

4.2 School Bus Service and technology support (IT)

School Bus Service dedicated to children attending kindergartens and primary schools and students attending secondary schools implemented in the southern part of Tuscany in Italy and operated on the basis of two different schemes, a conventional bus service and an “open door” service.



4.2.1 About South Tuscany, Italy

Country	Region	Target Area	Population	Population density inh./Km ²	Visitors/year
Italy	Tuscany (South)	900,31 Km ² (Montieri, Monterotondo M., Massa M., Civitella Paganico, Piombino, Campiglia M.)	60.000 inh. (6 municipalities)	Montieri = 11,03 Monterotondo M.=12,49 Massa M.= 28,71 Civitella Paganico = 15,03	Montieri = 2534 Monterotondo M. = 1957 Massa M. = 34.859 Civitella Paganico = 11.757

The School Bus Service is implemented in the southern part of Tuscany in Italy, specifically in the area of the union of municipalities ‘Colline Metallifere (Metalliferous Hills)’, established in 2012 and including the rural municipalities of Montieri, Monterotondo Marittimo and Massa Marittima (province of Grosseto), the rural municipality of Civitella Paganico as well as the municipality of Campiglia Marittima (~12.815 inhab.). The municipality of Piombino (~25.000 inhab.), also included in the union of municipalities, is the main destination of the service.

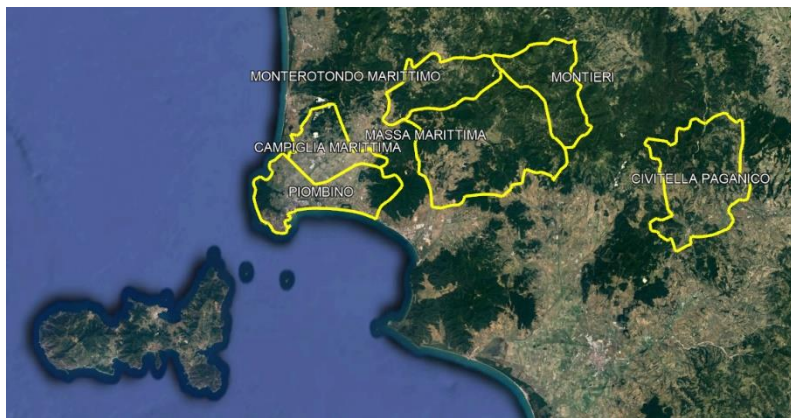


Figure 63 – Map of the involved municipalities

The rural area is mainly hilly on south-western part and flat along the coastal strip, except for the promontory of Piombino which separates the homonymous city from the Gulf of Baratti, on whose northern summit stands the medieval village of Populonia. The rural area of the ‘Colline Metallifere’ is characterised by natural landscapes, pine forests and vineyards.

The socio-economic characteristics of the municipalities are very different based on their size, geographic location, infrastructure, activities and population composition. Piombino, one of largest city in the province of Livorno, is an important hub for ferry

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connections with the islands of Elba, Corsica and Sardinia with also a significant ro-ro traffic interchange. Campiglia Marittima is an important railway station node of the Tuscany transport network, located on the Tyrrhenian railway axis, connecting the Tuscany and Lazio Regions and the Tuscan coasts' municipalities, one acting as a multimodal hub. In addition, Campiglia also presents relevant tourism flows both within the municipality area and to Island of Elba thanks to the connection with Piombino.

The socio-economic characteristics of the other involved small rural municipalities (i.e., Montieri, Monterotondo Marittimo, Massa Marittima and Civitella Paganico) are mainly related to agriculture and, in particular, to vineyards and olive-culture being part of the Cities of Wine and Cities of Olive Oil Associations. These municipalities have also developed significant tourist sector, thanks to their historical/medieval inner centres, cultural heritages and attractive surrounding rural area. Some of these villages have been awarded the "Orange Flag" by the Italian Touring Club and are part of the circuit of "The most beautiful villages in Italy".

4.2.2 Description of the Mobility Solution

The School Bus Service is dedicated to children attending kindergartens and primary schools and students attending secondary schools. From the operational side, the school bus services are operated on the basis of two different schemes:

- **Conventional school bus service**, operated with vehicles dedicated to the specific type of passengers and dedicated exclusively to a specific target user (children attending kindergartens and primary schools and students attending secondary school). In general, the pick-up (and drop-off) points are agreed between the Municipalities and the transport operators, taking into account also the needs and indications of the parents/families. In some cases, the public transport stops are used as pick-up and drop-off points, together with some defined meeting points specially in remote rural areas.
- **"Open door" School bus service**, operated with conventional vehicles (generally buses of 8, 10 or 12 meters) for the transport of both schoolchildren (for reaching primary schools) and students (for reaching secondary schools) as well as for allowing the journey also to other PT passengers/users.

Target user groups and needs

Piombino residents mainly travel for daily work/school activities or for shopping. People living in small villages of the other rural areas mainly commute (the main mode is the private vehicles) for daily work / school activities towards the city of Piombino.

The public transport offer in the different involved areas is quite limited both in terms of quantity (service hours, frequency, etc.) and quality (comfort, coverage, punctuality, etc.). In terms of infrastructure, the railway network cover only Campiglia Marittima and Piombino while the conventional bus services are based on fixed extra urban lines and some feeder lines. Therefore, public transport throughout the different areas is considered to be very weak and clearly does not meet the needs of different groups of citizens and tourists.

In this context the service is mainly aimed at students of both primary and secondary schools and at all citizens who can use the service in conjunction with students.

Involved Bodies

The School Bus Service is regulated by a specific service contract, signed between the Municipalities and the transport operator. It is important to highlight that this service is considered as "essential public service" and

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therefore is regulated by national law (N ° 146 of 12 June 1990). The main actors involved in the planning, contracting, implementation, monitoring and evaluation/assessment of the services are:

- The *Municipalities* of Massa Marittima, Monterotondo Marittimo, Civitella Paganico, Montieri, and Campiglia Marittima involved in the planning of the service, in the elaboration of the tender documents describing the service technical and operational specifications, in the assignment of the service to a Transport operator, in the monitoring and assessment of the operated service.
- *Transport Operator*: AT Autolinee Toscane provides the overall public transport services in South Tuscany territories, which operates urban bus services in Arezzo, Siena, Grosseto and Piombino, and “extraurban” bus services in rural areas in southern part of Tuscany Region.
- *School Bus operators*: different companies operate the specific school bus service in the different municipalities/areas contracted by the individual Municipality or by the union of municipalities
- *End-users* (mainly families and pupils): final users of the school transport service. Their needs and suggestions represent the base elements that the Authority and the Transport Operator should consider in design and operating the service. Additionally, feedback provided by the end-users during on-road service operation allows to better evaluate and, if needed, to improve/change the service.

Mobility services provided/addressed

The School Bus Service operated in Montieri, Massa Marittima and Civitella Paganico follows a traditional service scheme, “many-to-one” in the case of outward journeys, and “one-to-many” scheme in the case of return journeys. For children attending kindergartens and primary schools and secondary schools’ students with a service subscription, the pick-up points are defined by the Municipality in agreement with the families (in some cases, they are represented by the conventional Local Public Transport bus stops). The service is dedicated to children attending kindergartens and primary schools and secondary schools’ students. Kindergartens and primary schools’ children must be always accompanied by an adult.

In Monterotondo Marittimo (and Piombino), instead, the school bus service is operated under “open door” scheme. This is dedicated not only to students but is also open to the other citizens groups, as conventional bus lines. The service moreover is operated as the other transit lines and, in most of the cases, the buses are equipped with specific IT systems such as AVM (Automated Vehicle Monitoring system) and e-ticketing systems.

Supporting technologies

User information panels are installed in the Campiglia Marittima station and in the port of Piombino, in order to provide information about the PT service timetable.

Usually, the school buses dedicated to the kindergartens and primary schools’ children are not equipped with any ICT device but connected only by phone; the service for secondary school students being based on standard bus (dedicated or “open” to other users) sometime could be equipped with ICT (mainly Fleet control or e-ticketing system).

The choice to involve or impose (in the procurement) the ICT equipment (on bus board and/or with travel dispatch centre) depends on the budget (better on the economic financial plan) available for the service and the duration of the contract.

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Engagement aspects

End-users are families with babies and children from the age of 3 to the age of 14 attending infant and primary schools; and young students aged 14 to 18, attending secondary schools. They are asked to complete *Customer Satisfaction surveys*, elaborated by the transport operator, to evaluate the service and provide feedback for potential improvements.

Ridership and other key metrics/results

The following table highlights a total of around 11.000 Kms/week and therefore, considering an average of 35 weeks/year of running service, it is possible to estimate a total of 385.000 Kms/year, operated by different typology of school buses (from minibus to 32 pax bus).

Item	Montieri	Monterotondo Marittimo	Massa Marittima	Civitella Paganico	Campiglia Marittima	Piombino
No. of students subscribed to the service	61	28	62	105		184
No. of students transported in typical weekday	45	28	43	102		184
Educational institutions served	Kindergarten, Primary and Secondary school	Kindergarten, Primary and Secondary school	Kindergarten, Primary and Secondary school	Kindergarten, Primary and Secondary school		Kindergarten, Primary and Secondary school, High school
Overall number of accompanying/assistance people (on board)	1	4	1	2		8
No. of available vehicles	3	3	4	4	7	15
No. of vehicles used in a typical weekday	2	2	3	3	6	11
Type of vehicles used	School bus	Minibus	School bus	School bus		Bus (different sizes)
Vehicle capacity	35 pax	27 pax	32 pax	34 pax		Min: 18 pax; Max: 85 pax
No. of available drivers	2	5	3	3		16
No. of drivers operating in a typical weekday	2	3	3	3		13
Overall trip duration (minutes/week)	2900	1507	1120	1065		5530
Overall length of the trip (Km/week)	1295	726	1110	1320	2178	2665
N° of trips/week	46	34	47	90		154
Overall number of stops served	25	24	31	53	104	169

Figure 64 Ridership and metrics - School Bus South Tuscany

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4.2.3 Timelines and Milestones

Milestone no. 1: 2012 - Assignment of the service

The service is planned and put out for tender (procured) by the individual Municipality. In the case of the school bus for high school students the bus service is included in the conventional PT service (procured by the individual province or Region (as the case of Tuscany)).

**Milestone no. 2: 2020** – Covid Period

From March 2020 on, the COVID-19 impacted the overall transportation system and the school bus services were suspended due to the suspension of the school activities.

**Milestone no. 3: 2021** - Change of the operator

From January 2021, operation of the service was transferred from Autolinee Toscane to Tiemme

4.2.4 Long-term assessment

Success, Durability and Expansion

The service is greatly appreciated by citizens residing in the areas concerned.

Regarding its continuity, it must be considered that this is a "public service" and cannot be suspended or abandoned except in cases of force majeure. In particular, in the event of any suspensions by the designated operator, the Administration, to guarantee continuity, may entrust the service to another economic operator, with costs borne by the designated operator as well as applying any sanctions for compensation of damages suffered.

Why is it considered a good practice?

The school bus service is well suited to rural areas or small housing developments with distant primary and secondary schools.

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4.2.5 Transferability considerations

CONTEXT PECULIARITIES	TRANSFERABILITY CONDITIONS
<p>Not very suitable in large cities that have primary schools in residential neighbourhoods and secondary schools served by efficient public transport.</p>	<p>The service can be transferred to rural areas or small settlements with organization by the Regions and with financial contribution from the students' parents.</p>
DIFFICULTIES ENCOUNTERED/WEAKNESS	LESSONS LEARNT
<p>Municipalities must collect and analyse the mobility needs of the groups/families of citizens involved (origin of the trip, safety space, specific support, parents' wishes, number of pupils, etc.) and the various school data (place, timing, etc.). This complex analysis supports the planning of the different routes, the definition of timetables and the identification of the buses/resources necessary to operate the service.</p>	<p>It is very important that the municipalities stipulate a service contract with the school bus transport operator which includes various precise obligations such as on-board staff, performance reporting, methods of picking up children, regularity of the service, availability of transport vehicles, reservation, guarantee of maintenance of vehicles in perfect working order.</p> <p>It is also important to carry out surveys with parents to evaluate the performance of the service and in case of deficiencies, take urgent action</p>

References for further details

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