Politecnico di Torino

VENARIA REALE MOBILITÀ DOLCE

Redevelopment of the Viale Buridani - Via Andrea Mensa axis towards the Reggia di Venaria and La Mandria Natural Park: connection with the Corona Delle Delizie cycle path

Thesis of second level
Architecture For The Sustainable Project

Candidate:
Francisco Javier Ramírez Estrada
s. 275920

Tutors:
Prof. Mario Artuso
Prof. Angioleta Voghera
Arch. Roberta Cardaci

Piazza Annunziata and surrowndings,
Venaria Reale

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ABSTRACT

Within the context of architecture, construction, urban planning and mobility, in recent decades an implementation of systems has been sought, intervening at various scales within urban fabrics in order to improve the quality of life of the inhabitants and the revaluation of the urban landscape.
This thesis project aims to provide a response to an existing mobility and urban requalification initiative within the framework of urban planning of the Municipality of Venaria Reale, Piedmont, established in the Urban Traffic Plan (PUT), dated 2006 and updated in 2021, a process in which I had the opportunity to develop my academic internship.

The need to develop a requalification of the main commercial axis of the city, Viale Buridani, arises as a consequence of the imminent local tourist vocation that the city possesses due to its anchors of visitors to the city, whose attractive potential exceeds the capacity of the urban current structure. Venaria Reale is home to the historic Savoya Palace and Residence, La Reggia Di Venaria, one of the "delights" as the palatial complexes built by this reigning Piedmont house are known, restored and opened to the public in 2007. It is also the site of the La Mandria natural park, an important green lung in the metropolitan area of Turin, which includes an important center for visitors by bicycle, an area within which it is sought to promote a circuit between these royal residences known as the "Crown of Delights". It is also in this territory that the Allianz Stadium is located, home of the sports soccer club, Juventus. Within the framework of the rehabilitation of the Torino Ceres railway, which connects Venaria directly with the Torino Porta Susa station, an operation for the improvement of the urban landscape and modernization in terms of sustainable mobility is essential to make the city a quality space for residents and visitors.
It is expected to obtain as a result an investigation of reference cases, mobility theory and in-depth analysis of the city that will direct this work to the product of a proposal for the urban requalification of Viale Buridani as an important axis perpendicular to the historic Via Mensa, so that it may also be the object of study of the same municipal organization.

GRATITUDE

To Professor Mario Artuso, for his attentive guidance during the stages of this thesis work, his particular focus on urbanism issues and his professional and human commitment as a teacher of international students.

To the architect Roberta Cardaci from the Municipality of Venaria Reale, for her valuable collaboration through her knowledge and her significant career dedicated to facing the current challenges of urban planning; to the architects Giacomo Bugliarelli and Marta Santolin for their relevant contributions; to the current municipal administration.

DEDICATION

To my parents and siblings, whose unconditional support has strengthened in the distance.

To Fr. Thierry Pierre Dourland SDB, who has accompanied these recent years with fatherly, wise and friendly close advice.

RESEARCH METHODOLOGY

As a research methodology, a combination of direct and indirect sources has been used, depending on the case of the phases of this project. A first theoretical phase in which the city is described in its historical and morphological aspects was studied with sources from historians of the city and the House of Savoy; The theory on the aspects related to sustainable mobility and its development until today, has been supported by the source of various academic papers from both Italy and abroad, with the authors from The Netherlands being of particular support as a case study of mobility by bicycle and the limitation of traffic, those of Spain, as a case study of the national bicycle lane networks, those of Northern Europe, in terms of transport intermodality. In order to understand the context of sustainable mobility networks in Europe, the points established by European documents on sustainable objectives also at regional and national levels, as well as the aforementioned municipal urban transport planning documents, were essential.
A second stage of analysis was supported thanks to specific direct research interventions interviewing a technical executive from the Municipality of Venaria Reale, in the sector directly concerned, Urban Planning and Public Works and European Funds. In the same way, this work is enriched with the notions that as an author I have been able to develop about the management and space of this city through the work developed in the academic internship.
A third project phase was previously analyzed observing similar cases and interventions in Italy and the rest of the world, to know the mode of operation in a project that involves public, private and tertiary actors such as the Venaria Reale center.

The elements of the investigative fabrication, this being a thesis with a projectual character, are in the cases of explanation of urban planning terms rather abstract, supported with graphics composed of mental maps, graphs and images.
The research development process and analysis were observed from its initial stage by the teacher who acted as the tutor of this thesis work, as well as in intermediate moments, by the aforementioned municipal office.

RESEARCH PHASE

ANALYSIS PHASE

PROJECTUAL PHASE

INTRODUCTION

As it was proposed in the study program of the Politecnico Di Torino's specialization in Sustainable Architecture, urban planning is a fundamental task within the architect's capacities as much today as it has been in the past.
The work developed in this thesis aims to propose an urban solution to the need expressed by the commune to rehabilitate Viale Buridani as a new pedestrian axis with smooth mobility. Via that hitherto serves this purpose in an irregular and rather accidental way. It seeks, then, to understand the context of operation, the methodological tools for the performance of urban transformation as well as the supporting theory in the existing literature with reference to this topic.
The city of Venaria Reale, developed historically from having been the northern area of Altessano before the construction of La Reggia in the 17th century, later a military headquarters and more recently in history as an industrial pole characterized by an almost spontaneous organization towards the south of Via Mensa (the north being topped by the Ceronda river). Today this city is the site of three major visitor attractions in the Turin metropolitan area: the Reggia, La Mandria natural park: a large territorial extension that makes up three municipalities and is home to an important heritage of flora, fauna and historical architecture of Piedmont. Together with the Allianz Stadium, which attracts a large number of visitors at specific times, the city faces the challenge of seeking to guarantee the sustainable mobility of its inhabitants, who usually move between Turin and Venaria, as well as being able to accommodate in terms of transit to visitors to these poles of attraction.

Existing research, projects and analyzes propose the use of bicycles as the most effective method for local mobility, in terms of speed, well-being, environmental care and economy of space. Cities in central and northern Europe have preceded the cultural use of this means of transport within the daily life of urban centers, Italy nevertheless has a rich heritage of cycling networks whose purpose is to enhance the natural and built landscape of the Italian Territory. It is intended to generate, on an urban scale, a new dynamic that turns mobility within Venaria into a "smoother" one, that is, without the exclusive need for motor vehicles, and that trips outside the city, with the same character, can be carried out by means

Within the forms of action of urban planning, which since the past has had an evolution in the approach by public entities, private interested parties towards the citizen base users of public space, there has been an increase in recent decades interest in the experimental management of urban public spaces of reduced dimensions in which in collaboration with owners, merchants and public administrators, the space is intervened with common consent to experiment a new use, generally in cases of pedestrianization of the streets through of the limitation of the passage of vehicles, offering alternatives for a new operation that, being tested within an experimental stage, can later be planned for a longer term as a street intervention and formal public space.

The city of Venaria faces the challenges of managing a large amount of on-street parking and having a low use of gentle forms of mobility, in addition to having to deal with a traffic in which its inhabitants for reasons of work or study, in the vast majority of them travel to Turin every day.
This work seeks to provide an urban solution in which the partial pedestrianization of Viale Buridani can be considered, also giving a new priority to bicycle users, this being, together with the use of the train, the intermodality proposal that would bring this city closer to new sustainability goals consistent with the tools currently available.
It is hoped that this work can propose a vision for the future, understanding what this important traffic artery could provide the city in terms of quality of space and public landscape as well as sustainable mobility in a city at the height of the heritage: cultural, historical and natural of which it is home.

CHAPTER 1

THE CITY OF VENARIA REALE

The City of Venaria Reale, emerged as the borough around the Royal Residence of La Reggia di Venaria in the north of Altessano. Over the centuries it acquired various characters: a hunting site for the Savoy court, a military exercise area and later an industrial area. Today it is a municipality that houses important elements of attraction in the Metropolitan Area of Turin.

1.1 Historical Background

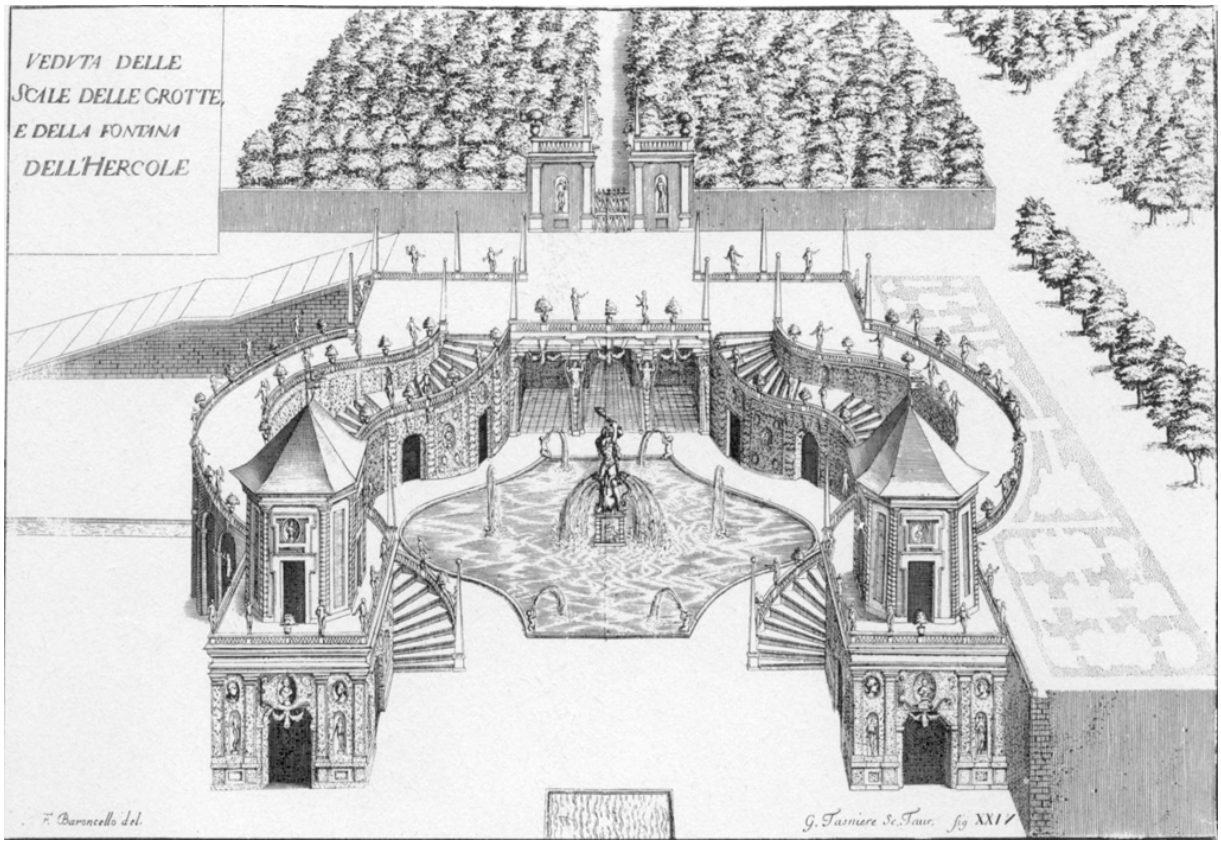
Although the origin in the first millennium of this era of what took place in the territory today occupied by the municipality of Venaria Reale reveals little information, thanks to documents and archives detailing the existing fiefdoms, it is intuited that previously the Ceronda riverbank and the Dora Riparia were occupied by some type of Roman settlement near Augusta Taurinorum, making use of the river torrent. Documents dating from around the year 1200, detail the presence in the Altessano zone of feudal lords and vassals subordinate to the princes of Acaia, a noble family originally from Chieri enriched, rather than by possession of territory, by having the allocation of taxation rights for the passage through the area. Within this context, the route of Via Franchigena, which communicated Burgundy, Veneto, Lombardy, through Turin to the south, is of great importance. (Ballone & Racca, 1998)

The House of Acaja, coat of arms
Available in: https://it.m.wikipedia.org/wiki/File:Stemma_dei_Principi_d%27Acaja.jpg

These fiefdoms, coexisting in the community of the territory of Druent (today called Druento), in the year 1660 yielded by contract the north of Altessano to Carlo Emanuel, Duke of Savoy, Prince of Piedmont and King of Cyprus. The Dora Riparia canal was given to the prince to feed the gardens of his project: La Venaria Reale, a royal residence that would give rise to the stables for storing the cavalry, a palace, the gardens and the adjacent forests for hunting and entertainment. of the court.(Ballone & Racca, 1998)

Although before this concession for the construction project by royal decree, the territory was known as Altessano Nord, it was because of the founding of the royal residence that the site and surroundings began to be known as Venaria Reale.

For the construction of their palace, their "delight", Carlo Emanuele and his consort Duchess Maria Giovanna Battista of Savoy Nemours commissioned the court architect Amedeo di Castellamonte. The project, of a theatrical and scenographic nature, includes the residence, the park, the hunting forests and a village for the residence of the court employees.
The project was originated from its initial stage with the Italian gardens, a set of sculptures, stairways, fountains and terraces on different levels, with a high Park faction at the same height as the palace and a second one on a lower level, more large, at the same height as a landscaped fish farming tank called Peschiera Grande. The whole complex is distributed around a single axis: the perspective line that divides the borough in two that continues along the long channel that connects the Fountain of Hercules with the Temple of Diana.



The fountain of Hercules at Reggia di Venaria
Available in: https://www.lavenaria.it/it/eventi/lhercole-colosso-venaria-reale

In 1699, defining a new construction period of the Reggia complex, the architect Michelangelo Garove, commissioned by the then Duke Vittorio Amedeo II, who wanted to transform Italian gardens into French gardens, aspirationally imitating the Palace of the Court of Versailles . The gardens were thus completely redefined, generating the infinite perspectives that were fashionable in the French court at the time.

Later, when the duke ascended the throne in 1716, he commissioned the architect Filippo Juvarra to enlarge and embellish the building through the design of the large Gallery, the Chapel of San Uberto, the Citroniera and the Stables. It was in this period that the "Juvarriano" designed space gave rise to the complex's emblematic Baroque style.

Later, in 1739, Carlo Emanuele III entrusted the architect Benedetto Alfieri with the task of giving a new sense of unity to the residence through the construction of a series of cavalries that would give rise to the stables and the riding school. The Reggia complex would continue to function as a hunting residence for the court of Vittorio Amedeo III and later that of Carlo Emanuele IV.

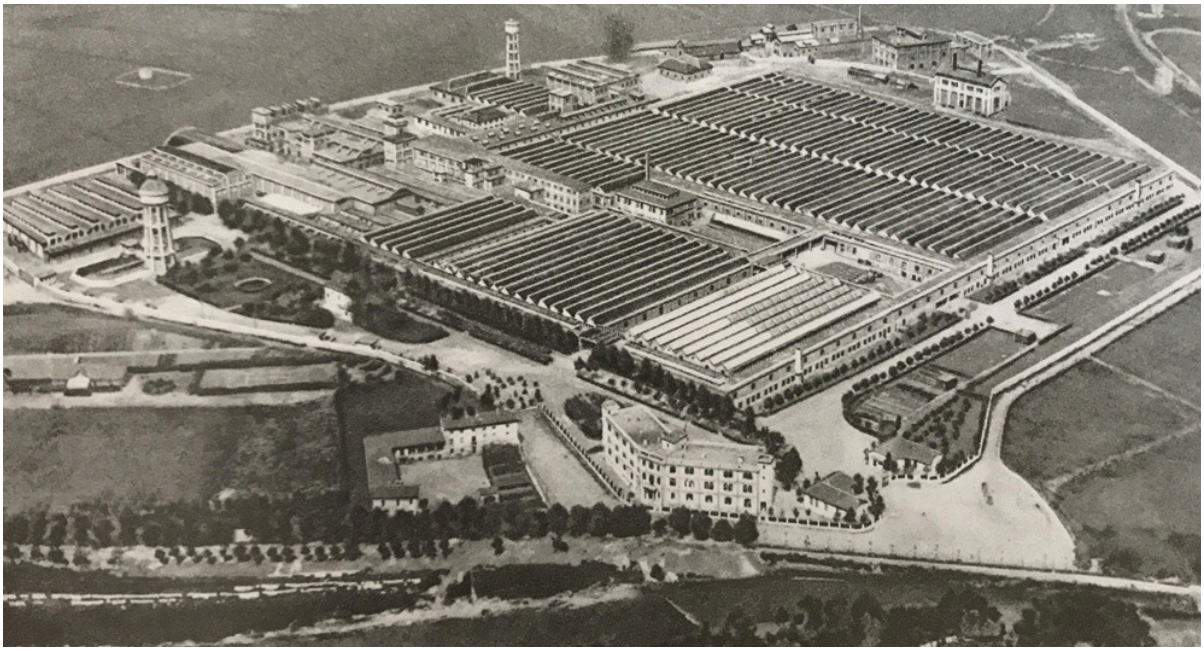
At the beginning of the 19th century the decline of the palace began with the invasion of Napoleon, an event followed by the restoration of the monarchy. With the Napoleonic occupation the Reggia was transformed into a military barracks and it continued to be until World War II. The gardens disappeared to give way to a square for military exercises; the space once occupied by sculptures and fountains became occupied by cannons and elements of heavy artillery. The War of Independence, the First and Second World Wars had the Reggia as a military base. After this, the palace was abandoned, architectural elements were stolen or vandalized despite strong insistence on the part of the community to maintain this heritage. (Ballone & Racca, 1998)

In 1996 the restoration work began on the Reggia di Venaria. The work then carried out on the palace, the gardens, the stables, La Mandria, the Sant Uberto chapel, as well as the urban surroundings of via Andrea Mensa constitute the most extensive restoration work ever carried out in Europe. For this, various experimental investigations were performed to return to the palace frescoes, sculptures and elements considered lost by then. It is from this work that the School of Restoration of the University of Turin took as facilities the space of the royal stables. The work concluded in 2007 with the whole of the palace as it is known today.

The Reggia di Venaria nowadays
Available in: https://www.lastampa.it/topnews/tempi-moderni/2019/06/28/news/torna-all-antico-splendore-la-fontana-dell-ercole-si-completa-il-restauro-dei-giardini-di-venaria-1.36544634

In 1920 the textile industry of Pavia, Snia Viscosa acquired the land on the Ceronda river, in the vicinity of the city center. With the arrival of this large factory, a large number of workers, mainly from Veneto and Sicily, moved to Venaria. For this the industry provided a series of houses today known as the Snia village. This residential complex developed to the south of the city consists of blocks of buildings with four floors, within them there was a public lavatory and a nursery school. Later, during the fascist regime, the street that connected to this complex, Viale Buridani, acquired the form known today. Belonging to this period are the buildings of the municipality, the police and the De Amicis school.

Today, the city developed to the south of the Ceronda river channel, around the La Reggia palace and the subsequent urban development in the SNIA villages, is an urban center of around 33 thousand inhabitants (ISTAT).



Snia Viscosa Factory, 1940s.
Available in:https://areeweb.polito.it/imgdc/schede/VEN10.html

1.2 Main urban characteristics

The urban layout of the city of Venaria Reale, as well as the composition of the buildings itself, show in comparison a dichotomy of urban languages belonging to generally two different historical periods: an axis defined by Via Mensa, with the interruption of the perspective generated by the Piazza Santa Maria forms a substantially baroque urban element from the Savoyard period. The immediate buildings, mainly to the south of this road, also date from the 18th century, of rather poor construction, they belonged to the structures of the court servitude. Viale Buridani, perpendicular axis developed to the south, having the north blocked by the river, belongs to a period marked by the urban planning of the fascist regime. Buildings such as the municipality, the Amicis school and the old police headquarters denote this characteristic style present in almost all metropolitan centers in Italy.

At the southern end of Viale buridani is the previously mentioned Snia village, the other buildings contained in this area belong to a later period of industrial development and demographic mobilization from southern Italy.

Overview with main storical urban elements
Author's ellaboration based on Google Earth Pro

CHAPTER 2

URBAN & COMMERCIAL DYNAMICS

Commercial activities are the components that generate mobility within cities, it is read in a different way depending on the way in which users move from origin to destination.

2.1 The commercial activities throughout pedestrian areas

On-street and off-steet parking

A fundamental need of each trip made by vehicle is a place to park both at the origin and at the destination of the road. In recent decades, parking spaces have been observed to fail to accommodate this demand during peak traffic hours. On-street parking is an observed behavior that involves the modalities of either free or paid parking through the traffic lanes. In this case, moving vehicles are allowed to share the street with those parked, either parallel or at an angle to the road. This popular modality allows drivers to park near their destinations. Another variable observed is that users, having to pay for this convenience, generally prefer to leave their vehicles where the cost is low, free or else illegal. Consequently, the increase in off-street parking in many cases is not able to satisfy the on-street demand. It has been observed that the availability of the aforementioned modality is sometimes a key criterion when users choose their destinations, opting for those places where they can leave their vehicle parked on the street, in the case of developed countries. (Biswas, Chandra, & Ghosh, 2017)

Regarding the issue of safety against vehicular accidents on the streets, according to their absence or presence of parking lines, there is evidence that suggests that depending on the speed of the road an increase in road safety with parking lots, since in areas with greater speed stopped vehicles function as a protective buffer for pedestrians. (Biswas, Chandra, & Ghosh, 2017). The On-street mode would be more comfortable for retail and local businesses since on average, people refuse to walk a radius greater than 200 m. from their parking point.

Studies carried out in the Netherlands identified the variability of the merchandise for which drivers traveled and parked. On-street parking was found to be of higher importance for non-daily goods purchasing activity. It could be because the purchase of this rather "casual" merchandise, such as the wardrobe, requires more time than the purchase of everyday groceries.
Vehicle parking, when it takes place on the street, has the potential to provide security for road users according to their cultural circumstances and their attitude towards safety.
In some cases, on-street parking can be classified as a traffic calming tool according to speed, in those corridors with limits below 40 kmph. There has also been an increase, in these cases, in the awareness of drivers while moving through a crowded area, causing fewer collisions. (Biswas, Chandra, & Ghosh, 2017).

On-street parking also has a series of drawbacks, one of the most notable being the slowing down of the speed of traffic flow, a consequence of the lateral friction generated by vehicles in parking. A 14% increase in congestion is also reported due to the maneuvering of cars, parking, opening doors and limiting the visibility of pedestrians crossing the street. It is a particular problem in areas with a high presence of pedestrian children due to their limited ability to distinguish an approaching vehicle, this being one of the most conclusive stipulations in the available literature: the safety of infants does not go with the presence of parking lots on-street. (Biswas, Chandra, & Ghosh, 2017).

Among the different types of parking, those in parallel, low angle or high angle are distinguished. It has been shown that the safest for pedestrians is the parallel. On the other hand, drivers find the low angle more comfortable, which is also effective for vehicular fluidity, having the great disadvantage of reducing space on the road and producing more inconveniences during the exit maneuver.

Pedestrian zones and the environment

Pedestrian road elements within cities and urban centers must be designed to encourage people to walk: a territorial plan that encourages people to look for work near their residence, use nearby services and belong to a local community. Incorporating these elements could reduce the use of private vehicles. (Vugule, April 2021)
Before designing a pedestrian street, it is essential to define the meaning of this pedestrianization in the local context of the street, to understand the reason for its need. A good pedestrian street design should observe a series of principles described below:

Connectivity: A set of pedestrian areas connecting the main urban nodes of the city in order to generate an external route in which basic needs of the people are covered: fresh air, recreation, water, sunlight. This network must be linked to the local public transport system.

Convenience: Allow the main routes to be direct avoiding obstacles. Crosswalks must be very clear, safe, and obvious.

Comfort: Pedestrian areas must have an adequate width, using appropriate materials avoiding steps and stumbling blocks to reduce the risk. The anatomy of the pedestrian streets must respond to the need to guarantee the safety of the people as well as to have amenities consistent with the bioclimatic conditions of the place.

Ethnic conditions: A pedestrian crossing must have adequate lighting during dark hours, it must guarantee the communication of users without excessive noise and without air pollution: the general image of a pedestrian zone must be attractive and consistent with the heritage of the city. town.

Clarity: Pedestrian areas should be easy to understand with clear vertical and horizontal signage, landmarks, squares and green areas that contribute to the clarity and spaciousness of the space.

A pedestrian zone can be designed to be incorporated into the public green system of a city, and in this way collaborate to guarantee access to air quality for users, create diverse landscapes and promote mental health. (Vugule, April 2021)

2.2 The implementation of bicycle lanes for touristic assets

In conventional tourism, trips cause CO2, emitted either by cars or airplanes on their way, place of departure and arrival. The use of public transport and trains contributes to reducing these emissions.
The environmental benefits of cycling, described later, position it as the most efficient mode of transport in terms of environmental care and physical health.
Tourism is an economic sector with the objective of economic development of destinations and regions through the creation of added value, an important purpose of the establishment of a sustainable cycle tourism. This type of tourism is perceived as highly enjoyable due to the possibility of non-motorized mobilization, which generally consists of leaving and returning the same day. (Hartwig, et al., 2021)
The objectives of a cycling tourism, which generates value and sustainable business models carried out by local stakeholders:
Improve the competitive position of the region

- Become a leading region in cycling tourism
- Encourage cycling as a mild form of tourism
- individing different target groups for cycling trips.

User segmentation:

In cycling tourism, users can be divided according to criteria of the objective of the trip and type of bicycle used:

- Reasons and accommodation during the tour.
- Type of bicycle use
- Specific interests beyond cycling.

Link to Traffic Calming

The design principles of the bicycle rack apply to traffic calmed areas. These similarities are based on the principle that what is designed and built should automatically generate the desired speed of motorized traffic without the need for additional reinforcements: large-scale impacts can be achieved with combinations of physical and psychological measures:

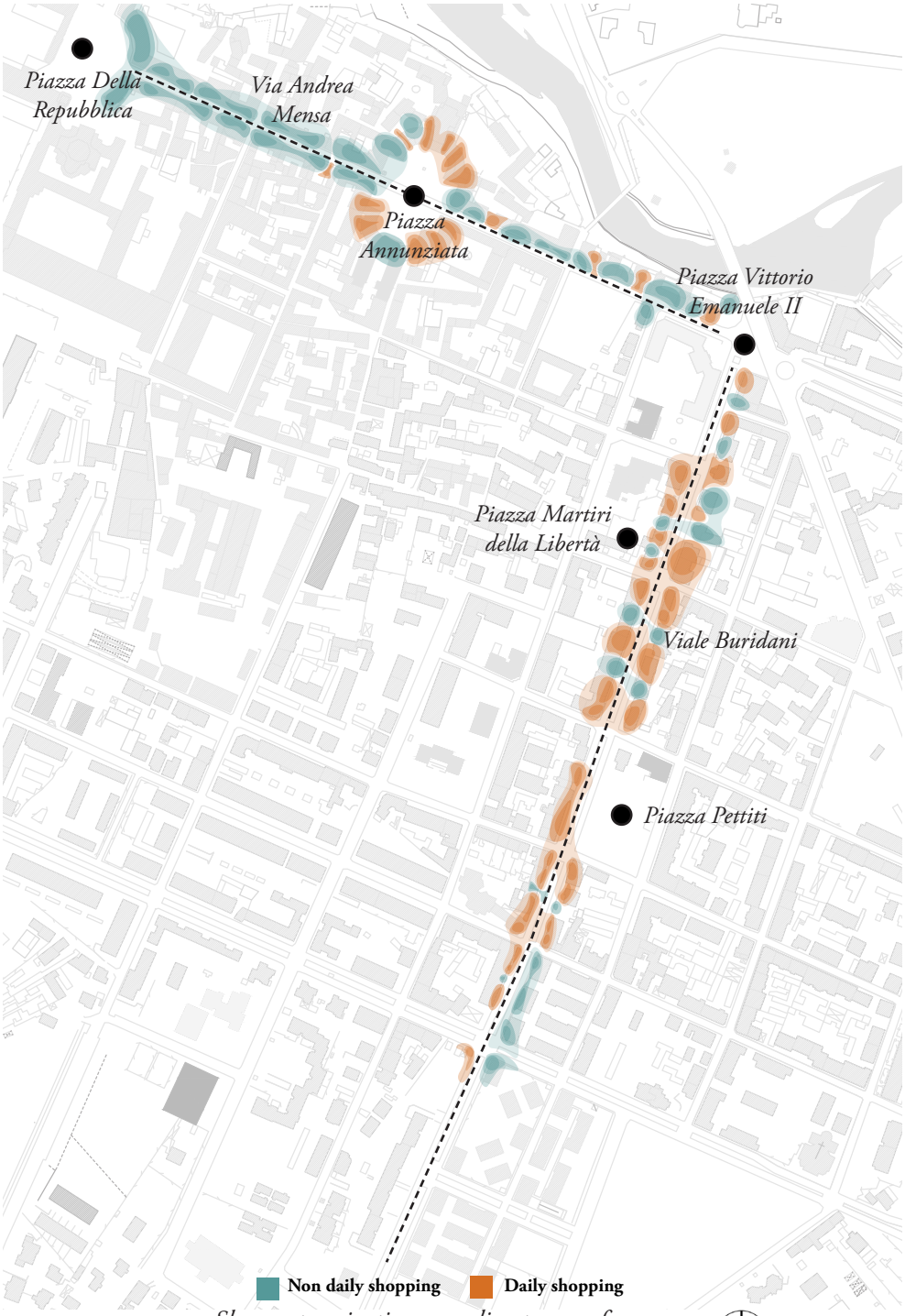
- Removal of street markings such as center lines, which give drivers more security than appropriate, resulting in excessive speed.
- Use of different materials, colors, urban furniture, plants to achieve a suitable street environment, modifying the existing geometry. (Hartwig, et al., 2021)

2.3 Main activities along the Viale Buridani and Via Andrea Mensa

The commercial activities carried out in these two roads, for study purposes, have been classified according to two categories: daily shops and non-daily shops.

To the first category belong the businesses that users frequent according to needs and regular customs of each day: pharmacies, grocery stores, bookstores, cafes, tobacco shops, pizzerias and local bars.

To the second category belong the businesses that are visited occasionally, and usually constitute a destination point for the trips made: retail, shoe stores, ophthalmologies, jewelers, renowned restaurants, real estate agencies, legal offices, funeral agencies, general medical clinics and of dentistry.



Shops categorization according to users frequency
SC 1:5000

Viale Buridani from Piazza Vittorio Veneto
The author, 2021

CHAPTER 3

THE URBAN TOOLS

Cities are inhabited by people who in various ways carry out the action of mobilizing, thus generating an urban dynamic: work, study, shopping, tourism. Studies carried out on sustainability suggest new practices to make transport beneficial for the person, community, economy and environment.

3.1 The Issue of Mobility

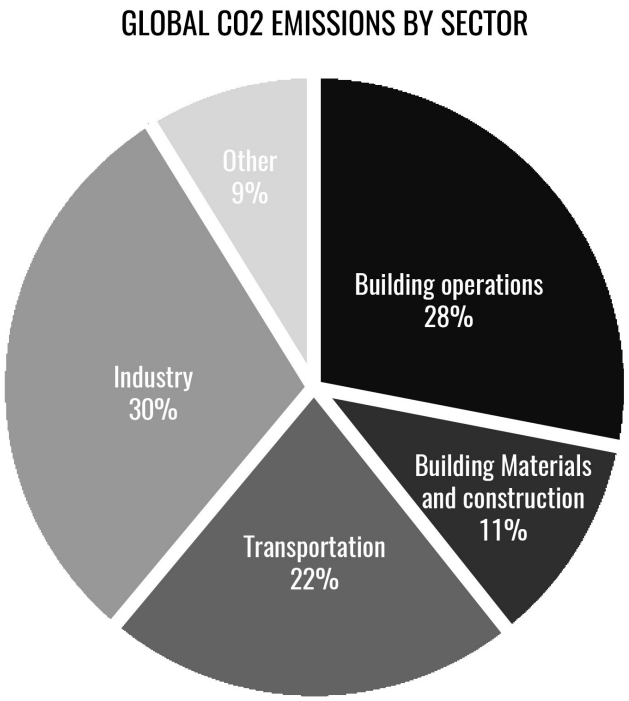
The development of transport systems, which in history has evolved as a result of advances in technology and mechanics, has been a determining factor in the form and mode of growth of cities. Mobility at different scales, depending on time, distance and capacity of number of people, has largely established the shape of cities. The development of the automobile and its generalization, which brought a new rhythm and dynamics to urban and rural life, together with all its benefits as well, also resulted in a high population density, sometimes poorly distributed between zones, generating a large city sprawl. The great availability of cars for occupying the streets has led to negative impacts on biodiversity and quality of life, linked with negative consequences such as increased traffic congestion which, in addition to the psychological and social repercussions of users, translates into time and economic loss (Moreno, Allam, Chabaud, Gall, & Pratlong, 2021). In response to the environmental, economic and social situation of cities and metropolitan areas, recent urban studies head to city models fit to the scale and measure of man.

3.1.1 Mobilità Dolce: the man scale dimension of traffic.

Soft mobility is understood as the activity of moving by foot and by bicycle. Public transport, part of the sustainable mobility realm, also belongs as an option although in many cases it cannot satisfy the mobility needs of citizens due to complexities of routes, schedules, and availability. In highly densified cities, cars are not an efficient or sustainable means of transport to travel short distances (Gonzalo-Orden, Díez, Linares, & Rojo, 2014), therefore, in addition to the encouraged use of bicycles and pedestrian mobility, more compact models of urban layout are proposed.

A study that consisted of comparing the energy efficiency of machines and people in their consumption of calories per gram per kilometer, showed that, without considering the energy consumed during its manufacture, traveling by bicycle is five times more efficient than walking; one hundredth of power use compared to the automobile and in energy terms, the most efficient transport of all (Wilson, 1973)

The increase in the use of soft mobility translates into a reduction in the concentration of harmful gases in the atmosphere, a phenomenon due largely to transport activity, which consists of 18% of the total pollution in the world air and its Health consequences represent € 60 billion in healthcare in Europe, causing the premature death of 500,000 people annually on the continent (Berthier, 2019)



Global CO2 emissions diagram
Author's elaboration

A change from the car to the bicycle, giving preference to this vehicle could increase the quality of life in cities due to a series of advantages that these entail:

- They do not require fossil fuels or emit air pollution.
- They do not produce noise
- They have a sustainable life cycle from manufacture to disposal
- They are easily recoverable and reused at the end of their useful life
- Requires little surface to circulate

(IDAE 2007)

Bicycle users report a series of motivations to switch to this vehicle. Motives bequeathed mainly to speed, efficiency, flexibility, environmental awareness and health. The bicycle is not affected by congestion and in short distances within the city (5-6 km. or less) they have a good average speed, are easy to park and handle and generally keep people in shape and avoid heart problems and obesity.

As limitations for the use of the bicycle, Gonzalo-Orden, Díez, Linares, and Rojo, (2014) establish a subdivision of demographic, social and environmental factors that restrict people to move by bicycle, focusing on observable data, people They do not generally choose the bicycle for distances greater than 5-6km., nor when the orography of the place is inadequate and because of the eventual rainfall or snow.

3.1.2 Precedents of cycling within urban centers

The bicycle historically had a wide generalized use until the early 1950s when after World War II, this vehicle was abandoned in Europe and North America due to the vast spread of motor vehicles offered largely by the amount of oil available after war. In the mid-1970s, as a consequence of the first oil crisis, the European countries, mainly the Netherlands, experienced a redevelopment in the use of bicycles, this situation was replicated in a milder way in the other countries and the United States, giving rise to the first bicycle promotion policies that prioritized developing intermodality with Public Transport.

Studies carried out show that in Europe there are around two billion and 295 million bicycle holidays, equivalent to a total value of more than 44 billion euros each year (Di Marcello, 2014). Although the activity of cycling tourism has proven to be so important as a means of transport for the benefit of health, the economy and the environment, the objective of its implementation frequently encounters the difficulty of not having sufficient cycling networks or of the poor state of these.
As it is a highly specialized form of tourism, it has many variants that, although they make it a heterogeneous activity, always need protected, well-marked and long-standing routes that can link points of attraction: naturalistic, cultural, religious tourism, sports, food and wine itineraries; cycling routes that can be traveled safely.

A publication of the European Commission on the use of bicycles in urban contexts established that the development of long cycling routes could be an important economic development through tourism, following the example of the Netherlands where it is calculated that long-distance cycling routes generate around 7 million euros a year. (European Commission, 1999)

In Switzerland, national "bike-streets" have been developed in order to promote green tourism. Through 3,300 km of itinerary, around 650 hotels and accommodation facilities for cyclists have been selected. In Switzerland, the company that rents bicycles to train stations currently makes about 120,000 rentals a year.
In Spain the "Vías Verdes" are developed in more than 30 itineraries of around 150 km each and the implementation of another 50 of 250 km is foreseen, in this country there are still around 6,500 km of unused railways for revalue as cycle tracks.
The United Kingdom, the National Cycle Network, with a length of more than 10,000 km, was a program carried out by more than 400 communes, public and private bodies and the Sustrans that constitutes the central axis of this entrepeneurship. (Di Marcello, 2014)

The European Cycling Road Network
available in: https://ecf.com/projects/eurovelo

North - South Itineraries

1 Atlantic Coast Route (North Cape - Sagres), 8.186 km;
3 Pilgrims Route (Trondheim - Santiago de Compostela) 5.122 km;
5 Via Romea Francigena (London - Rome and Brindisi) 3.900 km;
7 Sun Route (North Cape - Malta) 7.409 km;
9 Baltic - Adriatic (Gdansk - Pula) 1.930 km;
11 East Europe Route (North Cape -Athens) 5.984 km;
13 Iron Curtain Trail (Barents Sea -Black Sea) 10.400 km;
15 Rhine Route (Andermatt - Hoek van Holland) 1.320 km;

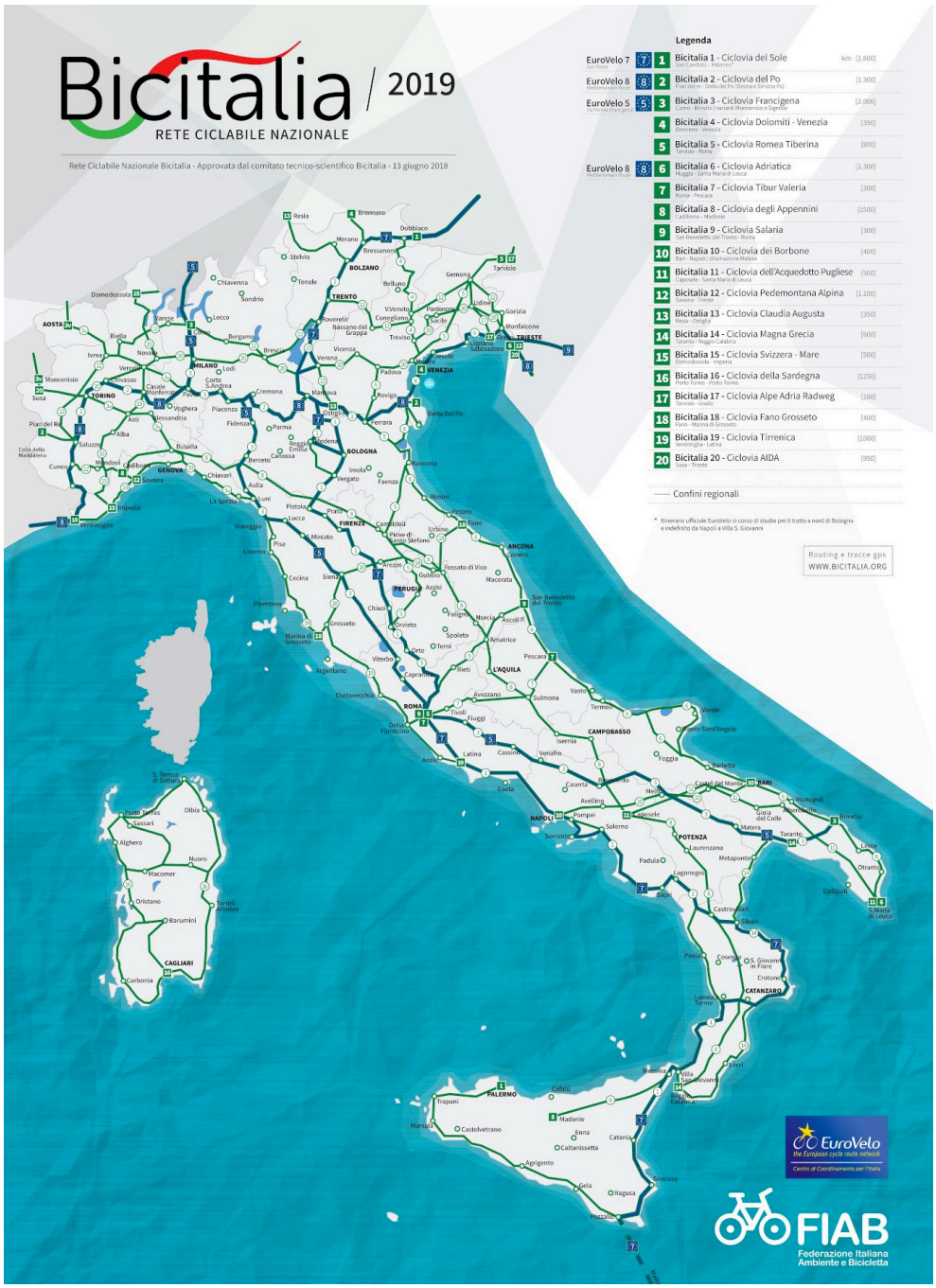
East - West Itineraries

2 Capitals Route (Galway - Moscow) 5,500 km;
4 Central Europe Route (Roscoff - Kiev) 4.000 km;
6 Atlantic - Black Sea (Nantes - Constanta) 4.448 km;
8 Mediterranean Route (Cádiz - Athens and Cyprus) 5.888 km;

Circuits

10 Baltic Sea Cycle Route (Hansa circuit) 7.980 km;
12 North Sea Cycle Route: 5.932 km;

The Italian Cycle Road Network Bicitalia



Rete Ciclabile Nazionale, 2019
available in: http://www.bicitalia.org/it/bicitalia/la-rete-ciclabile-nazionale-bicitalia

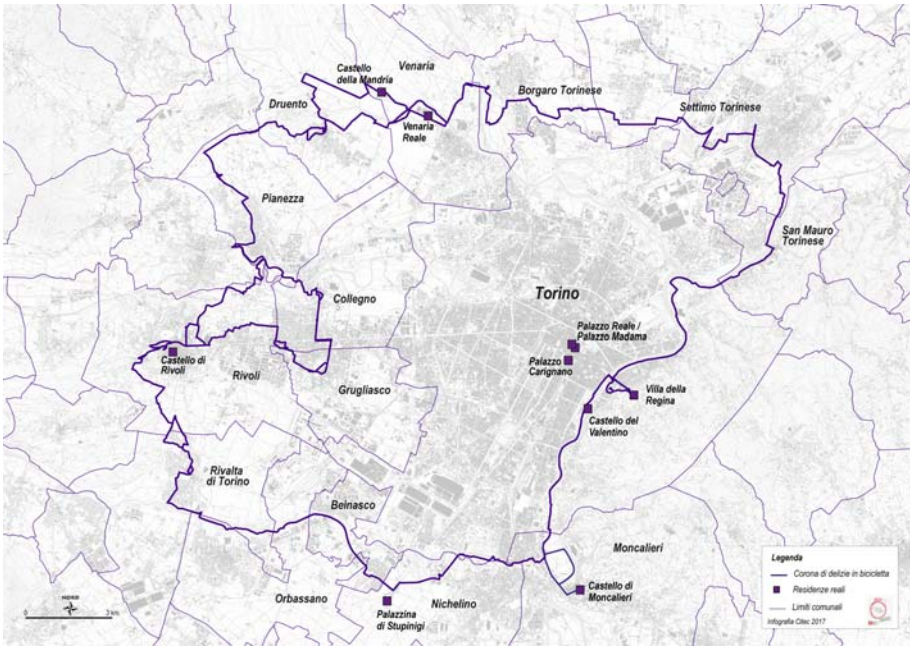
- **Bicitalia 1 Ciclopista del Sole:** from Brennero (BZ) to Santa Teresa di Gallura (OT). It follows the route of the Eurovelo itinerary n.7 crossing Trentino Alto Adige, Veneto, Emilia Romagna, Tuscany, Umbria, Lazio, Campania, Basilicata, Calabria and, with the bicycle-ship / ferry intermodality, Sicily and Sardinia. Length of the route: 3,000 km;
- **Bicitalia 2 Ciclovia del Po:** from the source to the Po delta following the Eurovelo itinerary n.8. Regions crossed: Piedmont, Lombardy, Emilia-Romagna, Veneto. Length of the route: 1,300 km;
- **Bicitalia 3 Ciclovia Francigena (**formerly Ciclovia dei Pellegrini): from Como to Brindisi on the Eurovelo route n. 5. Regions crossed: Lombardy, Emilia Romagna, Liguria, Tuscany, Lazio, Campania, Basilicata, Puglia, for a total of 1,800 km;
- **Bicitalia 4 Ciclovia dei fiumi del Triveneto** (formerly the cycle paths of the Venetian rivers): routes along the course of the rivers Adige, Brenta, Livenza, Sile, Piave, Tagliamento and Isonzo. Regions crossed: Veneto, Trentino Alto Adige, Friuli Venezia Giulia. Length of the route: 1,000 km;
- **Bicitalia 5 Ciclovia Romea:** from Tarvisio (UD) to Rome. Regions crossed: Veneto, Friuli Venezia Giulia, Emilia Romagna, Tuscany, Umbria, Lazio. Length of the route: 800 km;
- **Bicitalia 6 Adriatic Cycle Route:** from Trieste to Santa Maria di Leuca (LE), following part of the Eurovelo itinerary no. 8 (taken from Trieste to Venice). It crosses the regions: Friuli Venezia Giulia, Veneto, Emilia Romagna, Marche, Abruzzo, Molise, Puglia, for a total of 1,300 km;
- **Bicitalia 7 Romagna-Versilia cycle route:** from Rimini to Viareggio (LU). Regions crossed: Emilia Romana and Tuscany. Length of the route: 400 km;
- **Bicitalia 8 Conero-Argentario Cycle Route:** from Monte Conero (AN) to Argentario (GR). Regions crossed: Marche, Umbria, Tuscany. Length of the route: 400 km;
- **Bicitalia 9 Ciclovia Salaria:** from Rome to San Benedetto del Tronto (AP). It crosses Lazio and the Marche connecting the capital to the Adriatic Sea. Length of the route: 300 km;
- **Bicitalia 10 Bourbon Cycle Route:** from Naples to Castel del Monte (BA). It crosses Campania, Basilicata and Puglia for a total of 500 km;
- **Bicitalia 11 Ciclovia degli Apennini:** from Colle di Cadibona (SV) to Reggio Calabria. It crosses Liguria, Emilia Romagna, Tuscany, Umbria, Marche, Abruzzo, Molise, Puglia, Basilicata, Calabria, for a total of 1,800 km;
- **Bicitalia 12 Alpine foothills cycleway:** from Trieste to Savona. It crosses Friuli Venezia Giulia, Veneto, Lombardy, Piedmont, Liguria, for a total of 1,100 km;
- **Bicitalia 14 Cycle route of the three seas:** from Otranto (LE) to Sapri (SA). It crosses Puglia, Basilicata and Campania for a total of 400 km;
- **Bicitalia 15 Swiss sea cycle route:** from Locarno (Switzerland) to Ventimiglia (IM). It starts from Switzerland and crosses Piedmont and Liguria. Path length: 500 km;
- **Bicitalia 16 Tyrrhenian Cycle Route:** from Verona to Rome. Regions crossed: Veneto, Lombardy, Emilia Romagna, Tuscany, Lazio. Overall length: 750 km;
- **Bicitalia 17 Adda cycle route**: from Stelvio (SO) to Verona. It crosses Lombardy with a journey of 350 km.
- **Bicitalia 18 Fano-Grosseto cycle route:** from Fano (PU) to Grosseto, crossing Marche, Umbria and Tuscany. Route length: 400 km. The Fano-Grosseto Cycle Route was included in the Bicitalia network in 2014.

The Corona delle Delizie

The Corona Delle Delizie is a project that was born from the idea promoted by FIAB Torino in 1999, when a cycling route was drawn up to connect the Sabaudas Residences in the Province of Turin.

This course is a cycle ring of approximately 120 km in circumference, additionally with approximately 90 km of variants. It develops around the City of Turin and passes through 16 Communes: Turin, San Mauro Torinese, Settimo Torinese, Borgaro Torinese, Venaria Reale, Druento, Pianezza, Collegno, Grugliasco, Rivoli, Rivalta, Orbassano, Beinasco, Nichelino and Moncalieri .

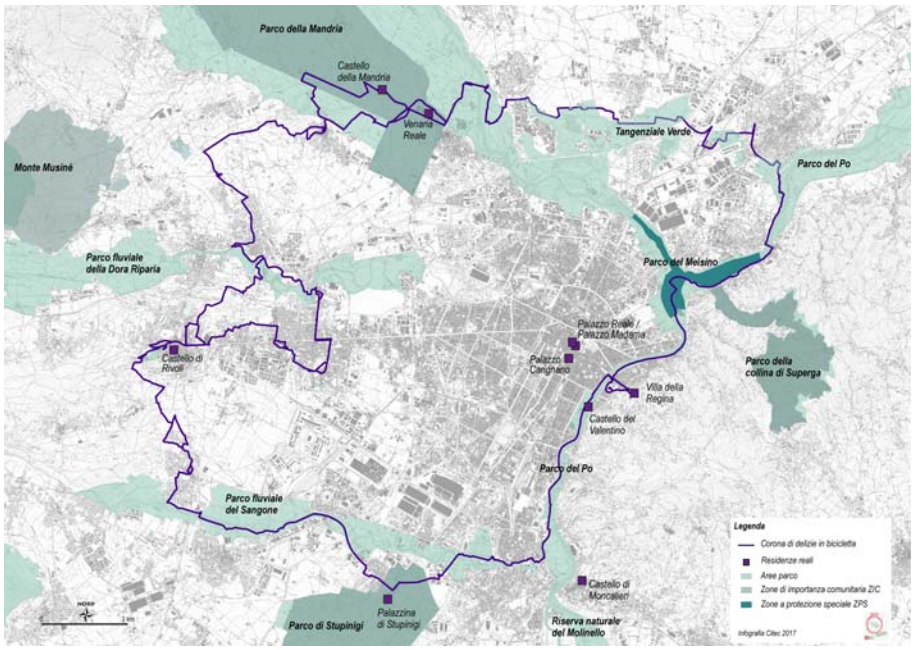
This tour connects 10 Sabaudas royal residences (The Delights): Palazzo Reale, Palazzo Madama, Palazzo Carignano, Villa della Regina, Castello del Valentino, La Reggia di Venaria, Castello della Mandria, Castello di Rivoli, Palazzina di Rivoli and the Castello di Moncalieri .



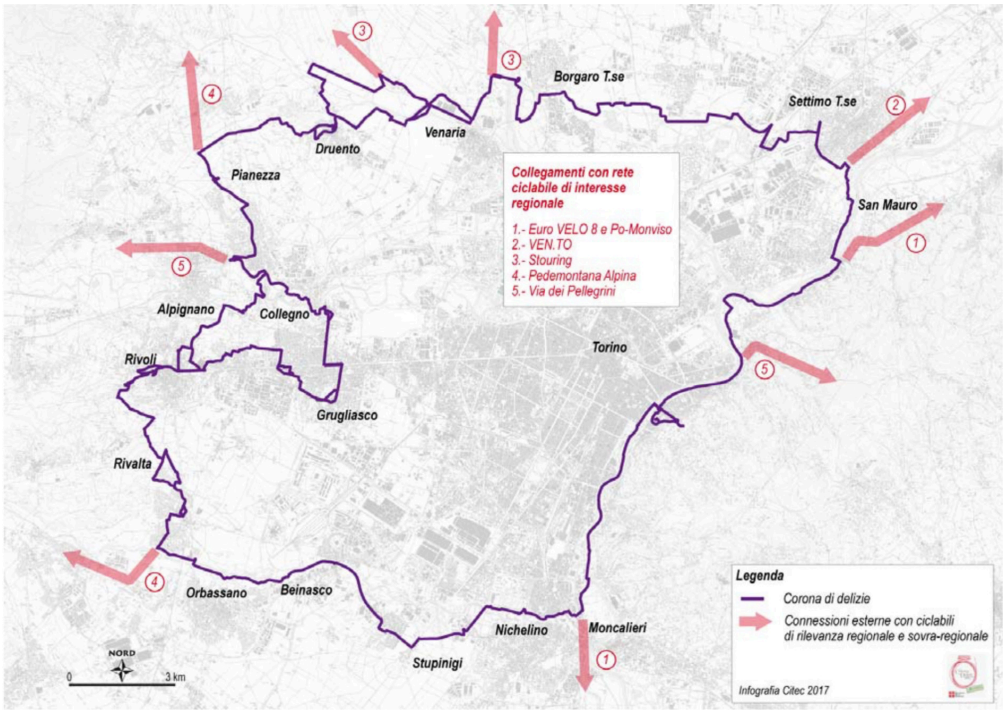
Corona Delle Delizie, conection between Savoy Royal residences
Citec SRL.

The communication that the Crown proposes for parks and nature reserves in the area that are crossed by the route is also important:

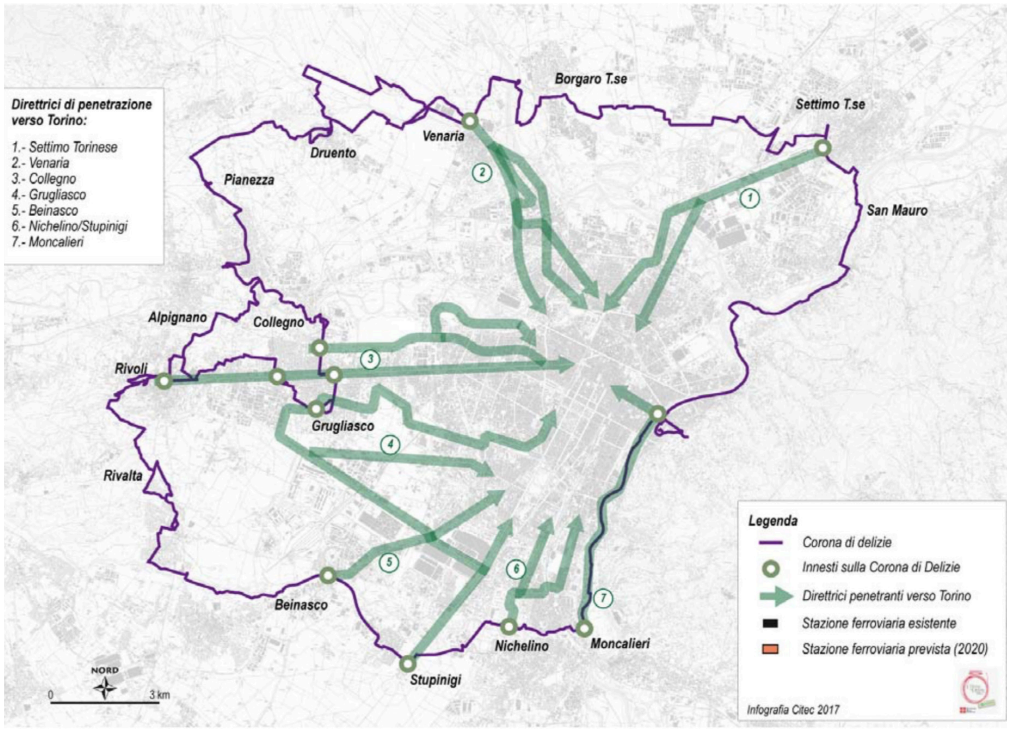
- Parco del Meisino: 45 hectares, in Borgata Rosa-Sassi, northeast of the city
- Parco della Collina di Superga: historical, natural and religious emblem on the hill to the east of the city.
- Parco del Po: Park that takes place along the banks of the Po river.
- "Collina Po" protected areas: UNESCO man and biosphere reserves.
- Tangenziale Verde: Metropolitan park of environmental connection between Parque del Po and La Mandria.
- La Mandria Park: the first park established in Italy, 1978. It is located between the Stura di Lanzo riverbed, the Ceronda river and the northwestern part of Turin.
- Parque Fluvial della Dora Riparia: natural heritage in the Community of Collegno
- Parco Fluviale del Sangone: an area of 120 hectares, it emerged in 2007.
- Parco di Stupinigi: 1611 hectare park, ecosystem of a vast number of local fauna species.
- Molinello Nature Reserve: 242 hectares between the communes of Moncalieri and la Loggia.



Corona Delle Delizie, conection between parks and natural protected areas
Citec SRL.



Corona Delle Delizie, External conections to regional cycle paths
Citec SRL.

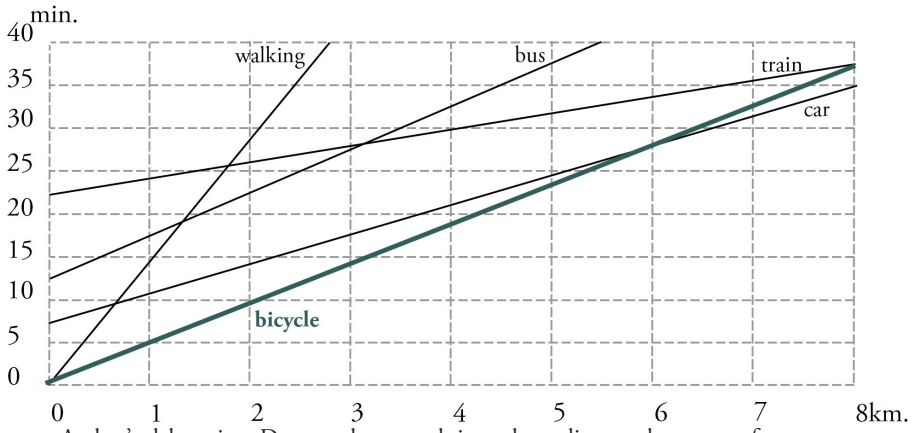


Corona Delle Delizie, Internal conections to Metropolitan Turin
Citec SRL.

3.1.3 Principles of transport intermodality

Currently, this intermodality constitutes an important principle in sustainability and transport policies, which regard the bicycle, walking and public transport as the main elements of sustainable mobility.

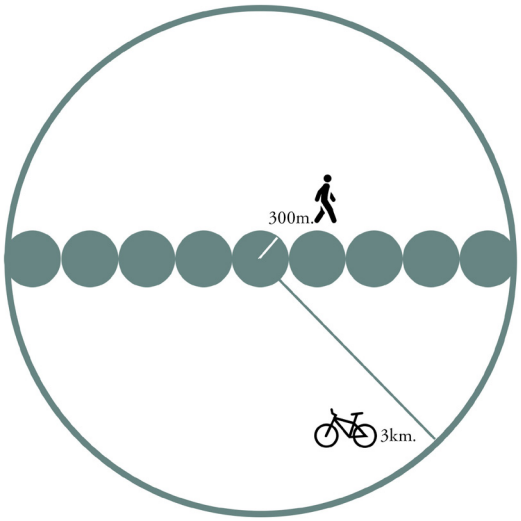
The bicycle is widely promoted, particularly in Europe as it is the most efficient element for mobility over distances of less than 5km. (corresponding to 50% of car journeys in the European Union) With respect to motorized vehicles, and a competitive performance in distances less than 10 km. (see fig.) (Universidad de Sevilla, 2013)



Author's elaboration. Door-to-door travel times depending on the means of transport. Reproduction based on the Universidad de Sevila, 2013

Intermodality can be defined as the possibility of using more than one means of transport for the same trip. In the case of bicycles with public transport, it is considered a fundamental element of sustainable planning, an attribute that increases the attractiveness and efficiency of public transport since it reduces the number of transfers. A symbiosis that could be an important pillar among mobility at different scales between different urban centers. (Tosi, Belli and Rinaldi, 2013)

The literature suggests that an average cyclist would be willing to travel to or from a public transport station a distance of 3.2 km. At an average speed of 20km / h in a time of 10 min. (Universidad de Sevilla, 2013). Various urban planning indicators suggest 300 m for the pedestrian accessibility for bus stations from its origin. These units would be greatly enhanced considering the distance that cyclists would be willing to travel to reach the station, considering for this case 3 km.



Author's elaboration.
Illustration of the reducing effect of bicycle-TP intermodality on the number of bus stations necessary to cover a given area. Based on Universidad de Sevilla 2013

Studies carried out in Europe suggest that the influence of social status with respect to the availability of the car is not relevant for the choice of bicycle use with public transport, the opposite case to similar studies carried out in North America.

Main solutions within the offer for intermodality bicycle - Public Transport

Among the actions promoted in various European municipalities to promote intermodality, the possibilities of obtaining it through the automobile system are confronted with that of the bicycle. As mentioned, the bicycle offers a greatly superior efficiency within the limits of urban areas compared to the automobile. With this in mind, proposals have been developed to facilitate the transport of bicycles in public vehicles (bike on board), or to orient intermodality through "bike and ride" initiatives around the stations of origin and destination together with public bicycles. The four most important groups within infrastructure actions to promote these principles are the following:

- The promotion of bicycle transport within public transport (buses, trains, metro, tram, etc.)
- Promote secure parking for bicycles at public transport stations.
- Promote the possibility of renting bicycles at public transport stations.
- Develop bike sharing systems.

The bicycle-public transport intermodality can be subdivided into two large categories, the systems already mentioned:

a) Bike on board:

systems that involve the transport of the bicycle within large vehicles, both to combine changing from the bicycle to public transport and vice versa, and to resume the bicycle after using a public vehicle "bike and ride and bike" (B & R & B)

This mode allows the user to carry their own bicycle on the means of transport, it is generally preferred by users and more difficult to manipulate than public bicycle parking.

Public transport vehicles have different capacities to accommodate bicycles, depending on their design and size, generally the train companies handle fees for this, in some cases an open car to which the owners adjust their bicycle from the platform. The buses, with low capacity, could give rise to 2-4 bicycles per vehicle, in some cases a front rack is used which usually generates delays at stops. The metros and tram have a moderate capacity of 2-4 bicycles per car; ferries have a practically unlimited transport capacity. To these problems of space within transport, in addition to the bike and ride systems, proposals such as the itermodal bicycle have been developed, which could present different prototypes of folding bicycle acc to the different models according to the different cycling cultures (Tosi, Belli and Rinaldi , 2013)

Public bus with frontal rack for bicycles
available in: https://sf.streetsblog.org/2015/05/05/three-bike-bus-racks-on-muni-a-solution-for-late-night-transit-woes/

Bicycle wagon in a tram in Germany
available in: https://www.wired.com/2009/10/
amazing-german-bike-carrying-train/

Bicycle wagon on a train in Denmark
available in: https://cyclingsolutions.
info/bike-plus-train-an-attractive-model/

The Intermodal Bike UE-FP7; displayed
Tosi, Belli & Rinaldi, 2013

The Intermodal Bike UE-FP7; folded
Tosi, Belli & Rinaldi, 2013

a) Bike and ride

Proposals aimed at offering intermodality based on the principle of using public bicycles (bike sharing) or having parking spaces at public transport stations are a measure that can be incorporated into different stages of intervention in the implementation of intermodal transport practices .

The first usual intervention is bike parking, they face the challenge of security against theft. In the initial phases, the literature explains that it is more convenient to use indoor bicycle parking in public transport stations with restricted access or some form of surveillance, while providing free access parking outside the station so that, whilst controlled parking becomes popular, people begin to use the free parking exterior spaces.

When there is no space available within the stations, as is frequently the case at bus stops, it is necessary to generate exclusive access parking infrastructures by means of cards or entry codes somewhere close to the platforms. These structures can be chosen based on the amount of demand, for those small (10 to 20 places): individual lockers in “harbours” for isolated centers and small hangars in denser areas.

To the extent that demand may increase, bicycle loan systems have proven efficient: their size must be considered together with the existing bicycle lane infrastructure and existing demand. After obtaining these results, the incorporation of bicycle stations that include services for cyclists follows: repair shop, shop, tourism information (Universidad de Sevilla, 2013)

A rider loads her bike into an on-demand locker in Washington, US. Available in: https://www.soundtransit.org/blog/platform/park-ride-new-secure-bike-parking-lockers-headed-to-station-near-you

Cycle Hub in Paddington Train Station at Westminster, London. Available in: https://www.cyclehoop.com/news/february-2013/cyclehoop-and-network-rail-announce-the-launch-of-paddingtons-380-space-cycle-hub-with-our-public-bike-pump-and-repair-station/

Mobike, sharing bicycle system in Turin next to Porta Susa Station. Available in: https://www.torinotoday.it/green/mobike-obike-torino.html

3.1.4 Traffic calming: zones 30 and limited transit zones

According to the Regional Road Safety Plan (Piano Regolatore della Sicurezza Stradale), in the major urban areas, around two thirds of the victims of road accidents are made up of "weak users" (pedestrians and cyclists) and motorcyclists. In 2003, 157 pedestrians died in the 14 main Italian metropolitan areas, out of a total of 594 people who lost their lives in road accidents. The "Zones 30" strategy has been established as the most effective action to provide safety in the road space of residential areas.
This strategy is guided by the prioritization of the streets in such a way as to establish limited traffic zones in which the use of pedestrians and cyclists is categorically prioritized.
Therefore, the first objective of the zones 30 is security, and secondly, multifunctionality and consequently the improvement of the environmental and landscape quality of the street. (Regione Piemonte, 2006)

The zone 30 strategy is based on the mitigation of vehicular traffic conditions, traffic calming. Through this, it seeks to adequately incorporate the different functions that the streets within residential environments could meet.

The first cases of traffic moderation occurred in England in the second half of the 1960s through the creation of *shared spaces*; spaces shared by users generated through the closure of streets to allow the promiscuous traffic of pedestrians, cyclists and motorized vehicles. This system encountered difficulties in the limited capacity to control the speed of vehicles in areas frequented by pedestrians due to the anatomy of the streets.
A successor to this was the *Woonerf* in the Netherlands in the 1970s. With the same objectives of the British shared space allowing the so called "weak" or "sweet" users to reappropriate the local streets hitherto dominated by cars, they were part of the aforementioned resurgence of the Dutch cycling culture of the 70s. Through the closure of streets to radically transform them in the landscape: the gardens, the green and the parking lots should give the impression that vehicular traffic had disappeared. Although individual vehicular access to residences is permitted, *woonerven* assign priority to pedestrian users by obliging vehicles to give them precedence. Signs were implemented so that these areas were recognizable from outside the streets.

British "Shared Spaces"
Available in: https://streetswithoutcars.wordpress.com/2014/08/27/living-and-naked-streets/

Dutch *Woonerven*
Available in: https://www.canin.com/world-woonerf/

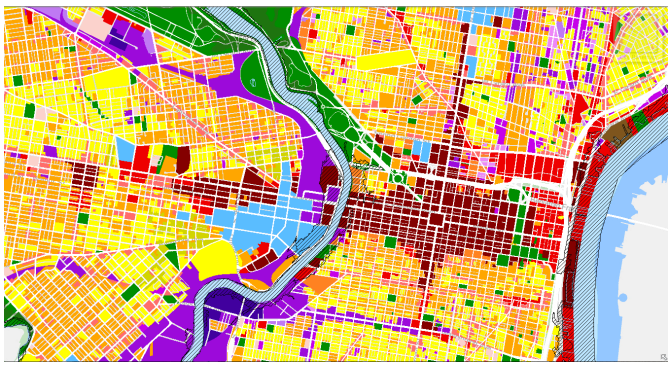
3.2Tactical Urbanism

Tactical urban planning is a tool disseminated by various municipalities in recent years as a response to the need to recover and promote pedestrian mobility, through small-scale, very cheap and rapid interventions that have acquired particular relevance during the COVID-19 pandemic. These interventions, frequently carried out in an experimental key, aim to modify the existing public space, generally that used by vehicles, in order, through a visual modification, to hand it over to pedestrians. They are carried out as a type of "urban acupuncture" in which new dynamics are created in rather confined spaces of the urban landscape to evaluate and read their result on a higher scale. Participatory processes are usually incorporated into its projection so that the opinion, needs and sensitivity of the users contribute to the itinerary of generating this space: a bottom-up approach. (Velázquez-Ruiz, 2018)

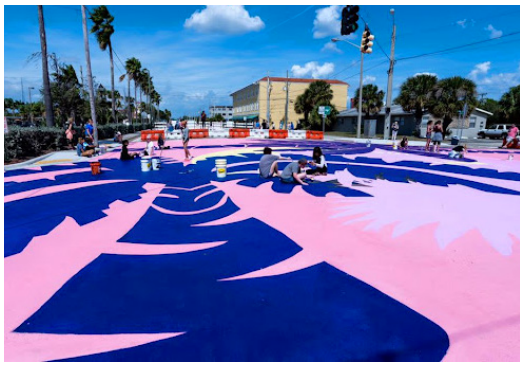
This tool has been widely used to modify the behavior of people during pandemics in public spaces, proving effective to overcome some urgent needs on a large scale due to the circumstances of the COVID-19 pandemic, the needs to be overcome have generally been those of to apply social distancing, increase access to a safe open space, adapt to a new form of mobility and take into account hitherto marginalized or disadvantaged social groups. (Pradifta, 2021)

Tactical urbanism and Strategic Spatial Planning

There is a confrontational dialogue in the existing literature between the principles proposed by tactical urbanism and strategic planning (Vallance & Edwards, 2021). The cited authors define in their differences the first as "unorthodox" and the second as "orthodox" as forms of action, management and urban planning. Although both approaches can be distinguished according to the quality of being conservative or not, the existing cases show a separation also in terms of scale, in which the tactical interventions are carried out in neighborhood contexts, with stakeholders and small-scale dimensions: the called "urban acupuncturism". On the other hand, strategic actions have taken place in transformations on a territorial scale



Philadelphia's Integrated Planning and Zoning Process
Available in: https://philadelphiaencyclopedia.org/zoning-map/



Palm Beach intersection mural
Available in:http://tacticalurbanismguide.com/latest/street-plans-workshop-with-west-palm-beach-results-in-intersection-mural/

Tactical Urbanism

Short-term interventions - general long-term changes

Basic principles:
- A deliberate phased approach to instigate change
- An offer of local ideas for local planning challenges.
- Short-term commitment and realistic expectations.
- Low risks with the possibility of high compensation
- Development of a social capital among citizens and the construction of an organizational capacity between public and private entities, non profit / NGOs.

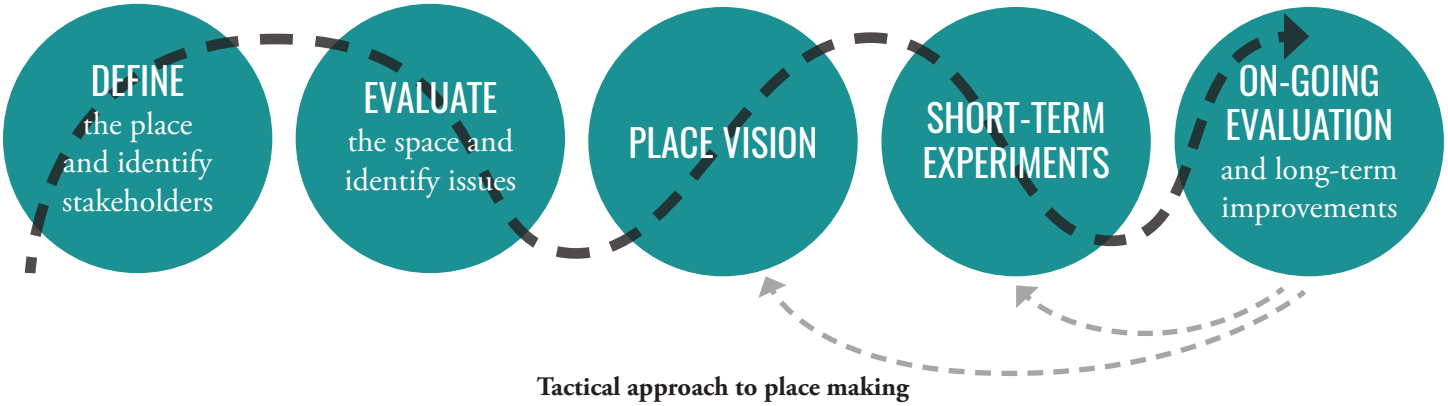
(Vallance & Edwards, 2021)

Strategic Spatial Planning

Long-term interventions - general short-term changes

Basic principles:
- Understanding the urban reality
- Realistic goals
- Focus resources according to their effectiveness in the different areas
- Persistence of the action until the objective is reached

(Vallance & Edwards, 2021)



Tactical approach to place making
Author's ellaboration based on Vallance & Edwards, 2021

Strategic Spatial Planning

Long-term interventions - general short-term changes

Basic principles:
- Understanding the urban reality
- Realistic goals
- Focus resources according to their effectiveness in the different areas
- Persistence of the action until the objective is reached

(Vallance & Edwards, 2021)

3.2.1 Paris Respire

Paris Respire is a scheme started in May 2016 in which some arrondishments in the French Capital remain closed for motorized traffic on Sundays and holidays between 10 am and 8 pm with some variations. These zones, depending on the conditions, allow the entry of taxis and delivery vehicles as long as they do not exceed 20 kilometers per hour. Closed areas include the banks of the Seine, the Canal Saint Martin and Montmatre.
The goal is to reduce pollution on a small scale and prioritize pedestrians and cyclists. (Mairie de Pris, 2017)

Street closed to motorized traffic
Available in: https://paris19.eelv.fr/tag/paris-respire/

Seine river bank for Paris Respire
Available in: http://www.sortirdeparisavelo.fr/blog/2015/07/quand-pompidou-arrete-de-respirer/

3.2.2 Milan, Piazze aperte

This project seeks to return the available space on the road, frequently used as parking, to the inhabitants of the city as new squares. It is carried out through tactical urban planning: council decisions made through a collaborative process with citizens. It is intended to experimentally evaluate the requalification of places and the relocation of traffic at certain points.
Promoting the dynamics of coexistence and recreation, particularly after confinement and returning public space to the center of the area could be actions that contribute to the social and economic development of the city. (Comune di Milano, 2020)

Piazze Aperte in Milan
Available in: https://milano.corriere.it/foto-gallery/cronaca/19_settembre_11/nolo-dall-incrocio-nasce-piazza-colori-e983894c-d470-11e9-8dcf-5bb1c565a76e.shtml

Piazze Aperte in Milan,
Available in: https://www.designatlarge.it/piazze-aperte-milano/

Piazze Aperte in Milan, Camilla Falsini murals
Available in: https://www.collater.al/en/camilla-falsini-murals-milan-street-art/8d

3.2.3 Barcelona Superilles

The project promoted by the Barcelona city council aims to make use of the city's characteristic grid to generate "super blocks" and which give total priority to pedestrians and cyclists. This project foresees stages of intervention in which the route of motorized vehicles and public transport will be gradually modified. An initial stage suggests the coexistence of cars with pedestrians on the same road. Part of the project consists of generating squares from the characteristic chamfer crossing projected by Ildefonso Cerdá. (Adjuntment de Barcelona, 2020)

Superilles Masterplan
Available in: https://www.elperiodico.com/es/barcelona/20201111/calles-superilles-eixample-barcelona-8198605

Pedestrian path, Superilles
Available in: https://www.plataformaarquitectura.cl/cl/924496/disenar-el-proceso-de-transformacion-la-superilla-de-sant-antoni-en-barcelona-por-leku-studio

Pedestrian path, Superilles
Available in: https://www.archdaily.mx/mx/938234/plaza-superilla-de-sant-antoni-leku-studio

CHAPTER 4

THE MUNICIPALITY TRAFFIC PLAN

The strategic actions of the public administration are understood through a document that establishes how public, private, pedestrian and cyclical vehicular mobility should be with a territorial and local scale approach.

4.1 Road hierarchy of the communicating elements of the city

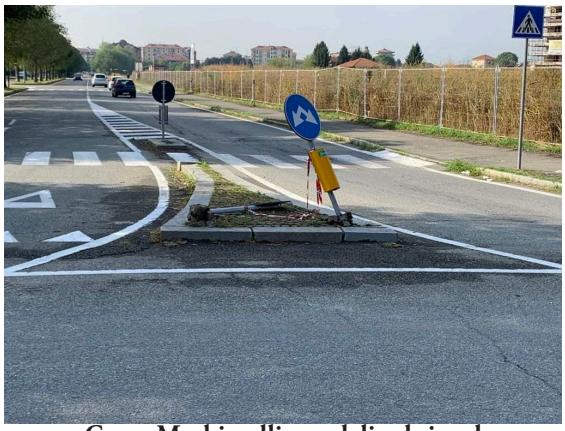
The municipal territory of Venaria Reale is divided spatially by the Torino Nord tangential motorway. To the south, bordering Turin is the territory characteristically identified by the presence of the Allianz Stadium. To the north, the historic center, the Reggia de Venaria and La Mandria park. The main accesses to the city from Turin are Corso Garibaldi, Viale Roma (Movicentro Venaria), Via Lanzo and Via Venaria, understood as crossing roads.

Within the urban core of the city, the streets Vía Barbi Cinti,Via Leonardo Da Vinci, Via IV Novembre, Via Palestro, Viale Buridani and Via Juvarra fulfill the function of the internal mobility of the area, used by public means of transport from Torino.

As distribution routes for vehicular and cycling mobility, Via Petrarca, Via Don Sappino, Via Barbi Cinti, Corso Papa Giovanni XXIII, Corso Matteotti, Corso Machiavelli, and Via Iseppon are categorized.

Via Garibaldi
Available in: https://www.lastampa.it/torino/2017/09/22/news/venaria-presidiata-dai-varchi-elettroni-

Viale Roma
Available in: https://mapio.net/s/46031876/ci-1.34424058



Corso Machiavelli, vandalized signal
Available in: https://www.quotidianovenaria.it/cronaca/venaria-vandali-in-azione-dan-

Municipal border

Tangential highway

Crossing viability

Distribution viability

Suburb viability

Local viability

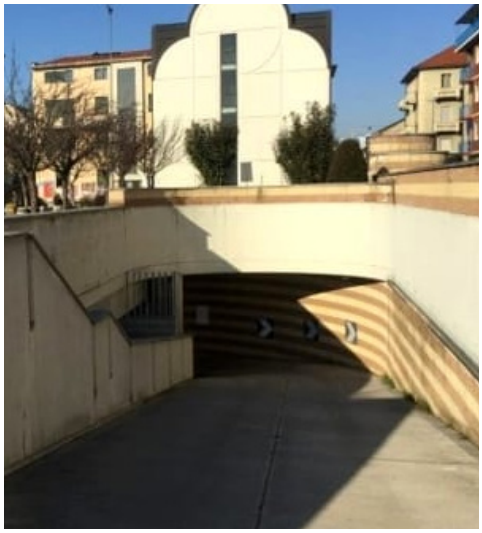
Road hierarchy in the City of Venaria Reale
Author's elaboration based on Tavola 2 Piano Urbano del Traffico 2006

4.2 Parking areas supply

The Viale Buridani, Goito, Palestro, Corso Papa Giovanni, IV Novembre, Juvarra, Medici, Sciesa, Barbi Cinti and Medici roads have on-street parking at payment according to the tariff. Piazza De Gasperi is used as a parking lot on those days that it is not occupied by the market. The main parking lots in the city are the underground in Piazza Pettiti, Piazza Don Alberione, Juvarra, Castellamonte (Reggia de Venaria), Borgo Castello (La Mandria Park).

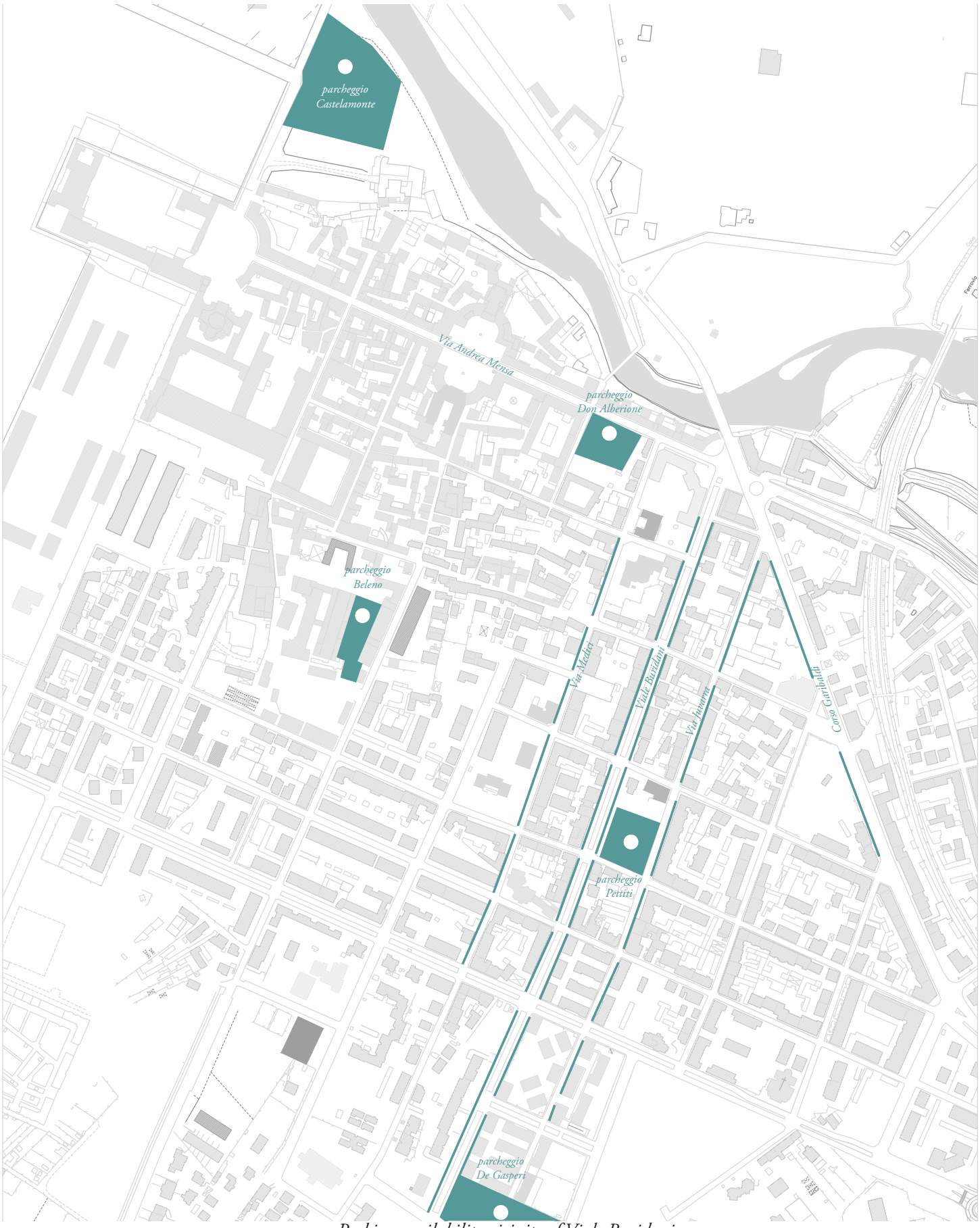
Various public and private initiatives seek to implement a system that makes these parking lots available jointly for the main attractors of the city: La Reggia, La Mandria, the stadium.

Don Alberione parking
Available inhttps://it.worldorgs.com/Catalogare/venaria-reale/area-di-parcheggio/parcheggio-don-alberione



Piazza Pettiti parking
Available inhttps:https://www.torinotoday.it/politica/Venaria-Reale-parcheggio-sotterraneo-Pettiti-.html

Movicentro parking
Available inhttps: https://www.quotidianovenaria.it/cronaca/venaria-il-movicentro--quasi-comple-



Parking availability vicinity of Viale Buridani
SC 1:5000

4.3 Public green

Venaria Reale, being a municipality with a wide presence of public green, mainly due to the presence of La Mandria park, has a network of public parks.
The Salvo D'Acquisto Park, with an area of approximately 95,900 square meters, constitutes a recreational sports center for the city. The Galileo Galilei park, with an approximate area of 23,890 square meters, is an area frequented by families with young children mainly.
To the north of the city, on the Ceronda riverbank, the green crown complex is formed by a series of trails in the Altesano area that borders the river.
In Via Giuseppe Cavallo, also next to the river is the pedestrian Viale Mazzini that connects the historic center with La Mandria park.

Salvo D'Acquisto Park
Available in:https: //it.worldorgs.com/Catalogare/venaria-reale/parco/parco-salvo-dacquisto

Castellamonte bridge
Available in:http://rete.comuni-italiani.it/foto/2012/24801/view

Ceronda riverbank
Available in:https://mapio.net/pic/p-44936608/


Public green
Available green
forestal areas
0
50
100
500m.

4.5 SWOT

S

- Presence of attractors
- Population with similar socioeconomic characteristics
- Presence of public green on a large territorial scale: species of flora and fauna.
- Cultural and historical identity of the city center.
- Presence of industrial heritage.
- Clear and orthogonal organization of the city.
- Multiple accesses to the metropolitan center of Turin.

W

- Poorly varied offer of little organized businesses, too similar between each other.
- Negligence in the use of on-street parking within the city.
- Traffic blocks at peak times of use of the stadium parking lot during sports matches.

O

- Joint public and private projects with the interested stakeholders of the main visitor anchors: La Reggia, La Mandria, Juventus Stadium.
- Ease of operation of participatory processes for an "urban acupuncture" due to the organized community management of citizens.
- Existence of European funds for the financing of projects in coherence with the interest of environmental, cultural and economic sustainable development.
- Possibility of experiencing the effects of pedestrianization for the benefit of heritage and commercial sites.

T

- Aging of the population.
- Little application of sustainable mobility through the use of bicycle lanes.
- Existing cycle paths with poor planning.
- Limited oportunity for visitors to know the city due to immediacy of parking to La Reggia.

STUDY SITE

CHAPTER 5

What are the challenges of this city in terms of mobility, traffic and commerce? Specific issues to be resolved are understood by resorting to various survey tools.

5.1 Main area overview

the area to be studied is delimited within the municipal territory of Venaria Reale. The specific site of Interest, Viale Buridani and Via Mensa are located in the north of the metropolitan area of the town, forming the historical center formed in the past around the Reggia de Venaria Reale along the baroque Andrea Mensa street that frames the main access to the palace. The development to the south perpendicular to Via Mensa, Viale Buridani, which belongs to the 20th century, marks the urbanization belonging to the industrialization process of the territory in which a large part of the current residential buildings were built.

The communal territory, which to the north is mainly occupied by the natural green area of the La Mandria park, has in the territory underlying it an urban area divided as well between north and south by the passage of the Tangential Highway of Turin. Above this is the area of immediate interest: the historic center and the axis of Viale Buridani towards a rather residential area. Under the highway, on the other hand, is the industrial and commercial zone characterized in a relevant way by the presence of the Allianz Stadium, which forms an important attraction of the municipal territory. Both areas are mainly connected by Corso Garibaldi that passes over the highway.

Source: Google Earth

5.2 Kevin Lynch analysis

A classification of urban elements is proposed within the framework established by Kevin Lynch's structure: paths, nodes, edges, landmarks districts.

The main paths are made up of the Machiavelli, Da Vinci, Buridani, Garibaldi, Andrea Mensa and Via Roma routes, these being the routes through which public transport runs and therefore they form an intermodal meeting point between public transport - pedestrians.
The designated nodes in the city are mostly the meeting point of the main streets usually equipped with a roundabout: Piazza Vittorio Emanuele II, Via Iseppon, via Barbi Cinti, via Dante and San Rocco.
The landmarks of the city cataloged as such are, in the first place, the Reggia di Venaria complex (the palace, the gardens, the Sant'Uberto church), La Mandria park and Piazza Annunziata. Later the municipal palace, Piazza Pettiti, Caserma di Beleno, the Altessano cemetery and the Don Milani school.
The listed edges of the city are those axes that divide the landscape and urban facilities: the Torino Ceres railway, Via Don Giovanni Sappino and the Ceronda river canal.
The districts that can be evidenced in the city are the historic center; a second zone to the south developed in the middle of the 20th century, and a third also to the south at the end of the same century and the beginning of the 21st.

Corso Machiavelli
Available in:https://www.quotidianovenaria.it/cronaca/venaria-estate-di-lavori-in-citt-sa-ranno-rifatti-strade-e-marciapiedi-nuova-rotonda-in-corso-machiavelli--18814


0
50
100
500m.
Path
Node
Edge
Landmark
District

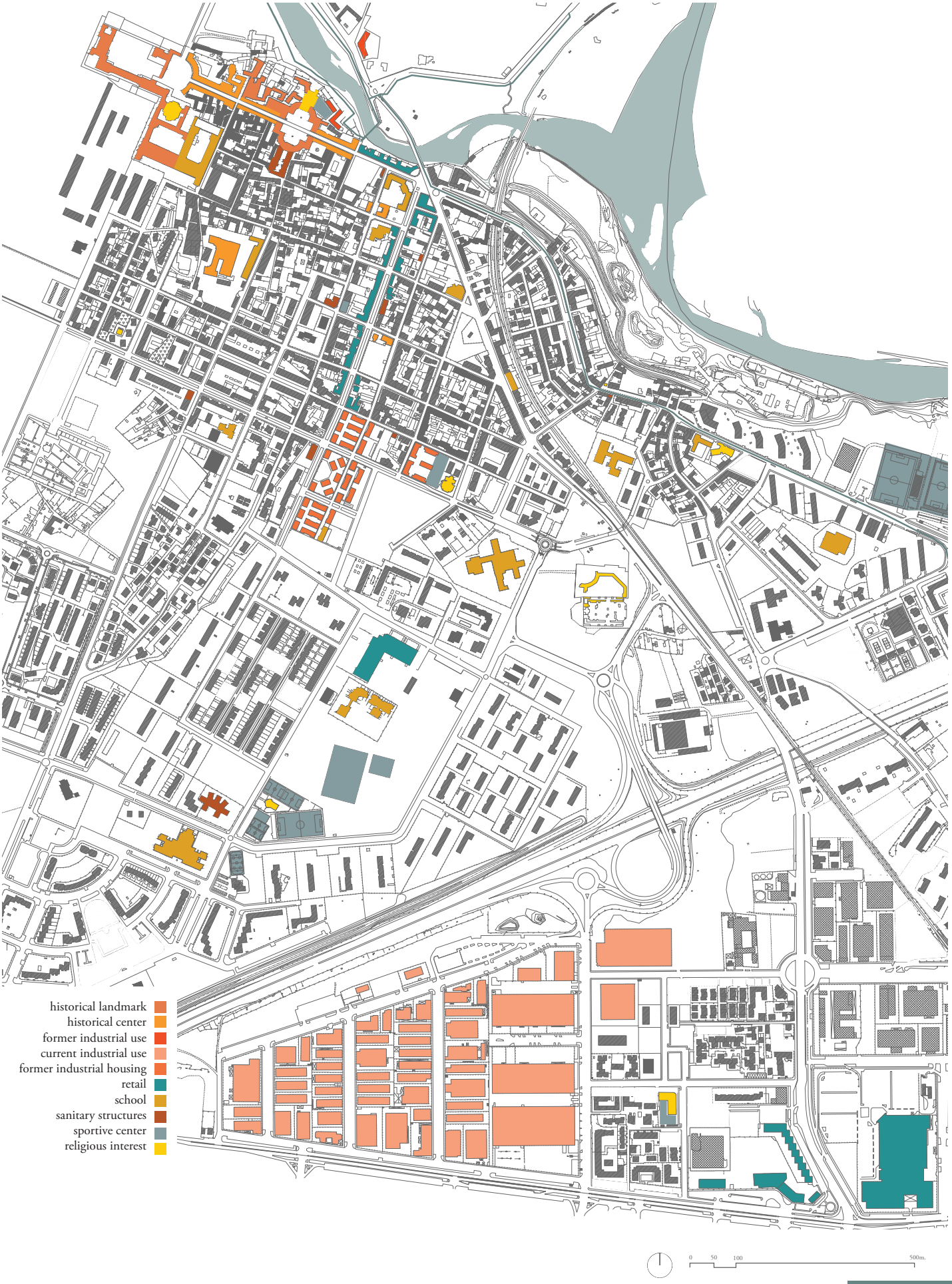
5.3 Use of the land

A study on the land use of the city is proposed in which the different sectors are graphically analyzed according to the occupation and use that is given to the properties individually.
As a historical landmark there are La Reggia, the cavalries and scuederie of Juvarra, as well as the old mill next to Ceronda. The hostoric Center and the various points of industrial residential interest, the Snia village, are identified: popular houses built for the workers of the Snia Viscosa industry. The main retail centers are found in Viale Buridani and in the Shopping Center in via Da Vinci and Conad in via Garibaldi. As places of cultural interest there is the Concordia theater to the south. The main temples of the city are the parish of Santa Maria that gives its name to Piazza Annunziata, the historic church of Sant'Uberto, the parish of San Francesco D'Assisi in Corso Papa Giovanni XXIII, the church of San Lorenzo in Altessano, the Chapel of Santa Gianna Beretta near the Allianz Stadium and the Orthodox Romanian Chaplaincy in Via Sciesa.

The main sports centers are the Venaria sports center in Altessano and the Salvo D'Aquisto park.
The health structures present are the Polo della Salute in Via Don Sappino, the Venaria hospital in Piazza Annunziata, the nursing home in Via Guarino Guarini.
The buildings for school use in the city are mainly Don Milani Middle School, Juvarra Scientific High School, Barolo Elementary School and De Amicis Elementary School.

La Concordia Theater
Available in: https://www.grugliasco24.it/2021/05/17/leggi-notizia/argomenti/cultura-13/articolo/venaria-reale-torna-il-teatro.html

Santa Maria parish church
Available in: https://it.worldorgs.com/Catalogare/venaria-reale/chiesa/chiesa-parrocchiale-della-nativit%C3%A0-di-maria-vergine


historical landmark
historical center
former industrial use
current industrial use
former industrial housing
retail
school
sanitary structures
sportive center
religious interest
0
50
100
500m.

5.4 The current experience for cyclists

The current structure of cycle tracks in the city is made up of a network that has been developed by rather spontaneous initiatives within the municipal organization, as well as a consequence of some sustainable mobility plans proposed by the metropolitan area of Turin.
Within the city, the bicycle lanes developed as such are found in Via Garibaldi, Via Iseppon and the Torino - Druento - Savonera cycling connection, this being the most extensive and developed from a project point of view.
The Commune of Torino seeks to promote the Venaría - Turin connection through the Venaria and the Lanzo roads. The Corona Delle Delizie circuit is accessed from La Manria park and, as a result of the influx of cyclists to this park, the Viale Giuseppe Mazzini remains as a route adapted to them.

Bicycle path Corso Garibaldi
Google maps

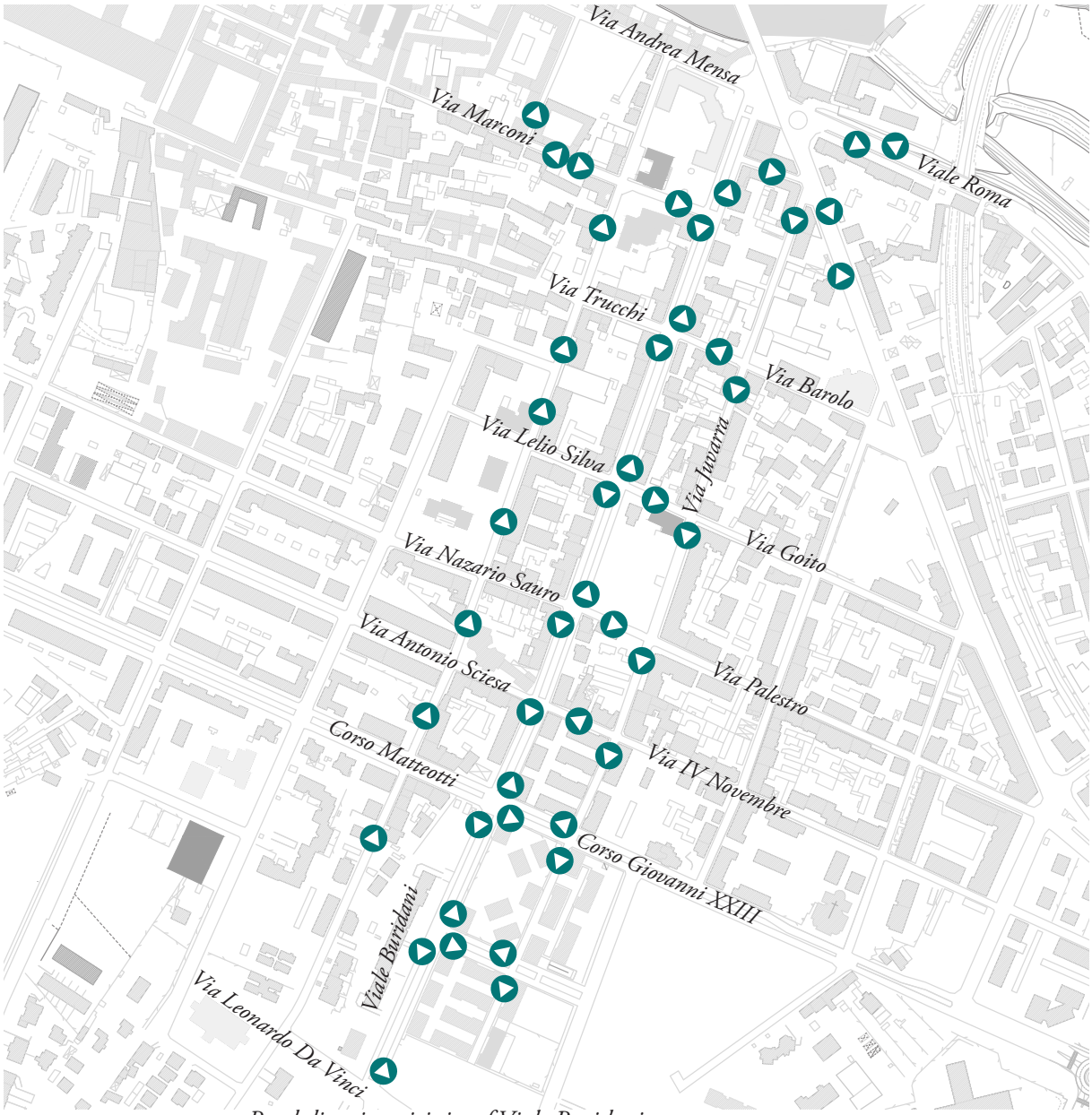
Bicycle path Venaria - Druento
Google maps


Corona Delle Delizie Path
Venaria Reale - Turin cycle connection
0
50
100
500m.

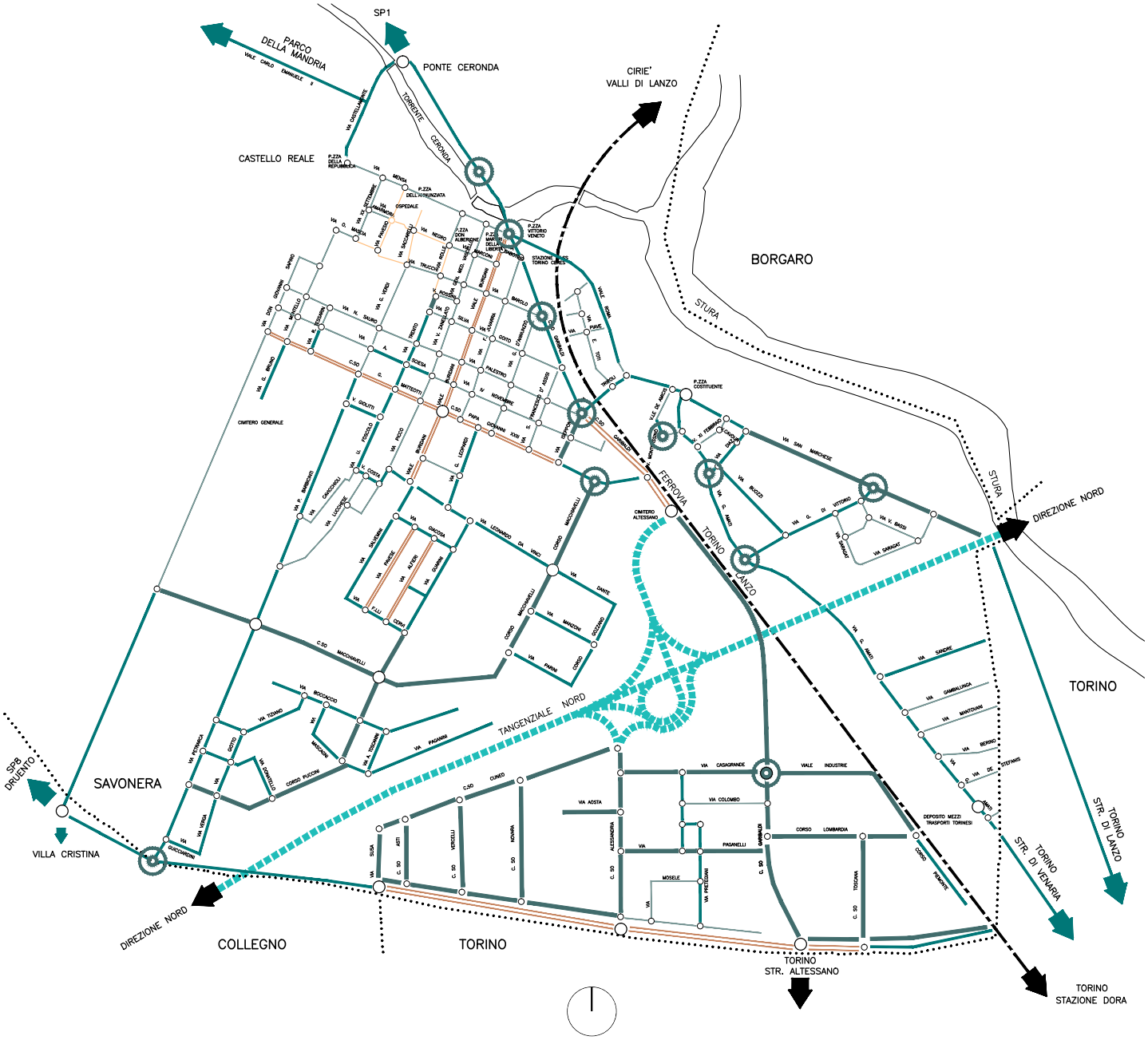
5.5 Main street configuration

In order to study the configuration of Viale Buridani, an analysis is proposed on the roadway of the street and the parallel routes: it has a two-way road with on-street parking. A central median for the pedestrian crossing also separated by the presence of trees.
The photographic analysis highlights pedestrian traffic and its coexistence with motor vehicles.

As specified in the map shown below (fig.), Viale Buridani has a length of approximately 19 meters according to some variations in the measure of the withdrawal of the road from some properties. Among the solutions adopted in the past for city road planning, extensive use of roundabouts was made to distribute vehicles at existing junctions. You can see the difference in urban character on the different sides, north and south of the tangential highway and in turn, along via Mensa and Vial Buridani, the morphological difference of the streets and buildings built several centuries apart from each other.



Road direction vicinity of Viale Buridani
SC 1:5000



Road hierarchy according to street lenght at Venaria Reale
Author's elaboration based on Piano Urbano del Traffico di Venaria Reale, Tavola 6

5.6 Photographic analysis

For the effective realization of a study of photographic survey of Viale Buridani, the moment and hour of a Friday at 5:00 p.m. was selected to understand the behavior of pedestrian, bicycle and motorized private vehicle traffic.
Photographs were taken focusing on the center of the road from the crossing points of the street with the Papa Giovanni XXIII, IV Novembre, Palestro, Goito, Barolo and Sabotino roads.

Photographic samples location
SC 1:5000

1. Crossing
Via Leonardo Da Vinci, Viale Buridani

Francico Javier Ramirez, 2021

At this time, Piazza De Gasperi (right) is observed in the weekly period during which it is used as a parking lot and not as a walking market. A signage is perceived in a deficient or vandalized state. The use of on-street parking is evident on both sides of the road in this segment of the road for a rather residential use.

2. Crossing
Corso Papa San Giovanni XXIII, Viale Buridani, Corso Giacomo Matteotti

Francico Javier Ramirez, 2021

At the point marked by this segment of the road, the use of the central pedestrian street starts within two lines of trees. A higher pedestrian influx is evident, at this time residents returning from jobs, pet walk.

3. Crossing
Viale Buridani, Via IV Novembre, Via Antonio Sciesa

Francico Javier Ramirez, 2021

From this point, the use of on-street parking by those who frequent local businesses, pedestrian crossing, families with young children using the road is evidenced. At this moment, a road intervention to install fiber optics is being observed.

4. Crossing
Viale Buridani, Via Palestro, Via Nazario Sauro

Francico Javier Ramirez, 2021

This survey point, at the intersection of Via Palestro, corner of Piazza Pettiti (right) opposite the premises of the Intesa Sanpaolo bank (left), shows the conflict of the coexistence of pedestrians and vehicles, as the former did not have a direct means of crossing in the interruptions of the crosswalk.

5. Crossing
Viale Buridani, Via Lelio Silva, Via Goito

Francico Javier Ramirez, 2021

From this node there is a slight change in the character of the road, the presence of retail stores (left) and historic villas from the beginning of the 20th century (right) being more evident. The use of the pedestrian path is evidenced by a varied segment of the population in terms of age. The use of on-street parking is marked on both sides of the street.

6. Crossing
Viale Buridani, Via Barolo, Via Trucchi
Francico Javier Ramirez, 2021

From this site the presence of coffee and restaurant businesses, as well as retail stores, is more accentuated. The presence of younger or smaller trees is evident in the pedestrian zone. Use of on-street parking in both directions of the road.

7. Crossing
Viale Buridani, Via Guglielmo Marconi: Piazza Martiri Della Libertà

Francico Javier Ramirez, 2021

From this point of the street a greater pedestrian cycle character is observed: on the left side is the Martiri Della Libertà square, the main seat of the municipality, which in turn gives way to off-street parking. There is a relevant presence of pedestrians. The use of on-street parking is still present on both sides of the street.

8. Crossing
Viale Buridani, Via Sabotino: Piazza Vittorio Emanuele II

Francico Javier Ramirez, 2021

From this point the vehicular use of the road ends and it is exclusively used for pedestrians, specifically being a Limited Traffic Zone (ZTL), this being also explained by the vertical signage. There is evidence of the presence of bars and cafes as well as a regular influx of pedestrians.

5.7 Direct survey towards site Municipality Technical office

For the validation of an analysis and the study carried out on the city, a consultation in the Office of Public Works and Construction of the municipality was necessary, to understand from a managerial point of view the problems surrounding the issue of cyclical and pedestrian mobility for the use of recreation and commerce in the specific of Viale Buridani.

*5.7.1 Interview with Municipality traffic tecnician, arch. Giacomo Bugliarelli **

To carry out a direct study with the public office to whose interest belongs the management of public works, mobility and implementation of sustainable urban solutions to make effective use of European Funds, the architect Bugliarelli was interviewed, who pointed out problems from a comprehensive point of view rather profound aspects of the city's functioning:

> F - Thanks, Giacomo for your time. As you know, a consultation with an external technician who is well acquainted with the urban practices of the City of Venaria is useful for my thesis study. I wanted to use some of your time to ask these questions.
> In your opinion, what is the importance of gentle forms of mobility in Venaria Reale, namely the use of bicycles, trains, pedestrians ... and its greatest challenges.
>
> G - So, in the meantime, let's talk about integrated mobility starting from a concept that, so far, the car has obviously been the master. Venaria does not have large pedestrian areas except the via mensa which is not a pedestrian area but a limited traffic area, although in fact it has become a pedestrian area; and a small historic center, small in the areas of via mensa, with very small streets where it is very difficult to park but where you can pass even with reduced mobility. In such a situation, the penetration of city buses towards the historic center is quite difficult, therefore the buses go to the outskirts of the historic center, although the historic center can be easily reached on foot and can be easily explored on foot. Having said that, walking, therefore walking is also fundamental for another reason substantially: that Venaria has an elderly population, there are many elderly people. Few of them take the bicycle and few take the bus if not to move and go to Turin therefore to give rather long journeys, most of them very few have a car of course, most of them go on foot and do long distances on foot. And we have realized this in the past years and we have made station stations, especially benches, that is, we have identified the main routes on which they could be used by elderly people and so we have placed benches at not so long distances. that they could stop. On buses, Venaria is in fact an attestation, that is, those who use the bus in Venaria are to go to Turin or to Venaria from Turin, especially for students, there is no internal bus traffic except in the peripheral areas. Cycle mobility... Venaria is flat, however the bicycles are there: we have recently inaugurated a cycle path connecting Druento, Collegno, Turin and Lanzo which is the piece that was missing in the inter-municipal cycle mobility, it is used a lot by pedestrians who find it pleasant and more nice to do that the sidewalk on the other side. That of the "beauty" of the routes to be used, the pleasantness of the routes is another topic that perhaps too little has been said about but which is fundamental in the choice of planning the territory.

** The interview was carried out in italian and later translated into english by the author so to be included in this work.*

F- What influence do you think important attractions such as La Reggia di Venaria, La Mandria Park and the Allianz Stadium have on city traffic?

G- Then, the attractors are basically the arrival points of various paths. The Reggia arrival point, the Mandria arrival point and the Stadium are elements that attract a very high number of people at certain times of the day: traffic people and users substantially from the city. Let's start with the problems that areas such as the Reggia or the Mandria can surely cause… La Mandria is quite detached so that there are no major problems on the traffic towards La Mandria, on the Reggia yes, and on the stadium much more. The stadium, when there are games in fact, both the Turin and Venaria roads on that part are filled in and alternative ways have to be found to go back and forth. Obviously a stadium, such an attractor creates a territory around itself, that is, the territory is organized and actually drawn around the stadium. From Venaria it hasn't emerged except perhaps a couple of fast food restaurants and a couple of bars of commercial economic activities linked to the stadium that benefit from the stadium also because in the new conception of modern stadiums there is not only the stadium but there is a multifunctional center, that of the stadium. Juventus as for example that of Real Madrid there is the stadium, there is the museum there is the shopping center, there are offices, there is J Medical the medical center, etcetera: a plurality of functions around the stadium. As far as our territory is concerned, it has undergone an architectural imprint of the stadium, as regards traffic and mobility management it is giving problems, it has always given problems and if the car continues to be the main method of locomotion to get to and from the stadium, obviously it gives problems also because it requires large parking surfaces so large surfaces that are left free with no other function than that of hosting cars in a few hours of the week, few, have no other functions, are costs unnecessary. For the palace, access is obviously more diluted over the course of the day and week, even here there are large parking areas, here the clientele is different, let's call it that. We are now trying to have greater involvement with the Royal Palace in ways of making a common growth, of implementing a common development. The clients of the Reggia use several commercial establishments, some hotels and in any case use the territory more strongly than for example the users of the stadium. There is a lot to do, this dualism with the palace can be developed especially in the cultural sphere and also in the hospitality sector. La Mandria is all the more detached, obviously and a suburban park the traffic to and from La Mandria leaves on Sundays and Saturdays quite small and a big pole of attraction especially as regards the other two, for heaven's sake, he is particular as regards the very knowledge of Venaria, that is, everyone knows that La Mandria, they refer to this park and they know it and they know that it is the territory of Venaria and they have a knowledge of this. This idea of the territory is fundamental for the development of the territory itself.

F- From the point of view of trade, on the other hand, what would be the differences between a ZTL and the one traveled by vehicles in this case punctually Via Mensa with Viale Buridani?

G- So, merchants would like to have parking spaces inside the shops practically even if this has proved counterproductive in most of the times. The example of Via Garibaldi in Turin has made school. It was in the seventies, there were enormous controversies, even very lively protests on the pedestrianization of Via Garibaldi because the traders of the time said that they would have zero profits if the street was pedestrianized. Despite the fact that it is amply demonstrated that this has not happened, indeed the shops have gained a lot from the pedestrianization of Via Garibaldi, every time you try to pedestrianize a street there are protests from traders about these things, the same thing has happened on Via Mensa which was passable by cars and then was fortunately closed and we would see what will happen in Viale Buridani which will not be pedestrianized but there will be a complete redesign of the avenue in the coming months - years also with a different distribution of traffic and parking. In reality, the problem is another, the problem lies in the supply by traders, therefore from the territory, a plurality of offers different from what is now available, therefore a system that affects the quality of the commercial service, the quality of the services offered and the ability to attract many people to a given place. Clearly the assumption is to say: the more people are in front of my shop, the more chances I have to gain. Now with online commerce, of course, all this begins to be questioned because obviously commerce opens up to us, and it is global: visibility on the street is very different from visibility on the net, but the fact is that the shop that works well in the area could also work well on the net because it has a structure that has more potential to be able to grow. Therefore, rather than seeing what links traffic to commerce, I would speak of remodeling of commercial areas, modulation of natural commercial areas and of the panoply of offers to the citizen. For example, in Venaria we have a huge number of bars one behind the other which, despite competing with each other, are unable to give quality to their offer. I can't go and take very few episodes apart, historical ones among other things, I can't say "in Venaria there is the best coffee in Turin because there are so many bars that compete on quality" that's not the case, coffee and normal without any problem the same I said for the rest of the services although they are literally one after the other. And this clearly does not help, we need to change mentality especially in the part of the traders because we can offer our services, we can offer our projects but on the other side there is a need for someone who co-designs with us and so far we have seen that the availability and the ability to understand was very limited. They have great complaining skills, they know how to complain very well but do not know how to find solutions until today. And the same in large-scale distribution which is another thing that is killing the neighborhood trade.

F- With this very interesting point, and still talking about the topic of parking. We talked about whether there was a relationship between the parking system and the effectiveness of the shops. On the other hand, is there a relationship with the safety of pedestrians in the case of Viale Buridani?

G- Viale Buridani is in fact a pedestrian boulevard, which has a series of road crossings that cross it from east to west both from one direction and from the other. Viale Buridani like other avenues in the nearby cities, take for example Collegno is a purely pedestrian avenue even if it is not actually recognized as such. The parking portal on the avenue, we have seen that it does not bring great benefits to the trade. First, because in any case the number of parking spaces that are available is quite low: we do not have large parking areas, it is paid and is occupied, willingly spent both by the inhabitants from the street and the neighboring streets and above all by the traders themselves who instead of going to park far away to get their customers to come and park, they put their car in front of their shop, extolling in fact a whole policy of creating parking in front of the shop which, however, serves up to a certain point.

It means, you have to take the person who walks in front of the shop, whoever is in the car does not enter the shop, he must be able to park to enter, he must think that he wants to enter spontaneously: he walks, sees him and enters, maybe even after a few days. You have to take the pedestrian, not the driver, you can leave the car far away. If you have to park, you go around. They are not commerce and cars, contrary to what is said, they are not two related things. The automobile does not benefit commerce, in this case of course. In the large distribution you arrive in, you park far away, because in any case the parking lot is far enough from the shopping arcade in almost all cases, you park and walk in the shopping arcade which could be huge, you also walk long distances but you , however, the distance by car you put anywhere from Venaria towards the surroundings of Viale Buridani and walk around a natural shopping center such as this avenue and the neighboring streets, going to any shopping center to turn around is the same. The thing that changes is the parking fee. To come to Viale Buridani I have to pay, on the other option I don't.

F- This is a more technical question: what would be the advantages of creating Viale Buridani, thinking of it as a pedestrian and cycle path that could work around the historic center of Venaria.

G- Why around the center?

F- Provide a ring, using the existing roads to ensure not only a forward-backward linear communication but one that we could reconnect with the roads closest to the Palace.

G- You should be able to create streets with attractors, now the streets of the Historic Center are very small, where you cannot park, only they can be traveled by vehicles with limited speed, they generally do not have sidewalks and they do not have space to create commercial activities. The construction, the building quality around Via Mensa is quite low: these are small houses with spontaneous construction with very small cramped spaces, there is no building quality, urban or services. If I had to put my hand to the complete redesign of the historic center of Venaria considering only the network important but not the various elements therefore the poor houses that are spontaneous that were born over the previous three centuries, then yes, such a speech can be made. Keep in mind that Via Mensa and Viale Buridani are two different historical axes. Via Mensa is the royal axis, the baroque street by definition with the entrance street, the royal street, a small square that stops the perspective and then another piece of street and the bottom that is the royal residence, as is the via Garibaldi in Turin as via Roma still in Turin ... the type of baroque street in Turin and that. Viale Buridani was built in the thirties in contrast with Via Mensa, meanwhile it was done perpendicular to Via Mensa to define a development towards the south of the city and in fact the city has developed around that axis, also because the other directions were blocked, on one side there was the Ceronda, then the town of Altessano and on the other side all the military camps that totally blocked the whole city to the west. For this reason the city has developed towards the south which, however, is in contrast to this axis: one is the Baroque axis, the other of the thirties: therefore with the architecture in which a whole series of public buildings or buildings have stood. private but with a little value, in which the village Snia is registered at the end of the avenue. This large factory (Snia Viscosa) generates large houses for the workers at the end of the avenue and had a whole series of services: the nursery school, the wash houses, the public toilets, etc., for which it is possible to do it, it is necessary to redesign the city . An old mayor of ours used to say: Venaria is nothing around Via Mensa, because what “serves” is the baroque street, all the rest are the houses born from what little industrialization there was in the eighteenth century and of those who worked for the court, but they are very poor houses.

F - Could you identify instead, what would be the advantages of the intermodality train - bike for visitors to the city through the Turin - Ceres railway?

G- It is fundamental... fundamental. Roberta (Cardaci) can tell you much better than me about these things and about future developments, however, it is fundamental. Because in the meantime on the extension of the line from Turin Ceres, which should be able to connect at this point also with the entire Turin railway network, it is essential because those who get off the train must be able to find bicycles, scooters or electric bicycles in order to expand the range of action: those who get off the train in Venaria either do it for work or study or do it to be a tourist. The first two have their own habits: you get off the train, take the scooter, you get home, you drop it and you save a lot of time. Same as with the bicycle, you could also do it with the buses but this is so much easier. The tourist would be the same thing, the tourist with a scooter or a bicycle would simply reach more. So we have to create interchange spaces between buses, trains, bicycles, scooters and even with walking routes. The more we link this type of interconnection, the more we have new ports: the movicentro is a strong node because it is the center of a whole diversified network of mobility, that is, on the Movicentro you have the attestation of the urban bus network, you have the attestation of the parking , the attestation of suburban buses, bicycle rental, taxis even if that is another matter because as in other European cities we must develop that the taxi is a normal means of transport, while in Italy it is a privileged transport: go to taxi to run to the hospital if you are about to become a father, but to go to the airport you do not take it.

F- Thanks Giacomo, for this enriching information. It will be very useful for the proceeding development of the thesis.

G - Thanks to you!

5.8 Practical author's considerations

Taking into account the information collected through the direct study carried out in the municipality, understanding this particular point of view, various work points can be identified in that related to the city's roads.

Venaria, in relation to its territorial surface, is a town rich in attractors that would lead visitors to its territory. The city also faces the challenge of managing the traffic produced by these elements, which each behaves differently and according to different variables. For this reason, the public-private alliance is essential to manage both local and visitor traffic at key moments and provide parking.

Within the city, on the Via Mensa and Viale Buridani axes, the challenge is faced of asserting new dynamics of sustainable mobility, specifically the pedestrianization of the street itself, for which it hinders a lack of cooperation from merchants who see it as an event economically negative the absence of motorized vehicles in front of their premises, even in view of cases that prove otherwise.

The lack of variety and quality in the services offered to visitors to the city is also an element to be worked on.

For the future organization of the mobility of Venaria Reale, following a parameter of sustainability, the restoration of the Torino - Ceres railway connection is fundamental to allow a train - bicycle - pedestrian - public bus intermodality that allows to alleviate the private vehicular traffic to and from Turin as well as generating its own internal dynamics of mobility within the city.

Mental map on general considerations, Author's elaboration

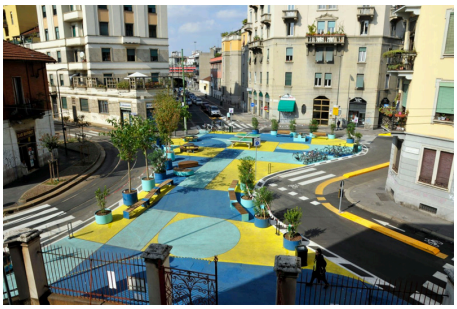
CHAPTER 6

AN OUTLINE WITH A PURPOSE

A proposal to respond to the different topics studied must seek a conscious process towards the generation of a space that is conscious and coherent with the potential of the city.

6.1 Tachtical Urbanism strategy for the Viale Buridani

An intervention plan divided into methodological stages is proposed: first, a small-scale tactical process, an "urban acupuncture" in which it is experimented to limit traffic in certain areas to grant new space to pedestrians through a visual intervention on pavement for which graphic designs related to the identity of the city are proposed. During this stage, tensions between stakeholders, neighbors and merchants are adjusted to later propose a formal reconfiguration of the road.



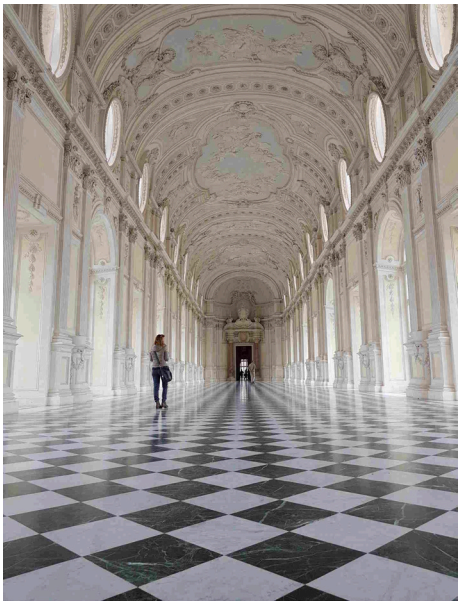
Milan, *Strade Aperte, 2019*
available in:https://www.esmartcity.es/2020/05/14/strade-aperte-plan-milan-promover-movilidad-sostenible-garantizar

Barcelona, *Superillas*
available in:https://www.publico.es/entrevistas/bel-en-moneo-arquitecta-modelo-ciudad-pandemia-coronavirus.html

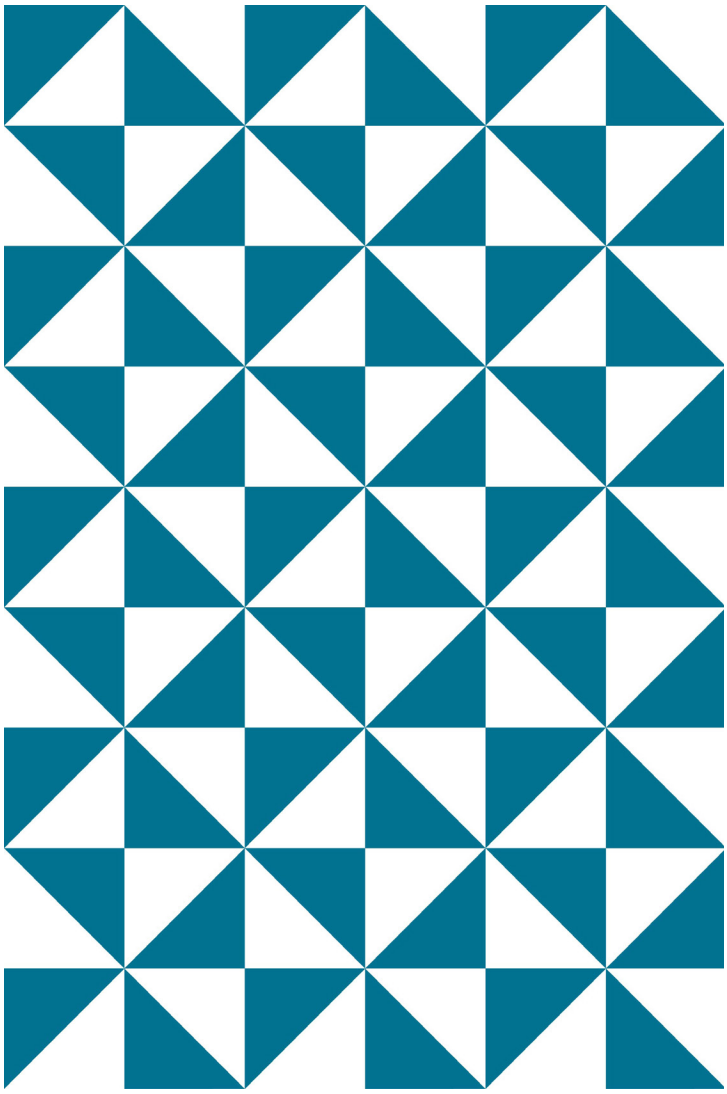
Biociudad, La Estrella, Colombia
available in: https://www.laestrella.gov.co/sitio/ver_noticia/urbanismotctico

Intervetion clusters: Tachtical urbanism strategy
SC 1:5000

STREET PATTERN
Refference: Pavement at the Reggia di Venaria Palace



Palace flooring
available in: https://www.spuntidiviaggio.it/reggia-di-venaria-reale-a-torino-cosa-vedere-come-arrivare/

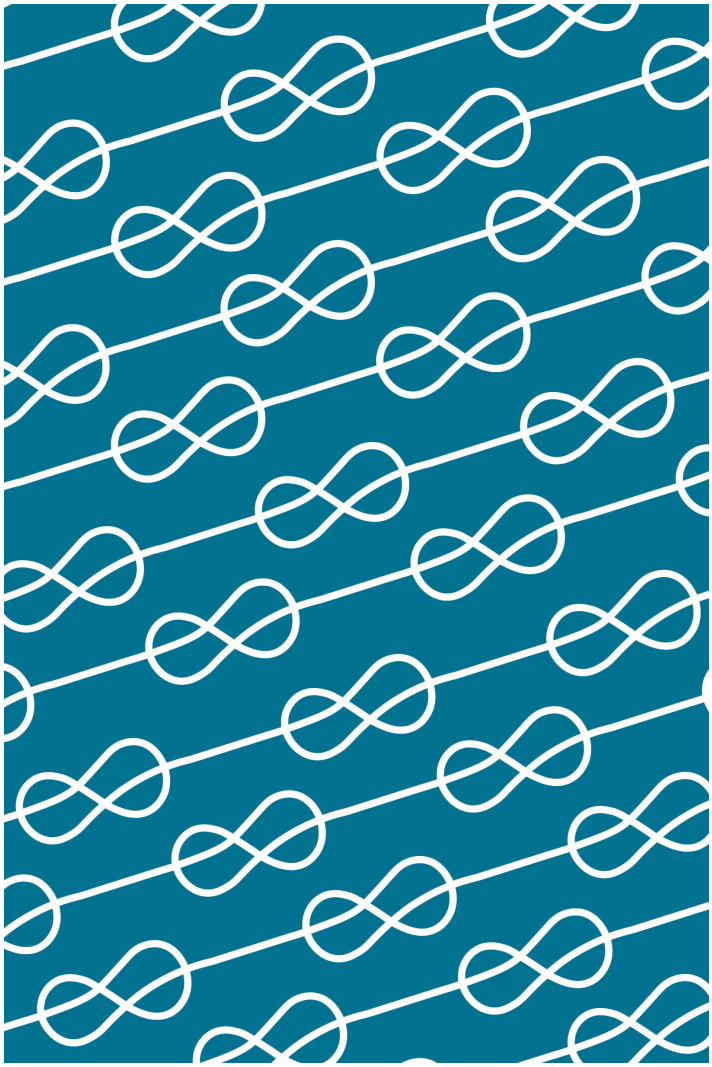


The interiors of the Reggia di Venaria palace constitute an emblematic image of the city. The checkered flooring inside, with black and white tiles, has been a point of reference for the production of much official graphic material on Venaria and this royal residence.

The proposal consists of generating a geometric pattern taking a quadrangular grid as a module, drawing diagonals between the angles. In this way to obtain a simple, replicable graphic and at the same time enriched with character as a pavement of the palace and the city.

STREET PATTERN
Refference: *Nodo Sabaudo*,
The knot of Savoy

Bronze coin from The Savoy Kingdom, engraved: the knot.
available in: https://numispedia.it/catalog/coin/Carlo-Emanuele-III-di-Savoia-1730-1773-Regno-di-Sardegna-2-denari-da-16-di-soldo-1764-Nodo-damore-Torino-Rame/349dere-come-arrivare/

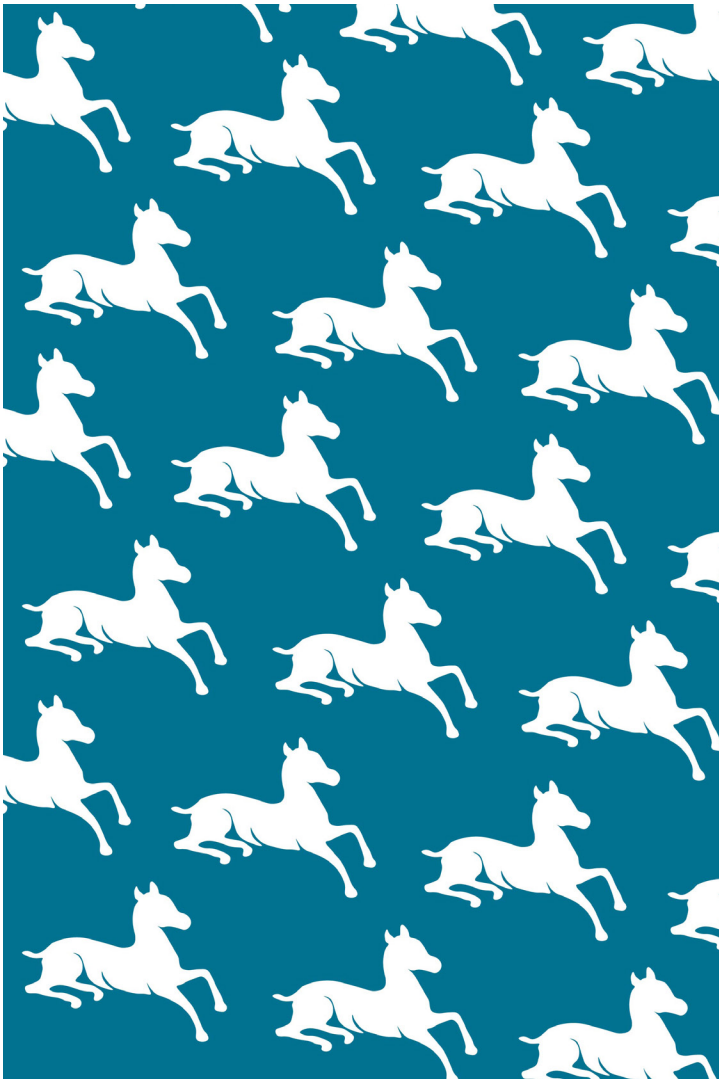


Also known as 8-shaped knot, stop knot, love knot, it is a form used in seafaring as a stopping knot since ancient times. Although its origin is unknown, it appears on the coat of arms of the House of Savoy. This emblem is repeated in different decorative motifs in the residences belonging to this reigning dynasty in the past of Piedmont as well as in the numismatics of this storic period.

The proposed pattern repeats this element of the House of Savoy heraldry on the pavement evoking the history of Piedmont as well as analogously representing the principles of collaboration necessary within the participatory process that this “urban acupuncture” intervention would promote.

3. STREET PATTERN
Refference: the doe.
Coat of arms of the city

Stemma di Venaria Reale
available in: https://www.araldicacivica.it/comune/venaria-reale/

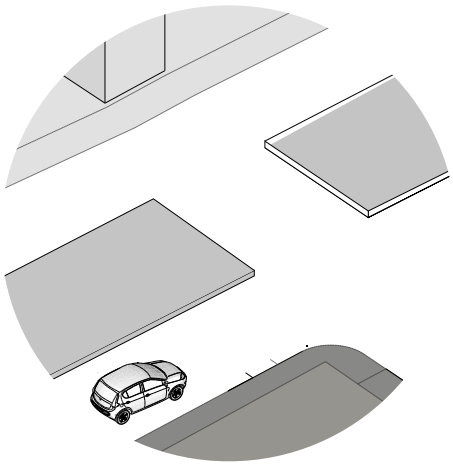


The coat of arms of the municipality of Venaria Reale contains, in addition to the Nodo Sabaudo, a doe. This refers to the ancient use of the fields of La Mandria, used as a hunting ground for the Savoy monarchs, as it is in fact one of the animals that make up the endemic fauna of the Piedmont forests.
This graphic proposal is developed for a temporary intervention in the street mantle because it is not only an element related to the emblematic identity of the city, but because it evokes the existence of the animal species that make up the ecosystem of the natural areas of the place, being the natural one of the fundamental patrimonies of the municipality and region.

CURRENT STATE

1

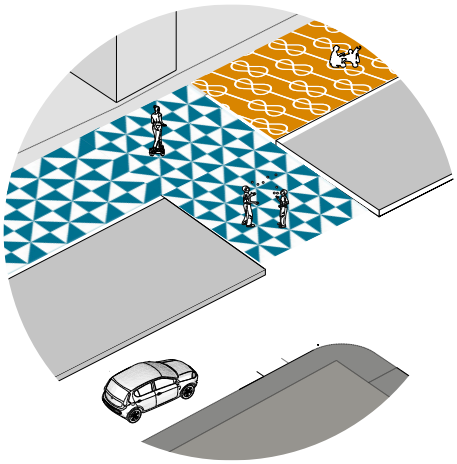
Evaluation of the current state of the street space of Viale Buridani. Identification of new routes, architectural barriers and the dynamics of pedestrians.



INTERMEDIATE TACTICAL ACTION

2

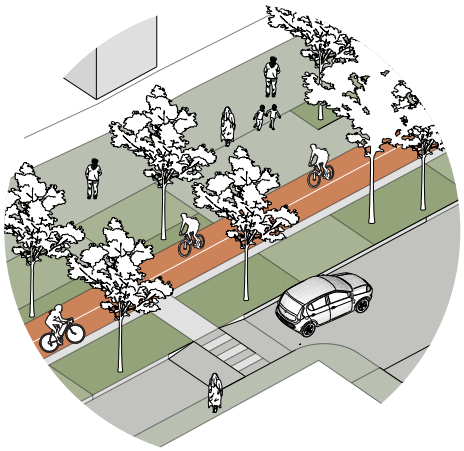
Identification of the streets to be directly intervened, whose use could be reproposed in the future as a pedestrian and / or cyclical crossing. Modification by limiting vehicular traffic and pedestrianization for which a graphic intervention would be carried out in the street layer with the aforementioned patterns. Participatory process with merchants, neighbors and municipality.



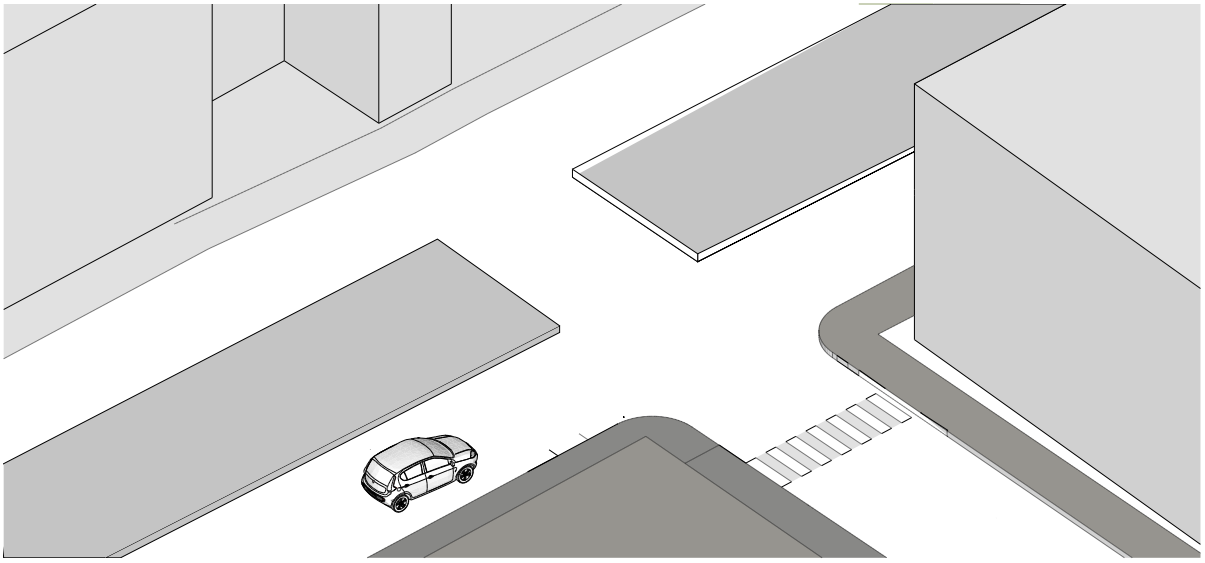
LONG TERM PROPOSAL

3

Redefinition of the road with a new pedestrian and cycling vocation, giving greater importance to public greenery and returning the space to users of sweet mobility. Reproposed roads and parking for private motor vehicles.

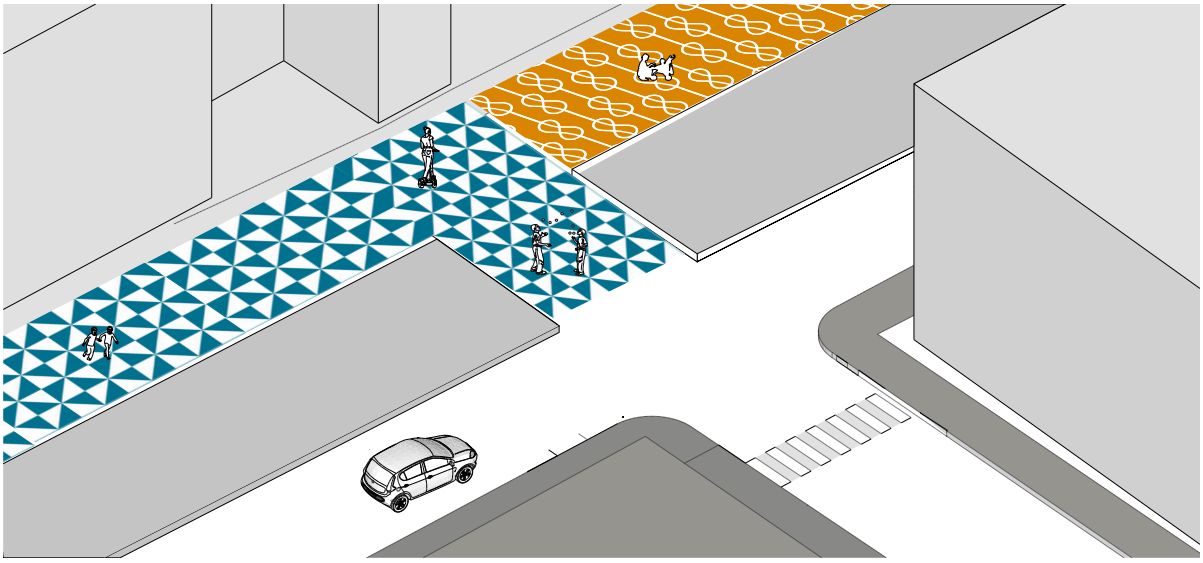


1



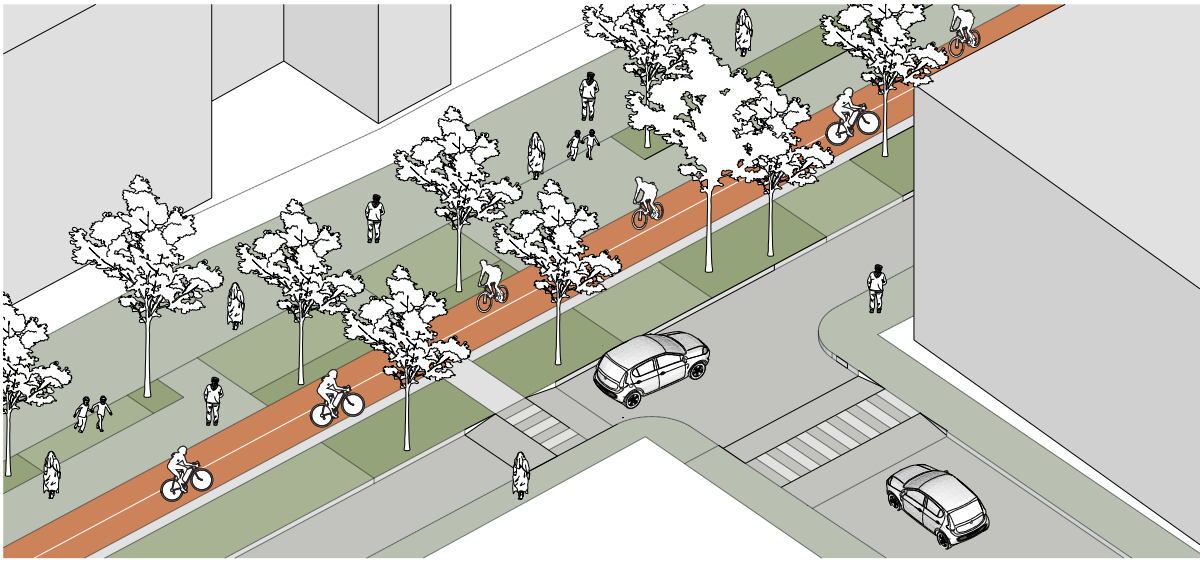
Current state: Viale Buridani - Via Guglielmo Marconi crossing

2



tactical proposal for intermediate action: Viale Buridani - Via Guglielmo Marconi crossing

3

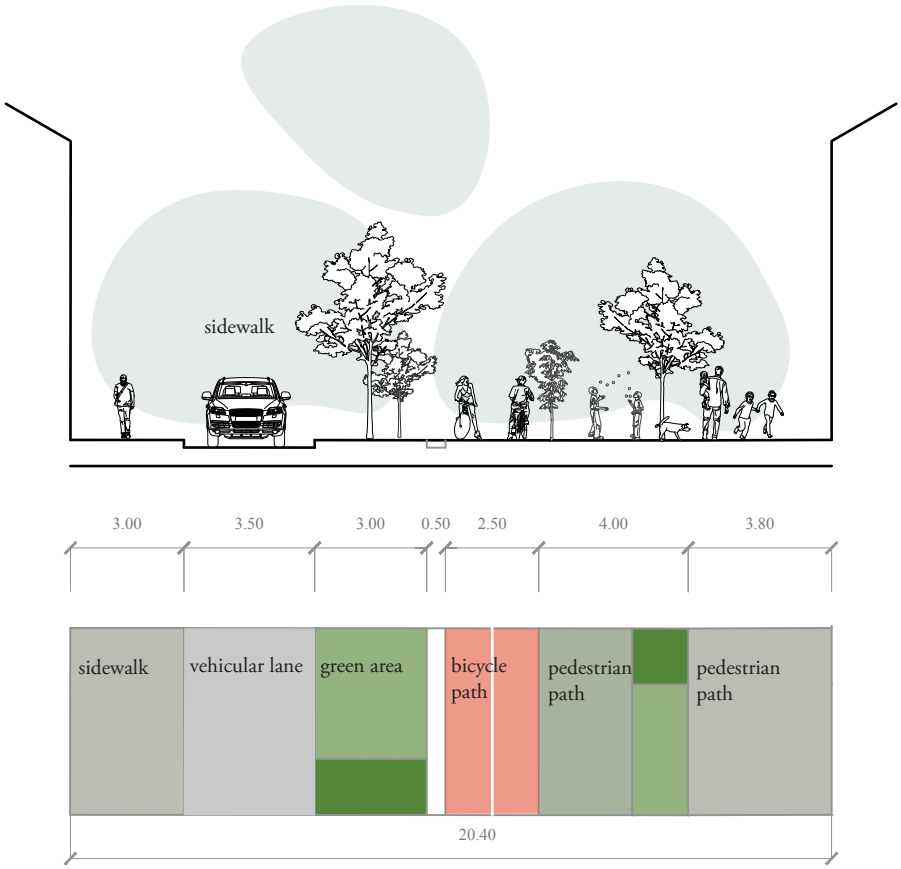


long term proposal: Viale Buridani - Via Guglielmo Marconi crossing

6.3 Reconfiguration of the Viale Buridani

Intervention at Viale Buridani scale 1:5000

Intervention at Viale Buridani
SC 1:500

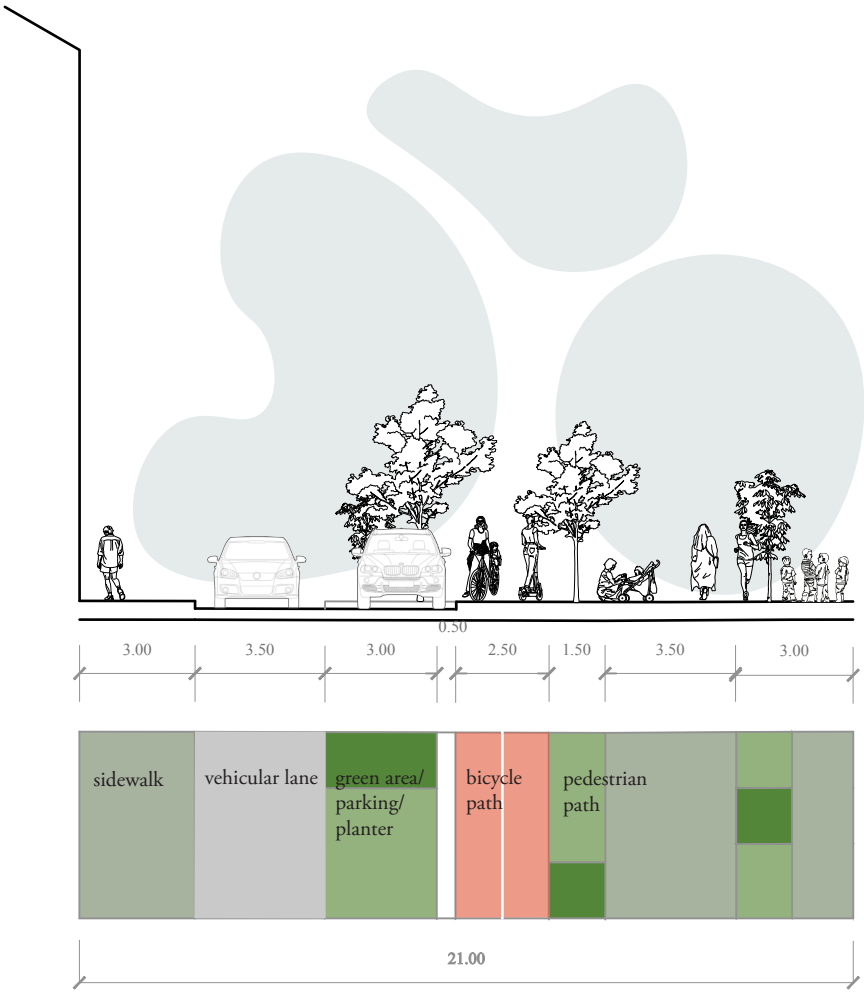


Street Section
SC 1:200

In this street tract, it is proposed to maintain the north-south vehicular direction, eliminate the south-north road to use that track as a new pedestrian space incorporating surfaces with different degrees of permeability giving a new priority to a cycle path. A new on-street parking complex is proposed in the parallel Via Zanellato.

In the new pedestrian zone, the possibility of vehicular passage is guaranteed for limited traffic: residents, suppliers and eventual emergency first aid vehicles and fire bodies.

Intervention at Viale Buridani
SC 1:500

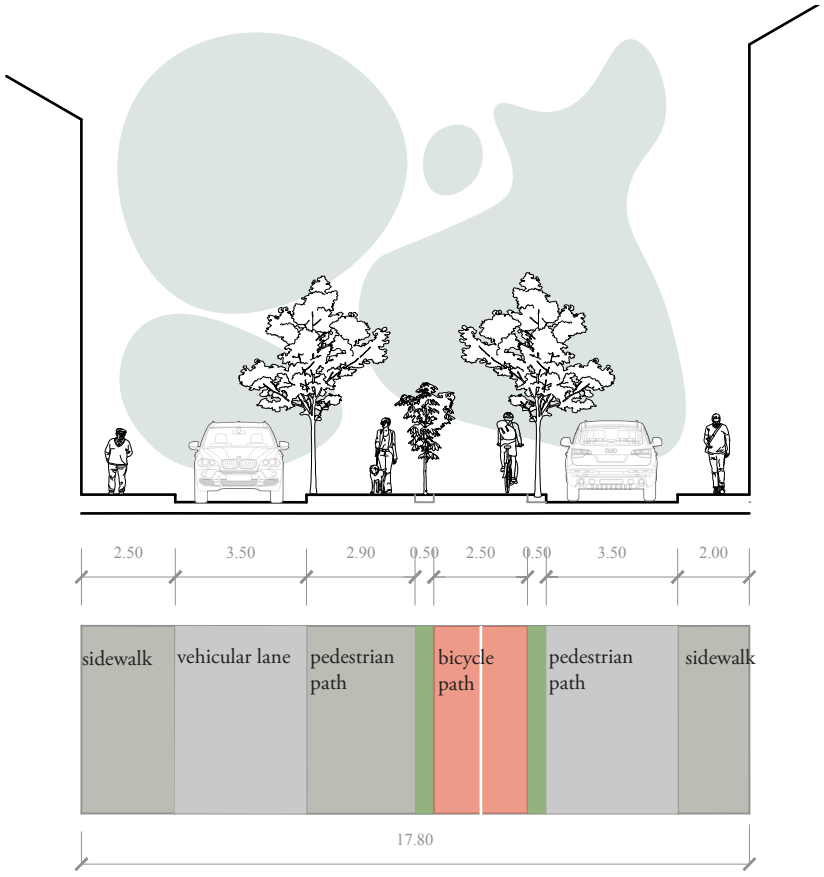


Street Section
SC 1:200

In this section of the route, it is proposed to eliminate the south - north road direction to generate a new pedestrian space that is incorporated in the landscape with Piazza Pettiti. The continuity of both the pedestrian and cycling flow is guaranteed without architectural barriers.
It is proposed to leave an on - street parking line in the north - south direction, placing it between the vehicular street and the bicycle lane, leaving planters between the parking lots for the insertion of new trees.

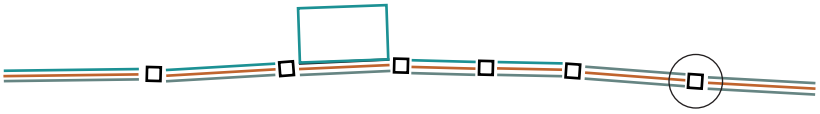
In the new pedestrian zone, the possibility of vehicular passage is guaranteed for limited traffic: residents, suppliers and eventual emergency first aid vehicles and fire bodies.

Intervention at Viale Buridani
SC 1:500

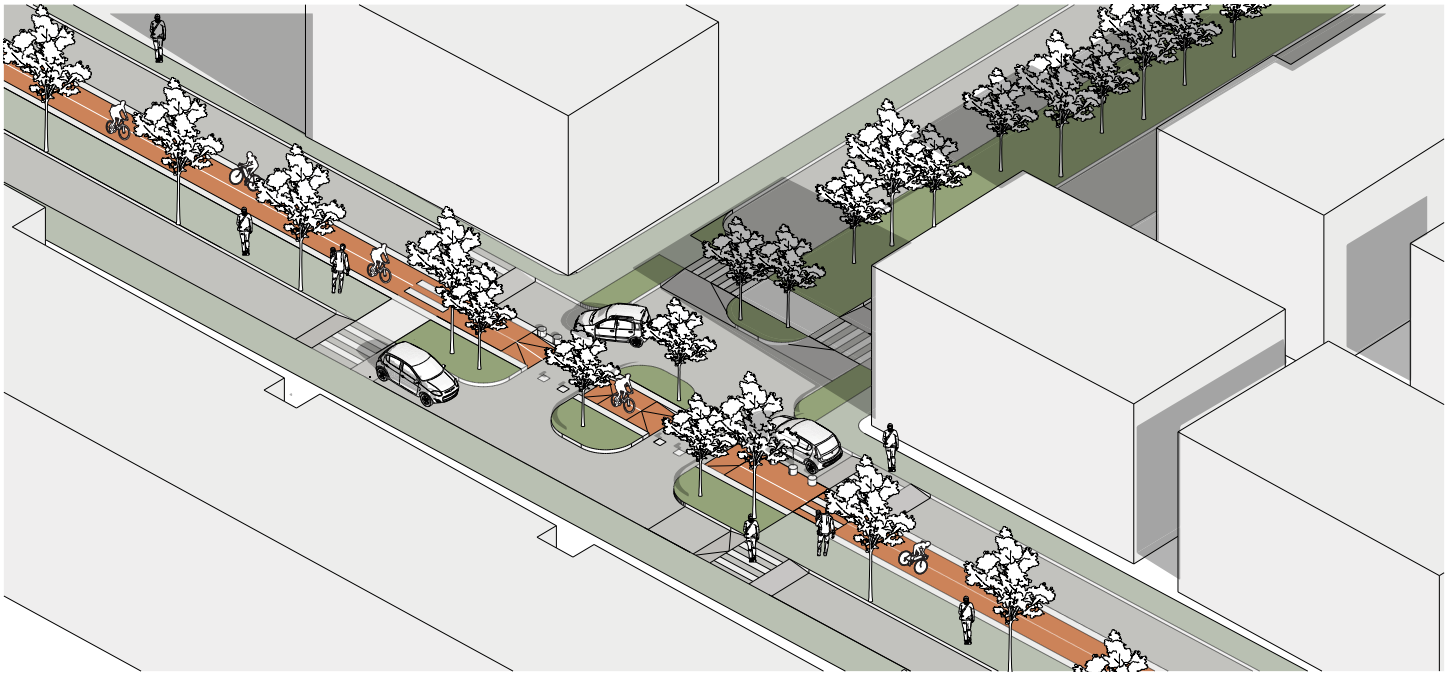


Street Section
SC 1:200

In the section of the road between the intersections with Corso Matteotti/ Corso Papa Giovanni XXIII and via Leonardo Da Vinci, it is proposed to maintain a two-way vehicular direction eliminating the space of vehicles parked on-street to generate a central bicycle and pedestrian path whose fluency is uninterrupted. Roundabouts are proposed for the distribution of vehicles both at the aforementioned junctions and at via Generale Della Chiesa.

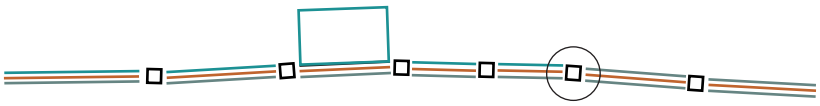


localization in Viale Buridani

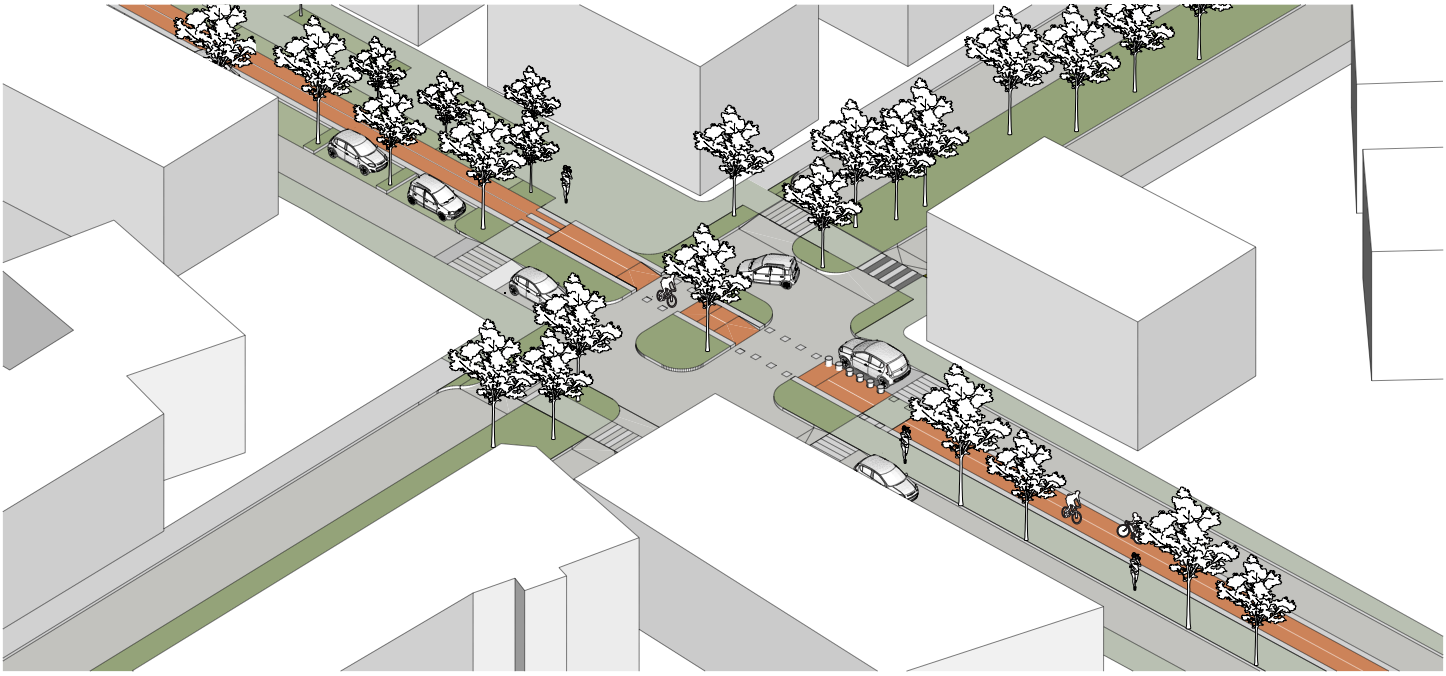


Crossing: Viale buridani - Via Generale della Chiesa
Author's ellaboration

For this section of the road, it is proposed to maintain motorized vehicular roads in both directions, a central median is proposed in which a cycle track and a pedestrian path would be created. Since Generale Della Chiesa Street also has two-way roads, a roundabout-type element is proposed for the distribution of vehicles in the different directions of the intersection. The priority continuity of the bike lane is proposed so that the track maintains a rectilinear shape along the entire track. In this section on-street parking is eliminated. To respond for the safety of cyclists within the roundabout, a speed reducer is proposed by means of a raised plan before the vehicular crossing.

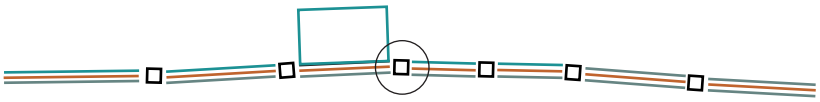


localization in Viale Buridani

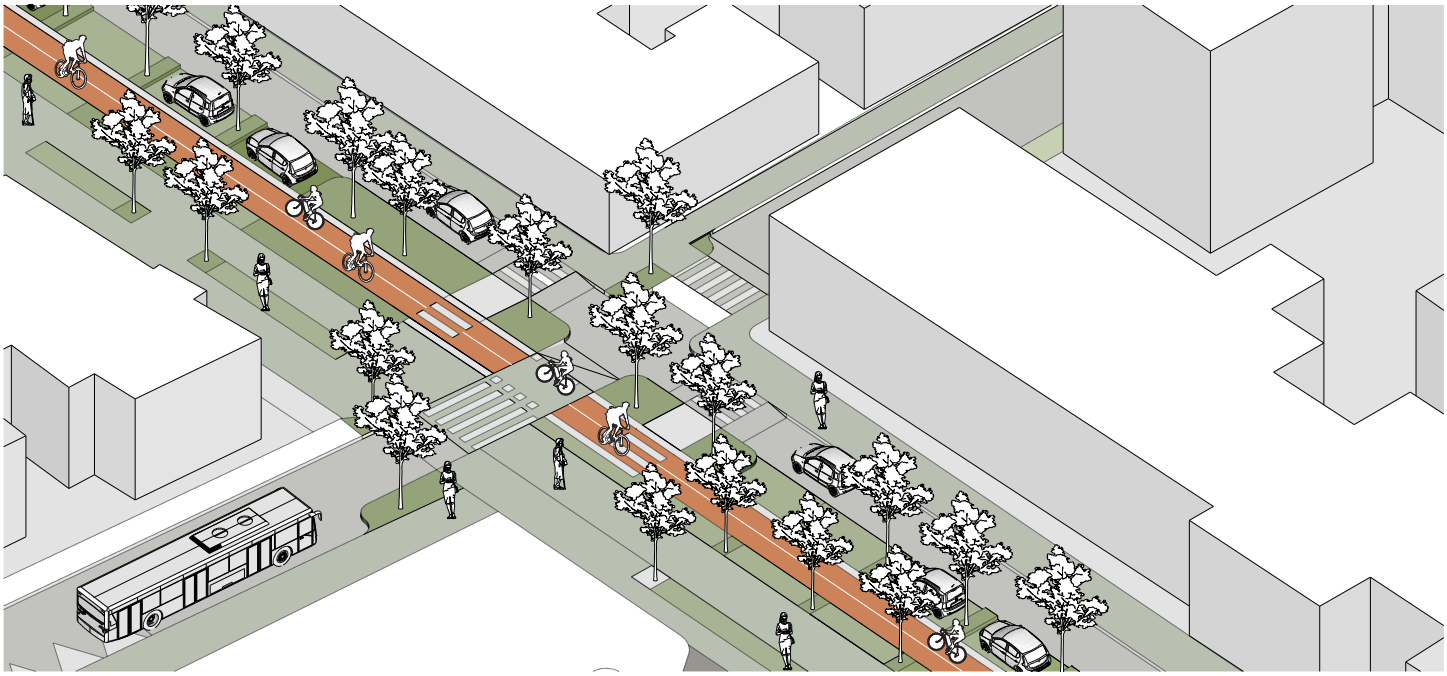


Crossing: Viale buridani - Corso Papa Giovanni XXIII / Corso Giacomo Matteotti
Author's ellaboration

At the intersection where Viale Buridani meets the Papa Giovanni XXIII and Giacomo Matteotti boulevards, it is also proposed to give continuity to the central element, welcoming cyclists and pedestrians, framed by arboreal lines. Priority is also given to mobility by bicycle, also crossing the proposed roundabout. The vehicular accesses access the rotary through a reducer that also forms the zebra crossing for pedestrians. From this point, to the north, vehicular mobility in a south-north direction is eliminated to create a wide pedestrian crossing. An on-street parking line is incorporated in the opposite direction, separating each unit by flowerbeds.

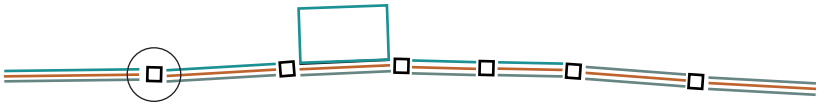


localization in Viale Buridani

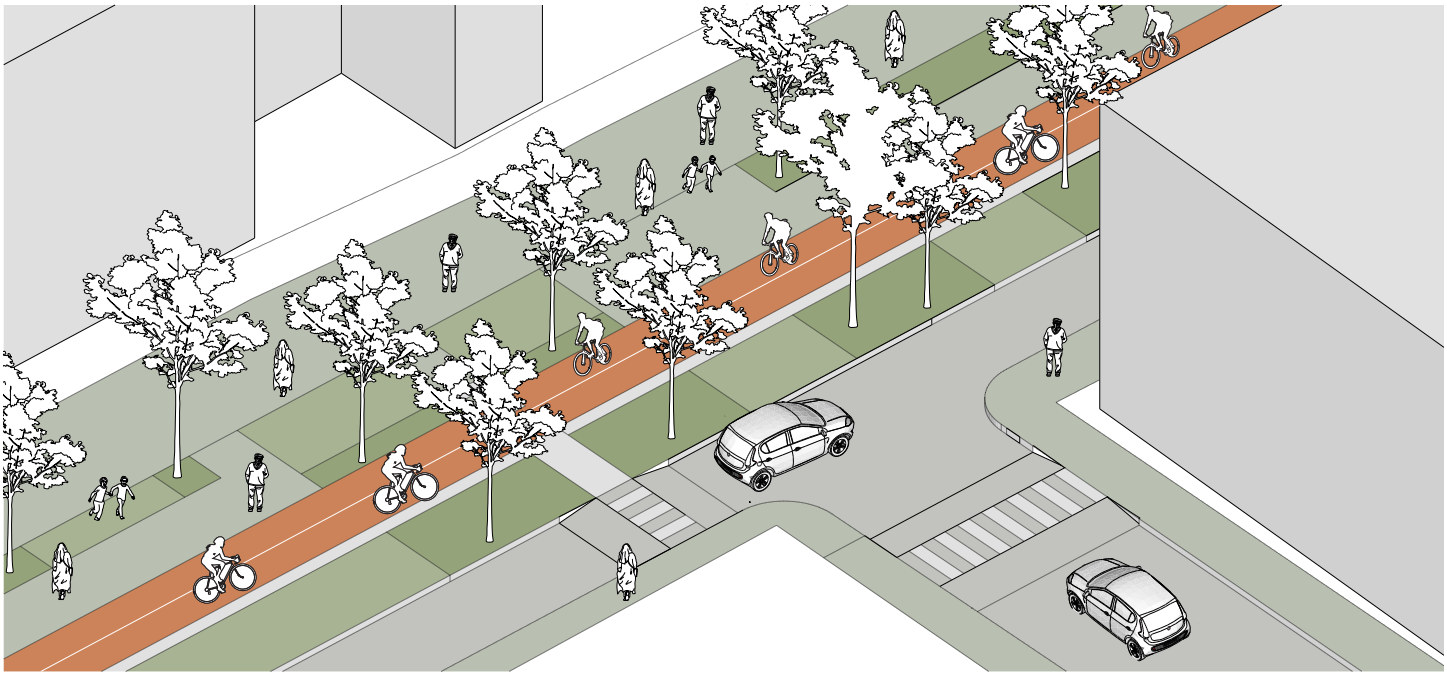


Crossing: Viale buridani - Via Palestro / Via Nazario Sauro
Author's ellaboration

At the meeting point of Viale Buridani with the Nazario Sauro and Palestro roads, forming the angle of Piazza Pettiti, an extensive pedestrian zone is proposed that is incorporated into the current morphology of the square, so that the street and public space merge into a unique element for the use of pedestrians and cyclists. The bus station is placed in its current location. Having eliminated the south - north road, on - street parking is also proposed along the vehicular street in a north - south direction. Vehicles coming from via Palestro in the direction of via Nazario Sauro cross the pedestrian space accessing through a reducer made up of the raised pavement.

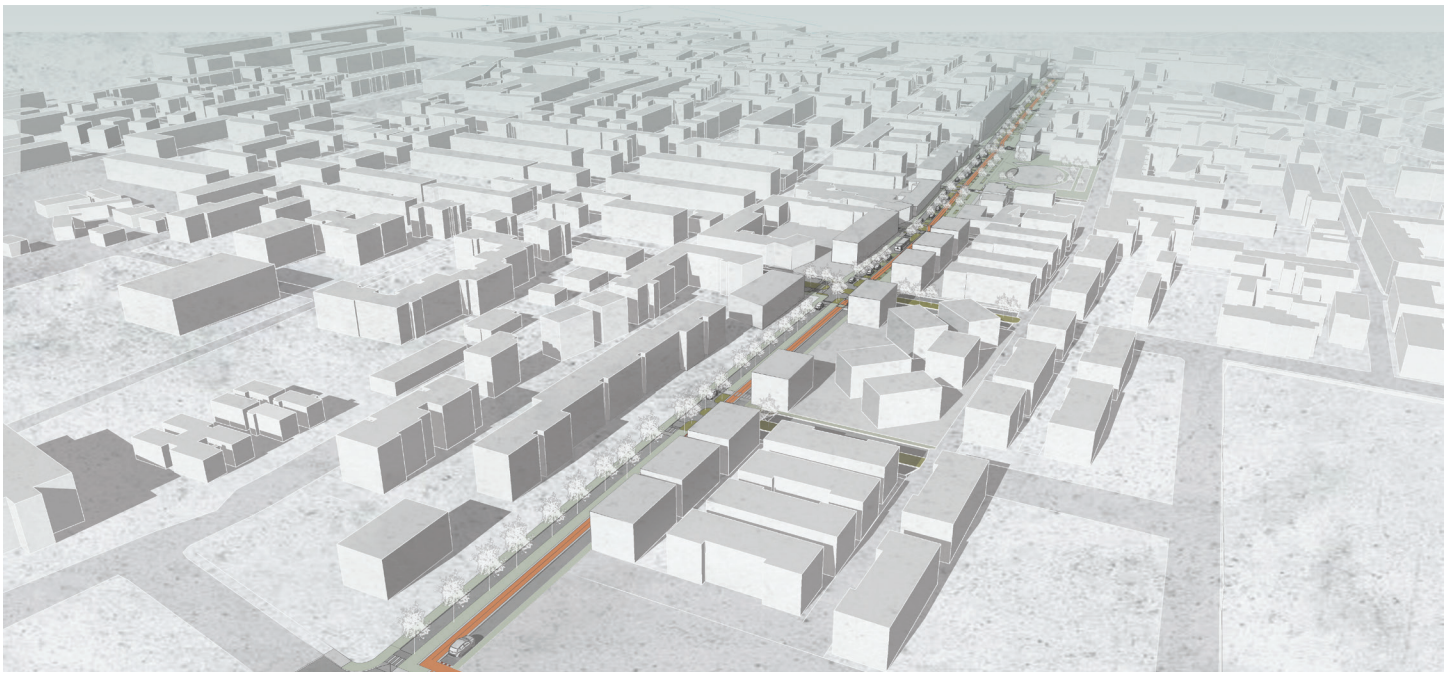


localization in Viale Buridani



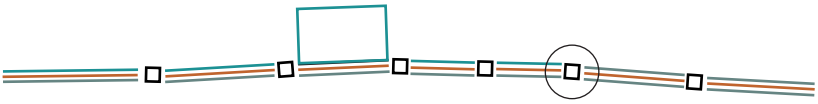
Crossing: Viale buridani - Via Guglielmo Marconi
Author's ellaboration

Between the exposed meeting point between Viale Buridani and Via Guglielmo Marconi, towards the end of the road at the perpendicular junction with Via Barolo, pedestrian use continues in the center and what was previously the south-northbound vehicular lane. The cycle track continues, uninterrupted, through Piazza Vittorio Emanuele II, either Via Andrea Mensa or Corso Garibaldi towards Borgaro or towards La Mandria Park via Viale Giuseppe Mazzini. As in the previous segments, a paved pedestrian route is proposed with systems of different permeability in which the incorporation of green within the same street layer is allowed, at the same time allowing to have the necessary resistance for the eventual passage of a vehicle of emergency.



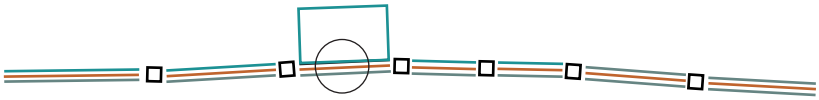
Panoramic view, intervention in Viale Buridani
Author's ellaboration

An aerial view allows observing the morphology that the vial adopts in its proposed state. It is intended to create a communication space between the south of the city, characteristically residential, with the historic center whose starting point perceptually is the Vittorio Emanuele II square, a place where it is also found with Corso Garibaldi that connects Turin and Viale Roma that proposes the railway station at a pedestrian distance. An accentuation that encourages the use of sweet mobility by citizens on this road is essential for an integral operation that responds to the sustainability goals for which the railway was redeveloped and the management of the main attractors of the city is planned.



localization in Viale Buridani

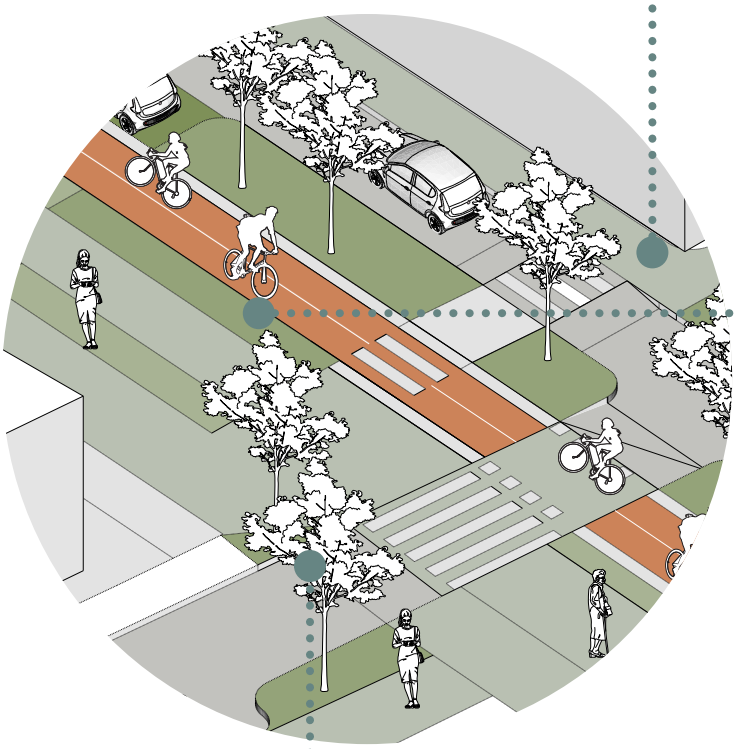
Street view, crossing at Viale Buridani - Corso Matteotti
Author's ellaboration



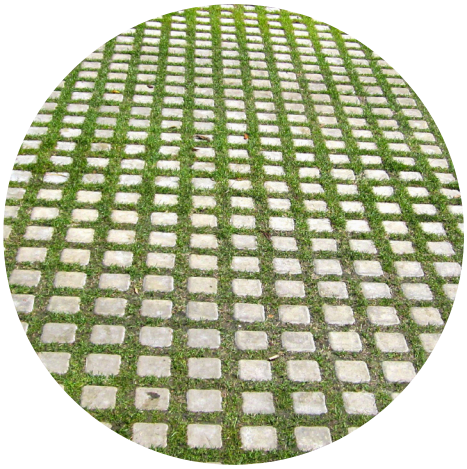
localization in Viale Buridani

Street view, crossing at Viale Buridani - Piazza Pettiti
Author's elaboration

Material proposal



Permeable pavers in rectangular tiles
Available in: https://www.epa.gov/soakup-therain/soak-rain-permeable-pavement



Permeable pavers
Available in: https://www.napawatersheds.org/images/view/9164

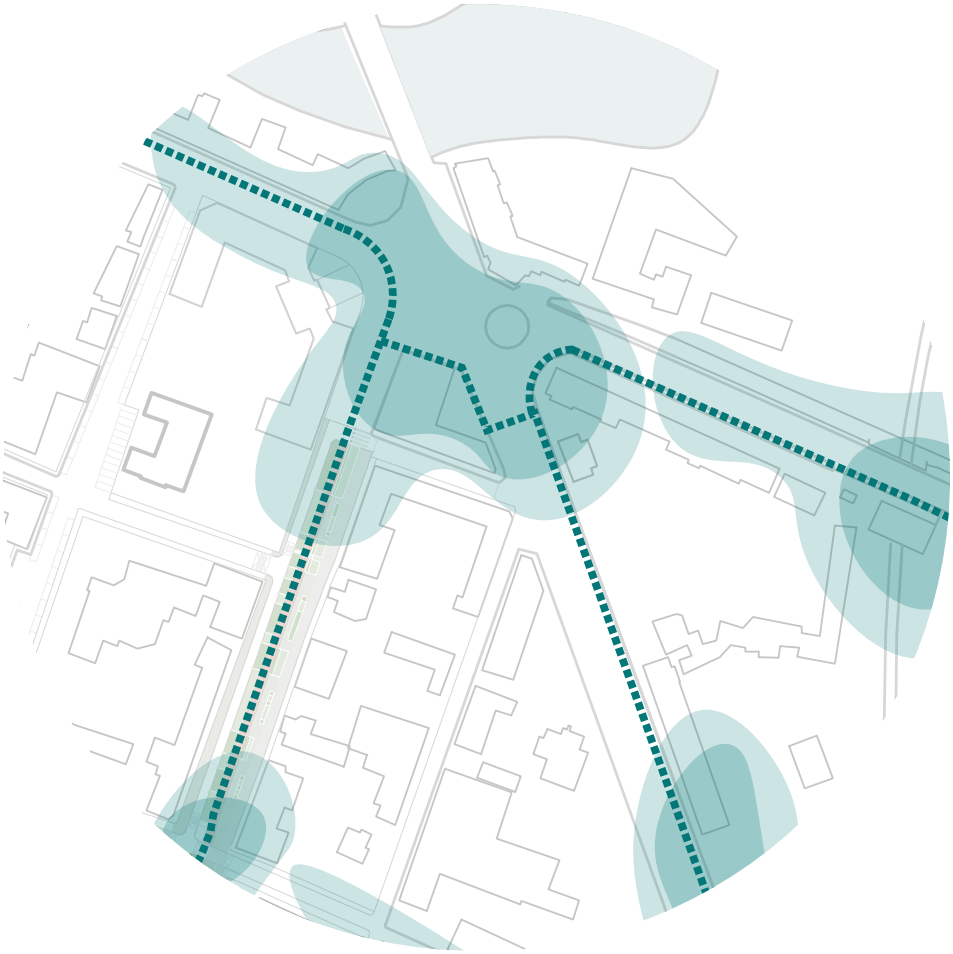
Magnolia grandiflora
Available in:https://www.gardeningknowhow.com/ornamental/trees/magnolia/pruning-magnolia-trees.htm

green areas and zone of influence diagram
author's elaboration

Through the proposed plan on a territorial scale, a new configuration of the green areas of the city would be projected. A new definition of Viale Buridani as a "green axis" would complement a system in which various parks and green areas are incorporated into the city. A route could be generated in which there is presence of vegetation in the roads that connect the different parks so that there is vegetation in the urban landscape of all the typical routes of the inhabitants of the city: through Viale Buridani the green would be incorporated existing roads of Papa Giovanni, Matteotti, Generale della Chiesa that lead to the Galieleo Galilei and Salvo D'Acquisto parks so that, through Viale Buridani, Via Giuseppe Cavallo is reached, already contextualized within the La Mandria Park system.

green areas and zone of influence diagram
SC 1:5000

6.4 Road connection with Corona Delle Delizie



Bicycle path interventions and zone of influence diagram
author's elaboration

In the proposed urban intervention project, a new solidity would be given to the cycling system by completing the existing routes generating a formal circuit. Viale Buridani would connect the Venaria - Savonera - Druento cycle track to Via Mensa, which being a limited traffic area allows the regular passage of cyclists forming the path to La Mandria Park, where the Corona Delle Delizie route specifically passes. A new cycling characterization is provided to the city taking as an advantage the reuse of the railway station, the Movicentro, through this mobility in Venaria would not be limited to consist of the road connection to and from Turin, but would be it a pole in which the means would serve the internal displacement of the city with bicycle lanes and pedestrian crossings and with Turin through the railroad.

Main cycling routes

Complementary cycling routes

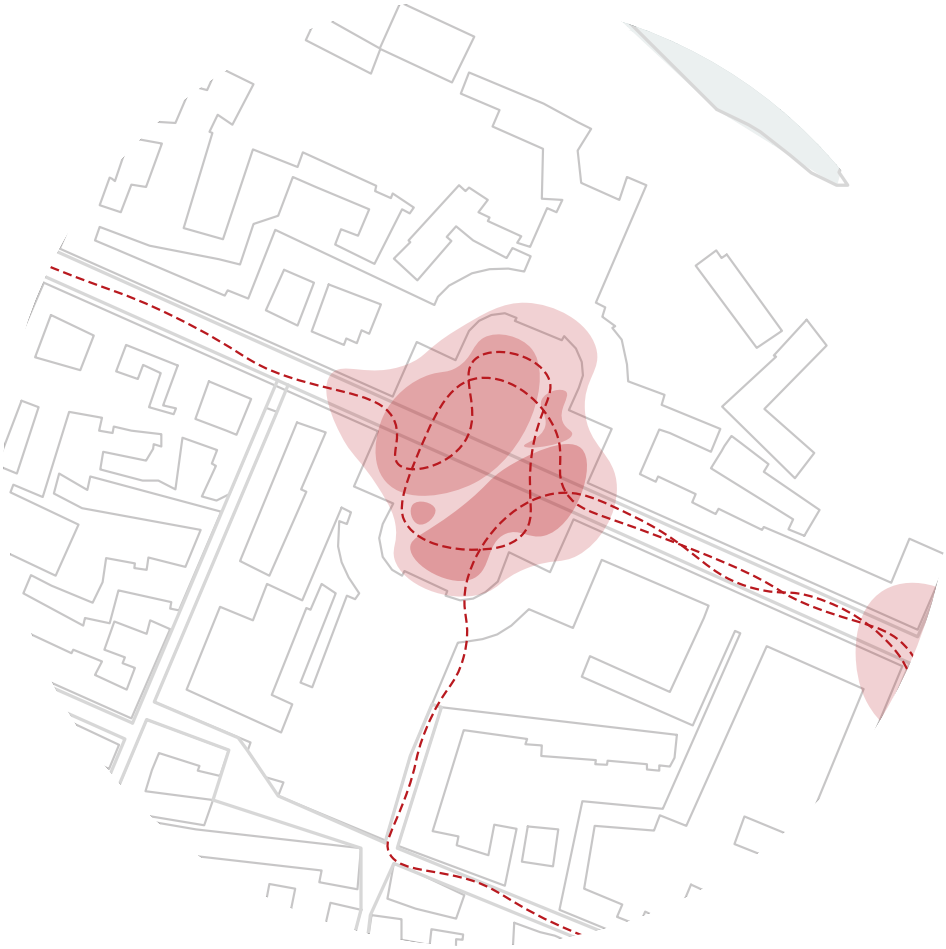
Projection of cycle paths connection

0 50 100 500m.

Bicycle path interventions and zone of influence diagram
SC 1:5000

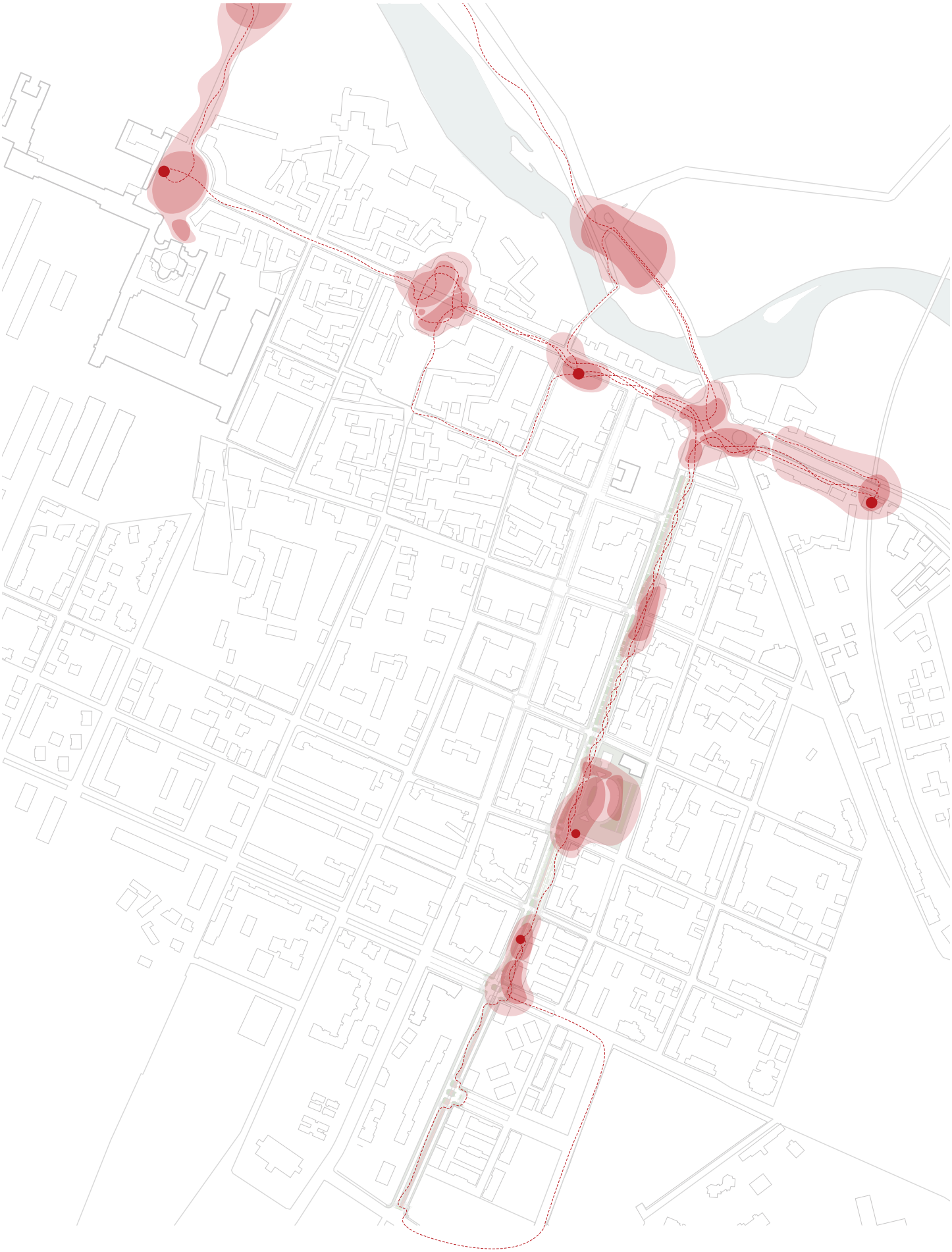
6.4.1 Proposal for infrastructure and services

Proposal of location for bike rental services
SC 1:5000

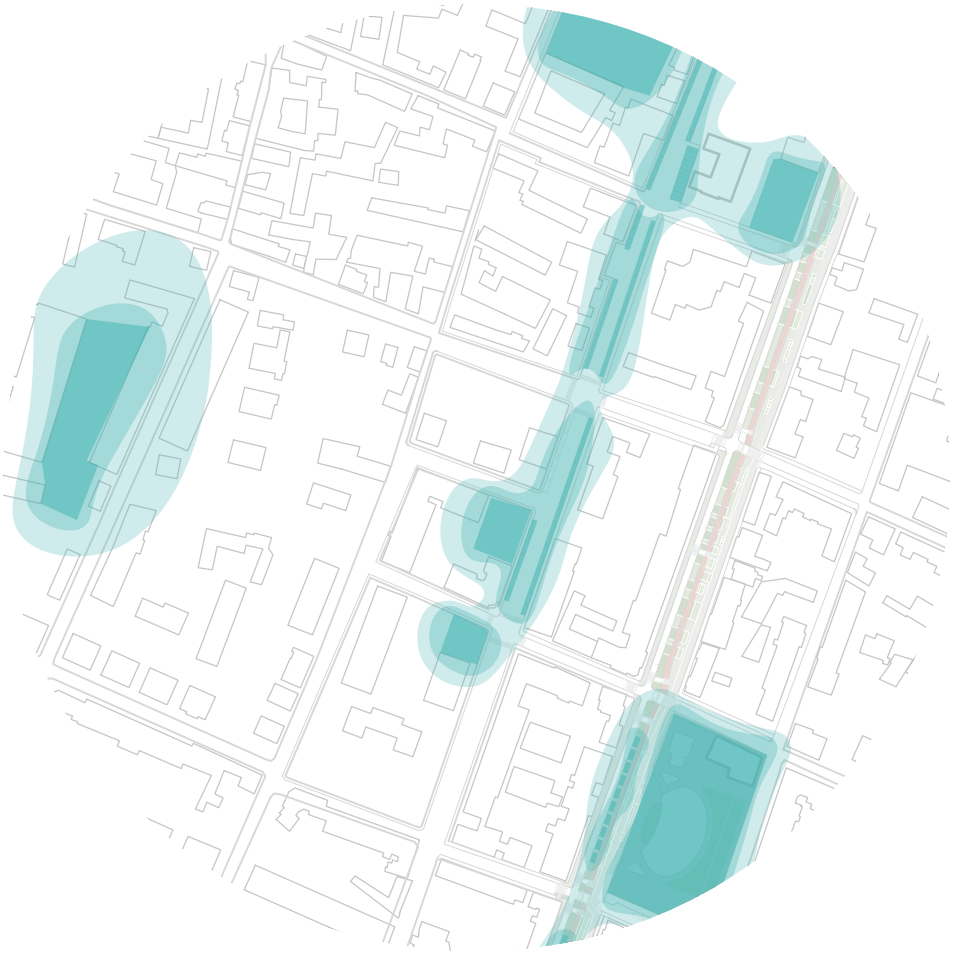


Pedestrian paths and zone of influence diagram section
author's elaboration

Through the project described, a new condition more favorable to pedestrians would be generated in terms of access availability, reduction of architectural barriers and increased safety in coexistence with motorized vehicles. A continuity in the routes related to and from Viale Buridani would allow, through this, a more immediate accessibility to the historic center understood as the route from Via Andrea Mensa to La Reggia, as well as access to the railway station that is intended to be, the main connection point with the city center of Turin. Pedestrian mobility responds to more than one sustainability goal, since it promotes a more dynamic commerce and an increase in physical activity that contributes to people's health.



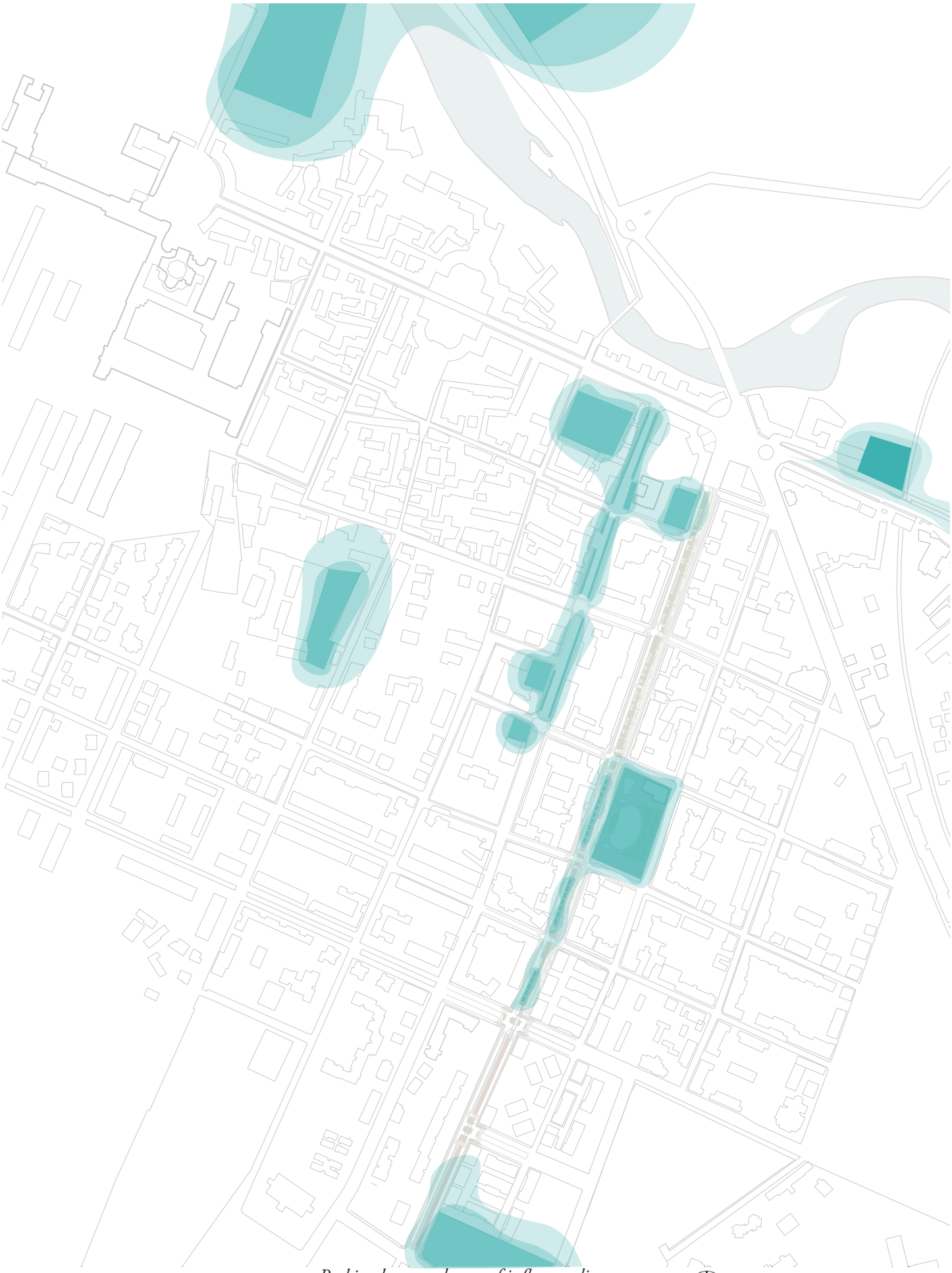
Pedestrian paths and zone of influence diagram
SC 1:5000



Parking lanes and zone of influence diagram
author's elaboration

The new configuration proposal for Viale Buridani also proposes a new organization of parking lots, both on-street and off-street. The measure of removing a large part of the parking lots on the Viale Buridani road is an action that, although not subtle, responds to a development of the style of city and commerce represented in this road, it is a solution based on similar cases of roads that have seen through pedestrianization an increase in the influx of visitors and sales of shops (eg, Via Garibaldi, Turin). The current vocation of Viale Buridani, as a parking way, would change to one of shared mobility between cyclists, pedestrians and motorized vehicles. Although on-street parking is not completely eliminated in the entire road, a new on-street area is proposed in via Medici, parallel to it, which also fulfills the function of guaranteeing a ring of vehicular roads.

The operation of promoting a type of intermodal mobility at this neighborhood scale inevitably means that people may use their vehicles less for trips within the city of Venaria. The existing network of parking lots could be managed jointly with public and private ones for the use of the main attractors of the city.



Parking lanes and zone of influence diagram
SC 1:5000

CONCLUSIONS

An urban construction following contemporary parameters of integration of public space seeks the creation of new dynamics that value the important elements of the building and the natural heritage.
The presented project seeks, in its mere composition to encourage, persuade the user to make use of "sweet mobility" to get from the southern development of the city to the center of Venaria Reale, understood in this case as the vicinity of Via Mensa, as well as the possibility of continuing towards the Mandria park or turning towards the train station and making use of it to move immediately to the Center of Turin. It is therefore a change in the composition of this street but it seeks in concrete terms to generate a dynamic that benefits people, tourism, and commerce.
The evolution of the movement and direction of the flow of private motorized vehicles would allow to continue guaranteeing access for vehicles to the city center as well as the passage of eventual first aid vehicles and fire bodies. The presence of this pedestrian and cycling path would be in the urban center of the city, an appeal, an evocation of the possibilities of distraction through the use of the bicycle in the La Mandria Park as a whole and the local trails for the appreciation of the landscape .

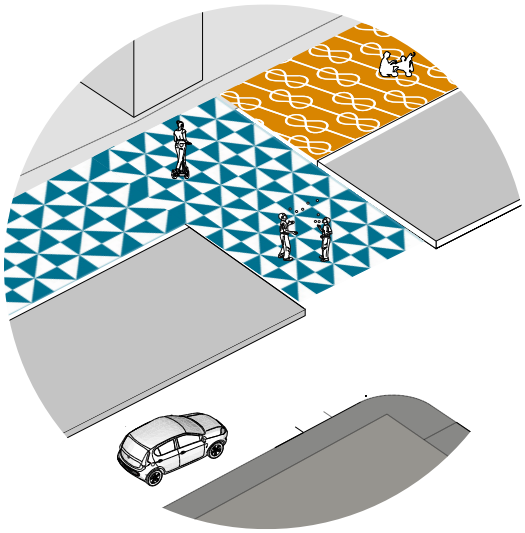
In terms of longer-term goals, the project values the use of bicycle - pedestrian - train intermodality, through which to reach Turin, and from here other cities in the region, the Caselle airport, and thus contribute to a new element within the regional mobility network that streamlines travel and contributes specifically to the proper functioning of the city through better dynamics offered to people.

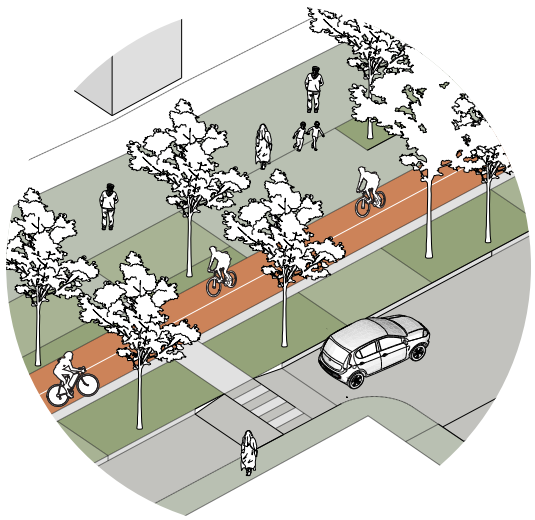
The proposal incorporates innovative features by establishing a faction of the street element with a use, still for mobility, but through a different means, that is, substitution of the vehicle for the bicycle or the route on foot. Even so, it does not essentially nullify the vocation of Viale Buridani for private motorized vehicles since it continues in one sense to allow them to pass, nor does it eliminate the use of on-street parking, it changes then, not its street quality of Viale Buridani but the dynamic that is proposed in it

The new roadway proposed in the area of immediate interest proposes a continuous north-south direction for motorized vehicles on the road. The south - north direction runs from Via Leonardo Da Vinci to the junction with Via Papa Giovanni XXIII, from this point on, the lane currently used by vehicles would become pedestrian use. To guarantee the mobility of cars around Viale Buridani in a south-north direction, the Via Vittorio Zanellato / Medici del Vascelo is proposed, through which one goes up from the south and reaches the parking lot in Don Alberione square and accesses it. to Viale Buridani through Guglielmo Marconi street. To allow mobility from the roundabout in Piazza Vittorio Emanuele II to Viale, a U-turn is proposed from Via Sabotino, today used as the exit from Viale to Corso Garibaldi, to be used as access from the aforementioned street to Viale.

Road direction vicinity of Viale Buridani
SC 1:5000

The elaborated proposal can establish as a successful methodology considering the dimensions and social characteristics of the place to work, a tactical urban planning intervention. This would allow an intermediate process in which the program of modifications could be coordinated: the communal council, an external professional element of urban design, the merchants and the neighbors. An activity of this type would allow, through a temporary modification of the street layer, to experiment a new form of pedestrian mobility that takes the pedestrian and the cyclist as a new point of support: the mobilitá dolce.





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