



## **“Sustainable mobility through public service in low demand areas”**

Wednesday 11 May 2022

Lilla Bommens Conference Center  
Gothenburg

# **SOCIAL TRANSPORT INFRASTRUCTURE IN LOW DEMAND AREAS IN THE EAST PARMA APENNINES**

**PROVINCIA DI PARMA**

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In cooperation with

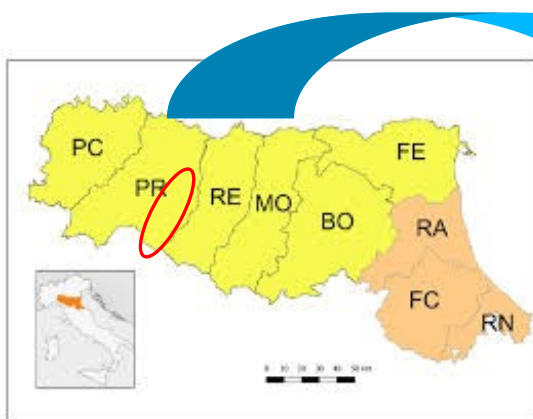


*The main question addressed by the seminar will be how to identify new solutions to facilitate mobility to/from small villages in rural and mountain areas.*

*These areas are far from larger urban big centres and it is difficult to manage a public transportation service, as they are low demand areas and a regular public transport service can be difficult to sustain in the long run from an economical point of view.*

***What kind of alternatives can be promoted and implemented in order to provide an alternative mean of transport to people who cannot use individual cars such as students and old people?***

## PROJECT ABOUT SOCIAL TRANSPORT INFRASTRUCTURE IN LOW DEMAND AREAS IN THE EAST PARMA APENNINES



Langhirano



Lesignano  
de' Bagni



Monchio  
delle Corti



Neviano  
degli Arduini



Corniglio



Palanzano

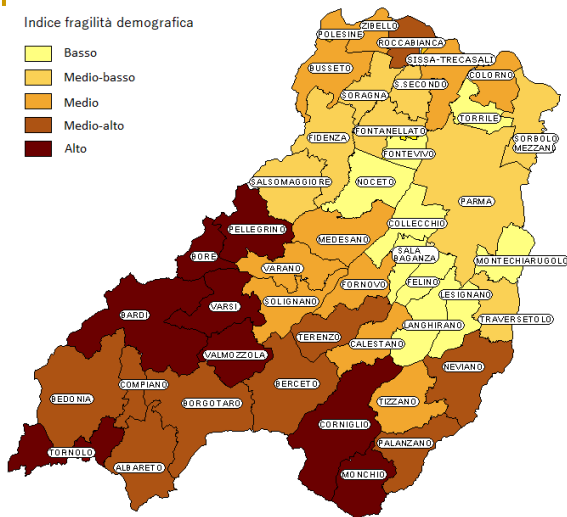
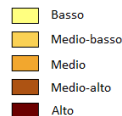


Tizzano  
Val Parma

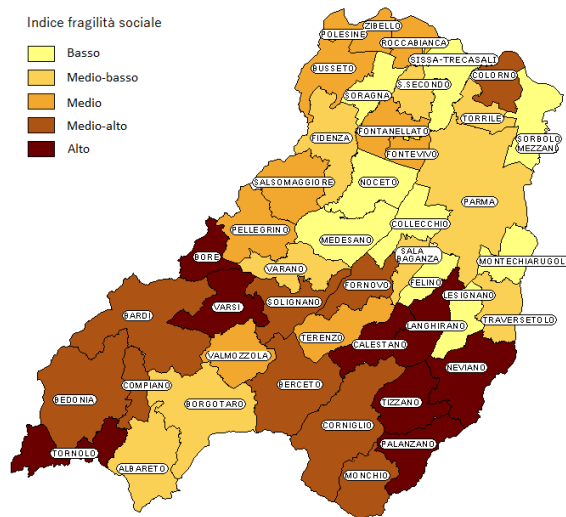
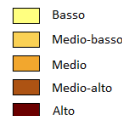
**7 involved Municipalities**

# Province of Parma: Context Analysis

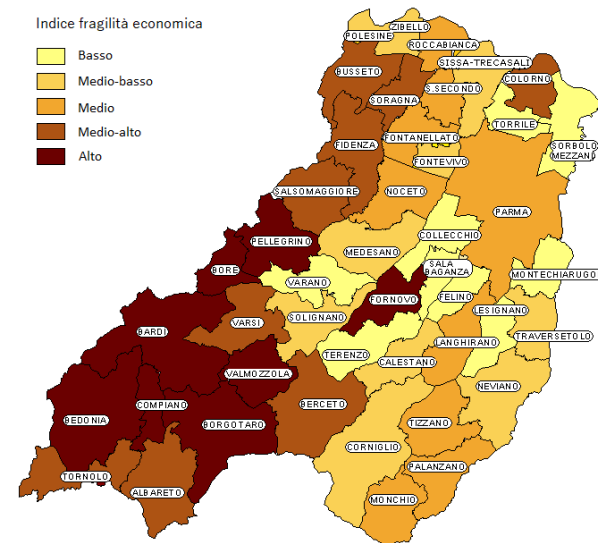
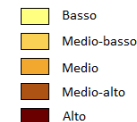
Indice fragilità demografica



Indice fragilità sociale



Indice fragilità economica



## Potential demographic fragility

% 80 years old (+) on 31.12.2020

variation % pop. 1.1.2016 - 31.12.2020

natural average balance \*1000 2016-2020

## Potential social fragility

%Seniors in single-person households on total population aged 65 and over on 31.12.2020

Average % change in foreign population 2016-2020

incidence % foreigners 0-19 years old on 31.12.2020

%graduates 25-49 years old - 2020 Permanent Census

% minors in single-parent families out of the total number of minors residing in the family 31.12.2020

## Potential economic fragility

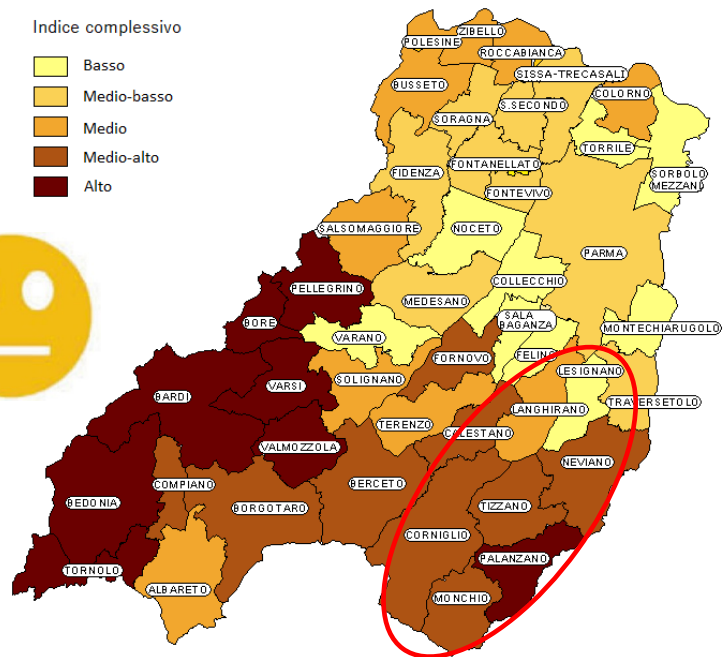
% rental-occupied dwellings (occupied by at least one person who is a resident of the household) 2011 Census

average taxable income per taxpayer 2019

% taxpayers with 0-10,000 total income - of total taxpayers 2019

Variables

Indice complessivo



## Synthetic indicator of potential fragility

*The synthetic indicator of potential fragility is obtained through a weighted average of the three indicators, according to the following weights:*

- Indicator of potential demographic fragility
- Indicator of potential social fragility
- Indicator of potential economic fragility

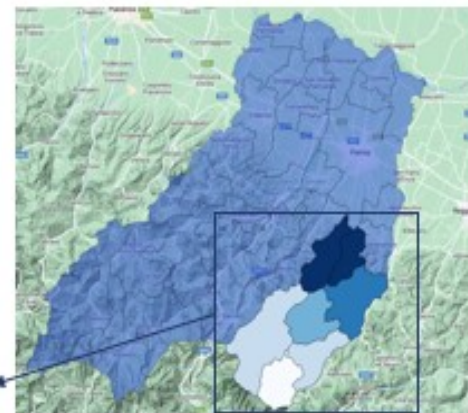
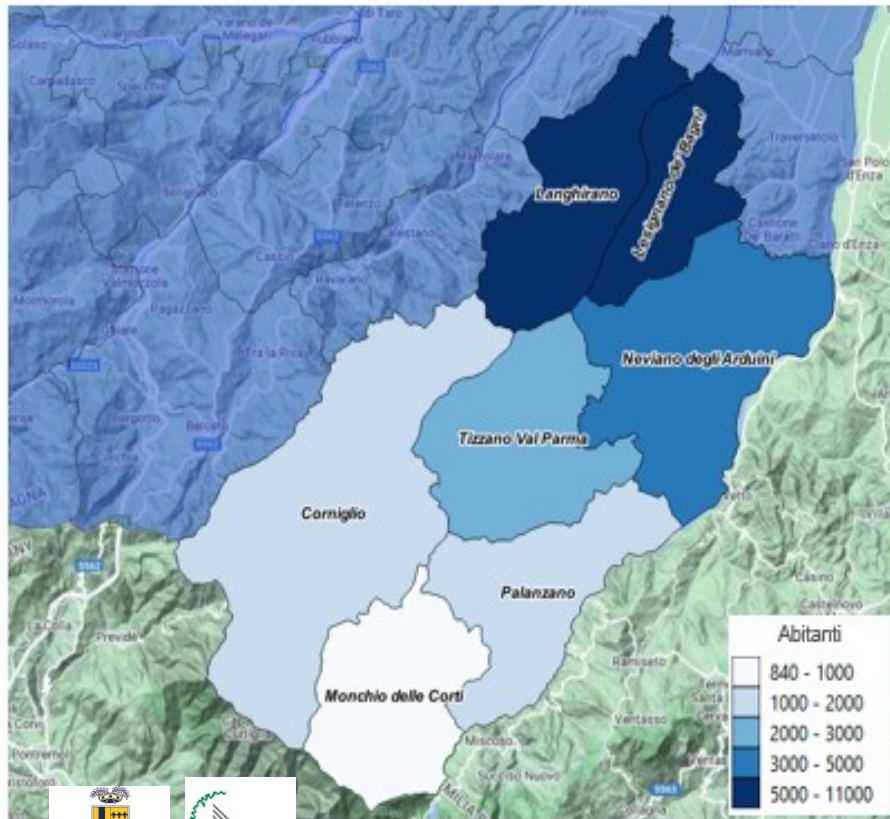




# THE CONTEXT AND SOCIO-ECONOMIC DYNAMICS IN THE INTERVENTION AREA

The Province of Parma is characterized by a part of territory (mountain and pre-mountain), so-called "rural area", consisting of a series of municipalities in which there is a demographic decline and a significant decrease or aging of the population, municipalities where the weakness of development prospects determines an increasing difficulty of living conditions of citizens who live there.

The area of intervention concerns the 7 municipalities of the Unione Montana Appennino Parma Est: Corniglio, Langhirano, Palanzano, Monchio delle Corti, Tizzano Val Parma, Neviano degli Arduini, Lesignano Bagni.



"The demographic framework of the Unione Montana Appennino Parma Est from 2003 to 2021 and projective scenarios to 2050", conducted by the Statistics Office of the Province of Parma, shows a decline in population in the last years of the period analyzed, which is effect not only of increased mortality, but also a decrease in the migration balance

## Population distribution by age groups

In 2021, the distribution in the 7 municipalities by age groups is as follows:

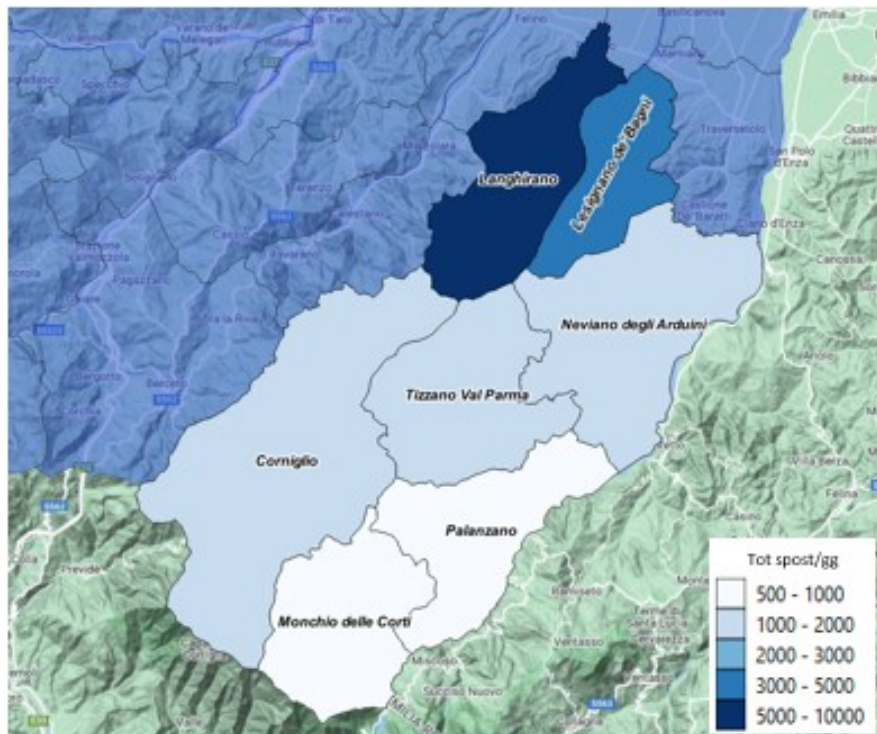
- **60%** of the population living within the seven municipalities is between **15 years and 64 years old** (coinciding with the so-called "**active population**")
- **25%** of residents are over 64 years old, of which around a third are **over 80** (2,087 residents), corresponding to the so-called "**third age**".

Classi di età	2021	2026	2031	2036	2041	2046	2050
65+	6.221	6.655	7.212	7.794	8.260	8.485	8.515
65-74 anni	3.031	3.173	3.551	3.890	3.991	3.856	3.688
75 e + anni	3.190	3.482	3.661	3.904	4.269	4.629	4.826
80+	2.087	2.122	2.312	2.419	2.588	2.849	3.049

All age groups inherent in the elderly population (65+) are estimated to grow through 2050, but the oldest age groups, i.e., the population **over 75, are growing very significantly**.

This scenario requires solutions focused on ensuring **more services dedicated to the fragile population** in order to support their development and increase their quality of life.

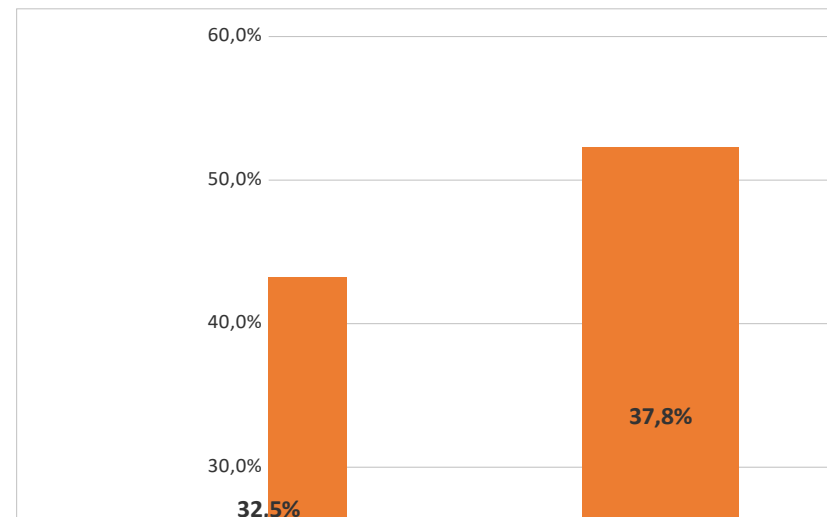
## THE REQUEST FOR MOBILITY IN THE UNION OF MUNICIPALITIES PARMA EAST



In 2019, the demand for systematic mobility (commuting) within the seven municipalities developed approx:

**10 thousand trips/day as origin**

**8 thousand displacements/day as destination.** Langhirano, the most populated municipality, has the highest number of displacements (4,488 as origin and 5,070 as destination), while Monchio delle Corti represents the municipality with the lowest number of attracted/generated displacements in the Union.

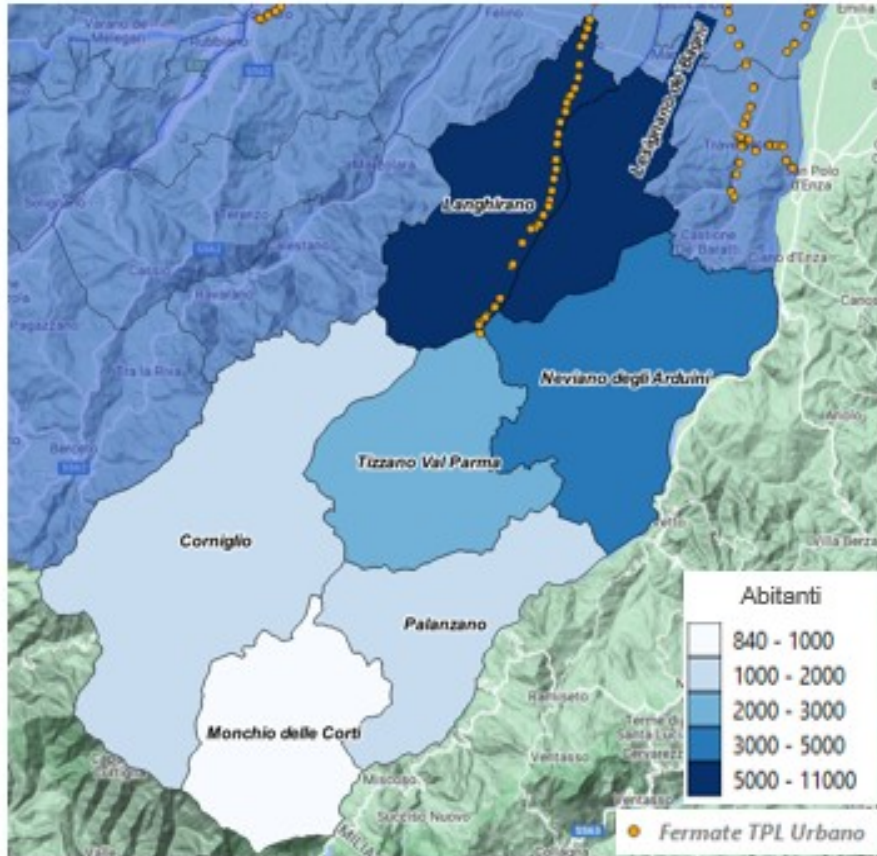


The comparison between the various emission indexes (ratio between the total resident population and the percentage of people who daily make at least one trip for study or work), at a national, regional, provincial level and relative to the Parma East Mountain Union, shows that the emission index relative to the Union, equal to approximately 43%, is lower than the provincial (52.3%), regional (52.0%) and national (47.6%) values, both in relation to the total value and to the specific emission for study and work reasons.

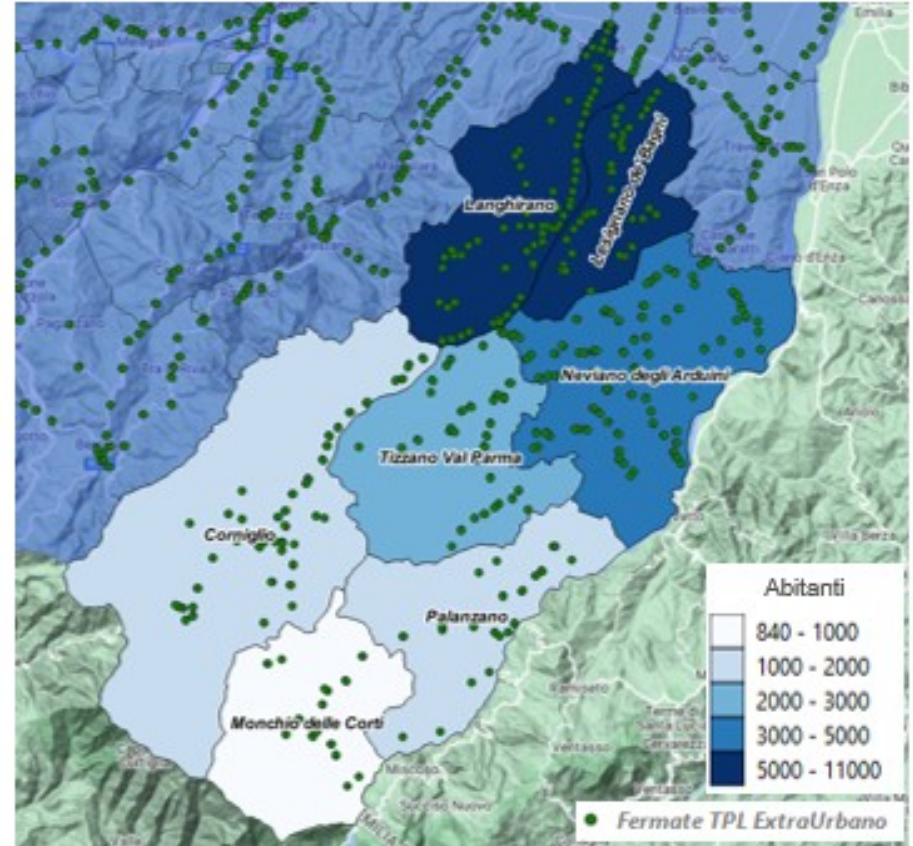
These data confirm that the attitude to travel in mountain municipalities is clearly affected by peculiar territorial conditions that lead to greater **discomfort and difficulty in moving**.



## THE TRANSPORT OFFER IN THE UNION OF EAST PARMA MUNICIPALITIES



The (urban) **LPT Local Public Transport offer** is present in the municipality of **Langhirano** and in the extreme north of the municipality of **Tizzano Val Parma**; it is **absent in the other municipalities**.



As far as the **extra-urban LPT** is concerned, the service covers all seven municipalities and reinforces transport in the most internal areas of the provincial territory. There are **24 lines and about 550 stops in all the municipalities**. In particular, the municipality with the most lines is Langhirano (14 lines) while the least served municipality is Palanzano with only 2 extra-urban lines.





In the territory of the Mountain Union there are several services, in addition to health services: counseling centers, cultural services, sports services and centers for the disabled... which are important **"poles" of attraction for the inhabitants of the Union of Municipalities.**

The scheme of the LPT service network offered in the municipalities of the Unione Montata dell'Appennino Parma Est (Eastern Parma Apennines Mountain Union) shows a greater concentration of routes and stops in areas of the municipality of Langhirano and Lesignano de' Bagni.

Some portions of the territory of the same municipalities and of Corniglio, Monchio delle Corti, Neviano degli Arduini, Palanzano and Tizzano Val Parma are instead characterized **by little or no accessibility to public transport services as there are no LPT stops within a radius of 500 / 700 meters.**

Consequently, it is important to **ensure additional transport services throughout the Union**, in order to allow interested users a greater degree of accessibility to the main poles of attraction.

The "Strategic Plan for the development of the eastern Parma Apennines" confirms the need to provide for **interventions to avoid the phenomenon of depopulation and highlights "the need to relaunch the network of personal services, infrastructure and public services that can provide a fundamental support for an organic growth of the territory".**

The development and strengthening of **personal services** such as social services and health services are an essential condition for the **effective protection and enhancement of people.**



## THE PROPOSAL'S AIMS



The context of the Unione dei Comuni dell'Appennino di Parma Est (Union of Municipalities of the Eastern Parma Apennines) is characterised by a **"fragile"** territory in terms of resident population, **"low demand"** in terms of mobility, **"rural"** in terms of location of the intervention area, characterized by **"social unease"** in relation to the depopulation of municipalities recorded in recent years

The public transport sector, for some years now, has launched **flexible service formulas**, such as **on-call buses**, **cab services** and **chauffeur-driven hire** in support of traditional **LPT**, subcontracting of lines, etc., but these are **not always affordable** for citizens, particularly in rural areas and with elderly populations, as in the case of the municipalities of the Parma East Union.



In correspondence with the strategic poles pertaining to the rural area of the Unione dei Comuni di Parma Est (Union of Municipalities of East Parma), the demand for transport services is not fully satisfied by the current offer, and improvement is problematic, given the structural lack of funds and the difficulty of intervening on the current service contracts of the automotive LPT.



The project proposal of the Province of Parma is part of a **path undertaken by the European Commission** aimed at **strengthening the most accessible transport services** with new service formulas, which can aim at the **"sharing economy"** approach.

## A PROPOSAL FOR A NEW SERVICE FORMULA

The **project proposal** foresees the launch of a new service formula that stems from a **punctual qualification of the requirements of the demand for mobility** (elderly and disabled users, but also young people entering sports activities and elderly accessing social centers and cultural services) to establish and quantify the sharing offer (shared between the seven municipalities of the Union) that will be an effective solution, in order to:



to offer basic mobility to all the elderly, including those with mobility difficulties, and to young people in all areas of the municipalities of the Union of the Parma East Apennines;

provide a convenient and effective alternative to the single use of the private vehicle;

to offer an alternative service in areas where today it is not possible to use traditional public transport and to extend the transport service to areas and localities currently not reached by conventional service;

to create a "network" of connections between the Union's municipalities and between the relative poles (health homes, medical wards, centers for the disabled, counseling centers, cultural and sports services...)



## THE PROJECT PROPOSAL IN THE UNION OF MUNICIPALITIES

The project is divided into three phases



### Phase 1 Actualization

Phase 1 foresees the implementation of a **new service solution**, subject to the precise identification of the target demand (i.e. the potential demand, not satisfied in part or entirely by the public service currently offered) that **includes the different user segments**: elderly people and those with motor difficulties, disabled people, users of social, health and care services, young people who practice sports, users of social and cultural services.

This phase will be developed through:



a **dedicated survey (fieldwork and web-based)**  
through the design of a questionnaire

The organization and planning of facilitation  
activities,  
focus groups and living labs

It is estimated that the potential beneficiaries of the project may be the inhabitants of the seven municipalities of the Union, aged between 15 and 20 years (for transport services to sports centers) and aged between 65 and 85 years (for services connecting with nursing homes and health, health services, social and cultural centers), quantifiable in January 2022 in about seven thousand people.

At the end of this phase it will be possible to finalize and confirm the **list of strategic poles of the Union** of Municipalities, thanks to which to **size and plan the collaborative transport solution** (shared between the seven municipalities of the Union), as an effective solution to **ensure users a higher level of accessibility** and create a **network of connections** between the various municipalities of the Union.

## Executive planning of the service

The executive design (i.e. the organization and planning) of the transport solution allows the optimal technical and economic dimensioning of the service, guaranteed by the use of **seven electric vehicles**, defining:



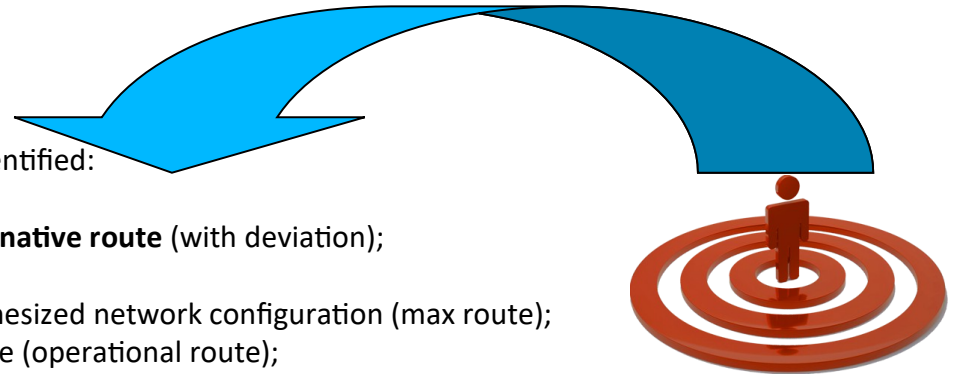
The **basic routes of connection** with the strategic poles of the 7 municipalities;

The **number of shifts and drivers** necessary to carry out the

The level of **territorial coverage** of the **target users** to be satisfied;

The **frequency** of the service;

The service pattern (**number of**  
in the **identified time slots**).



In particular, for each cluster (pole of attraction) will be identified:

- the **route** (municipalities, areas/zones crossed);
- the **length of the main route** and, if necessary, of the **alternative route** (with deviation);
- the **maximum deviation**
- the **maximum value** that the route can reach in the hypothesized network configuration (max route);
- the **length value** used for the technical design of the service (operational route);
- the average **journey time**;
- the service **users per day**.

**cluster (pole of attraction)**

A **benchmarking analysis** of the main studies and experiences of innovative transport services at national and European level will be carried out in order to choose the collaborative transport solution best suited to the needs of the territory.



The theme of **ENVIRONMENTAL SUSTAINABILITY**, after the inevitable drop in attention during the emergency period, is the subject of continuous revival;



Thanks to the increased propensity of users to **USE TECHNOLOGIES**, the offer of innovative accessory services based on ITS is more easily conveyed;



**SAFETY** (intrinsic and perceived) becomes a key driver for redesigning the new service offering;



Local governments should promote **new partnerships with private operators** to renew and develop the offer of innovative services, widely accessible and **integrated with the LPT offer in a multimodal logic**;



Renewed collaboration with **MOBILITY MANAGERS** can lead to identifying optimal sustainable mobility solutions for home-work trips;



Local authorities and administrations will have the task of maintaining and optimizing the available resources, finding **NEW BALANCE POINTS** for the budgets of transport companies.



## THE MAIN SERVICE MODELS

The **main service models** active at **national and European level** can be traced back to **three different solutions**, which are functions of both the model applied and the governance envisaged:



**DRT (Demand Responsive Transport):** demand responsive transport solution, characterized by flexible routes and/or timetables based on user requests



**Dynamic Collective Travel Sharing Services:** shared mobility solutions with a dedicated mobile application. The application generates in real time the best solution among the various travel requests received, giving priority to the first ones received, and communicates to the user the pick-up point, the drop-off point and the time of use of the service



**Social transport:** transport solutions offered by **voluntary associations**, financed through funds or donations. The services are mainly offered in peripheral and rural areas in order to guarantee optimal and satisfactory transport solutions mainly to the category of elderly, disabled and not autonomous users.

The "**Start-up**" phase of the service includes:

- the fine-tuning of the economic framework
- the identification of the management model of the transport solution,
- the purchase of the electric minivans
- the supply of IT tools and the training of dedicated personnel



## Phase 2 Start-up



**Finalization of the economic framework and identification of the service management model**

**The "sharing economy" paradigm**

Initiative governance tool



**Electric vehicles planned for the service**



*Service management IT platform*



The choice of an electric power supply for the vehicles is in line with the principle of "**Do No Significant Harm**", an indispensable condition for access to Recovery and Resilience Facility funds, in line with the double objective set by the European Union of achieving **climate neutrality** by 2050 and reducing greenhouse gas emissions **by 55%**, compared to the 1990 scenario, **by 2030**.

The **computer platform** is expected to support the management of the organizational details of the trip of the individual user (date, time, place of departure). For these purposes it is expected, in addition to a strong involvement of the municipalities of the Parma East Union and all local stakeholders, a system of comments on the platform to know in advance the characteristics of their trip, the previous satisfaction, and other features to **ensure the reliability and safety of travel**.



## PHASE 3 Testing and support

Following the "Start-up" phase of the service, the testing **phase of the transport solution** will begin for a period of 18 months.

**Specific performance indicators (KPIs)** aimed at monitoring the shared transport solution offered will be monitored during the testing and support phase, such as:

**Number of bookings made:** distinguished by municipality and period of the year;

**Vehicle productivity:** in terms of kilometers travelled, broken down by route and period of the year;

**Revenues:** broken down by route and time of year;

**Frequent destinations:** in order to identify the main poles of attraction for which travel is carried out;

**User characteristics:** age group, municipality and reason for travel;

**Cost per vehicle and/or service, territory, municipality;**

**Other KPIs** that will be shared in the Testing Phase.





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