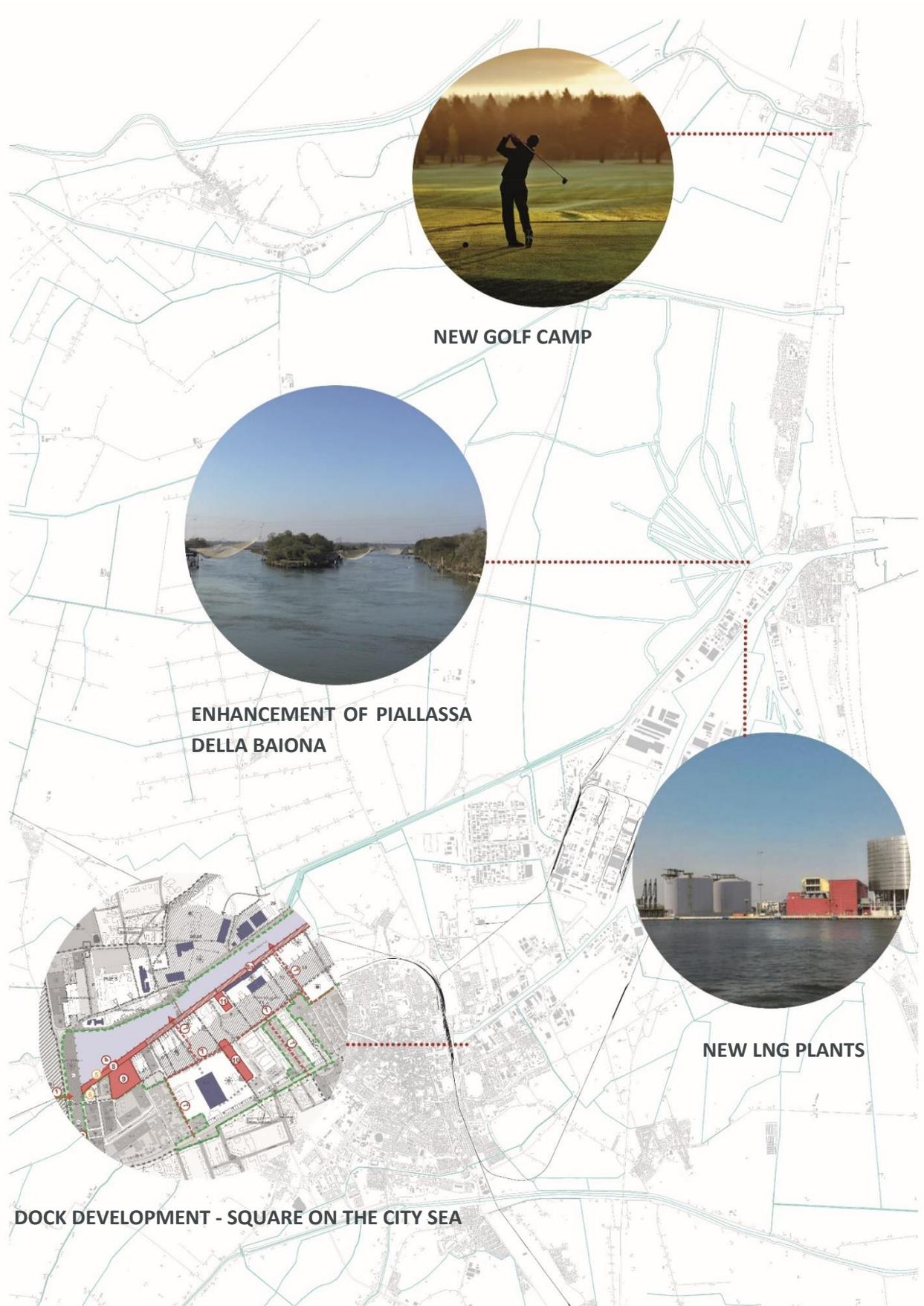
The realization of these works opens a scenario in which at least a part of cruise passengers could arrive in Ravenna through the Candiano canal with low-environmental impact vehicles, thus reducing the pressure on vehicular traffic, particularly in the town of Porto Corsini.

► THE LNG PROJECT IN RAVENNA

Società Petrolifera Italo Rumena S.p.A. (PIR S.p.A.) intends to create a deposit for the reception and storage of Liquefied Natural Gas (LNG) within the industrial area of the port of Ravenna, in the town of Porto Corsini. The development of LNG plants could have a positive impact on the environmental aftereffect of cruise traffic.

► AGREEMENT FOR THE ENHANCEMENT OF PIALASSA DELLA BAIONA

In August 2017, a Memorandum of Understanding was signed in order to enhance Pialassa Baiona, a natural area located near the cruise terminal, fielding resources for a value of over 5 million EUR.



NEW GOLF CAMP

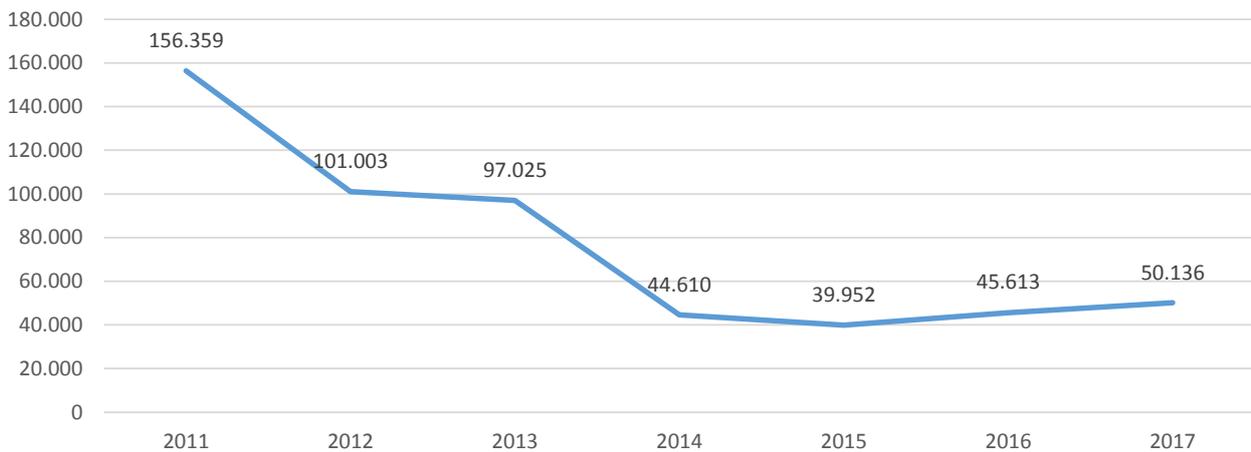
ENHANCEMENT OF PIALLISSA DELLA BAIONA

NEW LNG PLANTS

DOCK DEVELOPMENT - SQUARE ON THE CITY SEA

2. Current cruise-related flows features, trends, etc., in the city

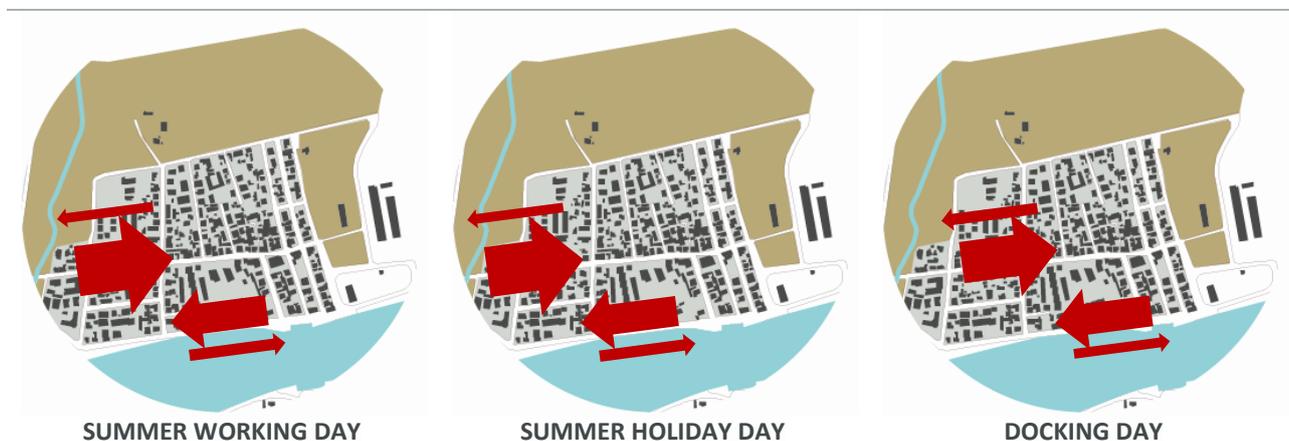
In recent years, the port of Ravenna has been considered a transit port, mainly providing for ships in transit. Data show that in 2011 passengers exceeded 150,000 units in a year; in 2014, numbers decreased by more than half, even though the last two years showed a slight improvement. Many causes are attributable to this decline and are part of a global picture of economic crisis that affected all cruise ports. In recent years, there has been a slight recovery in passenger numbers. The traffic linked to the supply of goods for cruise ships is negligible.



Details about the destination of shore excursion are not available. Nevertheless, Port Authority confirms that the majority of cruise passengers not staying on board visit Ravenna city centre.

► INDUCED TRAFFIC IN PORTO CORSINI

Since opening the terminal, several traffic flow detection campaigns have been conducted in Porto Corsini. Data show that vehicular traffic flows in Porto Corsini are subject to seasonal variation that causes a sharp increase in daily traffic in the summer season. Flows generated by cruise tourism are to be considered within this framework and they do not increase the volume of traffic compared to an average working day significantly according to data collected in 2017. The substantial change concerns the flows of heavy vehicles that record a net increase on docking days.



Total traffic flows: red arrows represent the total number of vehicles per each direction



HGV traffic flows: blue arrows represent the number of HGVs per each direction



The map shows bus routes connecting the cruise terminal and the city center. Outbound and return routes are slightly different. The journey is about 13 km long and it takes about 25 min, considering a commercial speed of 30 km/h. Busses going out of Ravenna follow in part the same route of the busses headed to the city center.

3. Cruise-sector mid- to long-term (5 to 10 years) development trends

The growth trends of cruise passengers' flows in Ravenna are not currently available and are unlikely to be made available, since they are commercial data of particular interest to industrial stakeholders. The Port Authority made huge investments to build a cruise dock in Porto Corsini and in order to make these investments profitable they hope to reach in the long term 200,000 passengers per year. Further studies are not available and estimations might be not reliable due to high fluctuation of political and economic global and local situation that has high influence in development trends especially for cruise tourism. Nevertheless, Municipal Administration and the Port Authority are working to make the Ravenna cruise port the home-port of choice by ship owners, connecting the cruise terminal with the Marconi airport in Bologna, one of the main airport of Northern Italy.

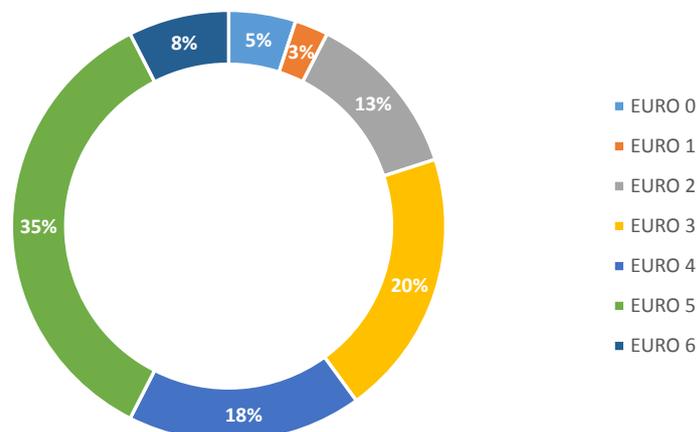
4. Current cruise-related mobility and transport management policies and public & private initiatives addressing the existing flows.

► RAVENNA TERMINAL PASSEGGERI (RTP)

In 2009, the concession of the management of the maritime and boarding/deboarding and transit passenger services was awarded to RTP S.r.l. until 2019. Recently, the majority of the Company's shares were acquired by Global Ports Holding.

► TRANSPORT OPERATORS CONSORTIUM

In November 2001, the main transport operators of the province of Ravenna set up the METE consortium. The company is the main operator engaged in transport operations for cruise passengers. To date, just over 20% of buses belong to a category equal to or lower than EURO 2.



► OTHER EUROPEAN PROJECTS

The passenger terminal area has been the subject of 3 European projects: "Adrimob", Adriatic Multimodal System and EA SEA-WAY, "Europe-Adriatic SEA WAY". In the first half of 2018, Project MOSES began as capitalization of EA SEA-WAY. The project aims to improve passenger mobility in the Adriatic area.

► CURRENT POSSIBILITIES AND CONSTRAINTS FOR NEW CONNECTIONS

A focus is needed to clarify the main constraints that hinder, at least in the short term, new connections by sea or the construction of new infrastructures. In the collective imagination of many Ravenna citizens, there is the idea of sea cruisers landing in the city Dock, a space abutting the historic center that could partially solve the problem of the cruise passengers' transfer from Porto Corsini to Ravenna. Keeping in mind that the depth of seabeds would not allow the arrival of cruises up to the Dock head, this solution would be feasible with fast motorboats for transporting passengers from Porto Corsini to Ravenna, along the Candiano canal. At the moment, the absence of direct connection between the Dock - the point of arrival of ships - and the historical center due to the presence of the railway line is a critical issue that cannot be neglected. The aspect of the feasibility of the maritime connection should also be considered. According to the "Regulations for navigation, parking, transit and right of way of ships and boats in the port of Ravenna", the maximum speed allowed in the Candiano canal is 6 knots, about 11 km per hour. At present, navigation from the cruise terminal pier to the city dock would take more than 60 minutes. Moreover, boats must give priority to all commercial ships, pursuant to Art. 25 of the Regulations. At present, it is therefore considered difficult to implement these new connections right away, but it is undeniable that in the medium and long term period they could be part of the solution to the problem of traffic congestion in Porto Corsini.

Another possibility that is proposed as an answer to the reduction of vehicular traffic linked to the transfer of cruise passengers concerns the construction of a new infrastructure specifically dedicated to the terminal to connect it directly with the main access route to Ravenna. However, this solution involves crossing the SIC IT4070005 area "Pinewoods (Pineta) of Casalborsetti, Pineta Staggioni, Duna di Porto Corsini". The pine forest is part of the Natura 2000 sites, where interventions, activities and works that may compromise the protection of protected natural environments are forbidden, with particular regard to flora, fauna and habitats of EU interest protected under Directives n. 92/43/EEC.

5. Weighted list of negative impacts linked to cruise-related flows

The main externalities caused by cruise passengers' mobility are the following ones:

- Congestion of tourist buses in Porto Corsini
- Concentration of cruise passengers in the 8 UNESCO monuments
- Conflicting situation in public transport system between daily users and cruise passengers

Moreover, other problems affecting cruise tourism have been evaluated by stakeholders and can be summarized into the following key themes:

- absence of an official coordination table for cruise tourism stakeholders;
- lack of services in the passenger terminal;
- low development of bike trails at the service of cruise passengers;
- problem of accessibility for people with reduced mobility.

6. Existing road network, transport services and infrastructure in the city/ port

A tourist accessibility platform specifically dedicated to buses carrying cruise passengers has been set up in the historical centre of Ravenna, near the station, in order to facilitate access to the historic centre. Cruise passengers use the following means to reach the historical centre of Ravenna:

1. Shuttle service managed by tour operators aboard ships
2. Excursion with tourist guide managed by tour operators aboard ships
3. Local public transport

2.1.2 SWOT analysis

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Project partnership • Integration of LCTP in Ravenna SUMP • The development of Ravenna Cruise Terminal has been treated by other European projects • Due to the small dimension of Porto Corsini – a little more than 1500 inhabitants – it is possible to customize actions and mitigations. • Shuttle busses from the cruise terminal have a special bus stop in the city center • 8 UNESCO monuments as important tourist attractions 	<p>WEAKNESS</p> <ul style="list-style-type: none"> • Few facilities at the Cruise Terminal • Distance between the Cruise Terminal, in Porto Corsini, and the historic center of Ravenna (20-25 min. by bus) • Poor development of cycle infrastructure and related facilities oriented to cruisers • Limited extension of Porto Corsini road network • The presence of various seasonal tourism attractions in Porto Corsini – each one with its own related traffic – increase the citizens' discomfort • Ravenna is a commercial port: the evocative idea of using the Candiano Canal to reach the city dock and, from there, the city center present some relevant difficulties • The cruise terminal and the city center are separated by the main industrial area of the Municipality (chemical, petrochemical, metallurgical industries)
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • The development of a golf course in the near center of Casalborsetti (Municipality of Ravenna) is foreseen by the master plan • It is possible to reach the beaches on foot from the cruise terminal • Naturalistic attractions close to the cruise terminal • Development of a LNG storage and distribution network in the port of Ravenna • Industrial research project to powered with GNL the Porto Corsini –Marina di Ravenna ferry • Financing of the city dock area • New maritime connection in the medium term between cruise terminal and city center 	<p>THREATS</p> <ul style="list-style-type: none"> • Fluctuating flow of cruise passengers in Ravenna • Public Administration and Port Authority haven't any possibility to act on the itineraries chosen by the cruise companies • A relevant part of cruisers is not environmental-friendly • The tourism flow generated by cruises is not enough to justify new dedicated infrastructures • It is difficult to realize new roads near the terminal due to its proximity to a naturalistic protected area (pinewood)

2.2 Step 2: Participatory process

1. Stakeholders identification

The process of stakeholders identification began from the work done during the kick-off meeting and was integrated during the first phase of the participatory process. Based on our meetings, a stakeholder “interest vs. power” matrix was developed for classifying their relevance in the development of the Plan.

POWER	HIGH	Emilia Romagna Region Stakeholder representative associations (crafts and trades) Heritage Agency Delta Po Natural Park Agency Ranger	Tour operators Ravenna Port Authority Ravenna Passengers Terminal
	LOW	Province of Ravenna Cruisers	Environment protection associations Cycling associations Tourist guides Transport operators Beach resorts operators Local Committee for the Seaside Area and Local Development of Porto Corsini
		LOW	HIGH
INTEREST			

Cruise lines were not contacted directly since they interact directly only with Ravenna Passenger Terminal company and cruise tour operators, that are in charge of the mobility of cruise passengers when they are not on board of cruise ships.

Given the plurality and diversification of players involved, it became necessary to structure the participatory process at different times, involving specific stakeholders in a different way. Among those identified, we can distinguish two types of actors:

1. Institutional or representative stakeholders representing an institution or group of people who are interested in the mobility of cruise passengers
2. Individual subjects who are directly affected by the Plan, namely, cruise passengers and citizens of Ravenna.

2. Participatory process design and implementation

The participatory path has been structured in two phases.

► STEP 1 PARTICIPATORY PROCESS WITH REPRESENTATIVE STAKEHOLDERS

Representative stakeholders have been involved in three different moments:

- I. A first phase of analysis, during which **focus groups** or **face-to-face meetings** were held in order to collect **critical issues** regarding the transfer of cruise passengers.
- II. In the second phase, actors were gathered according to power/interest matrix; a first group of stakeholders were invited to assign a **priority** to a set of actions and objectives that had been formulated in the analysis phase. Results of this voting process was presented in a subsequent interview with high-power/high-interest actors, outlining operational hypotheses required to put in place high-priority actions.
- III. After drawing up an LCTP draft, stakeholders were once again involved in a single meeting to gather any observations and further opportunities for developing the Plan.

► STEP 2 – PARTICIPATORY PROCESS WITH SINGLE SUBJECTS

Another phase of the participatory process included the direct participation of individual subjects. Cruise passengers and citizens of Porto Corsini were involved in this process.

As end users, cruise passengers were interviewed during the last 2017 docking in Ravenna. The citizens of Porto Corsini, as people more directly interested in the effects of the mobility of cruise passengers, were directly involved in a specific participatory process. A claim and a dedicated logo were created.

Comune di Ravenna

PUMS

Interreg Mediterranean

LOCATIONS

ASSEMBLEA PUBBLICA

lunedì 11 dicembre 2017 - ore 20,00
sede Pro Loco | via Po, 29 Porto Corsini (RA)

Parteci Porto

quale rotta per la mobilità

vieni a dire la tua, a segnalare criticità, a portare idee

The activities related to the participatory process with the citizens of Porto Corsini took place at different times:

1. an initial meeting structured as a “group interview” to so-called “opinion leaders
2. a public meeting open to all interested parties, during which the local population was informed of the objectives of the LCTP and, critical issues had been collected through the “geotagging” technique. Moreover, some initial roadmap proposals were collected,
3. the publication of an on-line questionnaire addressed to the Porto Corsini residents,
4. a public meeting focused on the measures that can be implemented in Porto Corsini and on the comparison between the different possibilities and implications
5. a final meeting in which the Plan proposal was submitted to residents.

3. Results of the participatory process

▶ PARTICIPATORY PROCESS WITH REPRESENTATIVE STAKEHOLDERS

The analysis of the critical issues that emerged from the stakeholders during the focus groups is reported in detail in paragraph “List of negative impacts linked to cruise flows”. A system of different priorities for the actions and strategies of the Plan, depending on the type of stakeholder considered, has emerged during the identification of solutions. What all the representative stakeholders consider as priority is the enhancement of local tourism offer in order to increase the positive impact of cruise tourism in the area, and the reduction of the length of routes to reach the excursion destinations, thus encouraging the use of sustainable mobility (bike and feet).

▶ PARTICIPATORY PROCESS WITH SINGLE SUBJECTS

During the process, citizens identified two most relevant issues: the improvement of routes and safety for pedestrians and bicycles. Most of citizens confirmed their consensus on improvement of the quality of public space, reduction of vehicle speed and mitigation of impacts related to the transit of cruise passengers' buses. The improvement of the cruise terminal area and of public transport stops are considered important and a large part of public opinion. The participation to the Public Assemblies was good: about 30 people joined the meetings and moreover were proactive showing interests in the project and proposing solutions for a better and sustainable mobility.

Concerning cruise passengers, in general, the assessment of the quality of the transfer is perceived positively, as the level of accessibility is considered good enough even among people with reduced mobility. The main reported problems are about the absence of public toilets at the tourist platform where they get off the coaches.

2.3 Step 3: Design of the plan

To achieve the general objectives that the Municipality of Ravenna is pursuing within the framework of the LCTP, 3 strategies have been defined and shared with stakeholders. Each strategy includes different actions.

1. Definition of the current scenario

Based on the information reported in the previous chapters, the current scenario of the mobility of cruise passengers on the ground is summarized here:

- about 50,000 cruise passengers per year;
- the bus is the only mode of transport available to cruise passengers;
- 40% of buses belong to a category equal to or better than EURO 3;
- during disembarkation days, there is a 45% increase in heavy traffic at Porto Corsini;
- Cruise passengers with reduced mobility have difficulties in moving about the municipal territory.

The most urgent problems of the current scenario are the following:

- Porto Corsini residents have to reckon with a considerable increase in heavy traffic during the disembarkation days;
- Porto Corsini residents perceive only the negative impacts of cruise tourism;
- stakeholders report the poor enhancement of tourist attractions near the cruise terminal;

2. Definition of vision and objectives

► VISION

The Municipality of Ravenna aims to become one of the reference destinations for the sustainable mobility of cruise passengers in the Mediterranean area. Specifically, the City aims to excel in the issue of accessibility to ensure everyone the opportunity to move in a sustainable manner in the port and in Ravenna with the least possible number of architectural barriers. We decided to develop a Plan that includes feasible actions, trying to overcome scepticism of citizens and stakeholders that in previous year were shown high-cost projects that were never realized. LCTP is a Plan integrated with other territorial and urban plans already approved (or being-approved) by the Municipality or other Public Bodies. For this reason, actions included in LCTP do not need to get special permissions (as Environmental Impact Assessment or other authorization) with long and complicated process and not certain results.

► DETAILED OBJECTIVES

According to this vision, three detailed objectives have been identified

1. Increase the number of cruise passengers (even those ones with reduced mobility) who visit with a sustainable mode of transport the point of interest near cruise terminal
2. Mitigate negative effects derived from cruise passengers' mobility in Porto Corsini, the place most affected by cruise traffic externalities.
3. Increment low carbon transport solution for cruise passengers (even those ones with reduced mobility)

For each objective a strategy has been developed. Strategies and actions are illustrated in the next paragraphs.

3. Definition of actions and indicators

STRATEGY 1 | IMPROVING TOURIST ACCESSIBILITY TO POINTS OF INTEREST IN THE PROXIMITY OF THE TERMINAL

Description

The improvement of the local tourist offer, especially referred to the naturalistic areas near the terminal tend to decrease distances travelled by cruise passengers on land with the double effect of reducing emissions produced by road trips and incentivizing more sustainable modes of transports, such as cycling, as these destinations become more attractive to cruise passengers.

Actions

1.1 Improvement of accessibility to points of interest near the cruise terminal

This measure envisages the creation of a cycle and pedestrian network connecting the cruise terminal with natural points of interests that have been identified together with local stakeholders.

- **Isola degli Spinaroni:** construction of a bike trail from the entrance of Porto Corsini to the embarkation point to the island of Spinaroni
- **Capanno Garibaldi** - construction of a bike trail from Porto Corsini to the access bridge to Capanno Garibaldi
- **Beach resorts and Diga Foranea (Breakwater):** as part of the new project of the Porto Corsini harbour, the Municipality of Ravenna has requested Port Authority to create a pedestrian route from the maritime station to beach resorts and the breakwater

Indicators	Source
km of bike paths from cruise terminal	Municipality of Ravenna
# points of interests 5 km far from cruise terminal accessible for cyclists and pedestrians	Port Authority
# of cruise passengers visiting points of interest near cruise terminal	
# bikes available for cruise passengers	
# of cruisers using bikes	

1.2 Cycle and pedestrian signage system

The LCTP includes a wayfinding draft plan designed to foster cycling for cruise passengers. The wayfinding system includes two types of signals:

- 1 Four-sides totem with information about points of interests and the entire cycle network related to cruise terminal. These totems have been designed to be read and consulted in stop and non-transit mode.

2 Signals with tables guiding cyclists on the most suitable routes to reach certain attraction centres and the main sites of scenic and naturalistic attraction.

Four recommended routes with departure from and arrival at Porto Corsini have been identified. The system includes information about difficulty and timing of each path (an average speed of 12 km/h has been considered). A four-side totem will be installed also in the city centre in order to facilitate walking on foot to reach the main attraction of the historic centre. The installation of the wayfinding system requires authorization from different public Authorities since the signal will be installed in natural and historic areas where several rules need to be followed. For these reasons, these authorities have been involved in the designing phase.

Indicators	Source
# of signals installed	Municipality of Ravenna

1.3 Activation of a new service of e-bike rent (MOSES project)

In collaboration with MOSES project and the cruise terminal concessionaire company, a bike rent service will be launched this year. MOSES shares with LOCATIONS the common goal to improve multimodal chains between the port and the city centre. A pilot action will be implemented in Ravenna: a mobile depot with e-bikes will be installed in the cruise terminal. The bikes will be provided with GPS system and will be rented free of charge at least for one year.

Indicators	Source
# e-bikes available for cruise passengers	Municipality of Ravenna
Average bike rent rate	Port Authority

STRATEGY 2 | IMPROVING URBAN QUALITY IN PORTO CORSINI

Description

The improvement of urban quality in the area most affected by the negative effects of cruise tourism will result, on the one hand, in actions aimed at improving accessibility and usability of cycling and pedestrian routes, and, on the other hand, increasing the quality of public spaces to compensate for inconvenience caused by the inevitable passage of buses in the town of Porto Corsini.

Actions

2.1 Implementation of interventions foreseen by the Detailed Urban Traffic Plan of Porto Corsini

A Detailed Traffic Plan has been developed in order to reach the following goals:

1. reduction of the adverse effects caused by the transit of buses in the town of Porto Corsini,
2. improvement of safety conditions, especially for users with challenges, and the urban quality of the Via Po axis.

In responding to the critical issues related to the impact of cruise traffic in Porto Corsini, the **Detailed Urban Traffic Plan** aims to outline a series of works that can lead to a stable improvement in the liveability and safety of the centre's public spaces

- Traffic calming actions in order to reduce vehicles' speed to 30 km/h and increase road safety especially for pedestrians and cyclists;
- New cycle and pedestrian paths in the village
- Interventions to improve some road intersections perceived as unsafe by citizens;
- Re-design of public spaces and roads in order to improve the urban quality in some crucial points
- Modification of coach and bus routes in order to avoid the passage in critical points and streets of the town.

A particular issue that we also tackled as a priority concerns the routes of buses and HGVs within the hamlet. The transit of buses in one of the main streets of Porto Corsini (via Po) is not appropriate due to the rather reduced road section and the presence of marked parking spots at roadside. To these difficulties on via Po are added problems related to interferences with pedestrian crossings, and, in particular, with bicycles travelling in the opposite direction of traffic.



The Plan proposes to forcibly divert vehicular traffic imputable to the cruise terminal (transport of people and goods) onto a more appropriate road, via Molo San Filippo, which will result in a moderate speed transit and the prospect of imposing limitations to the most impacting emission categories.

The mobility plan includes projects placed in areas owned by the Port Authority and the State. For this reason, they have been involved in the designing phase.

Indicators	Source
# of daily HGVs passing through Porto Corsini center	Municipality of Ravenna
% of the works foreseen by Porto Corsini Traffic Plan realized	
Sqm of 30 km/h area	

2.2 Preparation of a feasibility study for an intermodal platform at the entrance of Porto Corsini

This measure envisages a multimodal parking hub outside the built area of the town where the cruise terminal is located. The idea is to create a platform where coaches can wait and access the cruise terminal through a system designed to avoid congestion in the town. This hub should be carefully designed together with bus and cruise operators.

This is a high-cost action and implies several environmental effects since the parking space will strongly reduce the permeability rate of a large area outside the town. Considering existing cruise passengers' flows this action cannot be implemented in the short term and need to be evaluated when flows will increase in the long-term period.

When cruise passengers will cause critical situation for congestion, this measure will be able to control and improve bus and coach traffic flows in the little town.

Indicators	Source
# cruise passengers buses going into Porto Corsini / year	Municipality of Ravenna

STRATEGY 3 | TO IMPROVE THE ENVIRONMENTAL QUALITY OF CONNECTIONS BETWEEN THE CRUISE TERMINAL AND THE CENTRE OF RAVENNA

Description

This strategy aims at the environmental improvement of the connections between the terminal and the centre of Ravenna through both the upgrade of the vehicle fleet used for the transfer of cruise passengers on land, and the creation of new services and infrastructures to increase the share of low-emission transfers. This is a medium-long term strategy that seeks to combine synergies with other projects concerning the Ravenna area .

Actions

3.1 Limitation of circulation to polluting vehicles.

A Low Emission Zone will be gradually established in the village where the cruise terminal is located. Access restrictions for pollutant HGVs and buses will be gradually implemented. The development of fuels from renewable and/or alternative sources will allow the introduction of vehicles with reduced, if not zero, environmental impact. With the construction of the LNG storage facility at Porto Corsini, medium-term scenarios with LNG buses can be outlined, while in the long-term, transport operators will also have to consider the opportunity to use electric vehicles. By 2020, pursuant to the provisions of the Emilia Romagna Region, which provides for the replacement of all EURO 2 buses dedicated to local public transport, cruise passengers will be transported aboard EURO 3 category vehicles, or higher. Approximately every 4 years, the minimum emission category for access to Porto Corsini will be updated in order to contribute to the reduction of polluting emissions deriving from the transfer of cruise passengers on land. In the medium and long term, it is expected that a part of the vehicle fleet of buses dedicated to cruise ship transport will be powered by LNG and/or electricity.

Year	Environmental requirements for cruise passengers coaches
2020	At least EURO 3
2024	At least EURO 5
2028	At least EURO 6

The time frame considered is in line with SUMP scenarios. One critical issue that can be identified for this action is the fine sanction system: police must periodically control the compliance with this measure of all bus operators. Since the cruise terminal is located 15 km away from the city center, bus is one of the main transport solution for cruise passengers; for this reason, the implementation of a LEZ is essential in order to reduce carbon emission related to cruise passengers mobility.

Indicators	Source
Coach fleet	Municipality of Ravenna

3.2 Connections by sea

The Municipality of Ravenna has set in motion the process of establishing new sea connections along the Candiano Canal. Transfers should take place on motorboats accommodating about 150 passengers to connect the coast with the city dock, where it is planned the construction of a landing place also accessible to people with reduced mobility. Furthermore, a new connection with the railway station and the historical centre is foreseen by the extension of an already existing pedestrian underpass. Finally, we plan the installation of a bike sharing station with 15 pedal-assisted bikes. These projects are an important opportunity for cruise passengers. Although navigation is around 60 minutes, even tour operators may be interested in offering a package including a tour on the Canal. In the medium term, this action would allow a partial decrease in bus travel, which cannot be totally replaced by canal connections at least in the medium term (5-6 years). The canal connection should take place using a low-environmental impact means.

Indicators	Source
% of cruise passengers using maritime connections	Port Authority

3.3 Increase bike towards Ravenna city centre

A priority action required by all stakeholder is the creation of a safe and complete bike path connecting the cruise terminal to the city centre bike network. A cyclists' organization (FIAB) has identified a possible solution, which is already part of the SUMP. The LCTP has identified an alternative cycle route more suitable for touristic purpose where private investments can be found in the medium-term period. The bike path connecting the cruise terminal to the city centre has already been included in a national bike network in order to increase the possibility to get European and national funds. This action could be associated with a bike bus service to allow cruise passengers to return to the terminal by bus.

Indicators	Source
# of cruisers cycling to Ravenna city center	Municipality of Ravenna Port Authority

3.4 Installation of infrastructure for charging e- bicycles at the cruise terminal

The Municipality of Ravenna is in the process of writing a memorandum of understanding for the installation of a charging station for electric vehicles. Given the LCTP objectives, it will also include the installation of a charging station for e-bicycles also to support the launch of the rental service described in action 1.3

The memorandum of understanding will also contain details concerning the data that the manager will have to provide to the Administration in order to be able to carry out a correct monitoring process. After monitoring, it will be possible to install additional charging columns.

Indicators	Source
# e-bike recharge points	Municipality of Ravenna Port Authority

3.5 Improving accessibility for people with reduced mobility

In agreement with transport companies and tour operators, the Municipality of Ravenna will authorize low-impact vehicles with reduced size to access the Limited Traffic Zone (ZTL) to facilitate visits to the historical centre by people with reduced mobility. Specifically, two accesses to the ZTL will be allowed for each cruise call. Authorized vehicles must be specifically dedicated to people in wheelchairs or with serious walking problems. The main vehicles available today to transport companies that transfer cruise passengers can accommodate 12 guests, including 2 on wheelchairs and are just over 4 m long. These vehicles are powered by diesel and belong to the EURO 6B category, which is currently one of the most stringent in terms of polluting emissions. In the long term, a provision was made to deliver transfer services by electric vehicles.

Vehicles can make a stop in the historic centre of Ravenna. Once cruise passengers have gotten off, the vehicle must stop in the Piazzale Giustiniano parking lot, which will soon be acquired by the Municipality of Ravenna and where 2 stalls will be reserved for the vehicles described above.



Indicators	Source
# of buses for people with reduced mobility	Municipality of Ravenna
# of cruise passengers using of buses for people with reduced mobility	Port Authority

3.6 Restrictions for the access of touristic coaches in the city centre

As foreseen in the SUMP, Municipality of Ravenna is defining the regulation for the establishment of a limited traffic area for buses Touristic coaches coming to Ravenna will have to park in specific parking areas identified as multimodal hub and pay an access ticket. Since cruise passengers have a short time period to visit the city center, cruise passengers' coaches will continue to park near the station in a preferential position. Moreover, they will be excluded from the payment of the ticket.

4 **Development of future scenarios**

Given that the LCTP is a first implementation of the actions of the SUMP, the same future scenarios have also been adopted here, which are summarized below:

- “Business as usual” scenario;
- The short-term scenario
- The medium-term scenario
- The long-term scenario

Each action has been related to one or more scenario identified within the SUMP.

ACTIONS	SCENARIO			
	BAU	SHORT TERM	MEDIUM TERM	LONG TERM
1.1 Improvement of accessibility to points of interest near the cruise terminal		X	X	X
1.2 Cycle and pedestrian wayfinding system		X		
1.3 Activation of a new service of e-bike rent (MOSES project)	X			
2.1 Implementation of interventions foreseen by Detailed Urban Traffic Plan		X	X	
2.2 Preparation of a feasibility study for an intermodal platform				X
3.1 Limitation of circulation to polluting vehicles		X	X	X
3.2 Connections by sea	X			
3.3 Increase bike trips towards the center of Ravenna				X
3.4 Installation of infrastructure for charging e-bike bicycles at the cruise terminal		X		
3.5 Improving accessibility for people with reduced mobility		X	X	
3.6 Regulation of bus transit in the city center	X			

In the following table, three implementation levels of the LCTP have been identified according to the Capacity Building Manual. The implementation level are a sort of incremental scenarios: the best possible case is the scenario where all actions have been fully implemented.

ACTIONS	IMPLEMENTATION LEVELS		
	BUSINESS AS USUAL	MOST LIKELY CASE	BEST POSSIBLE CASE
1.3 Activation of a new service of e-bike rent (MOSES project)			
3.2 Connections by sea			
3.6 Regulation of bus transit in the city center			
1.1 Improvement of accessibility to points of interest near the cruise terminal			
1.2 Cycle and pedestrian wayfinding system			
3.1 Limitation of circulation to polluting vehicles			
3.4 Installation of infrastructure for charging e-bike bicycles at the cruise terminal			
3.5 Improving accessibility for people with reduced mobility			
2.2 Preparation of a feasibility study for an intermodal platform			
3.3 Increase bike trips towards the center of Ravenna			
2.1 Implementation of interventions foreseen by Detailed Urban Traffic Plan			

1.4 Step 4: Monitoring and funding

2.4.1 Monitoring LCTP implementation

The selected indicators are strongly related with those ones included in the SUMP. For obvious reasons, some new indicators have been introduced, but the reference scenarios are still the same of those pinpointed in the SUMP.

In general, for each indicator, we identified a target to be achieved in reference to each scenario. We highlight the presence of a context indicator that does not depend on the implementation of the LCTP. The number of cruise passengers as explained in the previous paragraphs depends on many factors, which, in turn, are largely not dependent on public bodies, but on the performance of the international market and geopolitical

balances that cannot be predicted. The targets of the Plan indicators necessarily depend on reaching the number of cruise passengers in each scenario.

INDICATOR	CURRENT	BAU	SHORT TERM	MEDIUM TERM	LONG TERM
Cruise passengers - <i>context indicator</i>	50.000		50.000	150.000	200.000
km of bike paths from cruise terminal	0.3	0.3	5	15	33
# points of interests 5 km far from cruise terminal accessible for cyclists and pedestrians	0	0	2	6	9
# of cruise passengers visiting points of interest near cruise terminal	N.A.	0%	2%	4%	8%
# of signals installed	0	0			
% of cruise passengers using maritime connections	0	0	1%	2%	5%
# of daily HGVs passing through Porto Corsini center	200	200	10	10	10
# cruise passengers buses going into Porto Corsini / year	~300	~300	~300	~600	<i>To be evaluated with feasibility study</i>
Coach fleet			<i>According to strategy 3</i>		
# bikes available for cruise passengers	20	20	20	30	30
# e-bikes available for cruise passengers	0	20	20	30	30
Average bike rent rate	N.A	30%	50%	50%	50%
# of cruise passengers using bikes	0%	0%	1%	2%	5%
# of cruisers cycling to Ravenna city center	0%	0%	0%	0%	1%
# e-bike recharge points	0	0	2	2	5
# of buses for people with reduced mobility	0	0	2	2	2
# of cruise passengers using of buses for people with reduced mobility	0	0	200	400	600
sqm of 30 km/h area (% of total Porto Corsini area)	0	0	~35.000 (10%)	~215.000 (70%)	~310.000 (100%)

Moreover, in the tables below we identified a responsible person and one or more milestones for each action.

STRATEGY 1– IMPROVING TOURIST ACCESSIBILITY TO POINTS OF INTEREST IN THE PROXIMITY OF THE TERMINAL						
Actions	Results	Indicators	Source	Monitoring responsible	Milestones	Description and methodology
1.1 Improvement of accessibility to points of interest near the cruise terminal	Cruise passengers visit points of interest near the terminal	<p>km of bike paths from cruise terminal</p> <p># points of interests 5 km far from cruise terminal accessible for cyclists and pedestrians</p> <p># of cruise passengers visiting points of interest near cruise terminal</p> <p>Average bike rent rate</p>	<p>Mobility Planning Department – Municipality of Ravenna</p> <p>Port Authority</p>	Municipality of Ravenna	M1.1.1 one of the point of interest identified by stakeholdes is easily accessible by pedestrian and bicycles	<p>Bike and pedestrian paths’ construction will be monitored considering the certification of proper execution issued by construction company, according to Italian legislation.</p> <p>Collection of data of possible future shore excursions to points of interests near cruise terminal</p> <p>Collection of data about number of bikes used by cruise passengers</p> <p>Questionnaires</p>

<p>1.2 Cycle and pedestrian wayfinding system</p>	<p>Cruise passengers can explore areas near the terminal safely and easily</p>	<p># of signals installed</p>	<p>Mobility Planning Department – Municipality of Ravenna</p>	<p>Municipality of Ravenna</p>	<p>M1.2.1 The wayfinding plan is approved M1.2.2 the first signage point is installed M1.2.3 the first totem is installed</p>	<p>Number of signage points will be included in the wayfinding plan The number of signals installed will be monitored considering the certification of proper execution issued by installation company, according to Italian legislation.</p>
<p>1.3 Activation of a new service of e-bike rent (MOSES project</p>	<p>Cruise passengers can rent e-bike directly at the terminal</p>	<p># e-bikes available for cruise passengers Average bike rent rate</p>	<p>Mobility Planning Department – Municipality of Ravenna Port Authority</p>	<p>Municipality of Ravenna</p>	<p>M1.3.1 Launch of the e-bike rent service M1.3.2 The rent service continues beyond MOSES project.</p>	<p>Data will be collected in collaboration with Port Authority</p>

STRATEGY 2 – IMPROVING URBAN QUALITY IN PORTO CORSINI						
Actions	Results	Indicators	Source	Monitoring responsible	Milestones	Description and methodology
2.1 Execution of works foreseen by Detailed Urban Traffic Plan	reduction of the adverse effects caused by the transit of buses in the town of Porto Corsini, improvement of safety conditions, especially for users with challenges, and the urban quality of the Via Po axis	# of daily HGVs passing through Porto Corsini center % of works realized	Mobility Planning Department – Municipality of Ravenna	Municipality of Ravenna	M2.1.1 Detailed design approved for the first part of works M2.1.2 Execution of the first part of works	Traffic flows indicators will be collected with mobile instruments owned by the municipality The % of works realized will be monitored considering the certification of proper execution issued by construction company, according to Italian legislation.
2.2 Preparation of a feasibility study for an intermodal platform at the entrance of Porto Corsini	The City Council will be able to evaluate impact, costs and benefits of an intermodal parking outside the residential area of Porto Corsini	# cruise passengers buses going into Porto Corsini / year	Mobility Planning Department – Municipality of Ravenna Port Authority	Municipality of Ravenna	M3.4.1 Identification of an external experts able to elaborate the feasibility study	Data about cruise passengers’ coaches will be collected in cooperation with Port Authority

STRATEGY 3 - IMPROVING THE ENVIRONMENTAL QUALITY OF CONNECTIONS BETWEEN THE CRUISE TERMINAL AND THE CITY						
Actions	Results	Indicators	Source	Monitoring responsible	Milestones	Description and methodology
3.1 Limitation of circulation to polluting vehicles	Pollutant emissions produced by cruisers' coaches are reduced.	Coach fleet	Transport operators Mobility Planning Department – Municipality of Ravenna	Municipality of Ravenna	M.3.1.1 50% of coaches for cruise passengers will be EURO 4 category vehicles, or higher M3.1.2 a GNL bus service is active for cruise passengers M3.1.2 an electric bus service for cruise passengers is active	Data will be collected in cooperation with bus operators.
3.2 Connections by sea	Part of cruise passengers can reach Ravenna city center by sea through the canal	% of cruise passengers using maritime connections	Transport operator	Municipality of Ravenna	M3.2.1 a maritime connection between the cruise terminal and city centre is active	Data will be collected in cooperation with bus operators.

<p>3.3 Increasing bike trips towards Ravenna city center</p>	<p>Cruise passengers can cycle to Ravenna city center</p>	<p>Average bike rent rate # e-bikes available for cruise passengers # e-bikes rented for cruise passengers # of cruise passengers using bikes km of bike paths from cruise terminal # of cruisers cycling to Ravenna city center</p>	<p>Mobility Planning Department – Municipality of Ravenna Port Authority</p>	<p>Municipality of Ravenna</p>	<p>M3.3.1 The detailed design of the bike path is ready M3.3.2 A construction company has been identified M3.3.1 a bus+bike service for cruise passengers is active</p>	<p>Bike paths’ construction will be monitored considering the certification of proper execution issued by construction company, according to Italian legislation. GPS system will provide information about destinations of users Questionnaire</p>
<p>3.4 Installation of infrastructure for charging e-bike bicycles at the cruise terminal</p>	<p>A bike recharge point is available for cruise passengers</p>	<p># e-bike recharge points</p>	<p>Private operator</p>	<p>Municipality of Ravenna</p>	<p>M3.4.1 the memorandum of understanding is signed M3.4.2 The first recharge point is installed</p>	<p>Data will be collected according to the procedure defined in the memorandum of understanding</p>

<p>3.5 Improving accessibility for people with reduced mobility</p>	<p>Cruise passengers with reduced mobility can easily access the historic center.</p>	<p># of buses for people with reduced mobility # of cruise passengers using of buses for people with reduced mobility</p>	<p>Transport operators Mobility Planning Department – Municipality of Ravenna</p>	<p>Municipality of Ravenna</p>	<p>M1.3.1 creation of parking spots reserved to minibus for people with reduced mobility M1.3.2 transfer service for people with reduced mobility is active</p>	<p>Data will be collected in cooperation with bus operators.</p>
<p>3.6 Regulation of bus transit in the city center</p>						

► POLLUTANT EMISSIONS MONITORING PLAN

Based on the scenarios identified above, since each one assumes a different number of cruise passengers as a context indicator, for each time frame, we identified and compared a “Plan scenario” and a “trend scenario”. For example, for the medium-term scenario, pollutant emissions have been calculated on the basis of a flow of 150,000 cruise passengers, considering the actions envisaged by the LCTP for the Plan scenario and only the actions envisaged by the BAU scenario for the trend scenario.

To determine the baseline of pollutant emissions, we estimated an indicator that evaluates the lengths travelled by bus per cruise passenger per year, a value that has been calculated based on the data of shore excursions made in 2017. We combined this indicator with the composition of the fleet of vehicles used to transport cruise passengers and with emission factors referring to the 3 main pollutants (CO₂, NO_x and PM₁₀).

For the estimation of emission factors, the methodology used refers to the database of average emission factors for road transport in Italy, provided by the Italian Institute for Environmental Protection and Research (ISPRA). The ISPRA methodology developed and applied to the estimation of atmospheric pollutant emissions is based on the 2016 EMEP/EEA Air Pollutant Emission Inventory Guidebook and is consistent with the 2006 IPCC Guidelines for greenhouse gases. ISPRA used COPERT 4 software, vers. 11.4, whose development is coordinated by the European Environment Agency, as part of the activities of the European Topic Centre for Air Pollution and Climate Change Mitigation (ETC/ACM).

With reference to the evaluation of the expected results of the Plan, for each strategy, we considered as the effects of relevant actions either the decrease of routes travelled by bus or the improvement of vehicle fleets for cruise passengers, or the percentage reduction of polluting emissions.

The reduction of the Km/passenger/year indicator was calculated differently according to the action being assessed. The improvement of the vehicle fleet took into account restrictions to access to Porto Corsini described in action 3.1, assuming that the share of buses belonging to the emission categories that will not be allowed access to the site will be equally distributed among other admitted categories. If it was not possible to arrive at emission factors due to the implementation of an action, we evaluated, where possible, a percentage reduction compared to an emission category taken as reference on the basis of scientific articles.

Emissions have therefore been calculated with factors calculated above by applying the number of cruise passengers referred to the considered scenario.

	CURRENT SCENARIO	SHORT TERM		MEDIUM TERM		LONG TERM	
		BAU	LCTP SCENARIO	BAU	LCTP SCENARIO	BAU	LCTP SCENARIO
CRUISE PASSENGERS	50.000	50.000	50.000	150.000	150.000	200.000	200.000
CALLS	48						
DISEMBARKATION DAYS	43	43	43	129	129	172	172
KM SAVED/CRUISE PASSENGER/YEAR	0	0,01032	0,0172	0,00258	0,1075	0,00258	0,1763
KM TRAVELLED BY VEHICLES/CRUISE PASSENGER/YEAR	0,96	0,95	0,94	0,96	0,85	0,96	0,79

	CURRENT SCENARIO	SHORT TERM			MEDIUM TERM			LONG TERM		
		BAU	LCTP SCENARIO	REDUCTION	BAU	LCTP SCENARIO	REDUCTION	BAU	LCTP SCENARIO	REDUCTION
Cruise passengers	50.000	50.000			150.000			200.000		
CO ₂ [t]	31,000	30,65	30,64	-	30,5	28,16	-8%	123,03	96,79	-21%
PM ₁₀ [kg]	5,61	11,09	8,57	-22%	10,01	4,5	-55%	20,18	4,39	-78%
NO _x [kg]	227	448	362	-19%	444	127	-71%	895	35	-96%

2.4.2 Funding

The total budget of the Plan is about 6.800.000 euro. The table below specifies costs for each strategy.

STRATEGY	COSTS
IMPROVING TOURIST ACCESSIBILITY OF INTEREST IN THE PROXIMITY OF THE TERMINAL	2.850.000 €
IMPROVING URBAN QUALITY IN PORTO CORSINI	1.310.000 €
IMPROVING THE ENVIRONMENTAL QUALITY OF CONNECTIONS BETWEEN THE CRUISE TERMINAL AND THE CITY	2.662.000 €

A more detailed cost analysis is reported in the next table, where possible sources of funding have been pinpointed

ACTIONS	DESCRIPTION	COSTS	POSSIBLE SOURCES OF FUNDING
1.1 Improvement of accessibility to points of interest near the cruise terminal	Completion of bike paths connecting cruise terminal to city center	2.750.000 €	National or regional resources European funds
	Path connecting cruise terminal to beach resorts	50.000 €	Port Authority
1.2 Cycle and pedestrian wayfinding system	Installation of wayfinding system	10.000 €	Regional funds
1.3 Activation of a new service of e-bike rent	Installation of a bike rent service in a mobile depot	40.000 €	Already funded by Interreg and private resources
TOTAL STRATEGY 1			2.850.000 €

ACTIONS	DESCRIPTION	COSTS	POSSIBLE SOURCE OF FUNDING
2.1 Implementation of works foreseen by Detailed Urban Traffic Plan	Realization of works foreseen by Detailed Urban Traffic Plan	1.300.000 €	National, regional or municipal resources European funds
2.2 Preparation of a feasibility study for an intermodal platform		10.000 €	Municipal resources
TOTAL STRATEGY 2			1.310.000 €

ACTIONS	DESCRIPTION	COSTS	POSSIBLE SOURCES OF FUNDING
3.1 Connections by sea	Floating accessible dock	800.000 €	Already funded by the State requalification outskirts' program
	Activation of a new maritime connection through Candiano Canal	350.000 €	Already funded by national requalification outskirts' program
3.2 Increase bike trips toward city center	Completion of bike network	1.500.000 €	National funds related to national bike paths Private funds
3.3 Installation of infrastructure for charging e-bike bicycles at the cruise terminal	Installation of a recharge point for e-bike	10.000 €	Already funded by private operator
3.4 Improving accessibility for people with reduced mobility	Installation of special signage system to reserve a parking space for minibuses providing this service	1.000 €	Municipal funds
3.5 Regulation of bus transit in the city center	Implementation of the new regulation for bus transit in the city center	/	/
TOTAL STRATEGY 3			2.662.000 €



LCTP for Durrës City

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

WP3 – Testing

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1. Introduction

The following document represents the synthetic report about the Low Carbon Transport Plan for the city of Durres, Albania.

2.0 Step 0: Work plan and team

The working team consists of two technical persons from the Institute of Transport and one representative from the Durres Port Authority. Also the team was supported by all the staff of AIT during all the process of researching and development of this plan.

Working Team

Name:	Organization:	Role in the Organization:	Tasks:
Bujar Kotri	Albanian Institute of Transport	<ul style="list-style-type: none"> Chief of Transport Planning Sector Transport Engineer, Transport Planning Expert 	Team Leader; Context Analysis; Participatory Process; Design of the Plan.
Florjan Xhelilaj	Albanian Institute of Transport	<ul style="list-style-type: none"> Official of Studies and Project Sector Civil Engineer, Transport Infrastructure Expert 	Context Analysis, SWOT Analysis; Participatory Process; Design of the Plan.
Serena Kovaci	Durres Port Authority	Chief of EU Projects Unit	Participatory Process, Stakeholders Identification;

Work – Plan

Tasks	Deadline	Status	Responsibilities
Step 1: Initial Assessment	May-17	Completed	Realize a complete assessments on the state of the art on the Port and City of Durres
1.1. Context Analyses	Apr-17	Completed	Identification of the Framework of Reference (EU, National, Regional etc.) Cruise Related Flows Analyses Existing Infrastructure Analysis
1.2. SWOT Analysis	May-17	Completed	Produce a SWOT analysis and a CAME Analysis
Step 2: Participatory Process	Sep-17	Completed	Involvement of the main Stakeholders and Actors
2.1. Stakeholders Identification	Jun-17	Completed	Identification of main Stakeholders

2.2. Participatory Process	Sep-17	Completed	Organize Participatory Process (2 or 3 expected meetings)
Step 3: Design of LTCP	May-18	Completed	Current Scenario Vision and Objectives Actions and Indicators Future Scenarios
Step 4: Monitoring and Funding	May-18	Completed	Methodology to monitor LCTP implementation
4.1. Monitoring LCTP Implementation	May-18	Completed	Development of Monitoring Plan to supervise the implementation of LCTP
4.2. Funding	May-18	Completed	Estimation of needed resources and possibilities of funding.

2.1 Step 1: Initial assessment

2.1.1 Context analysis

Strategic positioning of Durres City make a safe, high-value tourism destination featuring an unparalleled variety of world-class natural and cultural attractions in a small geographic area, managed in an environmentally and socially responsible manner, easily accessible to European tourism markets. In Durres City and Tirana –Durres Region, visitors are welcomed as guests as part of the country’s rich cultural traditions and heritage. Municipality of Durres is one of the richest geographical areas in a historical and cultural perspective. As a gateway in Albania, the city of Durres offers the first experience and impression of tourists who come to Albania from the sea.

1. EU, national, regional and local framework of reference.

EU Framework:

- Action Plan on Urban Mobility (2009)
- White Paper on Transport ‘Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system’ (2011)
- Urban Mobility Package (2013)

SUMP’s main goals:

- **ACCESSIBILITY:** Guaranteeing accessibility to all road users, with a focus on the so-called “vulnerable users”, namely pedestrians, cyclists, children, disabled persons, etc.;
- **MODAL SPLIT REBALANCING:** fostering a balanced development of all transport modes, tackling public and private, motorized and non-motorized transport, inter-modality, urban logistics, mobility management and ITS systems;
- **ENVIRONMENTAL, TECHNICAL, ECONOMIC AND SOCIAL SUSTAINABILITY:** reducing environmental impacts (primarily air and noise pollution) rationalizing efficiency and cost-effectiveness;

- CITIES' ATTRACTIVENESS AND QUALITY OF LIFE: optimizing the use of urban areas leading to a cleaner urban environment and consequently more attractive cities and better quality of life for all citizens;
- SAFETY AND SECURITY: improving road safety and security

EU Regional Framework:

1. South-East Europe 2020 Strategy (SEE 2020)

SEE 2020 has set up some ambitious targets for the transport sector, including:

- Decrease of the cost of transport per unit of transport service for 20%, and decrease in TEU transport costs to the EU average ;
- Improve transport infrastructure utilization rates to over 40% of designed capacity;
- Higher energy efficiency by decreasing energy consumption per unit of transport service for 20%; and
- Increase railway/ waterborne share to country specific targets to be defined in the national Action Plans and (v) facilitate air transport.

2. European Union Strategy for the Adriatic and Ionian Region (EUSAIR)

The EUSAIR Strategy released in 2014, which sets out the needs and potential for smart, sustainable and inclusive growth in the Adriatic and Ionian Region. When it comes to Transport, EUSAIR highlights that the Region has significant infrastructure deficits, notably between long-established EU Member States and the other countries, resulting in poor accessibility. This Strategy, based on the following pillars:

- Blue Growth,
- Connecting the Region (transport and energy networks),
- Environmental quality,
- Sustainable tourism.

National framework:

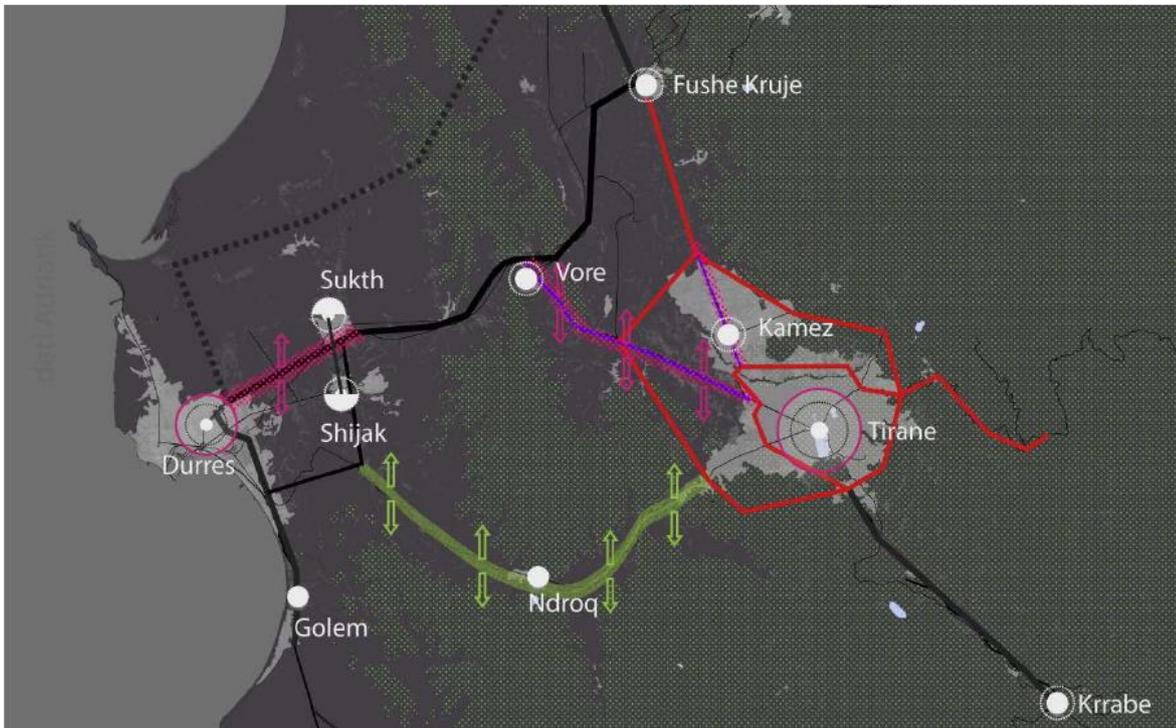
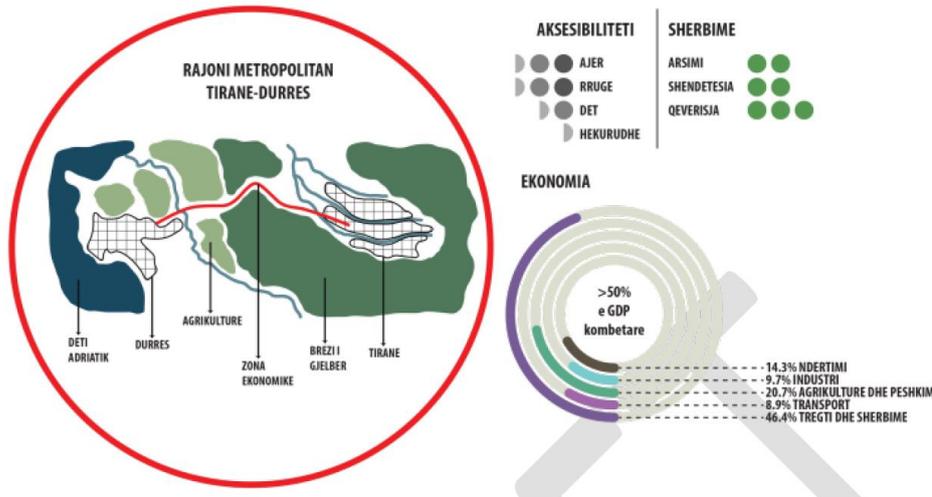
1. National Strategy for Development and Integration (NSDI-II)

The NSDI-II defines Albania's vision for its national social, democratic and economic development over the period 2015-2020, including a roadmap for integration in the European Union following the granting of candidate country status on 27 June 2014. The present "National Sector Strategy for Transport 2016-2020" has been therefore aligned with such governmental effort.

The development and modernization of Albania's transport infrastructure has been and remains one of the top priorities of the Government of Albania. The aim has been:

- to create the preconditions for the development of other sectors of the economy,
- to increase the accessibility of freight and passengers in trade and service delivery, and
- to significantly contribute to overall economic growth and development of the economy

The strategic priority is to accelerate the integration of Albania's transport system and the establishment of an integrated market comprised of transport infrastructure by land (road and rail), by sea and by inland waterways.



3. Albanian National Transport Plan (ANP2)

Was released in 2010 and which has been maintained and updated annually since then. The general objective of the ANP2 is to provide a safe, reliable, efficient and fully integrated transport system and infrastructure, aiming to meet the needs of freight and passenger customers, whilst being environmentally and economically sustainable. ANP2 has been essential to support strategies for economic and social development as well as an optimal integration of the country's transport systems within international, European and regional transport networks. Based on these principles, the main specific objectives or goals are to:

- Create a regulatory and legal system which promotes the optimal operation of the transport system;
- Support the development of the economy;
- Ensure equitable access to transport throughout the country leading to an improved balance in the country's regional development;

- Reduce traffic bottlenecks;
- Promote integration with the European Union and meet the transport demand of the Southern Balkan Region;
- Improve safety, quality and reliability of the transport system;
- Provide enhanced focus on passengers and freight shippers as customers and users;
- Create an environmentally sustainable transport system;
- Ensure transparency in the decision-making process.

4. Update of the Master Plan for the Port of Durres approved with the decision of CM no. 56 /2009

Objective is to decide optimal operational, commercial and financial strategies in long terms period.

Masterplan includes:

- Strategy & Policy
- Trade, Traffic Forecasting; Market Assessment
- Competitor Analysis
- SWOT Analysis
- Strategic Planning & Analysis
- Stakeholder Analysis
- Organizational Alignment
- Institutional & Regulatory Analysis
- Investment/Divestment Strategy
- PPP Strategy
- Pricing, Tariff Reform & Analysis
- Business Planning Preparation

Currently two important projects are completed:

- Construction of passenger terminal with all facilities, with funding of about EUR 22 million from EIB and EBRD
- Rehabilitation and extension of the eastern seabed and the squares for the processing of bulky goods, with a funding of about 35 mln euros from the EIB and EBRD.





5. Territorial Strategy of Municipality Durres 2015 – 2030;

Draw up the development vision of Durrës 2030, in function of the territory as well as to orient the economic-social development by efficiently utilizing the potential of the territory, economic, environmental and social resources in the service of Durres citizens, business actors and other groups of interest.

The tourism component of the strategy looks at the Municipality of Durres as follows:

- Durres: Albania's showcase for the visitors of the cruise ships;
- Protection and promotion of natural parks / valleys of the hinterland for visitors
- local and national (from Tirana);
- Tourism of the sea & sand;
- Protection and valorization of historical and archaeological wealth

This strategic document for Tourism Supports interconnection of relevant service sectors based on the elements natural, historical, cultural, etc. and support services.

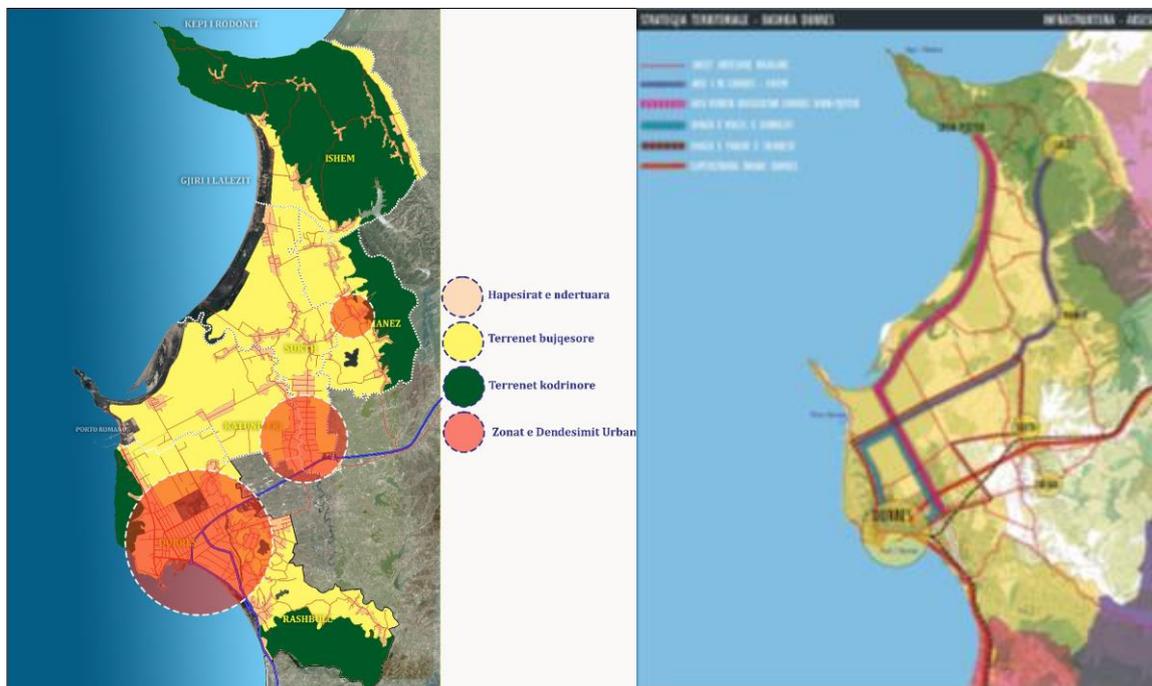
Focus on transportation: Oriented by Mobility Development and Mobility Optimization between communities; and between settlements and markets (labor/services/agricultural/etc.) with the aim of improving the interconnection between businesses, individuals and public services. In this context, for the Durres Municipality is very important the advancement of the national road/port infrastructure Strategic Projects /railways that enable national & international flows, such as:

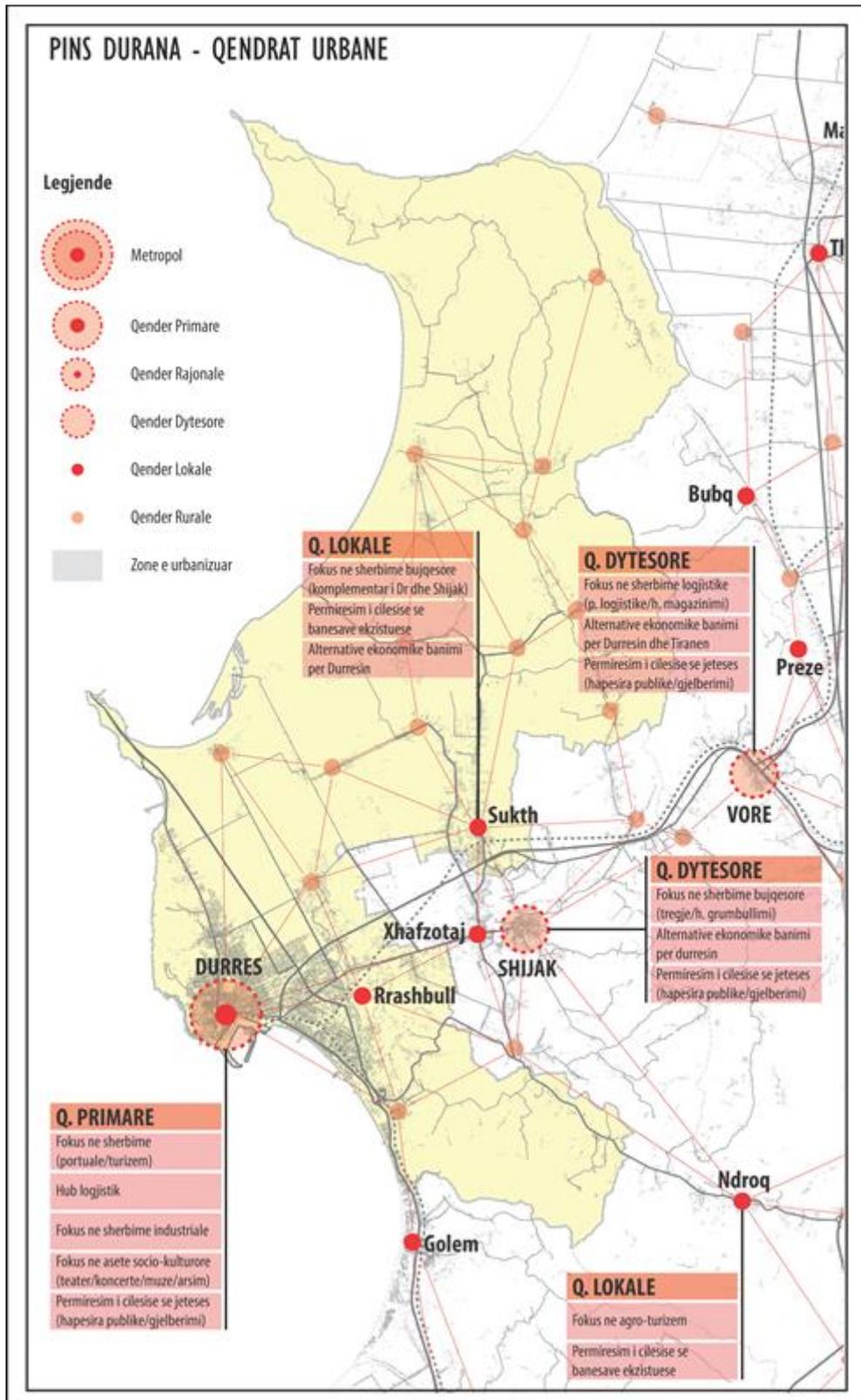
- Design and Development of the Blue Corridor (coastal tourist road with impact of low environmental level connecting the localities of the coast: Velipojë - Shëngjin - Patok - Durrës - Divjaka - Seman - Vlorë - Dhermi - Saranda - Butrint);
- Corridor VIII as the primary means of transport of goods (the shortest link between the Mediterranean Sea with the Black Sea; Durrës --- Varna / Durrës --- Istanbul) and Via Egnatia as well historical roads of tourist importance.
- Nation's Road (Durrës - Kukës - Prishtinë - Nis) as one of the influential corridors the largest in the region, due to the connection between Pristina and Corridor X and Serbia.
- Development of the Port of Durres (commodities - tourist) as the main port in Albania and the starting point for maritime highways through investments to increase its capacity and complementary functions.
- Development and Profiling of Porto Romano Industrial Port as a freight port, and tourism; its connection with adequate infrastructure and filling with functions complementary.
- Restructuring the rail system in the main axes: a) Tirana - Rinas (Airport) - Durrës; Durrës - Vlora;
- Durrës --- Hani Hotit (Montenegro Border);
- Durrës -Lin, Pogradec (Macedonia border); and b) the development of Durres as one of 10 stations

- International intermodal, to meet the transitional needs of the movement and exchange modes of transport with other countries.

Future Infrastructure Development Projects of National Importance up to 2030, as follows:

- Design and Development of the Blue Corridor (impacted low environmental level) connecting the localities of the coast: Velipojë - Shengjin - Patok - Durrës - Divjaka - Seman - Vlora - Dhermi - Saranda - Butrint;
- Development of the Port of Durres (commodities - tourist) as one of the 4 main ports on Albania, starting points for maritime corridors;
- Increased capacity investment and complementary functions of the Durrës port as the western central gate linking the national roads of Corridor VIII with West;
- Increased investments for Porto Romano industrial port -Profilization as a port cargo, and tourist - in order to connect it with the necessary infrastructure for filling with complementary functions;
- Restructuring the rail system in the main axes: a) Tirana - Rinas (Airport)-Durrës; b) Durrës - Vlore.
- Building a Yacht Harbor together with the Navy





“Old town Durres” master plan is an elaboration of specific studies, relative to the most important themes and the topics were met:

- Archaeological City Byzantine,
- Venetian and Ottoman Town of the '900 Period
- Social Morphology and Social Circulation,
- Port, Metropolitan Area, Corridor VIII
- Housing Requirements,
- Construction Process and Housing Marks University,
- City, Cultural Institutions Jogging,
- Hydro geological Hazards and Geo-techniques Structural Problems and
- Assessing Seismic Risk Event Tourism, Crafts and Trade

The plan proposes the strengthening and development of a sprawling parks and public spaces, which is both an attempt to revitalize the historic city and to evaluate the sites of a greater historical and environmental value (Roman amphitheater, Byzantine fortress and King’s fortress, the southern part of the hill.) The implementation of this program is linked to the procedures of urban equality and public-private cooperation for the implementation of the interventions.

2. Current cruise-related flows features, trends, etc., in the city/port

Durres Port is the largest port of Albania and now defined as the main gate of the VIII corridor. One of the main investments in the port infrastructure was the construction of passengers’ terminal with all facilities, with funding of about EUR 22 million. The Ferry Terminal is provided with a concession, and the Port Authority benefits 49% of the revenues generated from the services provided in it, as well as a lease for the area provided to the concessionaire. The ferry terminal have connections to Bari, Brindisi, Ancona and Trieste. The terminal has recently been modernized, is one of the most modern in the Mediterranean. More than 800,000 passenger, 160,000 cars and 65,000 trucks pass the terminal annually.

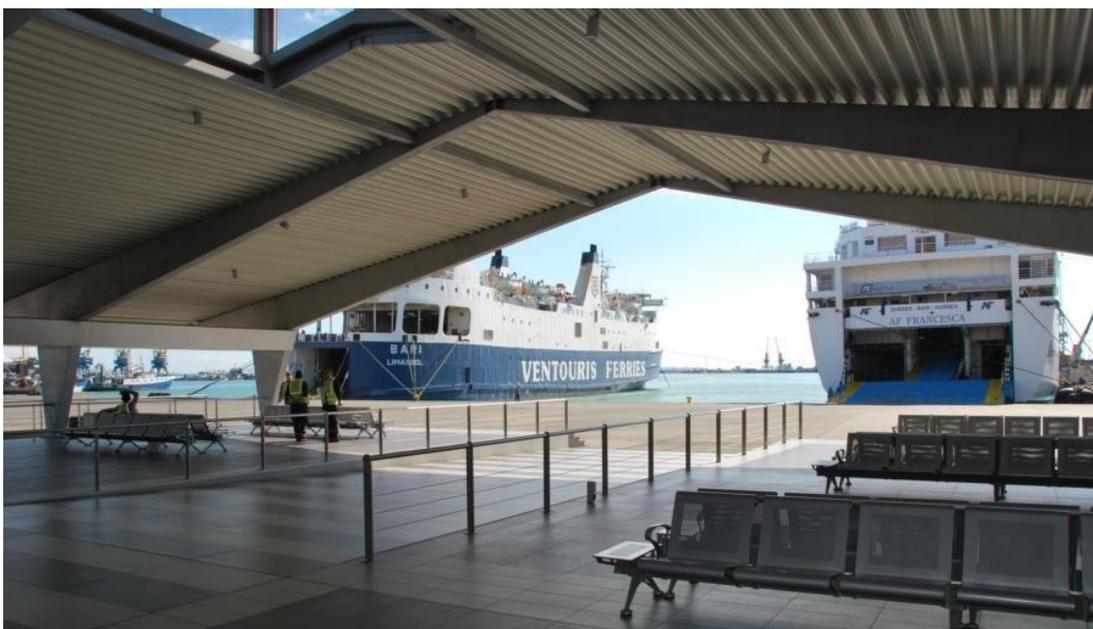


Figure 1 - Passangers Terminal

The last 5 years volumes are in the following table:

AFTO	2012	2013	2014	2015	2016
Passengers	798,524	717,399	774,702	774,411	839,598
Cars	183,263	152,272	150,703	152,497	172,961
Trucks	51,673	55,145	57,076	58,454	61,962
Trailers	10,904	8,284	7,347	5,927	5,550
Goods	699,426	710,249	715,547	743,405	770,154

Passengers

Analyzing the data from the customs police, the purpose of the travel of foreign nationals that enter into Albania, get the result that 2% are daily tourists, using Cruise ships, Tourist ships and regular ferry lines to Durres Port.

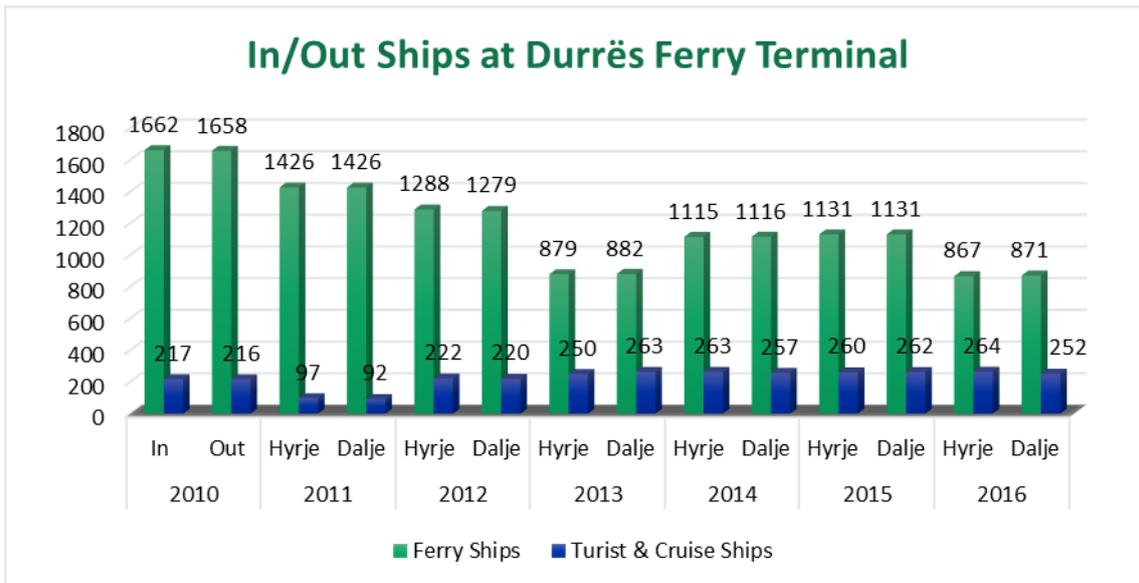
The number of cruisers is about 25 cruisers last year but a lot of tourists use the regular ferry lines.

The Capacity of Ferry Terminal is: 2000 passengers at once, 5 to 6 ferries at once, 1.5 million passengers for year.

The cruises stay for a short time in the Port (a maximum of 24h). They usually walk into the areas of interest in the city or they take the bus to Kruja City (and Castle) the nearest touristic destination of Cruise passengers.

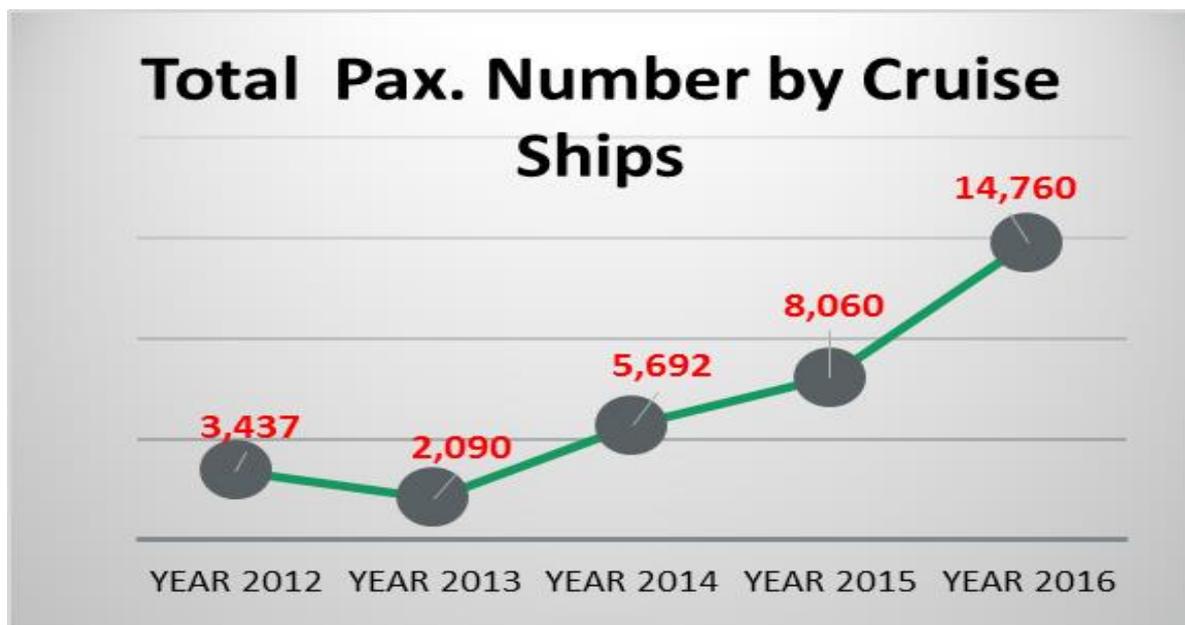


In total, number of tourist ships in Durres Port is increased by about 20% since 2010.



Number of Cruise ships and passengers using cruise

The number of passengers using cruisers has increased about 5 fold and the cruise ships number are increase by 2.5 fold in the last 5 years.





For the 2016 year 3.6% of total passengers are from cruise ships.

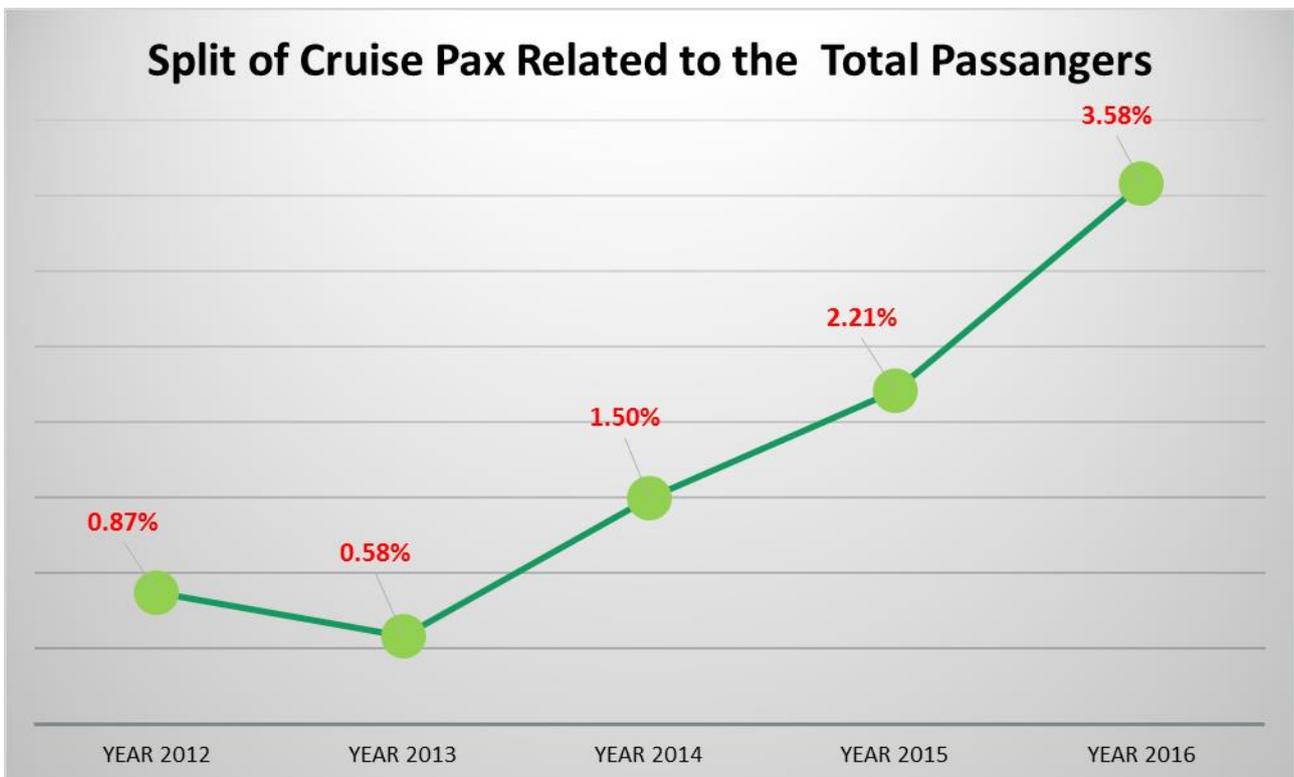


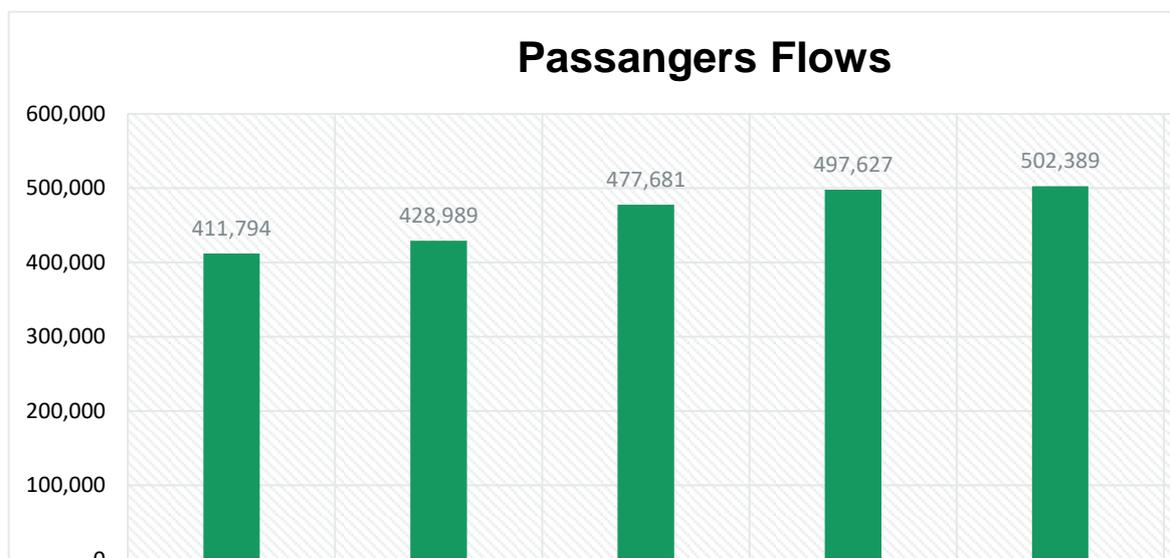


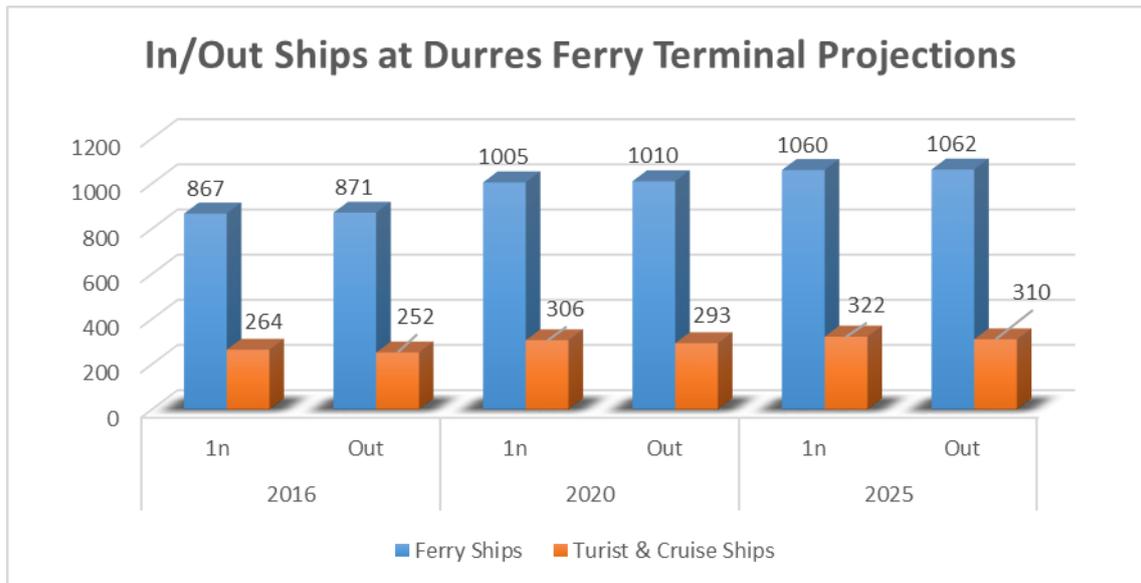
Figure 2 - Cruise Passengers at the Port of Durres

As seen in the above photo there is no terminal for cruise passengers arriving at the Port of Durres.

3. Cruise-sector mid- to long-term (5 to 10 years) development trends

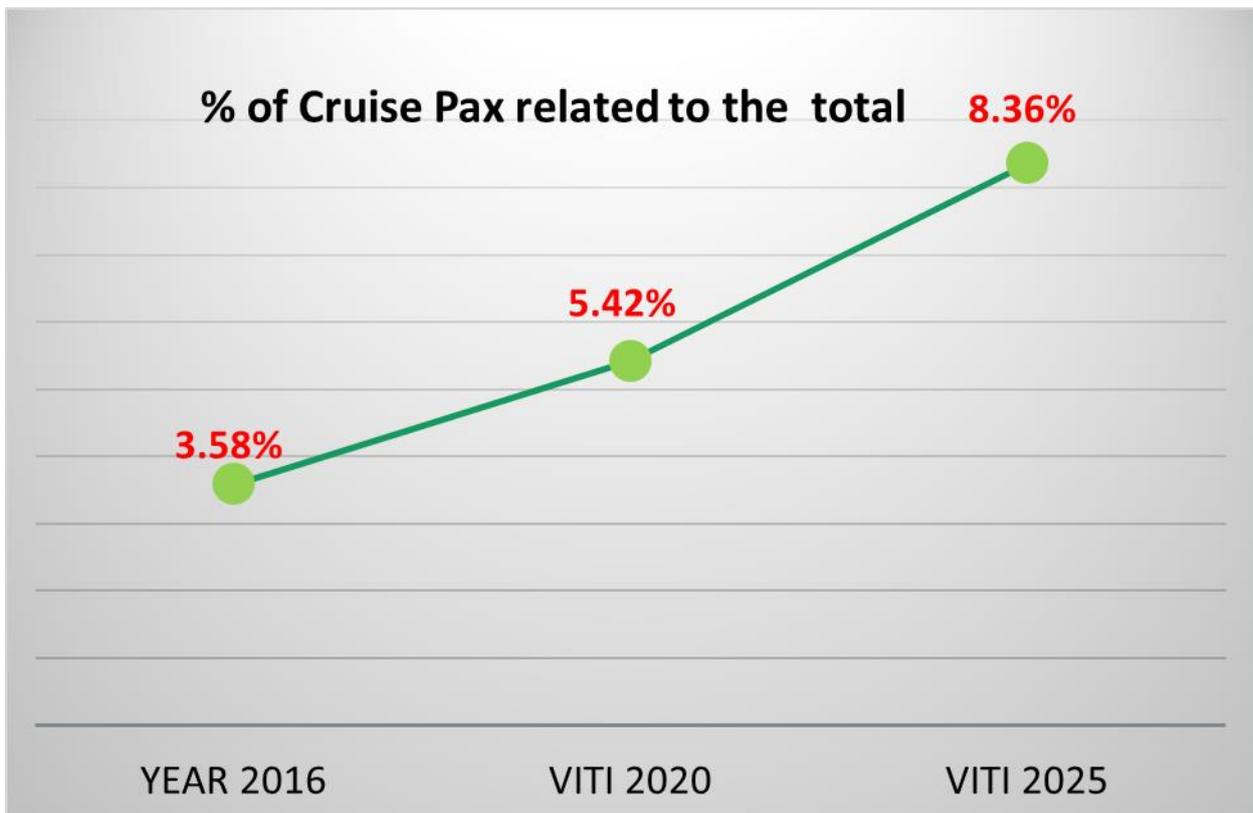
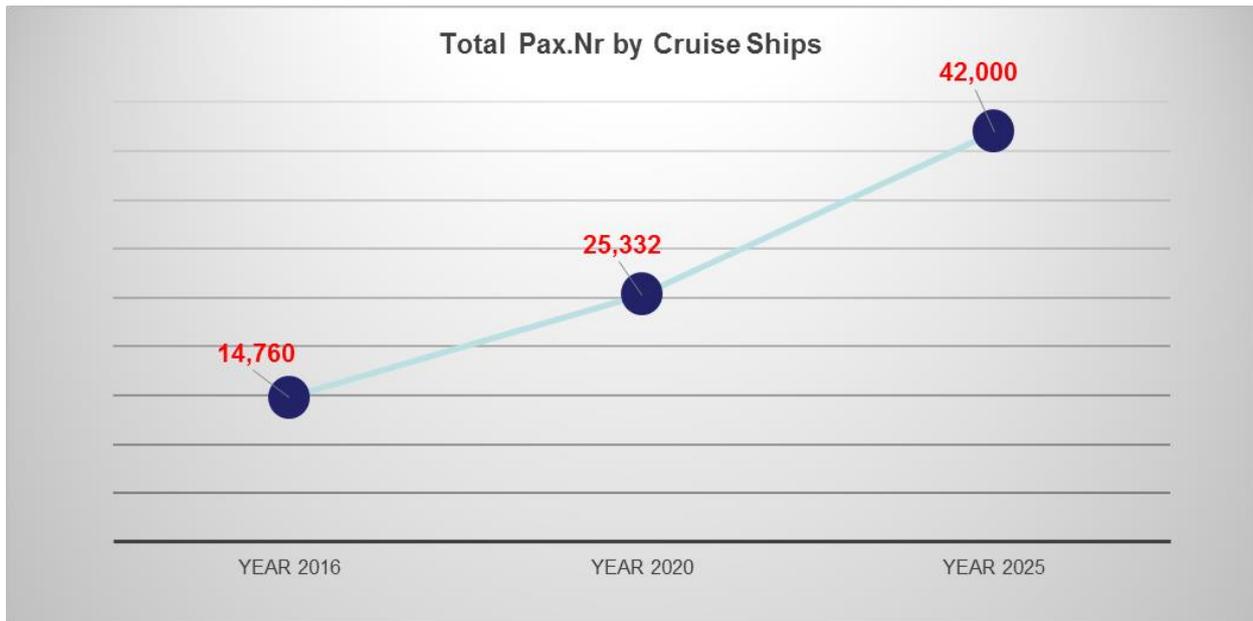
Mid to long term trend projections of cruise-related flows





Specific projection for cruise ships and cruise passenger in 10 years





4. Current cruise-related mobility and transport management policies and public & private initiatives addressing the existing flows.

General port information:

Durres Port Ferry Terminal is designated for ferry lines. There are not specific one cruise berths on this terminal, but usually berths 7 and 8 for cruises with no adequate terminal infrastructure.

General passenger services:

Passenger Terminal / Building are high-quality with:

- Benches for resting;
- Toilet facilities;
- Touristic Info Point (light infrastructures: information desks, totem and monitors);
- Food and beverage area (bar, restaurants, etc.);
- Wi-Fi network free;
- Luggage storage
- First aid equipment (heart impulse, ...);
- Services for passengers with reduced mobility;
- ATM point;
- Air conditioning;
- Waiting area/room;
- Waiting garden/roof;

Cruise services:

Except of footbridge covered, missing:

- Exposition area
- Escalator
- Lift
- Home port Touristic services
- Port of call Touristic services
- Touristic services for the city-port
- Hinterland Touristic services
- Luggage service from-to vessels/ships

Safety & security is high-quality with:

- Safety video-control system
- Electronic check-in system for passengers and vehicles
- Security team
- Body scanner
- Video surveillance
- Stairs to get out of water in case of accident
- Secure pedestrian paths

Mobility and info mobility services existing:

- Public transport Bus stop in walking distance
- Railway platform
- Connections to railway station from the Passengers Terminal
- Taxi service
- Real Time information for ferries

But are missing:

- Connections to City Centre
- Terminal for Cruise Passengers
- Connections to main urban areas
- Connections to airport Bypass/ring road directly access
- App for Smartphone
- QR code for fast info point
- Underground
- Organized trips for tourist
- Real Time information for public transport
- Interactive information displays
- Unique selling point for information
- Multilanguage information
- Real Time Info Services Platform
- Integrated ticket (Urban or Interurban)

5. Weighted list of negative impacts linked to cruise-related flows

Environmental impacts: “Air pollution and Noise”

- Heavy traffic in Durres port and city entrance
- Road congestion at the exit of the Port
- Misconception of the tourist activity in the City
- Congestion in old historical zones
- Lack of parking spots in touristic area
- Low traffic capacity streets
- Coaches cross downtown adding traffic volume during rush hour
- Coaches and taxis are among the most used modes
- Lack of information
- Low use of Public Transport

Economic impacts:

- Degrease the incomes from cruise tourist activities
- Raise of prices in touristic areas

Climate impacts:

- GHG emissions

6. Existing road network, transport services and infrastructure in the city/ port

There are three road networks that are intertwined:

- The first, the historic one, follows the labyrinth of walls in the old town. It can be considered as a small network, and not fitting to the flux of circulation that has brought about the recent urbanization.
- The second, later network extends to the line of agricultural areas. Since there is neither a given hierarchy nor a suitable model, the network does not even have a clear and practical circulation scheme.
- A third network (consisting of large axes) forms the backbone and enables the north of the city (with the industrial zone). In this network is also included the axis Tirana - Durres, which causes considerable traffic overload.



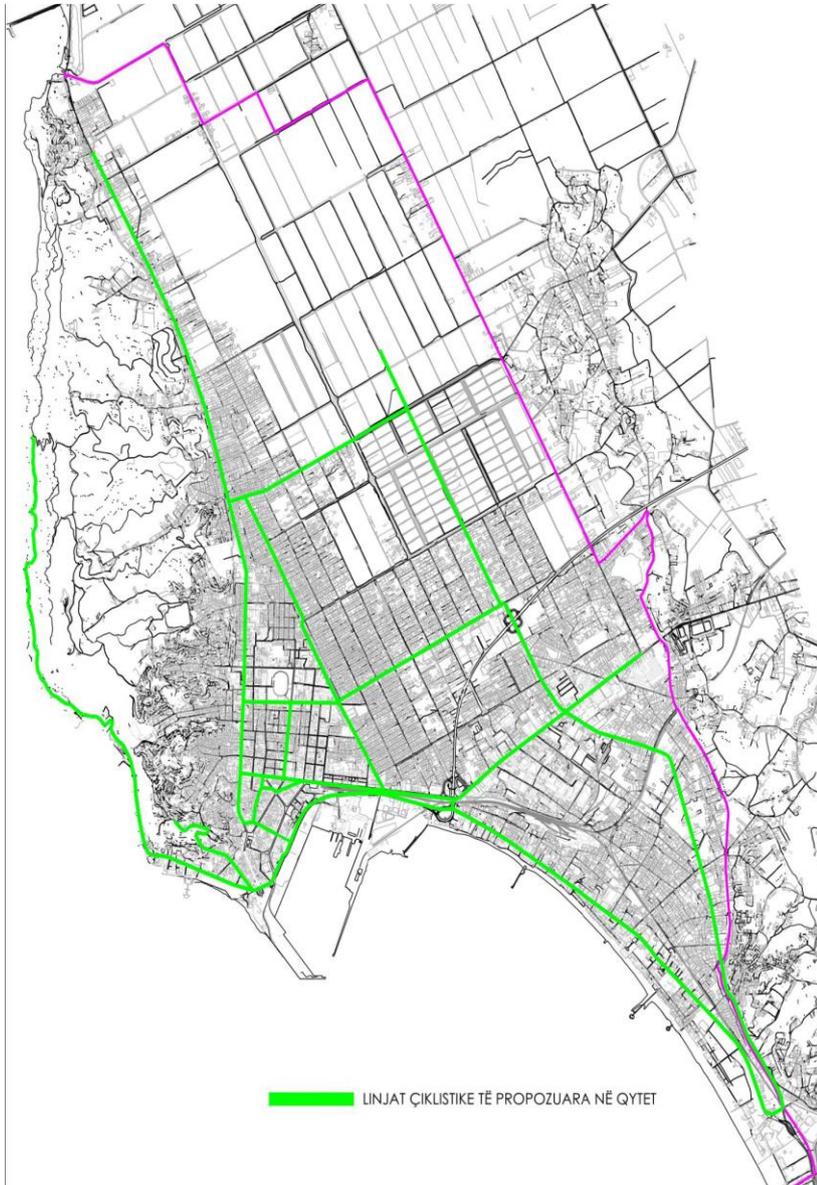
The fact that the Durres road network is not adequate for such fast economic development has brought problems that are characteristic of big developing cities:

- Breaking infrastructure, and especially the Tirana-Durres highway.
- Continuous increase in the number of vehicles related car ownership, increase of daily car usage.
- Physical breakdown of major infrastructure (highway / roundabout / railways to port area), and especially between the historic centre and the rest area.
- Consequences of conglomeration and uncontrolled distribution of constructions (informal zones) along the highway, which generate a chaotic urbanization to the detriment of the quality of life and the landowner's economy

Public transportation is based on 6 bus-lines, operated by private ownership companies. Dedicated bus lines are missing, and also there is a lack of information about stops, timetables etc.

The bicycle lines are missing in Durres City, but referring the last studies and initiatives by Durres municipality, is proposed the new scheme of the adaptation of existing bicycle lanes or the construction of new lines that would push many citizens to use bicycle transport. This Initiative aim to connect the railway

station to all the eastern and southern coasts; it is expected that this network will connect the central area of the city with the coastal tourist fauna and the industrial zone.



The road parallel to the wall of the port of Durres and Port Road is a project having opened a new road alternative. The multi-functional role of this road emphasizes the fact that it stretches in between Durres train station, by ensuring multimodality to road users and it goes by the terminal of passengers from/to the port of Durres.

This road, which can be considered as an urban "motorway", creates communication with the "Skanderbeg" centre and the city centre, and on the other side around the turning at the entrance of Durres where the directions lead to different areas of Albania. The plan gives this space the role of restoring the connection between different parts of the city. The purpose of the construction of this road is to facilitate the traffic that is created at the entrance to the city in the only access road for all means coming from the direction of Tirana and the southern direction of the country.



The first part of the road from "DAJLAN BRIDGE" to the ferry shore is designed as a 2-lane road, 1 bicycle lanes with a total width of 10.5m, with the passing width of $B = 7\text{m}$.

The second part of the road from the ferry market to the commercial bank Durres is designed with a total of 19m B with 2 lanes of motion, with parking and bicycle lanes in both directions.

The road creates advantages in the movement of pedestrians and bicycles towards the beach of Durres.

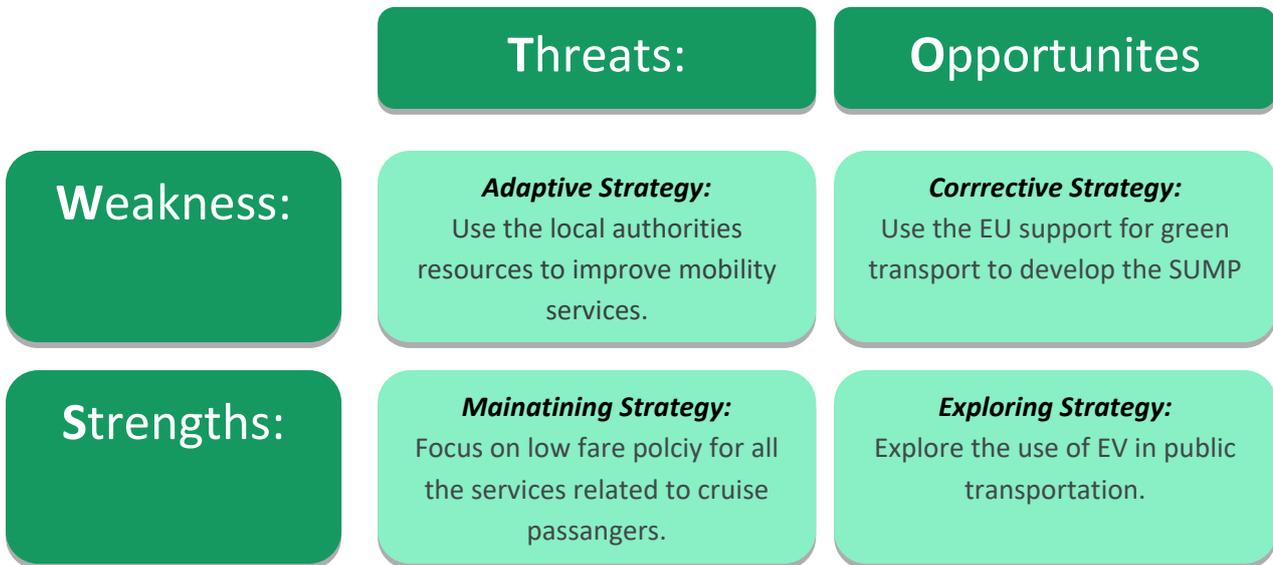
2.1.2 SWOT/CAME analysis

Based on information and data collected in the analyses and through consultations with stakeholders, was produce a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) following the provided model.

After the collection of the data and based on the inputs of relevant stakeholders the following SWAT was developed:



The SWOT analysis was followed by the CAME matrix below:



2.2 Step 2: Participatory process

1. Stakeholders identification

The stakeholders were divided in groups based on relevance and impact they had in the development of the LCTPs activates and future scenarios. Also in account was taken their potential influence in the development of Transfer and Capitalizing activities.

Group 1: Local and Regional Stakeholders (Very High Importance).

This group is directly involved, affected and interested in the development of the LCTP for cruise passengers.

<i>Stakeholder</i>	<i>Impact</i>	<i>Interest</i>	<i>Involvement</i>	<i>Comments</i>
<i>Durres Municipality (Ass. Partner)</i>	<ul style="list-style-type: none"> - High impact since the LCTP will be developed in own territory. - Political Support. 	<ul style="list-style-type: none"> - Sustainable Development Policy Implementation. - Economic Growth Expected. 	<ul style="list-style-type: none"> - Continuous collaboration with the LCTP working group. - Providing specific required data. 	<ul style="list-style-type: none"> - Integration of the LCTP with the SUMP that is being currently developed.
<i>AFTO – Albanian Passenger Terminal Operator</i>	<ul style="list-style-type: none"> - High impact since the LCTP directly affects the services of the Passengers Terminal. 	<ul style="list-style-type: none"> - Improving the Cruise Passengers related services. - Raising attractiveness. 	<ul style="list-style-type: none"> - Providing the required data. - Collaboration in identifying major mobility issues. 	<ul style="list-style-type: none"> - Improvement of the Mobility within the Port Areas.
<i>Durres Regional Political Authorities</i>	<ul style="list-style-type: none"> - High Impact since the LCTP will be developed in own territory. - Political Support. 	<ul style="list-style-type: none"> - Raising attractiveness for the region. - Economic Growth Expected. 	<ul style="list-style-type: none"> Collaborating in identifying the “Touristic Points” and mobility issues outside the city. 	<ul style="list-style-type: none"> - Tackling Mobility issues in the Town of Kruja old part. (Kruja Old Castle is a major Touristic Attraction.)
<i>Municipality Association of Albania</i>	<ul style="list-style-type: none"> - High Impact since this Project will represent a potential “good practice”. 	<ul style="list-style-type: none"> - Sustainable Development Policy Implementation. 	<ul style="list-style-type: none"> - Collaborating on Transferring and Capitalizing activities. - Adapting LCTPs guidelines for other municipalities 	<ul style="list-style-type: none"> - Define a set of guidelines for other municipalities to develop their own LCTPs.

Group 2: National Authorities (High Importance).

This group consists in the national political and development national authorities, which are important to the project in both phases, development of LTCP and during the Transferring and Capitalizing phase.

<i>Stakeholder</i>	<i>Impact</i>	<i>Interest</i>	<i>Involvement</i>	<i>Comments</i>
<i>Ministry of Infrastructure and Energy;</i> <i>Ministry of Finance and Economy;</i> <i>Ministry of Environment</i>	<ul style="list-style-type: none"> - Political support. - Enhancing Transferring and Capitalizing activities efforts. 	<ul style="list-style-type: none"> - Sustainable Mobility and transport Policies Development. - Low Carbon Economy Policy Development. - Economic growth expected. 	<ul style="list-style-type: none"> - Providing continuous feedback on policies. - Providing required information on future investments. 	<ul style="list-style-type: none"> - Focus on Energy conservation Methodologies. - Improve cruise passengers “comfort”, aiming to raise attractiveness.
<i>National Agency for Territorial Planning</i>	<ul style="list-style-type: none"> - Political Support. - Technical Support. 	<ul style="list-style-type: none"> - Territorial Development 	<ul style="list-style-type: none"> - Providing Information on regional territorial developments and investments. 	<ul style="list-style-type: none"> - Integration with national and regional transport plans.
<i>National Monuments Directorate</i>	<ul style="list-style-type: none"> - Political Support. 	<ul style="list-style-type: none"> - Increase of tourist visits in monuments within Durres Region - Increased income 	<ul style="list-style-type: none"> - Providing information on all potential touristic points. 	<ul style="list-style-type: none"> - Providing information to cruise lines.
<i>Albanian Railways</i>	<ul style="list-style-type: none"> - Political support. 	<ul style="list-style-type: none"> - Improvement of multimodal / intermodal transport 	<ul style="list-style-type: none"> - Providing information regarding the frequency of use of the railways by cruise passengers 	<ul style="list-style-type: none"> - Improve the available touristic information to the passengers, regarding nearby towns.

Group 3: Economic Operators and Associations (Medium Importance).

This groups consists in SMEs like Travel Agencies, Touristic Operators and related Associations which are highly interested in the improvement of the services offered for Cruise Passengers. Also they view the LCTP as a tool to raise the attractiveness of the Durres Region.

<i>Stakeholder</i>	<i>Impact</i>	<i>Interest</i>	<i>Involvement</i>	<i>Comments</i>
<i>Travel Agencies and Touristic Operators</i>	<ul style="list-style-type: none"> - Raising awareness. - Presenting the results to the cruise operators. 	<ul style="list-style-type: none"> - Increasing income. - Improving tourist related services. 	<ul style="list-style-type: none"> - Providing inputs on major issues to tackle related to tourists' services. 	<ul style="list-style-type: none"> - Focus on information of tourists. - Improvement of tourist services.
<i>Durres Trade Chamber</i>	<ul style="list-style-type: none"> - Political Support. - LCTP will be developed within Durres territory. 	<ul style="list-style-type: none"> - Raising attractiveness of the region. - Economic growth expected. - Low Carbon Economy Policy Development. 	<ul style="list-style-type: none"> - Providing potential touristic attractions in the Durres Region. - Providing Potential funding instruments. 	<ul style="list-style-type: none"> - Inadequate information infrastructure - Inadequate transport infrastructure
<i>ATA and Touristic Operator Association</i>	<ul style="list-style-type: none"> - Raising awareness. - Presenting the results to the cruise operators. 	<ul style="list-style-type: none"> - Economic growth expected. - Low Carbon Economy Policy Development. 	<ul style="list-style-type: none"> - Providing inputs on major issues to tackle related to tourists' services. 	<ul style="list-style-type: none"> - Focus on information of tourists. - Improvement of tourist services. - Inadequate travel connections.

2. Participatory process design and implementation

Participatory process undertaken:

The participatory process was organized in four phases and for each phase phases at least one meeting was planned to be organized.

Phase One: Identification and First Contact

Identification and establish contact with all relevant stakeholders mostly with informal meetings.

- Establishment of the Project Stakeholders Mailing List (Names, Organization, Function Contact Details, etc.)
- Travel Agencies Mailing List

- National Authorities Mailing List
- Regional and Local Authorities Mailing List

Phase Two: Involvement of relevant stakeholders in identifying the main bottlenecks and issues. The interviews intended to deepen the knowledge of the current situation and gather actions and measures that the interviewees found necessary to be included in the plan.

- Questionnaires were developed and provided to all stakeholders.
- Semi Structured Interviews (58 interviews conducted)
- Questionnaires (86 questionnaires completed)
- Info Events for Stakeholders
- **On - Line Questionnaires was uploaded to the AIT and APD official Web.**

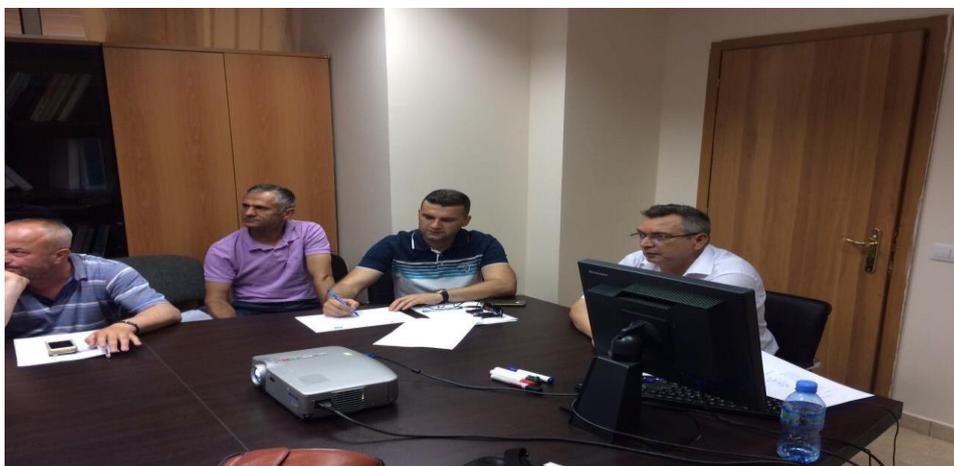
1stParticipatory Meeting, held in Tirana, on 17th June 2017

During this session, attended by 30 representatives, from main stakeholders were presented the

- **Project objectives**
- **Project Methodology and WP**
- **Expected results.**

Also the participants were invited to offer their comments and proposals.

Photo from Meeting



Main outcomes

- *Different option of Vision for Durres LCTP*
- *Additional Stakeholders to be involved*
- *Different future scenario related tourist traffic flow*
- *First indications of measures proposed and free discussions.*

2nd Participatory Meeting, held in Durres, on 10th October 2017

Organized in Durres in this meeting were discussed the main issued identified. Also during this meeting the municipality representatives proposed the integration of the LCTP with the SUMP which is being currently developed. Also the agencies contributed on drafting the final touristic attractions list.



Lessons Learned and challenges faced

1. The Durres citizens are not worried from the cruise and daily tourists
2. The Durres LCTP will consider daily tourist using ferry ships and arriving at Ferry Terminal
3. All stakeholders support introducing e-bike Rent/sharing
4. Suggestion for free e-minibus service within the port area for cruisers
5. The Challenge , E- bus introducing for cruisers, (sceptical for implementation)
6. Integration of Durres SUMP with LCTP
7. Info point, Web and application, most important
8. Creating conditions for increasing the number of cruise ships for the future.
9. Balancing of the future demand mobility with Low Carbon transport modes.
10. Easy access for tourist to the city centre and attractive places.
11. Low mobility, old user need to get attention

Phase Three: Finalization of the Action List

3rd Participatory Meeting, held in Durres

During the meeting the first draft of the LCTP was presented to the relevant stakeholders where comments for improvement or changes were expected.



New stakeholders joined the meeting, from public transport private company and local environmental agency.

Dissemination of the LCTP

- Through the Albanian Partners websites
- Through direct mailing
- Throw Port of Durres Exhibition Day
- Press Release and Media Communication



Phase Four: Transferring and Capitalization

- Info Events
- Direct Contact

2.3 Step 3: Design of the plan

1. Definition of the current scenario

Based upon steps 1 and 2, the collected data, information and feedback from stakeholders and main actors provides the basis for the elaboration of an overview of the current state of things and an opportunity to define the main working areas

The current state of things for the Durres Port and city tourist's mobility is characterized by:

- Low number of cruise ships and missing the Cruise Terminal (14,700 tourists by 25 cruise ships for 2016)
- Considerable number of daily tourists arriving in Ferry Terminal by regular scheduled lines (33,000 or 4% of total passengers by 2016 year)
- The future projection is optimistic for increasing the number of Cruisers and daily tourists (5 fold approximately).
- Lack of urban mobility related studies like SUMP and SEAP.
- Most urgent issues relate to Heavy traffic and Road congestion in Durres port and city entrance; Lack of rationalization of the touristic spaces; Lack of well-defined walking tourist paths infrastructure and information; Lack of Cruiser liners and operators business coordination; Low spending time of cruiser tourists, etc...
- The best of things: Territorial Strategy of Municipality Durres 2015 – 2030

Analyzing the current situation with the data and information collected, shared and discussed with main stakeholders, it is a clear current situation and an opportunity to define the main working areas:

- Mitigation of Environmental impacts in the better way using the Demand Management Strategies
- Mitigation of Climate impacts introducing "Clean transport and fuels" like: e-bike; e-bus; e-taxi.
- Make positive economic impacts by optimization of accessibility level of City and Port.

2. Definition of vision and objectives

Based on the current scenario, a strategic vision and a set of objectives is defined to guide the development of the LCTP

Vision:

Draw up the development vision of Durrës City as cruise destination that use of low-carbon transport systems and multi-modal connections in the frame of wider sustainable traffic and mobility policies.

Objectives:

The objective is to improve the mobility and quality of visit for cruise passengers, Durres citizens and the nearby areas, by fostering a complete and comprehensive plan. This requires developing a LCTP to meet the mobility needs of cruise passengers, residents, businesses, and the region for decades to come.

To attract more tourist using cruise ships to visit Durres and nearby areas of interest, by making the visiting experience as comfortable as possible.

To reduce the GHG emissions by developing the LCTP, this will promote the use of friendly environmental transport modes.

3. Definition of actions and indicators

Following the strategic vision and objectives, detailed actions are chosen and indicators to measure the performance in their implementation towards the objectives.

Please note that each action/measure envisaged in the plan is to be described according to the “Measure description template”, Annex 1 of the present document.

In terms of Demand Management Strategies the actions proposed are:

- Improving the mobility pathway of the cruise passengers from the Cruise Terminal (Western Terminal) and Ferry Terminal to the city.
- Establish touristic info points along the touristic paths within the city and the port areas.

The City walking paths becomes more important and necessary to allow cruisers to fulfill their recreation and travel goals more effectively. The mobility will be improved by establish of horizontal and vertical signals that will extend from the terminal to the city. The horizontal signals will include path lines of different colors that will guide the cruise tourists to the different “Exit Gates” of the Ports and different areas of the city. Ideally the lines will go on in the city and link all the touristic attractions and the info-points. These two action are considered most important measure and graphically are shown at the figure below



Figure 3 - Info Point & Walking Paths

Another important measure is considered:

- Develop an application for cruise tourists with all attraction points and activities.

The cruise tourist app will focus on this specific target group, supply them with all relevant information they will need during their visit in the city. The City walking paths and Info points will be included. This measure also improves optimization of accessibility level of Durres City and Port.

In the table below are detailed Actions and indicators for the above actions described.

General Objective	PROBLEM	Specific Goals	ACTIONS	INDICATORS
To improve the mobility and quality of visit for cruise passengers, Durres citizens and the nearby areas, by fostering a complete and comprehensive plan. This requires	Pedestrian congestion at the exit of the Port.	Simplify the pedestrian transit through the Port areas.	Establish touristic info points along the touristic paths within the city and the port areas.	1. Number of info points. 2. Number of tourists helped.
		Reduce of traffic in Durres port and city	Develop an application for cruise tourists with all attraction points and activities.	1. Number of downloads

<p>developing a LCTP to meet the mobility needs of cruise passengers, residents, businesses, and the region for decades to come.</p>		<p>entrance by 20% in one year</p>	<p>Improving the mobility pathway of the cruise passengers from the Cruise Terminal (Western Terminal) and Ferry Terminal to the city</p>	<p>1. Number of passengers using every path (exit) promoted. 2. Time needed for the tourists to exit the Port Area. (Reduce by 25%) 3. Number of cruise tourists using walking, public transport</p>
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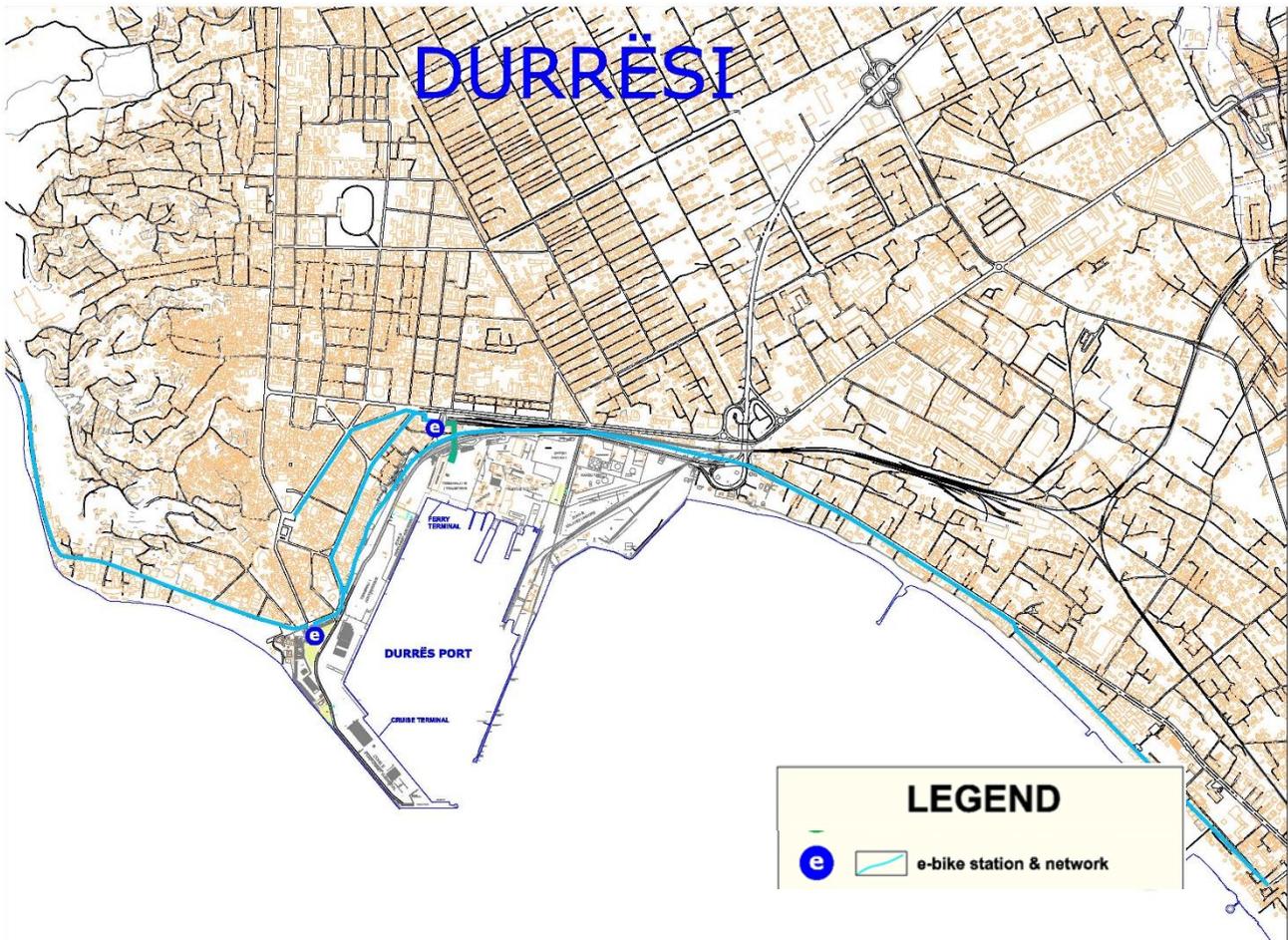
In terms of Mitigation of Climate impacts, the actions as follow introduce The Clean transport and fuels vehicles:

- Establish an e-biking rental service in the cruise terminal and ferry terminal.
- Extend the e-taxi services in the cruise terminal and Ferry Terminal.
- Establish an electrical bus shuttle service from the Cruise Terminal and Ferry Terminal to the regional touristic areas

Introduce e-bike service

Territorial Strategy of Municipality Durres 2015 – 2030 already completed and according to the strategy a bike-separate line network was forecast. It is accepted that this network to be included in the Durres SUMP (at starting process). The measure proposed in LCTP, is to introduce e-bike, and two of the rentals/share points to be:

- The first at the main Port Gate, that corresponds to the exit for cruisers that corresponds to the exit for cruisers
- The second at the Railway City Terminal (as multimodal terminal) that corresponds to the exit for daily tourists arriving at the Ferry Terminal, using Walking Bridge Pathway.



Extend the E-taxi services

Already the E-taxi services have started. One private company provides this service, as a pilot, with one post e-taxi at the center of the city. The proposed action on this LCTP is to extend with two other station to be establish at the Passengers Terminal of the Durres port through the pedestrian bridge pathway to the railway Station and also at the main entrance of the port near the Cruise terminal, increasing the number of electric taxis, and making it possible for them to use by tourists who come with cruisers, as well as daily tourists.

Introduce e-bus service

E-bus service is proposed to serve all the tourists who come with Cruise, as well as for day-to-day tourists. The proposal to this action is to offer:

- Free service from the Port Authority by establishing a e-minibus line from the cruise terminal to the Exit Gate near the beach touristic area and with a another stop to the Ferry Terminal linked with the pedestrian bridge that connects with the Railway Station.
- E-bus line that will have the starting point at the Railway Station area and the destination will be the Castle of Kruja, within the Prefecture of Durres. This measure, envisages the deployment of 2 e-bus with 4 hours of departure and return

Those measures (e-bike; e-taxi; e-bus line) have to consider the service to offer for all other tourist visiting the city, arriving by other mode of transport.

These Actions graphically are shown at the figure below:

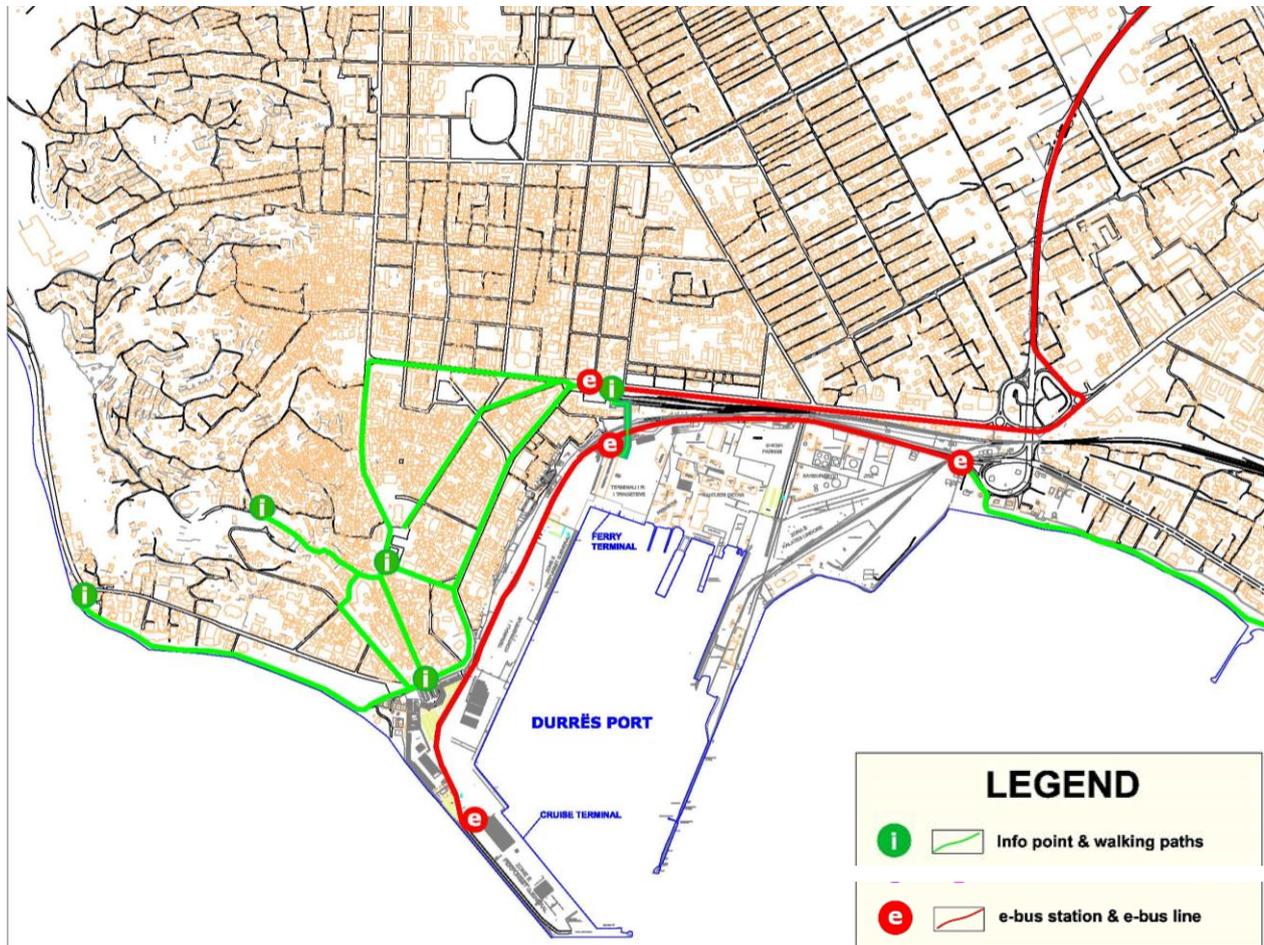
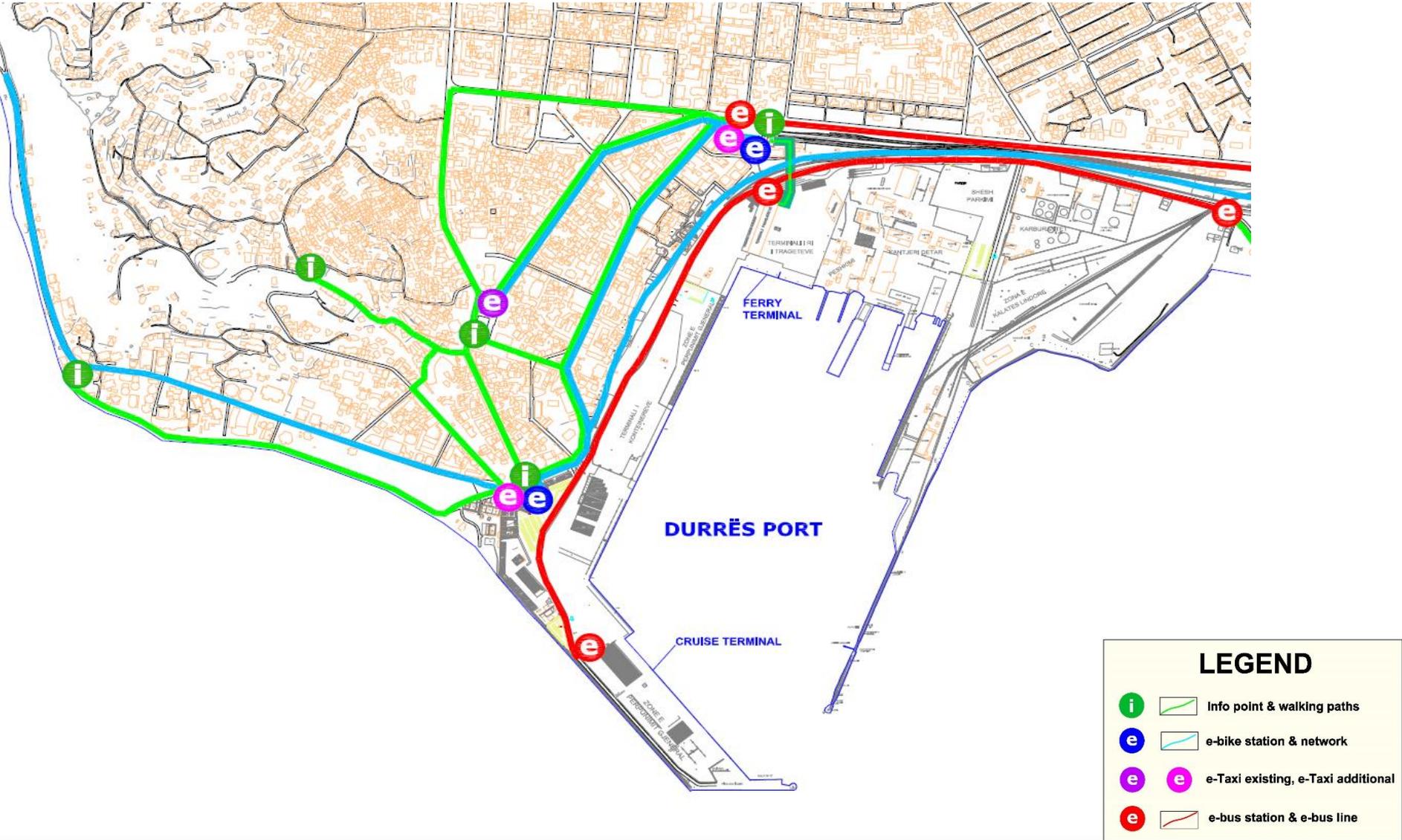


Figure 4: All Mobility improvement actions ghrific



In the table below are detailed Actions and indicators for the above actions described.

<u>General Objective</u>	<u>PROBLEM</u>	<u>Specific Goals</u>	<u>ACTIONS</u>	<u>INDICATORS</u>
To reduce the GHG emissions by developing the LCTP, promoting the use of friendly environmental transport modes.	Heavy traffic in Durres port and city entrance	Promote the use of Electrical Vehicles by the cruise passengers.	Establish an e-biking rental service in the cruise terminal and ferry terminal.	1. Number of bicycles 2. Number of rentals 3. Hours of Services 4. No of Users 5. Utilization Rate
			Extend the E-taxi services in the cruise terminal and Ferry Terminal.	1. Number of cruise tourist using the e-taxi service.
			Establish an electrical bus shuttle service from the Cruise Terminal and Ferry Terminal to the regional touristic areas.	1. Number of cruise tourists using shuttles visiting the regional spots.

Regarding to the vision and one the main objective, making Durres city and Port more attractive and having a positive economic impacts for the Region, three actions are included to the LCTP:

- Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.
- Promotion of facilitating policies for cruisers
- Improve accessibility for disabled low mobility passengers.

The last determinant of the attractiveness of a City as a cruise destination is the level of City and Port accessibility optimisation has to offer. Advance and real time information for organisation of City-visit and mobility, are the solution for Optimisation. A website with updating information about the benefits of the touristic activity is one of measure that must implement at a local level.

“Discover Durres city and more...” must be the local web with information about History (City history, Archaeological Sites); Culture, (Museums, architecture, music tradition); Exploring (Beaches, flora, fauna) Enjoy (Activities and Events); Travel Stay (accommodations and useful travel information); Taste (Local Products and Gastronomic destinations); Alternative Truism and Interactive Maps. Focusing on this specific target group and supply with all relevant information make them possible to be prepared to enjoy the city attractions.

This measure is linked with of Demand Management Strategies measures for developing a mobile application for cruise tourists with all attraction points and activities.

Durres City and Port has to respond proactively to the national cruise tourism developments. Demonstration of the positive market trends is potential for cruise tourism in the region. The chance for Durres city to be Albania's showcase for the visitors of the cruise ships, is attention of Cruise operators and liners that are more than ever searching for new destinations and itineraries. New facilitating policies for cruisers are necessary to apply:

- Create the policy to support the development of Cruise Tourism in Durres.
- Clearly demarcate roles and responsibilities of each agency/department in different aspects of cruise tourism development.
- Address tax related issues. In addition to tourism related taxes, a cruise vessel & its passengers are also subject to several charges and fees
- Simplification of payment procedures for dues and charges would create a favorable environment with the cruise tourists.

“Improve accessibility for disabled low mobility passengers” is another measure proposed on Durres LCTP. This measure takes in consideration that a large part of cruise passengers are senior citizens usually with low mobility. This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city.

In the table below are detailed Actions and indicators for the above actions described.

<u>General Objective</u>	<u>PROBLEM</u>	<u>Specific Goals</u>	<u>ACTIONS</u>	<u>INDICATORS</u>
To attract more tourist using cruise ships to visit Durres and nearby areas of interest, by making the visiting experience as comfortable as possible.	Low number of cruise ships visits. Also the cruises that come to Durres have a short staying. (Max 8 h)	Increase the number of cruise ships calls by 25% per year. Increase the staying time to 24h per cruise visit.	Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.	1. Platform created and available with a number of visits over a year.
			Improve accessibility for disabled low mobility passengers.	1. Number of infrastructure interventions.
			Promotion of facilitating policies for cruisers	1. Number of policies adopted by the regional and national authorities.

4. Development of future scenarios

Base Line: Current situation (Year 2016).

BCS Scenario: Normal Trend without project implementation (“Business as usual scenario”);

Nothing changes, neither for better nor for worse, where historical data, trends and behavioral). In this scenario, we must take into consideration that the Durres SUMP process is at the starting point. It will take a long time to develop Durres SUMP, and also to implement it.

Scenario 1: “Most positive possibilities foreseen actually occur”

Most positive possibilities foreseen actually occur, surpassing the expected outcomes and allowing to incremental adaptations of the Plan. In this Scenario all the Action/measures will be implemented.

Scenario 2: “Unexpected events or circumstances”

Unexpected events or circumstances, mostly negative for the project, become a significant obstacle and hazard for the fulfillment of foreseen objectives.

In this scenario, we expect that only 3 actions (Action 1.1.3; Action 2.1.2; Action 3.1.1) will be completed. Those actions do not need too much investment, as well as the 2 first could be the part of SUMP.

Two other action/measures (Action 1.1.1; Action 2.1.1) are expected partially completed, it means:

- Not all Info Points will be establish as in LCTP Plan because lack of collaboration of City Council with other stakeholders.
- Not e-bike will be introduced because lack of funds or collaboration with private company providers, but bike rent/sharing scheme will be accepted.

Four other actions/measures (Action 1.1.2; Action 2.1.3; Action 3.1.2; Action 3.2.1) will be not completed because:

- Lack of funding, or crawl procedure for using PPP scheme for e-bus line,
- Disregard for developing the Apps and improving the accessibility for disabled low mobility passengers,
- Disregard of collaboration of Local and National governance for “Promotion of facilitating policies for cruisers”

Scenario 3: “Most likely scenario”

When events occur in the most likely way, thus progressing to a certain stage (not as good as they could have), but getting low or even stuck in some aspects.

In this scenario, the most actions/measures will be implemented (5 of them) and 4 other will be partially implemented as in table below.

For the Action 2.1.3, Partially Implemented means that at least one of two components must be completed. If the e- bus route will start as a Pilot Project, it will be accepted.

MEASURE	BSC	S1	S2	S3
Action 1.1.1 Establish touristic info points along all touristic paths within the city	x	✓	✓ PARTIALY IMPLEMENTED	✓
Action 1.1.2 Develop an application for cruise tourists with all attraction points and activities.	x	✓	x	✓
Action 1.1.3 Improving the mobility pathway of passengers/tourist at the ferry/cruise terminal in/out	x	✓	✓	✓
Action2.1.1 Establish an e-biking rental/sharing service in the cruise terminal, (linked to the city service)	x	✓	✓ PARTIALY IMPLEMENTED	✓ PARTIALY IMPLEMENTED
Action 2.1.2 Extend the E-taxi services in the cruise terminal.	x	✓	✓	✓
Action2.1.3 Establish an electrical buss shuttle service from the Passenger's Terminal to the regional touristic spots.	x	✓	x	✓ PARTIALY IMPLEMENTED
Action 3.1.1 Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.	x	✓	✓	✓
Action 3.1.2 Promotion of facilitating policies for cruisers.	x	✓	x	✓ PARTIALY IMPLEMENTED
Action 3.2.1 Improve accessibility for disabled low mobility passengers.	x	✓	x	✓ PARTIALY IMPLEMENTED

According to the above scenario, in the table below are calculated the indicators of Mobility.

Indicator Descriptions	Measurement Units	Base line Period (2016)	Normal Trend	Scenario 1 "Most positive possibilities foreseen actually occur"	Scenario 2 "Unexpected events or circumstances"	Scenario 3 "Most likely scenario"
Total Mobility Users	N°	240.417	276.480	324.863	290.304	311.039
Transport Intensity (km/Users)	km/Users	23.24	27.8	28.7	28.16	28.72
mobility Users (for working)	% of Users	66,8%	67,5%	70,3%	68,1%	69,5%
mobility Users (for studying)	% of Users	24,7%	24,9%	21,2%	23,7%	22,1%
mobility Users (for tourism)	% of Users	1,2%	1,5%	2,7%	2,0%	2,6%
mobility Users (for other reasons)	% of Users	7,3%	6,1%	5,8%	6,2%	5,9%
LPT Users	% of Users	5,4%	4,9%	5,1%	4,8%	5,0%
Private Car Users	% of Users	44,7%	48,3%	37,2%	48,7%	41,2%
Walking Users	% of Users	43,4%	40,8%	50,0%	40,5%	47,4%
Bicycle User	% of Users	6,5%	6,1%	7,6%	6,0%	6,4%
Average Car Occupancy	%	46,0%	46,0%	45,1%	43,2%	44,6%
Average LPT Occupancy	%	62,0%	60,0%	72,6%	60,6%	68,4%

2.4 Step 4: Monitoring and funding

2.4.1 Monitoring LCTP implementation

The LCTP Implementation monitoring will follow the steps:

- Acceptance of the plan from the Durres City and Durres Port Authority
- Create the Co-working team responsible for implementation
- Pre-decision for funding from Port Authority and City Council possibility from their own resources.
- Involving the key stakeholders for funding support.
- Appointment of the coordinator for the implementation of the plan
- Monitoring and control of the measures by the pre- management
- Monitoring of the results

The table below, shows the Work-plan complete with deadlines and responsibilities

Main goal 1: To improve the mobility and quality of visit for cruise passengers, Durres citizens and the nearby areas, by fostering a complete and comprehensive plan							
Specific goal 1.1	Start/dead line	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Simplify the pedestrian transit through the Port areas.	09/18-10/19	smooth transit	n/a	Ferry Terminal Operator	Durres Port Authority	Every 6 month	Survey by DPA & AFTO
Action 1.1.1	Start/dead line	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Establish touristic info points along the touristic paths within the city and the port areas.	09/18-10/19	5 Info-Point in different spots of Durres City	Number of info points. Number of tourists helped.	Durrës Municipality	Durrës Municipality	Every 6 month	Staff from Urban Development Dep.monitoring
Action 1.1.2	Start/dead line	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Develop an application for cruise tourists with all attraction points and activities.	09/18-10/19	Tourist spots and paths application	Number of downloads	Ferry Terminal Operator and Durres Municipality	Durrës Port Authority	Every 3 months	Staff from Urban Development Dep.monitoring
Action 1.1.3	Start/dead line	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Improving the mobility pathway of the cruise passengers from the Cruise Terminal (Western Terminal) and Ferry Terminal to the city	09/18-10/19	Different colored paths for tourist	Number of passengers using every path (exit) promoted.	Ferry Terminal Operator and Durres Municipality	Durrës Port Authority Durrës Municipality	Every 3 months	Staff from Urban Development Dep.monitoring

Main goal 2: To reduce the GHG emissions by developing the LCTP, which will promote the use of friendly environmental transport modes.

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Specific goal 2.1	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology	
Promote the use of Electrical Vehicles by the cruise passengers.	09/18-10/20	Reduced emissions	CO2, NOx, SOx, PM 10, PM 2.5	Environmental agency	Durres Municipality	Every 3 months	Gathering of data recorded by scheduled monitoring	
Action 2.1.1	Start/deadline	Outcomes	Indicators		Responsibility for monitoring	Monitoring Schedule	Description and Methodology	
Establish an e-biking rental service in the cruise terminal and ferry terminal.	09/18-10/20	E-Bike tourist users	Number of bicycles of rentals Hours of Services No of Users Utilization Rate	E-bike sharing Company	Durres Municipality	Every 3 months	E-Bike Company Monitoring	
Action 2.1.2	Start/deadline	Outcomes	Indicators		Responsibility for monitoring	Monitoring Schedule	Description and Methodology	
Extend the E-taxi services in the cruise terminal and Ferry Terminal.	09/18-10/20	E-Taxi tourist users	Number of cruise tourist using the e-taxi service.	E-Taxi Company	Durres Municipality	Every Month	E-Taxi Company Monitoring	
Action 2.1.3	Start/deadline	Outcomes	Indicators		Responsibility for monitoring	Monitoring Schedule	Description and Methodology	
Establish an electrical bus shuttle service from the Cruise Terminal and Ferry Terminal to the regional touristic areas.	09/18-10/21	Electric bus shuttle service	Number of cruise tourists using shuttles visiting the regional spots.	Bus Company	Durres Municipality	Every Month	Department of Transport & Tourism in Durres Municipality monitoring	

Main goal 3: To attract more tourist using cruise ships to visit Durrës and nearby areas of interest

Specific goal 3.1	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Increase the number of cruise ships calls by 25% per year.	09/18-05/22	Increase the tourist activities	Number of cruise ships calls	AFTO	Durrës Port Authority	Every months	Gathering of data recorded by scheduled monitoring
Action 3.1.1	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Create and disseminate a website with information about the benefits of the touristic activity in the Durrës Region.	09/18-05/20	New Platform	Number of visitors	Durrës Port Authority	Durrës Port Authority	Every month	IT data monitoring
Action 3.1.2	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Promotion of facilitating policies for cruisers.	09/18-05/20	Number of policies adopted by the regional and national authorities.	Number of tourists	Durrës Port Authority	Durrës Port Authority	Every 3months	Durrës Port Authority Ministry of Infrastructure & Energy
Specific goal 3.2	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Increase the staying time to 24h per cruise visitors	09/18-05/22	Economic Benefits	Avarage visit duration	Durrës Port Authority	Durrës Port Authority	Every Cruise visit	Passangers Staying Time
Action 3.3.1	Start/deadline	Outcomes	Indicators	Source of data	Responsibility for monitoring	Monitoring Schedule	Description and Methodology
Improve accessibility for disabled low mobility passengers.	07/18-05/22	New infrastructure interventions	number of older tourist used	AFTO and Durrës Port Authority	Durrës Port Authority	Every 6 month	Durrës Port Authority monitoring

2.4.2 Funding

Estimation of the needed resources and where funding will come from.

Item	Start / Deadline	Funding	Cost Category				Total
			Investments	Description	Sub-contracting	Description	
Action 1.1.1: Establish touristic info points along all touristic paths within the city	09/18-10/19	Amount (€)	50,000 €	Purchase of 5 Kiosk suitable for info-point	10,000 €	Web update and maintain for 5 years	60,000 €
		Source of Funding	Durres Port Authority Private Companies Municipality of Durres				
Action 1.1.2: Develop an application for cruise tourists with all attraction points and activities.	09/18-10/19	Amount (€)	5,000 €	App Development	15,000 €	Update and Maintain for 5 years	20,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 1.1.3: Improving the mobility pathway of passengers/tourist at the ferry/cruise terminal	09/18-10/19	Amount (€)	150,000 €	Purchase of all equipment	30,000 €	Construction works	180,000 €
		Source of Funding	Durres Port Authority Albanian Ferry Terminal Operator Municipality of Durres				
Action 2.1.1: Establish an e-biking rental/sharing service in the cruise terminal, (linked to the city service)	09/18-10/20	Amount (€)	200,000 €	Purchase of 400 e-bike and equipment	70,000 €	Construction work for two stations	270,000 €
		Source of Funding	Private Companies Municipality of Durres PPP				
Action 2.1.2: Extend the E-taxi services in the cruise terminal.	09/18-10/20	Amount (€)	250,000 €	Purchase of 20 e-taxi and equipment	30,000 €	Construction work for two stations	280,000 €
		Source of Funding	Private Companies Municipality of Durres PPP				

Action 2.1.3: Establish an electrical buss shuttle service from the Passengers Terminal to the regional touristic spots.	09/18-10/21	Amount (€)	360,000 €	Purchase of 2 e- bus (>40seat);3 e-minibus,<20seats); and equipment	70,000 €	Constructio n work for two stations	430,000 €
		Source of Funding	Durres Port Authority Private Companies PPP				
Action 3.1.1: Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.	09/18-05/20	Amount (€)	2,000 €	Website developing	6,000 €	Website update and maintain for 5 years	8,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 3.1.2: Promotion of facilitating policies for cruisers.	09/18-05/20	Amount (€)	50,000 €	Cruise Tourism Potential Strategy Study	0 €	n/a	50,000 €
		Source of Funding	Ministry of Tourism and Environment Municipality of Durres				
Action 3.1.3: Improve accessibility for disabled low mobility passengers.	07/18-05/22	Amount (€)	300,000 €	Purchase of equipment	50,000€	Constructio n works	350,000 €
		Source of Funding	Durres Port Authority Municipality of Durres				

ANNEX 1 – LCTP measure description template

Action 1.1.1: Establish touristic info points along the touristic paths within the city and the port areas.

- How is the measure implemented at a local level?
The measure foresees the implementation of four/five Info-Points for cruise-passengers, with the first one to be at the Port Main entrance the second stationed at the Railway Terminal for Passengers and the others in specific touristic points along the “touristic pathways”. These can be created and run by a private operator and/or by a public agency with an agreement with the city council.
- Which are the critical issues that one has to deal with in terms of implementation of the measure?
The main issue is the involvement of the key stakeholders, Durres Port Authority, Albanian railways and the City Council, to financially support the establishment of the Info Points, cause at first the interest of the private operators may be low.
- What sets the measure apart from other similar measures?
The measure will be specific and directed toward helping the cruise passengers, to help them “navigate” the through the city in less time and experience as much as possible touristic attractions.
- How does the measure satisfy the needs of cruise passengers?
The touristic info-points will take in account that the cruise passengers have a defined window (average 4-6 hours stay) of time to visit the city, and therefore will develop a suitable “touristic path”, tailored made for cruise passenger’s needs.

Action 1.1.2: Develop an application for cruise tourists with all attraction points and activities.

- How is the measure implemented at a local level?
Development of an application for cruise tourists, which will include information about the touristic spots, areas and activities on local level. The application will be developed with the collaboration of local touristic authorities and private operators and will include the “touristic paths” to follow in the city, based on different criteria (exp. “traditional cuisine” etc.).
- Which are the critical issues that one has to deal with in terms of implementation of the measure?

The information needs to be updated in real time so to contain all touristic activities foreseen in the area. Therefore the main issue will be the maintenance and update of the application, which may cause the risk of the app being not sustainable financially. Developing a sound business plan will be a critical issue, for the measure to be effective.

- What sets the measure apart from other similar measures?

The app for the information of cruise passengers is a more accessible and always in hand tool compared to other methods of information. Also the tool will create different paths of movement based on the passenger criteria, which makes the measure unique for the local area.

- How does the measure satisfy the needs of cruise passengers?

The cruise tourist app will focus on this specific target group, supply them with all relevant information they will need during their visit in the city.

Action 1.1.3: Improving the mobility pathway of the cruise passengers from the Cruise Terminal (Western Terminal) and Ferry Terminal to the city.

- How is the measure implemented at a local level?

Establishment of horizontal and vertical signals that will extend from the terminal to the city. The horizontal signals will include path lines of different colours that will guide the cruise tourists to the different “Exit Gates” of the Ports and different areas of the city. Ideally the lines will go on in the city and link all the touristic attractions and the info-points developed in “Action 1.1.1”.

- Which are the critical issues that one has to deal with in terms of implementation of the measure?

The critical issue is the involvement of the local authorities to embrace the idea and to develop coloured lines walking paths, throughout the entire city. Along the pathway will be established the required horizontal and vertical signals, to better orient the tourist within the city.

- What sets the measure apart from other similar measures?

The measure is simple and the costs of implementation will be relatively low.

- How does the measure satisfy the needs of cruise passengers?

The cruise passengers will have an easy way out of the terminals and an easy way to orientate within the city.

Action 2.1.1: Establish an e-biking rental service in the cruise terminal and ferry terminal.

- How is the measure implemented at a local level?
Establishment of the e-bike sharing/rental service throughout different areas of the city and in the Cruise and Ferry Terminals. Contribution to the design of a cycling network in collaboration with the Durres City SUMP developers. Establishment of two e-bike sharing/rental stations at the entrances of the port. The stations will be linked with the pedestrians' ways from the cruise and ferry terminals.
- Which are the critical issues that one has to deal with in terms of implementation of the measure?
The critical issue is the financial support. In Durres City the cycling infrastructure is non-existent at the moment, thus it will require a lot of funds to develop all the cycling lines and required infrastructure. Also a crucial issue will be the collaboration with the SUMP developers.
- What sets the measure apart from other similar measures?
This measure introduces in the city with the e-bike sharing/rental services, which will contribute to improve the mobility significantly.
- How does the measure satisfy the needs of cruise passengers?
This measure provides the cruise passengers with a different and cheap mode of transport, to move faster and easier around the city attraction areas.

Action 2.1.2: Extend the E-taxi services in the cruise terminal and Ferry Terminal.

- How is the measure implemented at a local level?
This measure determines the placement of two other e-taxi station at the Passengers Terminal of the Durres port through the pedestrian bridge pathway to the railway Station and also at the main entrance of the port near the Cruise terminal, increasing the number of electric taxis, and making it possible for them to use by tourists who come with cruisers, as well as daily tourists.
- Which are the critical issues that one has to deal with in terms of implementation of the measure?
The critical point of implementation of this measure is the engagement of local authorities, the Port Authority and the Albanian Railways, to reach an agreement regarding the necessary spaces for e-taxi near the terminals.
- What sets the measure apart from other similar measures?
This measure provides a clean transport mode for all tourists visiting the city. This measure reduces the GHG emissions and costs for the city.

- How does the measure satisfy the needs of cruise passengers?

This measure provides the cruise passengers with a different and cheap mode of transport.

Action 2.1.3: Establish an electrical buss shuttle service from the Cruise Terminal and Ferry Terminal to the regional touristic areas.

- How is the measure implemented at a local level?

Establishing an e-Shuttle bus line that will serve all the tourists who come with Cruise, as well as for day-to-day tourists, which is a considerable amount. The service will be divided in two parts.

The first part will include a free service from the Port Authority by establishing a e-minibus line from the cruise terminal two the Exit Gate near the beach touristic area and with a another stop to the Ferry Terminal linked with the pedestrian bridge that connects with the Railway Station.

The second part will establish an e-bus line that will have the starting point at the Railway Station area and the destination will be the Castle of Kruja, within the Prefecture of Durres. This measure, envisages the deployment of 2 e-buses with 4 hours of departure and return.

- Which are the critical issues that one has to deal with in terms of implementation of the measure?
- The critical point of implementation of this measure is the involvement of local and central authorities such as MEI and MTM on administrative licensing issues and the application of PPP strategies, since the investment value is considerable.
- Also the Port Authority will need to invest on e-mini buses, to offer free service within the port area.
- What sets the measure apart from other similar measures?
This measure connects different transport modes in order to reduce the GHG emissions, and offer different destinations.
- How does the measure satisfy the needs of cruise passengers?
This measure provides the cruise passengers with different cheap options to travel to different touristic areas of city and the prefecture.

Action 3.1.1: Create and disseminate a website with information about the benefits of the touristic activity in the Durres Region.

How is the measure implemented at a local level?

“Discover Durres city and more...” will be the local web with information about:

- History (City history, Archaeological Sites)
- Culture, (Museums, architecture, music tradition)
- Explore (Beaches, flora, fauna)
- Enjoy (Activities and Events)
- Travel Stay (accommodations and useful travel information)
- Taste (Local Products and Gastronomic destinations)
- Alternative Truism
- Interactive Maps

- Which are the critical issues that one has to deal with in terms of implementation of the measure?

The information needs to be updated in real time so to contain all touristic activities foreseen in the area. Therefore the main issue will be the maintenance and update of the website. This may arise the risk of the service being not sustainable financially. Developing a sound business plan will be a critical issue, for the measure to be effective.

- What sets the measure apart from other similar measures?

The website for the information of cruise passengers is a more accessible and always in hand tool compared to other methods of information. Also through the website the tourists are able to get pre-information on the city attractions.

- How does the measure satisfy the needs of cruise passengers?

The cruise tourist website will focus on this specific target group and supply them with all relevant information they will need during their visit in the city touristic areas. Allowing to be prepared to enjoy the city attractions.

Action 3.1.2: Promotion of facilitating policies for cruisers.

- How is the measure implemented at a local level?

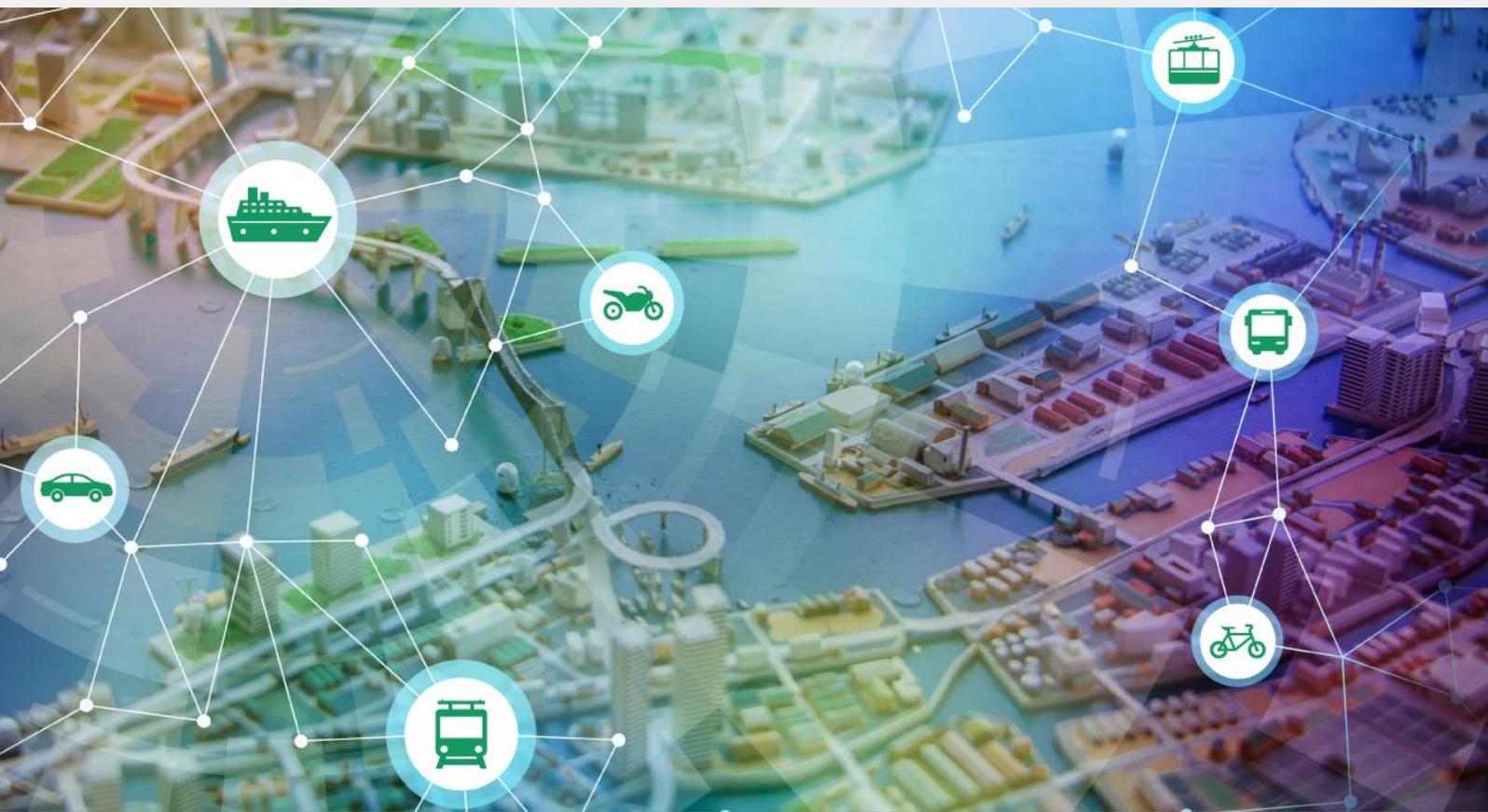
- Create the policy to support the development of Cruise Tourism in Durres.
- Clearly demarcate roles and responsibilities of each agency/department in different aspects of cruise tourism development.

- Address tax related issues. In addition to tourism related taxes, a cruise vessel & its passengers are also subject to several charges and fees
- Simplification of payment procedures for dues and charges would create a favourable environment with the cruise tourists. This can be explored through Combined tariffs (single tariff for multiple port calls in a single itinerary)
- Which are the critical issues that one has to deal with in terms of implementation of the measure?
Engagement of the port authority, local authorities and central government agencies to clarify all the possibilities of facilitating tourism with cruisers.
- What sets the measure apart from other similar measures?
This measure tackles all the bottlenecks created by the national legislations different from the EU legislations.
- How does the measure satisfy the needs of cruise passengers?
This measure helps the tourists by easing the police controls and reduces the travel costs.

Action 3.1.3: Improve accessibility for disabled low mobility passengers.

- How is the measure implemented at a local level?
Improvement of the infrastructure for low-mobility cruise-passengers. This will require the analysing of the actual infrastructure at the Cruise and Ferry Terminals.
Ideally the improvements made will lead to the use of low carbon modes during the entire visit in the city areas.
- Which are the critical issues that one has to deal with in terms of implementation of the measure?
The critical issue is the financial support. The infrastructure is non-existent at the moment, thus it will require a lot of funds to improve the actual infrastructures. Also a crucial issue will be the collaboration with the SUMP developers.
- What sets the measure apart from other similar measures?
This measure takes in consideration that a large part of cruise passengers are senior citizens usually with low mobility. This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city.
- How does the measure satisfy the needs of cruise passengers?

This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city areas.



Synthetic report of the final LCT

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

WP3 – Testing

Activity 3.6 Finalization of pilot activities

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1. Low Carbon Transport Plan

1.0 Step 0: Work plan and team

TEAM			
Name	Org1anization	Role in the organization	Tasks in the elaboration of the LCTP
Dinko Živković	Port of Rijeka Authority	Port development	Coordination of all relevant stakeholders for developing the LCTP; Analysing data for the statistic base; Defining the concept of the LCTP, public procurement of expertise in urban mobility
Rajko Jurman	Port of Rijeka Authority	Cruise business	Providing information on cruise development in Rijeka
Sandra Juretić	Port of Rijeka Authority	EU projects	Data analyzing
Astrid Zekić	REA Kvarner		Developing a questionnaire, communication with stakeholders, gathering data
Andrej Čotar	REA Kvarner	Energy Advisor	Project Assistant
Danijel Frka	Rijeka promet d.o.o.	Urban traffic and mobility expert	Defining the measures of LCTP.

WORK-PLAN			
task	time	responsibilities	comment
Meeting with the Commission of cruise development in Rijeka	May 2017.	REA Kvarner	
I. st participatory process	May-October 2017.	REA Kvarner/Port of Rijeka Authority	
Development of context analysis	July 2017.	REA Kvarner/Port of Rijeka Authority	
Defining the LCTP measures (draft)	October/November 2017	REA Kvarner/Port of Rijeka Authority	
LCTP draft	November 2017.	Port of Rijeka Authority	
II. Participatory process	January – March 2018.	REA Kvarner/Port of Rijeka Authority	

WORK-PLAN			
task	time	responsibilities	comment
Finalizing the measures	March 2018.		
Acceptance of measures by the Port of Rijeka Authority management	April 2018.	Port of Rijeka Authority	
Letters of support from the key stakeholders	May 2018.	Port of Rijeka Authority	

1.1. Step 1: Initial assessment

1.1.1. Context analysis

1. EU, national, regional and local framework of reference.

General context – linked to EU policies

- Common transport policy
- Fuel Sulphur Directive 2012/33/EU

National context – linked to national policies

- Transport Development Strategy of the Republic of Croatia
- Energy Strategy of the Republic of Croatia
- Action plan for the development of nautical tourism
- Study of sustainable development of cruise tourism in Croatia

Regional context – linked to regional policies

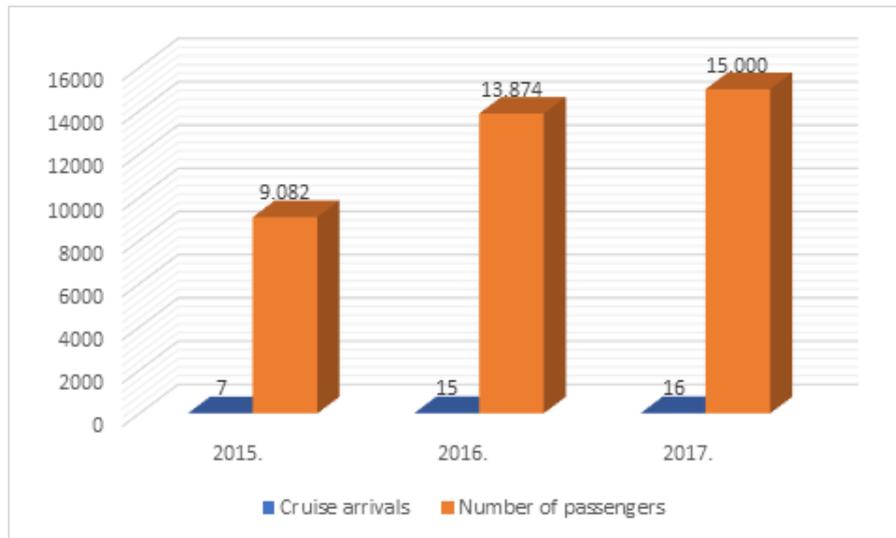
- Primorsko-goranska County Development Strategy, 2016.-2020.
- Strategic plan for tourism development Kvarner, 2016.-2020.

City context – linked to local policies/ plans/ strategies

- Spatial and urban plans of the city
- Rijeka - The starting port for cruise tourism, Action plan
- Study of possibilities for developing Rijeka as a cruising destination
- Action Plan for development Rijeka as a tourist destination - emphasising the segment of cruising tourism
- Sustainable energy Action Plan for the city of Rijeka
- Development Plans of the Rijeka Port Authority

2. Current cruise-related flows features, trends, etc., in the city/port

The port of Rijeka is a port of call. The number of cruisers and passengers is shown in **the Picture 1.:**



Picture 1.: Number of cruisers and passnegers, 2015.-2017.

At destination, cruiser is taking approximately 10 hours. According to that, about 35% of tourists stay on board. Tourists are offered with 3 to 7 trips, ranging from 2 to 164 kilometres, that last 4 to 7 hours and using 5 to 20 buses which are 16 to 50% full in capacity. For the tourists that remain in destination, a shuttle bus is organized (only Brajdica), starting at least every 30 minutes.

Within the questionnaire, the activities of a passengers and crew of the ships that remain in the destination, where investigated. The respondents were mostly from the United Kingdom, the United States and Australia. The highest number of respondents, in destination spent three hours. Moreover, the buss service used 13% of respondents, 6% taxi service, 2% bicycle, 1% motorcycle, and 78% of respondents did not use the means of transportation at their destination. Regarding the rate of traffic congestion, 61% of respondents rated low, very low 19%, high 15%, very high 4%, while 1% of respondents did not know.

Municipal waste is transported by the vehicles with an absorbing capacity of 5 m³ at a distance of 17 km. Approximately 2-8 waste discharges are carry out. The oily waters are conveyed at a distance of 10 km, while all other waters at a distance of 1 km.

3. Cruise-sector mid- to long-term (5 to 10 years) development trends

The forecast is given for a period of 10 years, for different scenarios as follows:

- 1. Worst-case scenario** in which no measure from this Plan is anticipated to be implemented.
- 2. The best possible scenario** in which all measures from this Plan are anticipated to be implemented in their best versions.
- 3. The most probable scenario** in which all measures from this Plan are anticipated to be implemented but in their initial versions.

PASSENGER TRAFFIC

Year	Scenario 1		Scenario 2			Scenario 3		
	No. of passengers	Index	No. of calls	No. of passengers	Index	No. of calls	No. of passengers	Index

2018	15.000		16	15.000		16	15.000		16
2019	20.000	33%	20	20.000	33%	20	20.000	33%	20
2020	28.000	40%	27	28.000	40%	27	28.000	40%	27
2021	30.800	10%	28	30.800	10%	28	30.800	10%	28
2022	33.880	10%	30	35.420	15%	30	33.880	10%	30
2027	47.518	7%	46	71.242	15%	45	68.145	15%	34

Table 1. Traffic forecast up until 2027

Year	Scenario 1	Index	Scenario 2	Index	Scenario 3	Index
2017	1.113		1.113		1.113	
2018	1.157	4%	1.157	4%	1.157	4%
2019	1.203	4%	1.203	4%	1.203	4%
2020	1.251	4%	1.251	4%	1.251	4%
2021	1.302	4%	1.302	4%	1.302	4%
2022	1.354	4%	1.380	6%	1.354	4%
2027	1.647	4%	1.846	6%	1.811	6%

Table 2. Forecast of the median number of passengers per cruise ship call in Rijeka

EXCURSION BUS TRAFFIC

Year	Scenario 1	Scenario 2	Scenario 3
2017	10	10	10
2018	10	10	10
2022	12	12	12
2027	15	17	16

Table 3. The average bus travel time from the passenger terminal to Road D404 and vice versa, expressed in minutes

SHUTTLE BUS TRAFFIC

Year	Scenario 1	Scenario 2	Scenario 3
2017	9	9	9
2018	9	9	9
2022	11	1	11
2027	13	1	2

Table 4. The average number of shuttle bus rounds per one cruise ship call at Rijeka

Year	Scenario 1		Scenario 2		Scenario 3	
	CT Brajdica	Breakwater	CT Brajdica	Breakwater	CT Brajdica	Breakwater
2017	43%	57%	43%	57%	43%	57%
2018	45%	55%	45%	55%	45%	55%
2019	47%	53%	47%	53%	47%	53%
2020	49%	51%	49%	51%	49%	51%
2021	51%	49%	51%	49%	51%	49%
2022	53%	47%	4%	96%	53%	47%
2027	64%	36%	5%	95%	10%	90%

Table 5. The percentage of cruise ship calls per pier

SERVICE OF DISPOSAL OF VARIOUS TYPES OF WASTE

Year	Scenario 1	Scenario 2	Scenario 3
2017	4	4	4
2018	4	4	4
2022	5	5	5
2027	6	7	7

Table 6. The average number of waste disposal service rounds per one cruise ship call at Rijeka

Year	Scenario 1	Scenario 2	Scenario 3
2017	1	1	1
2018	1	1	1
2022	1	1	1
2027	1	2	2

Table 7. The average number of oily water disposal service rounds per one cruise ship call at Rijeka

Year	Scenario 1	Scenario 2	Scenario 3
2017	1	1	1
2018	1	1	1
2022	1	1	1
2027	1	2	2

Table 8. The average number of other water disposal service rounds per one cruise ship call at Rijeka

ELECTRIC SCOOTER TRAFFIC

Year	Scenario 1	Scenario 2	Scenario 3
2017	0	0	0
2018	0	0	0
2022	0	0	0
2027	0	55	54

Table 9 The median number of passengers per one call using electric scooters

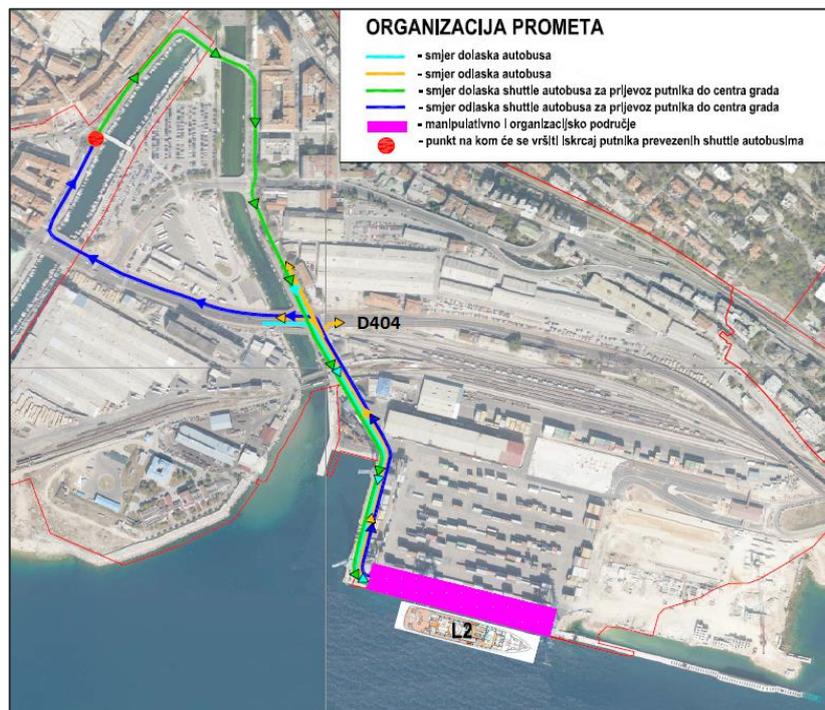
4. Current cruise-related mobility and transport management policies and public & private initiatives addressing the existing flows.

The cruise pier on the breakwater is located 300 metres from the city centre and there is no need to arrange a shuttle service from the ship to the city centre. The distance between the pier and the high speed Road D404 is 300 metres.



Picture 1. Breakwater – transport flow

The cruise berth on the container terminal is located 800 meters from the city centre and the shuttle service is organised to transport tourists to the city centre.



Picture 2 Brajdica Container Terminal

The local public transport is provided by KD Autotrolej d.o.o. Rijeka has 51 lines, connecting 12 towns and municipalities with the County centre (City of Rijeka). The city transport in Rijeka is conducted on 19 lines. The lines cover the entire city area.

Rijeka Airport is located on the island of Krk, about 17 km from the pier (in a direct line), or 25 km by road. It is common to use a taxi or a bus service to reach the airport.

5. Weighted list of negative impacts linked to cruise-related flows

Description of negative effect	Priority	Description of negative effect on the local level
Road traffic congestion	High	A bottleneck is created due to the narrow road and the fact that the road passes around the market.
More pronounced occupancy of land for the construction of parking spaces and road infrastructure	High	The problem of connecting the breakwater with Road D404 is in the occupation of the terrain with existing facilities. It is anticipated that the new road will partly pass through the area of the existing car park or the overhang under which timber is stored.
Air and noise pollution	Moderate	Air and noise pollution currently don't have a major effect, but with the anticipation of increased traffic this negative effect may have a tendency for growth.
Reduced road safety	Moderate	It is estimated that road safety has a moderate priority because sometimes there is an interaction of buses with pedestrians in the area of exit from the breakwater and there is also a problem of cyclists' safety on city roads. In traffic, cyclists are not equal to motor vehicles.
Increased tension in the local community	Low	Surveys have shown that there is no tension in the local community that comes with the arrival of cruise ships to the city.

6. Existing road network, transport services and infrastructure in the city/ port

Since 2012, Rijeka has started to develop cruise ship tourism more intensively, which represents a new challenge in organizing all activities related to the flow of passengers/goods from cruise ships. The Port of Rijeka does not have an adequate terminal with ancillary infrastructure intended for berthing of cruise ships, but their berthing is possible on two locations, both limited by certain parameters. One location is on the passenger part of the Rijeka basin on the breakwater's inner side, while the other one is located in the Sušak basin, on the Brajdica Container Terminal.

The most notable negative characteristic of the breakwater pier is its sea depth, limiting the arrival of large cruise ships. A further problem is the width of the breakwater operating surface of only 12 metres which makes it difficult to manoeuvre buses and other vehicles for the needs of passengers/goods transport.



Picture 3. Location at breakwater

The total length of the pier at the container terminal is 628 m, with a maximum depth of 13,5 m and a possibility of simultaneous reception of two container ships of maximum 367 metres. The Brajdica Container Terminal serves for reception of cruise ships in case their draught is over 7 metres. The container terminal can accept cruise ships of all sizes.



Picture 4. Location at container terminal Brajdica

1.1.2 SWOT/CAME analysis

STRENGTHS	WEAKNESSES
<p>Geographical position</p> <ul style="list-style-type: none"> - Part of the Mediterranean most deeply indented in the European mainland - Proximity of emissive markets <p>Resource/attractions base</p> <ul style="list-style-type: none"> - Possibility of excursions to surrounding places - High degree of ecological preservation - Agreeable climate - High number of cultural and historical monuments <p>Good traffic connections</p> <p>Port infrastructure</p> <ul style="list-style-type: none"> - Navigational safety - Port safety - Personal safety <p>Existing accompanying tourism infrastructure and superstructure</p> <ul style="list-style-type: none"> - Accommodation facilities - Human resources <p>CNG filling station</p> <p>Green energy sources</p> <p>Intellectual capacities</p> <p>Passenger terminal in the city centre</p> <p>Tourists walking around the city</p> <p>Inability to supply ship from the shore</p>	<p>Port infrastructure</p> <ul style="list-style-type: none"> - inadequate passenger terminal - use of container terminal for reception of cruise ships - lack of parking areas for buses and cars <p>Different degrees of interest for the development of cruise ship tourism</p> <p>Conflicts with other types of tourism</p> <p>Lack of common development initiative</p> <p>Environmental pollution</p> <p>Lack of space for construction of infrastructure</p> <p>Insufficient tourist offer</p> <p>Lack of accommodation facilities in the event of Rijeka becoming a home port</p> <p>Crowds in the city centre</p> <p>Crowds at the exit from the passenger terminal</p> <p>Centralised tourist offer</p> <p>Insufficient information on traffic trends in the city (insufficient number of displays, flyers)</p> <p>Insufficient experience in cruise ship tourism</p> <p>Inability to develop bicycle infrastructure (terrain configuration, narrow roads)</p>
OPPORTUNITIES	THREATS
<p>Expected stability in the region</p> <p>Trends in tourism</p> <ul style="list-style-type: none"> - Growth in demand for cruising tourism in the world - Favourable position of the northern Adriatic on the world tourist market - Expected growth of cruise ship tourism in the Mediterranean - Expected diversification of offer in cruise ship tourism - demand for new ports <p>Further improvement of traffic accessibility – particularly new low-cost airlines</p> <p>Increase in the quality of other tourist offers</p> <p>Green energy sources</p> <p>Construction of LNG terminal</p> <p>Study on development of cycling in the city</p>	<p>Political instability in the region</p> <p>Terrorism</p> <p>Emergence of new infectious diseases</p> <p>Disorders on emissive markets</p> <p>Environmental pollution</p> <p>Fast development of other destinations</p> <p>Development of unhealthy competition between ports</p> <p>Development of offer in other destinations</p> <p>Conflicts with other resource users</p> <p>Insufficient political will in the implementation of the LCTP</p>

Table 10. SWOT analysis

1.2 Step 2: Participatory process

1. Stakeholders identification

Stakeholders	Stakeholder's importance in the project (low/high)	Stakeholder's influence on the project (low/high)	Stakeholder's contribution
Port of Rijeka Authority	High	High	The main responsible entity for drafting the Plan and further implementation and monitoring of measures.
REA Kvarner	High	High	Participating in the development of the plan. Collecting data from all stakeholders. Surveying tourists and citizens.
Rijeka Tourist Board	Low	High	Providing information and data on the flow of cruise ship tourists and signing a support letter for the implementation of the measures/Plan.
Experts from the fields of mobility and transport: Rijeka promet d.d.	High	High	Detailed breakdown of measures per scenarios and calculation of greenhouse gas emission reductions per passenger. Signing the support letter for the implementation of the measures/Plan.
Public city carrier: Autotrolej d.o.o.	Low	Low	Providing information and data.
Utility company: Čistoća d.o.o.	Low	High	Providing information and data on the collection of waste from cruise ships and signing the support letter for the implementation of the measures/Plan.
Bus operator: Autotrans d.o.o.	Low	Low	Providing information and data.
Taxi service	Low	Low	Providing information and data on the use of taxi services by tourists.
Tourist agencies: ID Riva Tours	Low	Low	Providing information and data on the number of excursions per each cruise ship.
Tourists	High	Low	Surveying, which contributed to the development of tourist mobility statistics.
Citizens	High	Low	Surveying, which contributed to the development of tourist satisfaction statistics and citizens' attitudes towards cruise ships.
Private companies: Dezinsekcija d.o.o., IND-EKO d.o.o.	Low	Low	Providing information and data on the reception of waste and oily waters from cruise ships.

Table 11. Stakeholder identification

2. Participatory process design and implementation

The initial activity in the development of the Low-Carbon Transport and Mobility Plan is to determine the timeline for implementing the Plan i.e. achieving the set goals. Therefore, a period of 10 years from the adoption of the Plan by the evaluation body of the project LOCATIONS was taken as a reference timeframe.

One of the two specific goals is to reduce the CO₂ emissions per cruise ship passenger by 5% in the given time frame. The following consumers which are connected to cruise ships and serve for the carriage of passengers/cargo at the destination are taken into consideration:

- Buses for organized excursions engaged by cruising companies (different bus operators);
- Shuttle bus for the carriage of cruise ship passengers to the city centre and vice versa;
- Vehicle for the disposal and carriage of waste;
- Vehicle for the disposal of waste waters.

For the purposes of calculating CO₂ emissions per passenger, the following data has been taken from the past three years:

- Cruise ship passenger traffic per years and piers;
- Retention of a cruise ship at the destination;
- Number of excursion buses per cruise ship;
- Destinations for which excursions are organized and their distances from the pier;
- Mileage that a shuttle bus makes in one round;
- Frequency of shuttle buses per cruise ship;
- Number of vehicles for the disposal of waste, oily and waste waters per cruise ship;
- Distances of the landfill and facilities for the treatment of oily and waste waters;
- The time it takes for buses to cross the distance from the breakwater to Road D404 and vice versa.
- The structure and characteristics of all vehicles.

Since good-quality data is a key prerequisite for successful making of the Plan context, and its result are the entry data for calculation of CO₂ emission per passenger, **systematic collection and processing of collected data** is one of the most important, if not the most important, activity of the Low-Carbon Transport and Mobility Plan.

Methodology used	Who, when and how?	Results
Interview	An interview with Mr. Rajko Jurman, President of the Commission for the Development of Cruise Ship Tourism in Rijeka, was held in April 2017 at the premises of the Port of Rijeka Authority. The interview was held in order to get as much information as possible about the current state of	Based on the information and documentation obtained, a foundation for the development of the Plan context was laid. Contacts from the Rijeka Tourist Board and mobility and transport

	infrastructure, tourist flows, issues and the development of cruise ship tourism in the city of Rijeka.	specialists who have already participated in the existing transport and mobility solutions connected with cruise ships were also obtained.
“Face to face” meetings	This type of meeting was held with the following stakeholders: the Rijeka Tourist Board, tourist agency ID Riva Tours, utility company Čistoća d.o.o., private companies: Dezinsekcija d.o.o., IND-EKO d.o.o. The meetings were held in order to get more information about cruise ship passenger flows and collection of waste, oily and waste waters from cruise ships.	Based on the information received, detailed statistics for development of the Plan context were obtained.
Surveying	The survey of tourists was carried out personally on the ground, while the survey of citizens was carried out via a digital poll.	Detailed survey results are presented in the Plan context , chapter 3.4.3.
PAME	After each meeting with individual stakeholders, a meeting between the Port of Rijeka Authority and REA Kvarner.	Analysis of information and data obtained from various stakeholders presented in the Plan context .
Delphi method	This type of method was applied to transport and mobility specialists after the Plan context was defined. Several meetings were held at which the initial measures were presented and then given to the Port of Rijeka Authority management for the ultimately acceptance.	Definition of goals and specific measures which will solve the existing problems and reduce the negative impacts of cruise ships on the city and the environment.
Scenarios	This type of method was applied to transport and mobility specialists in order to define a vision and different scenarios of the Plan. For each measure, an easier and more difficult implementation scenario was anticipated.	Definition of the vision and different measure scenarios .

Table 12. Methodologies used for data collection

1.3 Step 3: Design of the plan

1. Definition of the current scenario

The existing state and statistic of the passengers and goods flows related to cruise activity is detailed described in STEP 1, chapters 2 and 3.

2. Definition of vision and objectives

VISION

As a new destination, Rijeka is aware of all negative impacts brought by the flow of tourists/goods related to cruise ships and looks into the future with the aspect of a sustainable way of developing the cruise ship tourism. A new berth is defined for cruise ships on the breakwater by the passenger terminal which will accept more than 90% of all cruise ships calling at this destination, and in a sustainable way transport all passengers to destinations all over the city, county and wider area. Sustainable way of transport is the

lowest possible interaction of vehicles for transportation of passengers with the local traffic and promotion of cleaner, alternative types of transportation of cruise ship passengers/cargo.

GENERAL GOALS:

- To reduce the pollution and accelerate the flow of vehicles used for the transport of passengers/goods connected to cruise ships in order to reduce the jams at the connection point between the breakwater and Road D404;
- To promote alternative means of transport to the main destination attractions.

3. Definition of actions and indicators

1). Increasing the capacity of cruise berth at the breakwater

This measure is a prerequisite for the implementation of all measures except M2. With the increase of the capacity of the breakwater pier, further development of cruising tourism in Rijeka will be ensured. By ensuring the acceptance of cruise ships at that location, multiple benefits are achieved:

- Use of the Brajdica Container Terminal as a pier for cruise ships is reduced,
- No interference with cargo traffic,
- Pier availability of 24 hours and reception of cruise ships at any time,
- Proximity of the city centre (walking distance),
- Attractive location (views of the whole city),
- Proximity of Road D404,
- Proximity of the passenger terminal.

There are two versions of implementation of this measure:

- a. Deepening of the pier on the inner side of the breakwater, which would enable the berthing of ships with a draught of 9 metres;
- b. Instalment of distancers to keep the cruise ship away from the pier, which would enable the berthing of ships with a draught of 8 metres.

2). Introducing the CNG drive into the municipal waste trucks

The existing vehicles for collection of waste are diesel vehicles. With the introduction of the CNG drive in vehicles for collection of waste which service cruise ships as part of regular activities, **the emission of greenhouse gases will be reduced.**

A CNG filling station already exists and it is mostly used for supplying the public transport vehicles.

Procurement of one vehicle to be used for collecting waste from cruise ships is anticipated.

3). Removal of bottleneck between the breakwater and the road D 404

There are two versions of implementation of this measure:

- a. A road that involves a reconstruction of the existing (rotating) bridge and a construction of a bridge next to the existing one in order to allow two-way traffic. The road is anticipated to pass over the existing halls on Delta to the intersection on D404.
- b. A road that involves a reconstruction of the existing bridge with alternating traffic. The road is envisaged to further pass Grobnička riva to the existing intersection on D404.

4). Introducing the electro scooters with charging station

This measure envisages a point with electric scooters and a charging station at the passenger terminal as well as at other points in the city. The aim is to offer cruise ship passengers an option to use simple personal means of transport for two persons to distances within 10 km from the rental point. In this way, an adventurous dimension of the tour of the city and its surroundings is opened to passengers, while simultaneously using an ecologically acceptable means of transport without CO2 emissions, which contributes to a better overall traffic situation.

Two variants of implementation of this measure are anticipated:

- a. Variant with a fixed battery in the scooter and two charging stations with two connectors;
- b. Variant with a replaceable battery in the scooter with one charging station and a module for charging 30 batteries.

5). Traditional shuttle boat on hybrid drive

This measure involves the examination of the interest of potential concessionaires for introducing traditional shuttle boats for local transportation Breakwater - Adamić Pier or Karolina Riječka Pier, or for sightseeing tours of the city and the surrounding coastal area (Port of Rijeka – Kantrida – Volosko - Opatija). Such a boat would be powered by a hybrid or a steam engine.

The aim is to offer cruise ship passengers an alternative aspect of maritime traffic via a traditional boat used at the end of the 19th and beginning of the 20th century for the carriage of passengers.

6). Installing the informative panel board at the Port Passenger Terminal

Two variants of implementation of this measure are anticipated:

- a. Installation of one interactive information panel on the passenger terminal;
- b. Installation of three interactive information panels on Trsat, complex Benčić and on the passenger terminal.

4. Development of future scenarios

Due to the complexity of the context and many external factors which may affect the implementation of this Plan, this chapter describes the possible scenarios of the implementation of measures. It is impossible to anticipate all potential scenarios, so three scenarios are selected in accordance with the recommendations of the Manual for the Development of this Plan. Chapter 3.4.4. brings 10-year forecasts of cruise ship traffic flows which are also defined according to the scenarios from this chapter. Those forecasts were taken into consideration when calculating the CO2 emissions. Below is a description of each scenario and their impact on the achievement of goals set out in this Plan.

MEASURE		SCENARIO 1	SCENARIO 2	SCENARIO 3
M1	a	x	✓	x
	b	x	x	✓
M2		x	✓	✓
M3	a	x	✓	✓
	b	x	✓	x
M4	a	x	✓	x
	b	x	x	✓
M5		x	✓	✓
M6	a	x	✓	✓
	b	x	✓	x

1.4 Step 4: Monitoring and funding

1.4.1 Monitoring LCTP implementation

The implementation of the plan is defined in three parts:

1. Acceptance of the plan by the Port of Rijeka Authority;
2. Implementation of measures with the given timeframe. The Port of Rijeka Authority is responsible for the implementation of the Plan within the given time frame in coordination with key stakeholders who have supported the implementation of measures (support letter). This Plan proposes the coordinator is a person from the Port of Rijeka Authority responsible for the development of cruise ship tourism in Rijeka;
3. Monitoring and control of the implementation of measures. The monitoring and control of the implementation of measures and their results differs in this part. The body in charge of monitoring and controlling the implementation of measures is the Port of Rijeka Authority i.e. its management. Its main task is to monitor the work of the coordinator and support the implementation of measures.

1.4.2 Funding

MEASURE 1	INCREASE OF THE CAPACITY OF THE PIER FOR CRUISE SHIPS AT THE LOCATION BREAKWATER		
Activity	Design documentation	Building permits	Works
Amount (V1)	20.000,00 €	/	1.000.000,00 €
Amount (V2)	10.000,00 €	/	400.000,00 €
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority	Port of Rijeka Authority
Source of financing	Port of Rijeka Authority's resources	/	Port of Rijeka Authority's resources

MEASURE 2	INTRODUCTION OF THE CNG DRIVE IN WASTE DISPOSAL VEHICLES
Activity	Services of the introduction of CNG drive in waste disposal vehicles
Amount	65.000,00 €
Responsibility of	Čistoća d.o.o.
Source of financing	Čistoća d.o.o., Regional funds, IEE programme

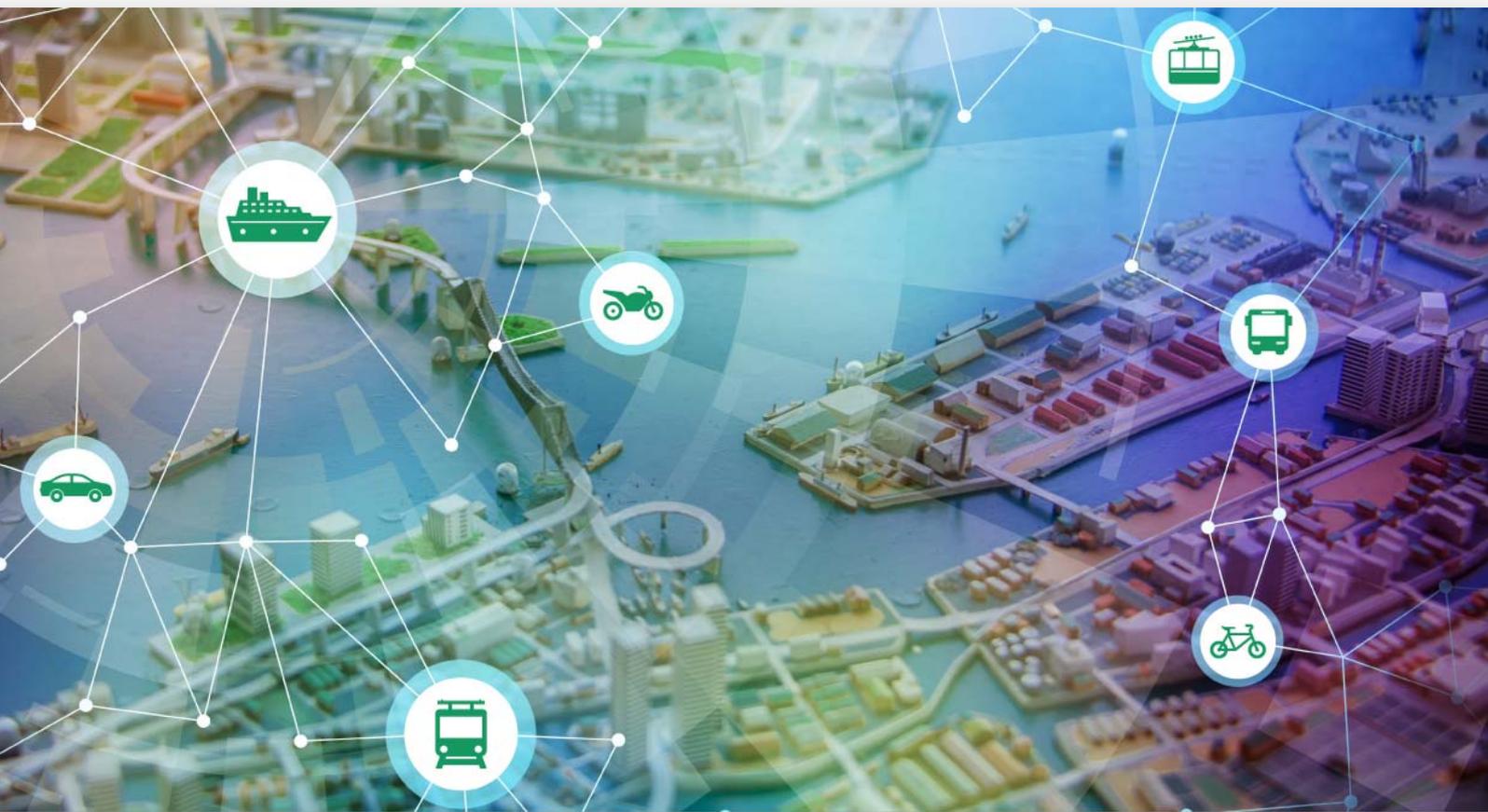
MEASURE 3	ELIMINATION OF THE BOTTLENECK BETWEEN THE BREAKWATER AND ROAD D404		
Activity	Design documentation	Building permits	Works
Amount (V1)	20.000,00 €	/	850.000,00 €
Amount (V2)	8.000,00 €	/	160.000,00 €
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority	Port of Rijeka Authority
Source of financing	Port of Rijeka Authority's resources		Port of Rijeka Authority's resources

MEASURE 4	INTRODUCTION OF ELECTRIC SCOOTERS AND CHARGING STATIONS			
Activity	Concession tender	Installation of charging station	Procurement of electric scooters	Connection, arrangement of location
Amount (V1)	/	12.000,00 €	30.000,00 €	3.000,00 €
Amount (V2)	/	9.000,00 €	30.000,00 €	3.000,00 €
Responsibility of	Port of Rijeka Authority	Concessionaire	Concessionaire	Concessionaire
Source of	Port of Rijeka	Concessionaire,	Concessionaire,	Concessionaire,

financing	Authority's resources	Regional/national funds, IEE programme	Regional/national funds, IEE programme	Regional/national funds, IEE programme
-----------	-----------------------	----------------------------------------	----------------------------------------	----------------------------------------

MEASURE 5	TRADITIONAL SHUTTLE BOAT		
Activity	Eol for concession	Production of the concession tender	
Amount	/	/	
Responsibility of	Port of Rijeka Authority	Port of Rijeka Authority	
Source of financing	/	/	

MEASURE 6	INFORMATION PANEL ON THE PASSENGER TERMINAL		
Activity	Installation of the panel		
Amount (V1)	6.600,00 €		
Amount (V2)	19.800,00 €		
Responsibility of	Port of Rijeka Authority, Grad Rijeka		
Source of financing	Port of Rijeka Authority, Grad Rijeka		



LCTP Malaga (Synthetic)

Version 0B. Draft

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

**WP3 – Testing
Activity 3.7.**

The content of this document reflects only the author's view and the Managing Authority of the Interreg MED programme is not responsible for any use that may be made of the information it contains.

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The city of Malaga, one of the largest cities in Spain (more than 500.000 inhabitants) and among the most relevant ones in terms of tourism impact, has experienced years of profound changes in many aspects. The economic and financial crisis suffered by the whole country has been deeply felt in Malaga and its impacts are still present at some stage.

However, already before the financial crisis, the city council started a new line of development for the city, based on promoting progress, culture, tourism and sustainability. The creation of the Urban Environment Observatory - which motto is 'towards a sustainable society'- or the large investment devoted to open art and cultural museums are some of the good examples of the referred approach.

This document intends to offer support and advice to the authorities in what regards cruise related mobility, in the framework of the plans and strategic lines already adopted and in place in Malaga. After the contextualization and the citizen's consultation, the actual Low Carbon Transport Plan (LCTP) is proposed, under the premise of making it adaptable and coherent with the existing and foreseen measures adopted by the city council through the referred plans. The LCTP is constructed after a modular approach so as facilitate their implementation and their replication to other cities or territories.

LOCATIONS project specifically addresses MED territories where the cruising phenomena highly affects the local economy. Such fast growing specific sector is dramatically driving a wide range of externalities (both positive and negative) on destinations, affecting, among others, the natural environment, urban mobility and accessibility, and sometimes triggering significant multi-fold repercussions on cultural heritage and local communities. Departure ports and ports-of-call are indeed impacted by sudden, often seasonal, heavy traffic of cars and coaches in connection with incoming and outgoing flows of passengers embarking or disembarking cruise ships, and with deliveries of goods, waste collection and provision of a range of other services.

LOCATIONS' main objective is to increase institutional and operational capacity to foster the use of existing low-carbon transport systems and multi-modal connections for cruise-related passengers and freight flows in the frame of wider sustainable traffic and mobility policies in MED cruise destinations. It promotes sustainable growth and low-carbon strategies in MED cruise destination cities by acting on the capacity of port, local and regional authorities to jointly develop planning tools for sustainable mobility of people and goods related to cruise flows, integrated with the mobility chapter of SEAPs or the cities' SUMP.

This document therefore, corresponds to the **Low Carbon Transport Plan for Malaga** aiming to support authorities to adopt and implement the necessary measures to progress towards a sustainable and healthy urban mobility in the city.

"In a long term perspective, an LCTP fosters the use of low carbon transport systems and multi modal connections for cruise-related passengers, goods and services flows in the frame of wider sustainable traffic and mobility policies (SUMPs and SEAPs/SECAPs)"

Low Carbon Transport Plan

Work plan and team

WORK TEAM

The **Work Team** for the project in Malaga is formed by MalagaPort (active partner of the project), Fundación CIRCE (Research Centre and technical partner of the project), and the Urban Environment Observatory (OMAU, as an associate partner). As an associated partner as well, the Tourism and Mobility areas form Malaga City Council are also involved in the project.

Table 1 – Teamwork during the elaboration of the LCTP

Name	Entity	Function	Tasks
Ana Allué Poc	Fundación CIRCE	Project Manager	Coordination Expert in Participation
Breogan Sanchez	Fundación CIRCE	Project Manager	Urban Mobility expert
Miguel Marco Fondevila	External expert (ex. Fundación CIRCE)	Sustainability Expert	Sustainability expert
Technical Staff	Fundación CIRCE	Technician	Co-organization Database collection
A. Manuel Gutiérrez Ruiz	MálagaPort	Managing Director	Coordination & assessment Local expert
Ana Marín	MálagaPort	Business Development	Coordination Local expert
Technical Staff	MálagaPort	Technician	Co-organization Database collection
Pedro Marín	Urban Environmental Observatory (OMAU)	Director	Council representation Assessment on initiatives
Nieves Fernández	Urban Environmental Observatory (OMAU)	Architect	Council representation Assessment on initiatives

WORK PLAN

The **Work Plan** adopted to produce this document is based on three main blocks: (1) present the general and local context, (2) develop the participatory process, and (3) Elaborate the actual Low Carbon Transport Plan (LCTP):

Table 2 – Initial work plan

Block	Task	Timeframe	Deviation?
Present the general and local context	Gathering of available data especially in what regards to urban mobility and cruise related mobility	Mar/17-Aug/17	No
	Representation of results obtained through the participatory process	Jul/17-Sept/17	No
Develop a participatory process	Identification of Stakeholders	Dec/16-Mar/17	No
	Engage Stakeholders	Mar/17-Jul/17	No
	1 st phase of participatory process	Jun/17-Sept/17	No
	2 nd phase of participatory process	March/18-Apr/18	No
Writing LCTP Malaga	Draft version	Jul/17-Nov/17	No
	Definitive version	Apr/18-May/18	No

Step 1: Initial assessment

Context analysis

EU, NATIONAL, REGIONAL AND LOCAL FRAMEWORK OF REFERENCE.

This LCTP has been created taking into account the following framework or reference, from EU to local:

EUROPEAN COMMISSION

- White Paper 'Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system' (2011)
- Delivering on low-emission mobility: A European Union that protects the planet, empowers its consumers and defends its industry and workers (COM/2017/0675)

SPANISH GOVERNMENT

- The Spanish Strategy for Sustainable Mobility (2009)
- National Plan on Air Quality 2017 - 2019
- The Spanish Strategy on Climate Change and Clean Energy – Horizon 2007 – 2010 - 2020
- Non-ETS emissions road map to 2020

ANDALUSIAN GOVERNMENT

- Andalusian Transport Infrastructure Plan towards 2020 (PISTA, 2016)
- Andalusian Territorial Planning Strategy (POTA, 2006)
- Andalusian Plan for bicycle commuting (2014)

MALAGA CITY COUNCIL

- Sustainable Energy Action Plan for Malaga (2011)
- Agenda 21 2020-2050 (2015)
- Sustainable Urban Mobility Plan for Malaga (2015)

Frequently, a correct and timely monitoring of the proper implementation of a Plan is the best way to grant its success, avoiding deviations and unwanted obstacles. **The 2015 SUMP and the Agenda 21 include a whole set of indicators, which fit to LCTP initiatives.**

CURRENT CRUISE-RELATED FLOWS FEATURES, TRENDS, ETC., IN THE CITY/PORT

From 2001 to 2012, a new dock and three terminals for mega-vessels were built, allowing the largest vessels (such as the Oasis Royal Caribbean class) to enter the city. This, together with the strategic management, **have turned Malaga into a main cruise destination in Spain, second in relevance in mainland only behind Barcelona.** Cruise traffic evolution over the last decade is as follows:

- Cruise traffic has its **peak seasons** in spring and autumn. Although cruise and traditional tourism coincide in these two seasons, the highest season of traditional tourism takes place during the summer.
- **Profile of cruise passenger:** slightly more than half of the visitors are over 50 years old, over 50k€ yearly income¹.
- **Passenger’s satisfaction level:** city traffic rated as 7.6/10, lowest attribute. Malaga reputation as a good destination is valued as 8.59/10¹.
- **Cruise passenger activities¹:**
 - Around 16% of passengers organize excursions with the cruise service. From this 16%, some 14% goes outside the province, 30% visits the province outside the capital, and the remaining 56% stays in the city.
 - Around 84% of the passengers visit the city or province on their own, or stay in the vessel.
- It can be estimated that among 65% and 80% of passengers stay in the city for just a few hours visit. Consequently, **a large number of movements and circulation takes place in relatively short periods** (mostly at daytime).

Year	Cruise Calls	Passengers
2007	240	290.558
2008	268	352.875
2009	301	487.955
2010	321	659.123
2011	311	638.845
2012	293	651.517
2013	248	397.098
2014	227	407.870
2015	238	418.503
2016	251	444.000
2017	299	510.607

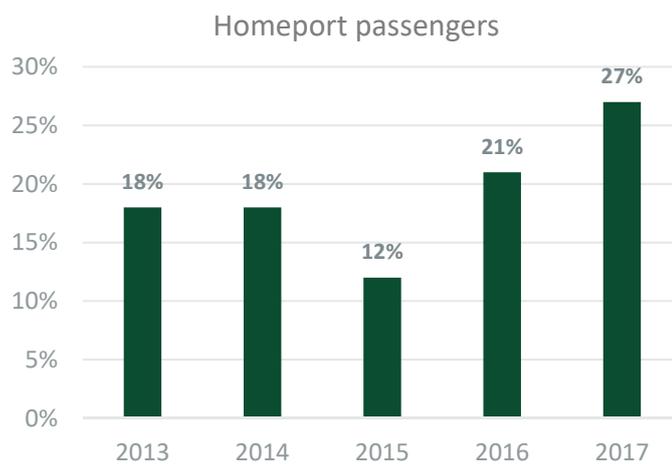


Figure 1 – Cruise tourism trends in Malaga until 2017

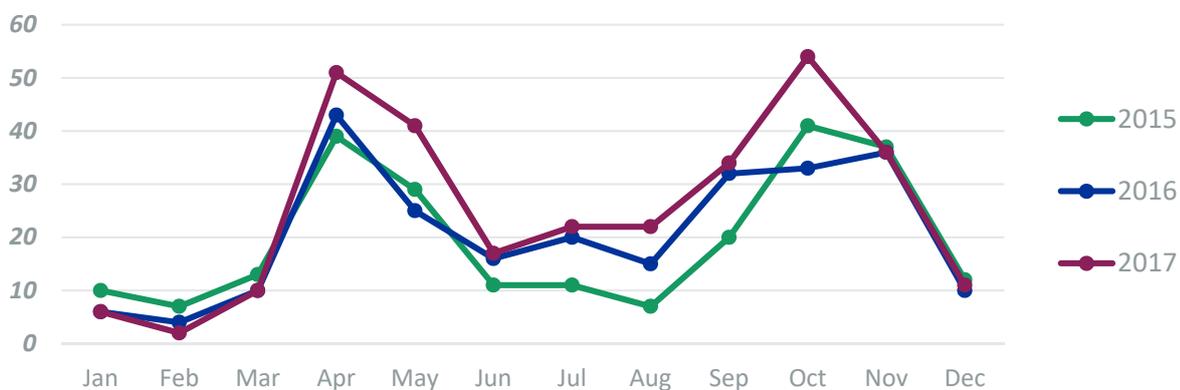


Figure 2 – Distribution of the number of stops in the Port of Malaga

¹ University of Malaga and MálagaPort (2016) cruise passenger survey.

CRUISE-SECTOR MID- TO LONG-TERM (5 TO 10 YEARS) DEVELOPMENT TRENDS

Given that cruise lines itineraries are planned in 1 to 2 years in advance, it is predictable that in **2018, the number of stops would be around 300**. In the same way, the city expects around half a million passengers offloading cruisers during 2018.



Figure 3 – Annual cruise passengers and future trends

The development of port traffic is a main goal within the strategic management in the Port of Malaga. Facilities have grown in capacity, so as the destination. The latest data show that Malaga has become a relevant multi-purpose, as hub to reach other touristic areas in Spain (Granada, Seville, Cordoba, etc.) and as touristic attraction by itself.

In addition, Cruise industry is growing with **80 new ocean vessels** to come between **2017 and 2026**. Although new destinations are entering the industry, the Mediterranean is the second world biggest cruise sailing area, after the Caribbean.

CURRENT CRUISE-RELATED MOBILITY AND TRANSPORT MANAGEMENT POLICIES AND PUBLIC & PRIVATE INITIATIVES ADDRESSING THE EXISTING FLOWS

The Port of Malaga shows minor levels of congestion. The Port Authority, the private operators and the City Council operate co-ordinately during days with major affluence of cruises. The port facilities and the city approach to cruise tourism are adequate and well planned for current and future flows of passengers.

However, traffic, congestion and parking are the factors worse rated by tourists. To ease the problem, an electric tourist train was installed to facilitate the cruise passengers’ movement along the port. Main routes shared by buses, taxis, electric train and pedestrians are shown next:



Figure 4 – Routes within and around the port

WEIGHTED LIST OF NEGATIVE IMPACTS LINKED TO CRUISE-RELATED FLOWS

- **Malaga's city centre**, where the port is located, is not very big and mostly pedestrianized, so main **streets' saturation might occur** with high number of passengers arriving at the same time.
- **Bus stops are shared with tourist services** and sometimes are crowded. **Shuttle buses** leaving the city usually **use the same one-lane road**, producing traffic jams.
- Roads entering and leaving the port are adequate for current and future flows -with two lanes on each way, and so are the parking areas in the port: one in front of each terminal and a big one next to both.
- **Cruise tourists are perceived by residents as less careful** with the city. **Minor economic impact is perceived** given that passengers do not spend the night and expenditure is concentrated in trade and restoration, within a limited area and with very limited time.

EXISTING ROAD NETWORK, TRANSPORT SERVICES AND INFRASTRUCTURE IN THE CITY/PORT

- The port facilities and the city approach to cruise tourism are adequate and well planned for present and future flows of passengers.
- The passengers do find the experience rewarding and the expectations fulfilled, although some aspects appear to be concerning. Specifically, **traffic, congestion and parking are the factors worse rated by tourists, and the ones causing more inconvenience to Malaga inhabitants.**
- The congestion and jams around the port are already a matter of concern for the city council, which has put in place some measures to ease the problem:
 - **Coordinated planning** among the Port, the city and the private operators takes place on days with a higher number of cruise passengers.
 - **Alternatives** such as the electric tourist train for cruise passengers to move along the port or the recent presentation of locally made electric tricycles are measures undertaken.
- It is **advisable to develop an integrated and long-term strategy to include the cruise vessels flows and effects, into the Sustainable Urban Mobility Plan of the city, promoting a Low Carbon perspective.**

SWOT/CAME analysis

SWOT ANALYSIS

	STRENGTHS	WEAKNESSES
INTERNAL CONTEXT	<ul style="list-style-type: none"> • Public transport use has remained stable over the years. A good management by the responsible entity is perceived. 10% of travels are made by bus. 	<ul style="list-style-type: none"> • Motorized means represent 50% of travels. Car is the dominant mean of transport in the city (31%). Motorcycles contribute with an extra 6.7%.
	<ul style="list-style-type: none"> • Pedestrian mobility has been consolidated over the last years, reaching 50% of the global mobility within the city. Travels by foot increased 2.3% from 2008 to 2014. 	<ul style="list-style-type: none"> • Congestion issues on city centre, main mobility attractor area. It attracts 17% of total travels, 40% using private means. 60% of centre residents walk, and only 13% drive.
	<ul style="list-style-type: none"> • Malaga possess a highly valued reputation among tourists (8.6/10). Trends show a gradual increment on cruise visitors, who recommend Malaga as a good destination (8.9/10). 	<ul style="list-style-type: none"> • Cruise passengers identify traffic and mobility related issues in Malaga as the weakest factors. Satisfaction degree is set around 6.5/10 for traffic and parking, and 7.8/10 for public transport.
	OPPORTUNITIES	THREATS
EXTERNAL CONTEXT	<ul style="list-style-type: none"> • City traffic has decreased as consequence of the financial crises and the actions developed by the city council. From 2008 to 2014, private car use decreased 4.2% and traffic has decreased 32.5%. 	<ul style="list-style-type: none"> • Exposition to vehicles' gas emission are likely to be more harmful to citizens. Concentration of Particulate Matter and Ozone are above the recommendations of the WHO.
	<ul style="list-style-type: none"> • Bicycle trips have grown by four (2008-2014), but still represents only 1.7% of total trips. Still, this trend reflects a higher awareness by citizens. 	<ul style="list-style-type: none"> • Cruise liners may consider other destinations preferable to Malaga and shift their vessels to those other destinations.
	<ul style="list-style-type: none"> • From 2006 to 2014, number of motorcycles has increased 63.8%, reducing problems related to parking space. 	<ul style="list-style-type: none"> • Malaga citizens feeling of cruise tourists as source of inconveniences could show up if mobility measures are not taken.

CAME ANALYSIS

		MAINTAIN	CORRECT
INTERNAL CONTEXT		<ul style="list-style-type: none"> Public collective transport to be the backbone of the intermodal and clean mobility system. Reducing travel time for mid/long distance, facilitating modal transfer, and promoting shift towards a low carbon and intelligent system are advised. Exploit Citizens’ perception by providing high quality services and increasing their sense of belonging. 	<ul style="list-style-type: none"> Adopt strategies PUSH-PULL to foster the shift from private modes to non-motorized or low carbon ones. This is the development of better conditions for sustainable mobility (PULL) while reducing the attractiveness to use private cars (PUSH).
		<ul style="list-style-type: none"> District level spatial and mobility planning should spin around walkability. Neighbourhoods should increase the space for pedestrians, limit speed, and guarantee comfort and accessibility. Walking for travels within districts, while public transport and cycling for travels among districts. 	<ul style="list-style-type: none"> Reduce city centre congestion. Diminish the travel necessity to travel to it by offering services and job opportunities in other districts. Foster the use of public transportation and bicycles to reach city centre while limiting the possibility to access/cross the centre for cars and motorcycles.
		<ul style="list-style-type: none"> Continue the cross-sectorial coordination to provide pleasant experiences to cruise passengers. City council to achieve alliances with private sector and social collectives to guarantee a sustainable exploitation of Malaga’s touristic potential. 	<ul style="list-style-type: none"> Establish specific measures to facilitate the mobility around the port and the city main touristic areas. Solutions to be envisaged within the Locations project should be developed.
		EXPLORE	ADAPT
EXTERNAL CONTEXT		<ul style="list-style-type: none"> Impede an increment in private modes use and traffic due to economic reactivation. New transportation services based on sharing schemes should be introduced to reduce the demand for infrastructure and parking. 	<ul style="list-style-type: none"> Gradually, make the shift to (1) local and renewable energy generation and (2) electric mobility. Both measures will improve the city’s air quality, reduce the emission of greenhouse gases and cut off the dependence on fossil fuels.
		<ul style="list-style-type: none"> Take advantage of cycling potential. Increase of electric personal vehicles use, such as kick scooters, should be kept in mind for infrastructure development. Stablish transit rules to promote safe conditions on shared spaces with people. 	<ul style="list-style-type: none"> Consolidate Malaga as a touristic destination for cruises by offering tailored services to cruise passengers, achieving partnership with cruise liners, and providing direct connections with other destinations (operating as a hub).
		<ul style="list-style-type: none"> Promote shared mobility in order to avoid an unsustainable increment on the motorization rate. Public-private coordination to avoid unfair competition with existing public services and the oversupply of sharing alternatives. 	<ul style="list-style-type: none"> The tourist sector should not operate without the involvement of local residents. The city must work to promote participation in decision-making process.

Step 2: Participatory process

STAKEHOLDERS IDENTIFICATION

Final selection criteria and result is show below:

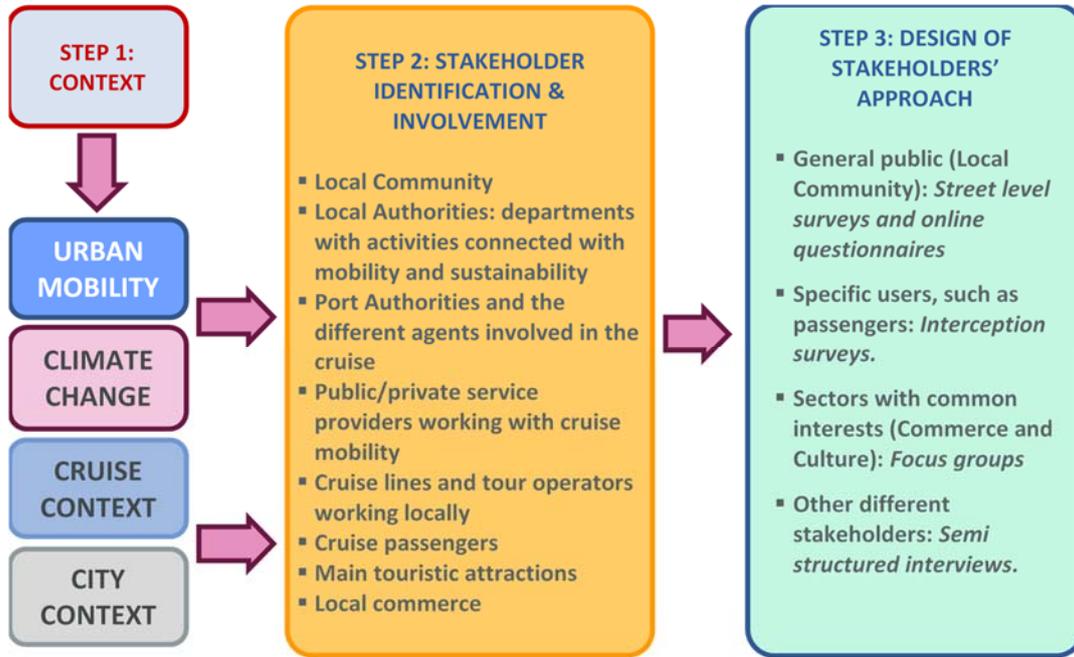


Figure 5 – Criteria for Stakeholder identification and involvement

PARTICIPATORY PROCESS DESIGN AND IMPLEMENTATION

A two-phase process was designed: First phase - participated diagnosis (June- September 2017), and second phase – feedback on LCTP Measures (March- April 2018). The final participatory methodology and result per stakeholder is as follows:

Table 3 – Techniques applied to each stakeholder category

STAKEHOLDER	METHODOLOGY	RESULT
LOCAL COMMUNITY	Street in-person survey	180 surveys
	On-line survey	+200 surveys
	Semi-structured interviews	Neighbourhood association
CRUISE PASSENGERS	Interception surveys	+20
RELEVANT SECTORS SERVICES SECTOR	One focus group with local commerce associations, public cultural agencies and OMAU	
	Semi-structured interviews	Restaurant service sector association
RELEVANT AGENTS	Semi-structured interviews	City council (Dept. Environment, Tourism, Mobility)
		Local Police (Planning and Communication Depts.)
		City Port (Port Authority, Port Police, Cruise Terminal)
		Cruise Liner and tour operators.
		City transport facilities for tourists (Electric Bikes, Panoramic train, Public Shuttle, Renting vehicles association, Cycling association, touristic bus)

FIRST PHASE CONCLUSIONS

The overall summary on how urban mobility linked to cruise vessels is perceived by Malaga inhabitants responds to the following sentence:

Urban Mobility in Malaga, regarding cruise activities, is not perceived as a problem to be solved but as an opportunity for the development of the touristic sector in the City.

Urban Mobility

- **Minimizing the environmental impact**, improving the quality of life, **can boost an improvement in the City image** for cruise tourism.
- The **excess of private road traffic in the City Centre is the main challenge to tackle** with more clean energy, pedestrian zones and public transport use, and less traffic on the Centre and polluting vehicles.
- A **joint effort and coordinated planning** is essential.
- The **lack of environmental awareness among citizens** risks the long-term sustainability of in-place or foreseen initiatives.
- Passengers mentioned the lack of information to the cruise vessel with regard to the touristic, gastronomic and commercial offer, and that **better signaling** would contribute to making traffic and circulation in general more efficient and effective.
- A significant number of cruise tourists stated that they would use **bicycles** if only infrastructures and facilities were adequate to do so.

Impact of Cruise Tourism in the City

- Local Community's interviewees agree that cruise tourists cause a more invasive perception and they appear to residents as less careful with the City. Their expenditure is concentrated in trade and restoration, within a limited area and with **very limited time**.
- Cruise passengers demand promptness and efficiency in transportation services. This type of tourist is perceived as more culture-oriented and less likely to cause trouble for the security authorities.
- Most interviewees think that **cruise tourism has a positive impact on the City**. However, balance with citizens' needs is stressed, addressing both tourist and citizens' interests.
- More than half the residents interviewed in the city centre claim that their **daily trips are influenced totally or partially by cruise tourists**, with congestion in pedestrian areas and traffic jams.
- Focus group of tourist and commercial sector propose the following **initiatives**

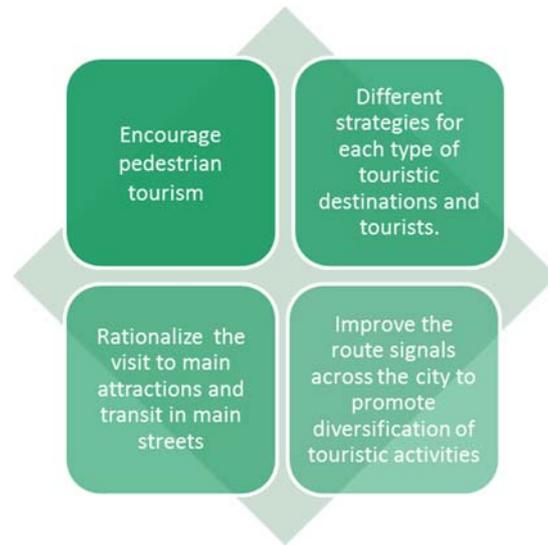


Figure 6 - Main demands of the cultural, hostelry and commerce sector.

Touristic attractions and transport alternatives

- The **majority of the visitors move to the Centre and to the same attractions**. Congestion is being handled adequately. It is necessary to come up with a solution to avoid uncomfortable future situations, also including diversifying the areas of attraction.
- The improving of **bike lanes connections and safety of bike users** is also expressed in the survey. Making public transport more sustainable by introducing electric and hybrid vehicles, and offering tourists the possibility of taking those vehicles or bike from the very same terminal.
- Most residents believe that **it is necessary to design plans that integrate in a more sustainable way the cruise tourism**. All the agents should be involved, the Public Administrations (City Council, Malaga Port, Junta de Andalucía, Andalusian Tourism, Ministries ...), as well as other civil actors affected.

SECOND PHASE: REVISION OF THE PLAN

The contribution of the **30 experts** that attended these sessions, allowed the refining of measures with a higher rate of validation from all agents involved.

- 1) Session 1: Cruise, Tourism, Commerce and Hostelry Sector
- 2) Session 2: City Council and Observatory of Urban Environment
- 3) Session 3: Citizenship

It is worth highlighting the **consensus about the opportuneness of the project vision towards sustainable growth and low carbon strategies**. The main identified barrier is finding out balance among different stakeholders' interests at stage. Cruise lines and citizenship, being two opposite poles of this stakeholder network. The most embraced measures were the promotion of walking to attractions and the provision of cruise integrated touristic cards. Cycling connection and infrastructure was also highlighted, especially by the residents. They express the need to work in some areas of the city, specifically in La *Malagueta*. Shuttle services raised some concerns by the authorities.

Step 3: Design of the plan

DEFINITION OF THE CURRENT SCENARIO

We need to face the following main challenges, to avoid future problems in the destination:

- Traffic in the city, not only caused by cruise flows.
- Congestion caused by vehicles and by large groups of people (mostly tourists)
- Lack of infrastructure to allow or help alternative means of transport, such as walking or cycling.

DEFINITION OF VISION AND OBJECTIVES

The LCTP vision is fostering the use of low carbon transport systems and multi modal connections for cruise-related passengers. It is important to highlight three main strategic axes:

- Strategic Axis 1: Cruise tourism contributes to ease movements and cohabitation in Malaga.
- Strategic Axis 2: Cruise tourism increases its contribution to local economy in a stable long term way.
- Strategic Axis 3: Cruise tourism contributes to decrease carbon emissions and acoustic pollution in Malaga.

DEFINITION OF ACTIONS AND INDICATORS

The three strategic axis presented are broke down into specific objectives, which in turn are composed of different initiatives. The different initiatives are described in details in Annex I.

Table 4 – Malaga LCTP strategic axis 1, specific objectives, initiatives and indicators.

STRATEGIC AXIS 1: CRUISE TOURISM CONTRIBUTES TO EASE MOVEMENTS & COHABITATION IN MALAGA.
Objective 1.1 Increase the number of cruise passengers walking to attractions.
Initiative 1.1.1 Promote alternative touristic interesting points.
At cruise arrival, distribution of specific information points for cruise passengers, highlighting tailored alternatives points of interests in the city to be reachable from the port.
Initiative 1.1.2 Walking time & distance information.
Setting up a network of signals around the port and touristic areas, indicating, in an easy and multilingual way, the distance (in meters) and walking time (in minutes) to reach nearby attraction.
Initiative 1.1.3 Foster walking tourism for cruise passengers.
Provide useful permanent information In order to foster cruise passengers to plan their visit before arriving to destination , as well as to encourage cruise passengers to reach attractions on foot.
Objective: Cruise passengers walking to city centre attractions increase 20%.
Data source: Cruise passenger surveys and tourist attractions' records.
Objective 1.2 Decrease traffic congestion around the port.
Initiative 1.2.1 Optimization of excursion buses routes from Terminals.
Reduce the congestion by optimizing the routes of excursion buses, especially in narrow street lanes often reduced to one.
Initiative 1.2.2 Specific traffic protocol prior to cruise arrivals.
To develop a comprehensive traffic protocol considering, both, citizens and visitors' profiles and necessities.
Objective: Decrease of 15% on traffic congestion in main streets around the port - Average Daily Traffic (ADT)
Data Source: Local police, plus survey to terminal operators and citizens living in the neighbourhood.

Table 5 – Malaga LCTP strategic axis 2, specific objectives, initiatives and indicators.

STRATEGIC AXIS 2: CRUISE TOURISM CONTRIBUTES TO LOCAL ECONOMY IN A STABLE, LONG TERM AND RISING WAY.
Objective 2.1 Increase the use local facilities and low carbon mobility services by cruise passengers.
Initiative 2.1.1 Cruise Mobility integrated into the Touristic Card
A customized package within existing touristic smart cards specifically designed for cruise passengers that facilitates access to all public transport means.
Initiative 2.1.2 Tool development tailored to cruise passengers' mobility
Integrating an existing app or design a new tool that includes basic information regarding navigation with public transport. This includes GPS navigation, bus network (with intervals and stops).
Objective: 20% increase on cruise passengers' expenses using local facilities and services
Data source: Records provided by tourist attractions, services operators and passengers' survey.
Objective 2.2 Increase cruise passengers reaching touristic and leisure options distant from the port.
Initiative 2.2.1 Shuttle services to reach distant attractions.
A shuttle service is offered to cruise passengers interested to visit distant tourist attractions in Malaga and its surroundings. The service might be contracted through an app or similar means.
Initiative 2.2.2 Promoting distant touristic offers for cruise tourists.
In order to encourage cruisers to visit touristic and leisure options distant from the port it is important to set more abundant and precise information.
Initiative 2.2.3 Development of integrated packages for distant touristic attractions.
Promoting integral visit offers to options distant from port, which include comprehensive experiences, tourist attractions, meals and shopping, to increase visits outside the city centre.
Objective: 20% increase on cruise passengers visit to distant touristic and leisure options
Data Source: Records provided by tourist attractions, services operators and passengers' survey.

Table 6 – Malaga LCTP strategic axis 3, specific objectives, initiatives and indicators.

STRATEGIC AXIS 3: CRUISE TOURISM CONTRIBUTES TO DECREASING CARBON EMISSIONS AND ACOUSTIC POLLUTION IN MALAGA.	
Objective 3.1	Increase the number of cruise passengers cycling to attractions.
Initiative 3.1.1	Port2City Cycling Connection.
	Complement the existing bicycle infrastructure (lanes & parking) with safe connections to the port terminals and tourist areas.
Initiative 3.1.2	Extend the bike sharing system to cruise tourists
	In order to increase cruise passengers using bikes when visiting the city, existing services for bicycle rental (both public and private) have to be reinforced.
Initiative 3.1.3	Improve signalling/priority/safety & awareness from citizens
	Increase the use of bicycles by cruisers visiting the city, it is important to reinforce safety perception.
Objective:	20% increase on the number of cruise passengers cycling to attractions.
Data source:	Sharing system and rental bikes records, passenger and local police survey.
Objective 3.2	Increase the use of low carbon motorized means from and into the port.
Initiative 3.2.1	Promoting the use of electric personal transporters
	Promote rental and other sharing schemes of electric personal transporters (electric bicycles, kick scooters, self-balancing scooters, etc.), working in association with private companies offering this service...
Initiative 3.2.2	Promote the use of electric vehicles throughout the port
	Design a mid-term plan to replace the port fleet with electric vehicles gradually, for both people and goods transportation and other services offered by the port...
Initiative 3.2.3	Foster the use of electric vehicles around city centre
	Setup incentives to foster the use of electric vehicles among residents, visitors and companies. Cars, scooters, bicycles, kick scooters and other innovative personal transporters included.
Objective:	Increase the use of low carbon motorized means from and into the port (75% of motorized means)
Data source:	Records from rental services and cruise passengers' survey. Information regarding port operation should be provided by MalagaPort and Port authority.

DEVELOPMENT OF FUTURE SCENARIOS

- **Do-nothing scenario:** No changes are brought in by the project and, therefore, the current trends in economic, social and environmental terms continue to be the same.
- **Adequate scenario:** Minor positive changes are brought in by the project, responding to more sustainable behaviours, but still not very significant. The limited effect of actions targeting mostly port activities is also constrained by the partial achievement of goals.
- **Best possible scenario:** Significant changes brought in by the project, boost a behavioural change along the city, multiplying its effects and creating a positive trend with utter implications along the city.

Besides the Locations LCTP, the city of Malaga is currently developing a wide range of actions derived from the 2015 SUMP and Agenda 21 recommendations. The horizon set to spot the foreseen results of the interventions is the current SUMP + 10 years. This is to say, the year 2025.

Step 4: Monitoring and funding

Monitoring LCTP implementation

Apart from the specific indicators mentioned before, there is a set of general indicators to be taken into consideration when monitoring the effects of the proposed interventions.

Table 7 – Malaga SUMP and Agenda 21 indicators related to the LCTP

	Objective	Initiative	LCTP	SUMP	A-21/PACES
STRATEGIC AXIS 1	1.1	1.1.1	LCTP-1.1. Cruise passengers walking to attractions.	I.1, I.4, I.5	TCC 5.3,5.4,5.5
		1.1.2		I.5, I.6, I.8	
		1.1.3		I.21	
	1.2	1.2.1	LCTP-1.2. Traffic congestion around the port.	I.24, I.43,	NR 3.6 & TCC 5.1,5.2
1.2.2		I.65			
STRATEGIC AXIS 2	2.1	2.1.1	LCTP-2.1 Cruise passengers use local facilities and services.	I.21,104,106	
		2.1.2			
	2.2	2.2.1	LCTP-2.2 Cruise passengers visit to distant touristic and leisure options.	I.15,16	TCC 5.5
		2.2.2		I.7,10	TCC 5.6,5.7
2.2.3		I.6,113			
STRATEGIC AXIS 3	3.1	3.1.1	LCTP-3.1 Increase the number of cruise passengers cycling to attractions.	I.31,32,39	NR 4.1 & TCC 5.6,5.7
		3.1.2		I.34,35,38	
		3.1.3		I.10,11,8	
	3.2	3.2.1	LCTP-3.2. Increase the use of low carbon motorized means from and into the port.	I.19,28	NR 1,2.1,3.1
		3.2.2		I.92	
		3.2.3		I.1,52,53	
GENERAL INDICATORS	All	All	LCTP-0.1. Preferred means of transport.		
			LCTP-0.2. Pedestrian mobility attraction by the port.		
			LCTP-0.3. Cycling mobility attraction by the port.		
			LCTP-0.4. Public transport mobility by the port.		
			LCTP-0.5. Private transport mobility attraction by the port.		
			LCTP-0.6. GHG emissions.		
			LCTP-0.7. Air quality index.		
			LCTP-0.8. Acoustic pollution.		

Funding

Table 8 – Malaga LCTP strategic axis 1, cost and possible funding source

Initiative	Short description	Cost	Possible funding source
1.1.1 Promote alternative touristic interesting points.	Maps for cruise passenger	2.000 €	Advertising; Regional funds
1.1.2 Walking time & distance information.	On-street signals (walking indications)	10.000 €	Regional funds
1.1.3 Foster walking tourism for cruise passengers	Dedicated webpage on the city portal with information for cruise passengers.	8.000 €	Regional funds
1.2.1 Optimization of excursion buses routes from Terminals.	Specific traffic evaluation and proposal of solutions.	30.000 €	Regional/national resources European funds
1.2.2 Specific traffic protocol prior to cruise arrivals.			
Axis 1: cruise tourism contributes to ease movements		50.000 €	

and cohabitation in Malaga.		
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Table 9 – Malaga LCTP strategic axis 2, cost and possible funding source

Initiative	Short description	Cost	Possible funding source
2.1.1 Cruise Mobility integrated into the Touristic Card	Tourist card based on ICT. Reduced cost option: update the existing App.	20.000 €	Regional resources, Advertising
2.1.2 Tool development tailored to cruise passengers' mobility	App development. Reduced cost option: update the existing App.	20.000 €	Regional resources, European funds
2.2.1 Shuttle services to reach distant attractions	Offer of shuttle buses in coordination with tour operators.	-	-
2.2.2 Promoting distant touristic offers for cruise tourists.	On-street signals and information.	10.000 €	Regional funds
2.2.3 Development of integrated packages for distant touristic attractions.	Promoting integral visit offers to options distant from port	-	Advertisement, Integration to 2.1.1
Axis 2: cruise tourism contributes to local economy in a stable, long term and rising way.		50.000 €	

Table 10 – Malaga LCTP strategic axis 3, cost and possible funding source

Initiative	Short description	Cost	Possible funding source
3.1.1 Port2City Cycling Connection.	Path between terminals and the cycling network envisaged within the SUMP (2 km).	100.000 €	National or regional resources; European funds
3.1.2 Extend the bike sharing system to cruise tourists	Public bike sharing station on port premises.	40.000 €	National or regional resources; European funds
3.1.3 Improve signalling/priority/safety & awareness from citizens	Improve safety conditions (signalling, barriers, educational campaigns)	15.000 €	Regional funds
3.2.1 Promoting the use of electric personal transporters	Promote rental and other sharing schemes in association with private companies offering this service	-	Port resources
3.2.2 Promote the use of electric vehicles throughout the port	Introduce electric vehicles into the port fleet (budget: procurement for e-scooters and 2 charging station)	45.000 €	Port resources + National or regional resources; European funds
3.2.3 Foster the use of electric vehicles around city centre	Evaluate and setup incentives to foster the use of electric vehicles among residents, visitors and companies, for all types of electric vehicles.	30.000 €	National or regional resources; European funds
Axis 3: cruise tourism contributes to decreasing carbon emissions and acoustic pollution in Malaga.		130.000 €	

Annex 1 – LCTP Measure Description

STRATEGIC AXIS 1: CRUISE TOURISM CONTRIBUTES TO EASE MOVEMENTS & COHABITATION IN MALAGA.

Objective 1.1 Increase the number of cruise passengers walking to attractions.

1.1.1) Promote alternative touristic interesting points

This measure aims to better integrate cruise tourists' flows in the city.

At cruise arrival, distribution of specific information points for cruise passengers, possibly adapted from existing ones, highlighting tailored alternatives points of interests in the city (such as artistic event or thematic buildings), to be reachable from the port. These points are aimed to connect walking track preferences from cruise tourists' groups or individuals. Thus, the alternative touristic interesting points are various and its distribution aims tourists to design their own itineraries, which helps avoiding the pedestrian overlapping and congestion in the historical centre main streets. The numerous shuttle bus stops might be used to distribute passengers' groups depending on the preselected itineraries.

With this measure, cruise passengers may visit the city through non-designed routes or, in other words, customized routes according to the cruise tourists' preferences. On-street signals will back up the information inside maps to facilitate passengers' mobility.

Financial requirements might be solved through the selling of advertisement to local businesses, specifically shopping and eating options for each itinerary that will enhance the passengers' experience. In addition, the map design could exploit the existing "*Málaga en 8 horas*" map to reduce implementation and costs restrains.

Initiative 1.1.1 should be in line with initiatives 1.1.2, 1.1.3, 2.1.1 and 2.1.2.

1.1.2) Walking time & distance information

This measure aims to better integrate cruise tourists' flows in the city.

Setting up an urban network of signals around the port and touristic areas, indicating, in an easy and multilingual way, the distance (in meters) and walking time (in minutes) to reach nearby attractions. The signal network corresponds to the information and recommendations given to cruise passengers, and tourist in general, through institutional means (maps, web, apps, etc.), so on-street passengers might find an intuitive and clear way to move around, while controlling the restricted time they have available.

For this reason, the design of reachable touristic interesting points described in the previous measure is required prior the installation of signals, as the featuring information should help to the distribution of cruise passenger to alternative attractions and through alternative streets. Thus, routes, times, distances, destinations and even colours should be the same in both the city signals and the available tools for visitors.

Cycling and Walking connectivity and accessibility shall always be taken into consideration while proposing a complementary network.

Initiative 1.1.2 should be in line with initiatives 1.1.1 and 1.1.3, 2.1.1 and 2.1.2.

1.1.3) Foster walking tourism for cruise passengers

This measure aims to better integrate cruise tourists' flows in the city.

In order to foster cruise passengers to plan their visit **before arriving to destination**, as well as to encourage cruise passengers to reach attractions on foot, this measure aims to provide useful permanent information via apps, QR codes, maps, advertisements or web resources. The main goal is to advise cruise passengers and enhance their planning by communicating the available facilities, services, routes, city attractions, walking options, etc... and this, after exiting the terminal, in the terminal itself or, even in the vessel, guaranteeing the own shipping companies' interest and cooperation.

One of the keys of this measure relies on reaching passengers and supplying recommendations before visiting the destination. For this purpose, it aims to collect and arrange all the potential and/or interesting data, enriching visitors' experience, assisting on the organization of the trip and optimizing their time spent in the city.

However, information and resources available should be user-friendly and avoid saturating passengers. Beforehand, resources should be evaluated and ensure that transmit effectively and briefly necessary data. Moreover, it would be advisable to revise and update these resources periodically.

Initiative 1.1.3 should be in line with initiatives 1.1.1, 2.1.1 and 2.1.2.

Objective 1.2 Decrease traffic congestion around the port.

1.2.1) Optimization of excursion buses routes from terminals.

This measure aims to decrease traffic congestion around the port.

In coordination with Malaga's mobility authority and tour operators, reduce the congestion by optimizing the routes of excursion buses, especially in some specific areas, for example Malagueta (where street lanes are often reduced to one). It is advisable to carry a mobility analysis of the current operation of excursion buses that offer services to cruise passengers in order to establish specific measures to reduce their traffic impact and enhance their on-route conditions. Times of arrival and departure, pick-up / drop-off areas, number of passengers picked up at terminals, destinations, routes and problems identified by drivers, tour operators and authorities are evaluated to select the most appropriate measures.

On the other hand, the diagnosis and analysis of this measures could be accompanied by the revision of existing streets directions, in order to harmonize them, as far as possible, with the existing and future cruise passengers' traffic flow (Paseo Ciudad de Melilla, Paseo de la Farola are, as a matter of example, some of the axis in which a reorganization of roads' senses could be interesting).

The main issue to implement this measure is the commitment and articulation of the different actors such as tour operators, travel agencies and local police. Similarly, once the measures to optimize excursion buses operation are selected, bus drivers and tour supporting personal should be trained to smooth the implementation and increase the positive perception of cruise passengers.

Initiative 1.2.1 should be in line with initiatives 1.2.2 and 2.2.1.

1.2.2) Specific traffic protocol prior to cruise arrivals

This measure aims to decrease traffic congestion around the port.

To develop a comprehensive traffic protocol considering, both, citizens and visitors' profiles and necessities. It entails the design and performance of a specific traffic protocol that eases transit, particularly, within the port area and touristic attractions. It includes traffic management, public service reinforcement and the supply of special services and facilities, among others. It defines usual itineraries and schedules and optimizes traffic management as a daily routine. Furthermore, information available to develop the traffic protocol can be enriched and updated through Big Data suppliers. The main objective is to reduce traffic congestion around the port area and city's streets through the coordination between the various stakeholders involved: public transport services, tour operators, port authorities and citizens. Hence it is necessary a proper dissemination of the protocol before cruise arrivals, especially large ships. Demand management strategies should be adopted, exploiting the fact that port authorities know arrivals' times in advance.

This measure stands out because it analyses usual practices and statistics to improve traffic and minimize time of congestion caused by the arrival of cruises, with services and available means of transport coordination. The reduction of traffic congestion can improve visitors' experience, making it more pleasant and comfortable, as well as, reduce citizens' inconvenience due to big cruises arrival.

Initiative 1.2.2 should be in line with initiatives 1.2.1, 3.2.2 and 3.2.3.

STRATEGIC AXIS 2: CRUISE TOURISM CONTRIBUTES TO LOCAL ECONOMY IN A STABLE, LONG TERM AND RISING WAY.

Objective 2.1 Increase the use local facilities and low carbon mobility services by cruise passengers.

2.1.1) Cruise Mobility integrated into the Touristic Card.

This measure aims cruise tourists to use local facilities and services.

A customized package within existing touristic smart cards (such as *Málagapass*) specifically designed for cruise passengers that facilitates access to all public transport means, while promoting local businesses and touristic attractions. Implementation might be done by taking into consideration the average spent time of cruise tourists in the city. It requires the integration of public transport services, potentially including the public bike sharing system.

The card, which would be easily accessible at the port arrival, is aimed to be used in an easy and intuitive way, within the public transport network. Furthermore, it aims to increase the contribution of cruise tourism in the local economy by including customized discounted entrances and/or offers in local shops, especially rental services of low carbon vehicles, such as electrical assisted bikes and other electric personal transporters. In this sense, a potential collaboration of tour-operators or shipping companies could be a must.

This specific tourist card is tailored to cruise passengers available time and expectations. First, it facilitates the way passengers move from the port to city attractions, and *vice versa*. Second, included services enhance passengers' experience by allowing them to plan their itineraries before or at arrival. Suggested routes with discounted packages (entrances, food and transportation) might also be offered. If based on ICT, collected data might serve to generate or improve services according to passenger requirements and behaviour.

As a third solution, together with the urban transport network, it would be interesting to provide a sort of list comparing the public transport stops with the nearby attractions.

Initiative 2.1.1 should be in line with initiatives 1.1.1, 1.1.3, 2.1.2, 2.2.1, 2.2.3, 3.1.2 and 3.2.1.

2.1.2) Tool development tailored to cruise passengers' mobility

This measure aims cruise tourists to use local facilities and services.

Integrating an existing app (such as *MálagaPass*) or design a new tool that includes basic information regarding navigation with public transport. This includes GPS navigation, bus network (with intervals and stops), as well as frequent and alternative interest points.

On the other hand, the app should include updated information, special events, tourist attractions, open stores and shops, etc. This, in order to distribute the tourist flux as well as promote local facilities and services.

The app should also allow, as currently *MálagaPass* does, the purchase of touristic packages promoted by the city council, such as touristic cards. This initiative is not restricted to cruise passengers, but open to tourists in general. This measure can also increase tourist attractions visits and cruise passengers' overall expenses in the city. On the other hand, the app could be linked to the Centro Malaga shopping app in order to avoid the congestion of the centre from shopping activities.

The improvement of the existing app can be performed in parallel with other proposals and be updated with the information and resources developed, such as, signalling, specific maps and routes. It is underlying that the app gathers and presents the information available in a user-friendly way. As the use of ITC increases, providing all the necessary data on a smartphone App can ease cruisers planning before the arrival and optimize their experience and time spent in the city. For the city council, the collected data might serve to generate or improve services according to passenger requirements and behaviour.

It would be important to analyze this measure together with the interests from the cruise companies to ensure their full support. In this sense, a potential collaboration of tour-operators or shipping companies could be necessary.

Initiative 2.1.2 should be in line with initiatives 1.1.1, 1.1.3, 2.1.1, 2.2.1, 2.2.3, 3.2.1 and 3.2.3.

Objective 2.2 Increase cruise passengers reaching touristic and leisure options distant from the port.

2.2.1) Shuttle services to reach distant touristic attractions

This measure aims cruise tourists to reach touristic and leisure options distant from the port.

A shuttle service is offered to cruise passengers interested to visit distant tourist attractions in Malaga and its surroundings. The tourism authority, by its own or in coordination with tour operators, promotes existing public services. The service might be contracted through an existing app or similar means.

The main issue is that most of cruise passengers do not plan their visit before arriving Malaga (only around 16% organize excursions with the cruise service). The tourism authority must work with cruise lines and travel agencies, under a common benefit agreement framework, in order to promote the existing touristic means, especially the app, and the deals offered within. Having personal and vehicles available to on-demand service might be expensive, so promotion must be done to visitors in general in order to achieve the required minimum occupancy level. Working together with tour operators is recommended as they might offer the flexibility a service of this kind requires.

At some extend, it could be crucial and interesting to find common benefits with tour-operators or shipping companies during the projection and implementation of the measure.

Initiative 2.2.1 should be in line with initiatives 1.2.1, 2.1.2 and 2.2.3.

2.2.2) Promoting distant touristic offers for cruise tourists

This measure aims cruise tourists to reach touristic and leisure options distant from the port.

In order to encourage cruisers to visit touristic and leisure options distant from the port it is important to set more abundant and precise information. For example, providing multilingual information about available bus services and schedule, car park areas, bike and/or electric vehicle rental shops, can facilitate visitors' movements within the surroundings of the city. In this sense, a network of signs and signals may be placed over the city, as well as, maps detailing routes, timing and public transport options should be made available. This measure can be supported by the downloadable app and/or other resources easing in advance planning. Hence, cruisers can easily reach distant options on their own.

It is, therefore, a key fact to define strategies in order to rely on the cooperation with private agencies such as tour-operators or shipping companies.

This measure aims to provide decision support for the most suitable options available for attractions distant from the port, allowing time optimization and a more comfortable experience. Furthermore, it eases movements outside the city and, in line with traffic protocol, can cope with traffic congestion in the city centre.

Initiative 2.2.1 should be in line with initiatives 1.1.1, 1.1.2, 2.1.2 and 3.1.3.

2.2.3) Development of integrated packages for distant touristic attractions

This measure aims cruise tourists to reach touristic and leisure options distant from the port.

Promoting integral visit offers to options distant from port, which include comprehensive experiences, tourist attractions, meals and shopping, to increase visits outside the city centre. These touristic options have to be attuned with tour operators, offering special prices, guides and routes. This measure eases and limits the need of cruisers to manage their visit individually. To avoid overexploitation of specific sites or shifting congestion problems to other sites, proper organization, coordination and partnership with local and regional stakeholders is recommended.

Integrated visits allow diversifying touristic offers and can be developed in line with other improvement proposals, such as, "Cruise integrated Touristic Card". Furthermore, active tourism activities in the surroundings of the city can supplement this measure and offer a unique and memorable experience. This option provides cruisers a more comfortable and relaxed experience, due to no planning is needed by their side. In addition, all-included packages may increase and diversify expenditure in the city and its surroundings. Moreover, diversion allows avoiding city centre overcrowding.

Initiative 2.2.3 should be in line with initiatives 2.1.1, 2.1.2 and 2.2.1.

STRATEGIC AXIS 3: CRUISE TOURISM CONTRIBUTES TO DECREASING CARBON EMISSIONS AND ACOUSTIC POLLUTION IN MALAGA.

Objective 3.1 Increase the number of cruise passengers cycling to attractions.

3.1.1) Port2City Cycling Connection

This measure aims to increase the use of non-motorized means.

Complement the existing bicycle infrastructure (lanes & parking) with safe connections to the port terminals and tourist areas. The existing plans to extend the offer of public lines in the city should be revised to ensure safe conditions that support the promotion of cycling among cruise passengers avoiding conflicts among residents. The port and its terminals should be included within the city plans to facilitate the access of visitors to public bike sharing stations, rental shops and attractions located within a range of 5 km. The bike line network should be complemented with bicycle parking options near touristic attractions as well as reorganized in case it is needed.

This measure will probably require a revision of the current mobility plan and the collection of stakeholders' perspectives to justify modifications. Allocation of public funds is also necessary, and it may compete with other more needed bike connections. However, this must be considered as a measure affecting the city in general, and not only the cruise tourism, given that the port is a major attractor and generator of travels.

An appropriate implementation will positively affect the congestion problematics around the port, while benefiting cruise passengers with safe cycling routes to reach touristic areas beyond the saturated historical centre.

Initiative 3.1.1 should be in line with initiatives 3.1.2 and 3.2.2.

3.1.2) Extend the bike sharing system to cruise tourists

This measure aims to increase the use of non-motorized means.

In order to increase cruise passengers using bikes when visiting the city, existing services for bicycle rental (both public and private) have to be reinforced. On the one hand, the number of stops and bikes available have to be increased, specifically within the port and the main touristic attraction areas. On the other hand, additional measures should be developed to ensure and manage the availability of bicycles. It is necessary to match supply and demand according to cruise passengers timing.

Therefore, increasing bicycle commuting, may contribute to city's Greenhouse Gases (GHG) emission reduction. In addition, it promotes environmental-friendly and healthy touristic offers. Combining ecotourism and cultural aspects, contributes to the generation of a new low-impact travelling philosophy. Hence, the visit results on a diverse, physical and intellectual active experience, where tourists not only tour the city.

Initiative 3.1.2 should be in line with initiatives 1.2.2, 2.2.2 and 3.1.1.

3.1.3) Improve signalling/ priority/ safety & awareness from citizens

This measure aims to increase the use of non-motorized means.

In order to increase the use of bicycles by cruisers visiting the city, it is important to reinforce safety perception. For this reason, it is highly recommended to improve signals and signs, install protection barriers and/or devices, develop education campaigns among citizens and advice about the presence of tourists flows. Safety and comfort of bike users and pedestrians has to be guaranteed and priority may be give when necessary. Furthermore, platforms and infrastructure shall be set into a multilingual environment.

This measure aims to foster cohabitation at two levels: “tourist-citizen” / “tourist-city”. On the one hand, cohabitation of tourists and citizens. On the other hand, cohabitation of different means of transport. This proposal is complementary to others, such as the development of new bike lanes, which also look for the increase of commuting safety. This way, the city is presented as a friendly and safe city to non-motorized visitors, increasing comfort perception and promoting healthy, ecological and high quality tourism.

Initiative 3.1.3 should be in line with initiatives 2.2.2, 3.1.1 and 3.1.2.

Objective 3.2 Increase the use of low carbon motorized means from and into the port.

3.2.1) Promoting the use of electric personal transporters

This measure aims to extend use of Low carbon motorized means.

Promote rental and other sharing schemes of electric personal transporters (electric bicycles, kick scooters, self-balancing scooters, etc.), working in association with private companies offering this service. Tourist service companies within the city have introduced this low carbon vehicles, representing a clean transportation option for visitors and a future opportunity for the city in general.

Personal Transporters’ promotion must be done by guaranteeing the security issues and avoiding conflicts among residents.

Management tools should be adopted as updated databases of existing companies, vehicles and their usage. On the other hand, a set of transit rules, and even changes on the current regulation, should be agreed with rental places in order to ensure the safety of visitors and avoid conflict with citizens.

As personal transporters are becoming a tangible reality in cities, Malaga takes several steps ahead for the smooth introduction of this low carbon means on urban mobility. Visitors will take advantage of this public-private partnership to access clean, quick and flexible transportation, especially cruise passengers moving from and to the port. Afterwards, the initiative allows the generation of local knowledge to enable schemes for residents as well.

3.2.2) Promote the use of electric vehicle throughout the port

This measure aims to extend use of Low carbon motorized means.

Design a mid-term plan to replace the port fleet with electric vehicles gradually, for both people and goods transportation and other services offered by the port. With the objective of 75% of port own land fleet to be electric and hybrid, this initiative aims to minimize the use of fossil fuels and contribute to the city sustainability objectives.

Services provided by the port authority, such as baggage loading/unloading and waste collection, using vehicles should comply with this objective. Investment is needed to both the acquisition of electric vehicles (including personal transportation vehicles) and the deployment of charging infrastructure, stations and dedicated parking spaces, through the port. In addition, incentives should be offered to private companies operating within the port, in order to support their shift to e-mobility.

This measure supports the city target to make electric mobility a reality. Instead of being an isolated initiative, the introduction of e-mobility at port-level is both supported and supporting similar actions in the city. Specifically, for cruise passengers, this initiative offers clean option to move inside the port (between terminals and the port entrance), as complement to other initiatives to guarantee a sustainable mobility between the port and the city.

3.2.3) Foster the use of electric vehicles around city centre

This measure aims to extend use of Low carbon motorized means.

Taking advantage from the special transport plan of the port as a pilot area, a master program for the consolidation of electric mobility in Malaga, ratifying the pioneer actions adopted in the last decade. This will include the setup of incentives to foster the use of electric vehicles among residents, visitors and companies, for all types of electric vehicles (cars, scooters, bicycles, kick scooters and other innovative personal transporters). Today, the city, through the municipal parking company, offer free parking to electric cars in special zones (including the port and the city centre) and manages the charging points. Further incentives should be designed, for example, supporting schemes for private touristic companies offering transport services to shift to this technology.

Malaga previous experiences prove that overcome the current market reluctance is a major challenge. Even after the successful participation in innovative programs, such as POWER and ZEM2ALL, electric mobility is still in an initial phase, waiting to be strengthen. Achieving a consensus over mid- and long-term objectives is also an important requirement. Special regulation for the transit of innovative personal transporters need to be agreed. Thus, private and public stakeholder's participation and commitment are highly required from the beginning.

This initiative builds on the city's knowledge in order to escalate Malaga as a national and European reference in electric mobility, promoting professionals and enthusiasts to visit the city. The port adopts specific measures that affect positively the cruise tourism and enhance the passengers' experience.

Annex 2 – Differences from LCTP draft version

The development of the LCTP, as well as the elaboration of the 2nd participatory process in Malaga in May 2018 the entailed a series of modifications in the definition of the measures, among others.

Thus, the names of the following measures have been changed accordingly. The content and description of them remain mostly the same.

1.1.1) Promote alternative touristic interesting points (Ex: Promote touristic walking routes alternatives)

1.1.2) Walking time & distance information (Ex: Walking time & distance signals)

1.1.3) Foster walking tourism for cruise passengers (Ex: Available useful info for cruise passengers)

2.1.1) Cruise Mobility integrated into the Touristic Card (Ex: Cruise Integrated Touristic Card)

2.1.2) Tool development tailored to cruise passengers' mobility (Ex: Downloadable App with info & resources)

2.2.1) Shuttle services to reach distant touristic attractions (Ex: Shuttle/tourist bus from council with special routes to reach distant attractions.)

2.2.2) Promoting distant touristic offers for cruise tourists (Ex: Clear signalling and maps indicating timings, means and availability)

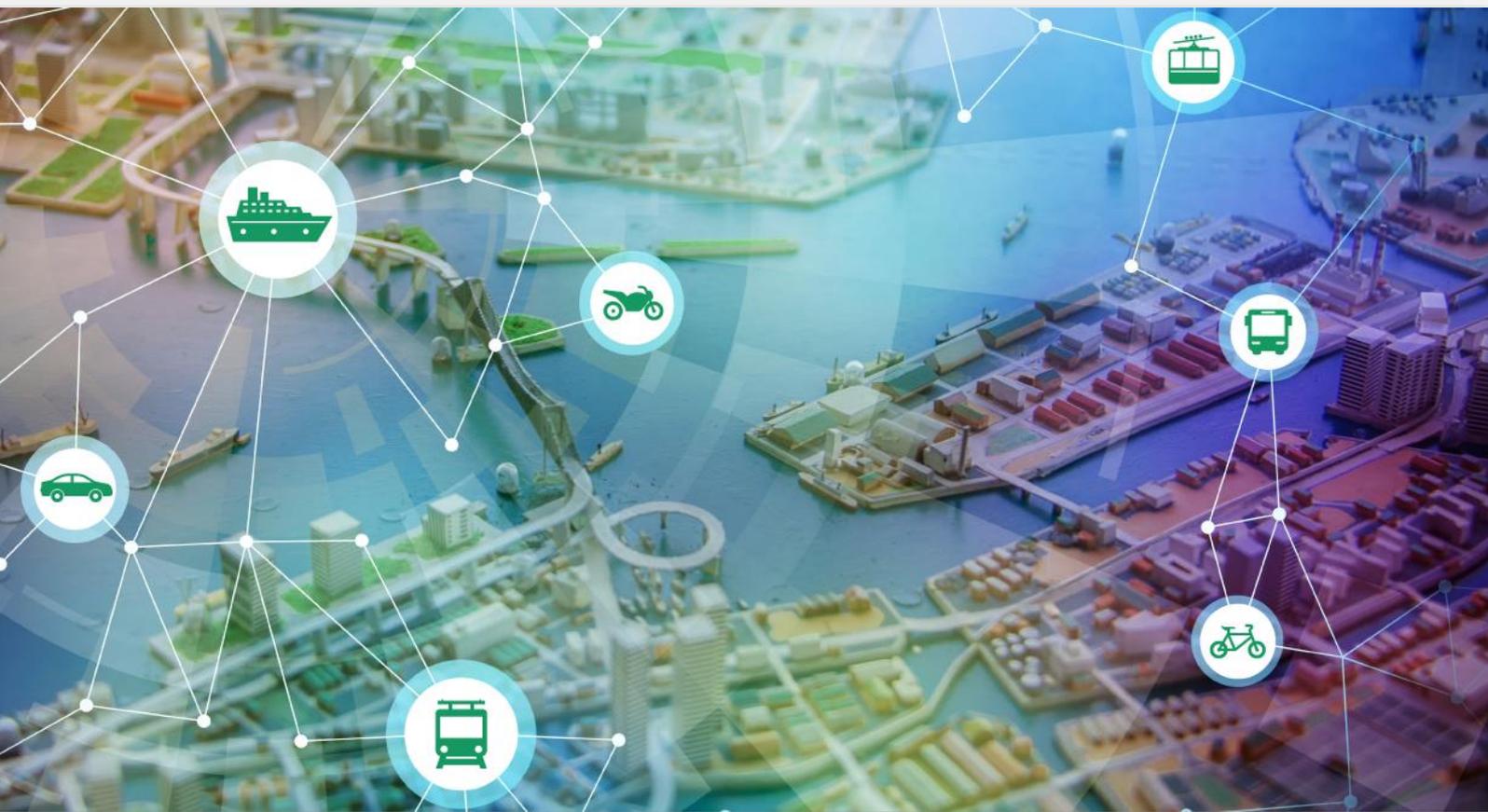
2.2.3) Development of integrated packages for distant touristic attractions (Ex: Integrated visit offers with attractions, lunch and shopping)

3.1.1) Port2City Cycling Connection (Ex: Extend the bike lane infrastructure from the port to tourist attractions)

3.1.2) Extend the bike sharing system to cruise tourists (Ex: Improve and extend bicycle rental service)

3.2.1) Promoting the use of electric personal transporters (Ex: Promote electric vehicles rental (tricycle, bicycle, Segway))

3.2.3) Foster the use of electric vehicles around city centre (Ex: Foster the use of electric vehicles around city centre (free from parking))



LCTP SYNTHETIC REPORT — LISBON

LOCATIONS - LOW CARBON TRANSPORT IN CRUISE DESTINATION
CITIES

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1. LOW CARBON TRANSPORT PLAN

1.1. STEP 0: WORK PLAN AND TEAM

TEAM:

The Low Carbon Transport Plan of Lisbon was developed by a team from the city council of Lisbon and Lisboa E-Nova . During the first months , extensive knowledge was acquired in cruise tourism and passengers flows to capacitate the team to develop the project successfully.

Table 1 – People involved in the production of the LCTP

Name	Entity	Function	Tasks/expertise
Rita Castelo Branco	CML	Urban Planner	Coordination (city council)/ Urban planning and Mobility
Pedro Machado	Lisboa E-Nova	Project Manager	Coordination of project (until Nov. 2017)/Mobility
Vera Gregório	Lisboa E-Nova	Project Manager	Coordination of project (from Nov. 2017)/Urban planning and GIS
Tiago Palma	Lisboa E-Nova	Project Manager	Participatory process/Production of LCTP

WORK PLAN:

The LCTP was planned according the previous guidelines provided by the coordinators and was divided into three parts: Participatory process, Diagnosis of the situation and Development of LCTP.

The participatory process occurred in two moments, one at the beginning and another one at midway. A third moment was planned but due to time constrains and external events (changes in city council administration) it was not carried out. The first participatory moment was carried out with several stakeholders using meetings face to face with each entity with the purpose of present the project and gather information. The second participatory moment consisted of individual interviews to acquire specific information and opinions from the relevant stakeholders.

The diagnosis was based on the information gathered from official sources and relevant studies combined with the information obtained during the participatory phase.

The drafting of the action plan took place after both previous phases where concluded despite being delayed by the uncertainty caused by the municipality elections of October 2017. Nevertheless, it was concluded on time (Table 2).

Table 2 - Planning of tasks

Task	Planned	Carried out
Data collection	Dec/16-Mar/17	Dec/16-Apr/17
1 st participatory phase	Mar/17-Jul/17	Mar/17-Jul/17
Diagnosis	Mar/17-Aug/17	Mar/17-Aug/17
2 nd Participatory phase	Jul/17-Sept/17	Jul/17-Oct/17
Development of LCTP	Jul/17-Jan/17	Oct/17-Apr/18
3 rd Phase-Participatory process	Feb/18-Apr/18	Did not take place
Finalize LCTP	Apr/18-May/18	Apr/18-May/18

2. STEP 1: INITIAL ASSESSMENT

2.1. CONTEXT ANALYSIS

EU, NATIONAL, REGIONAL AND LOCAL FRAMEWORK OF REFERENCE.

The LCTP of Lisbon is fully aligned with the European and National policies that traces the routes for the decarbonization of the economy by 2050. The LCTP of Lisbon is a planning tool that contributes for the city government programme (2018-2021). In this context, the LCTP emphasises the need for promoting the clean mobility, the development of shared services and the improvement of public transport, favouring intermodal transport and, when possible, active modes such as walking and cycling.

The tourism in Lisbon has been intensified during the last decade. The increasing demand of cruise tourism and the number of cruise ship calls, combined with the need to receive ships with large size, triggered the construction of a new cruise terminal in the city centre that is operating since September 2017. In this context, new challenges should be tackled to overcome the negative impact of the growing cruise tourism that due to its characteristics (short stays, touristic buses excursions, seasonality of cruises and easily changeable routes) and its location in a congested historic area of the city, will require the implementation of specific measures.

The successful implementation of LCTP of Lisbon will require a crosscutting approach that will assure the articulation with the main ongoing programmes oriented to public spaces: *Uma Praça Em Cada Bairro* (One Plaza in Each Neighbourhood), *Pavimentar Lisbon 2015-2020* (Paving Lisbon 2015-2020) and *Plano Geral de Intervenções da Frente Ribeirinha de Lisbon* (Lisbon River Front General Intervention Plan, as well as with other planning tools as it is the case of the recently approved Municipal Strategy for Climate Change Adaptation of Lisbon .

The LCTP of Lisbon will contribute for the current city government programme (2017-2021) and for the local implementation of European Urban mobility policy. Therefore, it is expectable that strategies and actions proposed in the LCTP of Lisbon would be integrated in the Sustainable Urban Mobility Plan (SUMP) of Lisbon, that is currently being developed by the Lisbon city council.

CURRENT CRUISE-RELATED FLOWS FEATURES, TRENDS, ETC., IN THE CITY/PORT.

Global tourism has grown steadily for the past two decades. The estimated total number of visitors in the world grew from 563 million in 1996 to 1322 million in 2017, a 135% increase. [1] In the case of Europe, the Mediterranean was the most active area, with a demand of 3,71 million individual passengers. Within the Med, the area with most volume of cruise passengers is the West Med that has been increasing its share of passengers for the past 6 years, from 69% in 2012 to 76% in 2017 of the total in the Med area (Figure 1 – Evolution of passenger movement in the different areas of the Mediterranean Sea.

.).

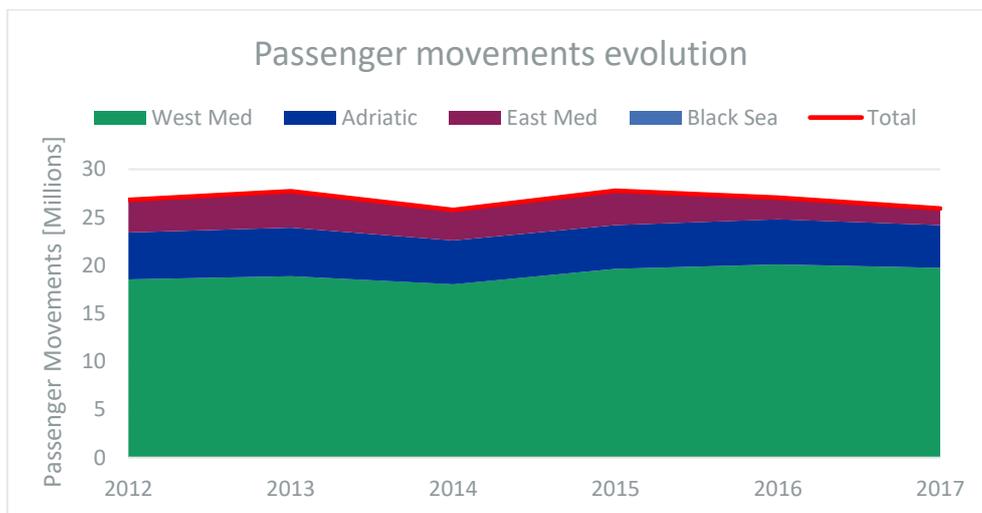


Figure 1 – Evolution of passenger movement in the different areas of the Mediterranean Sea. [2]

Likewise as other European ports, Lisbon shows a sharp increase in the number of passengers, with 560 000 passengers in the peak year of 2013 and from there onward the number of passengers (and ships) has stabilized near the 500 000 (Figure 2.).

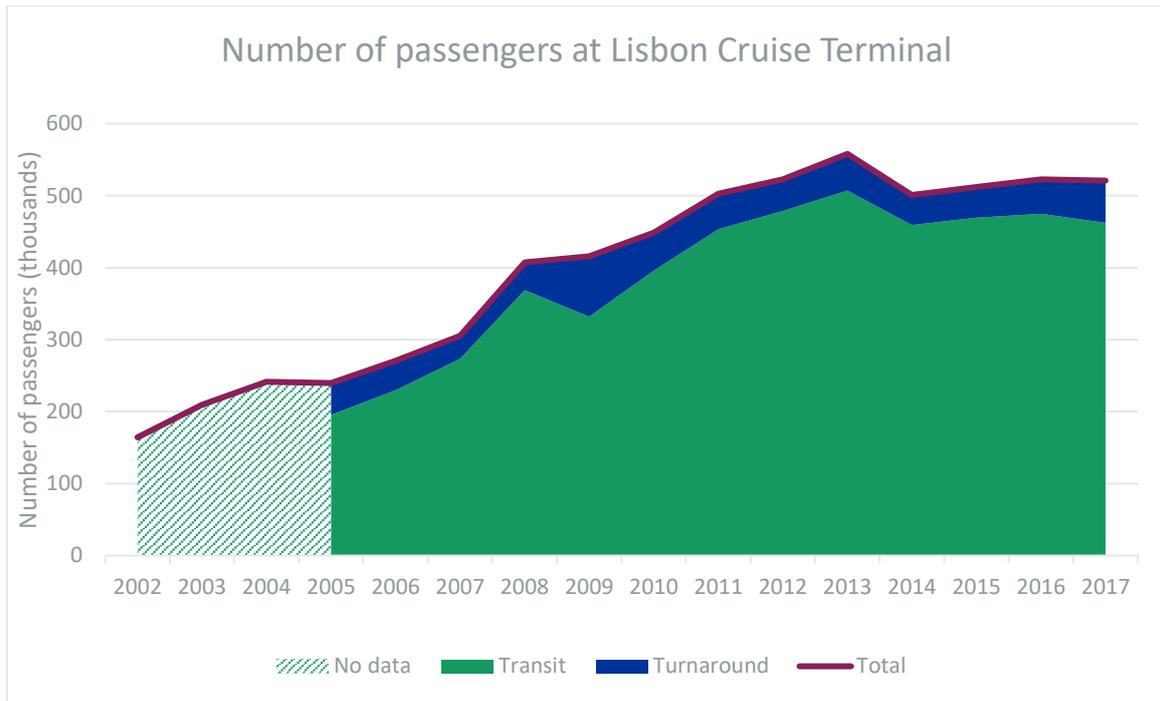


Figure 2 – Total passengers in Lisbon port and share of turnaround and transit operations. [3]

Lisbon’s high season is traditionally in April/May and September/October (Figure 3). This due to the repositioning of ships to the Caribbean and United States, in the winter, and to the North of Europe in the summer months (only time when it’s possible to cruise there). When relocating from the Med to these regions many of the cruise ships stop in Lisbon.

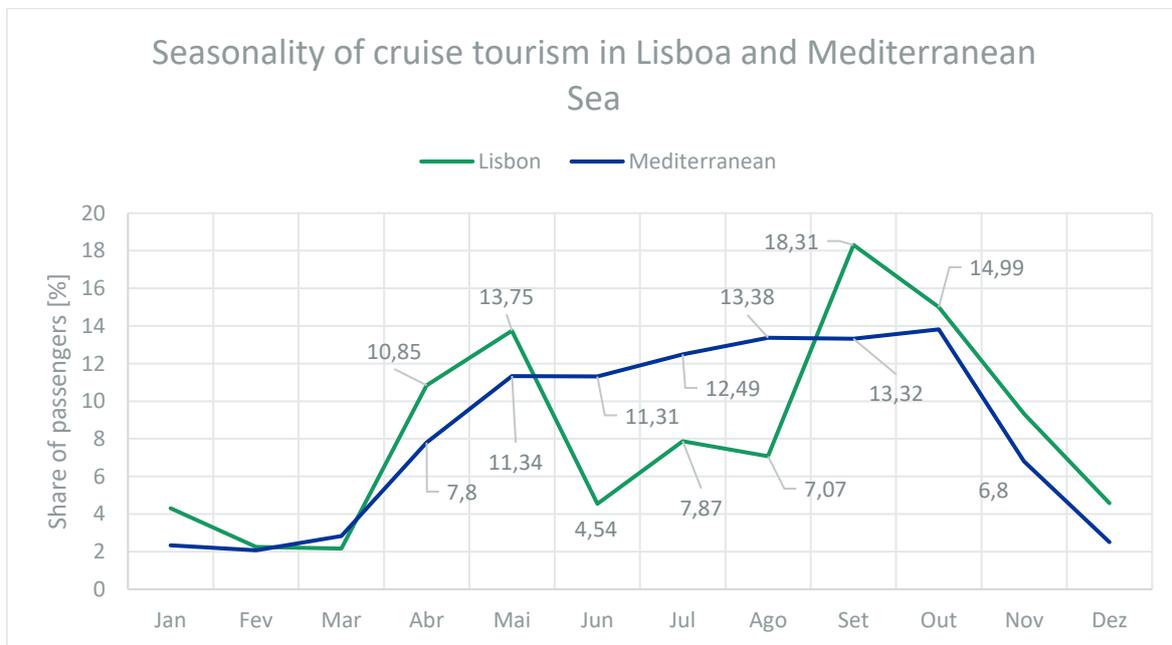


Figure 3 – Cruise passenger flow in Lisbon and Med area. [3] [2]

Furthermore, the ships typically arrive in the morning and depart in the end of the afternoon (Figure 4). These times coincide with road traffic peak hour in Lisbon which normally affects traffic flow downtown. The overlap of both events can produce additional congestion in city traffic with resulting increased emissions .



Figure 4 – Arrival and departure hours of cruise ships in 2015 in Lisbon. [3]

Since September 2017 that cruise passengers arrive at Lisbon only through the Lisbon Cruise Terminal (LCT). The LCT sits close to the city historical centre (Figure 5) bringing therefore both advantages and disadvantages. On one hand, it enables people to visit the closer areas using active modes (mostly walking) and, on the other, for touristic bus tours it is necessary to go to downtown to pick up people which can contribute to increase congestion in those areas. This is aggravated by the matching of local traffic peak hour and the arrival and departure times of the cruises.

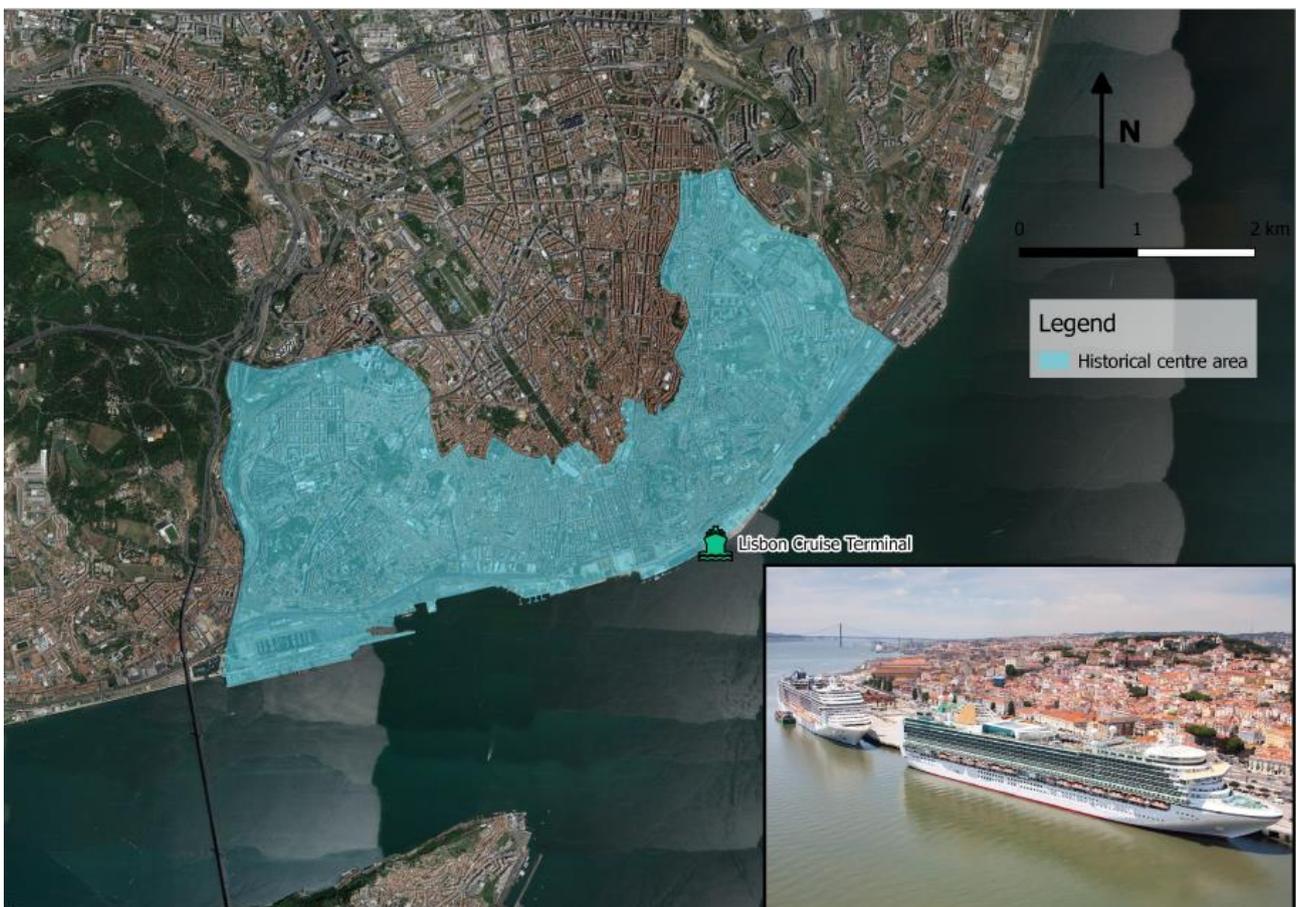


Figure 5 – Location of cruise terminal relative to city centre

The modes that have highest share, are touristic bus, walking and cab while public transport option seems to be of less importance for the tourists (Table 3). In 2017, 70% of the people bought their excursions on board and 6,4% bought them locally. This is explained since normally the tickets for the touristic bus are sold onboard , representing a significant share of the cruise operator’s revenue¹. Only , 13,2% of passengers had visited the city by their own means .

Table 3 – Modes of transport used by cruise passengers [%] (Source: Turismo de Lisbon)²

Mode	2015	2016	2017
Touristic bus	54,8	56,0	78,5
Walking	54,1	53,4	14,2
Cab	48,9	48,4	15,4
Carris (public bus company)	6,1	8,2	11,3
Subway	4	9,6	11,4
Train	2,5	2,7	5,5
Tram	1,1	1,7	2,6

There are several locations that attract the cruise passengers, though most of them are inside the city of Lisbon, and close to the terminal, due to the limited time ships remain in port. Outside of Lisbon there are 3 major locations that passengers visited (Figure 6). Fátima is a religious destination, was visited by 11% of the passengers, Sintra (28 % of visitors 9 and Cascais (18 %), which are historical villages, the first one surrounded by a natural park and the other close to the sea.

Table 4 – Share of passengers that reported having passed through the indicated touristic areas in 2017 (Source: Turismo de Lisboa)

Destination	Share
Bairro Alto	91%
Baixa/Chiado	90%
Alfama/Castelo	90%
Belém	93%
Parque das Nações	85%
Sintra	28%
Cascais	18%
Fátima	11%

¹ Confirmed during participatory process

² “Observatório do Turismo de Lisboa– Inquérito a Passageiros Internacionais de Cruzeiro”, 2017

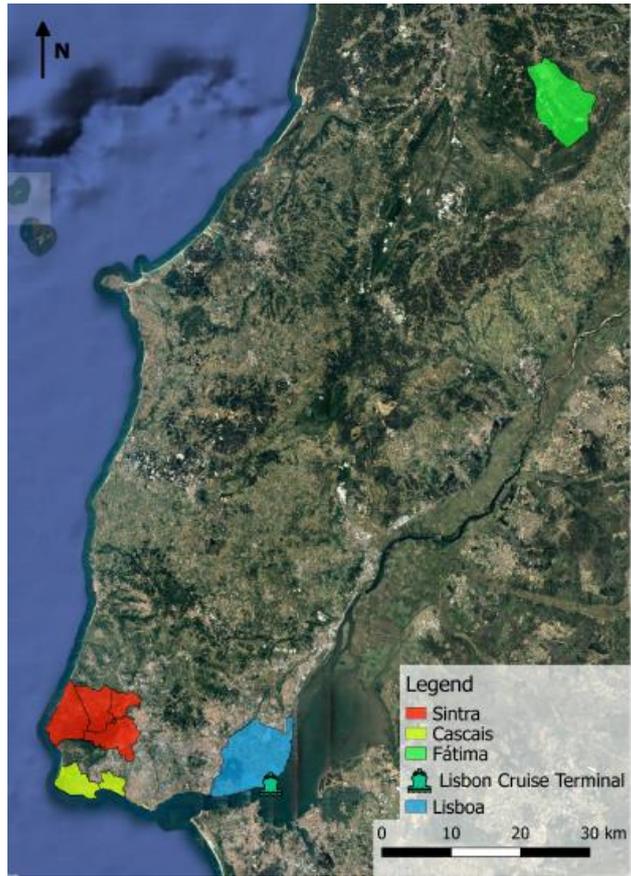


Figure 6 –Touristic destinations outside the city of Lisbon

Within Lisbon, traditionally, the historical neighbourhoods near the river and around downtown are the most visited (about 90% of visitors) with Belém (93%) and Parque das Nações (85%) attracting a lot of visitors as well (Figure 7). All the locations are easily accessible by public transport and even by foot (downtown area) or bike. Ensuring that the passengers, that stay exclusively in these areas, choose sustainable transport options is one step closer to reducing greenhouse gases and pollutants emissions.



Figure 7 – Location of touristic destinations within the city of Lisbon (1) (source: Turismo de Lisboa)

CRUISE-SECTOR MID- TO LONG-TERM (5 TO 10 YEARS) DEVELOPMENT TRENDS.

Reviewed literature estimated that in 2018 the 25 million cruise passengers mark would be surpassed while in 2024 this number would be as high as 30 million. Cruise Market Watch projects that in 2020 Europe demands for cruise tourism would reach 1 million passengers meaning a 7% increase from 2015. This puts Lisbon in a growing market and the belief is that Lisbon will also grow in terms of passengers. For 2018 a 18% increase in terms of passengers is expected bringing 617 000 passengers and 361 cruise ships to Lisbon terminal. [4]

CURRENT CRUISE-RELATED MOBILITY AND TRANSPORT MANAGEMENT POLICIES AND PUBLIC & PRIVATE INITIATIVES ADDRESSING THE EXISTING FLOWS.

Lisbon, as the centre of a metropolitan area with 3 million people, concentrates many of the jobs available in the area and attracts an important share of the population in the area to go work there. Every day, 711 thousand vehicles would get in or get out of the city [5]. Looking at the data it is possible to understand that Lisbon mobility system is highly dependent on personal vehicle.

The number of passengers using the public transport in Lisbon has been decrease from 2010 onwards (Figure 8). It has been argued that the disinvestment in the public (collective) transports during the crisis years is the reason for the decrease in their respective demand. The same argue that the decrease in regularity and quality have been the main reason for the loss of attractiveness of those means of transport. [6] [7]

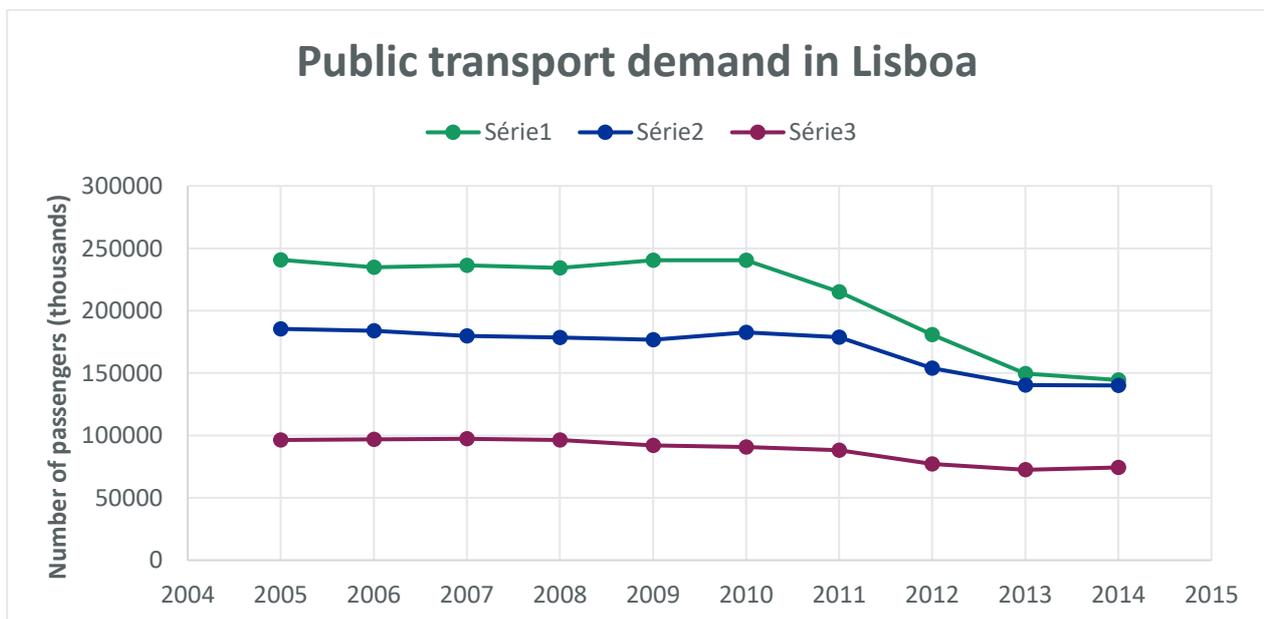


Figure 8 – Public transport demand in Lisbon. [8] [9] [10]

The current administration of the Lisbon City Council, elected in October 2017, has declared some objectives and strategies to try to invert this trend [11]. For example, regarding train lines, it intends to modernize one of the major lines which connects to municipalities to the west of Lisbon. Regarding the bus, dedicated road lanes for the bus are planned with the introduction of priority to the public transport at key intersections. Regarding soft modes, a relevant extension of the cycling network is underway (from 90 to 200km in 2021), the increase of parking spots for bikes is being implemented, the public bike sharing system is successfully nearing its full launch and the pedestrian infrastructures are being improved with the focus on an accessible and inclusive network.

WEIGHTED LIST OF NEGATIVE IMPACTS LINKED TO CRUISE-RELATED FLOWS.

From the information gathered and the participatory process it was possible to elaborate a list of negative impacts of cruise tourism on the city of Lisbon.:

- Higher number of coaches circulating and parking in the city centre and Belém area with increased congestion in road traffic;
- Quality of tourists' experience decreasing;
- Quality of inhabitants' life decreased due to excessive density of tourists;
- Increased cost of life;
- Increase GHG and pollutants emissions;
- Lower velocity of circulation;
- Noise pollution.

EXISTING ROAD NETWORK, TRANSPORT SERVICES AND INFRASTRUCTURE IN THE CITY/PORT

The touristic areas outside of Lisbon, are traditionally visited using touristic bus even though Sintra and Cascais are directly connected to Lisbon by train (Figure 9).

For the two areas, inside Lisbon, further away from the terminal, Belém and Parque das Nações, many options of public transport exist (Figure 9). Regarding Parque das Nações subway, bus and train are options, though bus seems to be the most attractive one since it is the faster and the one closer to the terminal. One can reach Belém, from the terminal or downtown, either by bus, by train or by the referred tram which currently stops about 1 km away from the terminal.



Figure 9 -Public transport connections in Lisbon.

The three areas closer to the terminal³ (Figure 10) are: Bairro Alto/Bica/Príncipe Real (in red and hereinafter Bairro Alto), Castelo/Alfama/São Vicente/Graça/Mouraria (in dark blue and hereinafter Castelo/Alfama) and Chiado/Baixa/Carmo (in yellow and hereinafter Baixa). The first two areas are in two

³ Plano estratégico para o turismo da região de Lisboa 2015-2019, Turismo de Lisboa

distinct hills where steep streets need to be climbed to reach their main . The last one is placed in the valley between the previous and is mostly flat except for the west limit of it which includes a bit of Bairro Alto hill.



Figure 10 - Distribution of touristic destinations within the city of Lisbon (2) (Red circle: Bairro Alto; Yellow circle: Baixa; Blue circle: Alfama/Castelo)

These three areas are a continuum with historical interest, being the Cruise Terminal in the centre of it, which means that, in fact, it doesn't make much sense to think about going from place to place in public transport. The more convenient way of exploring this part of the city will be walking and using lifts and funiculars. Also, bikes may be a good option, once the cycling network is well developed – something that it's not easy on this part of the city, where streets are narrow, and slopes are sharp. By other hand, touristic vehicles (as tuk-tuks, side cars, h-on-hop-off buses and old converted cars) may seem attractive for tourists that want to see Lisbon in a glance, but those are, naturally, the less desirable modes of transportation for the city and its residents as they have a massive impact on the environment and congestion.

2.2. SWOT AND CAME ANALYSIS

The topics listed in the SWOT matrix (Table 5 – SWOT Matrix), are related to the information presented in previous topics. The CAME (Table7) analysis are a more advanced systematization that will later support strategies and actions.

Table 5 – SWOT Matrix

Strengths	Weaknesses
<ul style="list-style-type: none"> ➤ Public bus connecting to main touristic attractions in front of terminal. ➤ Future tram line passing in front of terminal which takes you to main touristic attraction. ➤ Subway station 400 m from terminal. ➤ Train station reachable by bus/subway. ➤ Main airport 5 km and reachable by public transport. ➤ Possibility to know, months in advance, which cruises will be in port. ➤ Cruise Terminal located in city centre and with dedicated capabilities. ➤ New bike sharing system with two stations close to terminal. ➤ City Policy is to increase green and collective transport modal share. 	<ul style="list-style-type: none"> ➤ Disinvestment on public transport sector in recent years (less capacity). ➤ Limited amount of time to visit Lisbon. ➤ Tourists desire to visit the only main attractions. ➤ Arrival and departure times coincident with rush hour. ➤ High share of locals use car for commuting causing traffic congestions. ➤ Lack of touristic buses parking regulation. ➤ Centralized touristic destinations. ➤ Decentralized destinations accessible by train but not viable due to time constraint. ➤ Low quality Pedestrian network. (lack of accessible infrastructure and touristic pedestrian routes). ➤ Increase of the number of non-sustainable touristic options (e.g. tuk-tuks and increase in the share of touristic buses excursions).
Opportunities	Threats
<ul style="list-style-type: none"> ➤ Possible to influence tourists before they enter the city through the terminal capabilities. ➤ Increase of turnaround cruises from 2018 forward. ➤ Profile of cruise tourist changing (younger and more diversified). ➤ High education level which allows for ICTs. ➤ Ongoing intervention in the areas around the new terminal. ➤ More than one municipality program from which the plan can beneficiate. ➤ Touristic fund from touristic tax. ➤ 50-60 % of cruise passengers don't buy excursions inside the cruise. ➤ Cruise high season does not match the touristic high season. ➤ Half of the cruise passengers have already visited Lisbon in the past. ➤ Cruise Tourism might become less seasonal (with increasing turnaround share). 	<ul style="list-style-type: none"> ➤ Cruise terminal located in city centre. ➤ Number of tourists increasing (cruise and otherwise). ➤ Size and capacity of ships increasing. ➤ Loss of identity and residents in the city centre. ➤ Lack of an integrated PT authority. ➤ Seasonal activity with 4 busy months (April, May, September and October) and the other eight quiet. ➤ Cruise operators and port agents possible defensive attitude. ➤ Change of cruise routes with resulting reduced flow. ➤ Climate change and natural disaster. ➤ Global economic-political instability. ➤ Unable to “control” information passed to the tourist before arrival to Lisbon.

Table 6 – CAME Matrix

Maintain	Correct
<ul style="list-style-type: none"> ➤ Keep public transport options in the proximity of the terminal connecting to touristic areas. ➤ Use the foreseen number of cruise passengers to predict impact on specific days. ➤ Continue with active modes and public transport promotion to operate a modal shift from individual transport 	<ul style="list-style-type: none"> ➤ Invest in public transport capacity and quality ➤ Diversify touristic attractions location and promote new ones. ➤ Develop touristic transport regulation ➤ Improve pedestrian network quality and accessibility. ➤ Promote sustainable mode of transport for cruise passengers.
Explore	Adapt
<ul style="list-style-type: none"> ➤ Make use of cruise terminal facilities to promote plan’s actions. ➤ Explore longer stay of turnaround passengers ➤ Explore technological solutions such as web platforms and mobile apps ➤ Align plan’s actions with city council policy and plans. ➤ Study funding through touristic tax funds ➤ Influence the passengers that don’t buy excursions inside the cruise to use more sustainable transport options ➤ Promote alternative touristic locations among passengers that have already visited Lisbon 	<ul style="list-style-type: none"> ➤ Actions must take into account that passenger will always arrive right In the city centre ➤ Increasing number of passengers and tourists in Lisbon must be considered when drafting actions and their expected impact. ➤ The plan’s strategy must protect the identity of the city and its residents ➤ Many actions might have to take into account that the activity is seasonal with quite busy months and other with few passengers. ➤ Cruise and touristic transport operators must be informed of actions to be implemented beforehand to increase likelihood of cooperation

3. STEP 2: PARTICIPATORY PROCESS

3.1. STAKEHOLDERS IDENTIFICATION

The stakeholders involved in the project are presented below:

Table 7 – Stakeholders identification and categorization

Stakeholder	Potential Impact on the project	Main interest related to cruise	How to motivate
Porto de Lisboa (Port Authority of Lisbon)	High	Increasing revenue. Better corporate image. Increasing pan-European competitiveness .	Promote the cooperation with the City of Lisbon. Opportunity to influence the LCTP.
Lisbon Cruise Terminal	High	Increasing revenue. Improve public opinion about cruise tourism. Improve accessibility to the terminal.	Show how LCTP will contribute to good flow of cruise tourism traffic. Show importance of minimizing impacts on the city.
Turismo de Portugal (National Tourism Authority)	Medium	LOCATIONS mission lined-up with Tourism's one (Foster development of tourism). The Strategy for Tourism 2027 clearly aims at sustainable tourism, and LOCATIONS can contribute to this.	Show contribution of LCTP to the strategy for tourism 2027.
Turismo de Lisboa (Lisbon's Tourism Association)	Medium	Improve Lisbon's image as a sustainable touristic destination of excellence.	Show that LCTP can contribute to balance inhabitant's way of life with touristic economic value.
Public transport Operators	Medium	Increased revenue. Better service offer for both tourist and citizens. More daily customers.	Promising more clients and an increasing revenue. Opportunity to prepare themselves for more and different customers.

3.2. PARTICIPATORY PROCESS DESIGN AND IMPLEMENTATION

To involve all relevant stakeholders in the entire process, two moments for participation were planned, an initial presentation of the project and a second one for gathering information. In the first phase the objective was to present the project to potential partners and gather their support. The second phase consisted of individual interviews to key relevant people within the organizations. These interviews intended to deepen the knowledge of the current situation and gather actions and measures that the interviewees found necessary to be included in the plan.

FIRST MEETINGS WITH STAKEHOLDERS

Before the meeting, information about the target organizations had been previously gathered to know what could be expected from them and what kind of information they would have available. This preparation was useful since it allowed the meetings to go beyond the presentation of the project to collection of resources that were used in the diagnosis of the situation. **Erro! A origem da referência não foi encontrada.** summarizes the meetings that took place and the main outcomes.

INTERVIEWS WITH KEY PEOPLE OF STAKEHOLDER'S ORGANIZATIONS

The number of participants in these interviews and the organizations which they represent are listed below:

- 8 - Directorate of Mobility and Transport.
- 1 - Institute for Mobility and Transports
- 1 - Lisbon's public bus company – CARRIS
- 1 - Lisbon Cruise Terminal
- 1 - Tourism of Portugal

Table 8 - Outputs from interviews

Topic	Remark
Cruise Tourism	Typology of operation doesn't imply accommodation (95% transit) Tourist arrive in large numbers in narrow window of time Seasonal activity for which seasonal measures should answer. Substantial changes in the industry foreseen for next 5 years Limited time (from dawn to dusk)
Cruise Tourist	No longer only the typical, low mobility, old user. The absolute number of this users has not decrease but been diluted in other user profiles. Normally wants to go directly to the highlights of the city (related with limited stay).
New Cruise Terminal of Lisbon	Gives the possibility to influence the tourists' choices before they enter the city. It's uncertain the impact it will have on the cruise tourist flux but: <ul style="list-style-type: none"> ➤ It's expected turnaround will increase ➤ Number of cruises and tourists expected to rise Cruise tourism might become less seasonal
Areas of interest for cruise passengers	Lisbon: <ul style="list-style-type: none"> ➤ Downtown and historical neighbourhoods on the hills: Alfama, Castelo, S. Vicente and Bairro Alto, ➤ Belém, ➤ Parque das Nações.

	<p>Lisbon Metropolitan Area:</p> <ul style="list-style-type: none"> ➤ Cascais and Sintra. <p>Fátima</p>
Other potential areas	<p>The concentration of tourist in the typical areas can be alleviated by potentiating other areas:</p> <ul style="list-style-type: none"> ➤ Sintra and Cascais (even further) ➤ Palmela (wine area) ➤ Area around Fátima (Alcobaça e Batalha) ➤ Monsanto <p>This can be successful if aimed mainly at second time comers (about 50%)</p>
Information	<p>Most of the people interview believed that a crucial element is the information that reaches the tourist.</p> <p>How to inform them, where and when, will be crucial to influence their choices of transportation in the city</p>
Mobility Constraints	<p>Main constraints caused by touristic coaches are due to lack of regulated parking mainly in:</p> <ul style="list-style-type: none"> ➤ Praça do Comércio ➤ Rossio ➤ Sé ➤ Belém (Torre de Belém, Padrão dos Descobrimentos, Mosteiro dos Jerónimos)
Modes of transport	<p>Pedestrian</p> <ul style="list-style-type: none"> ➤ Improve walkability conditions ➤ Create and publicize urban touristic routes ➤ Complement this mode with Touristic Coached and public transport <p>Public Transport</p> <ul style="list-style-type: none"> ➤ Facilitate the access to tickets and have dedicated ones <p>Touristic Coach</p> <ul style="list-style-type: none"> ➤ Use this mode for longer trips to out of Lisbon ➤ Regulate parking and routes <p>Create mobility packages that include all these modes of transport</p>

4. STEP 3: DESIGN OF THE PLAN

4.1. DEFINITION OF THE CURRENT SCENARIO

The aims of this topic is to summarize the information previously gather in order to identify the main challenges , the causes and consequences associated Table 9.

Table 9 – Identified challenges and associated causes and consequences

Probable causes	Challenges	Consequences
<p>Low quality of pedestrian network.</p> <p>Low density of cycling network and facilities.</p> <p>Insufficient offer of bike renting and bike sharing services.</p> <p>Limited time to visit the city.</p> <p>People with low mobility.</p> <p>Economic interest of touristic buses operators in selling excursions.</p> <p>Lack of information regarding alternative options.</p>	<p>Tourists use of non-sustainable transport modes (coaches, taxi, tuk-tuk, minivan, etc) for short distances (Baixa, Alfama, Castelo, Bairro Alto, etc).</p>	<p>Higher number of coaches circulating in the city centre and Belém area.</p> <p>Increased congestion in road traffic.</p>
<p>Low use (offer) of public transport options.</p> <p>Only possible to buy tickets inside the buses (no office inside the terminal).</p> <p>Limited time to visit the city.</p> <p>People with low mobility.</p> <p>Economic interest of touristic buses operators in selling excursions.</p> <p>Lack of information regarding alternative options.</p>	<p>Tourists use of non-sustainable transport modes (coaches, taxi, tuk-tuk, minivan, etc) for medium distances (Belém, Parque das Nações, etc).</p>	<p>Buses (when used) get delayed due to ticket being sold by the driver.</p> <p>Higher number of coaches circulating in the city centre and Belém area.</p> <p>Increased congestion in road traffic.</p>
<p>Few touristic attractions besides Belém and historical neighbourhoods.</p> <p>Insufficient effort to potentiate alternative attractions and redirect fluxes (of cruise passengers) there.</p> <p>Touristic tours offered at cruises concentrate in those areas.</p>	<p>Excessive concentration of people at touristic attractions.</p>	<p>Quality of tourists' experience decreasing.</p> <p>Quality of inhabitants' life decreased due excessive to density of tourists.</p> <p>Congestion in road traffic in city centre and touristic attractions areas due to touristic coaches (circulating and parking).</p>
<p>Lack of parking capacity for touristic buses.</p> <p>High number of buses departing from cruise terminal and heading to same places.</p> <p>Arrival and departure hour of cruise coincides with rush hour.</p>	<p>Congestion in road traffic in city centre and touristic attractions areas due to touristic coaches.</p>	<p>Increase GHG and pollutants emissions.</p> <p>Lower velocity of circulation.</p> <p>Noise pollution.</p>

4.2. DEFINITION OF VISION AND OBJECTIVES

VISION

“Lisbon should become a destination of excellence where the available options of mobility have a reduced impact on the environment and on the city residents’ quality of life, contributing to potentiate opportunities and balance the coexistence between residents and tourists.”

This vision is built on the specific objectives of the project and on the vision and ambitions that the current city administration (2017-2021) has for the city. The Lisbon City Council ambition is then to “seize the moment in which we now live to make Lisbon one of the best cities in world to live in.”.

STRATEGY AND OBJECTIVES

From the vision the main objective of the project can be laid out. The plan aims at reducing the carbon impact of the mobility of the cruise passengers on the city of Lisbon. Furthermore, the plan must contribute to protect and increase the quality of life of inhabitants, potentiate economic and social opportunities and optimize the passengers’ experience. This general objective relates to all the challenges previously describe but to achieve it, distinct strategies must be carried out. Therefore, for each of the four main challenges a strategy has been defined to tackle it.

Below, Figure 11, lays out the strategy that will be followed with the corresponding challenges to be tackled.

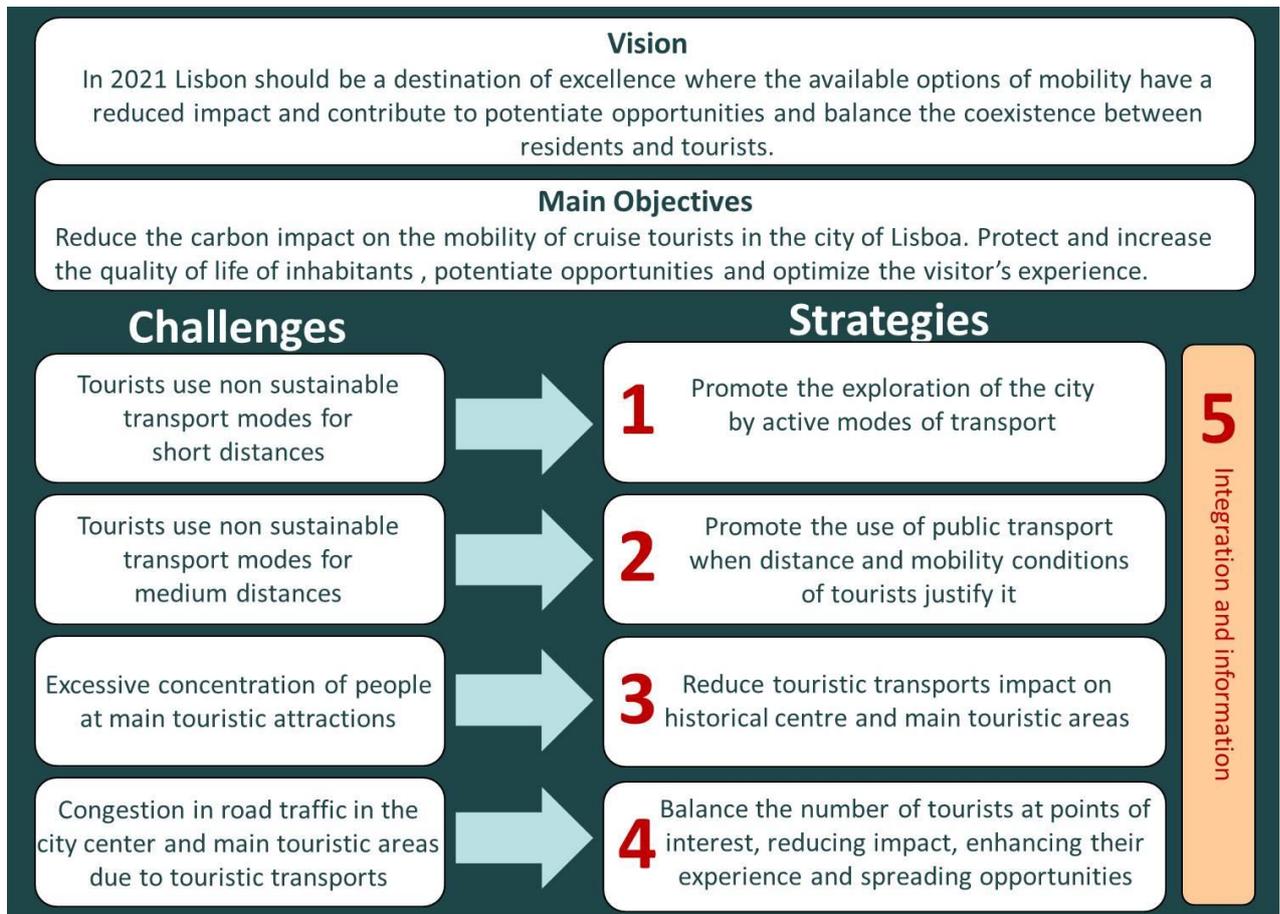


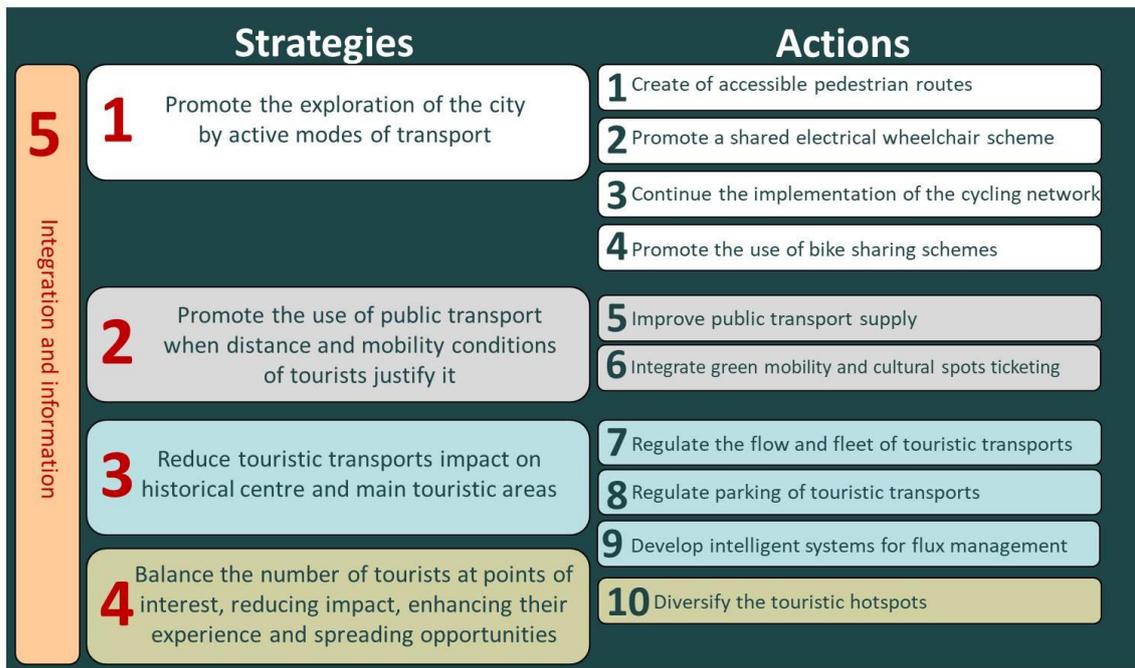
Figure 11 – Diagram laying out the strategy to be followed.

4.3. DEFINITION OF ACTIONS AND INDICATORS

For each challenge, a strategy has been determined. To prosecute each, several actions have been planned, responding to specific objectives. Activities were planned to achieve that objectives and the indicators that will ensure the monitoring of the actions and how successful they are. The quantifiable indicators

have their target value set to be achieved in the year 2021. Furthermore, related actions will also be listed since none of them are isolated.

Figure 12 – Diagram laying out the strategy and related actions.



Complementary STRATEGY N.1

Promote the exploration of the city by active modes of transport.

Table 10 – Action 1 information sheet

Action 1
➤ Creation of accessible and signalled pedestrian routes that connect distinct touristic attraction areas between each other and with the terminal.
Objective
➤ Increase the number of people exploring the city by foot.
Activities
➤ Map existing and planned accessible pedestrian routes.
➤ Identify gaps in existing pedestrian network in terms on missing connection and lack of accessibility.
➤ Identify touristic routes to be promoted / intervened.
➤ Development of solutions that tackle these gaps.
➤ Development of dedicated pedestrian signs.
➤ Propose mechanical equipment to aid pedestrians in hilly areas of the city (if not already in development through the Plan for Soft and Assisted Accessibility to the Castle Hill
➤ Improve connection with public transport
Related actions:
➤ Action 2: Promote the creation of project with electrical wheelchairs
➤ Action 5: Improve public transport supply
➤ Action 6: Integrate the access of tourists to sustainable mobility options and cultural attractions
➤ Action 9: Develop intelligent systems for flux management
Indicators and target:
➤ Share of cruise passengers walking and/or using public transport: <ul style="list-style-type: none"> ○ Currently: 14% for walking and 3-14% public transport (depending on the mode)

- Objective: 50% walking and/or using public Transport
- Kms of pedestrian touristic routes connected to the terminal (directly or through accessible PT):
 - Currently: 0
 - Objective: 12

Table 11 – Action 2 information sheet

Action 2
➤ Promote the creation of project with electrical wheelchairs
Objective
➤ Facilitate the inclusion of passengers with low mobility
Activities
➤ Business model
➤ Choose locations where to implement in coordination with Action 1.
Related actions:
➤ Action 1: Creation of accessible and signalled pedestrian routes that connect distinct touristic attraction areas between each other and with the terminal.
➤ Action 6: Integrate the access of tourists to sustainable mobility options and cultural attractions
➤ Action 8: Regulate parking of touristic transports.
Indicators and target:
➤ Existence of an electrical wheelchair project.

Table 12 – Action 3 information sheet

Action 3
➤ Continue with the implementation of the cycling network, considering the development of paths that are favourable to tourism.
Objective
➤ Increase number of passengers cycling.
Activities
➤ Map current cycling network.
➤ Identify touristic routes to promote.
➤ Identify gaps in the network (with attention to previously identified routes).
➤ Develop solutions to bridge these gaps.
➤ Development of dedicated cycling signs.
Related actions:
➤ Action 4: Promotion of bike sharing schemes for tourists.
➤ Action 6: Integrate the access of tourists to sustainable mobility options and cultural attractions
➤ Action 9: Develop intelligent systems for flux management
Indicators and target:
➤ Share of passengers cycling: <ul style="list-style-type: none"> ○ Currently: 0% ○ Objective: 5%
➤ Kms of cycling infrastructure implemented on touristic areas and linked to the terminal: <ul style="list-style-type: none"> ○ Currently: 0 ○ Objective: 18

Table 13 – Action 4 information sheet

Action 4
➤ Promotion of the use of bike sharing schemes by tourists
Objective
➤ Increase number of passengers cycling.
Activities

Action 4
➤ Promotion of the use of bike sharing schemes by tourists
<ul style="list-style-type: none"> ➤ Study the expansion of the public bike sharing system with cruise tourist in mind. ➤ Promote the creation of bike sharing schemes dedicated to tourist. ➤ Consider the expansion of the cycle paths network and the touristic hotspots when carrying out these activities.
Related actions:
<ul style="list-style-type: none"> ➤ Action 3: Continue with the implementation of the cycling network, considering developing paths that are favourable to tourism. ➤ Action 6: Integrate the access of tourists to sustainable mobility options and cultural attractions ➤ Action 9: Develop intelligent systems for flux management
Indicators and target:
<ul style="list-style-type: none"> ➤ Share of passengers cycling: <ul style="list-style-type: none"> ○ Currently: 0% ○ Objective: 5%

Complementary STRATEGY N.2

Promote the use of public transport when distance and mobility conditions of tourists justify it.

Table 14 – Action 5 information sheet

Action 5
➤ Improve public transport supply
Objective
<ul style="list-style-type: none"> ➤ Increase the number of people using public transport options when some transport is need.
Activities
<ul style="list-style-type: none"> ➤ Enable the selling of tickets of public transport at the cruise terminal. ➤ Increase capacity of bus and tram lines that are overcrowded due to touristic interest of the location they connect.
Related actions:
<ul style="list-style-type: none"> ➤ Action 1: Creation of accessible and signalled pedestrian routes that connect distinct touristic attraction areas between each other and with the terminal. ➤ Action 6: Integrate the access of tourists to sustainable mobility options and cultural attractions ➤ Action 9: Develop intelligent systems for flux management
Indicators and target:
<ul style="list-style-type: none"> ➤ Share of cruise passengers using public transport: <ul style="list-style-type: none"> ○ Currently: 3-12% public transport (depending on the mode); touristic buses: 79% ○ Objective: 20% using public transport; touristic buses: 50% ➤ Availability of public transport tickets at the terminal

Table 15 – Action 6 information sheet

Action 6
➤ Integration of sustainable transport options and cultural attractions ticketing
Objective
<ul style="list-style-type: none"> ➤ Increase the number of cruise passengers using sustainable transport options
Activities
<ul style="list-style-type: none"> ➤ Create an advantageous package that includes mobility and cultural services. ➤ Study the integration of mobility and access to cultural attractions though ticketing and smart systems.
Related actions:
<ul style="list-style-type: none"> ➤ Action 1: Creation of accessible and signalled pedestrian routes that connect distinct touristic attraction areas between each other and with the terminal. ➤ Action 2: Promote the creation of project with electrical wheelchairs

- Action 3: Continue with the implementation of the cycling network, considering developing paths that are favourable to tourism.
- Action 4: Promotion of the use of bike sharing schemes by tourists.
- Action 5: Improve public transport supply
- Action 9: Develop intelligent systems for flux management
- Action 10: Diversify the touristic hotspots

Indicators and target:

- The main indicator will be if the related actions are successful or not (therefore, indicators of related actions are measure)
- Existence of the described package

Complementary STRATEGY N.3

Reduce touristic transports impact on historical centre and main touristic areas

Table 16 – Action 7 information sheet

Action 7
Regulate flow and fleet of touristic transports
Objective
<ul style="list-style-type: none"> ➤ Minimize impact of touristic transports on traffic flow, noise, air pollution and CO2 emissions.
Activities
<ul style="list-style-type: none"> ➤ Update regulation: <ul style="list-style-type: none"> ○ Evaluate the existing routes and propose necessary modifications. ○ Study where the ban of circulation of touristic transport should be imposed. ○ Promote the replacement of fossil fuel by electric powered vehicles or other low carbon solution ○ Provide necessary infrastructure ➤ Reinforce oversight to the flow of touristic transport considering regulation.
Related actions:
<ul style="list-style-type: none"> ➤ Action 8: Regulate parking of touristic transports. ➤ Action 9: Develop intelligent systems for flux management ➤ Action 10: Diversify the touristic hotspots.
Indicators and target:
<ul style="list-style-type: none"> ➤ Number of buses crossing downtown. <ul style="list-style-type: none"> ○ Objective: 0. ○ Share of touristic fleet powered by electricity <ul style="list-style-type: none"> ○ Currently: unknown ○ Objective: 50%

Table 17 – Action 8 information sheet

Action 8
➤ Regulate parking of touristic transports
Objective
<ul style="list-style-type: none"> ➤ Decrease congestion caused by the drop off and pick up of passengers at touristic locations
Activities
<ul style="list-style-type: none"> ➤ Update regulation <ul style="list-style-type: none"> ○ Create short stay areas for pick up and drop off close enough to attractions (museums, monuments, etc.) for people with reduced mobility to access them. ○ Create prolonged stay parking areas for buses to wait after dropping off passengers. ➤ Reinforce oversight of parking regulations.
Related actions:
<ul style="list-style-type: none"> ➤ Action 2: Promote the creation of project with electrical wheelchairs ➤ Action 7: Regulate the flow and fleet of touristic transports ➤ Action 9: Develop intelligent systems for flux management and access to attractions
Indicators and target:
<ul style="list-style-type: none"> ➤ Number of parking areas dedicated for buses <ul style="list-style-type: none"> ○ Currently: <ul style="list-style-type: none"> ▪ 0 prolonged stay parks ▪ 49 parking areas for drop off and pick up of passengers (not exclusively dedicated to tourism) ▪ 23 parking areas for tuk-tuks ○ Objective: At least two prolonged stay parks (Belém and City Centre)

Table 18 – Action 9 information sheet

Action 9
➤ Develop intelligent systems for flux management

Objective
➤ Balance the number of tourist at each touristic location
Activities
➤ Create an integrated system used by operators of touristic buses and by touristic attractions which regulated the access of buses to distinct parking areas according to the capacity of the public space around.
➤ Create a mobile app which facilitates the “discovery” of the city through active transport modes
Related actions:
➤ Action 1: Creation of accessible and signalled pedestrian routes that connect distinct touristic attraction areas between each other and with the terminal.
➤ Action 3: Continue with the implementation of the cycling network, considering developing paths that are favourable to tourism.
➤ Action 4: Promotion of the use of bike sharing schemes by tourists.
➤ Action 5: Improve public transport supply
➤ Action 6: Integrate access to sustainable modes of transport and cultural attractions ticketing
➤ Action 7: Regulate the flow and fleet of touristic transports
➤ Action 8: Regulate parking of touristic transports
➤ Action 10: Diversify the touristic hotspots
Indicators and target:
➤ Existence of the described platform
➤ Existence of the described mobile app

Complementary STRATEGY N.4:

Balance the number of tourists at points of interest, reducing tourists’ impact on the places and, enhancing their experience and spreading opportunities.

Table 19 – Action 10 information sheet

Action 10
➤ Diversify the touristic hotspots.
Objective
<ul style="list-style-type: none"> ➤ Balance the number of tourists in each place. ➤ Promote economic benefits in other parts of the city.
Activities
<ul style="list-style-type: none"> ➤ Promote alternative spots inside the city of Lisbon: Paço do Lumiar, Feira Popular, Monsanto, and others. ➤ Promote alternative spots outside the city: Sintra, Cascais, Palmela ➤ Consider the passengers that are visiting Lisbon for the second time.
Related actions:
<ul style="list-style-type: none"> ➤ Action 6: Integrate access to sustainable modes of transport and cultural attractions ticketing ➤ Action 7: Regulate flow and fleet of touristic transports ➤ Action 9: Develop intelligent systems for flux management
Indicators and target:
<ul style="list-style-type: none"> ➤ Share of tourists that visit locations outside Lisbon: <ul style="list-style-type: none"> ○ Currently: 18% Cascais and 28% Sintra ○ Objective: 30% for both and 10% for new locations ➤ Share of tourists that visits alternative locations inside Lisbon: <ul style="list-style-type: none"> ○ Currently: n/a (very few) ○ Objective: 15-20% ➤ Share of tourist that visit traditional locations inside Lisbon: <ul style="list-style-type: none"> ○ Currently: 85-93% depending on location ○ Objective: 75-80% depending on location

Transverse STRATEGY N.5:**Integration and information**

Table 20 – Action 11 information sheet

Action 11
➤ Provide relevant information to tourists
Objective
➤ Ensure the successful outcome of related actions
Activities
➤ Enable easy access to information regarding active modes network through maps, apps, on street signs, etc.
➤ Promotion and awareness rising towards active modes and public transport.
➤ Coordinate with cruise operators to promote alternative destinations reachable by coach to leave city centre to public transport and active modes.
➤ Use the terminal capabilities to inform tourists of where to go and how to get there.
Related actions:
All complementary actions
Indicators and target:
➤ The main indicator will be if all the complementary actions are successful or not (therefore, indicators of related actions are the measure)

4.4. DEVELOPMENT OF FUTURE SCENARIOS

Table 21 summarizes the information regarding the three scenarios enabling an easy comparison between each scenario.

Table 21 – Different scenarios and foreseen impacts

Scenario	Pollutants and Greenhouse Gases	Coexistence between locals and cruise passengers
Worst-case scenario	With increasing number of cruise passengers and with current modal share, the number of touristic couches will increase and with it GHG and pollutants emissions	As the cases of Venice and Barcelona show if no measures are implemented the locals will start to question the benefits of tourism over the negatives. Normally cruise tourism is one of the main targets since its characteristics make it more visible (e.g. big packs of people and size of cruise ships)
Best-case scenario	Despite the increase of cruise passengers, there will be more tourists using more sustainable option (e.g. public bus, walking, cycling and others). This means that less GHG and pollutants will be released.	Touristic sites will not be overcrowded since there will be a balance between the different touristic areas. Also, local commerce will prosper with more people cycling and walking in the streets. This will benefit the image that the local population has of the cruise passengers.
Most likely scenario	The modal shift to low carbon options might not be enough to reduce the GHG and pollutants emissions (due to increase of total number of tourists) but could be enough to maintain the current levels.	There might be some decongestions of touristic sites with the creation of alternative ones and better balance between the touristic areas. Despite this and with increased number of tourists if the results are not visible to the locals, their image of cruise passengers will unavoidably worsen.

5. STEP 4: MONITORING AND FUNDING

5.1. MONITORING LCTP IMPLEMENTATION

All the actions were elaborated with the period 2019-2021 in mind to account for the political cycles (the current one ends at end of 2021) and to have time from the conception of the Low Carbon Transport Plan until political actors support it and promote its strategy. Therefore, actions are to start being implemented in the beginning of 2019 with the first visible effects expected to be felt during 2021.

STRATEGY 1 – PROMOTE THE EXPLORATION OF THE CITY BY ACTIVE MODES OF TRANSPORT.

Table 22 – Implementation and monitoring summary of actions 1 to 4

Promote the exploration of the city by active modes of transport.				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
1	Lisbon City Council Lisbon Tourism Association	Share of cruise passengers walking and/or public transport.	Lisbon Tourism Association	Yearly through the enquiry already done.
		Number of touristic routes starting and finishing at the terminal.	Lisbon City Council	Access mid-way: June 2020.
2	Privates/Start-ups Lisbon City Council	Existence of an electrical wheelchair project.	Lisbon City Council	Access mid-way: June 2020.
3	Lisbon City Council Lisbon Tourism Association	Share of passengers cycling.	Lisbon Tourism Association	Access mid-way: June 2020.
		Number of touristic routes starting at finishing at the terminal.	Lisbon City Council	Yearly through the enquiry already done.
4	Lisbon City Council EMEL Privates/Start-ups Lisbon Tourism Association	Share of passengers cycling.	Lisbon Tourism Association	Access mid-way: June 2020.
		Capacity of station close to the terminal.	Lisbon City Council	Yearly through the enquiry already done.

STRATEGY 2 – PROMOTE THE USE OF PUBLIC TRANSPORT WHEN DISTANCE AND MOBILITY CONDITIONS OF TOURISTS JUSTIFY IT.

Table 23 – Implementation and monitoring summary of actions 5 and 6.

Promote the use of public transport when distance and mobility conditions of tourists justify it.				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
5	Lisbon City Council CARRIS Lisbon Cruise Terminal Lisbon Tourism Association	Share of cruise passengers walking and/or public transport.	Lisbon Tourism Association	Yearly through the enquiry already done.
		Availability of public transport tickets at the terminal.	CARRIS	Access mid-way: June 2020.

Promote the use of public transport when distance and mobility conditions of tourists justify it.				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
6	Lisbon City Council EMEL	Related actions are successful.	Lisbon E-Nova	Access mid-way: June 2020.
	All transport operators Cultural attractions	Existence of the described package.	Lisbon City Council	Access mid-way: June 2020.

STRATEGY 3 – REDUCE TOURISTIC TRANSPORTS IMPACT ON HISTORICAL CENTRE AND MAIN TOURISTIC AREAS.

Table 24 – Implementation and monitoring summary of actions 7 to 9

Promote the exploration of the city by active modes of transport.				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
7	Lisbon City Council Touristic Buses Operators Municipal Police	Number of buses crossing downtown.	Lisbon City Council	Periodic counts in loco or through sensors.
		Share of touristic fleet powered by electricity	Lisbon City Council	Access mid-way: June 2020.
8	Lisbon City Council Touristic Buses Operators Municipal Police	Number of parking areas dedicated for buses.	Lisbon City Council	Access mid-way: June 2020.
9	Lisbon City Council Tourism Operators	Existence of the described platform.	Lisbon City Council	Access mid-way: June 2020.
	Privates/Start-ups Lisbon Tourism Association EMEL	Existence of the described mobile app.	Lisbon City Council	Access mid-way: June 2020.

STRATEGY 4 – BALANCE THE NUMBER OF TOURISTS AT POINTS OF INTEREST, REDUCING, ENHANCING THEIR EXPERIENCE AND SPREADING OPPORTUNITIES.

Table 25 – Implementation and monitoring summary of action 10.

Balance the number of tourists at points of interest, reducing tourists impact on the places and, simultaneously enhancing their experience				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
10	Lisbon City Council Lisbon Tourism Association Cruise Operators	Share of tourists that visit locations outside Lisbon.	Lisbon Tourism Association	Yearly through the enquiry already done.
	Lisbon Cruise Terminal	Share of tourists that visit alternative locations inside Lisbon.		

	Touristic Buses Operators Other city councils	Share of tourist that visit traditional locations inside Lisbon:		
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STRATEGY 5 – INFORMATION AND INTEGRATION

Table 26 – Implementation and monitoring summary of transverse action 11.

Information and integration.				
Action	Actors	Indicators	Responsibility for monitoring	Monitoring schedule
11	All previously mentioned actors	Related actions are successful.	Lisbon E-Nova	Access mid-way: June 2020.

GLOBAL MONITORING

Assuming, as dictated by all the predictions, that the number of cruises and passengers will continue to grow significantly, the plan success can't be measured having absolute CO₂ values as a reference. Also, because there will always be other factors influencing the results.

As so, a global indicator should be built, considering:

- Medium number of Km made by each cruise passenger in Lisbon
- Modes of transport used
- CO₂ emissions of each mode by Km, by passenger
- Number of cruise passengers per year

Since, currently the information regarding the distance that the passengers travel when in Lisbon is not available. Furthermore, one cannot associate a specific mode of transport with the destination of the passengers. (e.g. it is known that 28% of the passengers go to Sintra but it is not known if they go by bus or train or other transport mode).

5.2. FUNDING

Public funds can come from direct investment by the city council on infrastructure and promotional activities or from the touristic fund. The latter is created with the revenues that come from the touristic tax, which is charged to the tourists for every night a tourist spends in the city (until a maximum of 7 consecutive nights)⁴. Until 2019 a total of 33.7 million euros are planned be invest in the city⁵. The strategy for this fund is to invigorate the touristic offer through fluxes management and themes diversification, which contribute to improve the quality of life of the residents.

Some of the actions may require private initiative and can generate revenue by themselves, possible being attractive projects for private organizations or start-ups. Action 2 with the electric chairs project fills these requirements with the touristic buses operators being a possible interested party. Bike sharing services focused on tourists like the one described in Action 4 can also be carried out by private initiative just like the mobile app included on Action 11 or the mobility package of Action 6.

⁴ <http://www.cm-lisboa.pt/servicos/pedidos/pagamentos-taxas-e-tarifas/taxa-municipal-turistica-de-dormida/o-que>

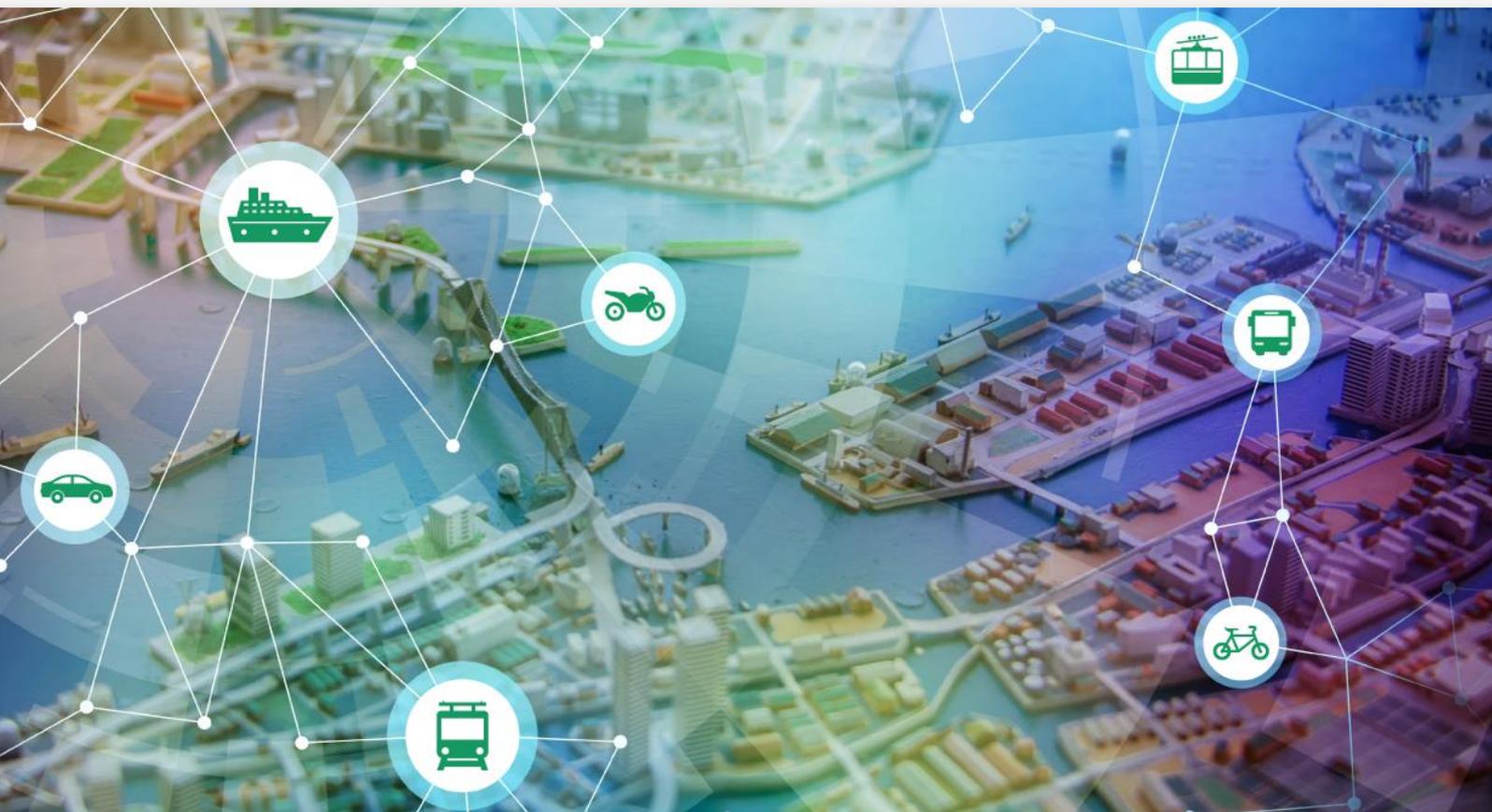
⁵ http://www.ahresp.com/news_article.php?id=2686

The last, but also important source of funding can be the European funds that have several topics aiming at sustainable mobility.

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DRAFT LCTP - PORT OF TRIESTE

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ALBERTO COZZI/PORT NETWORK AUTHORITY OF THE EASTERN ADRIATIC

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WP3

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30.07.2018

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EXECUTIVE SUMMARY

The LOCATIONS project, co-funded by the Interreg MED Programme aims at offering new solutions in terms of urban mobility within MED port cities by supporting public institutions that are in charge of the elaboration of the Sustainable Urban Mobility Plans (SUMPs).

Within the local context the scope of the project is therefore providing cruisers with alternative transport solutions given the recent increase of cruise liners that choose the terminal of Trieste as home port: the table below shows that the city of Trieste has become an important tourist destination with a relevant change if compared to only a few years ago.

Year	Number of cruisers	Ships
2017	121.219	58
2016	145.991	61
2015	134.265	46
2014	44.236	22
2013	70.244	31
2012	70.807	40

The increasing number of cruise passengers forces all institutions to closely cooperate as to guarantee the most efficient solutions for the city's inhabitants, tourists and cruise passengers.

To this purpose two rounds of interviews with relevant stakeholders were carried out by the Port Network Authority of the Eastern Adriatic Sea – Port of Trieste, through a participatory process that involved the following actors in the elaboration of the Low Carbon Transport Plan (LCTP) for the city of Trieste.

- Trieste Cruise Terminal – manager of the city cruise terminal;
- City of Trieste (associated partner in the project) – policy maker, responsible for elaborating the SUMP;
- Chambers of Commerce of Trieste and Italian General Confederation of Enterprises, Professions and Self-Employment – active in the field of local tourist promotion.

Within this context and as a result of the participatory process, the Port of Trieste has elaborated a LCTP which include a list of measures with the main goal to improve the accessibility of urban areas providing high-quality and sustainable mobility and transport to cruise passengers.

The identified set of measures will be afterwards included in the SUMP, which is going to be implemented by the Municipality of Trieste as the actor competent for planning the city's mobility:

1. Analysis of the public transport (train) options available for reaching Trieste;
2. Increase of bike sharing stations;
3. Study on dedicated public transport service between the train station and the cruise terminal;
4. APP for way finding in the city (already foreseen in the CIVITAS PORTIS project);
5. Webpage on the city portal with information for cruise passengers, suggesting LC transport options.

Finally, after the identification of these five measures, the Port of Trieste has followed a scenario-based approach that allows to examine the potential impacts of the above-mentioned actions, providing three different scenarios for the city of Trieste.

INTRODUCTION

This document is drafted within the LOCATIONS project, co-funded by the Interreg MED Programme.

The LOCATIONS project - Low Carbon Transport in Cruise Destination Cities - aims to support public administrations of MED cruise cities in defining Low Carbon Transport Plans (LCTPs) tackling the impact of cruise passengers on the city mobility, envisaging low carbon mobility options and measures.

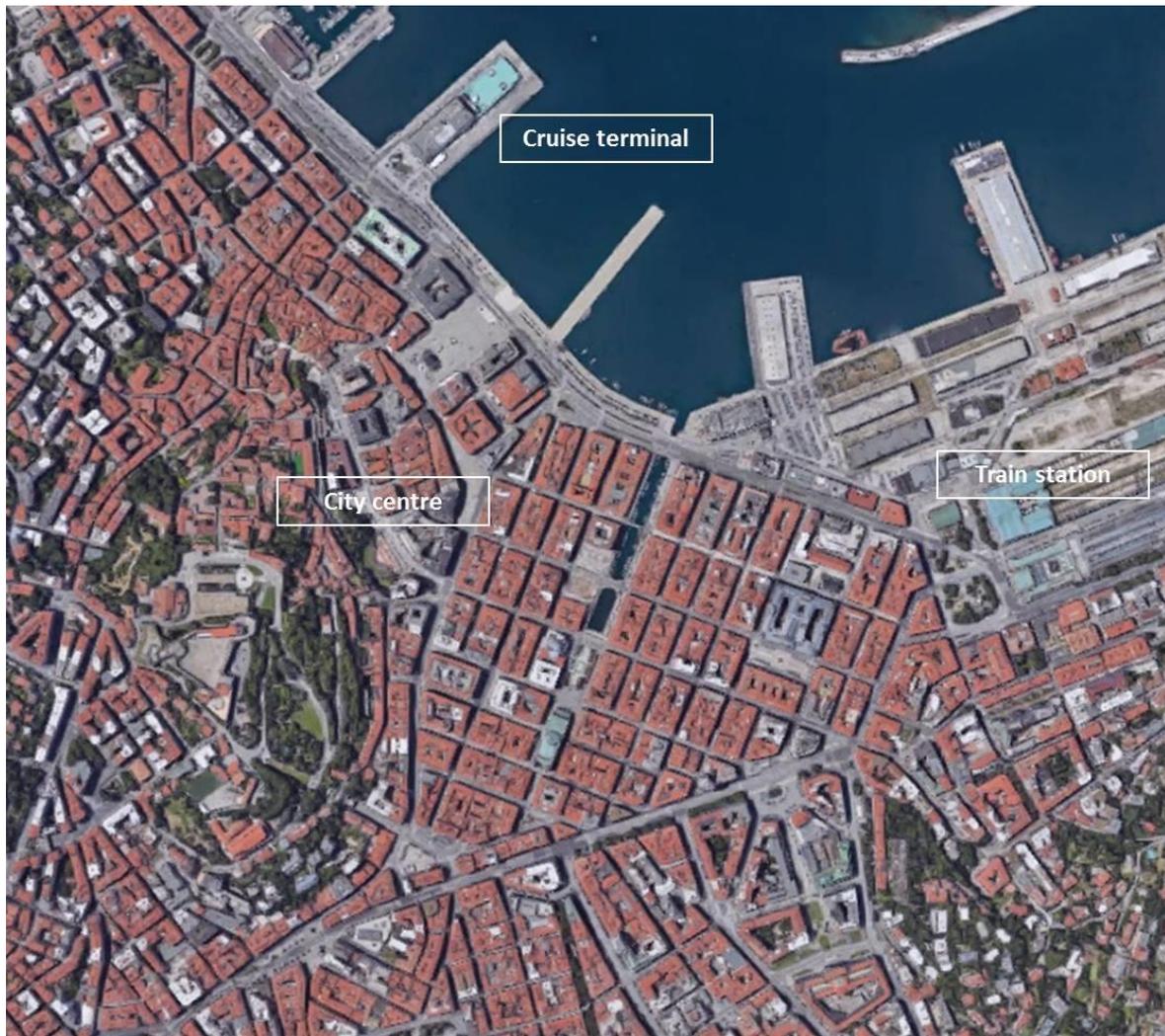
This LCTP concerns the city of Trieste, located in North Eastern Italy and was drafted by the Port Network Authority of the Eastern Adriatic Sea - Port of Trieste, as LOCATIONS project partner. The Municipality of Trieste is Associated Partner in the project.



As it can be easily noted from the picture above and map below, the cruise terminal is located directly within the city centre, on the main square and near most of the city's touristic attractions.

On one side, this is positive, since cruisers wishing to visit the city can walk through it as they disembark. On the other side, such a central location impacts on the residents, since cruisers wishing to arrive to the terminal or departing from it for local excursions mainly use private vehicles and buses, respectively.

This LCTP tackles these challenges. It was drafted in close cooperation with the Municipality of Trieste, which is the public entity responsible for planning the city's mobility.



VISION

The Port of Trieste has consistently invested in low-carbon and sustainable measures over the last few years.

First and foremost, the new Port Master Plan was approved with integrated EIA and ESA evaluation. Also, it is the only Italian Port Authority that is certified with 9001:2015 and 14001:2015 standard, ensuring that sustainability is embedded in the port development operations for the years to come.

Additionally, the port of Trieste is the first Italian port for intermodal traffic, with 8,681 trains moved in 2017 – specific statistics are described in the chapters below.

Therefore, the participation in a project devoted to low-carbon mobility for cruisers is a natural prosecution of the port authority's current and future strategy, devoted to supporting low-carbon and environmentally friendly transport solutions.

CONTEXT

GENERAL CONTEXT

The concept of Low Carbon Transport Plan (LCTP) is closely linked to the Sustainable Urban Mobility Plan (SUMP), envisaged by the European Union within the Urban Mobility Package (COM(2013) 913).

Like the SUMP, an LCTP has as its main goal the improvement of the accessibility of urban areas and providing high-quality and sustainable mobility and transport to cruise passengers. As such, it should regard the needs of the 'functioning city' and its hinterland rather than a municipal administrative region.

Moreover, the LCTP is linked to an existing long-term strategy for the future development of the urban area and, in this context, for the future development of transport and mobility infrastructure and services.

Therefore, any LCTP should be directly linked to the city's SUMP or equivalent planning document, in order to integrate cruise-related and citizen-related mobility needs and solutions.

Relevant EU policies and documents are:

1. Air Quality Directive (2008/50/EC)
2. Action Plan on Urban Mobility (COM(2009)490)
3. EU2020 Strategy (COM(2010) 2020)
4. White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" (COM(2011)0144)
5. Urban Mobility Package (COM(2013) 913)
6. SUMP Guidelines by ELTIS (Urban Mobility Observatory)

NATIONAL CONTEXT

The Italian national legislation does not envisage SUMPs or LCTPs to be mandatory for Italian municipalities.

Yet, Italian Law no. 340/2000 foresees a similar tool, i.e. the "Urban Mobility Plan", whose main objective is to plan the urban mobility system providing an organic set of actions on public transport and road infrastructures, P&R systems, ICT measures, transport demand management, mobility managers, traffic control and regulation systems, real-time information to users and passengers, plans and technologies to improve the distribution of goods at urban level.

The SUMP is developed and approved by Italian municipalities on a voluntary basis.

In addition, the Decree of the Italian Ministry of Transport dated 4th August 2017, published on the Italian Official Journal no. 233 on October 5th 2017 issued the guidelines for the elaboration of SUMPs, applying art. 3 of the Legislative Decree no. 257/2016 in accordance with Dir. 2014/94/EU on alternative fuels.

The City of Trieste does not have an UMP, but in 2012 it approved the "General Plan of Urban Traffic" (PGTU – Piano Generale del Traffico Urbano), containing important analyses and policy actions concerning the mobility patterns in the city.

CITY CONTEXT

Located at the intersection between the Baltic-Adriatic and Mediterranean TEN-T core network corridors, the Port of Trieste is an international hub for overland and sea trade with the dynamic market of Central

and Eastern Europe, and it is the top ranking Italian port for total throughput, with more than 61 million tons (2017).

	2015	2016	2017	Δ % 2015/2017	Δ % 2016/2017
TOTAL THROUGHPUT	57,124,772	59,244,255	61,955,405	+8.46%	+4.58%
Liquid Bulk	41,286,761	42,756,341	43,750,555	+5.97%	+2.33%
Dry Bulk	1,607,232	1,971,001	1,639,595	+2.01%	-16,81%
General Cargo	14,230,779	14,516,913	16,565,225	+16.40%	+14.11%
Number of Vehicles	301,353	302,619	315,705	+4.43%	+3.99%
Number of containers (TEUs)	501,144	486,462	616,156	+22.95%	+26.66%
Total TEUs (CTNRs, vehicles)	1,165,033	1,158,1329	1,314,953	+12.87%	+13.52%

Also, the port of Trieste is the first Italian port for intermodal connections, with more than 100 trains a week connecting Trieste to the Italian North-East industrial sites, Southern Germany, Austria, Hungary, Slovakia, Czech Republic and Sweden with more than 8,600 trains in 2017.

	2015	2016	2017	Δ % 2015/2017	Δ % 2016/2017
TOTAL TRAINS	5,980	7,631	8,681	+ 45.71%	+ 13.76%

As for cruises, the relevant statistics show a positive trend over the past few years:

Year	Number of cruisers	Ships
2017	121.219	58
2016	145.991	61
2015	134.265	46
2014	44.236	22
2013	70.244	31
2012	70.807	40

In 2016, cruise liners moved the following passengers:

- Costa Crociere: 121,989 – 83.56%
- Thomson: 8,666 – 5.94%
- Others: 15,336 – 10.50%

As for 2017 the breakdown is represented as follows:

- Costa Crociere: 90, 406 – 74,58 %
- Thomson Cruises: 8,557 – 7,06 %
- Pullmantur: 6,117 – 5,1 %
- Gran Circle Cruise Line: 637 – 0,53 %
- Others: 15,502 – 12,79 %

Although these numbers are far from resembling those of other historic cruise cities (e.g. Venice), they show that the city of Trieste has become an important tourist destination, with a relevant change if compared to only a few years ago.

The shareholders of the company managing the cruise terminal, “Trieste Terminal Passeggeri”, (TTP) comprise:

- Trieste Adriatic Maritime Initiatives S.r.l. (TAMI) – 60%, out of which:
 - Unicredit 31%
 - Costa Crociere 29%
 - Giuliana Bunkeraggi 15%
 - Reguardia 15%

- Generali Insurances 10%
- Port Network Authority of the Eastern Adriatic Sea – 40%

The President of the Port Network Authority of the Eastern Adriatic Sea is also the President of the board of TTP.

The City of Trieste does not have an UMP, but in 2012 it approved the “General Plan of Urban Traffic” (PGTU – Piano Generale del Traffico Urbano), containing important analyses and policy actions concerning the mobility patterns in the city.

As outlined in the figure below, in 2012 the modal split was the following:

- 13% motorcycle
- 47% car
- 20% public transport
- 1% bicycle
- 19% walking

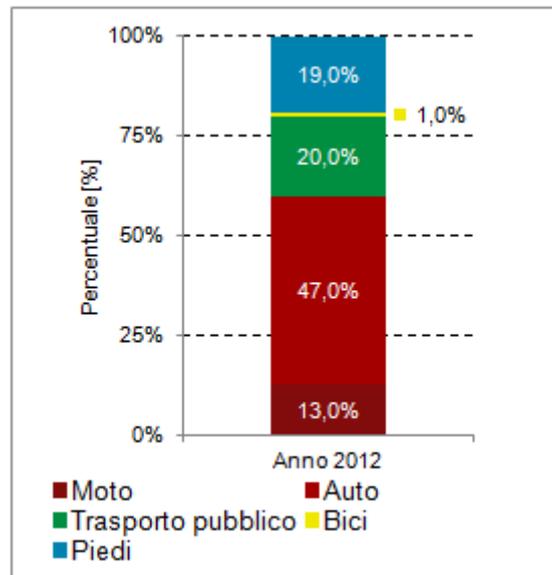


Figure 1 - Modal split in Trieste (PGTU, 2012)

The City of Trieste – AP in LOCATIONS – is participating in the CIVITAS PORTIS project¹, together with AREA Science Park and the Port of Trieste.

The main aims of the PORTIS project are to:

- Improve governance for an enhanced cooperation between cities and ports
- Create more sustainable and healthier city-port environments
- Shape more integrated transport infrastructure and mobility systems
- Improve the efficiency of urban freight transport

¹ <http://civitas.eu/portis>

More specifically, as far as Trieste is concerned, in order to enhance the function of the Old Port areas, to be integrated to the city and New Port, a multi-governance, technical office will be established. An efficient monitoring and data exchange system will allow to better coordinate freights movements and to control urban and port access.

The city of Trieste will implement a SUMP supporting soft mobility, increasing pedestrian areas, car- and bike-sharing, and other intermodal solutions to connect city and ports areas. The tendering procedure for the city's SUMP was launched in the 3rd quarter of 2017 and it is going to be finalized in the next few months.

Targeted awareness-raising campaigns on e-mobility solutions undertaken by the city will be launched in order to involve the younger generation and increase the number of informed users among citizens.

Specific e-services and sustainable mobility measures will also be implemented for the growing number of cruising tourists.

Within the CIVITAS-PORTIS project, with the objective to promote the use of bicycles and the pedestrian mobility to tourists, the city of Trieste will develop an initiative aimed at developing an open-access walking and cycling guidebook. "The guidebook will give very easy but complete and up-to-date information about how to move in the city, included the Old Port: from bicycle parking spaces to the location of intermodal nodes (stations, hubs, bus stops, etc.) and the position of bike-sharing stations along with itineraries for tourists (especially for cruise tourists) around cultural and historical sites. The guidebook will be freely downloadable from tourist promotion Agencies websites and Municipality web sites and will be distributed to the hotels; it will also be developed in APP format. This APP will facilitate tourists in their movements within the city; it will be especially helpful to cruise tourists who spend short time in the city and need quick information to walk in nearest urban area".

Considering the general framework of the Adriatic cruise-sector development trends, in 2016 the Adriatic was the area of the Mediterranean Sea with the highest positive variation in 2016 traffic compared to the previous year². Interviewed stakeholders in the specific context of Trieste cruise traffic segment noted an increase of concrete opportunities to go beyond this positive trend and underlined various still underestimate potentialities to be developed in the future. One of the strategic initiative envisaged in the coming years aims at providing a more positive framework than that emerging from the results of the previous year with regard to the implementation of new policies initiatives – SUMP - and the possible concentration of cruise related activities promoting new cultural and tourist activities in the Trieste Old Port areas.

² Adriatic Sea Tourism Report 2017, Risposte Turismo, 2017 – http://www.adriaticseaforum.com/2017/Public/RisposteTurismo_AdriaticSeaTourismReport2017.pdf

La crescita dei primi 20 porti crocieristici italiani per passeggeri movimentati, variazioni 2016-2007 e 2016-2015

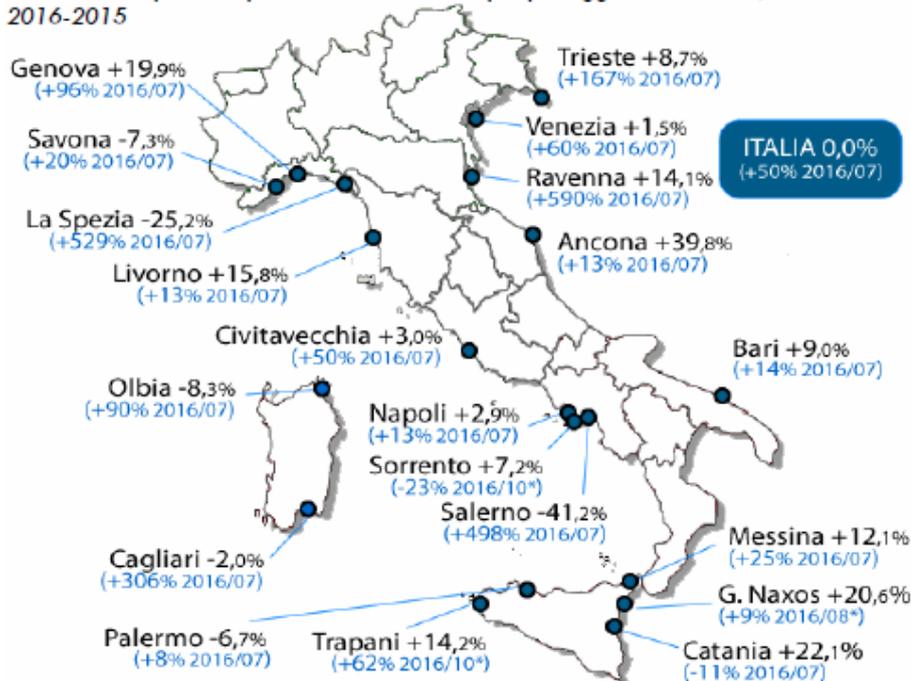


Figure 1 - Trend traffic in the top 20 Italian cruise ports determined on the bases of number of passengers. Variations value 2016/2007 and 2016/2015

In a long-term perspective, based on the previous positive cruise-related traffic trend and considering the current dedicated on-going initiatives under implementation, as the case of the SUMP and the EU funded project PORTIS, a further growth is expected in the coming years.

Against this background, the participation of the Port of Trieste within LOCATIONS must be viewed as complementary to the activities of the City of Trieste within PORTIS, the two institutions closely cooperating as to guarantee the best possible result for the city's inhabitants, tourists and cruise passengers. Indeed, through LOCATIONS the Port of Trieste will contribute to the parts of the SUMP of Trieste concerning cruise passengers, suggesting potential solutions to the City's government.

SWOT AND CAME ANALYSES

The following table shows the main strengths, weaknesses (internal), opportunities and threats (external) related to the cruise traffic in Trieste:

SWOT	Negative	Positive
Internal	<ul style="list-style-type: none"> Cruise Terminal in the city centre – impact on city mobility patterns SUMP under implementation 	<ul style="list-style-type: none"> Central location: cruise tourists can reach the city centre walking Train station located at 1 km from the cruise terminal Efficient PT services

External	<ul style="list-style-type: none"> Strong competition from other cruise-destination cities in the Northern Adriatic (e.g. Venice) 	<ul style="list-style-type: none"> Possibility to offer low-carbon transport services (e-bikes, bike sharing) along the coast Interesting local touristic attractions reachable with LC means
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The following table summarises the CAME analysis:

	Threats	Opportunities
Weaknesses	Change in government policy identifying adaptive solutions towards sustainable mobility – SUMP adoption	Identify corrective strategies based on shared experiences, collected inputs and data
Strengths	Maintain positive results with on-going monitoring and revising activities	Explore new opportunities in cross sector collaboration (alignment of aims among stakeholders)

RESULTS FROM THE PARTICIPATORY PROCESS

The Port Network Authority of the Eastern Adriatic Sea identified and interviewed the following actors:

- 1) City of Trieste – as the only entity competent for developing mobility plans and options for citizens and tourists alike;
- 2) Trieste Terminal Passeggeri (TTP) – the cruise terminal operator;
- 3) Chambers of Commerce of Venezia Giulia – gathering companies and enterprises constantly in contact with tourists and cruisers;
- 4) Italian General Confederation of Enterprises, Professions and Self-Employment – gathering local SMEs.

The interviews were held in June, July and September 2017, the outcome of which are summarised here below.

As indicated above, within the framework of the CIVITAS PORTIS project, the City of Trieste tendered the elaboration of the SUMP in the 3rd quarter of 2017. This procedure was closed in the 2nd quarter of 2018, when the LCTP elaborated by the Port of Trieste within LOCATIONS had to be finalised (April 2018).

Against this background, the **City of Trieste** welcomes the cooperation with the Port of Trieste within LOCATIONS, as it can provide useful suggestions for low-carbon mobility options for the cruise passengers to be better studied and analysed within the SUMP.

As far as possible actions to be taken, the City of Trieste suggested the following:

- Increasing the number of bike sharing stations;
- Upgrade of the existing coach station currently located next to the railway station;
- Dedicated public transport connections between the railway station and the cruise terminal;
- Smartphone APP with way finding options (already foreseen in the CIVITAS PORTIS project);
- Constant exchange of information on the arrival of cruise ships between TTP and the City's government and the upload of the relevant information on the City's web portal.

In addition, with the perspective of new opportunities to valorise culture-related activities, the City of Trieste suggested the creation of a collaborative framework with cruise ship-owners in order to promote guided walking tour packages involving the existing local tourist guide associations.

The company managing the cruise terminal, **TTP**, highlighted the result of recent surveys, revealing that that around 150.000 cruise passengers visited Trieste in 2016 bringing a positive impact on the local economy estimated in 20 million euros.

This important contribution to the local economy is referred both to the terminal related activities (freight forwarders, security dedicated staff and service providers), and to the commercial activities in the city centre (such as restaurants and hotels which attract both cruise passengers and staff employed on board, that can reach the number of 500 employees spending even more than a classical passenger).

As far as the impact on the city's mobility patterns is concerned, TTP assessed it as sustainable, since the current administration is able to prevent and manage the normal flow of passengers, and all requirements in terms of mobility are previously scheduled: the majority of passengers arrive by plane or by car and they can easily find a parking dedicated area with a shuttle connection to the departure terminal. There are a few passengers coming by train with no impact on urban mobility thanks to the proximity of the Trieste railway station to the cruise terminal. The only case that could negatively affect mobility occurs in case of emergencies, when the administration is not able to foresee and thus properly organize the arrival of the ship.

In this regard, one critical aspect to be considered is climate change effects, with the persistence of high winter temperatures causing frequent fogs on the Northern Adriatic Sea, determining cruise vessels delays and re-ordering of the ports of destination. The increased number of emergency calls during the current year is becoming an everyday issue in the TTP management – in fact, the port of Trieste is less affected by fog than Venice, causing last minute rescheduling of cruise calls to Trieste. In particular, critical issues and challenges arise due to weak connectivity to key rail transport services, determining the use of buses and coaches affecting the city centre to transfer cruise passengers.

Moreover, from January 2017 until October 2017 occurrence of dense fog laying on the Venetian lagoon forced more than six cruise ships to change itinerary and sail to Trieste. This 'last minute', unpredicted arrival of cruise vessels in Trieste reached the number of around 5,000 passengers in transit managed by the terminal, demonstrating how TTP is efficiently responsive during these critical situations and how Trieste is recognised as port of reference for emergency calls in the Adriatic.

TTP outlined the need to identify a more stable, dedicated policy line agreed between key institutional and private actors, building on the already existing collaborative approach. Indeed, stronger cooperation and a common understanding of key challenges and long-term objectives are crucial, because a cruise destination change or a large delay puts everything behind schedule affecting severely passengers' and ship companies' plans as well as Trieste urban mobility framework and tourist infrastructures capacity.

More specifically, with regard to LC mobility options, one of the major problems faced by cruise passengers was the lack of a direct transport connection to the nearest international airport, located in Ronchi dei Legionari. In this respect, the Industrial Plan 2016-2020 of Friuli Venezia Giulia Autonomous Region ensured from March 2018 the connection of the airport to the Trieste-Venice railway line being a first important step to provide tourists and cruise passengers with new sustainable solutions.

At the same time, **TTP** underlined that a potential opportunity may be the idea of creating a new way for the tram of Opicina in the proximity of the seafront and other type of solutions valorising the less-known touristic sites that can be reached by low carbon transport means.

In general, it was highlighted that fairs and promotional events are not enough to pave the way for the growth of this sector, but a coordinated local marketing action involving stakeholders from the public and private sectors is needed.

The **Chambers of Commerce** convened with TTP in considering the impact of the cruise passengers on the city's economic development as positive.

As far as mobility is concerned, LC mobility solutions have to be thought according to the different profile of cruise passengers. Moreover, the characteristics of the port itself affect the type of solutions that can be suggested (i.e. a dedicated parking areas for cruise passengers arriving by car).

For this reason, there is the need to enhance the integration between the urban mobility framework and the connections with the most important touristic and logistic nodes. In the first case, a focused attention should be paid to the relevance of intelligent traffic signs in order to provide users with clear information on entrance and exit ways. Particular attention should be paid to the importance of inter-modality based connections for routes that are currently not fully exploited by passengers.

In general, the dialogue between the shipping companies and the economic stakeholders is of great importance ending up in a mediation and agreements in order to make Trieste an even more attractive cruise destination city. A recent example of this type of collaboration is represented by the development of an APP including 100 different tourist destinations that is addressed to different users with the aim to valorize less-known touristic sites (i.e. the city of Palmanova that has been recently acknowledged as a UNESCO site).

Following this approach, a network between minor ports could be implemented to enhance the tourism seasonal adjustment, thus bringing new opportunities for the local population living in less known sites.

The last interview with the **Italian General Confederation of Enterprises, Professions and Self-Employment - Trieste city division**, was conducted in September 2017. During this interview session, a substantial agreement to the previous interviewed stakeholders' considerations and suggestions was underlined, in

particular regarding the identified LCT possible, further initiatives and the necessity to achieve a better coordination between stakeholders to implement effective and integrated LCT solutions.

At the same time, although the high level of difficulty in achieving formal agreements between cruise shipping operators and local public/private actors appeared fully recognized, stakeholders from the Italian General Confederation of Enterprises, Professions and Self-Employment - Trieste city division outlined two great opportunities in establishing this type of partnerships:

- promote *ad hoc* cruise tours offering Italian culture based experiences, where the cruise passengers can choose to join different destinations tour using LCT based trips to lesser known travel locations and discover their offerings in terms of historical traditions (i.e. visits of the Karst hills offering packages that include wine and food tours);
- empower synergy in information services on existing LCT solutions and Trieste city tour plans dedicated to various cruiser profiles on-board (i.e. integrating cruise tour packages with information campaign on existing web portals and open source apps).

LOW CARBON TRANSPORT PLAN

METHODOLOGY

The methodology used for the elaboration of the LCTP is based on the training developed by CIRCE during the Capacity Building Seminar held in Málaga on April 5th-7th and the table of contents sent on July 5th 2017.

Both the Capacity Building Seminar and the table of contents, together with the simulation held at the 2nd Project Steering Committee held in Ravenna on May 22nd-24th proved to be useful tools to develop the LCTP for Trieste.

As far as the participatory process is concerned, it can be summarised as follows:

Project Name	Objectives	Topic*				Participants	Time		€
		Knowledge	Maturity	Complexity	Controversial		Event	Total	1-4
Trieste	To gather the inputs of relevant stakeholders for the elaboration of the LCTP: 1) gather information; 2) suggestions of potential LC mobility options.	+/-	-	m	+/-	- City of Trieste - Trieste Cruise Terminal - Chambers of Commerce - Italian General Confederation of Enterprises, Professions and Self-Employment	May-July 2017; September 2017		

GENERAL OBJECTIVES

The Port Network Authority of the Eastern Adriatic Sea wishes to extend the approach adopted to decrease the impact of the port operations on the environment – as outlined in the chapter on the vision – also to the cruise sector.

Therefore, since it is not the competent actor for planning the mobility outside the port areas, through the LCTP the Port Network Authority of the Eastern Adriatic Sea wishes to provide the city administration with suggestions and contributions on the low-carbon mobility of cruise passengers to be included in the SUMP, that it is currently developing within the CIVITAS PORTIS project.

Within LOCATIONS, the Port Network Authority of the Eastern Adriatic Sea will implement action no. 1 – analysis of the public transport (train) options available for reaching Trieste. This study would also alleviate the impact of unforeseen cruisers flows caused by events such as fog in other ports – as highlighted by TTP in the chapter above.

MAIN STRATEGIES

Through the *ad hoc* interviews with the competent stakeholders, the Port Network Authority of the Eastern Adriatic Sea has identified the following set of measures able to contribute to the specific goal of reducing the traffic congestion in the city centre and consequent environmental downsides caused by cruise passengers:

6. Analysis of the PT (train) options available for reaching Trieste;
7. Increase of bike sharing stations;
8. Study on dedicated public transport service between the train station and the cruise terminal;
9. APP for way finding in the city (already foreseen in the CIVITAS PORTIS project);
10. Webpage on the city portal with information for cruise passengers, suggesting LC transport options.

The table below summarises the actions, indicators, timeframe and responsible stakeholders:

Action no. 1	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Analysis of the PT (train) options available for reaching Trieste	M1 - M12	Analysis on PT options to reach Trieste and the cruise terminal	number of cruise passengers using PT options	Port of Trieste	Port of Trieste	M12	Within LOCATIONS, the Port of Trieste will develop an analysis for PT options for cruisers as a technical report supporting the implementation of the LCTP. The results of the abovementioned analysis will be available in the Annex 1.
Action no. 2	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology

Bike sharing stations	M12 - M24	bike sharing stations available	bike sharing station	Municipality	Municipality	M24	The increase of bike sharing stations strategically located in the city and near the cruise terminal would provide additional LC mobility options for cruisers visiting the city. This action is already foreseen in the CIVITAS PORTIS project.
Action no. 3	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
Study on dedicated public transport service between the train station and the cruise terminal	M12 - M24	study on dedicated PT services for cruise passengers	number of cruise passengers using PT options	Municipality	Municipality	M24	The cruise terminal is close to the train station (1 km). A study may analyse the potential for dedicated PT services between the train station and the cruise terminal, including financial viability
Action no. 4	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology
APP for way finding (already foreseen in the CIVITAS PORTIS project)	M12 - M24	APP for way finding	number of downloads of the APP	Municipality	Municipality	M24	Way finding is a useful tool to guide tourists, providing information on the cultural heritage of the city as well as LC mobility options available to reach them
Action no. 5	start/end	outcome	indicator	source of data	responsibility for monitoring	monitoring/schedule	description and methodology

Webpage on the city portal with information for cruise passengers, suggesting LC transport options	M12 - M24	webpage on the city portal	number of visits to the webpage	Municipality	Municipality	M24	The city portal may be endowed with a page dedicated to cruise passengers, providing touristic and LC accessibility information
----------------------------------------------------------------------------------------------------	-----------	----------------------------	---------------------------------	--------------	--------------	-----	---------------------------------------------------------------------------------------------------------------------------------

SCENARIOS

The following scenario-based approach allows to examine the potential impacts of the above-mentioned actions. In fact, the purpose of scenario analysis is to explore several possible futures in a systematic way³.

For the purpose of the LCTP, three different scenarios were envisaged:

- **Business as usual (BAU):** none of the actions is implemented;
- **Likely:** only actions 1, 3, and 5 implemented;
- **Best:** All actions implemented.

The **BAU** scenario implies that none of the above-mentioned actions is implemented, as if the LCTP were not adopted by the relevant stakeholders.

Although highly improbable, given the strong political commitment of the local community, such a scenario must be considered as the baseline.

The **likely** scenario foresees the adoption of the following actions:

1. Action no. 1: Analysis of the PT (train) options available for reaching Trieste;
2. Action no. 3: Study on dedicated public transport service between the train station and the cruise terminal;
3. Action no. 5: Webpage on the city portal with information for cruise passengers, suggesting LC transport options.

These actions are either already foreseen during the project implementation with dedicated budget already allocated (Action no. 1) or are “light” actions requiring limited budget and commitment.

The **best** scenario implies the adoption of all identified measures, i.e. those of the moderate scenario plus:

1. Action no. 2: bike sharing stations;
2. Action no. 4: APP for way finding (already foreseen in the CIVITAS PORTIS project).

These two actions require additional funds and increased political commitment.

³ Peter Schwartz, *The Art of the Long View* (1996)

LCTP IMPLEMENTATION

IMPLEMENTATION TEAM

As outlined in the premises to this document, the Port Network Authority of the Eastern Adriatic Sea is not competent for planning the city's mobility outside the port areas.

The uptake of the project's results, and more specifically the LCTP for Trieste elaborated by the Port Network Authority of the Eastern Adriatic Sea, is ensured by the participation of the Municipality of Trieste to the project as Associated Partner, underlining the strategic support the Municipality of Trieste provides to the project.

Moreover, the Port and Municipality of Trieste, together with Area Science Park, are both involved in the CIVITAS PORTIS project, thus already working together on topics related to sustainable mobility.

ESTIMATED COSTS

The following table summarises costs for implemented the above-mentioned activities, also identifying potential funding schemes:

Action 1	start/end	amount	Cost category					
			staff	description	subcontracting	description	investments	description
Analysis of the PT (train) options available for reaching Trieste	M1-M12				60.000,00 €	External expertise for the PT option analysis		
		source of funding			LOCATIONS			
Action 2	start/end	amount	staff	description	subcontracting	description	investments	description
bike sharing stations - Municipality	M12-M24						50.000,00 €	Purchase of e-bikes and installation of the station
		source of funding					own funds/Interreg funds	
Action 3	start/end	amount	staff	description	subcontracting	description	investments	description
Study on dedicated public transport service between the train station and the cruise terminal - Municipality	M12-M24				50.000,00 €	External expertise for the study on dedicated PT service for the cruise terminal)		
		source of funding			own funds/Interreg funds			
Action 4	start/end	amount	staff	description	subcontracting	description	investments	description

APP for way finding – Municipality (already foreseen in the CIVITAS PORTIS project)	M12-M24	amount					50.000,00 €	<i>Purchase and installation of totems</i>
		source of funding					own funds/Interreg funds	
Action 5	start/end		staff	description	subcontracting	description	investments	description
Webpage on the city portal with information for cruise passengers, suggesting LC transport options - Municipality	M12-M24	amount			5.000,00 €			<i>Upgrade of the city web portal</i>
		source of funding			own funds/Interreg funds			

Annex 1 – Executive Summary of action no. 1

According to aims and goals of LOCATIONS project, this study is finalized in the identification of possible new rail services specifically dedicated to the needs of cruise passengers departing/arriving or transiting in the port of Trieste.

First the main features of this specific demand segment have been analysed, based on data coming from the Trieste Terminal Passeggeri company. Type, date, schedule and volumes of ships in the port of Trieste for the current year 2018 have been collected and analysed, together with informal information referred to the actual modal share (road transport and air/road transport are the most used transport solutions).

In the same time, all information about the current configuration of the railway network have been collected together with data referred to the actual timetable for both passenger and freight trains. On the network some sections exist where the residual capacity is quite low. In this context, according to the so called planning loop (defined in the following), different possible scenarios have been simulated.

Through the integration of analysis methods and simulation, rail planning is considered as a loop, which starts from the problem definition, ends with the proposed solution and whose elements are:

- the analysis of real data;
- the design of scenarios (which might include infrastructure, rolling stock and timetable alternatives);
- the simulation;
- the analysis of simulated results compared to the aim of the project.

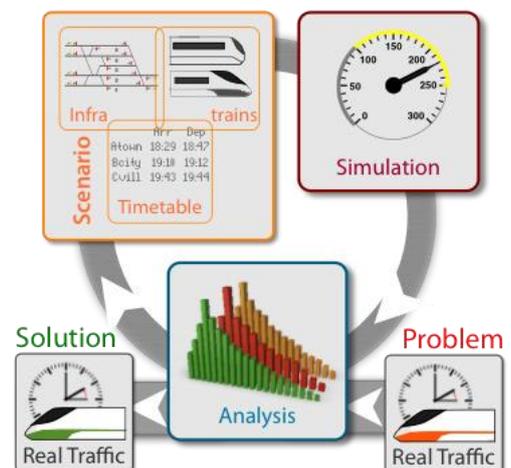
The loop appears as the ideal support at different stages of planning, from long term infrastructure design to mid-term timetable studies and short-term timetable improvements.

The planning loop is a virtuous circle that allows finding the equilibrium between network capacity and service reliability, maximizing the benefits of investments. This approach allows a quantitative estimation of KPI regarding railway operations and it has been used in a wide range of projects in the world.

As micro-simulation engine, the well known software called OpenTrack has been selected, which allows to reproduce railway operations including its stochastic disturbances. The simulation is based on three kinds of inputs (infrastructure and signalling, rolling stock and timetable) which define a scenario.

The railway network included among Trieste, Tarvisio and Villa Opicina (border stations), San Donà di Piave and Codroipo has been considered and modelled according to very precise information available in official RFI documentation. After that, different scenarios have been considered and simulated and in particular:

- scenario 0, which refers to the actual situation and is really important for model calibration and validation;



- scenarios 1A and 1B which refer to actual situation of infrastructure and volumes but consider the introduction of long distance trains and also regional touristic services respectively. These are a sort of immediate scenarios;
- scenario 2 with actual traffic, touristic services in case of infrastructure improvement according to RFI plans;
- scenario 3 which is a sort of extension of scenario 2 in case of freight traffic increase according to the expectation of the companies operating inside port terminals.

The figure 1 shows an example of graphical timetable in the actual situation on the Trieste – Venice corridor which is really important for the connection to both Venice itself and the airport.

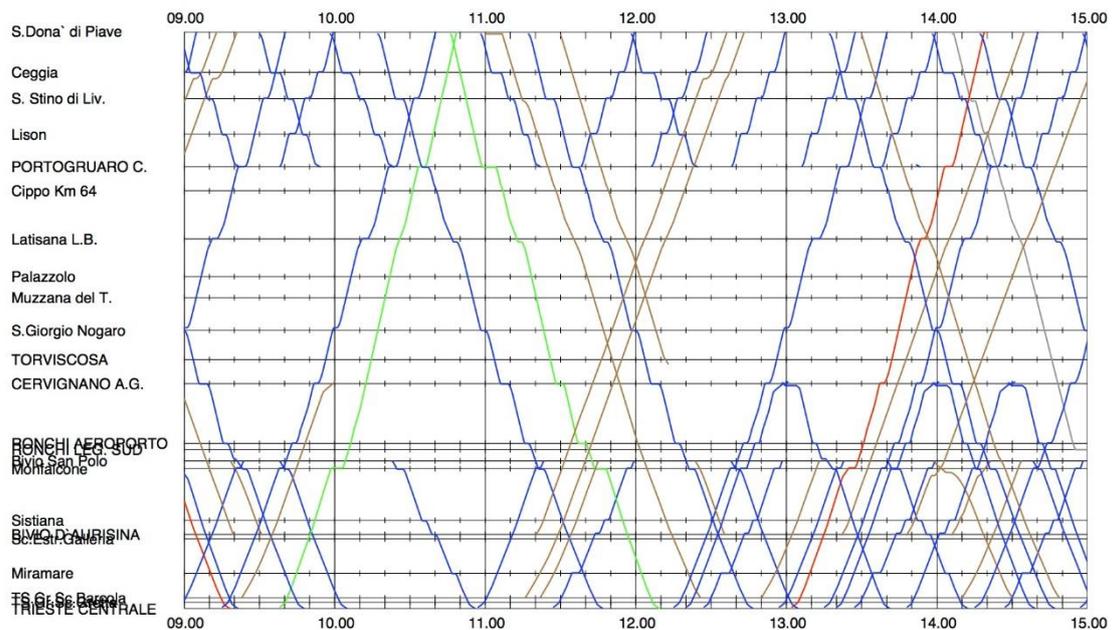


Figure 1 – Graphic timetable between Trieste and San Donà di Piave in the actual situation (scenario 0).

The figure 2 shows an example of graphical timetable in the final situation on the same Trieste – Venice corridor where both technological improvement and traffic increase have been considered.

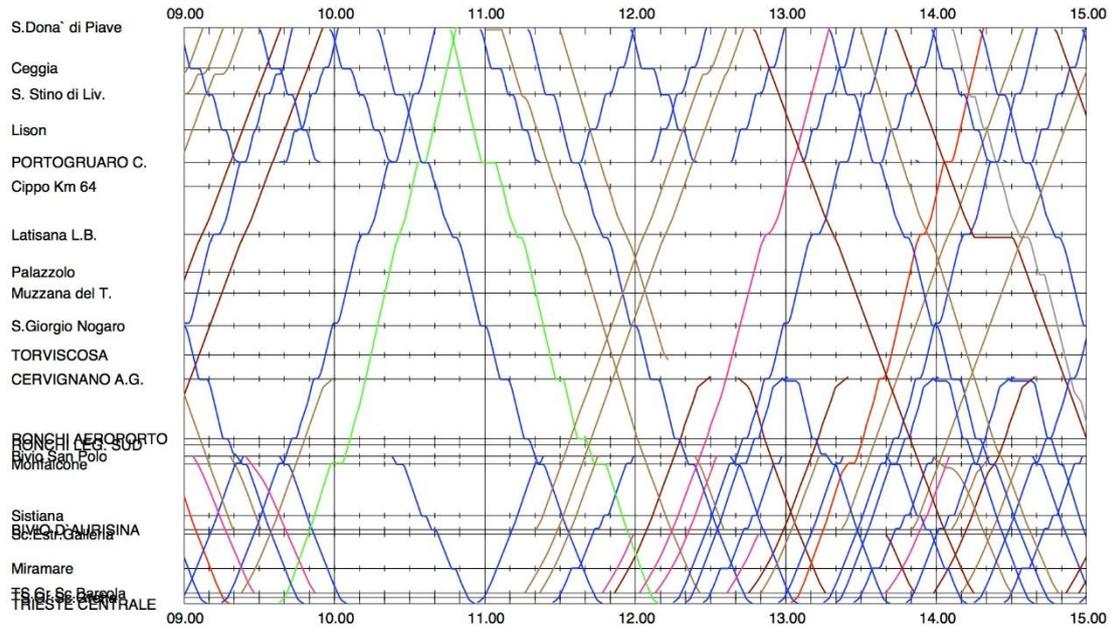


Figure 2 – Graphic timetable between Trieste and San Donà di Piave in the long term situation (scenario 3).

To perform the assessment of the scenarios the AHP methodology has been selected. Stakeholders, criteria and sub-criteria have been identified and the hierarchical assessment has been performed according to figure 3. Stakeholders have been inserted in the hierarchy to explicitly consider their specific and different perspective.

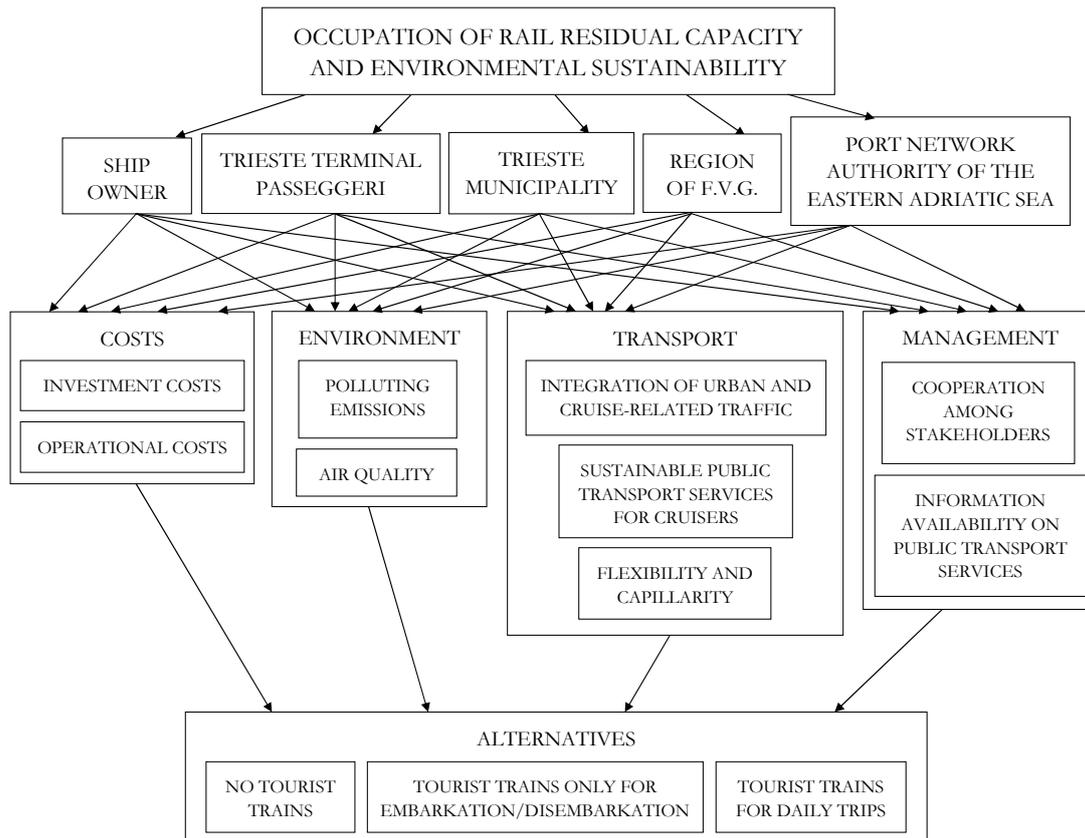


Figure 3 – Suggested hierarchy

As conclusive remarks, these are the most important findings:

- in the specific railway network (with some sections near capacity) there is still the possibility to insert additional freight services according to the needs of operators, especially if all planned improvements will be put in operations (there is a congruence between RFI and Port Authority development plans);
- the additional passengers services dedicated to cruise passengers would be compatible with the current situation of flows and infrastructure;
- even in the presence of improvements, in the target scenario a "competition" is observed for using the residual capacity between the additional freight trains and the cruise passenger ones, which therefore should be offered only after careful evaluation;
- the proposed assessment is consistent with that adopted in PORTIS and is based on the great stakeholders involvement, thus allowing the explicit consideration of their different perspectives.



Template for the report on LCTP draft

LOCATIONS - Low Carbon Transport in Cruise Destination Cities

WP3 – Testing
Activity 3.5 Mid-way stock-take

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1. Introduction

1.1 The template

This template, based on Deliverable 3.3.1 (Capacity Building Manual, final version dated 14/03/2017) which serves as reference, is to be used to produce a synthetic report in English providing all essential information on the finalized LCTPs.

The template consists of 5 sections (or steps), namely ‘Work-plan and team’, ‘Initial assessment’, ‘Participatory process’, ‘Design of the plan’, ‘Monitoring and funding’.

The report has to be completed in all its sections in English, respecting the format and the number of characters. Please use diagrams and bullet point lists whenever possible to facilitate evaluation.

The report has to be sent no later than May 15, 2018 in a Word format to:

mmarcof@fcirce.es; locations@area.trieste.it

Those partners that decided to produce full versions of their LCTPs in English, should send them to the same addresses. It is advisable to fill in the report in any case, to facilitate the assessment.

LCTP synthetic reports and/or full translations will be used to carry out LCTP evaluation.

2. Low Carbon Transport Plan

2.0 Step 0: Work plan and team

The City of Zadar (EU Funds Administration Department; Administrative Department for Spatial Planning and construction and Administration Department for Utility activities and protection of the Environment) and outer experts: for the implementation of EU projects - DRIOPE d.o.o. and transport – assistant professor Dino Županović, PhD participated in drafting the LCTP plan. The herein mentioned project team was created with the goal of gathering stakeholders from legislative and executive authorities, experts in the preparation and implementation of EU projects and experts from the field of transport. Details on the members of the project team are illustrated in Table 1.

Table 1: Details of the project team in charge of defining LCTP within the LOCATIONS project

PARTICIPANTS			TASKS
NAME	ORGANIZATION	ROLE	
Šime Erlić	City of Zadar	Administrative Department for EU Funds	Public procurement for external expert; Responsibility for LCTP drafting, implementation and funding; Communication with Stakeholders; Defining tourist interview structure
Ivana Vrsaljko	City of Zadar	Administrative Department for EU Funds	
Valentina Jačan	DRIOPE	CEO	Legislative and strategic (EU, national, regional, local) documents analysis; Transportation system data analysis (state-of-the-art); Assembling relevant data for LCTP; Interview results analysis; Defining possible objectives, activities and indicators; Defining various possible scenarios; Preparing draft LCTP and synthetic report version(s); Communication with stakeholders
Roko Baljak	DRIOPE		
Ass. Prof. Dino Zupanovic, PhD	DRIOPE	Traffic & Transportation External Expert	

During the process of drafting the LCTP process, contacts have been realized with the city Administrative Department for Spatial Planning and Administrative Department for Utility Activities and Protection of the Environment as main stakeholders in the later process of LCPT application monitoring and financial implementation. It was agreed that all contacts with the aforementioned offices would be coordinated through the Administrative Department for EU Funds. In cooperation with an external expert and the existing transport- technology solutions as well as the spatial (geospatial) possibilities, the initial set of goals, activities and indicators was proposed, which would be included and define the LCTP.

Based on the defined tasks, the most important stakeholders were determined and included in the later drafting process, and they participated in the activities connected with cruising tourism in the City of Zadar region whereby their roles, importance and possibility of contributing to the drafting of LCTP were precisely determined. A detailed list of stakeholders is illustrated in Chapter 2.2 Step 2: Participatory process / 1. Stakeholders identification

2.1 Step 1: Initial assessment

2.1.1 Context analysis

1. EU, national, regional and local framework of reference.

The Port of Zadar is classified as a port of comprehensive TEN-T network. It is a port open to public transport of particular international interest for the Republic of Croatia. International, state and local functions are performed in the port of Zadar, and it is the second port on the Croatian coast according to the number of transported passengers. Freight transport is limited due to physical limitations and the proximity of the port of Rijeka. The development of the port is directed towards road and railway transport, passenger transport and cruise ship transport. The passenger transport taking place in the port is approximately 2.5 million passengers and 350 thousand vehicles. Listed below are the strategical documents at city, county and national level with the pertaining goals, priorities and measures that refer directly and are connected to the drafting of LCTP with the LOCATIONS project.

City of Zadar Development Strategy

Strategic Goal 1. Preservation and sustainable development of space and improvement of the city's infrastructure system

Priority 1.3. Development of the city's traffic network

Measure 1.3.4. Development of maritime infrastructure and services, and support to the port of Gaženica port as a port of international significance

Measure 1.3.5. Improving the public transport system and creating preconditions for the development of intermodal transport

Measure 1.3.6. Development of bicycle traffic

Priority 1.4. Sustainable energy management and increased share of renewable energy sources

Measure 1.4.1. Encouraging the use of renewable energy sources

Urban Development Strategy of Zadar

Objective 3. Sustainable management of spatial resources with improved quality of urban environment

Priority 3.1 Improving transport connectivity and sustainable urban mobility

Measure 3.1.2. Improving public and suburban transportation systems

Measure 3. 1.7. Improvement of intermodal infrastructure and traffic in the dormancy of ITS UP

Measure 3.1.8. Development of pedestrian and bicycle traffic

Zadar County Strategy

Priority 2.4. Improved transport network and increased multimodality

Measure 2.4.2. Improving the public transport system and creating preconditions for the development of intermodal transport

Measure 2.4.5. Promotion and development of cycling traffic

National Traffic Development Strategy

General Purposes:

CO1 - Change the distribution of passenger traffic in support of public transport and modes of transport with zero emission of harmful gases. This includes public transport in agglomerations and the local regional context (trams, local bus lines, etc.), rail transport, public transport by sea, regional and remote bus services as well as pedestrians and cyclists.

CO7 - Increase the interoperability of the transport system (public transport, rail, road, maritime and air traffic and inland waterway traffic).

Specific objectives for public transport and forms of transport with zero emission of harmful gases:

SC4 - Increase efficiency and reduce the economic impact of public transport management and organization.

SC5 - Increasing the attractiveness of the public transport by improving the fleet management and modernization concepts

General measures:

G.4 Increasing multimodality in passenger traffic and the development of intermodal passenger nodes

G.12 Decrease of negative impacts of aprometry on the environment

Specific measures

City, suburban and regional traffic

U.5 Increasing multimodality

2. Current cruise-related flows features, trends, etc., in the city/port

With the construction of Zadar passenger port Gaženica with all the inner roads, terminal buildings and car lots conditions have been acquired for passenger and car embarking and disembarking according to the following capacities:

- 7 ferryboats on local lines length 50-150 meters in length;
- 2 ships of international navigation 150-200 meters in length;
- 3 ships on cruising trips 200-350 meters in length as well as the possibility of accommodating RO-RO ships on the same moles.

The data on the number of arrivals, passengers and crew members on cruise ships for the period from 2010 to 2018 are illustrated in the following tables and graphs. Table 2 and Graph 1 show a continuous increase in the number of arrivals and passengers in Zadar. Projections for 2018 are 139 foreign ships for cruise trips, 180,000 passengers and 70,00 crew members in Zadar Port.

Table 2: Number of arrivals, passengers and cruiser crew members in Zadar port in the period from 2010 to 2018

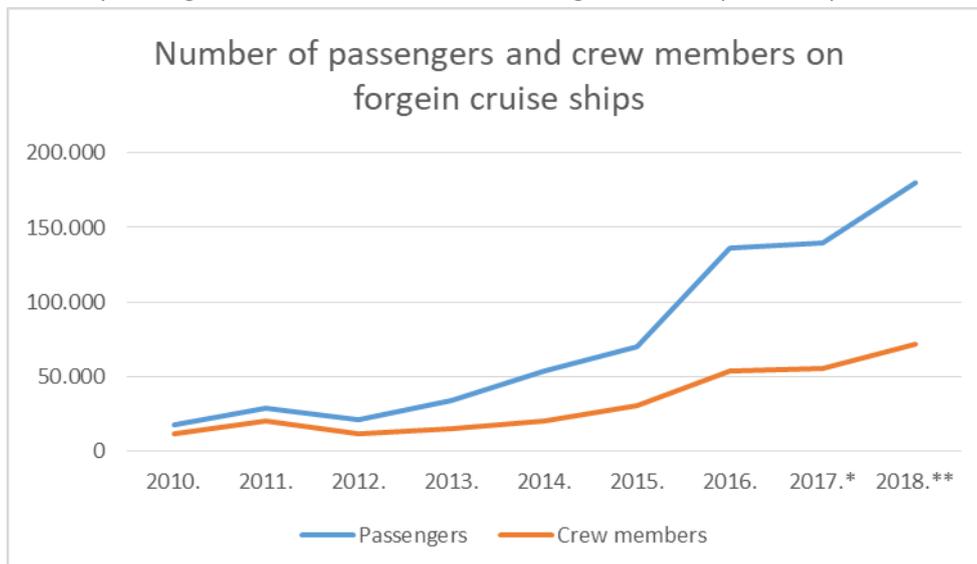
Year	Arrivals	Passengers	Crew members
2010.	80	17.157	11.224
2011.	72	28.667	20.176
2012.	57	20.958	11.171
2013.	69	33.647	15.024
2014.	77	53.791	20.247
2015.	92	70.366	30.513
2016.	114	136.462	53.400

2017.*	105	140.000	55.000
2018.**	139	180.000	72.000
* by end of year			
** projections according to announcements			

Graph 1: Number of foreign cruise ship arrivals in the period from 2010 to 2018



Graph 2: Number of passengers and crew members on foreign cruise ships in the period from 2010 to 2018



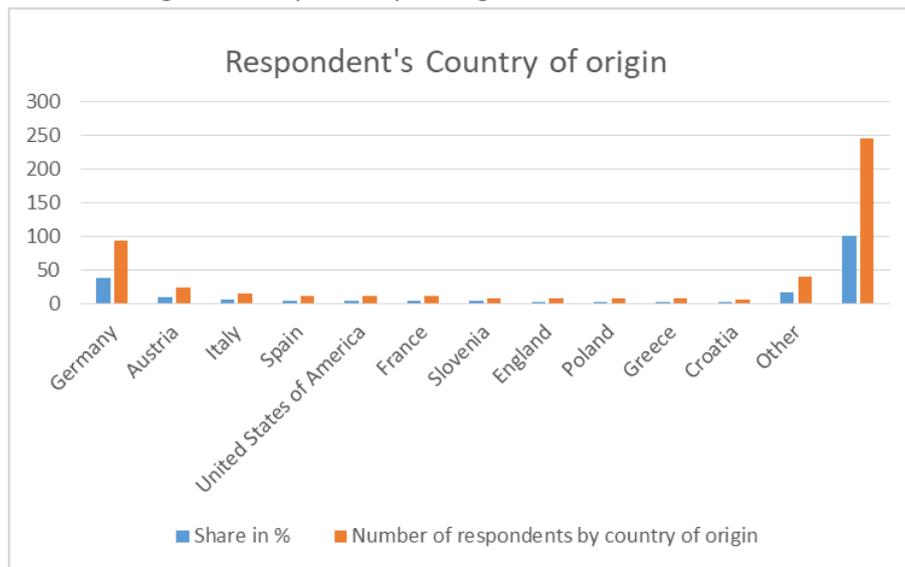
Since the port of Zadar presently functions exclusively as a port of call, there are no data on the origin and destination of cruise tourists as well as their distribution according to the multimodal split of their arrival. However, taking into consideration the proximity of the airport and the excellent road connection and passenger port terminal capacity, future expectations are (and efforts are being made) to make Zadar Port a home port.

Research on passenger and crew activity in a destination has been performed with the method of surveys. The basic content of the research covers the socio-demographic profile of passengers, activities in the

destination, satisfaction with the destination service and suggestions on service improvement. Information on the movement of passengers within the port have been acquired through interviews of Zadar Port authority employees and by observing the movement and organization within the international pier of the port. Research has been performed on a sample of 245 examinees in the period from 10/9/2017 to 10/10/2017. The following results have been acquired from analysis of the gathered data.

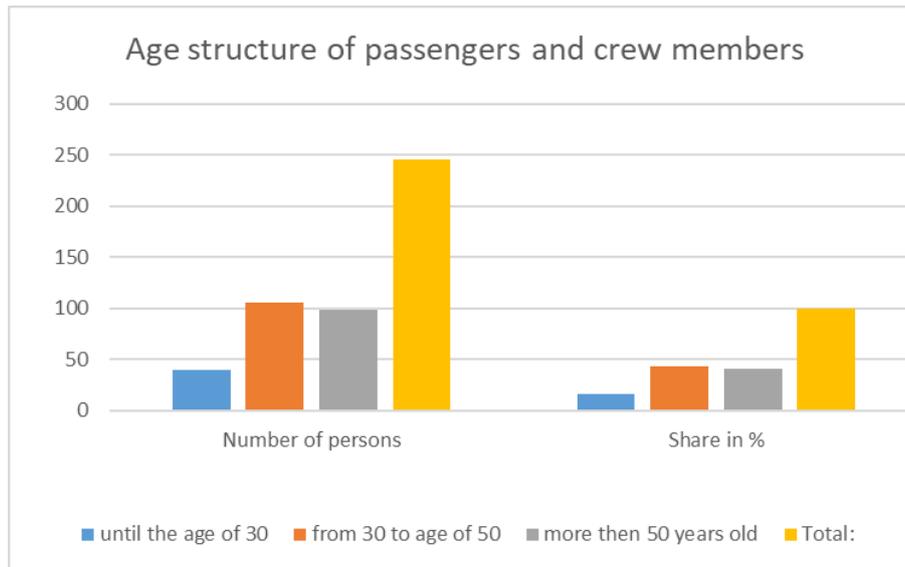
The division of cruise cruising tourists by country of origin is illustrated in Graph 3. Based on the illustrated, it is evident that the highest average of cruise ship tourists derives from European Union countries; Germany - 38.2%, Austria - 9.8%, Italy - 6.2%, Spain - 5%, France - 5%, followed by the USA – 5% and other countries - 16.7%.

Graph 3 3: Division of cruising tourists by country of origin



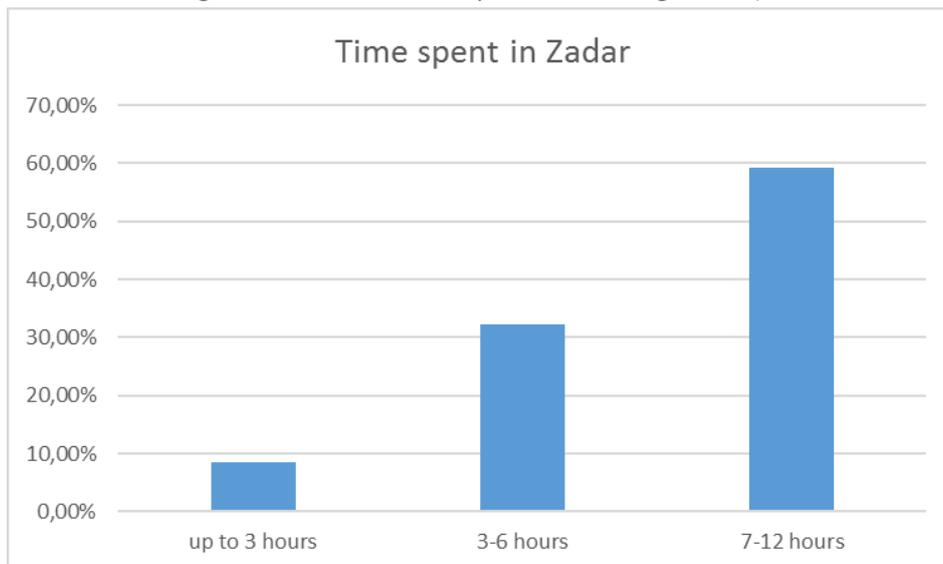
Graph 4 illustrates the age structure of cruising tourists; younger than 30 – 16.3%, from 30 to 50 years of age - 44%, and older than 50 – 40.4%. During the analysis of the stated data, the period of data collection is to be taken into consideration, the postseason period where guests of older age traditionally travel respectively, which also influences the modality of their transportation.

Graph 4: Age structure of cruising tourists



The greatest number of examinees – 54.18% spent from 7 to 12 hours in Zadar, 32.24% spent from 3 to 6 hours, while 8.57% spent up to 3 hours. Interesting to mention is the significantly shorter stay of the ship crew members in the destination – mainly up to 3 hours, and the reason is their work tasks on the ship.

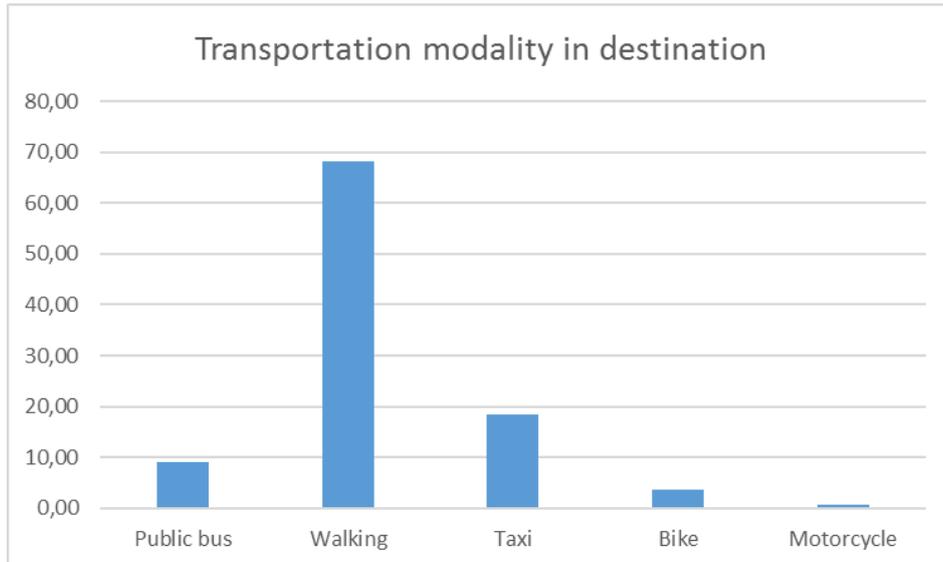
Graph 5: Distribution according to the time a tourist spends in visiting Zadar (and surroundings)



Due to the excellent road connection, besides a visit to Zadar and its surroundings cruising tourists are offered visits to the nearby national parks of Krka and Kornati (local tourist boats only), which was chosen by 31% of examinees. A majority of 69% of examinees did not choose organized excursions to other cities or destinations in the Zadar proximity but were transported by shuttle buses to the old nucleus of the City of Zadar.

Tourists who wished to visit the small town of Nin did so most often in rented taxis. A modal division of the means of transport is illustrated in Graph 6.

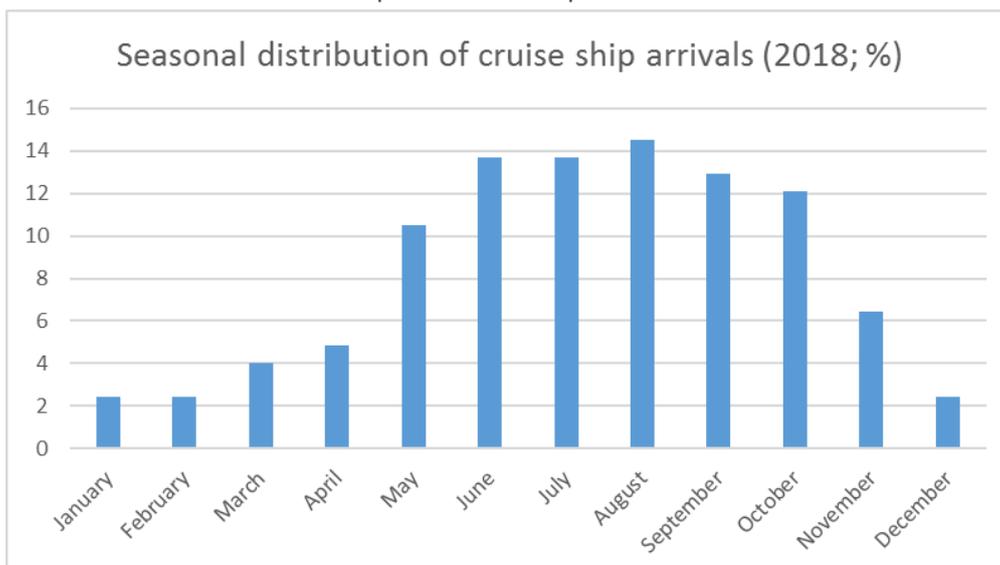
Graph 6: Modal distribution of cruising tourists and crew members



Public Transportation – PT; buses) was used by 9.0% of examinees. However, this data is not relevant for it was later established that examinees had incorrectly assorted shuttle bus transport under PT. None of the offered/walking was chosen by 68.2%, which also does not represent a reference data for it was also later established that tourists had incorrectly classified sightseeing (walking) of the old nucleus of the City of Zadar as none of the offered/ walking. Taxi transport service was used by 18.4% of examinees, and that was most often used by crew members who wished to reach the destination, the center of the City of Zadar respectively, as soon as possible, and examinees visiting the nearby localities (Biograd na moru, Nin). A small percentage of examinees used motorcycle and bicycles most often rented for a short period as well as crew members who used bicycles to move around the port area.

The seasonal distribution of cruise ship arrivals in the port of Zadar is illustrated in Graph 7.

Graph 7: Seasonal distribution of cruise ship arrivals in the port of Zadar in 2018



3. Cruise-sector mid- to long-term (5 to 10 years) development trends

Development trends on the number of cruise ship arrivals and their passengers in the port of Zadar have been drawn up during 2015 and 2016 and have shown to be correct for they followed the real trend of their number. A detailed overview is illustrated in Table 3 where it is visible that continuous increase of cruiser calls is expected in the port of Zadar, and in line with this and increase in the number of passengers. In comparison with year 2018, an increase of 22.25% is foreseen by 2020, 36.78% between 2020 and 2025 after which the trend foresees a decreasing percentage in the number of passengers to 17.97% by 2030, and 15.48% by 2035.

Table 3: Forecast in the number of cruise ship and passenger arrivals in the period from 2018-2035

Cruise traffic							
	Total	Pax		Total	Number of calls		
		transit	home port		large	medium	small
2018	169 421	144 741	24 680	289	23	57	210
2020	217 907	179 697	38 210	350	30	72	249
2025	344 690	279 920	64 770	532	52	103	377
2030	420 215	335 681	84 534	634	69	112	452
2035	497 181	389 146	108 035	729	88	118	524

4. Current cruise-related mobility and transport management policies and public & private initiatives addressing the existing flows.

The port of Zadar is at a distance of approx. 3.5 km from the historical nucleus of the City of Zadar in southeastern direction. A fast road connects the port directly to highway A1 and the nearby airport as well as state road D8 connection with the City of Zadar and its city traffic network. There is also a railway track between the port and the city (there is no infrastructure for passenger reception in the port). It was closed to traffic in mid-2014 and it is foreseen for the route to be arranged as a new cycling trail tower the inner-city center. It is possible to reach the city on foot from the port following the attractive walkway by the sea or the sidewalk that follows the state road. The geospatial position of the port of Zadar is illustrated in Figure 1. There is a taxi and PT station the port area. The most frequent means of transport of cruising tourists between the terminal and the inner-city center are shuttle buses managed by concessionaires (the concession granted by Zadar Port Authority)

Figure 1: The geospatial position of the historical nucleus of the City of Zadar and the port of Zadar (terminal)



5. Weighted list of negative impacts linked to cruise-related flows

With the relocation of the sea port from the inner-city center of the City of Zadar to Gaženica Port, great relief of the city road network has been achieved whereby the main negative consequences have disappeared – congestions, the reduction in the number of vehicles entering the city area, particularly the inner-city which also resulted in a reduction of gas emission as well as noise level. Albeit to a much smaller extent, problems have, however, appeared in connection with the transport of cruising tourists between Gaženica Port and the inner-city center in terms of optimal route choice of shuttle buses, and primarily the location – terminal of passenger exchange (embarking / disembarking) in the inner-city center. The appearance of shuttle buses in the inner-city traffic undoubtedly influences the reduction of the level of service, and, as such, the increase in the congestion of the mentioned network. A list of negative influences of cruising tourism thus arises from the aforesaid:

1. Congestion of the road traffic network caused by shuttle buses entering the inner-city center
2. Congestion of the road traffic network caused by inadequate stopping of shuttle buses in the inner-city center area

6. Existing road network, transport services and infrastructure in the city/ port

The port of Zadar is connected with the inner-city center by the following modalities: public bus transport – PT, taxi, shuttle buses, pedestrian zone, while the introduction of bicycles is in process. Considering the specific and international character of cruising tourists (reception in the limited traffic zone), the most frequent form of their transport between the terminal and their destination is represented by shuttle buses

managed by concessionaires (concession granted by the Zadar Port Authority). In leaving the international terminal, it has been made possible for cruising tourists to use all modalities but it is necessary to emphasize that the city public transport timetable is not adapted to the arrival /departure of cruiser ships but completely subject to the timetable of local ferry lines connecting the nearby islands with Zadar. Due to this, shuttle buses represent the primary means of cruising tourist transport to the inner-city center. Taxi transport (located outside of the international terminal) is mostly used by the crew members due to the speed and easy accessibility to most destinations.

2.1.2 SWOT/CAME analysis

Table 4: SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ✓ Modern passenger terminal ✓ Attractive tourist destination with rich cultural heritage ✓ Geospatial location with multimodal transportation connections ✓ Safety of the cruise vessels and passengers 	<ul style="list-style-type: none"> ✓ Lack of adequate shuttle bus terminal within inner city center ✓ Lack of ITS and other traffic optimization systems ✓ Master plan/SUMP have not been defined yet ✓ Insufficiency/inadequate national legislation regarding ecological port/terminal facilities and services ✓ Port remains to be port of call not home port
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ✓ Defining shuttle bus terminal location within inner city center ✓ Defining new cycling routes between terminal and inner city center ✓ Regulating vehicle emissions within the inner-city center ✓ Stimulating/subsidizing electrical/hybrid/LPG PT/taxi vehicles ✓ Optimization of the traffic light system (ITS implementation - implies PT priority) ✓ Becoming a home port ✓ Defining local and regional development strategies ✓ Positive tourism trends ✓ Quality Increasing of other touristic offers ✓ Access to green/sustainable energy sources 	<ul style="list-style-type: none"> ✓ Insufficient political engagement for the implementation of the LCPT (City of Zadar does not have jurisdiction over the Port of Zadar) ✓ Disturbances in tourist emitting markets ✓ Environmental pollution

<ul style="list-style-type: none"> ✓ Creating new business opportunities for SME ✓ Expected stability of the Region 	
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Table 5: CAME analysis

Corrective Strategy	Adaptive Strategy
Use EU and local/national funding strategies for implementing LC solutions.	Use city authorities to support the adoption of LC solutions including SUMP/SEAP.
Maintaining Strategy	Exploring Strategy
Further development of sustainable cruise tourism policies.	Implementation of ITS to support LC solutions.

2.2 Step 2: Participatory process

1. Stakeholders identification

In order to define the LCTP goals and measures for the needs of the LOCATIONS project, joined stakeholders were determined, as well as those who showed interest in cruising tourism in the City of Zadar area. They are the City of Zadar (administrative departments for: EU funds, spatial planning and utility activities and protection of the environment), Zadar Port Authority, the concessioner performing tourist transport service between the terminal and the inner-city center (Terra Travel), Liburnija as the city public transport service (PT – public transportation), Zadra Nova as the carrier of development activities and projects of the City of Zadar and Zadar County, and Zadar City Tourist Office. Cruising tourists belong to a special group among which a survey was carried out as additional basis for defining the LCPT goals and measures with the goal of achieving a better insight and understanding of the existing state-of-the-art system. Additional support throughout the entire LCTP drafting process was realized with the assistance of an external expert from the field of transport. The main role, as well as the bearer of the entire project, is definitely the City of Zadar with its pertaining offices. Table 6 illustrates the importance and influence of the stakeholders.

Table 6: The importance and influence of the stakeholders in the development, implementation and monitoring of LCPT

		Importance/Interest	
		Low	High
Influence /Power	High		City of Zadar Zadar Port Authority DRIOPE
	Low		

LOW	Liburnija Zadra Nova	Cruise Tourists Terra Travel
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2. Participatory process design and implementation

In order to define the LCTP strategy, goals and measures during the preparation phase of the LOCATION project joined stakeholders were determined, as well as those who showed interest in cruising tourism in the City of Zadar area. They are the City of Zadar (administrative departments for: EU funds, spatial planning and utility activities and protection of the environment), Zadar Port Authority, the concessioner performing tourist transport service between the terminal and the inner-city center (PT – public transportation), ZADRA NOVA as the carrier of development activities and projects of the City of Zadar and Zadar County and DRIOPE company as an expert in the implementation of EU projects and offering advice in the field of transport. A survey was performed among cruising tourists with the goal of achieving from them a better insight in the state-of-the art system and its perception. The description of stakeholders is illustrated below and the assessment of their importance is illustrated in Table 7.

Table 7: Participatory process meetings structure (timetable and conclusions)

PARTICIPANTS	DATE	CONTRIBUTION/CONCLUSIONS
<i>First Round</i>		
City of Zadar (COZ), Zadar Port Authority (ZPA)	11/05/2017	Initial local meeting; Defining baseline for LCTP; Public procurement for external expertize
COZ, ZPA, REA Kvarner (REAK)	19/07/2017	Presentations of possible stakeholders; review of available transportation system data
Cruise Tourists	10/09/2017 10/10/2017	Interviewing process; Acquisition of input data
COZ, ZPA, Liburnija	01/10/2017	Defining current system state regarding PT lines and future plans between terminal and inner city center
COZ, DRIOPE	06/10/2017	Initial meeting with external expert; Presenting gathered data; Setting baseline objectives, actions and indicators for LCTP
COZ, ZPA, Terra Travel	10/10/2017	Acquiring additional data regarding shuttle bus concessionaire and their business model
<i>Second Round</i>		
COZ, DRIOPE, ZPA, Terra Travel, ZADRA	31/01/2018	Presenting draft of LCTP and gathering stakeholders' feedback
COZ, DRIOPE	06/02/2018	Finalizing LCTP draft and fine-tuning – strategy, objectives, actions, and indicators.
COZ, DRIOPE, ZADRA	10/04/2018	Insight into ongoing and planned projects related to LCTP
COZ, DRIOPE, REAK	02/05/2018	Final check on LCTP synthetic report

COZ, ZPA, Terra Travel

04/05/2018

Presenting final LCTP and informing about its implementation in concessionaire business model

Zadar Port Authority has been a relevant stakeholder that has given the most data from research as they have given a permission to ask their passengers about their view on transport and Zadar in general. This data has been the starting point for all further analysis of LOCATIONS project. Liburnija Zadar has already shown initiative in acquiring a new set of low-carbon emission buses, which will make an immediate impact on low-carbon emissions as well as increase the general effectiveness of public transport in Zadar. Bus connecting of Gaženica and the inner-city center remains under monitoring process to achieve its optimization. Terra Travel has been a resourceful stakeholder for providing access to tourist data regarding their current position as commissionaire in the Port of Zadar. All stakeholders have been resourceful stakeholders in the process of providing input data for state-of-the-art analysis as well as providing insight into future trend predictions. DRIOPE was involved regarding traffic and transportation expertise.

2.3 Step 3: Design of the plan

1. Definition of the current scenario

Projections for 2018 anticipate 139 arrivals of cruise ships according to the announced arrivals, with about 180,000 passengers. Regarding analyzed interview data, approximately 69% of cruise passengers have chosen to visit the Old Town center of Zadar by shuttle buses. The shuttle bus service is operated by concessionaires from the Port terminal to the inner-city center in a total length of approx. 3.5 km in each direction. Since the Port of Zadar is not under the jurisdiction of the City of Zadar, rather on both national jurisdiction and concessionaire's management there is no direct possibility for the City of Zadar to influence shuttle bus procurement and operations management. Cruise tourists can also use the PT – Liburnija bus line and taxis. Since the Port of Zadar by design represents a regional multimodal point, it is also incorporating the local ferry lines terminal (the City of Zadar has several outlying inhabited islands whose population migrates on a daily basis for schooling and work purposes). Therefore, at the present primary optimization criteria of the existing bus PT line timetable is to match local ferry lines rather than cruise ship arrivals. Adjusting the PT bus line with cruise ship arrivals would represent a great challenge for PT provider Liburnija in both organizational and financial manner with a questionable outcome. Another aggravating fact in this process represents the location of PT bus station located outside the restricted terminal area and therefore not as attractive for cruise passenger's use.

Interview analysis defined exclusive usage of taxis by cruise ship crewmembers, therefore identifying shuttle bus transportation as the most important modality for the City of Zadar cruise tourism. Regarding shuttle bus(es) circulation, currently there are three different routes for shuttle busses to reach the inner-city center, leaving each driver with the decision on which route to utilize. Also varying shuttle bus capacities and their usage came into focus during state-of-the-art analysis stressing out some discrepancies and leaving space for further optimizations. Although this process might sound simple, objectively it might not be easily achievable without better cooperation between cruise ship operator(s), Port Authority and shuttle bus(es) concessionaire(s). Currently only legally necessary volume of information exchange is present between cruise companies, Port Authority of Zadar and shuttle bus concessionaires.

Within the City of Zadar, a major issue regarding cruise tourists shuttle bus transportation pinpointed inadequate shuttle bus terminal (both capacity and location) as the weakest point causing shuttle buses to

enter the inner-city center and cause traffic congestions, which can furthermore have negative synergic influence on inner city traffic flows, especially during the summer/tourist season. In manner of addressing and solving this problem, the City of Zadar has already implemented measures in the form of dedicating a certain number of existing parking slots as provisory shuttle bus terminal.

2. Definition of vision and objectives

The main vision is to focus on establishing a sustainable transport system for the future between the Port and the City of Zadar based on synergic effects of three objectives: *state-of-the-art analysis*, *decreasing shuttle bus/PT vehicle emissions*, altogether making a plausible *reduction of inner city traffic congestions*, especially during the summer/tourist season. Measures contained within the named objectives incorporate optimization of shuttle bus capacities, defining their traversing routes, implementation of legislative acts defining PT emissions within the inner-city center, defining location(s) of shuttle bus terminal(s) and defining new and alternative cycling routes for cruise tourists to reach the inner-city center. The City of Zadar is also actively encouraging interested shuttle bus operators and PT authorities to engage in the commercialization initiative and to bring forward the change to zero emission public transport in the City. Electric shuttle/urban buses also represent an alternative solution that could lead towards reducing emissions in PT. However, implementing electrical powered buses also incurs much higher investment costs in both buses and accompanying charging infrastructure compared to conventional diesel buses. In addition, their adoption by concessionaires is questionable in the near future due to their lack of flexibility in terms of the concessionaire's business plan.

3. Definition of actions and indicators

The definition of actions and indicators within the LOCATIONS project fall under three main objectives: *State-of-the-art analysis*, *decreasing of shuttle/PT vehicle emissions* and *reducing inner-city traffic congestions caused by shuttle/PT vehicles*. The first objective was set to provide state-of-the-art system analysis based upon which the second objective with accompanying set of actions and indicators was set. The third objective was set as a logical result of the second objective's action implementation.

Table 8: Definition of objectives, actions and indicators within LOCATIONS project

	<i>Implementation (Month)</i>	<i>Output</i>	<i>Indicators</i>
Objective 1 - State-of-the-Art Analysis			
<i>Action 1.1</i> State-Of-The-Art System Analysis	6-13	Acquiring data defining current process state	Number of passengers and their transportation modalities
Objective 2 - Decreasing shuttle/PT vehicle emissions			
<i>Action 2.1</i> Shuttle bus capacity optimization	13-21 (24+)	Shuttle bus number optimization	Average number of passengers per shuttle bus
<i>Action 2.2</i> Defining primary and alternate shuttle bus routes	13-21	Travel time optimization between port and inner city center	Duration of travel times on designated travel routes

<i>Action 2.3</i> Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	13-21 (24+)	Proposal/ acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	Number of submitted legislative acts
<i>Action 2.4</i> Defining locations for shuttle bus terminals	13-21	Defined locations of shuttle bus terminals	Number of defined shuttle bus locations
<i>Action 2.5</i> Defining new cycling/walking routed between port and inner city center	13-21 (24+)	Defining new cycling/walking routes	Length of newly introduced cycling/walking routes
Objective 3 - Reducing inner city traffic congestions caused by shuttle/PT vehicles			
<i>Action 3.1</i> Inner city center traffic congestion decrease	13-21 (24+)	City center traffic congestion decrease	Number of shuttle busses entering inner city

4. Development of future scenarios

The “Do-nothing” scenario implicates retaining the current state of the system which is not probable as certain measures, LCTP measures at least, in the experimental mode have been implemented (provisory inner-city terminal).

The most probable scenario is based upon defining the shuttle bus terminal within the inner-city center and defining legislative regarding the allowed vehicle exhaust emissions within the inner-city center.

The best possible case of improvement of the existing state implies the implementation of multiple solutions of reducing exhaust emissions in the inner-city center and the wider area of the City of Zadar. The primary goal should be directed towards the construction of a shuttle terminal in the inner-city center of the City of Zadar aimed at reducing the negative influence of traffic congestions. The following activity implies the determining of the shuttle bus route between the port of Gaženica and the inner-city center of the City of Zadar, whereby it is important to determine the accurate route distribution (determine the primary and secondary routes) taking into consideration that it most often concerns convoys (platoon) of shuttle buses. It is important, at the same time, to monitor the full capacity of the shuttle bus during passenger/visitor boarding in the port of Gaženica, in order to achieve the optimal capacity of the shuttle bus, achieve the optimal quantity of emission gases according to mileage per transported passenger respectively. With the goal of achieving maximum ecological acceptability, it is necessary for the City of Zadar to determine through legislature the limits – minimum value of emission gases (EURO norms) for vehicles trafficking in the City of Zadar area. It is additionally necessary to encourage the use of ecologically acceptable propulsion units in vehicles trafficking in the City of Zadar area, particularly in the port of Gaženica route – inner-city center in the form of hybrid (gasoline-electric) and / or gasoline units with LPG (liquid petroleum) installment. The best possible case is the use of only shuttle buses on electricity.

The following goal is the conversion of the existing railway route lines into cycling trails on the attractive and geographically suitable (flat) coastline area between the port of Gaženica and the inner-city center of the City of Zadar, as well as from the inner-city center towards the north-western parts of the city (Borik, Puntamika, Nin), with direct influence on the expansion of the Zadar City tourist offer contributing directly to its tourist attractiveness by paying particular attention to the rising trend of cycling tourism.

Table 9: Review of implications regarding possible LCTP action(s)/scenario implementation

Objective 1 - State-of-the-Art Analysis			
<i>Scenario</i>	<i>“Do-nothing”</i>	<i>Most probable</i>	<i>Best possible</i>
Action 1.1 State-Of-The-Art System Analysis	YES	YES	YES
Objective 2 - Decrease of shuttle/PT vehicle emissions			
Action 2.1 Shuttle bus capacity optimization	NO	NO	YES
Action 2.2 Defining primary and alternate shuttle bus routes	NO	NO	YES
Action 2.3 Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	NO	YES	YES
Action 2.4 Defining locations for shuttle bus terminals	NO	YES	YES
Action 2.5 Defining new cycling/walking routes between port and inner city center	NO	NO	YES
Objective 3 - Reducing inner city traffic congestions caused by shuttle/PT vehicles			
Action 3.1 Inner city center traffic congestion decrease	NO	YES	YES

2.4 Step 4: Monitoring and funding

2.4.1 Monitoring LCTP implementation

The foreseen monitoring and implementation of defined objectives, actions and indicators belongs solely to the City of Zadar regarding its jurisdiction. The presentation and detailed overview of the monitoring and funding process is available in table 10.

Table 10: Monitoring and funding process overview

City of Zadar = COZ	Start-End (Month)	Amount Source	Costs Classification					
			Staff	Description	External Expertise	Description	Investments	Description
Activity 1.1 State-Of-The-Art System Analysis	6-13	-	City of Zadar, Zadar Port Authority, Terra Travel, DZ	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by LOCATIONS and COZ
Activity 2.1 Shuttle bus capacity optimization	13-21 (24+)	-	City of Zadar, Shuttle bus concessionaires, DZ	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by LOCATIONS and COZ
Activity 2.2 Defining primary and alternate shuttle bus routes	13-21	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.3 Proposal/acceptance of legislative defining maximum allowed shuttle bus/PT emissions in inner city area	13-21 (24+)	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.4 Defining shuttle bus terminal location	13-21	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ and LOCATIONS
Activity 2.5 Defining new cycling/walking routed between port and inner city center	13-21 (24+)	-	City of Zadar, Zadar Tourist Board	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ, LOCATIONS and other/future EU projects
Activity 3.1 Inner city center traffic congestion decrease	13-21 (24+)	-	City of Zadar	Allocated through LOCATIONS & COZ	Yes	Allocated through LOCATIONS & COZ	Not needed*	*Funding by COZ, LOCATIONS and other/future EU projects

* The term "Not needed" is referring that all planned actions represent "soft" measures whose planned implementation is through the City of Zadar departments and will not require additional funding.

2.4.2 Funding

Since the planned “soft” measures within the LOCATIONS project should at a certain point of time lead to the implementation of “hard” measures in order to improve the overall system usability, planned funding for implementation of such measures is through the following institutions and projects:

- City of Zadar
- City of Zadar participating EU projects
- EU projects: ITU; CB-GREEN; Urban Green Belts; MOBILITAS; IRENE; OptiTrans; LivingStreets; CHESTNUT
- Future EU Projects
- Zadar Port Authority
- Nacional funding (OP Competitiveness and cohesion)

Regarding the varying complexity and combinations of possible implementations (i.e. e-busses and charging infrastructure), costs could vary in-between 1,000,000.00 EUR to several million EUR regarding the number of e-buses purchased and not counting possible subsidies for concessionaires operating shuttle bus lines between the Port of Zadar and the inner-city center to support them in the acquisition of zero-emitting shuttle buses.



LOW CARBON TRANSPORT PLAN OF CITY OF ZADAR

ANNEX 1 – LCTP measure description template

1). State-Of-The-Art System Analysis

Measure implementation comprised of analysing all relevant strategical documents regarding cruise tourism and traffic-transportation on both national and local levels in order to provide insight into the designated ways of development. It comprised series of meetings with local stakeholders to identify their roles and level of involvement (importance) regarding cruise tourism in the City of Zadar (COZ). Additionally, the interviewing of cruise passengers/tourists provided necessary data and information regarding their perspective on the current system state-of-the-art. The critical issue was to gather as much as possible information from all parties involved. This measure represents a starting point for defining all other measures presented.

2). Shuttle bus capacity optimization

Since Port of Zadar is located about 3 km from inner-city center, most commonly shuttle busses operated by concessionaires are used for transferring cruise passengers back and forth to the terminal. Due to specific circumstances of not knowing the exact number of tourists for transfers as well as multiple concessionaires, presence situations occur where shuttle busses are not optimally occupied, i.e. a certain number of seats can remain unoccupied. Critical issues can be recognized through a varying number of passengers regarding different cruiser sizes calls along with the fact that the Port of Zadar is not within the jurisdiction of COZ making it difficult to achieve complete shuttle bus capacity optimization. Certain measures can be taken by COZ since all shuttles are transferring tourists into the inner-city center. Therefore, COZ could influence concessionaires through: 1) education about the positive effects on reducing the number of shuttle vehicles used; 2) Adjusting shuttle vehicle size; 3) Providing benefits for using shuttles with lower (zero) emissions; 4) Providing certain penalties/rewards for non/optimally occupied shuttles. This measure falls under the category of soft measures meaning it is cheaper/easier to implement. If the applied measure could provide benefits for all parties: 1) concessionaires could lower their operational costs by optimizing their shuttle fleet; 2) COZ would reduce unnecessary shuttle entrances into the city; 3) Allowing convenient cruise passengers' transfers, reducing transfer time and extending visitation time.



LOW CARBON TRANSPORT PLAN OF [insert name of the City]

3). Defining primary and alternate shuttle bus routes

Measure implementation comprises of defining the primary and secondary route connecting cruise terminal with the inner city center. Using real time traffic information shuttle (and taxi) drivers should receive instructions on the preferred (shortest arrival time) route to take. Three critical issues arise from this measure's implementation: 1) Definition of named routes by the COZ; 2) Distribution of real time traffic information towards shuttle (and taxi) drives; 3) Actual tracking of routes taken by shuttle (and taxi) drivers. Accordingly, the first issue is definable as there are two available routes. The second issue solution comprises of incorporating the currently available real time distribution system available through vehicle built-in navigation systems that are already capable of receiving real time traffic information and recalculate routes accordingly. The second approach would be through city enabled ITS. The third issue solution is to require all shuttle vehicles to have fleet tracking alike devices allowing COZ to track their movements as a part of COZ ITS. Depending on the implementation approach, this method falls into soft, hard or both categories. Cruise passengers' benefit from this measure's implementation would be more conveniently transfers of cruise tourists, saving time on transfers and extending their visitation time.

4). Legislative defining maximum allowed shuttle/PT vehicles emissions in the inner-city area

Measure implementation comprises of COZ as local authority able to define and adopt legislation regarding maximum allowed shuttle (and other PT) vehicles' emissions stimulating the adoption of more environmentally acceptable shuttle and PT vehicles (i.e. higher EURO norm, e-Shuttles or LPG powered vehicles). The critical issue within this measure implementation is manifested through possible higher investment costs for concessionaires (both shuttles and taxis) although their mitigation is possible by providing a certain implementation grace period. This measure falls under both soft (from the COZ point of view) and hard (from the concessionaires' point of view) measure category. This measure does not directly affect cruise passengers but has an overall environmentally friendly effect.





LOW CARBON TRANSPORT PLAN OF CITY OF ZADAR

5). Defining locations of shuttle vehicles terminals

Defining shuttle terminals within the inner-city center is of major relevance to the successful implementation of LCTP as it directly affects shuttle impact on COZ traffic flows. The determination of shuttle terminal(s) needs to be determined in such a manner so as to allow easy access for shuttles whilst minimizing the negative shuttle influence on COZ inner traffic flows as well as providing cruise passengers easy access to the inner-city center. The critical issue is for COZ to define the most appropriate terminal(s) location(s) regarding available geospatial locations. This measure falls under hard measures, as it requires a certain level of construction work. This measure is participated to allow more convenient cruise passengers' transfers, reducing transfer time and extending visitation time.

6). Defining new cycling/walking route between the port and the inner-city center

Measure implementation comprises of COZ and responsible national authority cooperation in order to set a new cycling/walking route by using the existing railway corridor since it is no longer in use. Additionally, extending the existing walking route following the seashore leading from the inner-city center to Punta Bajlo is also possible. The critical issue within this measure implementation lies within the willingness of responsible national authority to provide the necessary approvals and land use conversion. This measure falls under soft and hard measures and needs national level authority approval for successful implementation. This measure would provide cruise passengers (and all other tourists as well) an attractive way of reaching the inner-city center and even the connection to adjacent settlements like Zaton.

7). Inner-city center traffic flow optimization

This measure implementation depends on the implementation of measure no. 5 and its effect of minimizing negative shuttle influence on COZ inner traffic flows. Additionally, the enhancement of its positive effects is achievable through planned implementation of ITS solution(s) providing additional services to all traffic users (i.e. parking space guidance system). The segregation of shuttles from the inner-city flows should produce various positive effects on COZ inner-city flows. The measure's critical issue is a strong relation to successful implementation of measure no. 5. This measure falls under the category of soft measures and has a



LOW CARBON TRANSPORT PLAN OF CITY OF ZADAR

dependency on the successful implementation of other measure. This measure has no direct effect on cruise passengers' needs, but is participated to allow more convenient transfers, reducing transfer time and extending visitation time.



Annex 2. Modular Packages



***LOCATIONS PROJECT
SET OF MODULAR PACKAGES
TO FOSTER REPLICATION***



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INTRODUCTION



The cruise industry is expected to grow steadily in the coming years, exceeding 25 million passengers worldwide. An increasing number of people will choose to travel by sea at night, wake up every day in a new port city and spend a few hours on shore to explore destinations and experience their attractions. The increase in cruise traffic is also affecting destinations from an economic perspective, since each cruise passenger spends on average 70 euros to the benefit of the territory and its development. Destinations are, however, faced with seemingly conflicting needs: increasing cruise-related profits, while preserving natural and cultural resources, essential for the attractiveness of destinations, that the cruise industry will gradually consume and pollute if no change is proposed and jointly encouraged.

A more conscious cruise tourism is to be fostered by competent authorities and local decision makers, to sustainably improve passengers' experiences, both on-shore and off-shore, without jeopardizing local natural and cultural assets.

LOCATIONS APPROACH

LOCATIONS – Low-carbon Transport in Cruise Destination Cities is a 36-month-long, MED-ETC project, addressing the issue of negative externalities produced by cruise passengers and freight flows on on-land, local transport systems, particularly carbon emissions, both in home ports and in

ports of call. The solution proposed by Locations is the development of **Low Carbon Transport Plans (LCTPs)**, i.e. dedicated sectoral plans focusing on specific passengers and freight flows generated by cruise tourism, to be developed in the wider framework of other local strategic spatial, energy and transport/mobility plans.

The project rests on 3 main pillars:

- a strong local network of institutional actors (e.g. local authority, port authority, regional/county authority) joining forces to tackle the issue in a coordinated effort;
- effective participation and consultation, including local actors, business communities, service providers, cruise companies, passengers, etc.;
- a common operational methodology, based on the approach used for the development of Sustainable Urban Mobility Plans, to guide local institutions in the development of their LCTPs.

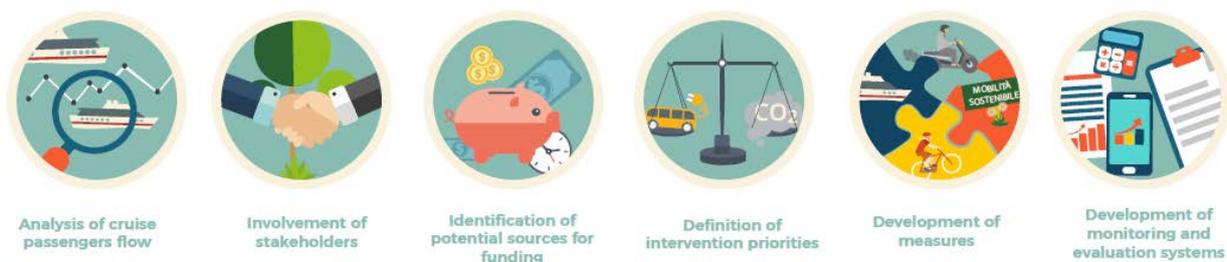


Figure 1 LOCATIONS operational methodology

LOCATIONS is developed over two main stages: 1) methodology development and testing; 2) capitalization and replication.

During stage 1, a sound operational model, jointly developed by a consortium of technical partners, local and port authorities from 5 MED-ETC countries (Italy, Spain, Portugal, Croatia, Albania) is used to produce a set of 7 LCTPs in as many cruise-destination cities (Trieste and Ravenna, Malaga, Lisbon, Rijeka and Zadar, Durres).

Stage 2 has a double focus. On one hand, it supports LCTPs' implementation at a local level, investigating encountered difficulties and finding suitable options, often including financing solutions. On the other hand, it triggers a replication procedure to develop new LCTPs, capitalizing on experience and materials developed during the testing stage. New cruise destination cities suitable to replicate LCTP development will be selected in project partners' countries, based on cruise-related passengers and freight flows affecting the area and related impacts on local transport systems and on the availability of a strong local network of institutions committed and prepared to support the process. Through replication procedures, moreover, Locations' methodology is further tested and applied to a wider range of specific local contexts, making it at once more sound and flexible to adapt to ever-new local conditions.

LOCATIONS MODULAR PACKAGES

To ease the replication and transfer of the LOCATIONS approach in new MED territories and countries and beyond, a set of modular packages is created, describing technical measures and solutions contained in the 7 low carbon transport plans produced in the framework of the project, in a way to make them easily used as reference to produce new LCTPs, complemented by practical tips and suggestions from previous LCTP implementation. Such modular packages represent a sort of catalogue of potential replicating actions that could be adapted to the local context, by local officers in the building of their own LCTP.

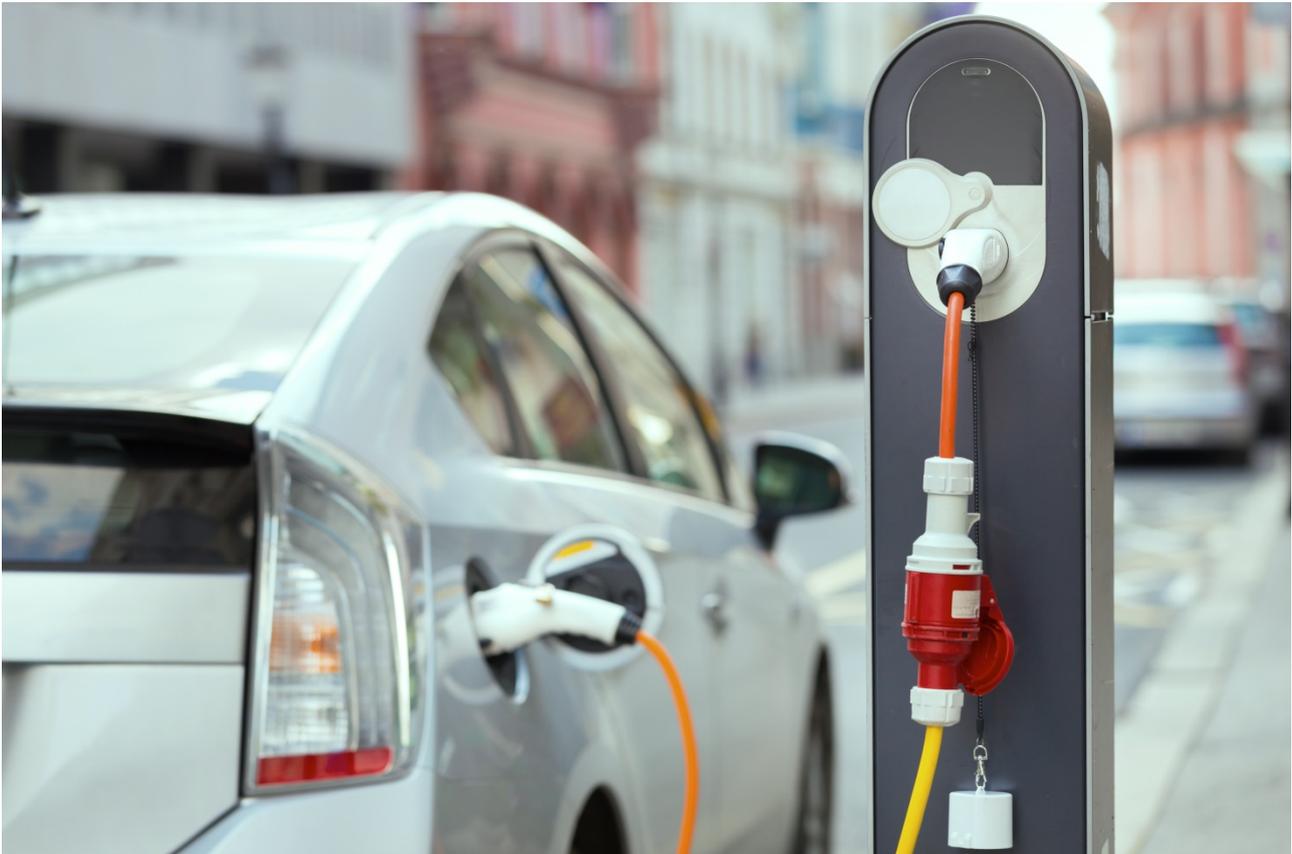
Overall, more than 40 LOCATIONS measures were taken into account as starting points for the development of the modular packages. According to the aim of each measure, they were grouped in 9 different categories, and in 14 modular packages, as follows:

Hybrid, clean and electric vehicles	Electric mobility for cruise destinations
	Sharing mobility solutions for cruise destinations
	CNG and LNG solutions for cruise destinations
	Low carbon water transport
Port accessibility	Improving port accessibility
Accessibility	Traffic and bus flow management in cruise destination
	Sustainable options for people with reduced mobility
Intermodality	Fostering passenger intermodality
Ticketing and tariffs	Integrated tourist card
Cycling and walking enhancement/services	Improving walking route offer for cruise passengers
	Improving cycling route offers for cruise passengers
Access management and road pricing	Low emissions zones and congestion charge schemes
Parking management/pricing	Improving parking management
Real time and road users information	ICT solutions and wayfinding systems for cruise passengers

Single measures envisaged and detailed in the 7 LOCATIONS LCTPs are included in each modular package as case studies that will provide more information on how the measure could be implemented in a given context, after context-bound adaptation. Once contextualized, assembled in new plans and concretely implemented, modular packages contribute to the ultimate goal of reducing cruises' environmental footprint on-land. Increased energy efficiency in transport and reduced reliance on carbon fossil fuels, coupled with reduced congestion and minimized harmful emissions enable cruise destinations to preserve local resources and to improve accessibility and quality of life for residents and visitors.

In pursuing such goals, modular packages perfectly contribute to reach the objectives and indicators of other strategic spatial, energy and transport/mobility plans, such as SEAPs/SECAPs and SUMP, paving the way for a sustainable territorial development, the deployment of a low carbon economy and achievement of EU2020 targets.

1. ELECTRIC MOBILITY FOR CRUISE DESTINATIONS



DESCRIPTION OF THE SOLUTION

Cruise destinations are faced with two conflicting needs: boosting cruise-related profits and other positive externalities, while mitigating the negative impacts exerted on cruise destinations, that affect their natural environment and urban mobility. Electrification of mobility represents a key tool to support cruise destinations cities' ambitions and provide cruise-related mobility users with cheaper, safer and greener transport alternatives.

To make electric vehicles in cruise destination a reality, City Councils and Port Authorities are to collaborate within a wider e-mobility plan able to promote e-mobility between the city and the port premises, enabling passengers and port operators to restore to clean modes of transport.

Regarding the port area, a gradual shift to the use of electric vehicles and replacement of the port fleet (cars, light trucks, work vans, motorcycles) is recommended. Buses moving passengers between the entrance and the terminals should be replaced with a similar type of vehicle, but cars or motorcycles used to move the port staff among ports premises and facilities might be renewed with Personal Transporters, such as electric bicycles, kick scooters or self-balancing scooters.

Where transfer of cruise passengers to the city is taken into account, the difference is to be made between port of call and home ports. In the former, the transfer service would be limited to electric vehicles connecting the terminal to one or more strategic points of the city or its surroundings, while in home ports such service is to be reinforced by electric vehicles linking the

terminal to main local transport terminals and intermodal hubs, where cruise passengers arrive and leave. In both cases, electric shuttles, busses and taxis might be taken into account, while e-car and e-bike rental options and schemes might support the destination in fostering an independent mobility among cruise passengers while visiting city main attractions and its surroundings. In such case, a given number of vehicles must be secured in a dedicated parking space in proximity of the passenger terminal.

A concrete shift to electric vehicles is to be supported by the deployment of an appropriate network of charging infrastructure, coupled with the improvement of the storage technology. Dedicated parking and charging spaces, is normally the object of negotiations with municipality, while appropriate local, regional and national regulations act as major levers for the success of the operation.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Progressive replacement of the port operators fleets starting from the Port Authority.
 Promote the purchase of electric vehicles among people, business and institutions close to the port..
 Reduced environmental and noise pollution.
 Increased possibility for cruise tourists, to reach the important attractive historical centres in the district.

MID AND LONG TERM RESULTS

Reduction of greenhouse gas emissions and environmental impacts
 Increasing energy efficiency in transport
 Improving the quality of life in cities in terms of reducing pollution and noise
 Increased use of renewable energy produced at local level

MAIN STEPS OF IMPLEMENTATION

This action should be conceived as part of a bigger plan to promote e-mobility across the city, and the probabilities of success is coordination of two main actors, City council with Port Authorities. Once the targets are clearly delimited, funding sources should be seek at national and international level. The plan/project may be submitted for funding in local, national or European programmes designed to promote climate change mitigation, economy decarbonisation or e-mobility integration in urban environments. Public-Private Partnerships may also result attractive to develop the port's plan/project.

For each specific project included to the plan, the Authority in charge for implementation has to start the procurement procedure (for example launches a public call). The entity providing the service develops a scheme and benefits from advantages provided by the council.

One strategy to promote the use of electric vehicles is to grant incentives to operators shifting from internal combustion to electric vehicles or limit access to some areas only to electric vehicles. The two strategies could be combined: for examples the operator may be advised that in 2/5 years- time some areas will be accessible only to electric vehicles but at the same time they are granted some financial incentives for purchasing electric vehicles.

Afterwards, implementation should be done gradually. Evaluation of the measures should be done on a regular basis to ensure that mobility performance is not being affected negatively.

Some training for electric fleet management and electric car driving could be envisaged.

INVESTMENT €€€

The replacement of existing fleets, along with the creation of dedicated parking spaces and charging infrastructures requires a high investment.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Málaga

Promoting the use of electric vehicles throughout the port

Services provided by the port authority, such as baggage loading/unloading and waste collection, using vehicles should comply with this objective. Investment is needed to both the acquisition of electric vehicles (including personal transporters) and the deployment of charging infrastructure, stations and dedicated parking spaces, through the port. In addition, incentives should be offered to private companies operating within the port, in order to support their shift to e-mobility. This measure supports the city target to make electric mobility a reality. Instead of being an isolated initiative, the introduction of e-mobility at port-level is both supported and supporting similar actions in the city. Specifically, for cruise passengers, this initiative offers a clean option for moving inside the port (between terminals and the port entrance), as complement to other initiatives to guarantee a sustainable mobility between the port and the city.

Durrës



Establishing an e-biking rental service in the cruise terminal and ferry terminal.

E-bike sharing/rental service will be established in Durrës, aimed at significantly improving the mobility in Durrës as well as at promoting active mobility among cruise passengers and tourists. Two e-bike sharing/rental stations will be created at the entrances of the port, both in proximity with the Cruise and Ferry Terminals, while 400 e-bikes are forecasted to serve within Durrës City, and 20 ranks to be established in different city locations.

Durrës



Extending the e-taxi services in the cruise terminal and ferry terminal.

This measure determines the creation of two additional e-taxi stations at the Passengers Terminal of the Durrës port: one close to the pedestrian bridge pathway to the railway station and the other one at the main entrance of the port near the Cruise terminal, providing cruise passengers with a different and cleaner mode of transport. 20 e-taxis are forecasted to additionally serve in Durrës.

The critical point of implementation of this measure is the engagement of local authorities, the Port Authority and the Albanian Railways, to reach an agreement regarding the necessary spaces for e-taxi near the terminals.

Durrës



Establishing an electrical bus shuttle service from the cruise terminal and ferry terminal to the regional touristic areas

In Durrës an electrical bus shuttle service will be organised both from the Cruise Terminal and Ferry Terminal to the main regional touristic areas. The service will be divided in two parts and will connect different transport modes in order to reduce the GHG emissions and offer different destinations to cruise passengers. Firstly, a free e-minibus service will be offered by the Port Authority to link both the Cruise and Ferry terminal with the Railway Station. Secondly, four times a day, an e-bus will drive cruise passengers and tourists from the railway station to the top attraction of the Castle of Kruja within the Prefecture of Durrës. This measure envisages the purchase of 2 e-buses (>40seats), 3 e-minibuses (<20seats) as well as the implementation of the respective charging equipment.

Rijeka



Introducing electric scooters with charging stations

The idea is to set up an electric scooters' station with charging points at the passenger terminal as well as at other points in the city. The aim is to offer cruise ship passengers an option to use simple personal means of transport for two people for distances up to 10 km from the rental point. Technologically, compared to other vehicles for cruise ship passenger transport, the electric scooter is a compact means of transport that an average driver can master quickly, and a minimum of personal equipment and training is required to drive in the traffic. With a scooter, it is possible to reach any point in the city within a short time, especially the places with panoramic views of the city and the *Kvarner Bay*, as well as the nearest beaches. Two variants of implementation of this measure are anticipated: (1) with a fixed battery in the scooter and two charging stations with two connectors; and (2) with a replaceable battery in the scooter with one charging station and a module for charging 30 batteries.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ CIVITAS Insight 13 - E-mobility: From strategy to legislation
- ✂ CIVITAS Insight 19 - E-mobility: Make it happen through SUMPs
- ✂ CIVITAS Insight 20 – Cities' role in introducing clean vehicles and using alternative fuels
- ✂ European Alternative Fuel Observatory
- ✂ PRESTO project (Intelligent Energy Europe Programme) - Cycling Policy Guide
- ✂ FREVUE project: main publications
- ✂ ZeEUS eBus: Report An overview of electric buses in Europe
- ✂ Case of Barcelona (Spain)
- ✂ Case of Iasi (Romania)

2. SHARING MOBILITY SOLUTIONS FOR CRUISE DESTINATIONS



DESCRIPTION OF THE SOLUTION

Cruise passengers arriving in a port of destination who are willing to leave the ship have two main choices: resorting to excursions organized by cruise lines and/or bought on site or a visit in the city/territory, which passengers may organize independently. In the latter case, cruise passengers may decide to use sharing mobility solutions according to their specific needs and preferences.

Rental services usually stem from private initiatives, leading to the introduction and operation of rental/sharing systems of bicycles, electric cars and electric Personal Transporters (PTV), such as electric bicycles, scooters, kick scooters, self-balancing scooters, etc., for cruise passengers, and visitors in general.

However, the creation of sharing/rental services for city users in general and for visitors in particular, may easily lead to conflicts, whereby the involvement of both public and private stakeholders is highly recommended, in order for ownership of initiatives and reciprocal acknowledgement between operators and with institutions to be facilitated.

Consensus among involved parties could be sought through public-private partnerships, working within a twofold objective: increasing the use of electric PTVs for mid-distance destinations and e-cars for long-distance destinations, while establishing clear rules for a secure and responsible transit.

On one hand, electric vehicles should be promoted as a mobility alternative for visitors over other transport means based on fossil fuels. Besides, bikes, PTVs and e-cars offer a flexible, clean and motorized way to move, adequate to the restricted amount of time cruise passenger spend in a city. Operational schemes can be station-based (point to point) or free-floating (whereby vehicles can be picked up and returned anywhere within the operational area, to be preferred in an urban environment).

On the other hand, private companies offering these services might be advertised or sold through existing public channels, such as city tourist cards, apps and websites. Further partnerships may be sought with travel agencies and cruise lines for a direct promotion before arrival. Also guided city tours can be arranged using PTV in spite of busses, and this is already common in several touristic destinations. Rental/sharing companies might also benefit from reduced cost for renting commercial spaces at the port, allowing direct access to passengers.

Finally, an extra effort should be made to establish clear transit rules and to set an adequate charging infrastructure, as key factor for the success of these vehicles. Some PTVs are able to achieve high speeds, increasing the risk level for users and people on public spaces. Mandatory personal protective equipment, restricted areas, speed limits and parking requirements near city attractions should be applied. There is a need for charging stations (slow/fast charging) and dedicated parking spaces. This is normally the object of negotiations with municipality and/or utilities.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Increased n. of cruise passengers and tourists safely using rented/shared electric PTV.
 Reduced n. of private cars in urban areas both coming from outside and owned by residents.
 Reduced environmental and noise pollution.
 Increased possibility for citizens, businesses and institutions to purchase/lease e-vehicles.

MID AND LONG TERM RESULTS

Minimized car-based tourist experiences.
 Increased use of PTVs by residents.
 Reduced need for parking spaces (land re-appropriation).
 Increased safety measures for all city users.

MAIN STEPS OF IMPLEMENTATION

City councils may start by promoting the development of e-car, PTV or bike sharing systems in order to achieve their own urban mobility and climate change mitigation objectives. The design and operation of these systems might be decided via a call for tenders. However, initiatives might also stem directly from private or non-profit organizations, and can be implemented in co-existence with public schemes. In this case, public authorities should carefully assess the convenience of multiple systems offering similar services. The city council should coordinate the different groups of interest to start negotiations and avoid problems already existing in major touristic cities.

The city council must first determine the tourist-sector or city-wide strategy to foster bike, PTV or e-car usage. Afterwards, a stakeholder engagement process should be initiated with the

identification of service providers already working in the city and other potential tourist operators. Residents' priorities and operators' expectancies should be addressed in order to optimize the decision-making process. Win-win agreements should be reached among involved parties to enable the realization of both public and private solutions for visitors.

In case of a public sharing system, the design might be done by the council itself or by contracting a consultancy firm. Operation, maintenance and development of the support systems (i.e. ICT platforms) are usually allocated via a call for tender. Local authorities should monitor and evaluate operation and renegotiate terms if necessary.

The charging & parking infrastructure is normally the object of negotiations. Public authorities can/should have an exemplary role and may get beneficial rates under certain conditions (e.g. fleet sharing).

For instance, the city council may grant access to restricted areas and support the installation of charging infrastructure under beneficial conditions.

INVESTMENT €€

Medium investment is required if the measure builds on the existing public and private sharing/rental systems and the current city means for touristic advertisement, promotion and selling. However, new systems requiring vehicles acquisition, infrastructure deployment, revenue collection schemes and promotion channels will require high investments and, probably, long-term PPP contracts for operation.

If the initial investment issue could be overcome by means of national and European funds, a particular attention must be paid already in the planning phase in the business model, since the sharing system requires a sustainable business model to manage the system and cover the maintenance costs. Who will be in charge for the day to day management? How many users are required to achieve the break-even point? All these are questions that must be answered in the planning phase.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Promoting the use of electric personal transporters.

The City of Malaga promotes rental and other sharing schemes of electric personal transporters, working in association with private companies offering this service. Personal Transporters' promotion must be done guaranteeing safety and avoiding conflicts among residents. Management solutions should be adopted, such as updated databases of existing companies, vehicles and their usage. On the other hand, a set of transit rules, and even changes of the current regulations, should be agreed with rental places in order to ensure visitors' safety of and avoid conflicts with residents. Thus, visitors will take advantage of these public-private partnerships to access clean, quick and flexible transportation, especially cruise passengers moving from and to the port. Afterwards, the initiative allows the generation of local knowledge to enable schemes for residents as well.



Fostering the use of electric vehicles around the city centre

Taking advantage of Locations' LCTP, using cruise passengers' mobility as a pilot initiative, a master program for the consolidation of electric mobility in Malaga will be developed, ratifying pioneer actions adopted over the last decade. This will include the setup of subsidies to foster the use of electric vehicles among residents, visitors and companies, for all types of electric vehicles. Today, the city offers free parking for electric cars in special zones (including the port and the city centre) and manages the charging points. By 2020, the expected number of e-vehicles in Malaga is expected to be around 1.200.



Promoting the realization of a project for passengers with reduced mobility

The main idea is to facilitate the inclusion of passengers with reduced mobility by setting up a system of shared wheelchairs. These can be placed in strategic points of the city to allow passengers to visit the surrounding area with minimal effort. The wheelchairs can work together with tourist buses, since they can be placed in a dedicated parking space, allowing buses to stop away from congested areas around popular attractions. These parking spaces should be close enough to allow passengers to move there independently. It will be paramount to define a business model to ensure the financial sustainability of the project and a careful choice of the locations for its implementation.



Promoting of the use of bike sharing schemes for tourists

The current public bike sharing system comprises three stations close to the cruise terminal, but the proposal is to study a possible increase of the capacity (the closest station has capacity for nine bicycles) to accommodate cruise passengers' demand not only within the terminal, but also in the main areas they visit (city centre, *Belém and Parque das Nações*). Also, alternative bike sharing systems dedicated to tourists should be considered for cruise ships passengers not to interfere with the use of the public bike sharing systems by residents. For this action to be successful, it is important to coordinate it with the current and future cycling network, tourist attractions and the promotion of this service among cruise passengers.



Introducing electric scooters with charging stations

The idea is to set up an electric scooters' station with charging points at the passenger terminal as well as at other points in the city. The aim is to offer cruise ship passengers an option to use simple personal means of transport for two people for distances up to 10 km from the rental point. Technologically, compared to other vehicles for cruise ship passenger transport, the electric scooter is a compact means of transport that an average driver can master quickly, and a minimum of personal equipment and training is required to drive in the traffic. With a scooter, it is possible to reach any point in the city within a short time, especially the places with panoramic views of the city and the *Kvarner Bay*, as well as the nearest beaches. Two variants of implementation of this measure are anticipated: (1)

with a fixed battery in the scooter and two charging stations with two connectors; and (2) with a replaceable battery in the scooter with one charging station and a module for charging 30 batteries.



Increasing the number of bike-sharing stations

The increase in bike sharing stations strategically located in the city centre and near the cruise terminal would provide additional Low Carbon mobility options for cruisers visiting the city. This action is foreseen and is going to be implemented through the CIVITAS PORTIS project. This transport service could be implemented along the coastal area of the city, thus offering opportunities to the cruisers who want to be more independent and do not want to buy excursion packages offered by the cruise companies: as far as mobility is concerned, low carbon mobility solutions have to be thought according to the different profiles of the cruise passengers.

Durrës



Durrës: establishing an e-biking rental service in the cruise and ferry terminal.

The idea is establishing an e-bike sharing/rental service throughout different areas of the city and in the cruise and ferry terminals and contribute to the design of a cycling network in collaboration with Durrës City's SUMP developers. Two e-bike sharing/rental stations will be realized by the entrance of the port. The stations will be linked with pedestrians' pathways from the cruise and ferry terminals.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ CIVITAS Policy Note: Smart choices for cities - Cities towards Mobility 2.0: connect, share and go!
- ✂ CIVITAS Insight 10 – Bike-sharing as a link to desired destinations
- ✂ CIVITAS Insight 13 –E-mobility: From strategy to legislation.
- ✂ CIVITAS Insight 19 - E-mobility: Make it happen through SUMPs!
- ✂ Handshake Issue #4: Cities & PPPs

3. CNG AND LNG SOLUTIONS FOR CRUISE DESTINATIONS



DESCRIPTION OF THE SOLUTION

When a cruise ship calls on a port, passengers walk off the vessel for shore excursions or to visit the city, while supplying companies are engaged in delivering provisions to cruise ships and disposing their waste. Passenger shuttles and supply trucks come and go, generating a local traffic hustle and bustle and contributing to the emission of harmful polluting agents in the surroundings. The same happens on the very first and last day of a cruise, when passengers embark and disembark, while their luggage gets on and off the ship, food must be stocked, and the ship made ready for the new journey.

In such a perspective, natural gas used in a compressed (CNG) or liquid (LNG) state in several modes of transport might play a significant role in greening local transport system, providing cruise passengers with cleaner transport alternatives and ensuring more sustainable cruise-related logistics at the same time. Even though CNG/LNG powered vehicles suffer from technical drawbacks, i.e. a more expensive installation and limited range when compared to conventional fuel vehicles, their lower fuel consumption, lowest mileage and reduced environmental impacts make them competitive and convenient. Ecological awareness, coupled with lower maintenance costs, longer engine life span and, of course, significant fuel cost savings compared to diesel and gasoline motors, are some of the major reasons to induce passenger transport operators, utility companies, delivery companies and other entities to introduce CNG/LNG vehicles into their fleets.

Converting private and public passenger and freight transport fleets to CNG or LNG might prove to be a successful resource also for achieving the European Commission's targets for greenhouse gas reduction and air quality improvement, while paving the way for reducing dependency on crude oil and enhancing supply security. However, it has to be taken into account that CNG and LNG must be acknowledged as temporary solutions, destined to wane in a long term perspective yet able to foster the energy transition to a sustainable transport system powered by clean and renewable energy.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced harmful emissions and improved local air quality.
Increased energy efficiency in the transport system.

MID AND LONG TERM RESULTS

Reduced dependency on carbon fossil fuels.
Improved quality of life in cities in terms of pollution and noise reduction.

MAIN STEPS OF IMPLEMENTATION

The availability of the CNG and LNG infrastructure represents the prerequisite for the implementation and running of LNG and CNG solutions. Private –partner partnerships might be established.

Regarding fleets, in case public service vehicles fleets are to be converted and replaced, the city council has to undergo a procurement procedure.

INVESTMENT €€€

Overall investment is medium to high. It depends on whether a new fuelling infrastructure is being set up with the upgrade of the existing one.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Rijeka



Rijeka: introducing CNG drive into the municipal waste trucks

One of the services available to cruise ships and other vessels upon their arrival in the port is waste collection. In Rijeka, all waste trucks are currently diesel-powered, but the intention is to switch to CNG drive. A lot of public transportation buses already switched to CNG and the CNG gas station was built in Rijeka for that need. This is a good starting position for the municipal waste management company Čistoća Ltd., which has initiated activities aimed at purchasing two CNG waste collection trucks both meeting EURO 6 standard. Čistoća Ltd. has also started procurement of electric vehicles for separate collection of waste and electric three-wheelers designed to maintain the cleanliness of the city. A larger CNG truck will be purchased, with a total volume of 30 m³ and a two-chamber side-loader for separate waste

collection, which will be coupled with a smaller CNG powered cargo vehicle, suitable for narrow streets and designed for collecting separate types of waste.

A reduction of CO₂ and other harmful gases emissions of 10-11 tonnes per year is estimated, which is a direct consequence of using CNG as fuel in these vehicles.



Promoting new connections via canal

The Municipality has started the process to launch a new service of a maritime connection via canal. This new mode of transport should connect the cruise terminal to the city center through low carbon ferryboats powered on LNG along the canal. Ferryboats should carry about 120 passengers and they will be accessible even for people with reduced mobility.

The City has already received national funds in order to realize infrastructure needed to start the service: a dock suitable for people with reduced mobility, a new underpass connecting the city dock *Darsena* to the city center and a new bike sharing station with 15 e-bikes in the city dock *Darsena*. The critical issue of this measure concerns the navigation rules in the canal. All sorts of touristic boats must give priority to cargo ships and the maximum speed allowed is 11 km/h. The canal trip would take about an hour and there would not be a fixed and reliable timetable since cargo ships arrive and leave the port with a short-term notice.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ CIVITAS Policy Note- Smart choices for cities: Clean buses for your city
- ✂ CIVITAS Policy Note- Smart choices for cities: Alternative Fuel Buses
- ✂ CIVITAS Policy Advice Note 02 – Clean Fuels and Vehicles
- ✂ CIVITAS Insight 20 – Cities’ role in introducing clean vehicles and using alternative fuels
- ✂ European Alternative Fuel Observatory
- ✂ CIVITAS MOBILIS - Case Studies on Sustainable Urban Transport
- ✂ INTERNATIONAL ENERGY AGENCY working paper – The contribution of natural gas vehicles to sustainable transport
- ✂ SOLUTIONS project: Handout - Cluster 6: Clean vehicles
- ✂ Buses operating on compressed natural gas in Barcelona (Spain)
- ✂ Hybrid and CNG buses in Ljubljana (Slovenia)

4. LOW CARBON WATER TRANSPORT



DESCRIPTION OF THE SOLUTION

Waterways might offer an interesting perspective to cruise passengers willing to know the city as well as explore its surroundings, away from traditional passages and traffic schemes.

In addition to this, when compared to land-based transport routes, waterway costs are small, being already in place and requiring little improvement and maintenance. Where cruise passenger city exploration is taken into account special attention is to be devoted to the use of eco-friendly boats and vessels fuelled by alternative fuels.

The alternative fuels that are most commonly considered today are Liquefied Natural Gas (LNG), Electricity, Biodiesel, and Methanol.

Other fuels that could play a role in the future are Liquefied Petroleum Gas (LPG), Dimethyl Ether (DME), Biomethane, Synthetic fuels, Hydrogen (particularly for use in fuel cells), Hydrogenation-Derived Renewable Diesel (HDRD) and Pyrolysis Oil. Additionally, fuels such as Ultra-Low-Sulphur Diesel (ULSD) can be used to comply with the regulations and support the transition to alternative fuels.

Electrification has also generated strong interest. The challenge with respect to shore-based electricity for powering ships is related to the energy density of batteries and other storage solutions, limiting the range of the ships. Electrification in shipping can have two distinct forms: as

a hybrid propulsion system, or as a pure electrical propulsion system. Boats powered by shore-based electricity can offer significant benefits in terms of improved energy efficiency and reductions in emissions. The benefits in energy efficiency arise from eliminating combustion engines, which are associated with significant efficiency losses. In addition to using on-board batteries for propulsion, shore-based electricity can also be used to power ships at berth. The main barrier for introducing batteries in shipping is their high capital costs. It has to be taken into account that low carbon water transport might require new regulations and legislations.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Improved local infrastructure for energy efficient transport .
Reduced congestion in the city center.
Reduced environmental and noise pollution.
Improved and more sustainable tourist offers.

MID AND LONG TERM RESULTS

Improved quality of life in cities in terms of pollution and noise reduction.

MAIN STEPS OF IMPLEMENTATION

The initiator of this modular package needs to be a city/municipality or Port Authority.

The concrete measures can be implemented by private transport operators upon agreement with the city council/ Port Authority/county or regional government.

Once conditions are created, collaboration is possible through public-private partnership or organization of services through private companies.

INVESTMENT €€

A medium overall investment is expected. It depends on the size of the boat, type of fuel, autonomy, as well as on the availability of dedicated charging infrastructure

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Promoting new connections via canal

The Municipality has started the process to launch a new service of a maritime connection via canal. This new mode of transport should connect the cruise terminal to the city center through low carbon ferryboats powered on LNG along the canal. Ferryboats should carry about 120 passengers and they will be accessible even for people with reduced mobility.

The City has already received national funds in order to realize infrastructure needed to start the service: a dock suitable for people with reduced mobility, a new underpass connecting the city dock *Darsena* to the city center and a new bike sharing station with 15 e-bikes in the city dock *Darsena*. The critical issue of this measure concerns the navigation rules in the canal. All sorts of

touristic boats must give priority to cargo ships and the maximum speed allowed is 11 km/h. The canal trip would take about an hour and there would not be a fixed and reliable timetable since cargo ships arrive and leave the port with a short-term notice.

This measure sets up a new mode of transport available for cruise passengers, creating a synergy with two different projects. Cruise passenger will have a further possibility to reach the city center with a low carbon mode of transport.

Rijeka



Rijeka: traditional shuttle boat

This measure involves examining the interest of potential concessionaires for the introduction of traditional shuttle boats powered by a hybrid drive for local transport *Mololongo* (breakwater) - *Adamićev gat* or *Gat Karoline Riječka*, or for transportation to sightseeing tours of the city and the coastal area. The aim is to offer cruise passengers an alternative view of the city through a traditional boat used at the end of the 19th and early 20th centuries for the transportation of passengers. Two types of travel are envisaged:

- A short "shuttle" ride from the location of the breakwater berth to some of the locations on the opposite side of the city center (*Gata De Franceschi*, *Adamić's Gat* or *Gata Karoline Riječka*);
- Longer drive to visit the port of Rijeka and the coastal area all the way to Opatija, and with good weather conditions, continue along the Istrian coast.

Part of the cruise passengers can use the traditional shuttle boat which affects the reduction of the required number of buses with internal combustion engine for tourist sightseeing and the wider coast.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ [CIVITAS MOBILIS project - Case Studies on Sustainable Urban Transport](#)
- ✂ [Case of Bourguet: electric boat on the lake](#)
- ✂ [Case of Bristol: hydrogenesis passenger ferry](#)

5. OPTIMISATION OF PORT ACCESSIBILITY



DESCRIPTION OF THE SOLUTION

Current trends show that cruise tourism is still a young sector and has great potential for expansion. Optimization of port operations is essential to make it attractive to cruise companies. The optimization of the terminal does not only mean improving productivity and reducing operating costs, but coming up with a new approach to managing the terminals based on the knowledge of the criteria adopted by the companies in the selection of ports.

In all cases, a good port for cruise ships optimizes accessibility of the ship to the port, availability of berths, mooring facilities, facilities for the reception of passengers and safety of the ships.

As a home port, the port acts as a basis for a cruise ship, taking passengers around on a circular cruise circuit, starting and ending in the same homeport. The choice of ports by cruise companies depends to a large extent on the accessibility of the terminal to tourists and suppliers, minimizing conflicts between dedicated and standard activities carried out in and around the port area.

Although cruise passengers spend most of their time on board the ship, excursions in ports of call are primary selling points for the cruise to be appealing for passengers. Optimization will also consider additional options for passengers, such as: independent transport modes, taxis, shuttle services to different destinations, pedestrian linkage to the city, information processing and supply chain nodes for logistics.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Increased port accessibility.
Reduced port congestion.

MID AND LONG TERM RESULTS

Increased capacity of the cruise berth at the breakwater.
Increased possibility to accept all types and sizes of cruisers.
Improved cruise passengers' mobility.
Reduced greenhouse gases emissions and air pollution.

MAIN STEPS OF IMPLEMENTATION

Optimisation starts with strategic planning and architectural layout for port accessibility to guide all relevant decision making processes, starting with a vision to present to institutions and investors and a cost/benefit analysis.

The subsequent steps are further sectoral planning, defining among others measures, deadlines, costs, resources, performance indicators and allocating responsibilities, followed by implementation.

The plan may be financed by the port authority and the city council, or submitted for funding under national or European programmes, designed to promote climate change mitigation, economy decarbonisation or e-mobility integration in urban environments. Public-private partnerships may also be a solution to develop the plan.

INVESTMENT €€€

According to the type of intervention the investment ranges from medium to high.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Rijeka



Removing the bottleneck between the breakwater and road d 404.

By increasing the capacity of the cruise berth at the breakwater near the passenger maritime terminal, it will be possible to accept all types and sizes of cruise ships. This will also result in the relocation of all cruise operations, from the usual activities of the ship's supply to the acceptance of passengers and their transportation to further destinations in the form of one-day excursions. Most of this will be related to the road transportation of passengers using tourist buses traveling to tourist destinations, and the electric scooters that are included in the passenger terminal. All transportation currently passes through the one way road around the city market, where the traffic is usually very intensive, even without additional cruise passengers' flows, which lead to higher congestion and residents' dissatisfaction.

To deal with that issue, it is necessary to separate the traffic directed to the city market and the traffic connecting the breakwater and road D 404. There are two options for the implementation of this measure: 1. Building a new road, including the reconstruction of an existing turntable bridge

and the construction of a new bridge to provide bi-directional traffic and 2. Adapting an existing road, involving the reconstruction of an existing bridge, where traffic could be alternate.

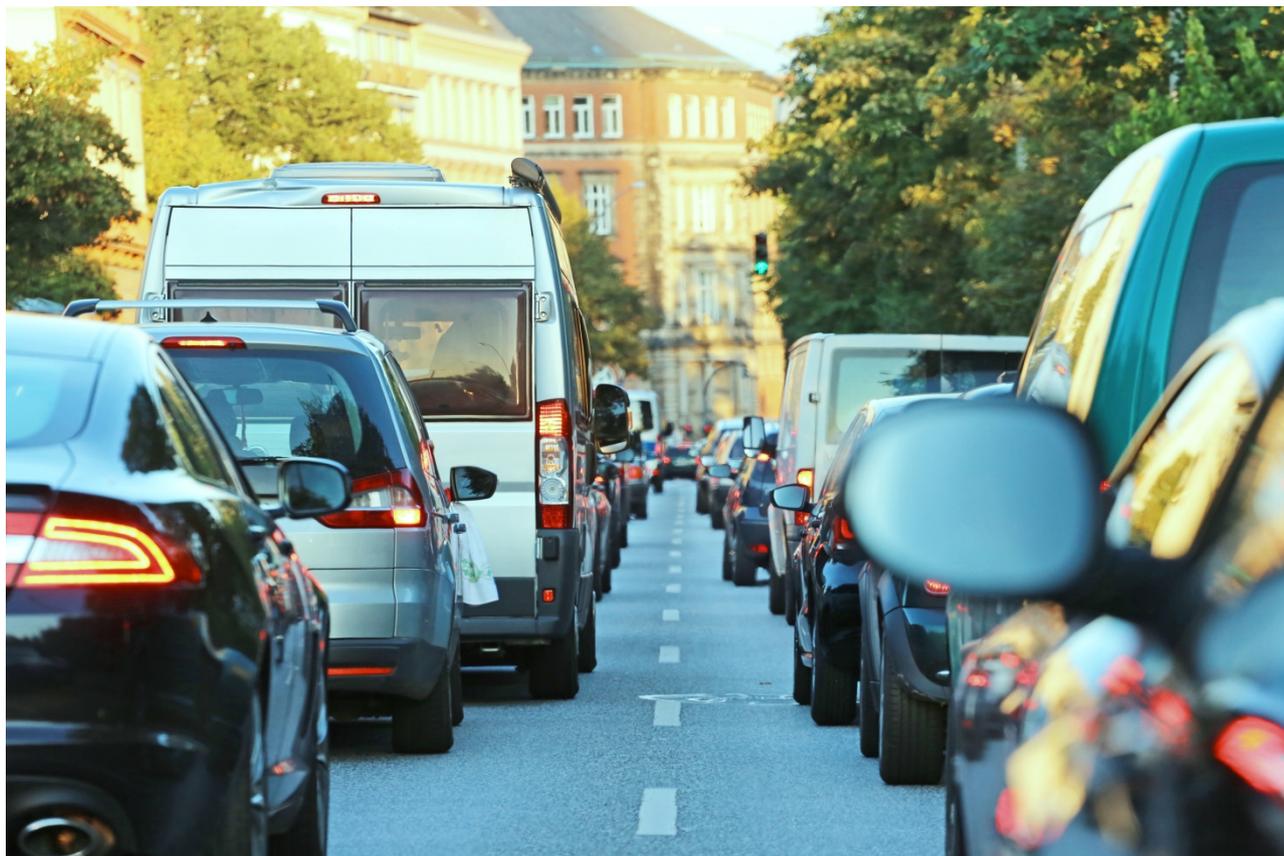
OTHER RESOURCES/EXAMPLES/REFERENCES

✎ [Case of Kotor Cruise Port: Traffic Modelling and Performance Evaluation](#)

✎ [Case of the Port of Leith: 21st Century Gateway Port](#)

Kai Wang Shuaian Wang, Lu Zhen, Xiaobo Qu, (2016) "Cruise shipping review: operations planning and research opportunities", Maritime Business Review, Vol. 1 Issue: 2, pp.133-148, available at <https://doi.org/10.1108/MABR-04-2016-0007>

6. TRAFFIC AND BUS FLOW MANAGEMENT IN CRUISE DESTINATION



DESCRIPTION OF THE SOLUTION

The idea is offering attractive bus services to connect the port to attractions through the optimization of on-route times, better facilities to board the buses, the provision of services tailored to cruise passengers' requirements and flow management enhancement through innovative means.

To promote alternative destinations outside the city or distant from the port, tour operators and travel agencies have to ensure that the excursion services they offer comply with the limited time passengers have.

In this sense, the port authority, in coordination with the local tourism and mobility authorities, may support the tour operators in order to enhance the visitor experience, helping the diversification of the city's tourist offer.

One alternative is the optimization of the routes when leaving the city, so traffic congestion is avoided and reduced. Through a detailed diagnosis of the status of the city traffic around the port during the time periods when excursion buses pick passengers up and start their itineraries, specific measures might be designed in order to reduce the time buses spend inside the city. For example, the utilization of navigation systems to calculate optimal routes in real time or enabling bus lanes from the port to the city's main exits. This might require the daily support of the local

police to facilitate access to these optimized routes, and the training of bus drivers for the utilization of innovative tools.

As a complementary solution, new infrastructure could be developed to support the increase of cruise passengers contracting shuttle services to distant destinations. This could take place inside the port for the use of tourist buses only or outside the port with the deployment of a new multimodal station providing different kinds of services, including public buses and taxis.

In addition, services might be tailored to cruise passengers' requirements. For instance, shuttle services might be prioritized depending on the distance needed to arrive to destinations. This way bus boarding and departure conditions would allow smoother operations for services with longer travel times. Another alternative might be offering on-demand shuttle services.

Finally, extra management efforts might be done through the measurement of tourist capacity of areas and relative requirements for parking spaces by bus operators. The parameters used to calculate the above are the number and capacity of attractions, number of shops and restaurants, transport infrastructure in the area and transport connections to it. Other factors such as the total area of public space and of green areas might also be considered. The number of parking spaces available in the target areas should then be based on this capacity. A pool for those spaces could be created, enabling the reservation of parking spaces in advance by the operators.

EXPECTED RESULTS



MAIN STEPS OF IMPLEMENTATION

This initiative might be promoted by the city tourism authority in coordination with the port.

The port and tourism authorities should start consultation rounds with tour operators in order to identify common issues that shuttle services undergo when leaving (or arriving to) the city. Afterwards, the planning phase should be initiated in coordination with the city mobility authority. This entity should help decide if public transport might also benefit from this initiative. The preselection of measures should also be shared with tour operators to receive their feedback. The final design and/or implementation of the conceived solutions might be done through a call for tender.

In the case of parking management in tourist areas, the city council must first determine the different tourist areas and calculate their capacity. This step should be done with participation of

relevant stakeholders. Once capacity is defined, the maximum number of available parking spaces for tourist transport can determine and the communication platform launched.

INVESTMENT €

Investments should remain low, unless the scope of the measure is broadened beyond cruise tourism (as is the case of creating dedicated bus lanes or a multimodal bus station).

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Providing shuttle services to reach distant tourist destinations

A shuttle service is offered to cruise passengers interested in visiting distant tourist attractions in Malaga and its surroundings. The tourism authority, on its own or in coordination with tour operators, promotes existing public services. The service might be contracted through an existing app or similar means. The main issue is that most cruise passengers do not plan their visit before arriving in Malaga (only around 16% organize excursions with the cruise service). The tourism authority needs to work with cruise lines and travel agencies, under a common benefit agreement framework, in order to promote the existing touristic offer, especially the dedicated app, and the deals offered within. Working with tour operators is recommended, as they might offer the flexibility a service of this kind requires.



Optimising excursion bus routes from terminals.

The idea is reducing congestion by optimizing the routes of excursion buses, especially in some specific areas, for example *Malagueta* (where there is often only one lane available) in coordination with Malaga's mobility authority and tour operators. The city council carries out an analysis of the current operation of excursion buses that offer services to cruise passengers, in order to establish specific measures to reduce their impacts on traffic and enhance their on-route conditions. Times of arrival and departure, pick-up and drop-off areas, number of passengers picked up at terminals, destinations, routes and problems identified by drivers, tour operators and authorities are evaluated to select the most appropriate measures.

On the other hand, the analysis of these measures could be accompanied by the revision of existing road management and conditions, in order to harmonize them, as far as possible, with the existing and future cruise passengers' traffic flow (*Paseo Ciudad de Melilla*, *Paseo de la Farola* are, as a matter of example, some of the axis in which a reorganization of travel directions could be interesting).



Defining primary and alternative shuttle bus routes

In Zadar primary and secondary routes connecting the cruise terminal with the inner city center will be defined, to provide shuttle and taxi drivers with real time traffic information and instructions on the preferred and shortest route to take. Three critical issues arise from this measure's implementation: 1) Definition of named routes; 2) Distribution of real time traffic information to drivers; 3) Actual tracking of routes carried out by

drivers. Accordingly, the first issue is definable as there are two available routes. The second issue's solution comprises incorporating the currently available real-time distribution system available through built-in vehicle navigation systems, that are already capable of receiving real time traffic information and recalculate routes accordingly. The second approach would be through city-enabled ITS. The third issue solution is to require that all shuttle vehicles have fleet tracking devices. Cruise passengers' benefits from this measure's implementation would be more convenient transfers of cruise tourists, saving time on transfers and extending available time for visiting.



Developing intelligent systems for traffic flow management

The objective is to create a balance in the number of tourists (including cruise passengers) in each area of attraction to allow a better experience and decrease the impact on the residents' quality of life. The first activity is a system that regulates access of tourist buses to certain tourist areas, based on the capacity of the areas. The capacity should be determined based on the number of attractions, available mobility services, public space areas, number of restaurants and other relevant parameters. After this capacity is defined, a limited number of parking areas for tourist buses should be made available and the operators would then be able to book their parking spot through a common platform.

OTHER RESOURCES/EXAMPLES/REFERENCES

 [CIVITAS Insight 06 - Access regulations to facilitate cleaner and better transport](#)

 [CIVITAS Insight 14 - Real-time information for public transport](#)

Coccosis, H., Mexa, A., Collovini, A., Parpairis, A. and Kostandoglou, M. (2001). Defining, measuring and evaluating carrying capacity in European tourism destinations. Athens.

Castellani, V. and Sala, S. (2012). Carrying Capacity of Tourism System: Assessment of Environmental and Management Constraints Towards Sustainability.

7. SUSTAINABLE OPTIONS FOR PEOPLE WITH REDUCED MOBILITY



DESCRIPTION OF THE SOLUTION

When a cruise ship docks into a port, cruise passengers might opt for organised destination excursions or for individual visits. Taking into account that cruise passengers are often elderly people, frequently affected by mobility limitations, destinations are to put in place appropriate solutions to foster independent mobility in the city, pursuing the idea of becoming more accessible to all cruise passengers, regardless of their physical limitations, disabilities or age.

Accessible public and private transport facilities and accessible buildings/attractions in destinations must be granted, providing passengers with limited mobility with all the needed facilities to independently reach all the attractions within the city. On the one side, wheelchair access to public and private transport fleet must be granted as well as accessible bus tours of the main attractions. On the other one, accessibility planning needs and removal of structural barriers must be properly addressed. More accessible pedestrian paths and comfortable pavements are to be created, complemented by mechanical means (i.e. elevators) and lowered curbs and ramps in non-pedestrian areas, to promote barrier free access to destinations' attractions and facilities. Along with this, disability equipment such as electrical wheelchairs might be rented to facilitate the movement of people with limited mobility. In such case, electrical wheelchair should be provided at key points of the city that are usually visited by cruise passengers (or other tourists) or close to dedicated parking spaces for touristic buses.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced congestions in critical areas .
 Reduced environmental and noise pollution.
 Increased city accessibility for people with reduced mobility.

MID AND LONG TERM RESULTS

Improved and more sustainable offers targeting passengers and tourist with reduced mobility.
 Improved quality of life in cities in terms of pollution and noise reduction.

MAIN STEPS OF IMPLEMENTATION

Where accessibility of public spaces and services is at stake, the city council is the initiator of the action. Other private initiative might arise offered as part of a touristic package by the cruise or buses operators or be explored by a start-up.

Involvement of final users in testing facilities, routes and equipment is encouraged.

INVESTMENT €€€

According to the type of intervention the investment ranges from medium to high.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Lisboa



Promoting the creation of project with electrical wheelchairs

Lisbon's LCTP has proposed an electrical wheelchairs measure to facilitate the movement of people with limited mobility. Electrical wheelchairs will be provided at key points of the city and in particular in proximity with drop off places of touristic buses that connect the cruise terminal to the touristic areas or additionally close to public transport interfaces. One of the advantages here is that the touristic buses won't need to stop so close to the attractions where congestions are frequently caused by the drop-off and pick up of the passengers due to the time it takes for the operations to conclude and to the lack of space for dedicated parking spots. Thanks to this measure, buses can park further away from the attractions and passengers can easily move there and explore the area returning afterwards to the same place. Coordination with buses and cruise operators is fundamental since access to the wheelchairs can (possibly) be included in the traditional touristic packages and, also, with the administration of the city for integration with other sustainable mobility initiatives.

Improving accessibility for reduced mobility people

Ravenna



In collaboration with transport and cruise tourism operators, the municipality will let two special low carbon minibus designed to transfer people with reduced mobility to enter in the historic center, where there are several access restrictions for vehicles. At the moment, this type of minibus can carry 10 people and 2 wheelchair users. Two parking spots will be reserved for the

minibus in a parking lot near the UNESCO monuments. This parking lot at the moment is private owned, but the Municipality will acquire it in the short time period. This is a low-cost action that has the support of many stakeholders, but police controls are needed in order to avoid bus operators using these minibuses for regular transfer service. This measure will increase the accessibility for reduced mobility people and it is crucial to give cruise passengers with reduced mobility the opportunity to visit easily the city center of Ravenna.

Durrës



Improving accessibility for disabled low mobility passengers

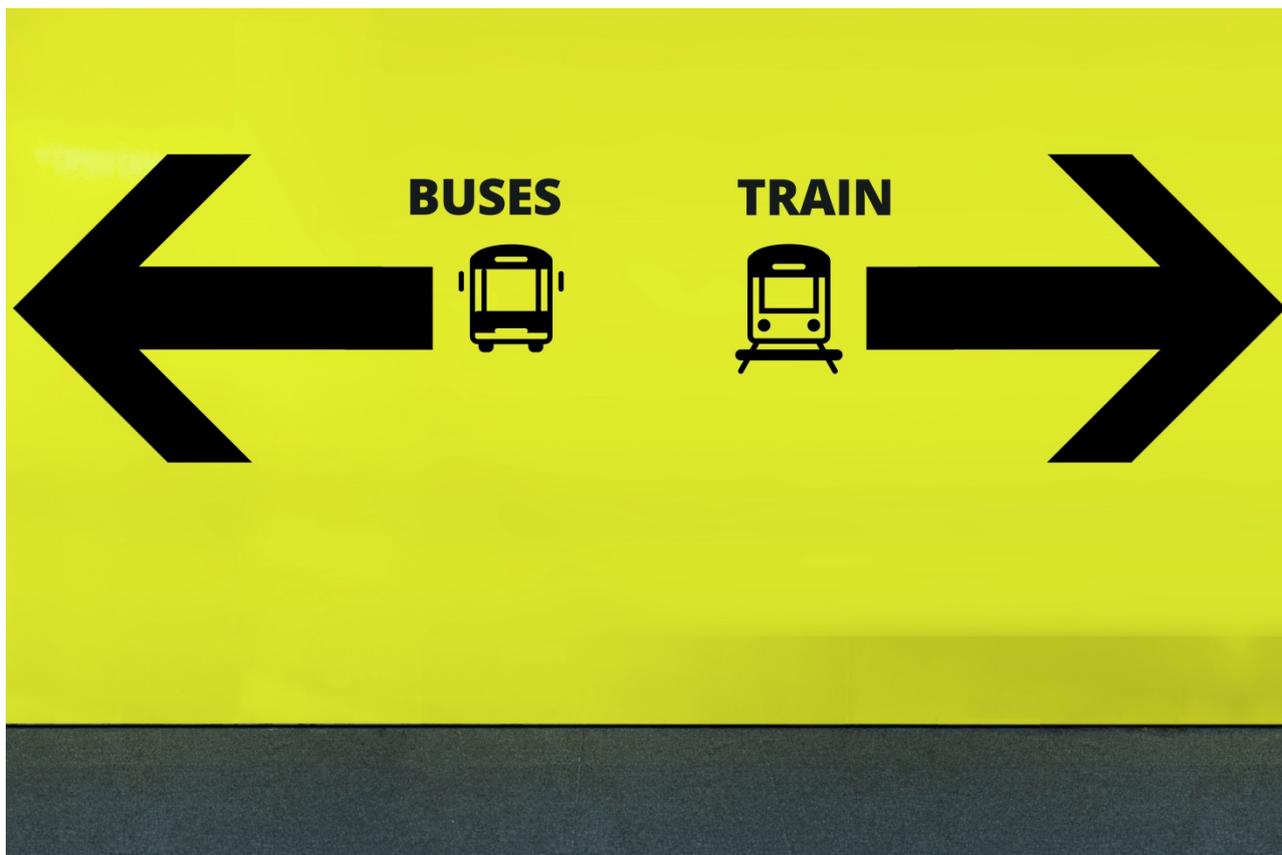
This measure will require the analysis of the actual infrastructure at the Cruise and Ferry Terminals. Ideally the improvements made will lead to the use of low carbon modes during all the visits in the city areas. The critical issue is the financial support. The infrastructure is non-existent at the moment, thus it will require a lot of funds to improve the actual infrastructures. Also, a crucial issue will be the collaboration with the SUMP developers. This measure takes in consideration that a large part of cruise passengers are senior citizens usually with low mobility. This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city. This measure focuses to provide the passengers with all the needed facilities to reach all the attractions within the city areas.

OTHER RESOURCES/EXAMPLES/REFERENCES

 [CIVITAS Highlight on accessibility](#)

 [CIVITAS INSIGHT 02- Accessible mobility: enabling independent living for all](#)

8. FOSTERING PASSENGER INTERMODALITY



DESCRIPTION OF THE SOLUTION

Eurostat figures from the last decade show that 80% of passengers in EU-28 prefer to resort to individual means of transport, attracted by greater mobility and flexibility. Intermodal transport will have to be a viable alternative in the near future, to contribute to reducing congestion and pollution in many urban areas.

The intermodal logic envisages a mixed formula consisting of trains, maritime ferries, river boats and airplanes for the longer sections, and finally the use of road vehicles only to cover the so-called "first and last mile".

In the specific case of cruise ship tourism, this logic will give passengers substantially two new options: arriving comfortably at the home port for boarding without using their private cars and being able to use a vehicle in the port of call, suitable for visiting both historic sites and areas of naturalistic interest.

With the term "intermodal transport" we do not define a new type of transport, but an innovative approach to use the current transport systems, moving from an independent and unrelated use of the single, traditional systems to an integrated one.

The most important planning issue is to have efficient intermodal nodes: a good node is a connection point, linking at least 3 transport systems and facilitating interchange.

A structure of this type is therefore rarely created ex-novo. It is instead typically designed after a phase of analysis of current infrastructures, through interventions aimed at the overlapping of the various transport networks, in strategic and well-served points. For example, in some cases it might be sufficient to upgrade the services linked to the existing railway stations, ensuring strong synergies with local public transport (bus, tram, metro), simply adding or bringing the stations closer to each other; furthermore, the creation of new mobility systems, such as rental or sharing of cleaner vehicles, can play an important role.

These projects, in general, have an even wider goal, that is to redevelop the entire surrounding area, positioning themselves as a flywheel for economic growth.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced traffic volumes and congestion.
Reduced greenhouse gasses emissions and air pollution.
Reduced number of private cars in urban areas of cruise destinations both coming from outside and owned by residents.

MID AND LONG TERM RESULTS

Reduced private car use, increased use of public transport and more sustainable modes of transportation.

MAIN STEPS OF IMPLEMENTATION

As for most transport systems, the municipality is often the initiator, while concrete measures can be undertaken by private operators (mobility agencies, public transport companies, utilities) upon agreement with the city council.

- Policy development, feasibility study, technical/functional/legal design as well as communication of the policy to gain public acceptance;
- Elaboration of the strategy, which, among others, includes a detailed analysis of the targeted intermodal hub, identification of the main routes and key destinations as well as potential connection issues.

INVESTMENT €€€

According to the type of intervention the investment ranges from medium to high.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Analysing public transport options available for reaching the city

The analysis mainly focuses on the railway capacity of the local context (Friuli Venezia Giulia Region) to be able to welcome the increasing number of tourists, with a specific focus on cruise passengers, providing them with alternative public transport solutions to easily reach the city centre and Trieste cruise terminal. The development of Trieste Airport's railway station (*Ronchi dei Legionari Station*) is an important step in this direction, and this new

link can be exploited by cruise passengers arriving by plane as a sustainable and comfortable solution to reach Trieste.



Studying dedicated public transport service between the train station and the cruise terminal

In Trieste the cruise terminal is located just across the road from the main square, in the very heart of the city centre. This location has positive and negative repercussions. The facility offers huge benefits for tourists who, disembarking the ship in one of their port of calls, find themselves immediately among the local sites of interest (museums, monuments, shops, restaurants, etc.) in the city centre, but is also a serious concern in terms of mobility. Passengers using Trieste as a home port and the large numbers of passengers disembarking the ship to go on excursions need to either reach the cruise terminal or be transferred to their destinations. In this respect, the recent development of the railway station at Trieste airport is likely to bring an increase of passenger flows arriving at the train station of the city. A better connection between the cruise terminal and the railway station that is only 1 km away would be a step towards the implementation of efficient mobility services, facilitating tourists in their movements to, from and in the city.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ CIVITAS Insight 15 – Linking intermodal service better
- ✂ CIVITAS mobility solution: Intermodal interchanges for public transport
- ✂ CIVITAS mobility solution: Intermodality with public transport
- ✂ Case of Bucharest (Romania)
- ✂ Case of Pomerania (Poland)
- ✂ OECD Intermodal connections for destinations

9. INTEGRATED TOURIST CARD



DESCRIPTION OF THE SOLUTION

This solution aims at facilitating cruise passengers' access to public transportation, bike-sharing systems and/or electric vehicle rental from the port to city attractions, and *vice versa*, with the use of a tourist smart card adapted to the requirements of cruise tourism. Widely implemented in cities over the world, a tourist card is a marketing tool that integrates several destination services, from public and private providers, such as discounted city attraction entrances, special offers in shops and use of public transportation. A card's validity usually fluctuates between 1 day and 1 week.

The design of a card tailored to cruise passengers' requirements serves as a method to foster the use of low carbon transport solutions, while contributing to local economy. Beyond the integration of the city's public transport (buses, trams, metro, etc.), cruise tourist cards should include access to bicycle sharing systems and electric vehicle (cars, bicycles, kick scooters, personal transporters), either through unlimited use or discounted prices. Depending on the existing infrastructure, the localization of top attractions and the characteristics of the city, a transport mode might be prioritized over the rest.

Public-private partnerships are required to offer attractive deals to cruise tourists. On one hand, with private rental companies, tourist attractions and local businesses, while on the other one, with cruise lines in order to promote and sell this service prior to or on arrival.

Furthermore, whether based on smart card technology or through an app, municipalities might benefit from the data gathered in order to enhance the city's tourist and mobility management, while passengers might have all the local information in one place and in real time (app case). The development of an app is recommended over other ICT options, given the possibility of offering all the information to cruise passengers in a unique and intuitive way.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Increased number of visits to tourist attraction.
Increased overall cruise passengers' on-site spending .

MID AND LONG TERM RESULTS

Optimized offer of transport. services for cruise passengers.

MAIN STEPS OF IMPLEMENTATION

In order to guarantee the integration of the public transport system, the city council, through its departments of tourism and mobility, should initiate the implementation process. However, private initiative is also possible.

An easy implementation might be expected in cities that already offer a tourist card, especially if it is managed by a public entity.

The first step should be the conception and design of the card functionalities. It is highly recommended to work together with public and private stakeholders from the beginning, in order to achieve agreements on how the final product should operate. For example, the retribution scheme (a discount card from advertised local businesses, an all-inclusive card with a financial compensation or a combination of both) and the required technology (magnetic card, chip card, app, etc.).

Once the general framework is determined, the implementation phase might be performed through a public call for tender. Operation is typically done by the city's tourism authority. However, external operation of the system might be also allocated via public bidding. The system's operation usually includes card commercialization, negotiation of services and technical maintenance.

INVESTMENT €

The expected investment is low. Budget requirements will vary according to the current state of the local tourist or city card introduction, since the investment is inversely proportional to the level of development. From less to more expensive, the different investment categories are:

- Including new category/services into an existing smart tourist card scheme.
- Updating a non-smart card system to become smart and include the new services.

- Developing a tourist smart card system from scratch.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Integrating cruise mobility into the tourist card

A customized package within existing tourist smart cards (such as *Málagapass*), specifically designed for cruise passengers, that facilitates access to all public transport, while promoting local businesses and tourist attractions. The average time spent, the location of attractions and the optimal transport mode to arrive to each destination should be taken into consideration. Far attractions, as the Botanic Garden (7 km from port), might be offered together with public transportation or a car sharing option, while mid-distance attractions, like the Russian Museum or the Glass and Crystal Museum (3 km from port), could include the use of bike sharing systems or electric personal transporters rental services.

The card, which would be easily accessible on arrival at the port, is aimed to be used in an easy and intuitive way. Furthermore, it aims to increase the contribution of cruise tourism in the local economy. The services enhance passengers' experience by allowing them to plan their itineraries before or on arrival. Suggested routes with discounted packages (entrance, food and transportation) might also be offered.



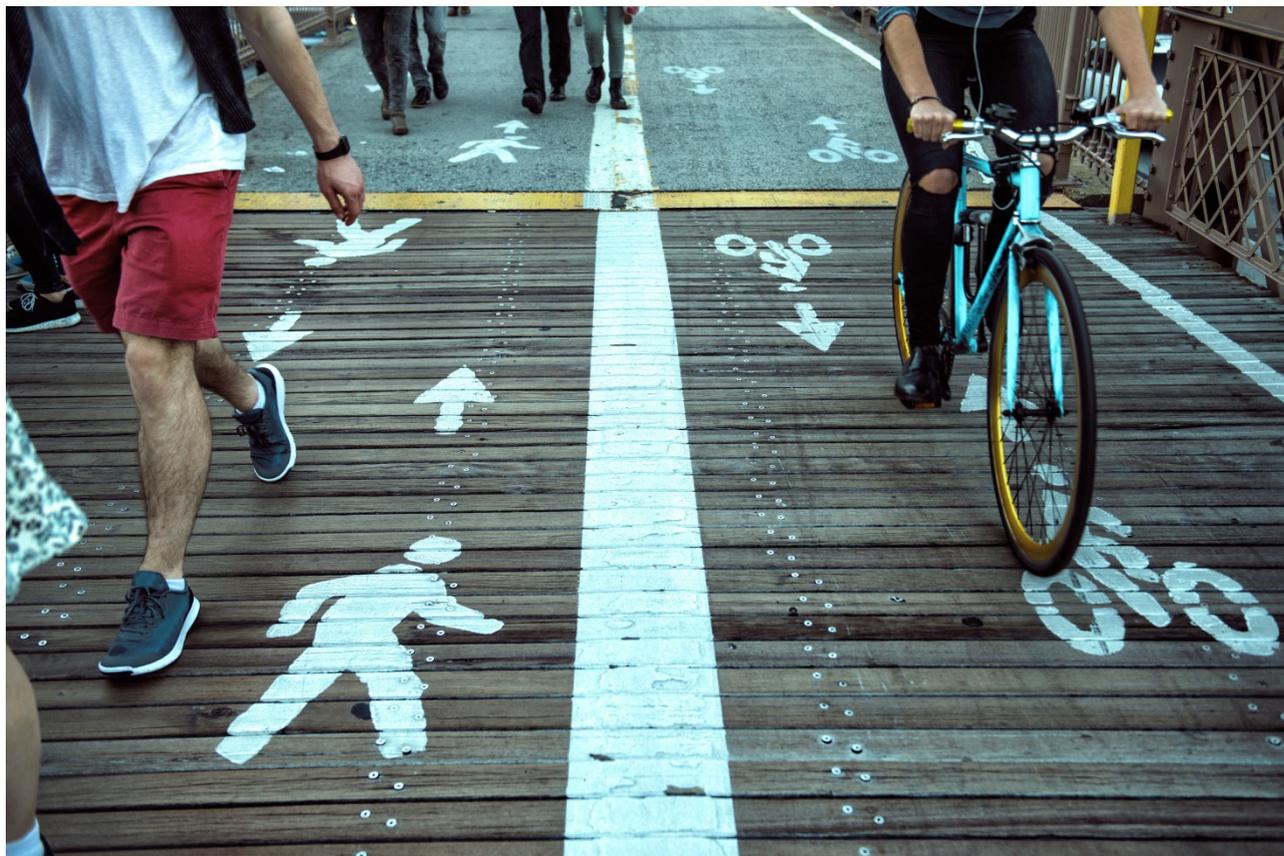
Integrating sustainable transport options and cultural attractions ticketing

This action is intended to foster the creation of a multi modal package that includes various mobility services along with entrances to cultural attractions. Included services can be bike sharing, tourist transport, public transport, walking apps and even access to monuments and museums. Tourist transport can play a key role here, since they might help fill the gaps in the mobility network of the city (e.g. a passenger uses public transport in the city center and then takes a dedicated tourist transport service to a location outside the city, such as Sintra or Cascais). Coordinated with other measures, this package should be promoted among tourists and made available at the cruise terminal to obtain an increased impact.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✍ [European Commission DG MOVE- Study on Public Transport Smartcards.](#)
- ✍ [UK's Department for Work and Pensions - Evidence review of smartcard schemes in local authorities.](#)

10.IMPROVING WALKING ROUTE OFFER FOR CRUISE PASSENGERS



DESCRIPTION OF THE SOLUTION

Walking and cycling are recognized and promoted as sustainable transport modes, with positive repercussions on health, the environment and a city's more general quality of life, in that they help reduce congestion and demand for more polluting modes, curb a range of negative externalities including air and noise pollution, implement policies addressed to the re-appropriation of urban spaces and a more people-friendly urban environment. However, in order for walking and cycling to be embraced by city users and supported by local authorities and institutions, infrastructure needs to provide a safe and effective environment for people to walk and cycle free from worries and excessive constraints.

As for cruise destinations, there are at least two good reasons to improve walking route offer in ports of call in cruise circuits: it helps prevent cruise passengers sudden flows from exacerbating the city's mobility and it supports a more homogeneous distribution of tourists in the city, helping reviving businesses in a wider catchment area than merely around the main tourist attractions.

In order for walking to be effectively promoted, furthermore, there is a need for accurate routes and distances analysis, covering excessive distances (e.g. from terminals to urban centers or other areas of interest) with different modes (public transport, shuttles, etc.), taking into account available time, habits, preferences and cruise passengers' features.

Improving walking routes in tourist areas is paramount and may include, among others, a well-developed sidewalk system, walkways through parks, creation of pedestrian zones in shopping areas.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Increased share of cruise passengers preferring walking as transport mode.
Reduced number of cruise passengers using non-sustainable transport options.
Reduced greenhouse gasses emission and air pollution.
Improved tourists' satisfaction.

MID AND LONG TERM RESULTS

Reduced need for parking spaces.
Reduced environmental and noise pollution.

MAIN STEPS OF IMPLEMENTATION

The first step is sectoral strategic planning, to gain a clear understanding of context features on the demand and supply sides, assessing where flows would be coming from, where they would be aimed, what sort of information and infrastructure they may require to opt for walking in their experience of the urban environment and local attractions.

Planning and promoting walking routes should find its natural setting in more overarching local mobility and transport policies, addressing walking as one of the modes to be supported and valorised.

The subsequent steps are detailed design, defining among others measures, deadlines, costs, resources, performance indicators and allocating responsibilities, followed by implementation.

The plan may be financed partly or totally with own resources by local institutions (regional/county authority, city council, port authority, etc.) or through calls for funding under national or European programmes, designed to promote climate change mitigation, economy decarbonisation or e-mobility integration in urban environments. Public-private partnerships may also be a solution to develop the plan.

INVESTMENT €€€

According to the type of intervention the investment ranges from medium to high.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Improving accessibility to points of interest close to the cruise terminal

This measure envisages the creation of a cycling and pedestrian network connecting the cruise terminal with natural points of interests that have been identified together with local stakeholders. This action is essential to give cruise passengers an alternative mode of moving near the terminal. Furthermore this measure increases the number of possible excursions

available for cruise passengers that can appreciate some parts of Ravenna that they now hardly visit.



Defining new cycling/walking route between port and city centre

Zadar City Council, together with the county authority and responsible national authority are developing in cooperation an innovative measure to set up a new cycling and walking route using an existing railway corridor which is no longer in use. This can be additionally connected to an existing walking route along the shore, leading from the city centre to *Punta Bajlo*. This measure provides cruise passengers and all other city users with an attractive solution for reaching the city centre and connect adjacent settlements like *Zaton*.

Durrës



Improving the mobility pathway of the cruise passengers from the cruise and ferry terminal to the city.

Horizontal and vertical signals will be established that will extend from the terminal to the city. The horizontal signals will include path lines of different colours that will guide the cruise tourists to the different “Exit Gates” of the Ports and different areas of the city. Ideally the lines will continue in the city and link all the tourist attractions and information points.

Durrës



Establishing tourist info points along the tourist paths in the city and port areas.

The measure foresees the implementation of five information points for cruise-passengers (the first being at the port main entrance, the second at the railway station and the others in specific points of tourist interest in the city). These can be created and run by a private operator and/or by a public agency with an agreement with the city council. The tourist information points will consider that cruise passengers have a definite time window (on average 4-6 hours stay) to visit the city, and develop a suitable tourist path for cruise passenger’s needs.

OTHER RESOURCES/EXAMPLES/REFERENCES

-  CIVITAS Insight 01 – Safer road infrastructure for cyclist and pedestrians
-  CIVITAS Insight 08 - The high potential of walking
-  Planning City Tourism Development: Principles And Issues
-  Case of Barcelona (Spain)
-  Case of St. Olav Ways (Norway)

11. IMPROVING CYCLING ROUTE OFFERS FOR CRUISE PASSENGERS



DESCRIPTION OF THE SOLUTION

Cruise passengers must be induced to explore the city by preferring clean and alternative transportation modes. Independent and active exploration of cruise destinations should be supported and appropriately endorsed by city councils and port authorities. In such a perspective, the necessary infrastructure and facilities are to be put in place to promote cycling among cruise passengers. Where a developed cycling network is already in place or it is going through a planning phase, action should be focused on the improvement of already existing lanes as well as on the construction of new cycle paths that might benefit cruise tourism. Well-planned and maintained infrastructure is a prerequisite to bring cycling closer to cruise passengers attract tourist cyclists. Otherwise, where there is a lack of cycling infrastructure, then planning it for cruise tourism (and tourism in general) should be taken into consideration.

Either way, the cycle path rather than just connecting the terminal to the city and to its cycling network (where available), must ensure that main touristic attractions can be comfortably and safely reached by cruise passengers on two wheels. An important feature to consider is to couple appropriate cycling infrastructure with bicycle rental services and with an appropriate signage

system supporting cruise passengers wayfinding needs. Also attention must be paid to itinerary directions, they must be simple and intuitive (see below the example of the Pesaro bike network “*Bicipolitana*” in the Resource section).

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Increased share of cruise passengers using bicycle as transport mode.
 Reduced number of cruise passengers using non-sustainable transport options.
 Reduced greenhouse gasses emission and air pollution.

MID AND LONG TERM RESULTS

Improved tourists’ satisfaction.
 Reduced need for parking spaces.
 Reduced environmental and noise pollution.

MAIN STEPS OF IMPLEMENTATION

City infrastructure like the cycling network is the responsibility of the city council but coordination with touristic operators and cultural attraction associations is important in the definition of the routes.

The first step is to map the existing network. The location of the cruise terminal and of the points of interest (i.e. touristic areas) are then identified. Combining these two layers of information one can identify where intervention is required. Afterwards priorities should be defined (where to intervene first) and then progress to implementation.

INVESTMENT €€€

According to the type of intervention the investment ranges from medium to high.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Lisboa



Improving the cycling network, considering developing paths that are favourable to tourism

The city council of Lisbon is currently pursuing a strategy of expanding the cycling network of Lisbon 90 km to 200 km, till 2021. The present measure aims at creating or improving cycling infrastructure with the cruise passengers (and tourists in general) in mind. The process should start by analyzing the current infrastructure and what is envisaged for the future. Crossing this information with the location of the cruise terminal and of the main attractions visited by the cruise tourists it is possible to identify gaps and aspects to improve. Signs with information regarding direction of touristic areas and attractions, distance and time to get there and touristic routes to be followed will be made available at the cycle paths or through mobile apps. A bike sharing services will be coordinate with this measure and made available close to the terminal.

Increasing bike trips towards city center

Ravenna



In Ravenna a safe and complete bike path connecting the cruise terminal to the city center bike network will be created. Even though the SUMP of Ravenna already includes a similar solution, the LCTP has identified an alternative cycle route more suitable for touristic purpose where private investments can be found in the medium-term period. This action could be associated with a bike bus service to allow cruise passengers to return to the terminal by bus. The creation of this bike path is fundamental to allow cruise passengers to cycle not only near the terminal but also towards the city center of Ravenna.



Improving accessibility to points of interest close to the cruise terminal

This measure envisages the creation of a cycling and pedestrian network connecting the cruise terminal with natural points of interests that have been identified together with local stakeholders. This action is essential to give cruise passengers an alternative mode of moving near the terminal. Furthermore this measure increases the number of possible excursions available for cruise passengers, that can appreciate some parts of Ravenna that they now hardly visit.



Enhancing port to city cycling connection

In Malaga the existing bicycle infrastructure (lanes & parking) will be complemented with safe connections to the port terminals and tourist areas. The existing plans to extend the offer of public lines in the city should be revised to ensure safe conditions that support the promotion of cycling among cruise passengers avoiding conflicts with residents. The port and its terminals should be included within the city plans to facilitate the access of visitors to public bike sharing stations, rental shops and attractions located within a range of 5 km. The bike line network should be complemented with bicycle parking options near touristic attractions, as well as reorganized in case it is needed. This measure will probably require a revision of the current mobility plan and the collection of stakeholder's perspectives to justify modifications. Allocation of public funds is also necessary, and it may compete with other more needed bike connections. However, this must be considered as a measure affecting the city in general, and not only the cruise tourism, given that the port is a major attractor and generator of travels. An appropriate implementation will positively affect the congestion problematics around the port, while benefiting cruise passengers with safe cycling routes to reach touristic areas beyond the saturated historical center.



Defining new cycling/walking route between port and city centre

Zadar City Council, together with the county authority and responsible national authority are developing in cooperation an innovative measure to set up a new cycling and walking route using an existing railway corridor which is no longer in use. This can be additionally connected to an existing walking route along the shore, leading from the city centre to *Punta Bajlo*. This measure provides cruise passengers and all other city users with an attractive solution for reaching the city centre and connect adjacent settlements like *Zaton*.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✎ CIVITAS mobility solutions- Walking and cycling enhancements/services
- ✎ CIVITAS Policy Note: Smart choices for cities. Cycling the city
- ✎ CIVITAS Policy Advice Note 03 – Cycle-friendly cities – How cities can stimulate the use of bicycles
- ✎ CIVITAS Insight 01 – Safer road infrastructure for cyclist and pedestrians
- ✎ BICY project, Central Europe Programme: How to develop cycling tourism?
- ✎ BICY project, Central Europe Programme: Best-Practices in Cycling
- ✎ Case of Pesaro (Italy)

12. LOW EMISSION ZONES AND CONGESTION CHARGE SCHEMES



DESCRIPTION OF THE SOLUTION

Traffic and its immediate repercussions – polluting emissions and congestion – are increasingly becoming a problem for many medium-sized cities. Trying to solve these issues for local authorities is a challenge, especially - as concerns port cities - when the peaks caused by cruise ship tourism are added to the usual loads of people and freight.

Among the available tools to solve some of these problems are traffic-control schemes, typically implemented by delimiting areas of the city and controlling traffic through appropriate access points for the recognition of authorized vehicles.

LOW EMISSION ZONES

Road transport is one of the main causes of pollution in cities. Because this poses a real danger for city users' health, many countries around the world, including the EU, have set minimum standards for air quality.

Low emission zones (LEZs) are often the most effective measure cities can take to reduce air pollution, particularly emissions of particulate matter and nitrogen dioxide. The LEZ scheme creates areas, within the city perimeter, in which the traffic of vehicles with high emissions is controlled: usually this principle applies directly, by denying these vehicles access to the involved areas. LEZ could be established both in touristic attractions and cruise terminal areas to induce bus

operators, taxi etc. transferring cruise passengers from the terminal to the attractions or airport to use low emission vehicles.

CONGESTION CHARGE SCHEMES

Each road has a capacity limit, usually expressed in terms of vehicles per hour or day. Congestion occurs when the number of circulating vehicles exceeds the road’s potential capacity, usually at specific points in the road network and at specific times.

Congestion charge schemes are meant to mitigate congestion in cities, reducing the volume of traffic in certain roads or in specific city areas, persuading drivers to find more sustainable travel alternatives, as public transport and cycling. Most congestion charging policies are zone-based, meaning that drivers of motorized vehicles pay a fee for using a road or entering a specific city area, at times where there is low road capacity. Tariffs may vary according to the scheme type and time of the day, with higher charges during peak times on working days.

The monitoring of access regulations is a fundamental component for the success of both schemes. A further possibility is to reason by categories, which will concern the type of transport of people/freights and the ownership of public/private transport, with the possibility to prevent access to a specific class, permanently or at time slots. With this set of actions, each local authority is able to manage its urban center and the cruise terminal area over time, keeping pace with market changes and new environmental directives.

Therefore congestion charges in the touristic area and in accessing the cruise terminal could become a tool to manage the flow of busses and private cars. For example in a home port a congestion charge scheme could prevent passengers embarking and disembarking from using their private cars and choose public transport means to reach the terminal.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced traffic volumes in city centers
 Reduced environmental and noise pollution
 Improved transport safety
 Reduced number of private cars in urban areas of cruise destinations both coming from outside and owned by residents.

MID AND LONG TERM RESULTS

Increased road capacity for bicycles or public transport
 Increased use of public transport as well as of more sustainable modes of transportation
 Increased attractiveness of zones where the schemes are implemented

MAIN STEPS OF IMPLEMENTATION

As for all transport systems, the municipality is the initiator, while the concrete measures can be implemented by private operators (mobility agencies, ICT companies, utilities) upon agreement with the city council.

- Policy development, feasibility study, technical/functional/legal design as well as communication of the policy to gain public acceptance;

- Elaboration of the plan, which, among others, includes a detailed analysis of the targeted area, identification of the main routes and key destinations as well as potential traffic issues;
- Implementation of the system, along with its manufacturing, installation and maintenance;
- Increasing controlled traffic systems and monitoring regulations
- Operation and adjustment, including daily operations, system maintenance, ongoing evaluation (of benefits on traffic, pollution, road safety and costs) and required adjustments

INVESTMENT€€€

According to the type of scheme applied the investment ranges from medium to high.

In the case of Low Emission Zone the investment can be low for the public administration but it is high for the private sectors. In this case public incentives could be envisaged but this will raise the level of public investment.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS



Restricting access of touristic coaches in the city centre

Tourist coaches coming to Ravenna will have to park in specific parking areas identified as multimodal hubs and pay an access ticket. Since cruise passengers have a short time period to visit the city centre, cruise passengers' coaches will continue to park near the station in a preferential position. Moreover, they will be excluded from the payment of the ticket. This action is envisaged in the SUMP and it will have a direct impact on cruise passengers' mobility.



Introducing a low emission zone

A Low-Emission Zone will be established in *Porto Corsini* (the area close to the cruise terminal) through the implementation of gradual actions to limit the circulation of the most polluting heavy vehicles, including buses used for the transfer of cruise passengers, which will have to comply with increasingly more stringent environmental requirements. By 2020, pursuant to the provisions of the Emilia Romagna Region, which provides for the replacement of all EURO 2 buses dedicated to local public transport, cruise passengers will be transported aboard EURO 3 category vehicles, or higher. Approximately every 4 years, in line with SUMP scenarios, the minimum emission category for access to *Porto Corsini* will be updated in order to contribute to the reduction of polluting emissions deriving from the transfer of cruise passengers. In the medium and long term, after the construction of a LNG storage facility at *Porto Corsini*, it is expected that a part of the vehicle fleet of buses dedicated to cruise ship transport will be powered by LNG and/or electricity.

OTHER RESOURCES/EXAMPLES/REFERENCES

 [CIVITAS Insight 06 - Access regulations to facilitate cleaner and better transport](#)

- 🔗 CIVITAS Policy Advice Note 04 – Integration of parking and access management
- 🔗 Case of Valletta (Malta)
- 🔗 Case of London (United Kingdom)
- 🔗 Case of Stockholm (Sweden)
- 🔗 Case of Milan (Italy)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Asian Development Bank (2015), *Introduction to Congestion Charging: A Guide for Practitioners in Developing Cities*, available at <https://www.adb.org/sites/default/files/publication/159940/introduction-congestion-charging.pdf>

13. IMPROVING PARKING MANAGEMENT



DESCRIPTION OF THE SOLUTION

Cruise destinations are strongly affected by congestion phenomena caused by tourist busses and shuttles, carrying cruise passengers to main city tourist attractions or to daily excursions in the city surroundings. Regarding traffic flows generated by tourist busses in the city it is worth highlighting that usually busses take passengers the closest possible to attractions due to the limited time they have to visit the city and usually they normally take a long time to drop-off all the people.

A parking strategy for touristic buses is necessary to balance their negative impact on local traffic flows and air quality, able to ensure that dedicated parking spaces for the touristic buses are created further away from the attractions where congestions is typically critical. In such a perspective, two types of parking spaces should be created: short and prolonged stay. The short-stay parking space should be implemented close to touristic attractions and have a high rotation and limited parking time, aimed at merely picking-up and dropping-off cruise passengers. On the contrary, prolonged-stay parking spaces have the objective of supporting the short-stay ones by providing a space for busses to park after dropping off tourists and wait for their pick-up. The prolonged-stay parking spaces should serve bigger areas than the short-stay ones and be placed in locations with no traffic congestion issues. The amount of parking spots necessary for each touristic area must rely on previous studies of the maximum capacity the respective area can accommodate in terms of number of tourists.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced congestion in critical areas
Reduced greenhouse gasses emission and air pollution

MID AND LONG TERM RESULTS

Improved quality of life in cities in terms of pollution and noise reduction.

MAIN STEPS OF IMPLEMENTATION

City council has the responsibility over regulation of touristic transports parking.

The city council must first study where to create the short-stay and prolonged stay parking spaces as well as the capacity to be offered. Touristic buses operator should be involved in this process to make sure their needs are met without compromising city's traffic flow and quality of life. Once implemented the oversight by municipal policy is important to assure that regulation is followed.

INVESTMENT €€

Investment depends on the locations chosen for the parking spaces and the degree of needed intervention. If little intervention is needed investment will usually be low, otherwise it can be quite considerable.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Lisboa



Regulating parking of touristic transports

A system of short-stay parking spots only for drop off and pick-up passengers associated with a prolonged-stay parking area will be established. The short-stay parking areas will be close enough to attractions so that passengers with low mobility can reach them easily. The time allowed for it should be enough for the operations to conclude smoothly and for rotation to be promoted (e.g. 5 minutes). After dropping off passengers, busses will park at the prolonged-stay areas which should serve strategic touristic areas and several short-stay parking spots, and afterwards return to pick-up passengers at the end of their visit. The time allowed to remain in these areas should be adjusted to their capacity and to the number of short-stay spots they serve (e.g. up to 2 hours).

OTHER RESOURCES/EXAMPLES/REFERENCES

-  [CIVITAS mobility solution: Improving parking management](#)
-  [CIVITAS mobility solution: Developing a parking strategy](#)
-  [CIVITAS Policy Advice Note 04 – Integration of parking and access management](#)

14. ICT SOLUTIONS AND WAYFINDING SYSTEMS FOR CRUISE PASSENGERS



DESCRIPTION OF THE SOLUTION

Specific mobility alternatives and tools are to be devoted to cruise passengers that prefer the option of do-it-yourself visiting and sightseeing to organized shore excursions, getting away from the crowd and searching something not offered by traditional tourist paths.

In such a perspective ICT solutions might be adopted in destinations to guide people through a physical, often unfamiliar, environment and enhance their understanding and experience of the surrounding space. They are an invitation for cruise passengers to explore a city on foot, responding to the basic navigation, identification and information needs. Along with this, ICT solutions might represent an opportunity for cruise passengers, providing them with real-time information on how tourist and cultural attractions can be reached, favouring and promoting sustainable transportation modes and efficient public transport services.

On the one side, ICT solutions such as Intelligent transportation systems (ITS) may support cruise passengers in gaining information about traffic conditions and transport service operations, helping them to make the best-informed choices and enabling a safer, more coordinated, and 'smarter' use of available transport networks.

On the other one, wayfinding systems provide pedestrians with maps, directions, and universal symbols to help guide them to their destinations.

By making information more accessible and easy to grasp, they reduce possible confusion, contributing to improve and enrich pedestrians' experiences of the city. From an implementation perspective, attention is to be paid to where the information is displayed and not just to how it is presented. Information can be appropriately and successfully distributed either through localized on-street installations (e.g. interactive screens, kiosks, totems, and panels) and/or through digital channels (e.g. mobile applications). The systems may support navigation for pedestrians as well as for cyclists and people in wheelchairs (in this case it is recommended that instructions are proof read by disabled people associations). The pedestrian environment is to be made fit for purpose, convenient, convivial, connected, comfortable, and secure, therefore it might be useful to complement increased walking with reduced traffic speeds.

EXPECTED RESULTS

SHORT AND MID TERM RESULTS

Reduced number of private cars in urban areas of cruise destinations both coming from outside and owned by residents.
Reduced environmental and noise pollution.
Increased possibility for cruise passengers, tourists and residents to walk

MID AND LONG TERM RESULTS

Reduced congestion on public transport
Reduces congestion on road system
Safer neighbourhoods
Changed habits and behaviour in the local population's traffic

MAIN STEPS OF IMPLEMENTATION

The initiator of this measure needs to be a city/municipality, while the concrete measures can be implemented by private operators (mobility agencies, ICT companies, utilities) upon agreement with the city council. In the case of intelligent transportation systems the public transport utility is to be directly involved in its creation.

INVESTMENT €

The investment level can be from low to medium, depending on the extent of the development of traffic solutions and the number of platforms on which the application will be available.

REFERENCES TAKEN FROM LOCATIONS LOW CARBON TRANSPORT PLANS

Rijeka



Installing the informative panel board at the port passenger terminal

This measure involves installing the informative panel board at the Port Passenger Terminal near the cruise berth at the breakwater. The panel should include information about tourist attractions in the city and how to reach them. The panel will promote the alternative means of transport like electric scooters, traditional shuttle boat, walking, etc. The panel can be interactive, with fixed or changeable information. Given the amount of

information, it is proposed to install an interactive panel, i.e. a touchscreen display, so that the passenger can choose which information see and explore in more detail. The interactive panel provides the largest amount of information in a very short time and provides passengers everything they need to get to know the city by themselves.

Durrës



Developing an application for cruise tourists including all attraction points and activities

In Durrës an application for cruise tourists will be developed in collaboration with local tourist authorities and private operators, promoting a variety of “touristic thematic paths” in the city, based on different criteria (e.g. “traditional cuisine” etc.). The app for the information of cruise passengers is a more accessible and always in hand tool compared to other methods of information. Also, the tool will display different paths according to the criteria entered by cruise passengers, making the measure unique for the local area.

Trieste



Developing an app for way finding in the city

In Trieste a way finding application will be developed to provide cruise passengers and tourists with more detailed information about the main cultural and historical sites as well as to promote the use of low carbon transport solutions. The app is a useful tool to guide tourists, providing very easy but complete and up-to-date information about how to move in the city, included information on the cultural heritage of the city and on itineraries around historical sites. The App will be freely downloadable from tourist promotion websites and therefore facilitate tourists in their movements within the city, mainly for those who spend short time in the city and need quick information to walk.

Málaga



Promoting alternative touristic interesting points

At cruise arrival, distribution of specific tourist maps for cruise passengers, possibly adapted from existing ones, will be granted to highlight tailored alternatives point of interests in the city (such as artistic event or thematic buildings), to be reachable from the port according to the cruise tourist walking track preferences from cruise tourists’ groups or individuals. The routes are various and conceived from the tourists’ choices which help avoiding the pedestrian overlapping and congestion in the historical centre main streets. This is done by two means. First, from the port to the top attractions, routes make use of secondary streets that are equally equipped but do not receive tourist traffic as the main ones. Second, from the port to alternative attractions, detailed circular routes adjusted to the available time with different start points from the others. The numerous shuttle bus stops might be used to distribute passengers’ groups depending on the preselected itineraries. With this measure, cruise passengers may visit the city through tailored circular routes, while controlling the required time and effort, given that walking times (in minutes) and distances (in meters) are included in an intuitive way. On-street signals will back up the information inside maps to facilitate passengers’ mobility.

Financial requirements might be solved through the selling of advertisement to local businesses, specifically shopping and eating options for each itinerary that will enhance the passengers' experience. In addition, the map design should exploit the existing "Málaga en 8 horas" map to reduce implementation and costs restraints.



Providing walking time & distance information

In Malaga a urban network of integrated signals around the port and touristic areas will be set up to indicate in an easy and multilingual way, the distance (in meters) and walking time (in minutes) to reach nearby attractions. The signal network corresponds to the information and recommendations given to cruise passengers, and tourist in general, through institutional means (maps, web, apps, etc.), so on-street passengers might find an intuitive and clear way to move around, while controlling the restricted time they have available. For this reason, the design of walking itineraries described in the previous measure is required prior the installation of signals, as the featuring information should help to the distribution of cruise passenger to alternative attractions and through alternative streets. Thus, routes, times, distances, destinations and even colors should be the same in both the city signals and the available tools for visitors.

OTHER RESOURCES/EXAMPLES/REFERENCES

- ✂ CIVITAS Insight 14 - Real-time information for public transport
- ✂ CIVITAS Insight 08 - The high potential of walking
- ✂ CIVITAS Policy Advice Note 10 – Innovative information systems for public transport
- ✂ SIMPLA project (Horizon 2020): Turn-key package 4.5 - ICT applications for efficient and integrated transport solutions
- ✂ SOLUTIONS project: - Handout - Cluster 1: Public Transport
- ✂ Sign Research Fundation: Urban Wayfinding Planning and Implementation Manual
- ✂ Case of Pontevedra: "Metrominuto" (Spain)
- ✂ Case of Emilia Romagna Region: "MyCicero" (Italy)

LOCATIONS

PROMOTING GREEN MOBILITY IN CRUISE DESTINATIONS



PROJECT PARTNERS

Area Science Park – Lead Partner
Albanian Institute of Transport
Research Centre for Energy
Resources and Consumption
City of Zadar

Durres Port Authority
Lisbon City Council
LISBOA E-NOVA
MálagaPort

Municipality of Ravenna
Port of Rijeka Authority
Port System Authority of the
Adriatic Sea
Regional Energy Agency Kvarner



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