

#DynaMob 2.0 Copertino-Campobasso-Tirana- Budva

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1 Introduction

The Integrated Action Plan for Bike transport is developed under the Dynamob2.0 "#DynamicMOBILITization 2.0" project, funded by the Interreg Italy - Albania - Montenegro program. The project promotes the use of environmentally sustainable means of transport focusing on a combination of sharing-schemes and electric mobility to offer citizens smarter and more efficient mobility solutions.

The Dynamob2.0 project includes five other partners: the Municipality of Copertino (Lecce) as lead partner, the Ulisse Training Agency (Italy), the Chamber of Commerce and Industry of Tirana (Albania), as well as the Municipalities of Skrapar (Albania) and Budva (Montenegro). The project started in April 2018 and will end in 2020. The presence of economic and training actors, in addition to the local institutions, assures the useful competences and skills needed to improve the effectiveness of the proposed actions.

The Project includes four Working Packages (WP), each including one or more deliverables. **WP 1** designs and develops an App to promote tourism services and the offer of sustainable mobility in the local territories. **WP 2** focuses on analyzing the local background conditions that represent the frame of the Dynamob2.0 roads. **WP 3** focuses on the definition of the Dynamob2.0 roads through a participatory approach, managed by the local authorities, which involves both citizens and stakeholders. **WP 4** includes the operational phase of the investment and activation of the services provided for the Local Action Plan.

This Report includes the results of WP3, as it gathers the local Action Plan efforts of the cities involved in the Project in one final document, that is the actual Integrated Action Plan. The Action Plan is a summary of the local plans not in arithmetic terms but a summary of efforts that each city should take to provide future sustainable transportation forms. This Plan includes the most relevant information of each local plan providing the necessary information for future steps.

As overall consideration, the small-scale size of the intervention denotes the experimental nature of this project which focuses on the identification and testing of good intervention practices on sustainable mobility that can be replicated by the local authorities in future policy choices. The usefulness of this project assumes greater clarity if contextualized in the wider range of policies and interventions for sustainable mobility that the Municipalities involved are developing.

The Dynamob2.0 project therefore acts as a lab to give an opportunity for institutional policy learning also in respect to participatory approach to be further developed during the development of the cities' Sustainable Urban Mobility Plans (SUMP) and Cycling Plans.

A cycling plan will define the objectives, strategies and actions to promote and intensify the use of the bicycle as a means of transport for both daily needs and for tourist and recreational activities and to improve the safety of cyclists and pedestrians. Therefore, the interventions presented in this action plan will be more effectively developed once coordinated and further developed with the other actions envisaged in the future SUMP and Cycling Plan.

Bicycling is an affordable mode of transportation that provides physical activity, produces no pollution, and supports social interaction.

As a vehicle, the bicycle is very efficient in its use of public space. Bicycling supports healthy lifestyles. Although Tirana has made great progress by building a trail network that is a model for cities throughout the world, Tirana lacks a connected system of bicycle facilities. Bicyclists face barriers, such as freeways, roadway crossings, and topography in many parts of the city. Many people would choose to bicycle if they had a

connected network of comfortable, safe bicycle facilities throughout the city. Unsafe behaviors from both motorists and bicyclists increase the chances of injuries on roadways. Existing and emerging policies support improving and connecting bicycle facilities. There is a growing amount of public support for more bicycling and better bicycle facilities, as reflected by support for the city's Complete Streets Policy and voters supporting "Bridging the Gap."

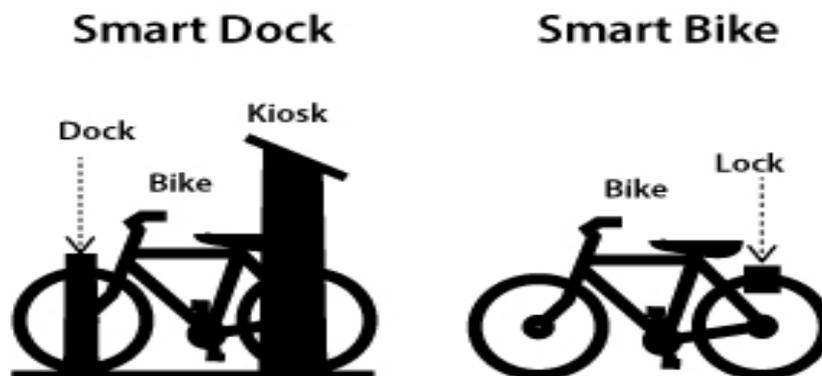
2 What is Bike share?

Bike share is an innovative transportation service, whereby system subscribers have access to public bicycles spread around the community. The system is accessed through low-cost subscriptions ranging from a few Euro or Albanian Lek for one day to longer time memberships and discounts.

Some of the characteristics of bike share include:

- It is oriented to short-term, point-to-point use: most trips are between 15 to 20 minutes and one to three km long
- The bicycle can be returned to any station, including the original check-out station.
- Generally, the bicycles are one style, sturdy, and easy to operate with custom components and adjustable seats.
- The rental transaction is fully automated and there is no need for on-site staff.
- There are a number of bike share technologies available – the two most popular are the “smart dock” and “smart bike” systems shown on Figure below.

Figure 2-1: Smart Dock and Smart bike



2.1 Smart Dock Systems

Smart dock technology is developed around a computerized terminal where transactions and information are processed to release and lock the bikes from their docks. The components of station-based bike share systems are shown on Figure below and include:

- Station: the collective grouping of the elements below.
- Kiosk: the electronic terminal where all credit card transactions occur.
- Informational panel: can be used to display maps, system information, or provide space for advertising.
- Dock: the mechanism that holds the bikes. Each dock has a mechanized locking system that locks and releases the bikes.

- Platform: the structure that holds the kiosk, information panel, and docks. Most systems utilize wireless technology and solar power so intrusion into the surface is not necessary and are modular, allowing various sizes and arrangements.
- Bicycle: is specifically designed for short trips and constructed of customized components to limit their appeal to theft and vandalism.
- Key: Radio Frequency Identification (RFID) cards or fobs allows users to check out a bike directly from the dock and speed up transactions. This also provides security and accountability to each transaction

Figure 3-2 : Smart Dock System



The bike-sharing service is based on bike-sharing stations where the user can start and end the rental. The stations can be configured as real access infrastructures to a series of value-added services, both related to bike-sharing and referable to other services.

The Dynamob2.0 project involves the installation of an information totem that can provide tourist information on the territory and on the relevant public services for tourists and visitors. In addition, dialogue with stakeholders highlighted the following additional services capable of generating further added value and thus increasing the usefulness of the system.

A first service is the possibility of having at the bike-sharing stations a small elementary maintenance point (e.g. wheel inflation pump, some tools) available to all citizens for correct basic maintenance of their bikes. This service is aimed not so much at users of the bike-sharing service, who in any case expect bicycles maintained and ready for use, as at all those who use their bicycle for daily commute.

A second service is the possibility of using the charging stations of the bike-sharing stations to recharge one's electric bikes.. This additional service, like the previous one, is not aimed at users of the bike-sharing service, but at all those who use their own pedal-assisted bicycles to move.

A third suggested service is the possibility to book a maintenance service for your bicycle by professional technicians which includes picking up and returning the bicycle during the day at the bike-sharing station, also based on positive experiences in other countries , as in Denmark. This service therefore allows you to leave your bicycle in maintenance during the hours when it is not used.

These first three additional services (maintenance point, own bike recharge, maintenance service) are configured as a space of useful services for all citizens, not so much for bike-sharing users. The logic of these additional services is to make the use of the bicycle more attractive for daily commuting, by promoting, overall, the cycle mobility of the area in addition to the bike-sharing service. Bike-sharing stations therefore become tools for promoting cycle mobility beyond being the points of access to the bike-sharing service.

A fourth service, suggested to intercept tourists' needs, is the provision of a luggage storage near the bike-sharing station. Those who arrive in the city, tourists or hikers, can therefore leave their luggage safe and use the bike-sharing system for daily excursions. The most appreciated solution is to have luggage storage directly in the railway station, but this requires sharing the project with the manager of the railway infrastructure, who is responsible for managing the station buildings. Alternatively, luggage storage should still be activated in the immediate vicinity of the station.

2.2 Accessibility

The level of accessibility mainly depends on the process of registration and reservation of a bike, and the physical accessibility to the bike itself at the sharing station (dockless sharing system is not implemented in this proposal).

The ease of access to the bike-sharing system therefore depends on the degree of immediacy and intuitiveness guaranteed by the user interface and by the station itself. These are critical issues especially for occasional users – such as tourists - who are not aware of the system in advance. To guarantee accessibility, the following guidelines have been adopted: 1. Clear instructions on how to pick up the bicycle and how and where to return it; 2. Information on prices and other economic conditions; 3. Instructions on how to deal with accidents or damaged bicycles or station elements that are not working; 4. Offer of a map or other information services on the territory (offered by the Dynamob2.0 App in this project); 5. Robust but easily accessible security mechanisms (such as padlocks); 5. Quick access in order to minimize waiting times and the possible risk of not having a vehicle available. Remember that all instructions and interfaces must have at least two Italian / English languages.

A critical aspect potentially impacting on the accessibility to the system concerns the prior registration to obtain personal credentials. Using a personal credit card is one of the most popular tools to carry out, with a single pass, the process of registering, paying and acquiring a security deposit for any loss or damage to the vehicle with fault or willful misconduct of the user. The use of a dedicated smart card is an alternative strategy which might be useful only if connected to other mobility or cultural or touristic services.

Some bike-sharing systems allow the booking of the bike prior to the use through automated telephone procedures or through an operator: normally in these cases a personal code of limited time validity is communicated to be used to unlock the bicycle. The main advantage of a booking system is that the users know and seize the availability of the bike. The disadvantage is that operating costs increase, because of additional management procedures. In addition, a booked bike might not be used by other users even when still available at the dock.

The choice of access channel (s) depends on different aspects whose actual importance is also related to the expected typology of users. Occasional ones normally prefer universal access systems (e.g. by credit card recognized on international circuits) rather than registration mechanisms that require the physical withdrawal of a card (e.g. smart card) at a specific location. The procedures for registering and withdrawing

a physical card can be facilitated, even by occasional users, by referring to physical places of reference for these occasional users. For example, tourists might obtain the card at railway and bus stations, or accommodation facilities. In these cases, especially where staff is trained, the card might provide an additional value to the tourist experience, because the staff can be a means to promote the service and provide more accurate information and support, linking the biking-share to the value of the travel or hospitality experience.

The use of the credit card issued by the main international circuits is considered the easiest and most immediate way to give access to the system by occasional visitors and tourists. It is also confirmed that the credit card is also the easiest way to guarantee a security deposit at the time of rental.

The use of a dedicated smart card will be evaluated in the future only if the card will allow the access to other mobility services.

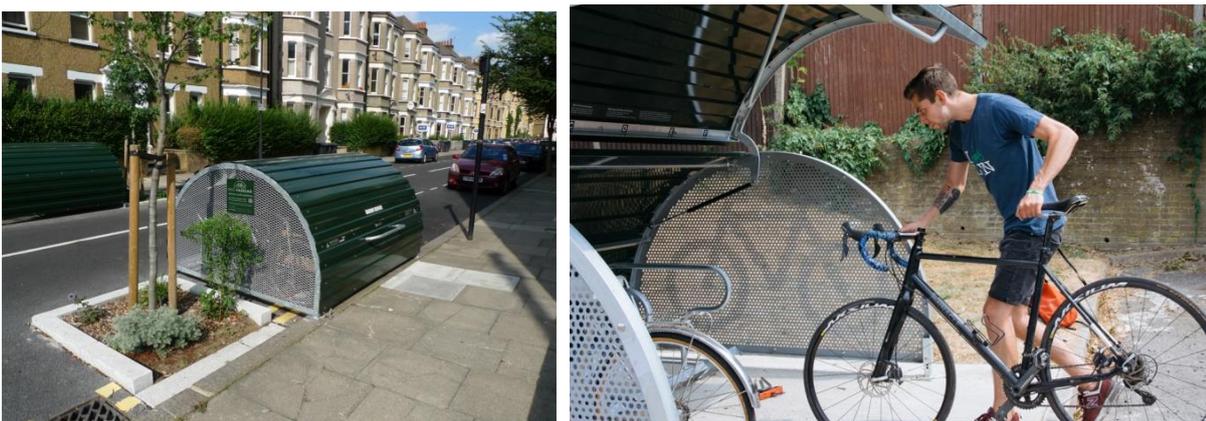
2.3 Bike sharing system types, facilities and size of the service

As indicated above, bike sharing stations might be both indoor/secured (i.e. available in a dedicated shop or building) or be conceived as on-street facilities.

Indoor stations (dock) can be arranged in a place where operations (booking, pick-up, return, charge) might be staffed (i.e. users need to interact with the station manager/operators usually at certain working times) or automatic (operations are made through passwords or apps that open the door and unlock the bike).

For **on-street facilities (dockless)**, due to the high value of the bikes in the prospected fleet, it's preferable to install more secured and weather-protected docking and charging stations making use of covered shelters or bike-hangars (as opposite to tailor made bike sharing stations). Both in the case of purchase of available products on the market or self-production through a local urban furniture manufacturer, a cost of at least € 3.000/3.500 including VAT can be estimated.

Figure 2-1: Suggested on-street facilities for the #Dynamob 2.0 bike sharing system





Source: products of <http://cycle-works.com>, <https://www.cyclehoop.com>, <https://fietshanqar.nl>, <https://www.euroform-w.com>

Dockless systems may utilize virtual parking zones but in general bikes can be found almost everywhere depending on the number of bikes in active circulation. Both systems needs the bikes to be continuously relocated (at stations or at certain points) in order to balance and distribute the presence of the fleet on the whole operational area. The relocation is made by using a van or, in smaller scale systems, also a bike or cargo bike with a trailer, a solution currently implemented by the fleet manager CPK in the city of Lecce.

Figure 2-2: Station-based bike sharing LEBIKE and CPK relocation system in Lecce¹

¹ Photo credits: Cosimo Chiffi



It has to be underlined that the design of a bike sharing systems might differ a lot depending on the territory and main prospected usage from the public.

Large and dense bike sharing systems, both station-based and on street or dockless, are typically implemented in big metropolitan areas and other urban environments mainly for short-range and mostly commuting/utility trips (bike-to-work/school/shop) by citizens and city users. The primary objective is to complement public transport and shift private motorised trips to cycling. These systems are operated by private companies and are often linked to other sources of revenues such as public transport, advertising and the selling of big data. In both cases the fleet is made available on the streets without any shelter so that bikes should be designed and manufactured in order to be resistant to weather conditions and acts of vandalism.

In smaller towns and touristic places bike sharing systems are more similar to bike rental services where multiple safe parking, charging and check-in/check-out points are added. These systems can be more basic and have to be fitted in terms of size and technology into the local context.

2.3.1 Types of bicycles

The choice of the types and characteristics of the bicycle of a bike-sharing system is an essential element as it influences the attractiveness of the service to different types of users, potentially interested in using the system. In fact, different bicycle models meet different needs both in terms of users and the type of activity or prevalent movement to be made.

In order to facilitate the comparison among the stakeholders on the choice of which bicycle model to use in Dynamob2.0 bike-sharing projects, Table below shows the most common types of bicycles, with pedal assistance, used in bike-sharing services. In consideration of the forecast of urban travel, the bicycle models designed for sports or long-distance routes (e.g. racing bikes or mountain bikes) are not listed.

Depending on the routes chosen for the bike routes will be also chosen the type of the bike.

The characteristics of bikes will be:

	<p><u>Mountain Bike²</u> Mountain bikes have wide knobby tires which allow them to be ridden in loose dirt and over obstacles. These bikes have flat handlebars and rugged frames and components. Mountain bikes often have suspension to help any cyclist navigate rocky mountain trails. Many people ride mountain bikes on roads as well as trails. This does the bike no harm. It could be likened to one driving an SUV on the highway: the vehicle will operate fine—it is simply not the most efficient choice. While mountain-style bikes come in all price ranges, the lower end recreational versions are not suited for aggressive mountain biking but work great for trips on smooth dirt paths.</p>
	<p><u>Hybrid/Comfort Bike³</u> Hybrids and Sport Comfort Bikes share the same comfort features but are distinguished by wheel size. Traditionally, hybrids have a larger road bike sized wheel with a slightly thinner compared to the comfort bikes which yield smaller, mountain style wheels. Both bikes are loaded with comfort features and will work equally well on smooth dirt, paved trails, and family cycling trips. These bikes have a very upright position meant for comfort.</p>
	<p><u>Electric Commuter bikes⁴</u> An electric commuter bike generally has wide tires for stability and to support the added weight of the motor and battery. It has a sturdy frame and often comes with metal racks for carrying your things, but it is not so heavy that it can't maneuver in traffic</p>
	<p><u>Electric tricycle</u> Electric tricycles are bicycles designed for users who do not regularly use the bicycle and who may have little confidence in using a two-wheeled vehicle in urban traffic. They are therefore bicycles capable of bringing users who are not inclined to use this vehicle closer. The double wheel can be front or rear placed, and normally provides accommodation for a parcel rack capable of carrying even small suitcases, bags, and medium-sized backpacks.</p>

² <https://thebicyclescape.com/resources/types-of-bikes/>

³ <https://thebicyclescape.com/resources/types-of-bikes/>

⁴ www.juicedbikes.com



Electric cargo bikes

Cargo bikes are bicycles used for the transport of bulky items or packages. Their function is suitable both for urban logistics and for the transport of bulky personal effects, such as large suitcases or boarding trolleys. Some models, such as the famous Cristiana version first in the photo, are also used to carry up to two people. The cargo bikes normally need more space and greater care in terms of maintenance and cleaning as it is possible that they are subject to vandalism of small magnitude such as the use as rubbish bins of parked bicycles.

Regardless of the choice of the most suitable bicycle model for the needs of users, the circulation of these vehicles on the road must take place in compliance with the provisions of the current Traffic Code in Italy for instance, where the Article 50 regulates the so-called "pedal-assisted bicycles" in the context of the definition of *velocipede*, imposing certain limitations. Paragraph 1 provides that pedal assisted bicycles are equipped with an electric auxiliary motor having a maximum continuous rated power of 0.25 KW whose power is progressively reduced and finally interrupted when the vehicle reaches the maximum speed of 25km/h or earlier if the cyclist stops pedaling. Furthermore, paragraph 2 indicates that Velocipedes cannot exceed 1.30m in width, 3m in length and 2.20m in height.

2.4 Bike Share Benefits and Risks

Bike share is a relatively inexpensive and quick-to-implement transportation option that can deliver a variety of mobility, economic, health, environmental, and safety benefits. When combined with other modes of transportation, bike share can provide a fundamental shift in the way people move about and make decisions on transportation. For Dynamob#2 cities, bike share could be a means to:

- Expand and enhance existing and future transit services.
- Reduce dependence on automobile transportation.
- Introduce new riders to the benefits of bicycling.
- Promote the Cities to potential employers, residents, and visitors.
- Provide an economic uplift to local businesses.
- Reduce household transportation expenditure.
- Improve physical and mental health and reduce health care costs.
- Reduce greenhouse gas emissions.

2.4.1 Mobility and Transportation Benefits and Risks

Bike share is a mobility option. Bike share trips tend to be short – between one to two miles in length and about 20 minutes in duration. As a result, they provide an option for planned or spontaneous trips that are too far to walk or too short to wait for transit.

Many bike share users combine membership in a bike share program with transit, car-share, walking, and other transportation options to reduce their dependence on automobile transportation. In some places, this has resulted in a fundamental shift in trip-making and household vehicle ownership.

Bike share's ability to reduce some of the common barriers to entry, e.g., allowing new users to try bicycling without needing to own or store a bicycle, as well as the design of the bicycles and the visibility of the stations has a significant impact in attracting new riders. The addition of more bicyclists could provide the impetus for further investment in bicycling facilities and support the goals of the 2014 Bicycle Master Plan.

The following is a summarized version of the mobility and transportation benefits of bike share:

- Augments a community's existing transit system.
- Relieves already over-capacity transit services.
- Encourages active transportation by lowering barriers to entry.
- Provides the impetus for further investment in bicycling facilities.
- Connects places including university and commercial campuses.

In existing bike share programs, 20 to 40 percent of bike share trips have been known to replace single occupancy vehicle trips, although a full, holistic analysis of the impact of bike share on public transit and active transportation has not been undertaken. With this in mind, some bike share trips may detract from other public transit or active transportation trips.

2.4.2 Economic Benefits and Risks

There are a number of economic benefits that bike share may bring at the community, business, and individual level:

- At the community level, bike share is seen by many cities as part of their revitalization efforts and recognized as a means for attracting or retaining workforce talent. There are a small number of local jobs created to operate and maintain the system. Bike share also provides visitors with a unique way to experience the city and a means to attract visitors and their spending power to a city.
- For businesses and employers, the benefits include:
 - Increased economic activity - In other cities, businesses located near bike share stations have seen an economic uplift.
 - Increased bicycle sales - There is evidence that bike share can have a positive effect on bicycle retail with increased sales of private bicycles and accessories.
 - Increased marketing opportunities - Sponsorship or advertising opportunities are typically available on the stations and bikes. This can range from one large system sponsor to many smaller station-based sponsors. By providing increased marketing opportunities, businesses can help increase their visibility throughout a particular region.
- For individuals, bike share can reduce household expenditure on transportation and health care.

2.4.2.1 Economic Risks

There are some economic risks related to a bike share system:

- Most bike share systems are not economically self-sustaining, i.e., operating costs are greater than membership and usage fees. Therefore, the responsible organization (e.g., public agency, non-profit, or private company) must ensure that the requisite funding is available to support capital purchases, expansion, and ongoing operations.

- Throughout communities with existing bike share systems there have been initial doubts about the effects of bike share on local bicycle rental businesses. Several actions can be taken to reduce this risk including developing a price structure that deters long term rental of the bike share bikes and identifying bike rental and retail locations on the station maps.
- There could be some competing demand between users of the Bike Library and an automated bike share system. This is addressed in the Market Analysis section below.

2.4.3 Health Benefits and Risks

Bike share can have a positive impact on both physical and mental health. The physical health benefits of cycling are well documented and relate to helping address preventable diseases such as obesity, heart disease, and diabetes. Bike share is a mean for people to incorporate active transportation into their daily lives and lower medical and health care costs. Bicycling for 30 minutes a day, such as using bike share to go to and from work each day, can reduce the risk of heart disease by 82 percent¹² and reduce the risk of diabetes by up to 58 percent.

Bike share can also have a positive impact on mental health. Users in other cities have expressed that bike share has positively contributed to an improved outlook, increased recreation, and improved sociability.

2.4.4 Environmental Benefits and Risks

Bike share can have an impact on reducing greenhouse gas emissions by replacing trips taken previously by automobile. These impacts can be multiplied when bike share is used in combination with transit and other modes to reduce dependence on automobile use, change travel patterns, and increase environmental consciousness.

Bike share helps to increase environmental consciousness for both individuals and communities. For individuals, most bike share systems offer member logins where people can track the amount of greenhouse gas emissions avoided through their bike share trips. Employers can use these statistics to help track the organization's greenhouse gas emission reductions.

2.4.5 Safety Benefits and Risks

Safety is a significant concern to bike share partners and users. Although still relatively new, bike share has an extremely impressive safety record. To date, systems in Europe count for few crashes and the rates of injury crashes are generally lower than private bicycling.

The safety benefits of bike share include:

- “Safety in Numbers” – It is proven that the likelihood of a person walking or bicycling being struck by a motorist varies inversely with the amount of walking and bicycling.
- Increased education opportunities - More opportunities to communicate with bicyclists about road rules and safety hints through safety messaging provided on the stations, on the handlebars of the bikes, on the program website, via social media, and through press releases and articles.
- Built in safety features - Introducing bikes with built in safety features that are professionally maintained in good repair. Some of the features of bike share bikes include: Built-in safety features such as front and back lights, brakes, and reflectors.

- A heavy bike (typically 40-45 lbs) with wide handlebars that promotes slower speeds.

Many communities have had concerns about safety prior to implementation, including:

- Low number of available bicycle infrastructure for safe cycling.
- Introduction of inexperienced riders to the streets.
- Low helmet usage rate among bike share users
- Pedestrian concerns of riders breaking rules such as riding on the sidewalk or against traffic (particularly for the elderly pedestrian population).

3 Market Analysis

The intervention under this project is done differently in different Project cities. The differentiations come as result of:

- Different bike transport policies that are applied in different cities
- The stage in which bike share systems are in the cities; for instance there are cities like Tirana that already have a bike sharing system and others such as Skrapar or Copertino in which the bike sharing facilities lacks totally.
- Citizens preferences. From the interviews with citizens, especially the bike users there are drawn clear needs for the bike typologies that should be applied in the area.
- Financial restrictions. The Budget eligible for the intervention allows only a modest number of bikes to be purchased. It depends on the entities maximizing the project outcomes by selecting the best local choice of facilities and equipment.

Every analysis starts with the definition of the market which in different cities may differ. Below are given only the clues which are a base for a local market analysis.

The market analysis for the five cities starts with the identification of groups who really need to cycle. From a former study the Factors that impact bicycle travels are given as follows

Table 3-1: Factors Bicycle Travel Impacts ⁵

Age	Bicycle use increases until middle age and then decreases. Cyclists tend to have lower average age than non-cyclists.
Gender	Men tend to cycle more than women.
Education	Bicycle use increases slightly with education.
Students	Students tend to bicycle. Schools, colleges and universities are major bicycle trip generators.
Vehicles	People without a car available are more likely to cycle
Drivers' licenses	licenses People who cannot drive are more likely to cycle.
City size	A population of less than 1,000,000 appears to offer a better environment for cycling, and so may have higher rates of cycling than larger cities.
Employment status	Higher unemployment is associated with more cycling.
Professional status	Among employed people, professionals and managers appear more likely to cycle than blue collar and sales workers
Household income	Utilitarian cyclists tend to have lower average incomes compared with non-cyclists. Recreational cyclists tend to have higher than average incomes.
Trip length	Cycling is most common for short trips (<5 mile)

⁵ Factors Affecting Bicycle Travel Demand [based on Levitte 1999]

Parking fees	Commuters who must pay for parking may be more likely to bicycle
Facility conditions	Bicycle facilities (paths and lanes) and roadway conditions considered favorable for cycling tend to increase bicycle travel
Travel costs	Market trends or policies that increase vehicle travel costs may increase bicycling
Bicycle parking	Secure bicycle parking may encourage cycling
Community values	Some communities support utilitarian cycling more than others

From the table results that people of all project cities have sufficient incentives to use bicycles. All cities have a infrastructure that is being continuously improved.

It is important to understand where bike share fits into the existing transportation spectrum in all cities and in particular, to determine whether bike share will serve a different market to private bicycling. This section addresses who might use an automated bike share systems both in city and mountains.

- Some of the potential users of a potential bike share system may include:
- Commuters looking to ride the first or last mile of their trip to connect to bus services.
- Commuters, who only want to bike at the start or end of their day, and who will use another transportation mode at other times.
- Visiting friends and relatives and taking a bike to restaurants or to the breweries.
- Visitors staying at a midtown hotel riding through the town
- Business travelers travelling from their hotels close to the bike stations to a business meeting.
- Conference and meeting attendees going out for lunch or drinks.
- Employees that have parked in high demand locations and want to run errands through the day without losing their parking space.
- Local residents trying to get to events or touristic places in nature where cars can not reach
- People who would like biking in mountainous areas or who want to be physically trained

Other users of the Bikes include families and larger groups attracted by the variety of sizes and types of bicycles offered, as well as residents that temporarily don't have access to their own bicycle. Rentals tend to be multiple hours long and the most popular uses of the bicycles are the brewery tours and riding on the extensive trail network throughout cities.

3.1 Copertino

The service area for the #Dynamob2.0 (e)bike-sharing system and eco-charging points can be defined by two main elements:

- the location of the bike-sharing stations and charging points, i.e. the points where e-bikes can be picked-up and returned and both bikes and other e-vehicles such as cars and scooters can be charged;
- the operational area as defined by maximum distance and radius where the use of e-bikes is allowed.

As indicated in the guidance document, the **#Dynamob2.0 stations and charging points have to be localised within the jurisdictional boundaries of the Municipality of Copertino**. The ideal locations are the city centre and particularly the historic centre (for example in the proximity of the Castle or the tourist information point) but also the railway station FSE and neighbourhoods with mixed residential and service functions, including the sites where electric vehicle charging facilities are already installed or planned. Another possibility is to identify additional “virtual” stations at some specific points such as hotels, holiday farms and shops.

The operational area has to be wider due to the fact that Copertino is a small town of 24.000 inhabitants and the characteristics of the bike sharing service and its prospected usage have to target both interurban commuting trips and longer touring rides. Furthermore, the operational area has to be put in relation to the possibility to provide prompt assistance to the users while using the e-bikes (e.g. reaching them in case of any damage or disruption in order to repair or substitute the bike).

The selected operator might choose to limit the operational area to the “Salento Arco Ionico” municipalities or to extend it till Lecce and northern Salento. This can be the ideal solution for regular commuters and clients of the system whereas for tourists and occasional users the operational area can be expanded to the whole Province, ideally identifying a network of bicycle repairers in different towns that can secure the operation. Also, further rental possibilities might exclude any territorial limitations (also in order to increase profitability of the service) but all the different options, contract conditions and extra costs have to be clear and transparent for the public.

Average price range for a mixed-use urban/touring e-bike of sufficient quality and 400w battery starts from € 1.800/€ 2.000 including VAT. Both in the case of cargo and folding e-bikes a purchase cost of at least € 3.000 including VAT has to be considered. In case of more professional cargo e-bikes the average cost might rise till € 4.000.

3.1.1 Financial planning

In the following table, an estimate of the needed investment for the “minimal e-bike sharing configuration” is provided.

It includes the minimal fleet and additional equipment such as child seats, bike bags and tools. The provision of 14 GPS trackers is also foreseen. The calculation does not includes other consumables such as spare parts, inner tubes and the arrangement of a bike repair kit and workstation. For the bike sharing station 2 e-bike charging points and one sole on-street facility has been considered.

Table 3-2: Capital overlay for the minimal bike sharing configuration (VAT included)

Category	Model type/characteristics	Accessories included	Avg price per unit	Units	Total purchase cost
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e-MTB/Touring bike	e-bike with Bosh technology and 400w battery	Rear rack & mudguard	€ 2.000,00	11	€ 22.000,00
Kids bike	MTB non electric		€ 500,00	2	€ 1.000,00
e-Cargo bike	Cargo-bike front loaded		€ 3.500,00	1	€ 3.500,00
e-Folding bike	Folding e-bike with front rack		€ 1.800,00	2	€ 3.600,00
GPS tracker	invisible anti-theft GPS tracker	U-Lock	€ 200,00	14	€ 2.800,00
Helmets	MTB		€ 60,00	8	€ 480,00
Child bike seat	standard		€ 80,00	2	€ 160,00
Kids bike tow bar	standard		€ 60,00	1	€ 60,00
Bike bags	waterproof rear		€ 80,00	8	€ 640,00
Bike tools	portable kit		€ 15,00	8	€ 120,00
Total investment fleet and equipment					€ 34.360,00
Bike sharing station	on-street facility (bike hangar or similar)	Smart lock	€ 3.500,00	1	€ 3.500,00
e-bike charging point		Tools	€ 1.800,00	2	€ 3.600,00
Total investment stations					€ 7.100,00

The following table outlines the potential set-up and running costs involved in starting a cycle based business (bike sharing/rental, guided excursions, cyclelogistics, bicycle parking etc.)

Their exact calculations have to be made through a specific business plan and may vary a lot depending on the starting conditions of the entrepreneur (i.e. if an existing business or a newly established one) but also from the additional support provided by the Municipality. For the purposes of the Dynamob project, in addition to the coverage of part of the investment needed for the bikes and the bike sharing stations, it is highly recommended to provide a physical space (bike hub and main office of the bike sharing system) for free and within the context of an urban regeneration or revitalisation initiative (as further described in the following section).

Table 3-3: Set-up and running costs in a cycle based business

Cost Categories	Cost Description
<i>Set-up Costs:</i>	
Company Set-up & Registration	Set-up of company and associated legal fees, VAT and tax legislation.
Bikes and stations	Purchase of bikes and instalment of the bike sharing stations.
Company Image and Design	Development of company name and logo along with supporting material (e.g. business cards, promotional brochure, etc.).
IT & Communication Equipment	IT facilities: General hardware (e.g. computer and printer) Specialist hardware (bike sharing management system) Software (eg. office productivity software, invoicing & accounting, tracking & scheduling) Communication facilities:

	Land line Mobile phones Web & social media Development of web-site, purchase domain name, hosting and set up of social media
<i>Running Costs:</i>	
Premises/Storage Rental & Utilities	As a minimum somewhere to store the bikes when not in use and which could potentially be used as an office and hub for the company. Gas, electricity and water. Business rates and/or property taxes.
Insurance	Public Liability –providing cover for mistakes which cause an injury to a member of the public or customer, or which damages their property.
Bike Maintenance	Set aside an amount for maintenance of the bikes to cover regular servicing, replacement of parts, etc.
Staff	Payroll costs for staff including payments, social security, pension contributions, etc.
IT & Communications	IT facilities (e.g. hardware and software maintenance) Communication costs (e.g. landline rental, mobile phone contracts) Web costs (e.g. web hosting)
Marketing & Promotion	Allowance required to cover items such as directory entries, company brochure, business cards, etc. Excluding advertising.
Professional Services	Annual accounting and legal fees.
Funding/Cashflow	Funding will be required during the first few months of operation before a steady stream of regular income is generated.

3.1.1 Revenues

In terms of **revenues** and according to the type of bike sharing system designed, revenues should come from the following services:

- Bicycle rental
- Guided tours/excursions
- Cycle based delivery services
- Training courses

As indicated in the following table comparing similar services and bicycle types (e-MTB), daily rental prices range from € 30/35 (Salento, Garfagnana, Marche) to € 45/50 (Langhe, Alta Badia).

Pedelec cago bikes are rented at € 40 per day. Guided excursions are quoted per guide and ranges from € 70/90 for a half-day ride to € 100/120 for a full day.

3.2 Tirana

Any Project being in infrastructure, transport should beforehand be calculated for its feasibility. Any acceptable project is calculated on basis on its NPV or IRR.

To start the feasibility of our calculation we have forecasted the investment return for five years and on the basis of desired expectation it is done the calculation of NPV.

3.2.1 Financial planning

To calculate the costs of intervention we have taken into consideration the cost categories written in the budget lines of the Project. The fleet will be made only with the types of bikes which fill the “niche” needs of a saturated market.

At present the bike sharing units in Tirana which are presented by two bike sharing companies count for approximately 2000 and it is obvious that the project can not compete nor complement their fleet. Instead new segments of bike users have been identified and their needs though in small number will be fulfilled. This way the fleet will be made out of 5 e-bikes and 5 mountain bikes which will be settled in two stations in the very center of Tirana and in suburbs.

Table 3-4: Investment Costs of the action

Cost Category	Model/Characteristics	Indicative Unit price	Units	Total Costs
E-bikes	E-bikes with a battery 400w	1,600.00	5.00	8,000.00
Mountain bikes	21 speed Shimano rear derailleur with SRAM twist shifters changes gears easily	300.00	5.00	1,500.00
Helmets	MTB	16.00	10.00	160.00
GPS tracker	Invisible anti-theft GPS tracker with U-lock	200.00	10.00	2,000.00
Bike tools	Portable kit	17.00	10.00	170.00
Bike bags	Waterproof rear	67.00	10.00	670.00
TOTAL INVESTMENT BYCYCLE FLEET AND EQUIPMENT				12,500.00
E-bike charging point		1,500.00	1.00	1,500.00
Bike sharing stations on street facility	on street facility (bike hangar or similar)	3,000.00	2.00	6,000.00
TOTAL STATIONS INVESTMENTS				7,500.00
TOTAL STATIONS, FLEET AND ACCESSORIES				20,000.00

The table below represents the costs for electronic appliances and software that will be needed for the proper functioning of bicycles and bike stations.

A software and application will be designed so that the users of the bicycles through an application are connected in real time with the center, have the possibility to pay the service through the app, can be traced through the app and have the map including bicycle lanes throughout Tirana.

Two interactive touch screen vertical totems which will be installed at each station will provide different information, on the type of bikes, important numbers and other tourist daily information.

Table 3-5: IT Costs of the Action

Cost Category	Model/Characteristics	Indicative Unit price	Units	Total Costs
Software	Technical roadmap and cost calculation software for bike users (designation installation designation and maintenance)	5,000.00	1.00	5,000.00
Touch screen totem		2,500.00	2.00	5,000.00
Road signs	Will be defined according to the needs	lumpsum		2,000.00
TOTAL SOFTWARE AND ELECTRONIC ACCESORIES				12,000.00

The bike stations that will be installed require a regular maintenance.

To provide the sustainability if the actions two scenarios can be feasible

1. The first scenario is based on the idea that outputs of the projects can be further managed jointly by the Chamber of Commerce and one of the actual companies that provide the bike sharing services already. Through a regular Contracts the entities will calculate the division of costs and respective revenues and other management and administrative issues. This scenario is the quickest and the most feasible since it does not require extra costs for establishment of new companies that will have to manage only a modest number of bicycles that can not be compared with the market power of other competitors.
2. The second scenario is based on the idea that for the future management of the fleet a business company could be created. This start up can be endorsed by CCIT which will mentor its future operations until it becomes profitable.

The relevant set up and maintenance costs are shown in the table below

Table 3-6: Set up and maintenance costs

Costs	Description of costs
Set up company costs	These costs include the registration of the company at the e-Albania portal as a business company
Costs for the fleet and accessories	Are the costs that include <ol style="list-style-type: none"> 1. Construction of bike stations 2. Purchase of two types of bikes with the needed accessories
Promotion costs	Include promotional costs to make the service visible to all the targeted audience including <ul style="list-style-type: none"> - Brand and image creation through short ads - Business cards / leaflets
IT Equipment	Electronic appliances <ul style="list-style-type: none"> - Computer - Printer - Photocopy machine - Internet connection including the installation - Software for bicycles (Bike management system) - Domain names of the company

	- Social media accounts
Office space and facilities	Office space rent Meeting tables Chairs Computer tables
Operations and running costs	Costs for utilities such as energy, water etc., and office materials
Staff costs	Including <ul style="list-style-type: none"> - Payment of salaries for office staff - Payment of salaries for bike station guards (if any) - Fringe benefits for all employees
Maintenance costs	Costs for the maintenance of bicycles which can be on yearly basis through a specialized company or case by case basis upon the occurrence of incidents.
Marketing and promotion	Includes the costs for making known the company through leaflets, brochures and other social media stories
Financial costs	Include costs for financial services and maintenance of relations with Taxation directorate etc.
IT costs	Hardware and software maintenance Web hosting Internet connections

3.2.2 Revenues

The revenues that will come will come directly by renting the bikes

From a revenue plan sorts out the actual fee system which other companies are using can not be used by the small fleet of the company since with the actual fees are not sufficient to recover the costs of a new company (scenario 2).

The costs that would cover the costs of a new company should be at least 10 times higher the actual ones (compare to 46 ALL for three hours) that Mobike is using.

From the questionnaire below we have found out the existing bike users are not able nor willing to pay such high costs for the bikes. Therefore as a more feasible scenario for a reasonable recovery of costs it is advised the first one (described above).

3.3 Budva

“Rent-a-bike” system will be given for management to the Public enterprise DOO "Parking Servis Budva".

DOO "Parking Servis Budva" was established in 2003 with resolution of the Parliament of the Town of Budva to conduct activities of public interest.

The enterprise conducts activities of public interest: management, usage and maintenance of public parking spaces and garages of Budva Municipality, collect fees and charges related to usage of parking

spaces and public garages as well as relocation of illegally parked or damaged vehicles using specialised tow truck, the activities which the Founder had transferred onto the Enterprise.

The Articles of Association of the Enterprise sets out that the activities that could be categorised as activities of public interest will be funded from the Budget of Budva Municipality, from the revenues of the Enterprise and other sources established by the Founder in accordance with the Law.

3.3.1 Financial Planning

Capital expenditures are mainly funded from donation and in general refer to financing:

- 32 classic bicycles with equipment
- 2 bicycle stations
- Information system
- Mobile application
- Branding: (stickers, paint for the bicycles, logo for the totems)
- Administrative cost of agreements (specifying and defining the rights and responsibilities of the users and the rights and responsibilities of DOO "Parking Servis Budva", defining the manner of organising memberships, amendments to the Articles of Association for DOO "Parking Servis Budva", specification of rights and responsibilities of contractual parties: Budva Municipality and DOO "Parking Servis Budva", defining the pricelist during and in the off-season and other elements that refer to the project).
- Training of the employees
- Concreting and preparation of parking surfaces for the stations (where required)

Operative expenses mainly refer to expenses of hiring required staff, in particular:

- 2 persons that would be working on parking stations, full-time employees working in three shifts (from 06:00-00:00h). Job description would involve bike renting services and accompanying administrative services.
- 1 person that would be responsible for administrative tasks.
- 3 persons par each location that would be working in the user service (1 person per shift).

Financial analysis and expenditure for the first year are reported in the table below:

Table 3-7: Capital Expenditures

Cost Category	Model/Characteristics	Indicative Unit price	Units	Total Costs
Bikes	Classic bikes with equipment	300.00	32.00	9,600.00
Tools/Equipment	Equipment and tools for basic servicing	100.00	1.00	100.00
TOTAL INVESTMENT BYCYCLE FLEET AND EQUIPMENT				9,700.00
Bicycle stations	Open dock bicycle stations	4,000.00	2.00	8,000.00
TOTAL STATIONS INVESTMENTS				8,000.00

Information and app	Informative system and mobile application	23,700.00	1.00	23,700.00
Training	Training for employees for evaluation and registration of damage and for basic serving of bicycles	100.00	2	200.00
TOTAL INFORMATION & TRAININF				23,900.00
TOTAL STATIONS, FLEET, ACCESSORIES & APP				41,600.00

3.3.2 Revenues

Proposed prices are defined taking into account cost of renting bicycles in the surrounding.

The pricelist can differ during and in the off-season.

Table 3-8: Projected Revenues

<i>Tariff basis</i>	<i>Bicycle renting in the season</i>	<i>Bicycle renting in the off-season</i>
<i>Started hour</i>	1€	0,5€
<i>Daily ticket</i>	5€	3€
<i>Monthly ticket (just for members)</i>	20€	
<i>Annual ticket (just for members)</i>	50€	

Monthly and annual memberships would be options offered to the local residents. Additional discounts could be provided for the local residents or for certain categories of the citizens.

Foreign tourists would rent bicycles by the hour or by taking daily tickets.

Sponsorship revenues could be generated by promoting this form of tourist activities.

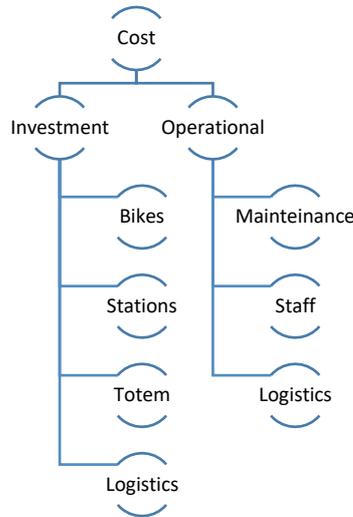
In relation to Marketing and Promotion revenues, advertisements could be placed on the stations and totems

3.4 Campobasso

3.4.1 Financial Planning

The main operational and investment costs are breakdown in Fig below:

Figure 3.1: Type of costs for the bike-sharing service. Source: Dynamob2.0 project.



Logistics represent a variable voice in the management of bike-sharing systems. In particular, these costs take the form of rebalancing or repositioning costs of the bicycles of the bike-sharing service and occur when it is necessary to physically move the bicycles from one point to another to rebalance the offer of vehicles. Rebalancing is therefore needed when stations are quite far and when demand of bikes fluctuates over the day. For example, a classic case of unbalancing of bike-sharing services occurs when users use the bicycle for downhill routes, preferring another mode of transport for the return route.

The Dynamob2.0 project envisages three managing approach which differ in terms of ownership of the service and the related costs. In all three cases, the investment costs and ownership of the assets remains in the name and on behalf of the project partner. Conversely, the three models differ in the way they manage operating costs. The first model foresees that the project partner itself manages the operational aspects of the service and sustain the relative costs. The second provides that management is entrusted to another public body that provides the service. The third model provides for the entrusting of management to a private organization through a specific contractual agreement.

The Dynamob2.0 project finances the investment costs, while it foresees a specific sustainability analysis for the operating costs. The municipality of Campobasso is oriented towards the third model, where the management of the service is entrusted, by agreement, to a private NGO who bears the relative costs. To sustain the service, the Municipality is keen to guarantee a grant for operating the system and/or leaving all the potential incomes to the private actors (while the pricing level is under contractual agreement with the Municipality).

The experience relating to the management of bike-sharing services identifies a management cost included in a wide range between 400 and 2,000 euros per bicycle per year. The design of the Dynamob2.0 routes and the relative positioning of the two bike-sharing stations considered the need to contain operating costs, in particular avoiding any cost about the need of rebalancing the service.

The Dynamob2.0 project provides funds for the purchase of 12 pedal-assisted bicycles. Thus, it is expected an annual operating cost of approximately 4,800 euros which must therefore covered by public grants and/or by the service revenues.

3.4.2 Revenues

The bike-sharing service also experiences revenues in the form of sponsorships or the sale of services which normally are either pay-for-use or fees and memberships. The breakdown of possible revenues has identified the following opportunities:

- grants from the municipality or from another public body / organization;
- contributions from private commercial operators interested in developing the bike-sharing system for their business purposes;
- sponsorships from private commercial operators;
- revenues from the service:
 - membership and fees;
 - pay-per-use price.

The proposed pricing system includes two plans as it targets two types of users with quite different needs and behaviors: 1. tourists who will likely use the service occasionally during their stay in Campobasso; 2. Citizens who might use the services several times essentially for recreational purposes (eg visit to the Faiete Wood) or for special needs. Intensive use of bike-sharing by regular users is not expected, as regular cyclists do prefer using their own bicycle.

The two formulas proposed are therefore referred to as the pay-for-use plan, and the flat plan, the first designed for occasional users, the second for commuters and residents.

The hourly price is always € 0.50 per hour or part thereof with a maximum daily cost of € 3. The rate is aligned with that of local public transport tickets (€ 0.60 for a single journey, € 1, 20 for 120 minutes).

The flat plan includes an annual subscription of € 30, but the first hour of daily use is for free. On holidays users that have subscribed the flat plan do not have any additional cost. The aim is to allow the use of bike-sharing for recreative use during holidays.

Table 3-9: Bike-sharing service price list

Plan	Yearly fee	Hourly price (Max 3 Euro/day)	
		Working day	Public holiday
Flat	30 Euro	0.5 Eur/hour (first hour for free)	-
On-demand	-	0.5 Eur/hour	

3.5 Skrapar

The diversity of relief and types of roads in Skrapar, as well as the diversity of people who are bike users imply that the variety of bike types that are to be purchased under this projects varies from electric bikes, to kids bikes which for this town is a novelty.

The preferable fleet that it is deemed to be purchased comprises eight electric bikes MTB, eight normal bikes MTB, four city ikecycle, and four kids' bikes, totalling a small fleet of 24 bikes.

There are not many species because it is a small town and the terrain conditions this. then considering the small number of populations I think that these models are optimal for the municipality of Skrapar.

Skrapar has to choose between two models, the standard MTB model and the model with the most arched tube in the middle which looks like when it fits more with the female gender.

3.5.1 Financial planning

In the following table, an estimate of the needed investment for the “minimal e-bike sharing configuration” is provided.

It includes the minimal fleet and additional equipment such as child seats, bike bags and tools. The provision of 14 GPS trackers is also foreseen. The calculation does not include other consumables such as spare parts, inner tubes and the arrangement of a bike repair kit and workstation. For the bike sharing station 2 e-bike charging points and one sole on-street facility has been considered.

Table 3-10: Capital overlay for the minimal bike sharing configuration (VAT included)

Cost Category	Model/Characteristics	Indicative Unit price	Units	Total Costs
E-bikes	MTB 250WAT	1,200.00	8.00	9,600.00
Normal bike	MTB	500.00	8.00	4,000.00
Normal bike	For the city	300.00	4.00	1,220.00
Kids' bike	Normal	150.00	4.00	600.00
Kids 'bike seat	Standard	60.00	2.00	120.00
TOTAL INVESTMENT BYCYCLE FLEET AND EQUIPMENT				15,620.00
Eco charge	Standard	4,000.00	1.00	4,400.00
Installation and bike point	Simple	4,000.00	1.00	4,000.00
TOTAL STATIONS INVESTMENTS				8,000.00
TOTAL STATIONS, FLEET AND ACCESSORIES				23,620.00

The following table outlines the potential set-up and running costs involved in starting a cycle-based business (bike sharing/rental, guided excursions, cycle logistics, bicycle parking etc.)

Their exact calculations have to be made through a specific business plan and may vary a lot depending on the starting conditions of the entrepreneur (i.e. if an existing business or a newly established one) but also from the additional support provided by the Municipality. For the purposes of the Dynamob project, in addition to the coverage of part of the investment needed for the bikes and the bike sharing stations, it is highly recommended to provide a physical space (bike hub and main office of the bike sharing system) for free and within the context of an urban regeneration or revitalisation initiative (as further described in the following section).

Table 3-10: Set-up and running costs in a cycle-based business

Cost Categories	Cost Description
<i>Set-up Costs:</i>	

Company Set-up & Registration	Set-up of company and associated legal fees, VAT and tax legislation.
Bikes and stations	Purchase of bikes and instalment of the bike sharing stations.
Company Image and Design	Development of company name and logo along with supporting material (e.g. business cards, promotional brochure, etc.).
IT & Communication Equipment	IT facilities: General hardware (e.g. computer and printer) Specialist hardware (bike sharing management system) Software (eg. office productivity software, invoicing & accounting, tracking & scheduling) Communication facilities: Land line Mobile phones Web & social media Development of web-site, purchase domain name, hosting and set up of social media
<i>Running Costs:</i>	
Premises/Storage Rental & Utilities	As a minimum somewhere to store the bikes when not in use and which could potentially be used as an office and hub for the company. Gas, electricity and water. Business rates and/or property taxes.
Insurance	Public Liability –providing cover for mistakes which cause an injury to a member of the public or customer, or which damages their property.
Bike Maintenance	Set aside an amount for maintenance of the bikes to cover regular servicing, replacement of parts, etc.
Staff	Payroll costs for staff including payments, social security, pension contributions, etc.
IT & Communications	IT facilities (e.g. hardware and software maintenance) Communication costs (e.g. landline rental, mobile phone contracts) Web costs (e.g. web hosting)
Marketing & Promotion	Allowance required to cover items such as directory entries, company brochure, business cards, etc. Excluding advertising.
Professional Services	Annual accounting and legal fees.
Funding/Cashflow	Funding will be required during the first few months of operation before a steady stream of regular income is generated.

3.5.1 Revenues

In terms of **revenues** and according to the type of bike sharing system designed, revenues should come from the following services:

- Bicycle rental
- Guided tours/excursions

Table 3-11: Price list of some similar bike rental services

Renting Period	ECOVOLIS	MOBIKE
1 HOUR	1 Euro	0.5 EURO



2 HOURS	2 Euro	1 Euro
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From the table we see that there is no daily rent and tour because it is something that will be new. to set the prices of these we have to discuss with the staff of the municipality which district we will take as a reference point.

4 Pilot action

4.1 Copertino

4.1.1 Design of the system

The Copertino's Pilot action for the bike sharing and charging point system is based on a fully managed service where one or more suppliers would provide the following items:

- **1 #DynaMob Cycling Hub**
- **12 electric-assist bicycles (11 e-MTB/Touring, 1 cargo)**
- **15 standard bicycles**
- **1 on-street movable bike sharing and charging station**
- **8 recharging docking points**
- **virtual stations (as many as needed)**
- **Complete equipment and tools (smart lock, GPS tracking, child seats, etc.)**
- **Bike sharing/ operations and management**

These services will be provided in the city of Copertino.

At the final procurement stage the market will be tested on whether separate contracts for equipment (e-bikes, equipment, stations) and ICT (smart lock, App, back office booking system, e-bike tracking) offer the best value route to delivery.

Local businesses and associations will be involved in the fine tuning of the fleet configuration, equipment and characteristics of e-bike sharing infrastructures. A public fleet of 15 brand-new city bikes (already purchased by the Municipality) will be also integrated in the system so that the DynaMob investment will be devoted to the purchase of only e-bikes.

The model developed in Alta Badia and particularly in Garfagnana will be the main reference for the Dynamob pilot action in Copertino, thus preferring the “upgraded bike rental system” as opposite to more expensive on-street and fully automated system. Priority is given to the element of profitability for the operator in order to secure the presence of the service in the city in the long term and also its further expansion.

A main staffed station will be established in the city centre. This main “hub node” represents the #Dynamob2.0 headquarter where, in addition to booking, pick up and return of the shared/rented bikes, also equipment, spare parts and ordinary management and maintenance activities have to be located.

The **#DynaMob Cycling Hub** should be identified in a public or private building of at least 50/60 sqm offered for free to the system tenant/operator. It has to be seen as an opportunity to revitalise a specific place and facility offering a multitude of bike-related services and main starting point for bike tours and other urban cycling initiatives. The Municipality has currently in place a project for the renovation and re-use of its railway station (in cooperation with the railway operator Ferrovie del Sud Est) - where also an electric vehicle charging point is located – but also other facilities might be utilised for the scope. Site visits to the properties and a further administrative check are needed in order to take the final decision.

One or more on-street bike sharing and charging stations will be tested. Additional “virtual stations” will be operated in collaboration with local wineries, holiday farms, hotels/b&b and associations located in the wider cycling network of the Salento Arco Ionico area as planned by the MIBACT-SAJ project⁶.

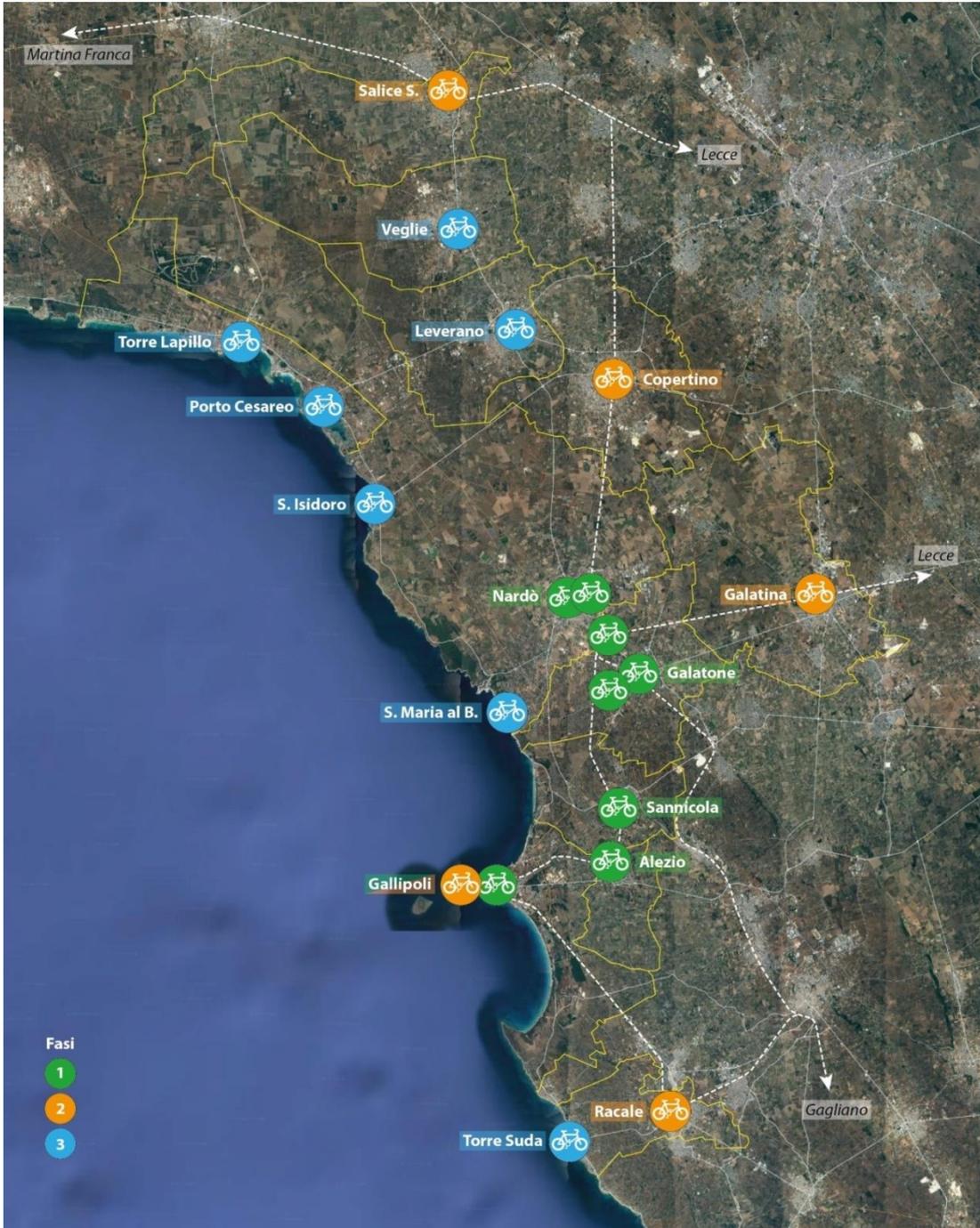
Figure 4-1: Salento Arco Ionico cycle network and national/regional routes



Source: Sustainable mobility territorial system within the MIBACT Salento Arco Ionico project, TRT (2018)

⁶ https://drive.google.com/open?id=10amLb1DJC_l7cf9dcowB3KcRprN49XMM

Figure 4-2: "Salento Arco Ionico" bike sharing system



Source: Sustainable mobility territorial system within the MIBACT Salento Arco Ionico project, TRT (2018)

The distinctive element is identified in the area's wine production, those of D.O.C. present along the "wine route" Salice Salentino - Gallipoli with branches from Galatone to Galatina and from Galatina to Copertino. The crossing of the extensive vineyard areas as well as the visit to the cellars and points of interest would be the common thread to associate the tasting of other local food and wine products with all the other elements already present in the area (rural landscape and natural environments, monumental old towns, coastal panoramas, local culture and tarantism).

The combination of "food and wine" should guide the preparation of e-bike touring experiences that will be also linked to other circuits in the area (e.g. to connect the Jonian seacoast and the provincial capital Lecce). Further information on both cycling routes and tailored itineraries to be associate to the e-bike sharing system are described in the Deliverable D.T3.1.1 – Feasibility study as part of Activity A.T3.1 #DynaMob 2.0 Roads.

4.1.2 Additional services and role of the #DynaMob Cycling Hub and stations

In addition to e-bike rental and tourist-related services (guided tours and cycling experiences), the #DynaMob Cycling Hub in Copertino should address the attitudes of adults without cycling experience, aiming at removing their psychological and practical barriers that affect the fulfilment of cycling as a daily routine. In many projects and initiatives such barriers have been addressed by focusing on awareness raising and marketing campaigns or on specific training activities.

The pilot action results in a strategy that aims at creating a collaborative environment, where the Hub/system operators and non-cyclists will meet each other, find active learning opportunities and share urban cycling experiences.

In doing this, the pilot action focuses on supportive infrastructures developed according to the concept of "enhanced social bike station", a place where users can rent a bike, safely park their bike, find additional services (e.g. public pumps and lockers) and occasions for improving actively their cycling attitudes and meet new people and friends. Hub managers should also organise a dense programme of activities for animating and growing the stations themselves.

#DynaMob Cycling Hub managers should provide guidance and organise a set of common theoretical courses and practical training. The idea is to link training sessions to occasions for meet new people and practically apply the new skills. Training activities will be focused on some key aspects: choose the correct bike, buy a quality bike, maintenance and basic repairing, safe parking, routing and safety issues. In addition to that, new urban cyclists will be assisted through a personal coach, an experienced urban cyclist that supervises their first rides, help in choosing the best cycling routes and answer "live" to any question about cycling in the city.



A typical collaborative training initiative that can be mentioned is the **Community Bicycle Clinic**, known in Italy with the term *Ciclofficina* or *Ciclofficina popolare*. It is a place where is possible to find bicycles repair equipment, self-repair bicycles and/or receive basic training on

mechanics and collaborative technical assistance from bike associations and informal groups of bike enthusiast.



Another approach that the pilot action wants to replicate is the coaching of new cyclists through the **Bike Buddy**⁷ service developed by MUBi in Portugal and the similar **Bike Experience**⁸ initiative of Brussels. The initiative is promoted as "a decisive boost to adopt cycling" and is addressed to volunteer motorists who are encouraged to take the bike and leave their cars at home (e.g. for two weeks) to make their daily trips to work or to

the children's school. Each registered motorist receives the contact details of the assigned coach, who is selected by the organisation, and has to contact him or her and ratify timetables and routes. In a preparatory meeting the candidate new cyclist has the opportunity to talk with the coach and receives a theoretical course (indoor) and practical training (outdoor). The coach assistance is given in a number of consecutive

⁷ www.bikebuddy.mubi.pt

⁸ <https://bikeexperience.brussels/en/home>

days (normally 3) and in real life daily commuting trips. The scheme uses also “*testimonials*”, the participant new cyclists, to recruit new people and promotes similar initiatives in workplaces.

Last but not least, the pilot action will address also the provision of last mile delivery services by cargo bikes in the city. The EU projects CycleLogistics and CycleLogistics Ahead have demonstrated that cargo bikes have a huge potential to tackle volume of traffic caused by commercial delivery services and private trips as they can replace over 50% of urban transport-related trips, as well as enhance air quality, safety levels, and liveability of urban areas. Also they represent an opportunity of self-employment targeting different types of delivery services such as distribution of goods, internal mail between companies/entities, food, pharmaceutical products, etc. The publication “*Dalla City alla Cyclelogistics, Proposte innovative e soluzioni sostenibili per le città*”⁹ provides information and guidance on how to introduce a cycle based urban freight scheme in cities and town. The approach is both from the perspective of local authorities and newly established businesses.



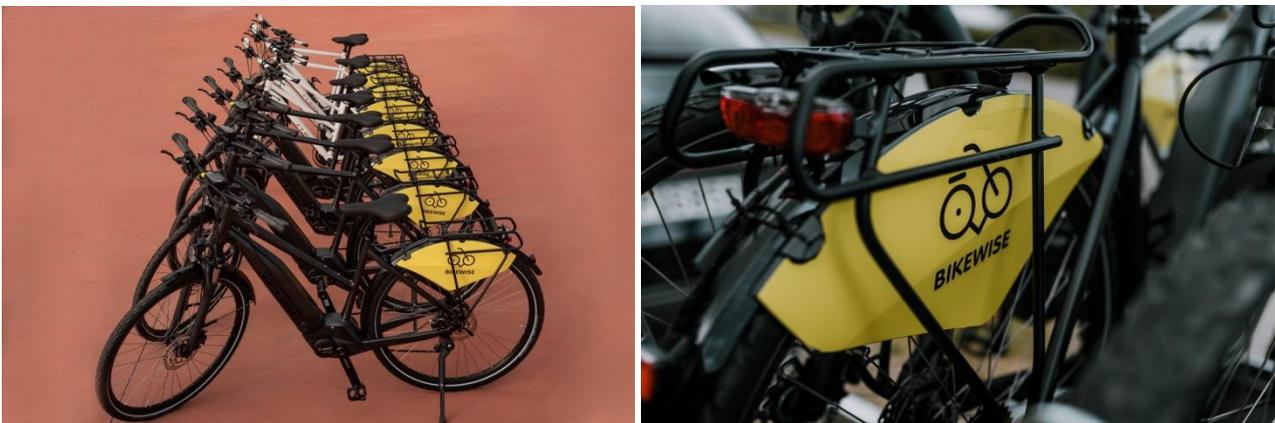
These services will add extra revenues to the bike sharing system. Training sessions and/or an open startup workshop will be organised.

4.1.3 Communication and marketing

The distinctive design elements and communication strategy for both the #DynaMob 2.0 bike sharing system and routes are described in Deliverable D.T3.1.1 – Feasibility study.

The fleet will be made recognisable by means of personalised extensions to be mounted on mudguards or bike racks as in the following pictures.

Figure 4-3: Personalised bicycle fleet of the Greek operator Bikewise



Source: <https://www.bikewise.gr>

4.1.4 System operation

The #DynaMob Cycling Hub and bike sharing system in Copertino will be developed according to the following scheme:

Publicly owned and Privately Operated

⁹ <http://www.trt.it/dalla-city-alla-cyclelogistics/>

- The Municipality purchases and owns the assets and contracts operations of the system to a private company or a local association that takes on liability for the system.
- The operator might be selected through a public procedure (Call for Interest/tender) or through the Regulation on Urban Commons, which rules the forms of cooperation between citizens and the local authority for the care, the shared management and the regeneration of urban commons.

Some training modules targeted to start-ups/young entrepreneurs on how to run a cycle-based business will be organised.

The launch of the Call for Interest for the management of the entire #DynaMob system is therefore foreseen.

4.1.5 Launch of the service

A campaign will be launched via the website and social media in Copertino for the services and routes promotion. Feedback tests will involve mobility providers, operators and citizens.

The campaign will be an event framed to the media and the public, and featuring participation of important officials. The aim of the event will be to aware potential new customers about the service and share the idea that the #DynaMob Cycling Hub and bike sharing system can work for residents as well.

Customer service, before and after opening, will help users navigate the system's components and functioning. The selected operator will offer free rides and test to customers.

Promotion in digital multimedia also e.g. project website, partners institution website and social media will be also secured.

4.2 Tirana

4.2.1 Design of the system

The Pilot action of Tirana for the bike sharing and charging point system is based in a fully operational service where the

- **5 electric-assist bicycles (e-MTB/Touring)**
- **5 mountain bikes**
- **1 recharging docking point**
- **2 bike sharing stations**
- **Complete equipment and tools (helmets, bike tools, bike bags)**
- **Bike sharing operations and management**

These services will be provided in the city of Tirana.

The pilot actions are designed done as a result of consultations between stakeholders. Personal contacts as well as virtual contacts through CCIT web page have served as a meeting point with several citizens who wanted to give opinions on the sustainability of our Dynamob interventions.

The last stage of procurement will also be served as a testing phase in order to repair any minor deficiency in operations which in its spur may lead to further losses. The Mobike failure example is also a proof that "learning by doing" can be also applied in small scale.

The experience of other bike sharing companies in Tirana will also be analysed and served as a model of what works good for the citizens as well as what can bring to failure? The new small fleet will be tailored to solve the core needs and to differentiate the offer in the city of Tirana so the needs of niche segments of citizens who want different types of bike transportations can be fulfilled too.

4.2.2 Proposed Project Sites

The Project sites are chosen in close collaboration with the Transport sector from the Municipality of Tirana. The project sites were chosen having in regard two criteria

The bicycles though using the “smart” technology should fill a special need of the targeted customers that is not filled from any other business or state entity.

Also the bicycles should be linked to the special needs of transports that fill the needs of increased foreign visitors of Tirana.

From the questionnaire in attachment sorted out that the two types of bikes that were in need especially by Tirana’s visitors were those in relation to the special needs Tourism such as adventure Tourism and the type of bicycles were the mountain bikes and the other type should be a small number of bicycles for small group of visitors that are close to the main square of Tirana and can be used by them for a guided visit of Tirana.

With this logic it was agreed that two were the main squares where the bicycle station could be constructed.

4.2.2.1 *The Mountain bike station in Petrela*

Petrela is located 12 km southeast of the capital, along the national road Tirana - Elbasan. It is mentioned as early as the 11th century, in the battles between the Normans and the Byzantines, when it is written in the form Petrela, by Ana Komnena (1083 - 1153).

Petrela Castle is located in the village of Petrela, 15 km south-east of Tirana, on a rocky hill 400 m above sea level. Since ancient times, this castle controlled the intersection of roads of economic and military importance which passed near it, such as the road Egnatia (Durrës-Tirana-Elbasan branch), which for the time was of special importance.

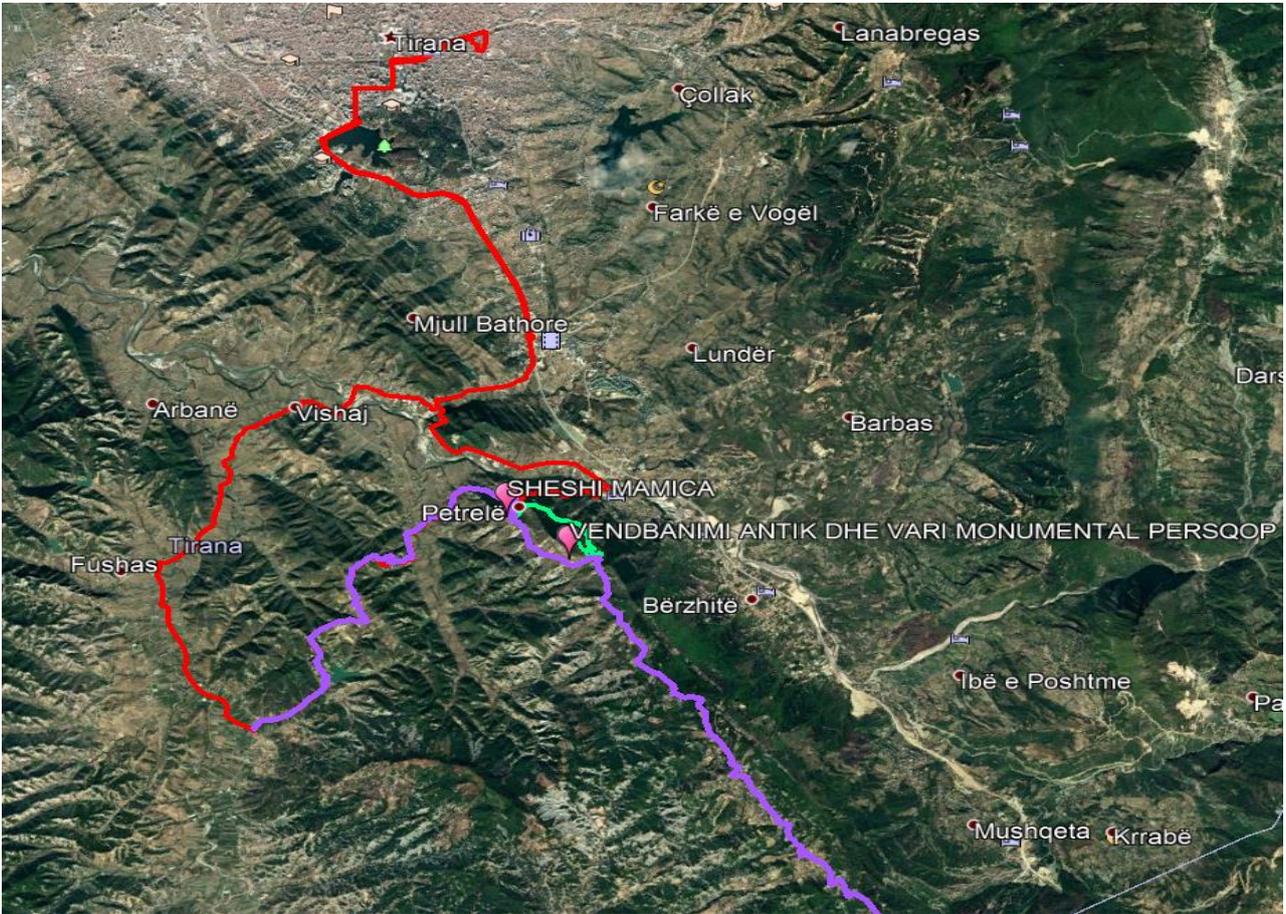
In addition to the ancient walls, Persqop also houses numerous traces of dwellings, as well as traces of a tomb and a water supply supplied by the Villa Mountain. These data are an important indicator of the military, economic and political power of the ancient settlement of Persqop.

Petrela is the ideal destination to visit because within a territory, some types of tourism are offered, such as historical-cultural, culinary and green, which merge with each other, making it one of the most visited tourist destinations in Tirana. Petrela, by its very shape of physical formation, with fields, hills and valleys, enables a wonderful contrast of nature. Many restaurants and resorts have been set up along the river and the hills that lie next to it.

From the height of Petrela Castle, a very beautiful view of the Erzeni valley, the olive hills and the surrounding mountains can be seen. Not only the natural beauties, but also the history it carries have turned Petrela into an attractive center for many visitors from the country and the world.

Petrela is chosen as a tourist destination by various tour operators but also individuals because in addition to the suitable terrain for mountain biking, there are often events that include culinary, tradition, organic products, etc.

Map 4-4: The road from Tirana to Petrela



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In the very heart of Petrela some 300 meters from the Castle is a wide square that has been reconstructed and serve as the main base for the visitors who like to go to the top of the mountain.

The square it is called the “Mamica” square and a view of the square is given below.

Precisely in this square it is foreseen to be built the first bike station but only mountain bikes.

The sites have been set in close collaboration with the Municipality of Tirana and in total compliance with the future development plans of the city of Tirana.

Figure: 4-5: View of Mamica Square

¹⁰ Source: Municipality of Tirana



There are different places around the square where the bicycle docs can be built. From the square one may reach different tourist point and Petrela's attractions as well as the tourist accommodation buildings.

4.2.2.2 *The Electric bike station in "New Bazaar" – Pazari i ri*

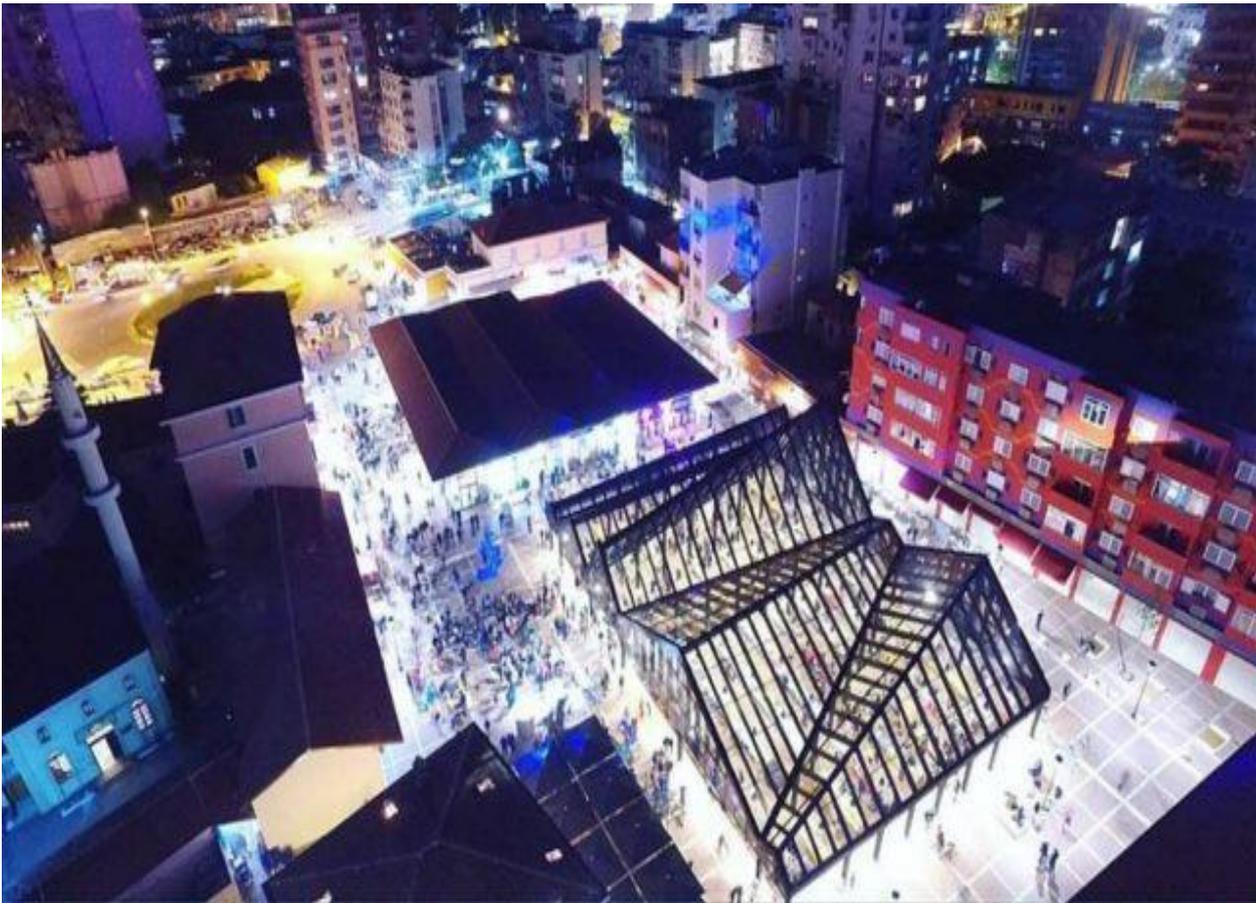
In¹² the dedicated project web site it is emphasized that the New Bazaar was established in 1939 and through the following years it kept on prospering and developing. Its establishment came as a necessity, due to the continuous increase of the trade activity which could not be afforded any longer by the only Old Bazaar. After the demolition of the old Bazaar in 1959, the new Bazaar remained for a long time the only trading centre of meat, fish, vegetables and fruits in Tirana. The territory of the Old Bazaar started from the Suleiman Mosque and continued till the area where nowadays is situated the building of National Library. The Bazaar is located in one of the oldest areas of the city. Even today, the new Bazaar continues to be one of the largest markets for meat, fish, vegetables and fruit trade in town. The Municipality of Tirana reshaped this area and turned it into a business development area to provide a new investment model and community space. The New Bazaar is a space that operates 24 hours, with the biggest focus on product trade in the morning hours and in afternoon on culinary issues, for the restaurants around and the development of artistic and cultural activities such as festivals, fairs, etc.

Figure 4-6: The New Bazaar Square¹³

¹¹ Source: Wikimapia.org

¹² Source: Pazariiri.com

¹³ Source: Municipality of Tirana



The number of businesses as well as foreign visitors who visit the New Bazaar reaches thousands and therefore the new Bazaar could be one of the most suitable places where especially single visitors or small groups of visitors up to five, may find suitable the use of electric bicycles either to visit different angles of bazaar or to reach other Tirana's tourist attractions that can be perfectly reachable through bicycle.

The new bazaar is also close to the Tirana's Tourist Information Office where visitors can stop to ask for more information.

Electric bicycles are a very good mean also to visit other areas of Tirana such as the Lake Park, where the circulation of other vehicles is not possible.

4.2.3 Competitive advantage

It is created a gap in the market for tailored bicycle services to tourist groups either that need a movement supporting bicycle facility (such as electric bicycle) even for elderly people, or for out of the normal reach of other competitors (Mobike and Eco Volis). There are every days small groups of tourist who visit Tirana and suburbs.

We believe that our business could grow and expand rapidly not only due to shear number of visitors concentrated in Tirana centrally, but beyond this community by also offering services to the general public.

From our market research we have discovered that when consulting with the general public the main contributing factors in support of our services are; Negative economic factors; which have put increasing pressure on consumer finances. Our low cost option would sit well financially within the general

consumer’s transport mix. Also, in an increasingly more socially responsible & environmentally aware market place our transport solution which provides a carbon neutral option would be greatly welcomed.

Within the leisure industry the recession has affected the number of people using gym services. With the expense of gym membership people are deciding that gym membership isn’t a necessary cost. These people not choosing to renew their gym memberships could be easily persuaded by such leisure services; by being able to save money on fitness & leisure costs, and combining their fitness & leisure costs with their transport costs we can save the customer time and money.

Figure 4-7: SWOT and Critical Success Factors

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Bikes are an environmentally friendly way to travel with no associated fuel costs. • Bikes are cheap to buy and cheap to run. • We have the opportunity to expand, it is not a restricted market. • We can set up alliances Municipality and tourist board to support the business. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Theft or damage to the bikes could jeopardise our business. Taking deposits from customers may reduce this risk of this happening. • Seasonality and rainy days can risk factors for tourism. We will combat this by offering services to the general public.
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Following the start up of the business there is the opportunity to expand. • Expansion into normal consumer markets, with the general public being able to hire bikes. • Depended upon success in Tirana, would could expand to other cities. • There is opportunity to use different locations. For example the train station would be a good place to rent bikes. • We have undercut bus prices, for any routes that might be covered elsewhere. 	<p>THREATS</p> <ul style="list-style-type: none"> • The weather can affect our business. Snow & rain may reduce the amount of students wanting to use bikes, therefore harming our profit. • Competition. If the bus company decides to restart services again, people may use our service less.

PESTEL analysis:

- **Political** – The main political factor that would be associated with our business is probably the governments interest in education and the environment. If successful we may be able to receive some kind of support from the local government.
- **Economic** – In the current economic climate, the fact that our prices are competitive will help our business. Also, as oil prices inevitably go up, (as the planet is running low on this resource) in the gap between the new non-oil based transport and current modes of (oil based) transport, our service will become cheaper (and therefore more attractive) in comparison with other (current) modes of transport.
- **Social** – As people like to keep fit and as this way of living is becoming more and more popular, this method of transport of which has been associated with tourism and healthy persons for many years, would not be out of place within the customers transport mix.
- **Technological** – Bikes are technically marvellous. Yes, they've been around for years, but they're extremely efficient, easily transportable, cheap, durable and they work! There's no point re-inventing the wheel, so were not. We're using proven technology to provide a reliable service.
- **Environmental** – In the threat of global warming, and adverse weather systems, the world is in fear of CO² our transport solution emits of CO².
- **Legal** – Obviously like all companies we have to adhere to health and safety regulations, tax laws, discrimination laws etc. there aren't any laws in particular that pose a major hinderance to our success.

4.3 Budva

4.3.1 Pilot Project – “rent-a-bike” system in the center of Budva

4.3.1.1 Locations for the stations

The locations shall be selected in accordance with following guidelines:

- The stations should be placed at an illuminated location with the option of constant monitoring
- They should be located in proximity of institutions, shops and restaurants, locations that are popular with tourists, so as to be used by permanent users and by-passers
- It would be good if the stations were located near bus stops

Four possible locations were defined for the stations:

- Public parking along Budva seaside walkway (at the location of the Old bus station)
- On a public parking next to the Adriatic Fair building
- On a public parking in front of the Municipality building
- On a public parking in front of the TQ Plaza
- On a public parking in Bečići



Parking Budva seaside walkway (at the location of the Old bus station)



Parking next to the Adriatic fair building



Parking in front of the Municipality building



Parking in front of TQ Plaza

Location of the parking space in Bečići, managed by DOO “Parking Servis Budva”, is also a possible location for placing the stations, if the works on this parking space are finalised prior to fitting the stations and a toll booth with constant monitoring set-up so as to allow conducting procedures for bicycle renting. The recommendation is to place the very station as close as possible to the seaside walkway.



Parking in Bečići



Recommended location for the bike station

In this pilot project, the stations will be set up at 2 selected locations, at the "Old Bus station" location and in the parking lot near the Adriatic Fair.

4.3.2 Technical parameters for the stations

The stations are planned in accordance with following technical parameters:

- Spacing between the parking spaces for bicycles needs to be minimum 0.7 m
- Tentatively, for 32 bicycles, divided into 2 stations each 16.
- If there is no sidewalk in front, stations should be placed in a way that provides minimum 2 m of free space in front.
- It is desirable to have a station with overhang.

4.3.3 Types of bicycles for renting

Taking into account the results of the survey, conclusions made at the meeting with the stakeholders and parameters defined in the project, it was decided to put stress on developing urban bicycle network and to purchase city bicycles.

4.3.4 Characteristics of bicycles for renting

The bicycles are selected based on following guidelines:

- Universal size, the frame size will be suggested based on estimated average height of users
- Since high degree of bicycle usage is planned, lifecycle of these should be between 3 and 5 years. After that period, it would be desirable to replace them with new ones
- Lower maintenance requirements as one of the criteria for selection, given that this reduces the operative costs
- The bicycles need to be safe with simple locking.
- The bicycles that are safe need to have reflectors on wheels, bells, mud-fenders, brakes, front and back lights for night-time rides
- Protective helmets would be a standard addition to the bicycle that is rented as well as reflective vests

- Each bicycle needs to have clearly marked ID, system number and user service telephone number
- Front baskets should be used as a place where the users could store their belongings
- A bike child seat should be also part of the bike rental offer.

Storage unit for the bicycles that are dispatched for servicing would be provided at the “Red Cross” location or in the “TQ Plaza” garage.

4.3.5 Manner of functioning of the system

The bicycles are located on bicycle stations which are positioned on locations operated by DOO Parking Servis Budva.

The bicycles could be used by all interested persons above than 18 years of age, with an ID card or a passport. Bicycles can be rented to minors when they are accompanied by an adult that shall take full responsibility for the bicycle that the minor will use.

The bicycles and the equipment shall be returned to the station where they were initially picked up.

The renting period shall be deemed completed when the user returns the bicycle in technically proper state to the station.

The fee for the damage on the bicycle or loss shall be charged according to the defined pricelist.

All documentation must be prepared bilingually, in Montenegrin and English.

Structure of bicycle rental system

The system shall have two bike rental stations, status monitoring software, software for user card issuance and mobile phone software for tracking fleet status at stations.

Bicycle stations

One station consists of the control cabinet and 9 bicycle locking stations. The control cabinet contains all elements for bike renting and collection of usage fees. One locking station can accommodate 2 bicycles. The control cabinet includes display where the user can rent/return the bicycle and pay for it. The payment is done via pay card or user card. Credits on user card can be topped-up by paying with pay card or paper banknotes. Fiscal receipt can be issued after each payment/topping-up.

Software for status monitoring

Software for monitoring status in stations is installed on the computer in the dispatched center. It records all the data about bike rentals (who rented the bike and when, the length of bike usage, remaining credit on one’s user card, current status of bicycles in the stations).

Software for user-card issuance

Software for user card issuance is used to issue contracts that allow the user to get special RFID cards – user cards. The Contract sets out liabilities and rights of the user in terms of bike renting. This is a standard contract and you just need to insert basic data from the identification contract (ID card or passport). The user card does not have date of expiry.

Mobile phone software for tracking fleet status at stations

Software for mobile phones for tracking fleet status at stations provides the user with information about the current number of bicycles at the stations. There are software versions for Andriod and IOC operative systems.

Steps to bike renting

The user comes to the station and chooses at the control cabinet whether to do identification with pay card or user card. In case the user decides to identify him/herself with pay card, assets amounting to the value of the bike are immediately reserved after confirmation of bike renting. These assets will be deblocked after confirmation that the bike has been returned and made payment for used bike, in accordance with regulations of the bank (this period is usually a few days). In case the user decides to used use card for identification and has credit for minimum one hour, s/he can rent a bike. When s/he returns the bike, in case the user does not have sufficient credit, he must pay the fee with pay card or cash. In case the amount is

smaller than the banknote the user inserted, the change will not be returned but turned into credits for the following bike rental.

4.3.6 Communication and marketing

Promotional campaign for “rent-a-bike” system will be defined together with the Tourist Organisation of Budva, Budva Municipality as well as non-government organisations that are recognised as interested parties. The basic goal of the campaign is to create environment that supports sustainable modes of transport. Given that citizens of Budva are the basic target group, it is necessary to diverge from the existing habits towards the new ones characterised by lower usage of cars and gradually transition to sustainable means of transport.

The campaign should be integrated in the comprehensive communication strategy per target groups (addresses to the citizens, tourists) and decision makers. This includes appointing a person that would be responsible for communication and that would also get feedback from the targeted population about the campaigns.

Steps:

- Create a Facebook and Instagram pages with name and logo of the system that would be used for promotion of cycling and sustainable means of transport. These pages would contain information about all events related to promotion of the system with tagging of the stakeholders and citizens that wish to participate in promotional rides. The bicycle riders would be encouraged to make photos and post them on social media.
- Another element that would be significant for promotion of cycling are stories published by existing bicycle riders about riding habits, advantages and benefits of this mode of transport.
- Organise promotional thematic rides, in cooperation with the Tourist Organisation of Budva and local NGOs with free usage of bicycles. The events will be promoted via social media, on website of Budva Municipality, TO Budva, via radio and in dailies and magazines. Promote environmental protection, healthy lifestyle and sustainable transport on billboards, totem advertisements, bust stops and mobile billboards on bicycles.
- Promote system through discounts for certain categories of citizens, with accompanying marketing (advertisements on totems, leaflets, informing via social media)
- Position bicycle stops with system logo and contact information on frequented locations (in front of the Old Town, near the Secondary School, the Faculty, shopping mall, beaches). This will provide parking for cyclists and it acts as advertisement for the tourists who also represent an important target group.
- Promotion of cycling through workshops and lectures about cycling. A feature story about safety of cycling traffic will be prepared in cooperation with the Main Police Station of Budva.

4.3.7 Launch of the “rent-a-bike” system

The event will be organised with the support of the Tourist Organisation of Budva.

After setting the date and the venue, the event will be published via website, social media, papers, TV and radio.

Promotional ride along the seaside walkway will be the backbone of the event.

Following entities will be included in detailed planning of the event: Budva Municipality, DOO Parkin Servis Budva, the Tourist Organisation of Budva as well as interested NGOs. The cost of the promotional material will be covered from the project funds.

Schools and faculties also need to be included in the campaign.

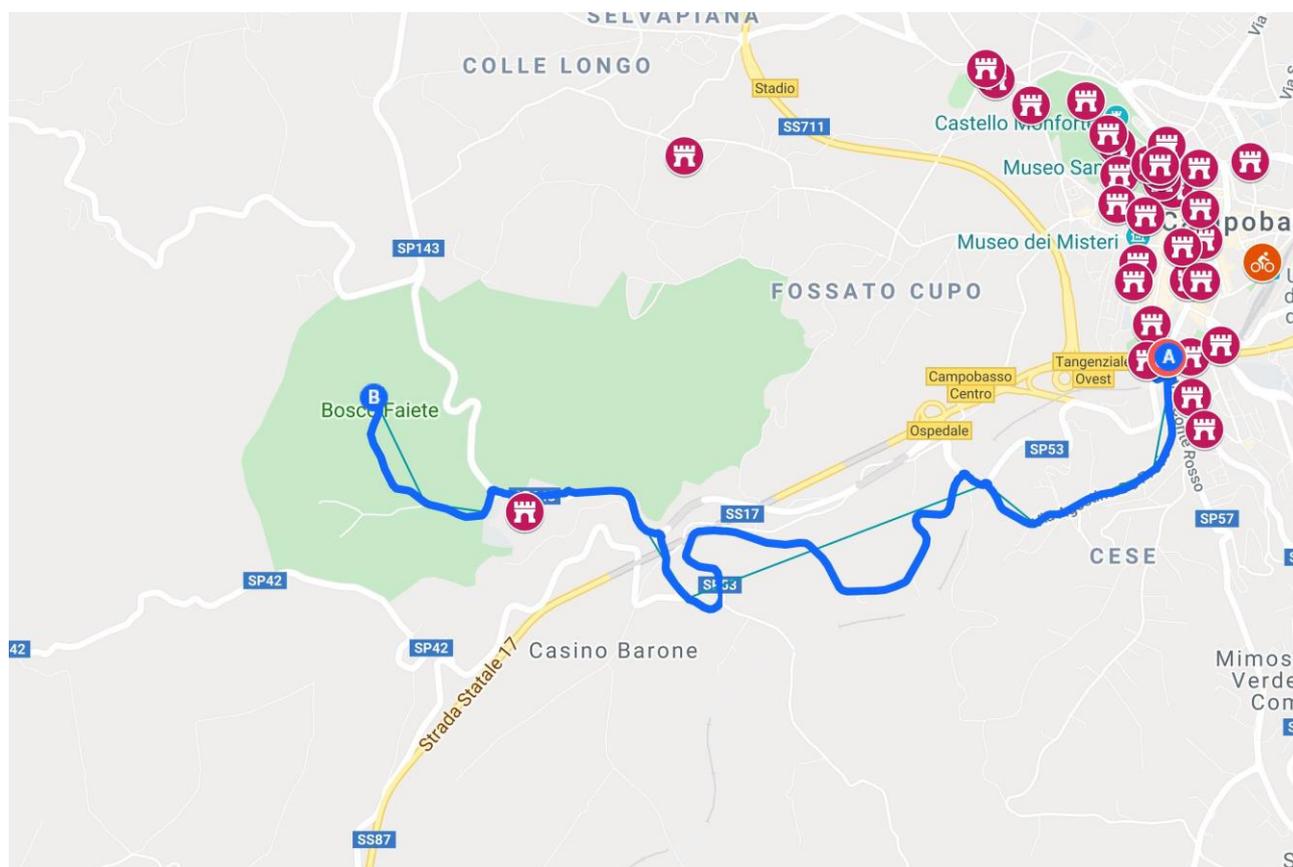
4.4 Campobasso

The Dynamob2.0 project involves the purchase and commissioning of two bike-sharing stations and twelve pedal-assisted bicycles. In addition to that, the project foresees the development of the Dyanmob2.0 roads, intended as a coordinated series of interventions of various nature aimed at promoting the electric cycle mobility and tourist attractiveness of the territory.

4.4.1 The identified itineraries

Figure 10 shows the first itinerary, about 5.2km, connecting Piazza Falcone and Borsellino to Bosco Faiete.

Figure 4 The itinerary Piazza Falcone and Borsellino - Bosco delle Faiete. In purple some points of interest.



The route serves an essentially tourist and leisure function by serving the city center with the tourist area of the Bosco Faiete. Alongside Dynamob2.0, the Municipality is defining some development projects for that area that are expected to make the area more attractive and accessible for touristic and recreational activities.

The route, in addition to the initial functions, also connects the hospital center to the city. The BikePlan, in connection with the development of the SUMP, will investigate how to promote the bike accessibility of the hospital center for both commuters and visitors, leveraging the Dynamob2.0 initiatives.

The route includes a bike-sharing station in Piazza Falcone and Borsellino, while only a traditional bicycle parking rack will be available at Bosco Faiete, in the are reported by Figure 11.

Figure 4-9: The suggested area for a bicycle parking rack at Bosco Faiete



The length of the path, less than 6 km, easily allows the use of a single recharge to make the round trip. Returning to the charging station will be eased also by the difference in altitude so that the return journey, from Bosco Faiete to Piazza Falcone and Borsellino, will follow mostly a descending path, thus facilitating the possibility of pedaling back to the station even if the electric bicycle runs out of recharge. Figure 12 shows the area identified for the bike-sharing station at Piazza Falcone and Borsellino.

Figure 4-10: The identified spot for the bike-sharing station at Piazza Falcone e Borsellino



The choice of this square for the bike-sharing station is based on multiple considerations. The current layout of the square easily allows the identification of an area to be used as a bike-sharing station without an impact on the area's circulation and parking availability. Secondly, it represents an elegant point of the city with the main entrance of Villa De Capoa as well as the presence of various institutional offices nearby. Third, the location on the edge of the southern area of the historic city center allows adequate coverage of the bike-sharing system throughout the city center, considering that the second bike-sharing station, near the railway station, is about one km far away. Fourth and final reason, the journey on Via Amedeo Trivisonno and Viale Alessandro Manzoni allows to use the station of Piazza Falcone and Borsellino also to satisfy a share of potential movements towards the University Center. The site therefore represents an elegant, institutional and functional gateway to the city on the south side.

4.4.2 Bike-sharing station at Piazza Cuoco

The second Dynamob2.0 proposal is not an itinerary - with a defined beginning and an end - but a bike-sharing station in Piazza Vincenzo Cuoco. The station is developed together with measures which make the service more attractive, such as traffic moderation, and value-added services for tourists and commuters travelling from/to Campobasso by train.

The goal of this station is to offer services which might increase the use of bikes for diversified travel needs, from the tourists to the daily commuters. The absolutely central location of Piazza Cuoco allows the bike-sharing user to reach most of the administrative, receptive, tourist and recreational functions within a kilometer away, offering a wide range of easily accessible traffic attractors. The diversification of the potential users reflects the need to provide a variety of additional services, as explained by the rest of this chapter.

Questions for discussion with stakeholders:

1. *What are the specific interventions to make the Dynamob2.0 roads more attractive and pleasant?*

4.4.3 Solutions identified by the dialogue with citizens and stakeholders

The proposed interventions are generally appreciated by both citizens and stakeholders. In particular, the appreciation regards bike-sharing as an incentive tool for the tourist and recreational usability of Bosco Faiete. Stakeholders and citizens have shown a skeptical position on the ability of the proposals to reduce traffic, because of the limited scale of the project - only twelve bicycles and two stations – but also for the type of transport demand being intercepted, mainly for tourism and recreational purposes, which develops essentially few journeys, during weekends, and with a strong seasonal pattern.

The station in Piazza Falcone and Borsellino shows an overall appreciation because it lays in the center of the city surrounded by close city services that might make bike-sharing attractive for daily needs. The station of Piazza Vincenzo Cuoco, in front of the FS station, is essentially appreciated as a gate for incoming tourists, but less for citizens. Unanimous suggestions, coming from both citizens and stakeholders, highlight the usefulness of extending the bike-sharing service to the most populated peripheral areas, as the possibility for citizens to use bike-sharing instead of their own car also depends on the availability of bike-sharing stations nearby. The extension of bike-sharing to other areas is however an element of evaluation of the future BikePlan to be designed, as already announced, within the SUMP.

4.4.4 Integration with other means of transport

The development of cycle mobility in a dense territory such as an inhabited center faces potential "conflicts" with other users, as the interaction affects the safety and attractiveness levels of each means of transport.

Considering the interaction between bicycles and other modes of transport, the solutions range from the establishment of a separated lane for bicycles to the other extreme which provides for the prohibition of circulation for bikes. Within these extremes, different solutions regulate the co-existence between bicycle and other modes of transport, identifying constraints and priorities to solve conflicts. Table 8 summarizes the different types of integration between the bicycle and other modes of transport.

Table 4-10: Design approaches of interaction between bicycle and other modes of transport

<p>Bicycle lane. The cycle path is a cycle infrastructure physically separated from vehicular traffic that offers an excellent level of safety and accident reduction but requires greater use of urban public space.</p>
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	<p><i>One way.</i> The conventional one-way cycle path follows the direction of the road but is physically separate from it. By requiring two separate infrastructures on the sides of the road, it is the solution that requires greater use of land.</p>
	<p><i>Two-way.</i> The two-way cycle path allows you to use a single infrastructure for both directions of travel, thus reducing the space required. This approach requires special attention at road intersections as vehicle drivers may not be aware of the possibility of cyclists arriving from two directions.</p>
	<p><i>Raised.</i> The elevated cycle path provides an additional level of security especially at intersections where presence is physically signaled by the elevated seat which must be crossed by vehicular traffic. The raised track can be designed both one-way and two-way.</p>
<p>Preferential lane. The cycle lane is dedicated to the bicycle but not physically separated from vehicular traffic. It therefore offers less safety in terms of accidents but reduces the space of use and allows greater flexibility in the design phase.</p>	
	<p><i>Conventional.</i> The conventional cycle path is a portion of the roadway bounded by specific signs and located to the right of the lane reserved for vehicular traffic.</p>
	<p><i>With safety distance.</i> The addition of an additional safety space between the lane used for vehicular traffic and the cycle lane significantly improves safety margins as it improves visibility at the turn. The safety space is also particularly useful in the case of proximity to the level car parks, as it reduces the possibility of an accident between the cyclist and the vehicle door when opening.</p>
	<p><i>Reverse flow.</i> The reverse flow cycle lane is usually used to allow cyclists to travel a one-way road against flow. This solution allows excellent visibility of cyclists by the vehicle passing in the opposite direction but requires greater attention at the lateral intersections as the vehicles entering it may not be aware of the arriving cyclist from the opposite direction.</p>

	<p><i>On the left side.</i> The lane on the left side is normally used only on one-way streets. This solution improves the visibility of the cyclist by the vehicle as the cyclist is on the driver's side; it also reduces potential conflicts with vehicles parked on the opposite side, as well as conflicts with bus stops.</p>
	<p><i>Centered.</i> The central cycle lane is usually used near an intersection where a significant vehicular flow with a right turn is expected. The lane preselection allows a greater understanding of the driver's intentions to turn and allows the driver to dedicate himself to the intersection with the cyclist before engaging in the intersection with the other cars and pedestrians.</p>
<p>Shared space. One method of designing the roadway is that which removes the segregations between the modes of transport to increase its promiscuity.</p>	
	<p>The shared space reduces the distinctions between the various modes of transport by creating a single shared environment. The shared space can be between cyclist and pedestrian, but also with vehicular traffic and can be thought of both at street and intersection level. The positive effect on road safety occurs when the various modes of transport slow down at speeds compatible with the other modes (therefore very low speed limits are required for motor vehicles).</p>

The situation in Campobasso has highlighted a scarcity of available space - caused by the high rate of vehicles owned by the residents, as well as by a dense and compact urban structure - which turns in a high competition between the different means of transport. This scarcity of public space and competition between means of transport is particularly accentuated near Piazza Cuoco station, where important road axes co-exist with other means of transport (the railway station and various bus lines), parking slots, and all surrounded by several city services.

Therefore, at present, the Dynamob2.0 proposed initiatives do not include the definition of preferential and protected lanes for bicycles due to the impossibility of getting more public space without seriously compromising the capacity of the other means of transport. In the case of the Piazza Falcone and Borsellino – Bosco Faiete itinerary, the urban density decreases considerably as soon as it moves outside the city center, making the route mainly sub-urban with less interactions and lower density. Consequently, the strategy suggested by the Municipality is to pursue the sharing of the space between the bike and the other means of transport, providing specific and punctual measures to reduce conflicts and increase safety.

It is worth to remember that the Municipality, together with other institutional actors, is nowadays thinking about an overall re-design of Piazza Cuoco which envisages measures to promote sustainable mobility, including greater attention to cycle mobility. The bike-sharing station in Piazza Cuoco stands as a first pilot action for the promotion of bike-sharing meanwhile the SUMP will identify wider and coordinated interventions.

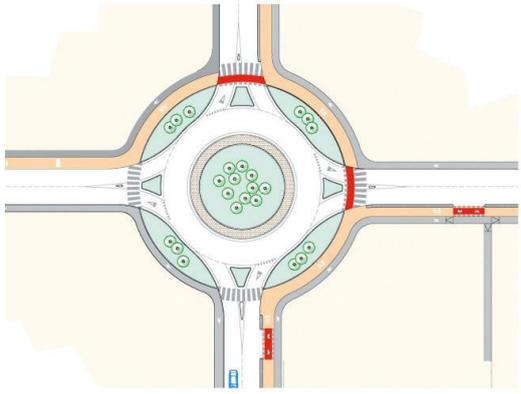
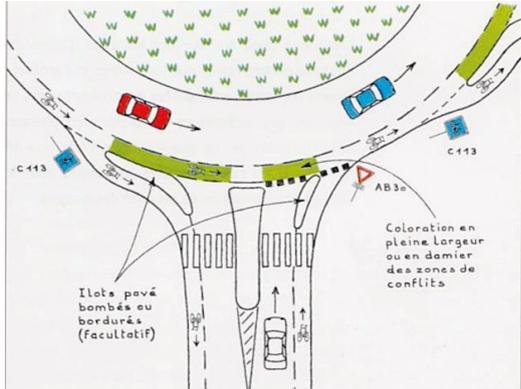
4.4.5 Intersections and crossings

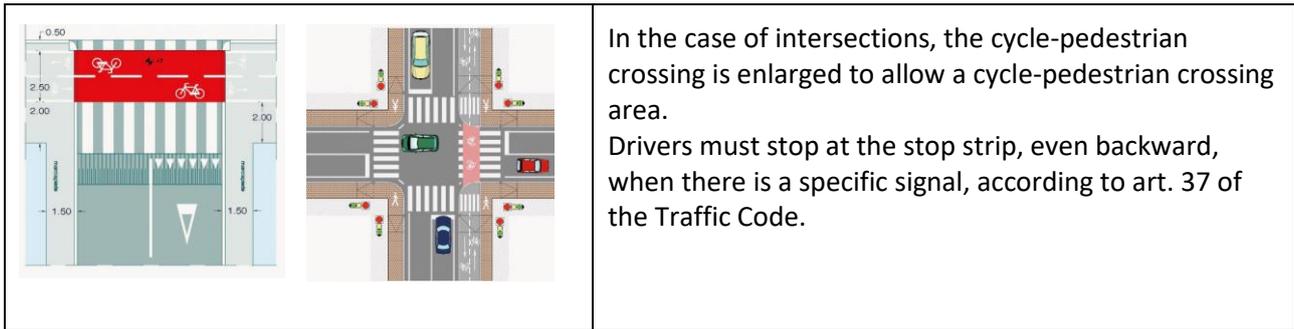
The use of the shared-space approach poses several critical issues relating to the road safety of cycle crossings in the presence of intersections and roundabouts, especially on roads without traffic moderation measures. Intersections are in fact the most dangerous points where the bicycle intersects other means of transport, especially cars, with obvious health and safety risks. Correct design of intersections and crossings is an essential safety feature, although it may require the use of a greater surface area, an aspect that is sometimes difficult to solve in the case of heavily urbanized areas.

The National Traffic Code indicates the legal standard of cycle crossings. As article 40 paragraph 11 states: "In correspondence of pedestrian crossings, drivers of vehicles must give priority to pedestrians who have started the crossing; vehicle drivers must behave in the same way towards cyclists at cycle crossings." The Traffic Code identifies a general priority of cyclists on vehicles but only in the case of specific cycle crossings.

FIAB has published a short guide on the design of cycle intersections with differentiated solutions for crossings around roundabouts (with a further subdivision between large and small ones) and crossings. Table 9 summarizes some examples of intersections between those of greatest interest for the context of Campobasso.

Table 4-11: Examples of intersections between vehicles and bicycles. Source (FIAB).

	<p>In the case of large roundabouts, a circular route is recommended with a geometry that makes the cyclist's intention clear, thus avoiding geometries that generate sudden turns from the cyclist, which are difficult to foresee by the vehicle driver.</p> <p>The cycle ring is usually highlighted by a different background color and is physically separated from the car lane, in order to facilitate mutual visibility, reducing the visual angle, at the moment of the intersection, between cyclist and driver, one of the main causes of collision.</p>
 <p>Ilots pavé bombés ou bordurés (facultatif)</p> <p>Coloration en pleine largeur ou en damier des zones de conflits</p>	<p>In the case of small / medium-sized roundabouts, the cycle ring may not be separated from the road lane, in fact it is often made using the outermost road lane.</p>



The general rules of good traffic on roundabouts are:

- The bikes that enter the roundabout give priority to those in the roundabout, but they must not give priority to the cars that are in the roundabout if there is a lane for bicycles, as there is no intersection, at the moment of entry, between car and bicycle.
- Vehicles entering the roundabout give priority to all those who are already in the roundabout, both cyclists and other vehicles.
- Cyclists take precedence over vehicles inside the roundabout: a driver of a vehicle exiting the roundabout must first let the cyclist who is on the outermost ring pass.

Figure 13 shows some intersections along the Dynamob2.0 itineraries in Campobasso that identify possible safety critical issues by cyclists. The Municipality of Campobasso will define the specific safety measures during the activation of the bike-sharing service, starting from a greater attention to the quality of horizontal and vertical signs, as well as from the verification of the possibility of providing for advanced space lane in crossings with the presence of traffic lights.

Figure 5 List of intersections relevant to road safety for cyclists on the Piazza Falcone e Borsellino - Bosco Faiete route



Intersection between Viale Duca D'Aosta and Via Amedeo Trivisonno



Intersection between Via Amedeo Trivisonno and Via Conte Rosso



Roundabout at Via Agostino Depretis - SP53



Roundabout at SP53 - Ring road



Roundabout at SP143 - Sannitica Provincial Road



Intersection between SP143 and the Access to the Hospital Center



Intersection between SP143 and Largo Gemelli

The discussion with stakeholders and citizens had therefore the purpose of identifying the methods of interaction between the various modes of transport in order to guarantee the safety of traffic and the sustainability of the mobility offer. Questions for discussion with stakeholders:

1. *What are the best traffic rules for the co-existence of the bicycle with the other modes of transport along the two Dynamob2.0 routes?*

4.4.6 Solutions identified by the dialogue with citizens and stakeholders

On the issue of integration with other means of transport, the most recurring suggestion is to provide an integrated ticket that allows both parking at the train station and accessing to the bike-sharing service, a solution that promises to be particularly welcome to encourage the use of the service at the Piazza Cuoco station.

Regarding safety, stakeholders agree with the complexity of providing protected lanes for cyclists due to the high density of use of the current road space. In particular, the high presence of cars makes the roadway particularly congested and the development of preferential lanes for cyclists would be detrimental to the offer of parking spaces in the area, a lively issue in the public debate. For this reason, the coexistence of the bicycle with means of transport is the short-term preferred solution.

A second solution is to equip the bike-sharing service with helmets for bicycles, also in order to protect the municipal administration (or in any case the service manager) from any civil liability in the event of accidents. However, such solution generates relevant issues, for example about how to avoid thefts and how to guarantee a high standard of hygiene, in consideration of the use of the same helmet by multiple users. One method, to be verified with the support of local stakeholders, is to offer a pick-up and drop-off service at some shops adjacent to the bike-sharing stations.

The last short-term solution regards widespread traffic moderation measures where cyclists interact with other means of transport, especially in the roundabouts along the route. Adequate horizontal and vertical signs is confirmed to be a very cheap and effective strategy to make motorists aware of possible interactions with cyclists.

Stakeholders also expressed their appreciation for the idea of a reverse flow on Viale Principe di Piemonte, intersection on Piazza Falcone and Borsellino, to improve the safety of the crossings between Viale Duca D'Aosta, Via Amedeo Trivisonno and Via Conte Rosso on the planned route Piazza Falcone and Borsellino-Bosco Faiete.

4.5 Skrapar

4.5.1 Pilot action

4.5.1.1 Design of the system

Our Pilot action for the bike sharing and charging point system is based on a fully managed service where one or more suppliers would provide the following items:

- **8 electric-assist bicycles (8 MTB)**
- **16 standard bicycles (8 MTB, 4 NORAL, 4KIDS)**
- **2 bicycle distribution points along with the respective charging point recharging docking points**
- **accessories (GPS, smart lock,tools ect)**
- **1 eco charging machine**

The main and only station will be in the centre of the city as shown in the map above.

Staff will be positioned there for job management.

These services will be provided in the city of SKRAPAR.

Figure 4-13: Skrapar and national / regional roads



4.5.2 System operation

The #DynaMob Cycling Hub and bike sharing system in SKRAPAR will be developed according to the following scheme:

Publicly owned

The municipality will be the sole owner of the system. It will control, manage and qualify the staff for a more efficient performance. It will collect income which will be used for salaries, taxes, rent, etc. There will also be constant contact with the Tirana Chamber of Commerce for more specialized support.

4.5.3 Launch of the service

A campaign will be launched via the website and social media in Skrapar for the services and routes promotion. Feedback tests will involve mobility providers, operators and citizens.

The campaign will be an event framed to the media and the public, and featuring participation of important officials. The aim of the event will be to aware potential new customers about the service and share the idea that the #DynaMob Cycling Hub and bike sharing system can work for residents as well.

Customer service, before and after opening, will help users navigate the system's components and functioning. The selected operator will offer free rides and test to customers.

Promotion in digital multimedia also e.g. project website, partners institution website and social media will be also secured.



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