



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.

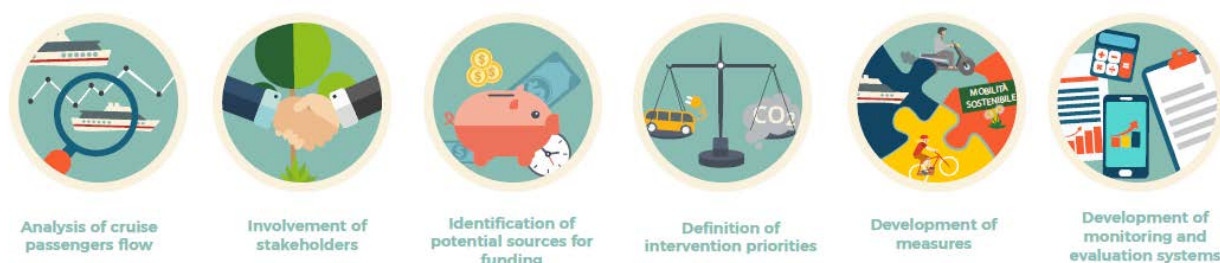


Figure 1 LOCATIONS operational methodology

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 SUMPs, 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



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

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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

SHORT AND MID TERM RESULTS

Reduced shuttle services boarding times (from the terminal to the bus).
Reduced shuttle services' time losses due to congestion.
Reduced environmental and noise pollution.

MID AND LONG TERM RESULTS

Increased number of cruise passengers visiting distant attractions.
Reduced congestion in critical areas.

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

Coccossis, 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

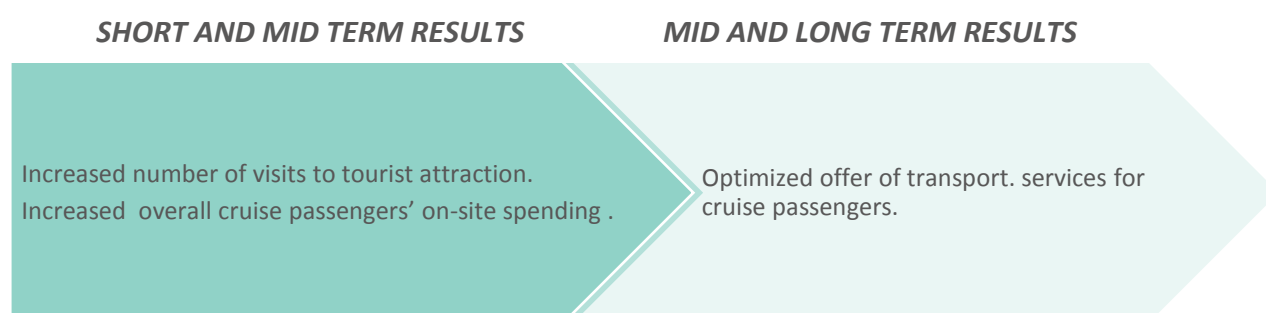
This solution aims at facilitating cruise passengers' access to public transportation, bike-sharing systems and/or electric vehicle rental from the port to city attractions, and *vice versa*, with the use of a tourist smart card adapted to the requirements of cruise tourism. Widely implemented in cities 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



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 develop 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

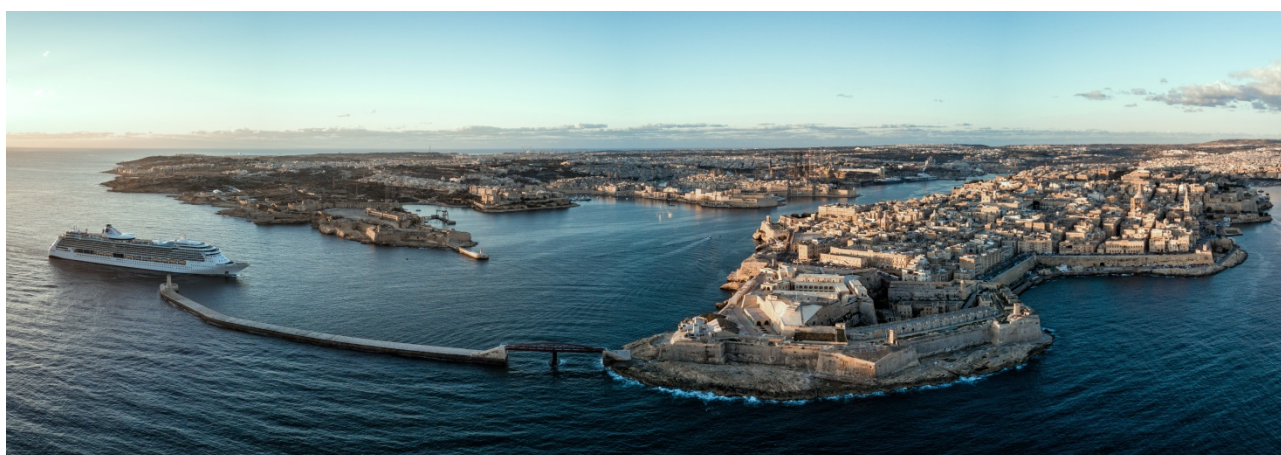
In Malaga a urban network of integrated signals around the port and touristic areas will be set up to indicate in an easy and multilingual way, the distance (in meters) and walking time (in minutes) to reach nearby attractions. The signal network corresponds to the information and recommendations given 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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