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TERRITORIAL, URBAN, ENVIRONMENTAL AND LANDSCAPE PLANNING

Merging the Divide:

Challenges and Strategic Orientations in integrating Piemonte Regional Landscape Plan and Asti Land Use Plan

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For my country, may the light of freedom rise where silence and fear once ruled.

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Abstract

This thesis investigates the integration of the Piemonte Regional Landscape Plan (PPR) into Asti's Land Use Plan (LUP), focusing on the methodological, spatial, and institutional challenges that emerge in aligning regional landscape objectives with municipal urban planning tools. The research is grounded in a diagnostic and observation-based approach, emphasizing spatial analysis, regulatory comparison, and perceptual mapping. Particular attention is given to the role of GIS-based cartographic techniques in documenting landscape constraints, visual corridors, and settlement morphologies, as a result constructing a multi-dimensional reading of the territory that moves beyond formal zoning logic.

Asti represents a particularly relevant case due to its complex territorial identity—defined by overlapping systems of ecological corridors, historical layering, rural landscapes, and urban expansion pressures. Through the integration of technical assessments developed during an internship at a planning studio involved in the preliminary variant of Asti's Land Use Plan, the study identifies critical mismatches between protected landscape values and areas allocated for transformation. These findings are supported by detailed spatial overlays that reveal inconsistencies in regulatory alignment, perceptual discontinuities, and the underrepresentation of landscape sensitivity within local planning categories.

Rather than proposing planning solutions, the thesis offers a diagnostic framework for evaluating how regional landscape strategies—particularly those related to scenic continuity, ecological resilience, and territorial identity—are recognized and translated into municipal planning instruments. It also reflects on the institutional and procedural gaps that limit the implementation of co-planning mechanisms, particularly the absence of structured collaboration between regional and municipal levels.

Ultimately, this study argues for a renewed approach to planning in which the landscape is not treated as a secondary constraint, but as a structuring and perceptive framework capable of guiding spatial coherence, cultural continuity, and integrated governance. The case of Asti highlights the importance of landscape as both an analytical lens and a design premise, contributing to a broader reflection on how identity-based planning can be integrated within contemporary urban and territorial strategies.

Keywords: Regional Landscape Plan (PPR); Asti Land Use Plan; Landscape Planning; Urban Landscape Integration; Spatial Governance; GIS-based Analysis

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Abbreviations and Acronyms

ELC: European Landscape Convention

GIS: Geographic Information System

LUP: Land Use Plan - Refers to the municipal urban plan (PRGC)

MiC: Ministero della Cultura / Italian Ministry of Culture (former MIBACT)

NdA: Norme di Attuazione / Official title of the regulatory rules attached to the Piemonte PPR

NTA: Norme Tecniche di Attuazione / Technical Implementation Norms (Asti LUP)

PAESC: Piano d'Azione per l'Energia Sostenibile e il Clima / Action Plan for Sustainable Energy and Climate

PPR: Piano Paesaggistico Regionale / Regional Landscape Plan

PRGC: Piano Regolatore Generale Comunale / municipal land use plan

PTR: Piano Territoriale Regionale / Regional Territorial Plan

VAS: Valutazione Ambientale Strategica / Strategic Environmental Assessment

1. Introduction

1.1 Research Context and Objectives

In the evolving landscape of spatial planning, the integration of landscape values into urban and territorial policies has become a fundamental challenge, particularly within the Italian context. The European Landscape Convention (2000) significantly influenced this shift by promoting a broader interpretation of landscape—not only as a category of protected heritage but as an everyday dimension of territorial identity, quality of life, and public interest. In response, Italian planning culture has progressively moved beyond sectoral approaches, seeking to embed landscape concerns into the logic of territorial governance. However, the operational translation of these values into local planning instruments remains complex, particularly when aligning regional strategies with municipal planning frameworks.

Asti provides a meaningful case for exploring how regional landscape planning interacts with municipal land-use strategies. The city lies in a territory shaped by environmental sensitivity, layers of history, and ongoing pressures from urban expansion, making it a clear example of the tension between landscape protection and urban transformation. Its surroundings include natural corridors, agricultural mosaics, and panoramic viewpoints — many of which fall under legal safeguards in the Piemonte Regional Landscape Plan (PPR). At the same time, Asti must respond to demands for housing growth, infrastructure projects, and the renewal of underused areas. Taken together, these intertwined factors make the city a valuable setting for understanding how strategic landscape objectives can be carried into local planning instruments.

This thesis examines how the Piemonte Regional Landscape Plan (PPR) has been incorporated into the urban planning tools of the Municipality of Asti, with particular attention to the variant of the General Regulatory Plan (PRGC), also known as Asti's Land Use Plan (LUP). The research focuses on the ways regional landscape strategies—especially those concerning landscape assets, perceptual frameworks, and ecological corridors—are reflected in municipal-level planning. Instead of presenting planning solutions, the study concentrates on assessing how far landscape objectives are acknowledged, interpreted, and technically applied within the regulatory, cartographic, and morphological framework of Asti's Land Use Plan. Its overarching aim is to bring out the methodological, technical, and institutional challenges that arise when regional landscape visions are adjusted to the distinctive features of a local urban fabric.

This research treats the landscape not as a restriction but as a framework for interpreting spatial coherence and governance. By carrying out a diagnostic reading of Asti's planning tools, it examines the ways regional landscape principles are represented and interpreted within the local planning context.

1.2 Methodology and Approach

The methodological approach adopted in this thesis is based on diagnostic analysis, with the goal of interpreting how the principles and regulatory contents of the Piemonte Regional Landscape Plan (PPR) are technically integrated into the urban planning tools of the

Municipality of Asti. The research does not propose planning interventions but instead focuses on a systematic review of planning documents, cartographic representations, and spatial relationships that emerge from the comparison between regional landscape objectives and municipal planning frameworks. Emphasis is placed on the identification of critical areas, regulatory inconsistencies, and interpretive gaps between the two planning levels.

The analytical process relies on a combination of qualitative and spatial tools, including the interpretation of GIS data, thematic cartography, and official regulatory documents. In particular, the study makes use of the PPR's cartographic tables—focused on landscape assets, components, and perceptual values—and compares them against the structural and zoning elements of the Asti's Land Use Plan. This includes the examination of constraint layers (such as areas protected under Articles 136 and 142 of Codice dei Beni Culturali e del Paesaggio (D.lgs. 42/2004)), land-use categories defined in the Norme Tecniche di Attuazione (NTA), and relevant planning regulations. Furthermore, attention is given to environmental assessments, such as preliminary Strategic Environmental Assessment (VAS) documents, and how they contribute to the framing of landscape sensitivity and compatibility within planning logic.

An important part of this research is the use of observations gathered during an internship at the planning studio that provided technical support in the early phase of Asti's Land Use Plan variant. Although the studio contributed to the spatial interpretation and landscape assessment processes, this thesis does not put forward or endorse any design proposals or planning solutions. Rather, it draws selectively on internal working documents and spatial analyses produced during the internship, using them only for diagnostic purposes. Throughout the analysis, a clear distinction is maintained between officially adopted planning materials and internal studio drafts, so that the findings remain within the limits of technical interpretation and policy reflection.

1.3 Structure of the Thesis

The thesis is structured into six chapters, each corresponding to a distinct analytical step that builds from conceptual foundations to case-specific application. Chapter 2 offers a theoretical and historical overview of the landscape concept within the Italian planning tradition, drawing on academic literature and institutional reforms to trace the evolution of landscape as a central element in territorial governance. Chapter 3 focuses on the Piemonte Regional Landscape Plan (PPR), detailing its strategic objectives, regulatory framework, cartographic system, and methodological structure. Chapter 4 shifts to the local scale, presenting the urban planning context of Asti and describing the technical and regulatory structure of its Land Use Plan (LUP), with particular attention to the zoning system, planning constraints, and institutional procedures.

Chapter 5 represents the core analytical section of the thesis, where the integration of the PPR into Asti's urban planning is examined through a diagnostic approach based on cartographic comparison, territorial interpretation, and spatial constraint analysis. Drawing from both official planning documents and technical assessments conducted during the internship, the chapter identifies key landscape assets, regulatory misalignments, and perceptual

considerations that influence the planning framework. Finally, Chapter 6 offers a reflective conclusion, summarizing the main findings, discussing methodological and institutional challenges, and outlining possible future directions for the integration of landscape policies within municipal urban planning practices.

2. The Landscape Concept in the Italian Planning Culture

2.1 The European Landscape Convention and Its Impact on Italian Policies

The approval of the European Landscape Convention (ELC) in 2000 marked a decisive turning point in the evolution of spatial planning across Europe—and in Italy in particular. The Convention introduced the first internationally recognized definition of landscape, set out in Article 1(a):

"'Landscape' means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors." (Council of Europe, 2000)

This represented a clear departure from earlier approaches that centered on the protection of isolated aesthetic values. Instead, it redefined "landscape" as a dynamic, integrated system including cultural, environmental, and social dimensions (Marson, 2023).

The ELC emerged at a time when the limitations of the modernist, function-oriented approach to planning had become increasingly evident. As Marson mentions in her work the Convention was conceived not only as a normative framework but also as a call for rethinking the very notion of landscape. It challenged the main idea of landscape as a static repository of beauty and heritage. Instead, The Convention formalized the evolving understanding of landscape as a *common good*, establishing it not only as a conceptual ideal, but as a legal and participatory requirement. This demanded policymakers to translate cultural identity and collective memory into tangible planning practices, aligning legal instruments with lived territorial realities. Marson expands on how the ELC promotes the integration of landscape into broader spatial planning processes. She notes that the Convention's focus on public participation and shared responsibility for the landscape compels policymakers to take into account the lived experience of people within their territorial context. This shift from earlier, fragmented approaches is especially significant in Italy, where planning traditions often concentrated on protecting isolated natural or historical sites instead of advancing a comprehensive and interconnected vision of the territory (Marson, 2023, 2016).

The ELC's influence on Italian policies became evident with the introduction of the National Heritage and the Codice dei Beni Culturali e del Paesaggio (D.lgs. 42/2004) (hereafter referred to as "the Codice"). As detailed by Marson, the Codice represents a legislative response to the new European vision. This legislation imposes that landscape plans must incorporate the entire territory rather than solely protecting areas of exceptional aesthetic or historical value. The broad scope of the Codice—requiring knowledge, safeguarding, planning, and management of the whole territory—is a direct consequence of the ELC's principles. Building on the ELC's participatory principles, the Codice institutionalized co-planning as a mandatory governance mechanism. Through formal agreements, Regions and the Ministry jointly develop landscape plans, ensuring that technical and cultural knowledge are co-produced by both central and local actors (Marson, 2016) This co-planning model reflects the ELC's emphasis on participatory approaches—ensuring that local communities have a voice in shaping the policies that affect their environment (Magnaghi, 2016).

The European Landscape Convention (ELC) marked a turning point in the evolution of landscape policy by expanding the scope of intervention beyond exceptional sites to include every day and degraded landscapes. As Marson notes, the ELC urges member states to adopt policies that "are not limited to the protection of landscapes of exceptional value, but which also take into account the ordinary landscapes of everyday life". This inclusive vision redefines landscape not only as a visual or natural asset, but as a cultural construct shaped by the continuous interaction between nature and society, integrating aesthetic, ecological, and social values within a unified conceptual framework. Moreover, the Convention transforms landscape governance by promoting participatory and shared decision-making. It outlines that landscape policies must be "formulated through public participation and the co-responsibility of national, regional and local authorities". This participatory principle is rooted in the notion of landscape as a "common good," to be planned and managed with the active engagement of communities. As Marson emphasizes, this approach has shaped national strategies—especially in Italy—by positioning landscape as a driver of identity, cohesion, and democratic reform in spatial planning (Marson, 2016).

The European Landscape Convention also influenced how regional governance developed in the following decades. In Italy, the period between the mid-1990s and the early 2000s marked an important turning point, as landscape became a political issue woven into cultural and institutional agendas. During these years, policy was redefined not only as an instrument of environmental protection but also as a pillar of territorial identity and public planning. Italy took an active role in shaping the international debate on landscape, presenting itself both as a committed signatory and as a model for integrating landscape into wider policy frameworks (Marson, 2024).

In Italy, the effects of the European Landscape Convention (ELC) can be traced not only in national legislation but also in the growing role of regional governance. Between 1995 and 2006, landscape became a clearly political issue, marking a crucial stage of transformation. During this period, Italy's approach to landscape policy placed the country at the center of international debate, particularly through its leadership in UNESCO nominations and cultural heritage discussions. At the same time, the very definition of landscape widened—from a purely aesthetic view to a cultural synthesis shaped by both natural and human forces—opening the way to a new understanding of territorial planning rooted in the socio-political fabric. This evolving vision was reinforced by Italy's strategy of presenting entire regions or historically evolved environments—rather than isolated monuments—as "cultural landscapes" worthy of international recognition. From the Val d'Orcia and the Langhe-Roero to the Medici Villas, Italy's successful nominations helped shape the broader European understanding of landscape as a space for sustainable development and identity-building. These actions reflect the ELC's view of the landscape as a "theatre of economic activities" and as a place where well-being, development, and heritage preservation come together. This perspective not only strengthened Italy's role in global heritage politics but also showed the Convention's transformative influence on national planning strategies (Ricci, 2024). Magnaghi also points out that regional planning practices began to adopt a more integrated and dynamic interpretation of landscape, one that considered both protected assets and the wider regional territory within governance frameworks. This shift was further supported by the co-planning processes promoted between

the Ministry (MiC) and regional institutions, aiming to align technical planning tools with locally rooted landscape knowledge (Magnaghi, 2016).

Following the adoption of the European Landscape Convention, Italy saw an expansion of participatory approaches and methodological experimentation in landscape planning. Landscape plans were for the first time required to address the entire territory—not only areas of exceptional value—and were co-developed through collaboration between the State, Regions, and local communities. This participatory shift emphasized the inclusion of local, everyday knowledge alongside codified expertise, recognizing that landscape perception is shaped by lived experiences and cultural context. The National Landscape Observatory played a key role in facilitating dialogue among multiple stakeholders, enabling the shared construction of strategic frameworks for acceptable landscape transformation (Marson, 2016).

Despite these advances, however, the full application of the Convention's principles has faced notable institutional challenges. In several regions, political fragmentation and bureaucratic passivity have slowed the process of plan approval and weakened implementation mechanisms. In some cases, administrations have shown little attention to landscape governance, often placing it beneath economic priorities or real estate development. Marson observes that simply following bureaucratic procedures is not enough to drive meaningful landscape transformation; instead, integrated and participatory models need to be firmly embedded in institutions if the Convention's goals are to be realized (Marson, 2016).

The European Landscape Convention has had a major influence on how landscape is understood, governed, and planned in Italy. Its effects can be seen in legal reforms, institutional practices, and new methodological approaches. Challenges still remain—especially in bringing multi-level governance into line with participatory ideals—but the Convention has laid the groundwork for a more holistic and inclusive landscape culture, one that looks to the future while staying rooted in territorial identity, shared responsibility, and environmental justice. The implications of this framework become particularly evident when moving from the national level of policy to the regional scale of implementation, which will be examined in Section 2.4.

2.2 Evolution of the Landscape Concept in Italy

The Italian conception of landscape in spatial planning has evolved significantly from a static, protective vision to a dynamic and collaborative one. Initially, legislation conceived landscape primarily as a visual and cultural asset to be safeguarded, emphasizing monumental, scenic, and historically significant sites. An influential turn occurred with the approval of the Codice which legally reinforced the centrality of landscape in planning processes and introduced co-responsibility between the State and Regions in managing and planning landscape values (Magnaghi, 2016). The conceptual evolution reflected in the Codice was shaped not only by national debates, but also by broader European influences—most notably the European Landscape Convention, signed in 2000. While Italy ratified the Convention in 2006, many of its core principles—such as public participation, perception, and the treatment of all landscapes as culturally significant—had already begun to inform national policy. Nevertheless, the Codice remains the fundamental reference for embedding these principles into Italy's planning system.

The concept of “co-planning” (*copianificazione*) became a foundation of this new standard. The document describes how regional landscape plans—particularly those developed through coordinated processes between the MiC and local administrations—began to interpret the landscape as a layered system of ecological, historical, and territorial relationships. While the methods applied across regions varied, this overview marked a methodological transition: landscape was no longer just a collection of individual protected sites but was recognized as an evolving and integrated territorial framework. Importantly, the planning culture began to treat landscape as an active component of spatial strategies, tied to identity, governance, and public policy. Landscape is portrayed not only as heritage but as a structuring element in territorial development, capable of integrating local knowledge, political action, and sustainability goals (Magnaghi, 2016). This broader conceptual framing opens the door to more participatory and socially embedded approaches—frameworks that are further researched by multiple specialists, who develop the notion of landscape as a common good and a vehicle for inclusive governance.

Marson offers an important contribution to the discussion on the evolution of the landscape concept. Her work presents the idea of the landscape as a “common good,” central to both local identity and collective memory. She stresses that protection should not stop at individual sites but extend to the management of the territory as a whole, so that its social, cultural, and ecological values are preserved for future generations. At the same time, she critiques earlier planning models for being too narrow in scope. Their initial focus on aesthetics—though significant—did not capture the full complexity of the landscape. For this reason, Marson calls for a broader approach that treats the landscape as an evolving entity. Her analysis shows that this shift has been driven by the recognition that human intervention and natural processes interact over time, producing an integrated model more suitable for contemporary spatial planning (Marson, 2016). The shortcomings of the modernist, rational-functionalist model are now widely acknowledged, opening the way for approaches that emphasize local identity, spatial perception, and the everyday experience of place. More recent frameworks, such as Landscape Urbanism, expand on this direction by promoting planning models that embrace succession, transformation, and process, rather than static design (Marson, 2023).

Although not a law, the Convention is an essential cultural and policy reference that provided a common European definition of landscape and encouraged national governments to integrate landscape into all policies affecting the territory (Marson, 2023). In Italy, this impulse was later consolidated through the Codice, which remains the only binding legislative reference for all Regions.

In Italy, the transition from traditional regulatory zoning to an integrated governance framework reflects a deliberate effort to move beyond sectoral fragmentation toward greater systemic alignment. Within this shift, the landscape is viewed as a platform that brings together ecological restoration, participatory governance, and spatial justice. The document also highlights the importance of "territorialisation"—the active process of building relationships between communities and their environments—as a strategic basis for contemporary landscape planning (Marson, 2024).

An essential shift came with the rethinking of the planning paradigm. Where once the focus was on sectoral and land-use control, recent developments—especially post-COVID—highlighted the relevance of slow mobility, local resources, and multifunctional landscapes in reshaping public space and quality of life. The pandemic has revealed the vulnerabilities of monofunctional urbanism and boosted interest in landscapes as adaptive, resilient systems (Bedini & Bronzini, 2024). This redefinition of the landscape concept has led to its acknowledgement as a common and shared good—no longer viewed solely as an object of protection, but as an active participant in territorial governance and public policy. Landscape's value in fostering inclusion, equity, and civic responsibility aligns it with broader themes of sustainability and well-being (Marson, 2016).

La Riccia offers a complementary reading of this evolution by identifying three key transitions in Italian landscape planning: from aesthetic and scenic views to environmental and ecological interpretations, and finally toward a participatory and identity-driven vision. While early planning laws focused on protecting exceptional broad landscapes or monumental views, later developments—especially after the 1985 Galasso Law—extended protection to ordinary and ecological landscapes. La Riccia notes that the European Landscape Convention marked the turning point where local communities and lived experience became part of the institutional understanding of landscape, emphasizing that landscape is widespread throughout the territory and constitutes a collective resource shaped by perception and participation. This shift also redefined the planner's role. Rather than imposing a formal structure upon the land, the planner now mediates between territorial structures, local knowledge, and collective objectives. According to La Riccia, this requires landscape to be treated as a shared cultural construction, not a fixed object, and for planning to evolve into a collaborative process that incorporates identity, functionality, and perception across scales (La Riccia, 2017).

This broader reconceptualization of landscape has also begun to take root within the Italian legal system, culminating in a significant constitutional reform that reflects the evolving understanding of landscape as both an ecological and civic foundation of territorial governance. In February 2022, Article 9 of the Italian Constitution—originally dedicated to the protection of culture and landscape—was amended to include explicit references to the environment, biodiversity, and ecosystems, to be safeguarded also in the interest of future generations. (Senato della Repubblica & Camera dei deputati, 2022) This legal recognition formalizes a transition already underway in planning theory and practice: the shift from a heritage-based view of landscape to one that incorporates ecological continuity, intergenerational responsibility, and environmental justice. While previous reforms and planning instruments emphasized the co-evolution of human and natural systems, the constitutional amendment strengthens the normative foundation for treating landscape as a dynamic space of ecological, cultural, and perceptual interaction. It also reinforces the need for landscape policies to address environmental complexity not as an external constraint but as an internal structuring principle—thereby aligning legal, perceptual, and planning dimensions into a more unified framework.

This evolving perspective also redefined how conservation is approached—not as static protection, but as a dynamic, adaptive practice. These evolving ideas laid the groundwork for more integrated models of landscape preservation and regeneration, which will be examined in the following section.

2.3 Landscape Conservation and Innovation in Italy

Today, landscape conservation in Italy should be seen not only as the protection of exceptional sites but also as part of a wider territorial system that ties environmental integrity to cultural identity. Gambino points out that conservation has become a strategic practice based on territorial coherence, ecological function, and the dynamic interaction between nature and human activity. This perspective moves away from static or isolated approaches and introduces what Gambino calls "active conservation"—a method that safeguards values while allowing adaptation and renewal. The focus therefore shifts from simple preservation to transformation that both respects and strengthens the underlying landscape structure. Within this view, the landscape is not a passive backdrop but a living, multifunctional system whose governance must take account of ecological complexity, cultural narratives, and policy innovation (Gambino & Peano, 2015).

Beyond the legal and institutional shifts, Italy's approach to landscape has also evolved in practice, especially in how it balances conservation with innovation and regeneration. In Italy, landscape conservation has gone through a major transformation, moving from a model based on restriction and aesthetic preservation to one more focused on dynamic governance and cultural innovation. This change reflects broader shifts in how landscapes are perceived—not only as passive objects of protection but as active systems shaped by history, memory, and territorial practice. The Italian experience provides a useful example of how legal, institutional, and technical frameworks can sustain both conservation and creative regeneration. In its early stages, landscape policy mainly focused on safeguarding individual scenic or historic features—such as monuments, views, or culturally significant sites—considered worthy of protection for their symbolic or aesthetic value. This approach stemmed from early 20th-century laws, including the Bottai Law of 1939, which emphasized the protection of isolated landscape "assets," often detached from their wider territorial setting. While this static model laid important foundations, it soon showed its limits in a rapidly changing socio-spatial environment. It treated landscapes as fixed representations of the past—objects to be admired and protected—rather than as living environments open to transformation and social engagement. Tuscany offers a contrasting strength through its innovative tools for regeneration and adaptation. Instead of freezing landscapes in their historic forms, its plan allows functional reinterpretation, encouraging slow mobility, sustainable agriculture, and cultural itineraries. These strategies integrate conservation with future-oriented land uses, showing how planning can support ecological continuity without imposing rigid protectionist models (Marson, 2016).

Gambino's conceptual shift highlights the need for landscape conservation to follow a network-based logic: a system built on interconnected spaces and relationships, rather than on fragmented zones of protection. This perspective is especially relevant in Italy, where ecological corridors, rural landscapes, and urban-edge transition areas are closely linked with cultural heritage. The network-based approach integrates these dimensions into a landscape mosaic—bridging the ecological with the symbolic, and natural processes with the lived experience of communities. Conservation is not only a tool for restriction, but a spatial language that organizes values and enables co-evolution across time and space (Gambino & Peano, 2015). Complementing this theoretical model, La Riccia explores how these principles are applied in urban conservation practices.

La Riccia builds on this adaptive view by stressing the role of ecological values in urban planning, approached through structural and network-based methods. He points out that modern conservation should operate through territorial systems, where green infrastructure, urban form, and perceptual quality are treated as interconnected layers rather than separate parts. Such a model supports innovative forms of conservation by weaving ecological continuity into spatial design, making it possible to allow transformation and regeneration without losing environmental coherence or identity (La Riccia, 2017).

This vision makes space for conservation that is not about freezing landscapes but about maintaining their capacity for resilience, coherence, and legibility in the face of ongoing change. Tools such as the identification of "landscape units," thematic guidelines for transformation, and co-planned local adaptation strategies reflect a shift toward territorial responsibility rather than preservation. The concept of landscape as a common good gains operational significance in the context of conservation and innovation—not as an abstract legal term but as a foundation for civic responsibility. Marson emphasizes that the preservation of landscape quality depends not only on regulatory instruments but on the active involvement of citizens, professionals, and local communities. This reframing transform conservation from a top-down obligation into a participatory practice, where territorial knowledge and cultural memory inform adaptive planning strategies. Such an understanding has practical implications. It reorients planning priorities toward the integration of new uses—such as sustainable agriculture, slow mobility, and cultural itineraries—into historically layered landscapes. This reflects a broader principle: that innovation in landscape governance must be rooted in place, attentive to its specific cultural and ecological form (Marson, 2016).

Gambino also stresses that innovation in conservation planning must be integrated in a systematic reading of territorial structure. Rather than theoretical principles, conservation must operate through structural invariants—persistent features such as hydrogeological systems, settlement hierarchies, and agro-ecological networks—that inform the landscape's capacity to evolve without interruption. These invariants are not regulatory barriers, but analytical tools that allow planning to become place-specific and adaptive, while safeguarding territorial coherence. In this way, conservation and transformation are not in conflict—they are understood as different phases of the same spatial process (Gambino & Peano, 2015).

Rather than banning transformation, Italy's most forward-looking conservation policies focus on guiding and adapting it. This is evident in the spread of regional pilot projects, such as Tuscany's "Slow Enjoyment of Landscape," which links ecological infrastructure with cultural networks and non-invasive mobility (Magnaghi, 2016). These projects combine policy, design, and participation to regenerate underused or degraded areas. Their innovation lies not in their scale but in their methodology: they do not treat landscapes as "solved" spaces but as open systems requiring continuous engagement, reinterpretation, and care.

A notable dimension of these initiatives is their focus on use value rather than exchange value. In other words, the primary concern is not to commodify the landscape but to ensure its accessibility, ecological functionality, and cultural legibility for present and future generations. This reorientation is evident in adaptive regulatory mechanisms, which allow for context-sensitive modifications rather than uniform restrictions. For example, land-use plans are

expected to “dialogue” with landscape prescriptions, adapting zoning regulations to respect and enhance the structural logics of the territory (Marson, 2016).

However, as Gambino warns, the realization of this vision is constrained by a persistent cultural and institutional lag. Many planning authorities still treat conservation as a legal formality rather than a contextual and transformative practice. This disconnect often reduces landscape policy to the application of constraints, without acknowledging its potential as a generative tool for spatial innovation. The challenge, therefore, lies in mainstreaming the network-based, multifunctional, and identity-based logic of conservation into planning routines—moving from symbolic conformity to structural integration (Gambino & Peano, 2015).

Despite institutional progress, many planning authorities continue to face difficulties in adopting adaptive approaches. Marson observes that landscape governance often remains fragmented and under-resourced, which prevents its full integration into everyday planning practice (Marson, 2024). This gap between ambition and implementation helps explain the importance of the European Landscape Convention, already discussed in Section 2.1, which reframed landscape as both a cultural and participatory dimension of planning.

2.4 From National to Regional Landscape Planning

These conceptual and methodological evolutions at the national level have paved the way for a growing role of the Regions in shaping and applying landscape policies—marking a fundamental transition in the governance of the Italian territory.

The evolution of Italian landscape planning from a centralized, state-led model to a more decentralized and regionally adaptive framework represents one of the most significant institutional transformations in contemporary territorial governance. This shift has not only altered the distribution of planning authority but has also introduced new cultural, legal, and operational dimensions to the very concept of landscape planning. At its core, this transition reflects a broader reconfiguration of the relationship between the State, Regions, and local communities in interpreting, managing, and designing the landscape. The early trajectory of Italian landscape governance was deeply rooted in national legislation, characterized by top-down measures focused on the protection of isolated landscape assets. Law such as L. 431/1985 (the “Galasso Law”) established the foundations of state intervention by identifying specific categories of areas—coastal zones, lakeshores, forests, riverbanks—as automatically protected by national decree (Marson, 2016).

Although innovative at the time, these laws treated landscape in static and administrative terms, often detached from territorial dynamics or regional cultural identities. Protection was defined through fixed boundaries and broad prohibitions, leaving little room for interpretation or participation. The centralized model assumed uniformity across very different territorial contexts, producing a form of conservation that many local actors experienced as bureaucratic, reactive, and externally imposed. Planning itself was handled in a technically rigid way, carried out almost entirely by state officials and heritage authorities, with minimal links to wider urban or rural policy frameworks (Marson, 2016; Magnaghi, 2016).

A key step toward regional empowerment came with Law 281/1970, which established the institutional and financial framework for the Italian Regions. While it did not directly assign

responsibilities for landscape, it initiated a broader process of decentralization and administrative autonomy that was later strengthened by constitutional reform. The reform of Title V in 2001, which redefined the division of legislative powers between the State and the Regions, laid the legal basis for decentralizing spatial and landscape planning in Italy. For the first time, the Regions gained full competence over landscape planning, as long as their actions remained consistent with national principles. This reform redefined the Regions not just as executors of national policy but as autonomous political and cultural actors in shaping and managing the landscape. The legal framework evolved further with the 2022 amendment to Article 9 of the Italian Constitution, which expanded landscape protection to explicitly include environmental values, biodiversity, and ecosystems (Senato della Repubblica & Camera dei deputati, 2022). While primarily symbolic at this stage, the amendment strengthens the constitutional mandate for integrating ecological and landscape dimensions into regional planning practices—though its practical implementation still depends on the institutional capacities and tools available at the sub-national level. It paved the way for differentiated planning strategies that could respond to the specific ecological, historical, and socio-cultural characteristics of regional territories. However, this transfer of responsibility also revealed gaps in technical capacity and institutional coordination. While the law enabled regional autonomy, it did not automatically guarantee the availability of the resources, skills, or procedures required to develop comprehensive and innovative landscape plans (Marson, 2016).

The Codice introduced a co-planning mechanism (co-pianificazione) that requires joint development of landscape plans between the Regions and the Ministry of Culture. This framework—defined in Article 135 of the Codice—seeks to balance regional autonomy with state oversight, enabling collaboration without recentralization (Marson, 2016). Rather than repeating the procedural specifics detailed earlier, it is worth noting here how this model has functioned as a transitional tool, allowing Italy to move from a single-authority model toward one that fosters shared interpretive and planning responsibilities. The emphasis is not just on legal compliance but on cultural negotiation between different levels of governance (Magnaghi, 2016). This negotiated model acknowledges that landscape, by its very nature, spans jurisdictions and requires shared visioning. However, the practical application of co-planning often reveals tensions, particularly in politically fragmented regions or where administrative capacity is weak (Marson, 2023).

Since the introduction of the co-planning model, several Italian regions have prepared and adopted their own landscape plans, each expressing a different planning culture. Tuscany's case shows how structural invariants can be effectively built into planning systems, though the success of such tools varies depending on each region's political vision, planning traditions, and institutional capacity (Magnaghi, 2016). Other regions, including Puglia and Piedmont, have also produced plans shaped by their own geography, legal frameworks, and political context. These documents range from strictly regulatory instruments to more strategic and participatory frameworks, reflecting a growing diversification in how landscape planning is conceived and practiced across the country (Calace, Paparusso, Dellerba & Torchiani, 2024).

Although the decentralization of landscape planning has created room for regional experimentation and cultural adaptation, several structural challenges persist. Fragmented

responsibilities, weak interdisciplinary coordination, and uneven technical capacity across regions have at times produced inconsistencies and delays in implementing plans. In addition, many municipalities have found it difficult to align their urban regulatory plans with regional landscape frameworks, which has often resulted in conflicts of interpretation and application at the local level. Nonetheless, the transition from national to regional planning has set the stage for a more dynamic and context-sensitive approach to landscape governance. As knowledge production becomes more participatory and planning tools more flexible, there is growing potential for landscape planning to serve not only as a legal obligation but as a catalyst for territorial regeneration, democratic participation, and ecological resilience (Marson, 2016, 2023, 2024).

2.5 Landscape Governance in Italy: Institutions, Laws, and Policies

While the European Landscape Convention reshaped the conceptual and normative framework, its implementation in Italy required significant changes in governance structures and institutional coordination—developments explored in this section.

In Italy, landscape governance has developed into a multidimensional and multilevel system that involves institutions operating at national, regional, and local levels. Rather than following the older model of top-down environmental control, today's governance is shaped by legal reforms, cultural reinterpretations, and collaborative planning practices. This section outlines the institutional framework guiding landscape governance in Italy, tracing the evolution of its laws, administrative structures, and planning tools—especially in relation to how landscape values are incorporated into spatial policy.

Before the regulatory transformation introduced by the Codice, landscape planning in Italy showed a fragmented character. The planning processes varied widely between regions, with no unified national model or shared protocol for co-planning between the Ministry and regional governments. As noted in the research overview, only a minority of Italian regions had adopted landscape plans compliant with the Codice, and many continued to operate outside of formal joint planning agreements with the MiC. The absence of systematized national guidance and reliance on case-by-case circulars held back the development of a coherent and inclusive planning framework. This regulatory disorder reflected a broader institutional limitation in addressing the landscape as a structurally integrated and democratic component of territorial governance (Magnaghi, 2016).

The Codice more specifically the Article 135 of the Codice requires that landscape plans—whether standalone or integrated into urban-territorial instruments— must consider the entire regional territory, not just isolated areas of scenic or historical prestige. This marked a decisive move away from the restrictive logic of individual constraints and toward a holistic view of landscape as a relational system (Marson, 2016). The Codice also introduces the concept of territorial heritage, which refers to the entire co-evolved structure of human settlements, natural systems, and landscape identities across Italy. This idea is grounded in a definition that goes beyond seeing landscape as a static repository of "beautiful places" and instead recognizes it as the result of long-term ecological and cultural interaction (Magnaghi, 2016).The legal framework assumes that every part of Italian territory, whether urban or rural, holds intrinsic landscape value due to the complex historical layering of social practices, infrastructural

systems, and environmental adaptations. As a result, contemporary planning is obligated to move from rigid preservation to active management of territorial transformation processes (Marson, 2016).

One of the most important innovations introduced by the Codice is co-pianificazione (co-planning), a legally required mechanism that redefines the relationship between state and regional authorities in the field of landscape governance. According to Article 143, landscape plans are to be prepared through formal agreements between the Regions and the Ministry of Culture, creating a constitutionally grounded model of shared responsibility that is unique within the European context (Marson, 2016). Although this arrangement is forward-looking, it has also generated major operational challenges. Putting shared governance into practice requires coordination across political agendas, administrative resources, and planning expertise at several institutional levels. The need for consensus often slows the planning process and produces bureaucratic friction, especially when sectoral policies must be brought together across different institutional tiers (Marson, 2023).

Although complex, this collaborative approach has resulted in the formal approval of six regional landscape plans under the Codice: Sardinia, Tuscany, Puglia, Piedmont, Friuli Venezia Giulia, and Lazio. Their adoption was made possible through co-planning agreements between the Ministry of Culture and the regional administrations, which serve as an essential tool for aligning national and local landscape objectives. These plans operate not only as regulatory instruments but also as strategic frameworks that set out the structural values of the landscape and guide future planning and development. Implementation, however, remains uneven at the municipal and provincial levels, often slowed by outdated local instruments, administrative delays, and fragmented institutional responsibilities. The approval of these plans—Tuscany's in particular—was made possible by a collaborative process that involved regional planners, environmental scientists, urbanists, and cultural historians. This multidisciplinary approach was essential to integrating both technical-scientific knowledge and localized territorial practices. Structural invariants are derived from a scientific understanding of territorial "neo-ecosystems"—living systems that result from co-evolutionary interactions between human settlement and natural processes. They are meant to be dynamic and adaptive, offering guidance for future transformations rather than simply preventing change. In the Tuscan Landscape Plan, for example, four main categories of invariants are used: hydro-geomorphological systems, ecological networks, historical-settlement structures, and agro-forestry mosaics. These categories are not abstract; they are operationalized through mappings, directives, and design principles that must be respected in all future planning instruments at the municipal level. Rather than applying strict bans, the invariant model allows for the codification of transformation rules that support the reproduction of territorial identity and landscape quality over time. This approach empowers planning to act as a generative process, one that strengthens the environmental, economic, and cultural sustainability of landscapes (Marson, 2016; Magnaghi, 2016; Voghera, La Riccia & Negrini, 2023).

Figure 1 – Status of Regional Landscape Plan (PPR) Adoption Across Italy
Source: (Voghera, La Riccia & Negrini, 2023)

Another core element of landscape governance in Italy is the integration of technical-cognitive systems—or frameworks of knowledge production—into planning practice. Italian landscape plans rely heavily on geohistorical investigation, spatial morphology analysis, and ecological network mapping to identify landscape units and transformation risks. This planning method is deeply interdisciplinary, requiring the participation of experts in geography, ecology, archaeology, and sociology to co-construct territorial knowledge. The knowledge base is not just scientific but also participatory, involving local actors and civil society groups in the interpretation and valuation of landscapes (Calace, Paparusso, Dellerba & Torchiani, 2024; Marson, 2016).

At the municipal level, La Riccia notes that landscape governance has evolved from top-down authoritative regulation toward shared responsibility, with municipalities acting as mediators of local values rather than simple executors of national rules. This shift is particularly evident in the application of landscape planning tools that link planning regulations with ecological and experiential structure. Municipalities now integrate landscape values in local plans through

visual corridors, landscape vulnerability zones, and design codes that reflect the unique character of place. A key innovation described by La Riccia is the use of inter-municipal planning, especially in fragmented or transitional territories where ecological and cultural continuity exceeds administrative boundaries. In these cases, governance is no longer confined to formal jurisdiction but becomes a relational process involving landscape systems, stakeholder networks, and cross-border collaboration. These strategies allow municipalities to address landscape as a living system rather than a series of isolated land parcels (La Riccia, 2017; Voghera, La Riccia & Negrini, 2023).

La Riccia underlines the central role of public participation, viewing it not as a mere procedural step but as a true method of governance. Through tools such as participatory mapping, local workshops, and landscape observatories, governance becomes a shared process in which citizens contribute to defining landscape quality objectives and spatial values. This approach strengthens the idea of landscape as a democratic resource and as a policy instrument grounded in both institutional capacity and civic imagination. At the same time, the growing integration of protected areas, ecological corridors, and biodiversity concerns into landscape planning signals a move toward multi-scalar strategies that link environmental resilience with cultural value (La Riccia, 2017).

The notion of public participation is not treated as an optional consultation step but as a structural component of the planning process itself. According to the principles set forth by the European Landscape Convention, local populations must be engaged in both the cognitive and normative phases of planning—meaning they help shape the knowledge and the rules (Marson, 2016).

3. Piemonte Regional Landscape Plan (Piemonte PPR)

3.1 Regulatory Framework and Legal Constraints

The regulatory framework of the PPR of Piemonte is deeply rooted in the legal principles established by the Codice, and it represents a decisive evolution in the governance of landscape policies at the regional scale. This legal foundation ensures that the Plan's contents are not only strategic but carry clear normative value, structured to influence both sectoral planning and local urban development instruments. The integration of the PPR with the Code is based on dialogue and harmonization, particularly with the Regional Territorial Plan (PTR) and other planning tools, in order to prevent overlaps and to ensure coherence in protecting and enhancing the landscape. The regulatory framework of the PPR is therefore not autonomous but built through cooperation with the Ministry, formal agreements, and institutional partnerships. This structure reinforces the shared responsibility for safeguarding landscape assets and for applying the Code's principles—especially in identifying protected areas and defining binding regulatory provisions. This regulatory framework is structured through a hierarchical system of guidelines (indirizzi), directives (direttive), and prescriptions (prescrizioni), each carrying a different degree of legal force and obligation. This structure ensures both flexibility in territorial interpretation and binding effectiveness where protection is non-negotiable. The guidelines are defined as planning orientations and criteria addressed to territorial bodies. They allow for a certain degree of flexibility in implementation, provided that such flexibility remains coherent with the PPR's landscape quality objectives. Directives, by contrast, are provisions that must be mandatorily observed in the drafting of urban, territorial, and sectoral plans. While departures are technically possible, they must be explicitly justified and backed by technical documentation. The most binding category, prescriptions, consists of immediately enforceable provisions that prevail over any incompatible elements in existing plans. These must be applied directly by all public and private subjects and cannot be bypassed or reformulated by local authorities. This regulatory hierarchy ensures that the PPR can fulfill its dual role: offering structured guidance for general planning while simultaneously enforcing strict compliance in the presence of landscape assets of high cultural or environmental value (Regione Piemonte, 2017a, 2017b).

Also, the legal foundation of the PPR of Piemonte is grounded in Article 143 of the Codice, which establishes the obligation for Regions to prepare and adopt landscape plans in collaboration with the MiC. This article sets out the essential contents that landscape plans must include, such as the identification of landscape values, the definition of objectives for conservation and transformation, and the establishment of regulatory prescriptions to govern spatial development. In line with this national framework, the Piemonte Region and the MiC formalized their partnership through the Agreement of 14 March 2017, which delegated to the Region the authority to implement the PPR's provisions while maintaining ministerial oversight. This agreement ensures that the landscape plan integrates the criteria and objectives defined by the the Codice, while also aligning with regional planning practices. Importantly, the PPR is not limited to areas already under formal protection but applies to the entire regional territory, including ordinary, everyday landscapes that are essential to local identity. This reflects a shift in national and European landscape policy—from exclusive protection toward

widespread recognition and planning-based enhancement of landscape values (Regione Piemonte, 2017a, 2017b, 2017c).

The legal force of the PPR's regulatory content is guaranteed by its integration with Articles 145 and 146 of the Codice, which grant its provisions primacy over conflicting planning instruments and establish the conditions for issuing landscape authorizations. According to Article 145, paragraph 5, the PPR includes binding and immediately prevailing provisions—contained in the Norme di Attuazione (NdA), in Annexes, and in the Catalogue of Landscape Assets—which override incompatible elements in general and sectoral territorial planning tools. These include municipal PRGs and sectoral plans, which must be adapted or harmonized accordingly. The Plan's binding force is further reinforced in landscape authorization procedures governed by Article 146. Until the full adaptation of municipal planning tools, competent authorities must verify that proposed interventions comply with the mandatory and prevailing provisions of the PPR, particularly those outlined in Article 2, paragraph 1, letter a) of the regulation and the Catalogue of Landscape Assets. After adaptation, this compliance check also includes the updated PRG. The Landscape Report, required for each authorization request, must demonstrate this alignment with precision, referencing both the PPR and the modified PRG provisions. These articles ensure that the PPR operates as more than just a planning framework; it becomes a compulsory legal reference in both spatial planning and administrative decision-making (Regione Piemonte, 2017c).

The protection system established by the PPR includes all areas already subject to constraint under Article 142 of the Codice, which defines the categories of landscape assets protected by law (ex lege). These include rivers and streams, lakes, mountain ranges above 1,600 meters, glaciers, parks and nature reserves, forests, and coastal zones—each recognized for their essential landscape and environmental values. Within the PPR, these areas are mapped and catalogued in dedicated plan tables (such as Table P2 and the Catalogue of Landscape Assets) that represent their spatial distribution across the regional and provincial levels. Municipalities are required to specify the delimitation and detailed representation of these protected areas during the adaptation of their urban plans, in coordination with the Region and the Ministry. The protection set out in Article 142 is automatic and pre-existing, which means it applies regardless of whether the asset is specifically identified in the PPR or the PRG. This confirms the principle of automatic legal protection. If a municipality considers that a water body listed under Article 142 is no longer relevant for landscape purposes, Annex C of the Regulation outlines the procedure for requesting its exclusion, which must be jointly approved by the Region and the MiC. This process confirms that the spatial layer of constraints in the PPR is both legally binding and technically negotiable, depending on documented landscape relevance and regulatory alignment. Among the categories of areas protected by law (ex lege) under Article 142 of the Codice, the PPR also recognizes and regulates lands subject to civic uses. These are communal or historically collective territories whose use is anchored in traditions of shared access and customary rights. According to Article 14 of the Implementation Regulation, these areas are considered landscape-relevant and remain protected under Article 142, paragraph 1, letter h of the Codice, even in the absence of specific declarations, unless the civic use is legally extinguished. In cases where a municipality wishes to initiate procedures for the removal of such civic status—such as through demanialization (the legal removal of public or

civic status) —the regulation requires that the landscape relevance of the area be reassessed. If the area continues to hold landscape interest, and no other protective measures are in place, the Region and the Ministry may initiate a process for its declaration of significant public interest. Furthermore, these areas are mapped in Table P2 of the PPR and governed by specific directives and regulatory provisions requiring that their structural landscape identity and historical territorial function be preserved through planning measures. This framework confirms that civic use areas are not only legally constrained but also culturally rooted components of the regional landscape fabric (Regione Piemonte, 2017b, 2017c).

A particularly significant legal consideration within the PPR is the framework established for the UNESCO World Heritage Site "Wine Landscapes of Piedmont: Langhe-Roero and Monferrato." This serial cultural landscape, recognized by UNESCO in 2014, includes 101 municipalities across three provinces and represents a landscape of exceptional historical, agricultural, and aesthetic value. In accordance with Article 33, paragraph 6 of the NdA, and further specified in Article 13 of the Regulation, municipalities that have already initiated planning actions to comply with UNESCO protection guidelines are nevertheless required to prepare a full variation of adaptation to the PPR within 24 months of the plan's approval, as mandated by Article 145, paragraph 4 of the Codice. This adaptation must take into account the detailed landscape analyses already performed during the nomination process and align with the broader regulatory objectives of the PPR. To assist this process, the Region has provided municipalities with dedicated Guidelines (DGR n. 26-2131 of 21 September 2015) that include criteria for updating master plans and building regulations in line with the landscape value system and protection measures required by both UNESCO and national law (Regione Piemonte, 2017a, 2017c).

The legal structure of the PPR positions it both as a landscape planning document and as a regulatory instrument, shaping not only spatial visions but also the procedures and responsibilities of planning authorities. Through its integration with the Codice—particularly Articles 142, 143, 145, and 146—and its extensions through Annexes A, B, C, and D, the Plan sets binding obligations for municipalities, provinces, and sectoral actors. These obligations are not abstract principles but concrete legal constraints that define how plans must be drafted, reviewed, and authorized. The presence of procedures for special categories—such as civic lands, UNESCO landscapes, and regional ecological corridors—shows the Plan's capacity to address territorial complexity. By setting out a hierarchy of rules (guidelines, directives, prescriptions) and codifying them in maps, catalogues, and explanatory reports, the PPR becomes a legal framework that integrates landscape quality objectives across all levels of planning, from vision to implementation. This legal depth allows the PPR to function not only as an instrument of compliance but also as a system of spatial governance rooted in territorial identity and constitutional protection.

3.2 Overview of the Piemonte PPR Framework

The Regional Landscape Plan (PPR) of Piemonte constitutes a comprehensive and innovative regional planning tool that addresses the entire regional territory through a landscape-based lens. Its foundational principles include sustainable development, conscious land use, minimization of land consumption, and the integration of landscape values within broader environmental and planning contexts. The plan reflects a deliberate alignment with both the European Landscape Convention and the national Code of Cultural Heritage and Landscape, aiming to harmonize protection, enhancement, and development policies across the region. The PPR is designed not only to safeguard areas of recognized landscape value but also to extend its influence across the entire territory, recognizing that landscape is a dynamic, collective, and lived dimension that concerns all communities and individuals. As such, it responds to a broad notion of landscape as a public good, integrating strategies of transformation management that are participatory, coordinated, and cross-sectoral (Regione Piemonte, 2017a, 2017b).

The institutional foundation of the PPR is grounded in the constitutional principles of cooperation, subsidiarity, adequacy, and differentiation, which govern the distribution of planning responsibilities across territorial levels. Its implementation relies on a coordinated system between the Region of Piemonte and the Ministry of Cultural Heritage and Activities (MiC). The Region acts through its competent departments in planning and landscape, while the MiC participates via the Regional Secretariat and Superintendencies for Archaeology, Fine Arts, and Landscape. A dedicated Technical Table composed of both institutions was established to assess the compliance of municipal planning tools with the PPR and to express binding opinions on landscape compatibility. This inter-institutional cooperation ensures that the PPR is not only legally enforceable but also effectively integrated into territorial governance, reinforcing the multi-level structure of landscape planning in Piemonte (Regione Piemonte, 2017b).

The PPR is conceived as a multilevel instrument built around four interconnected functions: knowledge, programming, planning, and regulation. In its knowledge function, it takes the form of a territorial “atlas” that records the physical, cultural, and ecological characteristics of the Piedmont region. It highlights essential values, distinctive traits, and areas of vulnerability, providing a shared interpretive view of the landscape. As a programming tool, the PPR defines strategic directions and thematic priorities aimed at enhancing resources, supporting transformation projects, and promoting sustainable territorial development. In its planning role, it serves as a reference point for provincial and municipal plans, helping to align sectoral tools and to ensure compatibility with the landscape framework. Finally, the regulatory function introduces binding measures that translate value recognition into operational rules guiding land use and spatial transformation. Taken together, these four dimensions allow the PPR to function at once as a cognitive base, a strategic platform, a planning reference, and a legal framework, embedding landscape quality objectives across the regional planning system (Regione Piemonte, 2017b).

The planning logic of the PPR represents a clear departure from conventional land-use planning models based solely on quantitative parameters and functional zoning. Instead, it introduces a qualitatively oriented model centered on form, identity, and spatial relationships. The PPR

promotes a reinterpretation of the territory based on its structural framework, recognizing that the landscape is shaped by historical layering and a web of interdependent cultural, ecological, and perceptual dimensions. This integrative approach leads to a more detailed understanding of urban and non-urban space—not only as functional areas, but as dynamic environments characterized by their aggregative structures, the spatial organization of volumes, and their visual and symbolic roles in the collective identity of the territory. The master plan, as re-envisioned through the PPR, is thus required to articulate strategies that preserve and enhance these dimensions by defining appropriate locations, boundaries between urban and rural environments, and criteria for the redevelopment of degraded areas. This logic insists on a planning process rooted in coherence and relational continuity, which enables the territory to absorb change while safeguarding its recognizable identity (Regione Piemonte, 2017a, 2017b).

The PPR applies to the whole regional territory, moving beyond the older idea that landscape planning should focus only on protected or scenic areas. Its approach requires that landscape values be addressed at every planning scale—from regional down to municipal—by creating a system that connects protection, transformation, and enhancement. This broad applicability is enforced both through direct legal provisions and through a structured process for adapting local and provincial plans. Territorial and urban planning instruments, including the PRG (General Urban Plan), must be revised within two years of the PPR's approval, with Region, Municipalities, the MiC, and metropolitan or provincial authorities all involved in a coordinated procedure. This mechanism ensures that the PPR's cartographic and regulatory framework is continuously updated, allowing for feedback across planning levels. Provincial and metropolitan plans play a key role in translating regional strategies into operational tools capable of addressing local issues, including ecological corridors, settlement forms, and visual settings. The application of these strategies extends beyond planning documents themselves and is reinforced by supporting instruments such as guidelines, manuals, and best practice catalogues (Regione Piemonte, 2017b). Together, these legal and spatial components provide the basis for the PPR's strategic direction, which is examined in the following section.

3.3 Strategic Objectives of the Piemonte PPR

The strategic objectives of the Piemonte Regional Landscape Plan (PPR) form a framework for sustainable territorial governance that responds to both regional and European directives. They are not developed in isolation but are grounded in the structural interpretation of the territory and organized around five strategic axes shared with the Regional Territorial Plan (PTR). The aim is to integrate landscape quality and environmental values into broader socio-economic development policies, ensuring consistency across all planning levels. The five strategic axes include: (1) territorial redevelopment, protection, and enhancement of the landscape; (2) environmental sustainability and energy efficiency; (3) territorial integration of mobility, communication, and logistics infrastructures; (4) research, innovation, and economic-productive transition; and (5) enhancement of human resources and institutional capacities. Each axis represents a dimension of territorial development that intersects with landscape protection and enhancement, forming the backbone of the PPR's long-term vision. These strategies were derived from a combination of regional, national, and European planning frameworks, and they

serve as the starting point for defining the 26 general objectives and their corresponding specific actions. They reflect a shift in planning logic—from static zoning to dynamic systems thinking—placing emphasis on landscape as a relational, cultural, and environmental resource that supports both identity and transformation (Regione Piemonte, 2017a, 2017b).

The first strategic axis of the PPR, titled "Territorial Redevelopment, Protection and Enhancement of the Landscape", represents the foundational principle of the regional planning vision. This strategy promotes a comprehensive approach to regeneration by intertwining the valorization of environmental and historical-cultural heritage with the support of local economic activities, especially in marginal and rural areas. It aims to reverse the processes of degradation by prioritizing the reuse and recovery of disused, abandoned, or compromised areas, the management of fragmented and unsustainable urban expansion, and the qualification of urban, peri-urban, and rural contexts. Emphasis is placed on enhancing multi-centered approach of regional settlements, revitalizing small and medium-sized urban centers, and fostering a renewed identity rooted in the cultural and socio-economic specificities of local communities. Furthermore, the axis underlines the importance of maintaining and improving the territorial mosaic by integrating natural systems, agricultural landscapes, and urban structures. Specific measures include the requalification of identity-deprived urban areas, the redevelopment of degraded industrial or infrastructural zones, and the recovery of rural landscapes affected by abandonment or excessive pressure. The PPR thus conceives this strategy as a lever not only for physical improvement but also for cultural reconnection, capable of reinforcing regional cohesion and guiding sustainable transformation processes (Regione Piemonte, 2017a, 2017b).

The second strategic axis of the PPR, titled “Environmental Sustainability and Energy Efficiency”, promotes a systemic and long-term vision of territorial development that balances economic growth with environmental integrity. Central to this axis is the protection and enhancement of primary resources such as water, air, soil, subsoil, and forest systems. This is to be achieved through a variety of coordinated measures: protecting both surface and underground water quality and function; preserving air quality in urban and peri-urban environments through increased green mass; and safeguarding high-value soils from erosion, contamination, and unsustainable extraction. Regarding forest heritage, the strategy promotes both conservation and selective improvement according to ecological, productive, or protective criteria. A further priority is the development of a sustainable and integrated energy system. The PPR highlights the use of renewable energy sources suited to the characteristics of the landscape, such as photovoltaic and wind installations, while also promoting a rationalized energy transport network to reduce visual and environmental impacts. This also extends to the mitigation of natural and environmental risks such as hydraulic, seismic, and hydrogeological threats, through proactive land management and awareness in infrastructure planning. Finally, the axis addresses waste management and disposal, promoting the containment of production and optimization of disposal systems to support the creation of new landscapes or minimize impact. This holistic strategy thus positions sustainability not as an abstract goal, but as a functional, spatial, and technical commitment across all territorial interventions (Regione Piemonte, 2017a, 2017b).

The third strategic axis of the PPR, titled "Territorial Integration of Mobility, Communication, Infrastructures, and Logistics", seeks to overcome the traditional separation between infrastructure development and landscape protection by promoting integrated planning approaches. This strategy emphasizes the landscape-environmental compatibility of all types of territorial infrastructure—transport, logistics, and telematics—beginning from their earliest design phases. Key actions include the reorganization of the regional transportation network to reduce fragmentation, re-establish lost connections, and minimize the barrier effect caused by major infrastructures like highways and railways. The plan calls for the landscape insertion of these infrastructures, considering factors such as location, scale, construction methods, and their relationship with surrounding areas. In logistics, it encourages the redevelopment and mitigation of large intermodal hubs, advocating for design solutions that soften their visual and ecological impacts. For telematics, the goal is a balanced territorial diffusion of digital networks that respects local landscape characteristics and avoids visual pollution. The overall objective is to reweave the physical fabric of the region by ensuring that infrastructural systems become coherent elements within the territorial mosaic, enhancing connectivity while safeguarding ecological continuity and visual integrity. The integration of these systems is also seen as vital for supporting economic competitiveness and accessibility, particularly in areas facing isolation or marginalization.

The fourth strategic axis of the PPR, titled "Research, Innovation and Economic-Productive Transition", focuses on strengthening the competitiveness and innovation capacity of the regional system through spatial, environmental, and economic strategies that are integrated with landscape values. This axis promotes the selective promotion of research activities, technology transfer, business services, and specialized training, while ensuring that the landscape-environmental integration of areas intended for innovative production is taken into account starting from their design characteristics—including location, size, construction methods, and surrounding conditions. In addition to fostering high-value activities in science and technology, the strategy supports the recognition and development of places tied to agricultural, manufacturing, and tourism production as symbols of Piedmont's identity. This includes the promotion of local agro-industrial systems, artisanal and industrial sectors, and tertiary commercial and tourism activities, all framed within an approach that values their landscape compatibility. Particular attention is also given to enhancing tourism through local circuits and widespread networks that support light infrastructure, enabling respectful development aligned with local production and environmental specificity (Regione Piemonte, 2017b).

The fifth strategic axis of the PPR, titled "Enhancement of Human Resources and Institutional Capacities", emphasizes the central role of governance and social cohesion in achieving landscape quality. This strategy encourages the development of a territorial governance system that fosters cooperation among institutions, professionals, stakeholders, and local communities. It promotes the strengthening of local identities and encourages policies that reinforce the social function of the landscape, including its symbolic and cultural value as a reference for community identity and planning processes. Within this framework, the PPR calls for the promotion of integrated supra-municipal project design, aiming to build a collaborative planning culture across administrative boundaries. It also supports the optimal organization of collective services, aligning service networks with the spatial logic of historically consolidated settlements

to enhance local centralities. More broadly, this axis recognizes the importance of educational and training programs, public awareness initiatives, and participatory processes to build a shared landscape culture and ensure lasting institutional engagement. The strategy treats landscape not only as a physical or visual entity but also as a resource for empowerment and civic responsibility, making institutional collaboration and citizen involvement essential tools for sustainable and equitable development (Regione Piemonte, 2017b).

The 26 general objectives of the PPR constitute the operational foundation of the Plan's strategic framework. They are not independent targets, but rather derivations of the five strategic axes, offering a more detailed and concrete articulation of the Plan's long-term landscape vision. Each objective is meant to translate broad strategies into territorially and thematically specific priorities that can guide implementation at all levels—from regional coordination to local planning tools. These objectives cover a wide spectrum of goals, including landscape requalification, ecological resilience, infrastructural integration, tourism and production systems, and participatory governance. While they serve both the PPR and the PTR, the PPR's objectives are tailored specifically to landscape-environmental dimensions, whereas the PTR objectives lean more toward economic-territorial logic. This structural divergence, though coordinated, reflects the PPR's core emphasis on landscape as a cultural, ecological, and identity-bearing resource (Regione Piemonte, 2017a, 2017b).

Functionally, the 26 general objectives act as a bridge between strategic vision and territorial implementation, offering planners, administrators, and technicians a reference system for shaping transformation processes in ways that protect and enhance landscape quality. The objectives are designed to be territorially adaptable, meaning their application is tailored to the specific dynamics and features of each landscape area in the region. This adaptability is supported by a set of specific objectives and strategic actions, which are outlined in Annex B of the Implementation Rules, and which provide concrete operational guidelines for municipalities and provinces. Importantly, these general objectives are not meant to be interpreted as abstract principles, but as criteria for evaluating interventions, structuring spatial policies, and ensuring coherence with the PPR's broader vision of sustainable and identity-based development. Their role is central in helping transform the Plan from a static legal document into a dynamic tool for managing and improving territorial quality (Regione Piemonte, 2017a, 2017b).

Together, the five strategic axes and twenty-six general objectives of the PPR define a comprehensive and multidimensional framework for landscape governance in Piemonte. They provide not only a conceptual structure but also the practical guidance necessary to integrate landscape protection with territorial transformation in a way that respects identity, ecology, and functionality. However, the effectiveness of these strategies ultimately depends on how they are territorialized—that is, translated into action across the specific and diverse contexts of the regional landscape. For this reason, the PPR identifies and categorizes the territory into landscape areas and landscape units, which serve as the spatial foundation for applying objectives and interventions in ways that are coherent with local conditions. The following section examines how these categories are constructed and applied, bridging the strategic framework with the regional diversity of forms, functions, and values.

3.4 An Innovative Territorial Framework: The Landscape Areas and Units

A foundational element of the PPR of Piemonte is its spatial structuring of the regional territory into 76 landscape areas and 535 landscape units, serving as the basis for organizing knowledge, objectives, and regulatory guidelines. This subdivision is not a simple cartographic convention but is designed to recognize and respond to the region's diverse landscape characteristics, including its environmental conditions, urban and infrastructural systems, as well as its economic and social dimensions. The landscape areas represent broad territorial identities grounded in naturalistic and historical-cultural factors and are defined in specific sheets that describe their characteristics and current transformation dynamics. This structure allows the PPR to frame interventions and policy directions in a way that is sensitive to the identity and specificity of each part of the territory, and to ensure that planning tools—especially at the provincial and municipal levels—can be adapted accordingly (Regione Piemonte, 2017a, 2017b).

The landscape areas (Ambiti di Paesaggio) represent the PPR's intermediate spatial scale and serve as the primary framework for understanding and managing regional landscape identity. Each area is defined by a coherent set of naturalistic, morphological, ecological, historical-cultural, and functional elements that distinguish it from neighboring contexts. The classification process considered both geographic continuity and shared landscape features, including geological formations, hydrographic patterns, traditional settlement structures, agricultural systems, and symbolic or visual reference points. This integrated reading of the territory enables the PPR to respond not only to physical configurations but also to cultural perceptions and identity systems recognized by local communities. Each of the 76 areas is accompanied by a dedicated descriptive sheet, which outlines its distinguishing characteristics, vulnerabilities, and transformation pressures, which in turn inform the assignment of objectives and the application of regulatory instruments. These landscape areas serve as the spatial containers within which both strategies and rules are differentiated and applied, making them essential to the vertical coordination of regional, provincial, and municipal planning (Regione Piemonte, 2017a, 2017b).

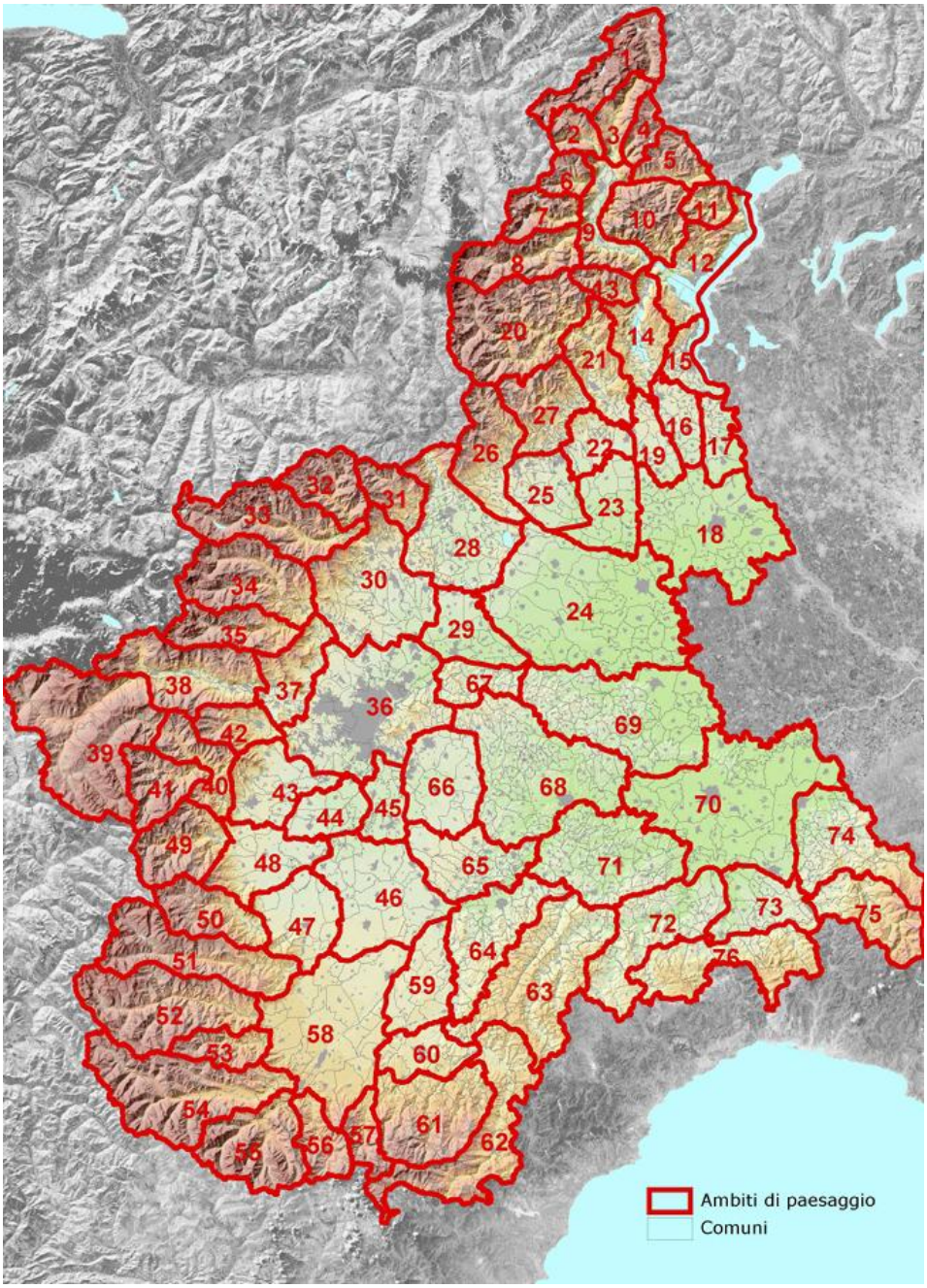

Figure 2 – Regional Distribution of Landscape Areas ("Ambiti di Paesaggio") in the Piemonte PPR
Source: (Regione Piemonte, 2017b)

The landscape units (Unità di Paesaggio) represent the most detailed scale of territorial classification within the PPR and serve as the spatial reference closest to local communities. Unlike the broader landscape areas, these units are organized at the municipal level, reflecting the recognizable and identity-based features of everyday landscapes. The landscape units are classified according to nine typological categories, which reflect the degree of relevance, integrity, and transformation present in each context—ranging from well-preserved natural/rural systems to significantly altered peri-urban or urban conditions. Each unit is defined by a set of landscape components, including morphological, ecological, historical-cultural, and perceptive-visual characteristics, and is catalogued within the "Lists of landscape

components and units." These documents are essential to understanding how planning tools should respond to the local scale of perception and recognition, particularly in line with the principles of the European Landscape Convention and the Codice. As such, the units function not only as analytical tools but also as operational references for adapting urban and territorial planning to the local characteristics of place (Regione Piemonte, 2017a, 2017b).

The spatial framework of the PPR is based on the complementary relationship between landscape areas and landscape units, which play distinct but connected roles in shaping landscape governance. The areas offer a broad territorial perspective suited to strategic analysis and regional coordination, while the units function at a finer scale, enabling actions linked to local identity, perception, and administrative boundaries. The PPR underlines the importance of this dual reading of the territory—top-down through areas and bottom-up through units. Although landscape areas may not coincide with socio-economic systems or administrative divisions, they must be regularly compared with and adjusted to local planning systems and the “local territorial systems” identified in the Regional Territorial Plan. This method ensures that objectives and regulatory measures remain attentive to both regional consistency and local particularities, supporting a flexible yet unified planning model. Using both spatial levels together is essential for integrating landscape and environmental strategies into wider territorial policies and programming frameworks (Regione Piemonte, 2017b).

The PPR documents its landscape areas and units through a structured set of materials serving both analytical and operational roles. Each of the 76 areas is presented in a dedicated sheet that summarizes its main features, including natural and historical-cultural elements, prevailing landscape dynamics, and the municipalities within its boundary. These sheets also outline the strategic orientations to be followed in applying the Plan at provincial and municipal levels. In addition, the PPR contains 17 lists of landscape components and units, arranged by municipality and linked to Table P4, which maps them at a scale of 1:50,000. The lists describe the individual components, indicate their legal classification, and connect them to specific landscape units. Together, this system of maps, tables, and descriptive sheets makes the PPR’s landscape framework geographically precise and functionally integrated, providing a solid basis for adaptation, planning consistency, and regulatory compliance (Regione Piemonte, 2017a, 2017b).

The role of landscape areas and units within the PPR extends beyond analytical classification to direct application in the adaptation of local and provincial planning tools, such as the PRG. Their recognition is an essential step for demonstrating the coherence of municipal planning variants with the strategic and qualitative objectives of the PPR. This requirement is formalized through detailed documentation procedures, in which municipalities must frame their analytical assessments within the specific landscape context defined by their assigned area and units. These analyses must identify the landscape factors that characterize and qualify their territory, link them to relevant landscape quality objectives, and define development priorities accordingly. Moreover, the implementation of these frameworks requires standardized cartographic outputs that integrate regulatory provisions and landscape components, allowing for a uniform regional application of planning rules. The Region supports this process by providing each municipality with all relevant PPR data for its territory, ensuring that adaptation

processes reflect not only legal compliance but also a deeper spatial and identity-based consistency (Regione Piemonte, 2017c).

Annex B of the Implementation Regulation establishes a standardized procedure to verify whether local urban planning variants comply with the PPR. It functions as an operational tool that connects the spatial framework of landscape areas and units with the wider regulatory and strategic system of the Plan. Municipalities must demonstrate how their planning instruments—particularly PRG adaptation variants—conform to the provisions of the PPR, including its components, objectives, and spatial rules. Annex B specifies the documents, tables, and explanatory reports required, which must show clearly how each variant applies and aligns with the PPR's framework. This involves mapping overlaps with protected components, evaluating transformation pressures, and verifying the consistency of proposed interventions. Municipalities are also asked to include these checks in a dedicated explanatory chapter, supported by maps and summary tables. In this way, Annex B ensures that landscape areas and units act not only as descriptive categories but as tools for regulatory alignment and territorial coherence (Regione Piemonte, 2017c).

Alongside the compliance rules set out in Annex B, Annex A of the Regulation specifies the minimum content and structure that municipalities must follow when preparing a PRG variant to adapt it to the PPR. It sets out the procedural framework and lists the technical documents required to show how the variant incorporates the territorial logic of the PPR, beginning with the correct identification and interpretation of landscape areas and units. The adaptation variant must include an explanatory report, supported by comparison tables, thematic maps, and other documentation, that explains how the local plan reflects the objectives, structures, and constraints defined by the PPR. These requirements are intended to ensure a consistent and coordinated process across all municipalities in Piemonte and to bring the PPR's strategic and qualitative aims into local planning practice. Annex A therefore plays a crucial role in implementing the spatial configuration of the region by integrating landscape areas and units directly into the technical and procedural core of municipal planning practice (Regione Piemonte, 2017c).

While Annex B sets out the verification criteria for alignment with the PPR, Annex A of the Implementation Regulation details the minimum content and methodological structure of the urban planning variant that each municipality must prepare in order to adapt its PRG to the PPR. This annex is centered on ensuring that the process of adaptation is not only formal but fundamentally rooted in the recognition and integration of the landscape structure, specifically the landscape areas and units. Municipalities are required to demonstrate how the planning variant acknowledges the landscape classification and how it aligns with the strategic and qualitative objectives of the PPR. Annex A prescribes the inclusion of explanatory reports, comparative analyses, and cartographic outputs that demonstrate this alignment. These documents must clearly reflect how the local plan engages with the values, typologies, and transformations described for each area and unit. This annex also reinforces that adaptation is not just about incorporating constraints, but about integrating landscape identity into planning logic, establishing a key link between spatial knowledge and regulatory action (Regione Piemonte, 2017c).

4. Asti Land Use Plan

The analyses and descriptions presented in this chapter are based on internal documents, explanatory reports, and preliminary drafts developed during my internship at the Castelnovi planning studio. These materials, while not officially adopted or published by the Municipality of Asti, have been used as reference tools for understanding the technical framework, procedural context, and planning rationale underlying the current revision of Asti's Land Use Plan. All content reflects a diagnostic interpretation of these internal sources and does not represent institutional positions or finalized planning outcomes.

4.1 Environmental, Historical, and Social Factors Influencing Asti's Development

Asti represents a strategic position within the Piedmont region, functioning as both a central urban node and a connective hub in the broader territorial system. The municipality is positioned at the intersection of diverse environmental, geomorphological, and infrastructural conditions that have significantly influenced its development patterns over time. The structural interpretation of the territory, as structured in the regional and municipal planning documents, highlights the relationship between the city's settlement structure and the primary territorial matrices: the hydrographic network of the Tanaro River, the surrounding hilly landscape of Monferrato, and the historical outward-expanding routes that have shaped the expansion of the city. These elements form the foundational layer of Asti's urban and rural framework and have directed both the evolution of land uses and the distribution of services across the municipal territory. The geomorphological configuration plays a particularly important role: the historic city center developed along a semi-flat area at the southern foot of a wide hilly belt, while the expansion toward the north and south has encountered topographical and hydraulic constraints. To the south, the proximity to the Tanaro River and its secondary streams introduces hydraulic risk, while to the north, urbanization on sloped terrains raises issues related to soil stability and exposure. These environmental conditions do not only shape physical development—they also act as planning constraints that demand ongoing regulatory attention and limit the spatial flexibility of the urban form. In particular, the southern river-facing areas are identified as zones requiring careful monitoring for flood risk, while hillside zones to the north are subject to limits due to elevation changes and geomorphological vulnerability. These factors are deeply integrated in Asti's current land use planning, influencing both past growth patterns and future spatial strategies aimed at control, resilience, and protection of ecological networks.

Asti has long played an important role as a center of urban life and regional exchange, with more than eight centuries of continuous development. During the Middle Ages, it grew as a crossroads on major continental routes, most notably the Via di Francia, which followed the line of the Roman Via Fulvia and later became a central urban axis. This location helped establish Asti as a service and administrative hub for the surrounding rural areas—a role it has maintained, even as the city has undergone major social and economic changes. The historical settlement structure of Asti is closely linked to its geomorphological layout: the urban core developed on the lower plains alongside the Tanaro River, while the surrounding hills, historically characterized by rural settlements and fortified villages, defined the city's territorial

limits and cultural landscape. The phenomenon of "castling" during the medieval period, particularly in the Roero hills, and the outward spread of infrastructure from Asti toward Alba, Turin, and Alessandria reinforced the city's centrality. Asti's architectural and spatial identity, formed during its cultural and economic peak between the 12th and 15th centuries, is still visible in the historic center. This core continues to function as the administrative, symbolic, and institutional heart of the city. Over the centuries, this identity has influenced how the city is both perceived and used, reinforcing its position as a territorial capital well before the Province of Asti was formally established in 1935. The historical stratification of urban and rural relationships continues to influence current planning decisions, particularly in the integration of cultural heritage and traditional morphologies into contemporary development strategies.

The historical maps that follow show how Asti's urban form and territorial organization developed between the 18th and 20th centuries. They draw attention to the city's geomorphological setting, the expansion of its infrastructure, and the persistence of its basic morphological structure over time.

Figure 3 – Urban and Territorial Structure of Asti (1765):
This map illustrates the historical urban core at the foot of the hills, surrounded by watercourses and distant from the Tanaro, demonstrating early geomorphological awareness in site selection.
Source: Historical cartographic archive, public domain. Reproduction of Giovanni Antonio Sevalle's "Piano della Città di Asti," 1765.

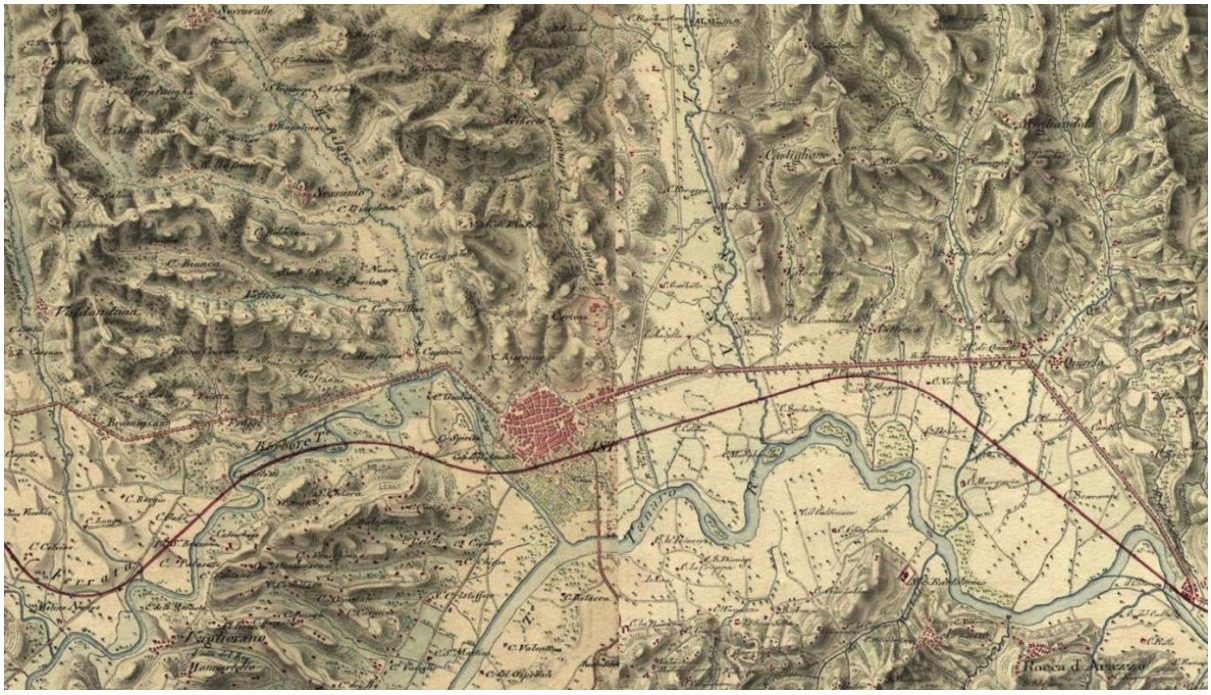

Figure 4 – Carta degli Stati Sardi (1852):
This 19th-century map confirms the stability of Asti's urban morphology, with the city still contained within its historic footprint and expansion limited to radial axes and early transport routes.
Source: Military Topographic Map of the Kingdom of Sardinia, 1852. Historical public domain archive.

Figure 5 – IGM Topographic Map (1934):
By the early 20th century, Asti begins to exhibit structured urban growth along its valleys and infrastructure lines, signalling the consolidation of its role as a regional center of commerce and services.
Source: Istituto Geografico Militare Italiano (IGM), Topographic Map of Asti, 1934. Public domain.

The demographic structure of Asti reflects long-term trends characteristic of many intermediate Italian cities, marked by a transition from mid-20th century expansion to present-day decline and aging. Following a period of significant growth in the post-war decades—where the municipality's population rose above the national average—the last two decades have witnessed a steady demographic decline accompanied by an increase in the average age of residents. This shift is especially notable in the rural hinterland, where the presence of scattered settlements and isolated settlement clusters has intensified processes of depopulation and lack of services. According to available territorial data, nearly 70% of the population within the province lives in outlying contexts with limited infrastructure and public services. This fragmented distribution has increased the functional centrality of Asti itself, which absorbs uneven demand for education, employment, healthcare, and mobility. The urban core thus acts as a gravitational pole for daily commuting, institutional services, and socio-economic activity. At the same time, the high share of elderly residents—especially those living alone—creates challenges linked to accessibility, housing conditions, and risks of social isolation. Demographic indicators also reveal a territorial imbalance: the capital supports a broad hinterland that is losing population, which puts long-term pressure on its spatial structure and planning capacity. These trends show how demographic change and planning are closely connected, underlining the need to interpret land-use dynamics with attention to social and population vulnerabilities.

The settlement morphology of Asti shows a dual nature: on one side, a compact city core, and on the other, a dispersed rural network. This contrast produces a territory that appears fragmented in structure yet remains closely connected in function. The historic center is marked by dense building patterns and a steady presence of services and institutions, while the outlying zones—especially in the hills and valleys—follow a more scattered and polycentric development pattern. This includes clusters of small villages, isolated houses, and agricultural outposts that have developed historically around productive activities and transit axes. The evolution of this morphology has been shaped not only by the geomorphological and hydrographic features of the area but also by longstanding socio-economic patterns, such as small-scale farming, the subdivision of landownership, and the limited presence of industrial poles. Over the years, Asti's rural areas have undergone gradual population decline, as aging and outmigration have left many buildings underused and densities reduced. Meanwhile, the city has concentrated most of the administrative and residential growth. Yet the two systems remain closely connected: the urban core delivers the main functions, while the countryside sustains ecological, landscape, and productive roles that are vital for the municipality's identity and balance. In today's planning approaches, this dual structure is not seen as a weakness but as a fundamental condition that requires respect and careful interpretation, particularly in light of urban expansion pressures and the need to safeguard rural resilience and continuity. The following figure illustrates these demographic trends, highlighting Asti's population structure, household makeup, and aging profile for 2024–2025.

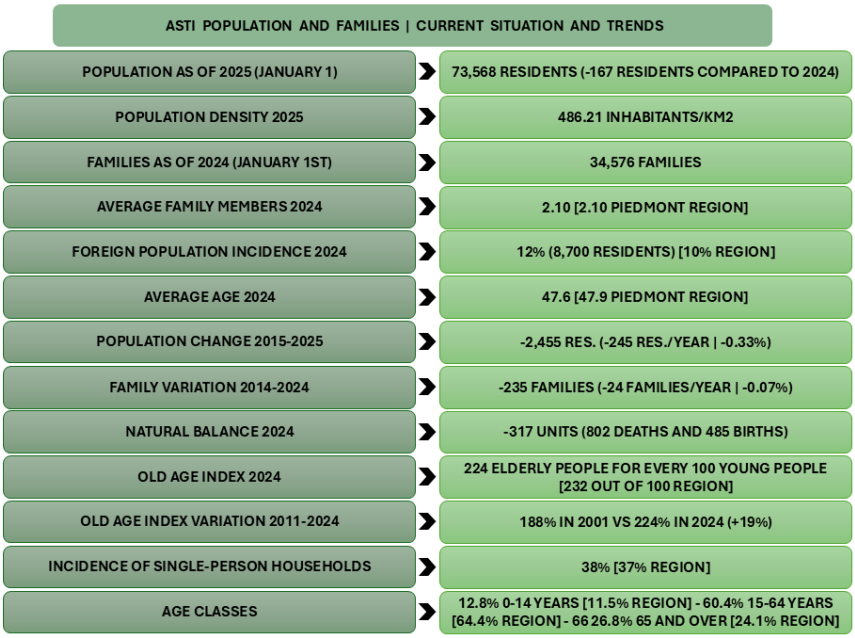

Figure 6 – Demographic and Household Indicators for the Municipality of Asti (2024–2025)
Source: Elaboration by the author based on ISTAT data and preliminary unpublished planning materials.

Asti's landscape is shaped by a long-standing cultural heritage that reflects centuries of interaction between human settlement and its environmental setting. The municipality forms part of the broader Monferrato landscape, a UNESCO World Heritage site of outstanding scenic and cultural significance, characterized by vineyards, ridgelines, historic villages, and terraced agricultural systems. Within this context, Asti assumes a dual role: safeguarding architectural and historical continuity in the urban center, while at the same time preserving rural heritage across its surrounding territories. The local landscape is organized through a combination of built, natural, and symbolic elements that together sustain a coherent identity, including medieval towers, Romanesque churches, linear vineyard structures, and historical road networks that maintain strong ties to the past. The Piemonte Regional Landscape Plan (PPR) acknowledges these components not only for their visual and historical qualities but also for their ecological and functional relevance within the wider territorial system. Particular emphasis is placed on visibility corridors, scenic viewpoints, and culturally significant landmarks that link spatial perception to both lived experience and symbolic meaning. The presence of landscape assets protected under Articles 136 and 142 of the Codice further reinforces the regulatory significance of these elements, ensuring their safeguarding within planning instruments. This stratified landscape—composed of environmental, visual, and historical dimensions—continues to structure the spatial identity of Asti, connecting present planning practices to a broader territorial narrative that extends beyond the limits of the urban fabric.

The environmental dimension of Asti's territory is characterized by a combination of hydrogeological risk, ecological fragility, and exposure to climate-related pressures, which significantly influence the priorities of urban planning and land management. One of the major concerns is the hydraulic risk associated with the Tanaro River and its branches, particularly in

the southern part of the municipality. These areas are periodically exposed to flooding events, and their vulnerability is worsened by soil sealing and historical urban expansion into low-lying zones. In the northern part of the municipality, unstable slopes and the irregular morphology of the hills create further constraints, most notably in relation to landslide risk and the challenges of maintaining infrastructure. Alongside these physical vulnerabilities, the area also shows signs of ecological stress. Evidence such as the break-up of green corridors, the reduced continuity of habitat systems, and the decline in soil quality in agricultural areas indicates a weakening of ecosystem functions, particularly in peri-urban zones exposed to ongoing pressures from land conversion. According to environmental evaluations carried out in the context of the Strategic Environmental Assessment (VAS), areas of concern include not only the geomorphologically fragile landscapes but also those affected by air pollution linked to vehicular traffic and thermal emissions. These factors—when viewed as part of a systemic territorial interpretation—highlight the need for a planning approach that is responsive to ecological thresholds, capable of reducing exposure to risk, and sensitive to the functional resilience of Asti's diverse landscape units. While regulatory tools enforce minimum standards for environmental protection, it is the recognition of interdependencies between ecological systems and settlement dynamics that most deeply informs the analytical framework within which Asti's land use plan operates.

Taken together, the environmental, historical, and social factors that define Asti's development outline a territorial system shaped by complexity, interdependence, and structural imbalance. The contrast between Asti's compact urban center and its sparsely populated rural surroundings generates functional imbalances that demand careful interpretation within planning processes. Environmental constraints—most notably hydraulic vulnerability and geomorphological instability—are not secondary risks but structural conditions that shape both the scope and direction of future land use transformations. At the same time, demographic fragility, expressed through aging populations, dispersed settlement, and declining density, reinforces Asti's central role as a service hub while intensifying pressures on its spatial and infrastructural systems. Cultural and landscape heritage adds further complexity, requiring safeguards not only as fixed assets but as active elements of territorial identity and ecological continuity. Taken together, these dimensions highlight the analytical complexity that frames the city's land use planning. Instead of being considered in isolation, they are addressed through an integrated approach in which municipal planning tools rely on territorial diagnostics, strategic environmental assessments, and heritage-oriented perspectives. The outcome is a planning framework that must continually balance preservation with adaptation, centrality with dispersion, and risk mitigation with development opportunities. This synthesis provides the analytical basis for the strategic directions embedded in Asti's Land Use Plan. The following maps present a combined reading of Asti's territorial and urban development: the first two trace the evolution of the city's built fabric and road network from 1934 to the present, showing how successive phases of planning consolidated the compact urban core and its outward growth. These are followed by structural interpretations that reveal the spatial interplay between landscape matrices, rural settlement patterns, and geomorphological features across the municipal territory.

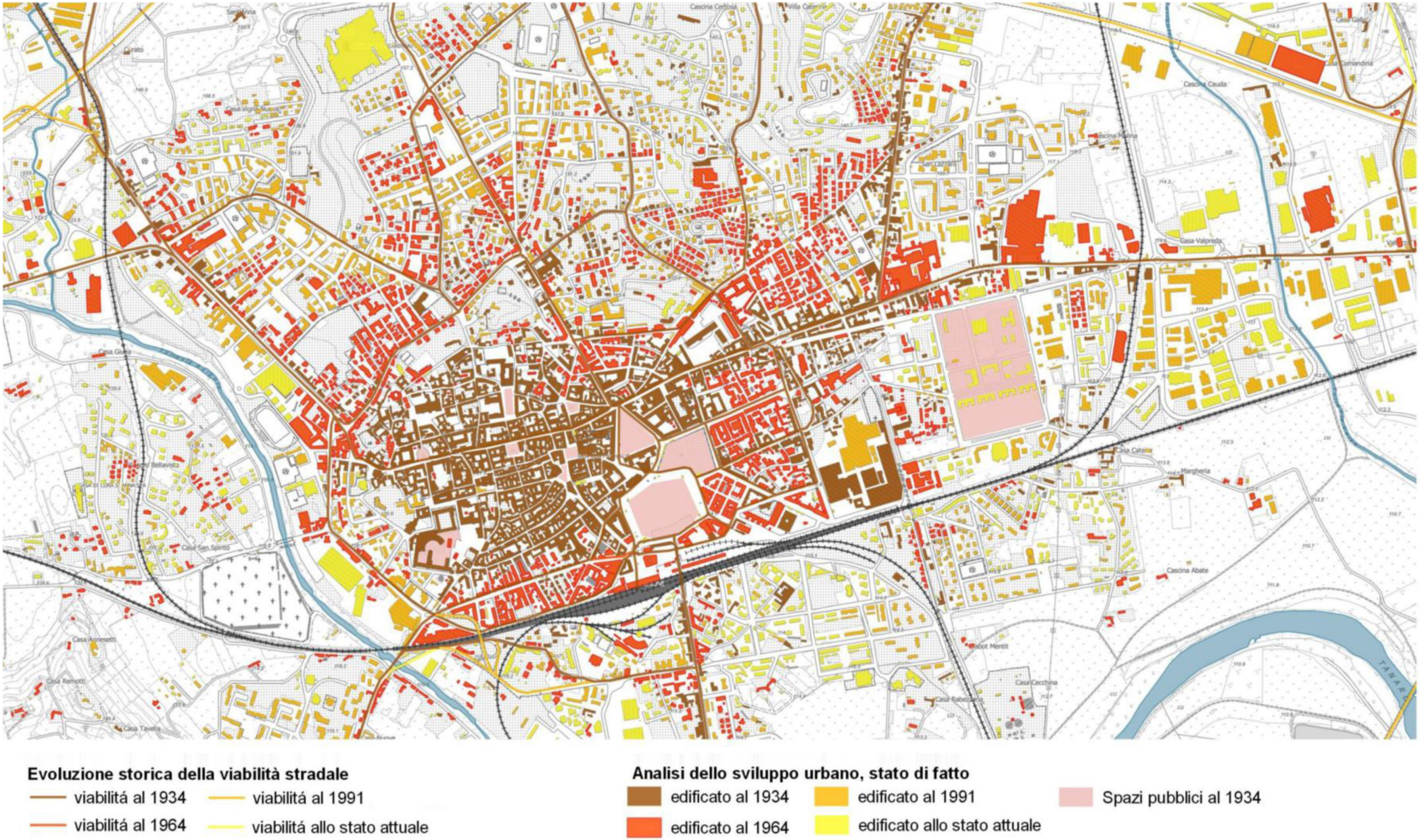

Figure 7 – Evolution of Urban Fabric and Road Network (City Scale): Cartographic representation of urban development phases (1934, 1964, 1991, present) and road network transformations within the urban core of Asti, highlighting internal densification and public space formation during the 20th century.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

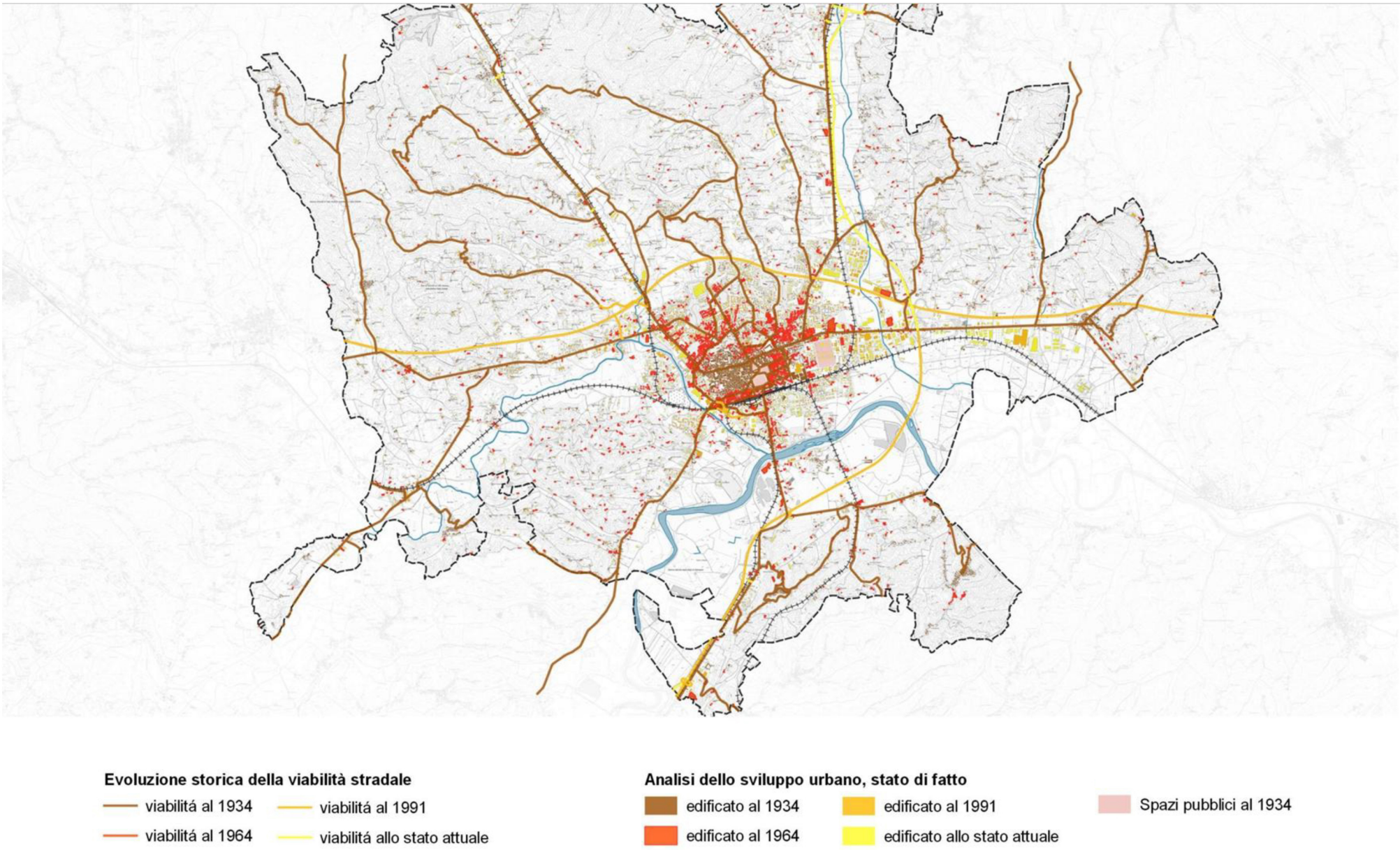

Figure 8 – Evolution of Urban Fabric and Road Network (Municipal Scale): Territorial-scale view of the same historical periods, showing the outward spread of built-up areas, radial axes, and their relationship to natural features such as the Tanaro River and hillside topography.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

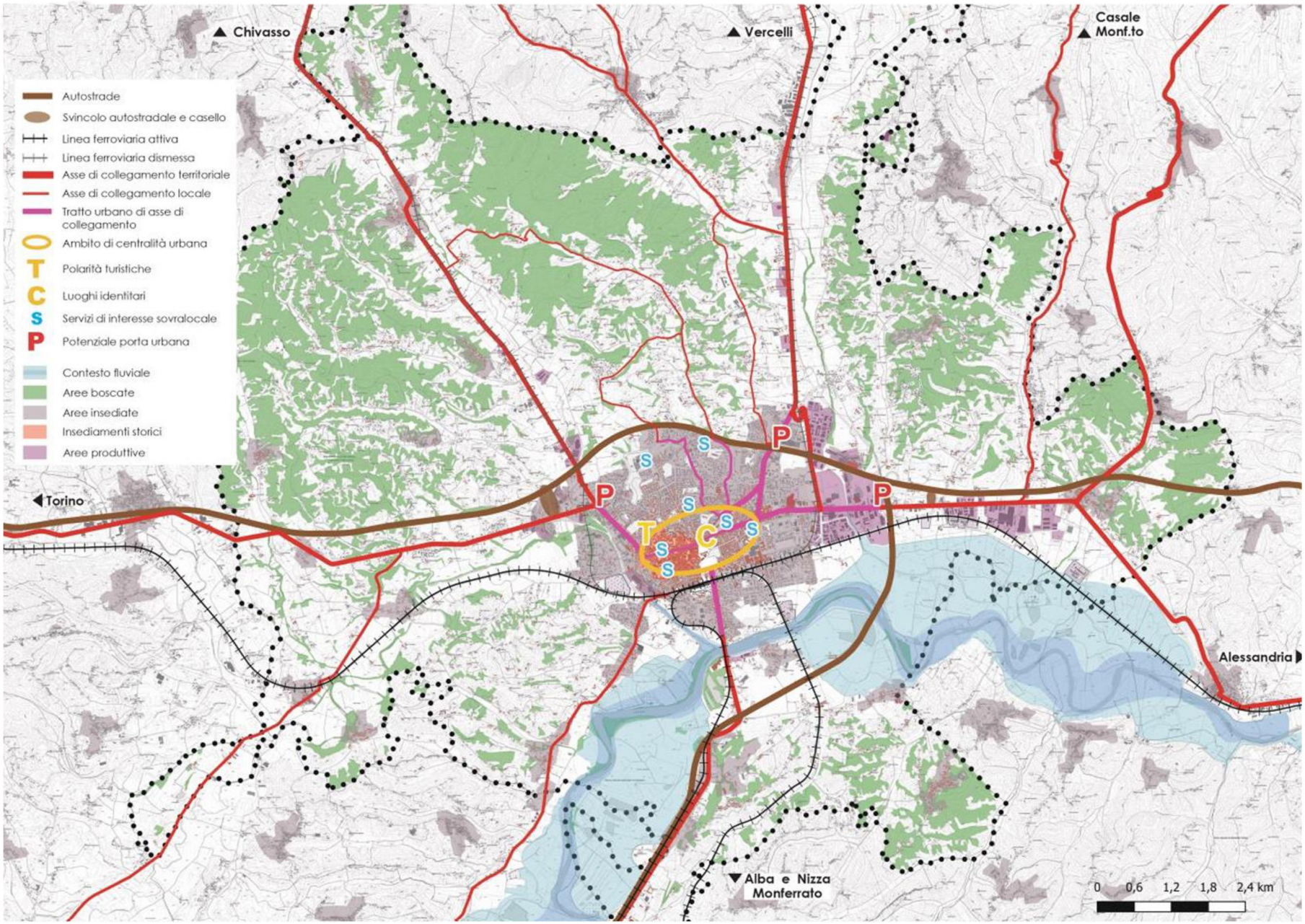

Figure 9 – Structural Interpretation of Asti's Territorial Framework
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

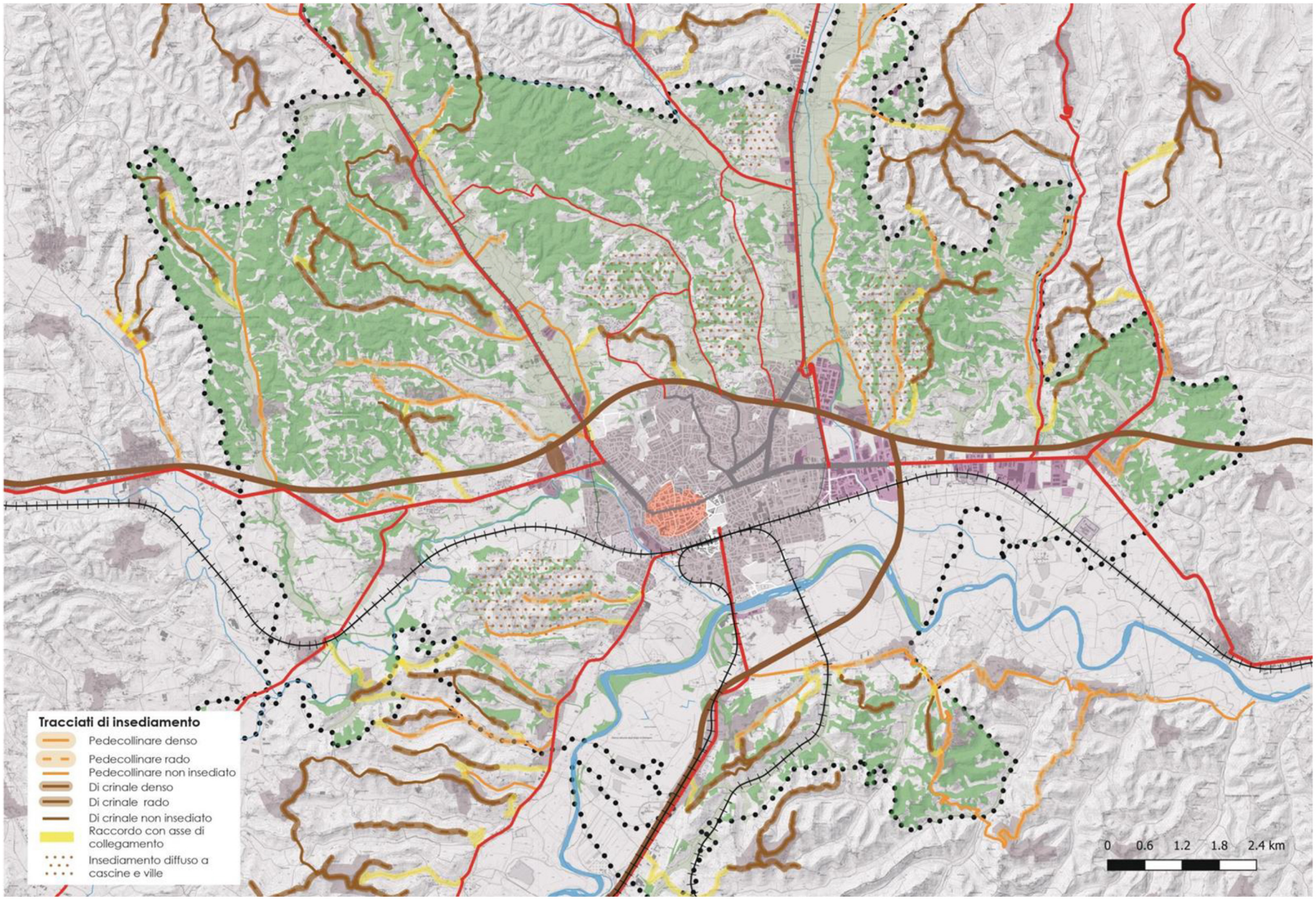

Figure 10 – Traced classification of rural settlement types, including foothill and ridgeline settlements, connective alignments, and dispersed structures such as farmsteads and villas, based on geomorphological logic and historical patterns.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

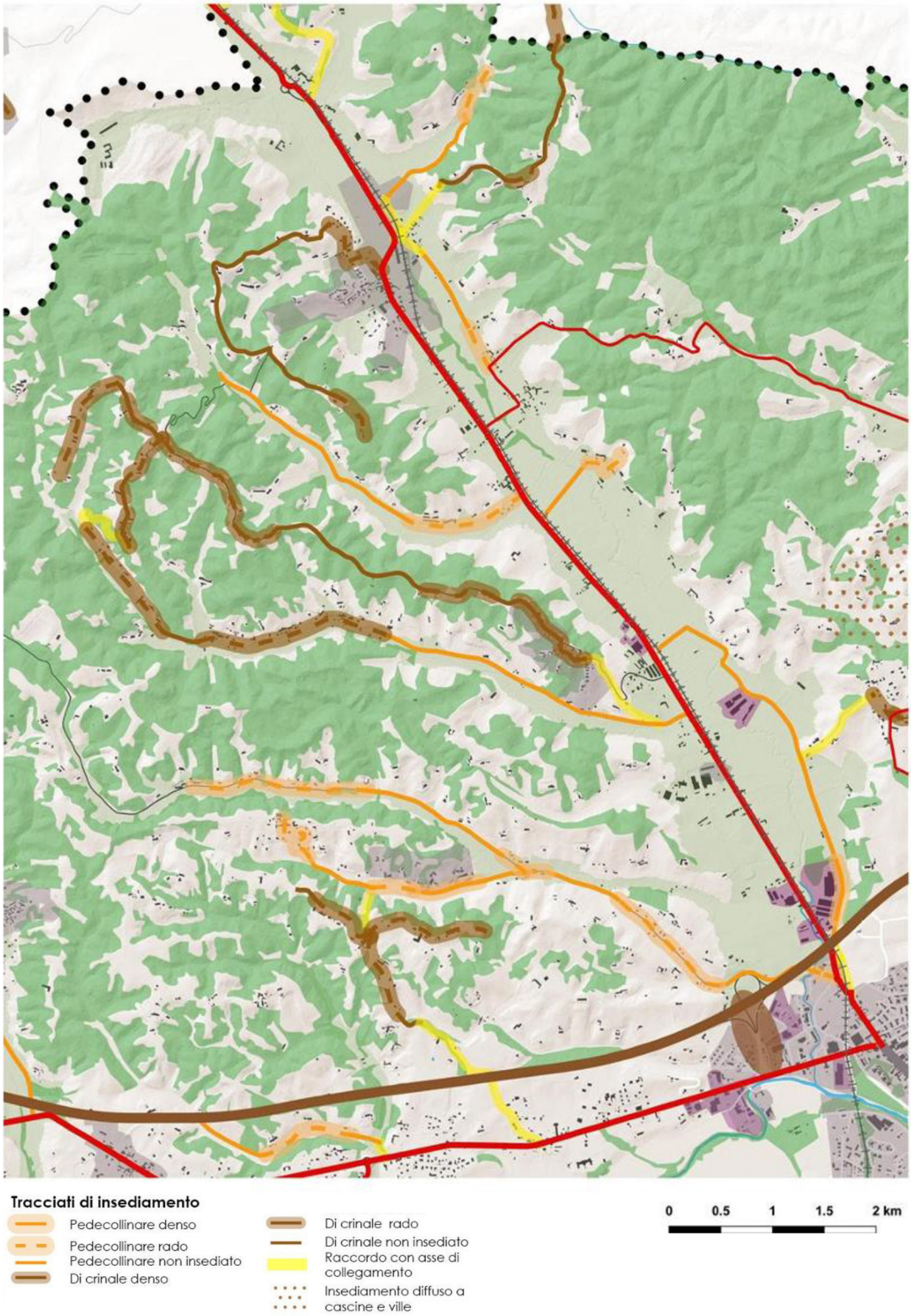

Figure 11 – Close-up view of rural settlement structures in the northeastern hilly sector of Asti, illustrating foothill and ridgeline alignments in relation to infrastructure and landscape matrix.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

4.2 Strategic orientation of Asti Land Use Plan

The current Land Use Plan (PRGC) of Asti is structured around the objective of redefining the spatial logic of the city in response to demographic, environmental, and infrastructural challenges. It moves away from a static, expansion-driven model and adopts a more integrated and adaptive framework centered on environmental compatibility, urban efficiency, and territorial cohesion. This strategic orientation is based on an analysis of the city's morphology, land-use dynamics, and patterns of settlement functionality. A central principle of the revised planning approach is to limit urban sprawl by focusing on the reuse and rehabilitation of underutilized or degraded areas within the existing urban fabric. Instead of pushing development into rural or environmentally sensitive areas, the plan gives priority to processes of internal regeneration and the strengthening of urban centralities. This shift reflects an awareness of the territorial limits imposed by Asti's hydrographic and geomorphological structure, as well as the need to reduce ecological fragmentation and preserve agricultural continuity. The PRGC thus positions itself as a regulatory and interpretive tool that operates not only through zoning, but also through a vision capable of coordinating environmental, infrastructural, and socio-economic dimensions. In this sense, strategic orientation is not limited to spatial distribution but extends to redefining the relationship between urban form and landscape, between mobility networks and ecological corridors, and between demographic needs and public services provisioning. The plan explicitly acknowledges the complexity of these relationships and aims to establish a framework that is both coherent with regional objectives and responsive to local territorial specificities.

These territorial specificities are particularly evident in the current housing conditions and future demographic trajectories of Asti. Understanding how the existing building stock is distributed, utilized, and dimensioned provides a foundational reference for assessing the spatial and infrastructural capacity of the municipality. At the same time, medium-term population projections—such as the decline in residents, the increase in smaller households, and the aging trend—highlight the socio-demographic pressures that the PRGC must anticipate. These aspects are made tangible through the figures that follow.

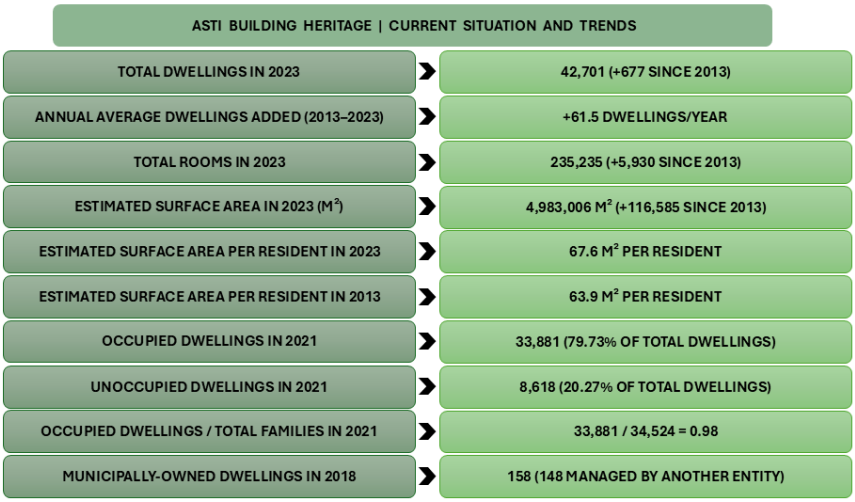

Figure 12 – Current Housing Stock, Residential Surfaces, and Occupancy Patterns in Asti (2013–2023)
Source: Elaborated by the author based on ISTAT data, projections, and unofficial studio drafts.

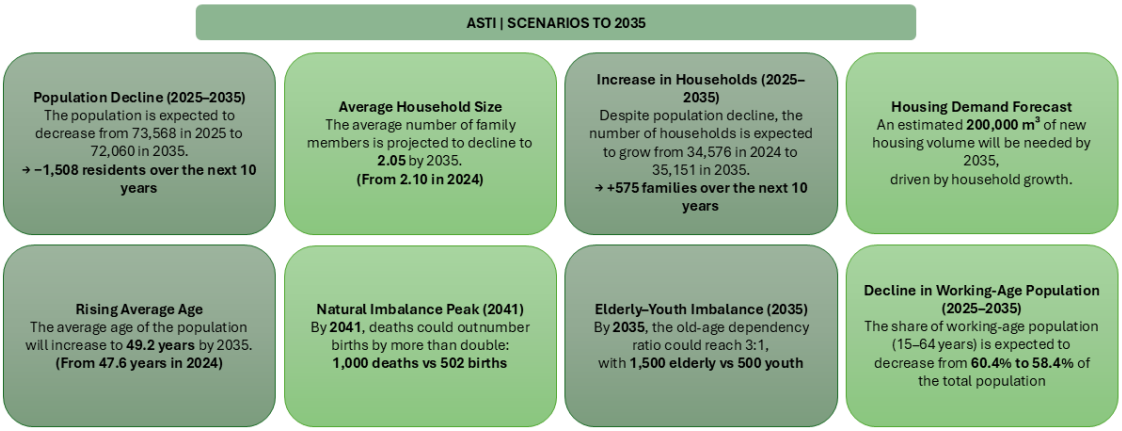

Figure 13 – Demographic and Housing Trends Informing Strategic Planning Objectives in Asti (2025–2035)
Source: Elaborated by the author based on ISTAT data, projections, and unofficial studio drafts.

The functional structure of Asti's territory, as established by the PRGC, is organized through a zoning framework that divides land into categories defined by their main uses, planning purposes, and environmental constraints. This framework distinguishes consolidated urban areas, expansion zones, agricultural land, production districts, and areas of environmental or landscape significance. Consolidated urban areas comprise both historic and more recent residential fabrics, service centers, and mixed-use districts, where planning strategies emphasize densification, regeneration, and stronger functional integration. Expansion zones, by contrast, are now addressed with greater restraint and limited to carefully chosen sectors where growth does not threaten ecological balance or overload infrastructure systems. Agricultural land, which covers a large share of the municipal territory, is assigned a dual function: maintaining productive activity while serving as an ecological buffer. Within this framework, the PRGC differentiates between high-value agricultural systems—such as vineyards and orchards characteristic of the Monferrato landscape—and marginal lands that

are more exposed to transformation pressures. Production and craft-industrial areas are geographically concentrated and subject to regulations aimed at preventing dispersed growth, with particular attention to compatibility, accessibility, and the provision of infrastructure. At the same time, zones of environmental value—including river corridors, ecological nodes, and landscape assets—are integrated into the zoning system through specific classifications that restrict building rights and establish protection measures in line with regional and national legislation. Beyond its technical function, this framework operates as the backbone of the plan's strategic approach, reflecting a planning culture that prioritizes spatial efficiency, environmental protection, and sustainable land governance.

Figure 14 – Economic and Employment Indicators for the Municipality of Asti (2021–2023)
Source: Elaborated by the author based on ISTAT data, projections, and unofficial studio drafts.

The zoning logic presented above is visually represented in the following two figures. The first map, taken from Variante Parziale 39 of the PRGC, illustrates the spatial classification of areas defined by the plan's zoning codes—such as consolidated residential zones, transformation sectors, new urban development areas, and productive districts. The second image groups these codes into broader functional categories, offering an interpretive synthesis aligned with the strategic orientation of the PRGC.

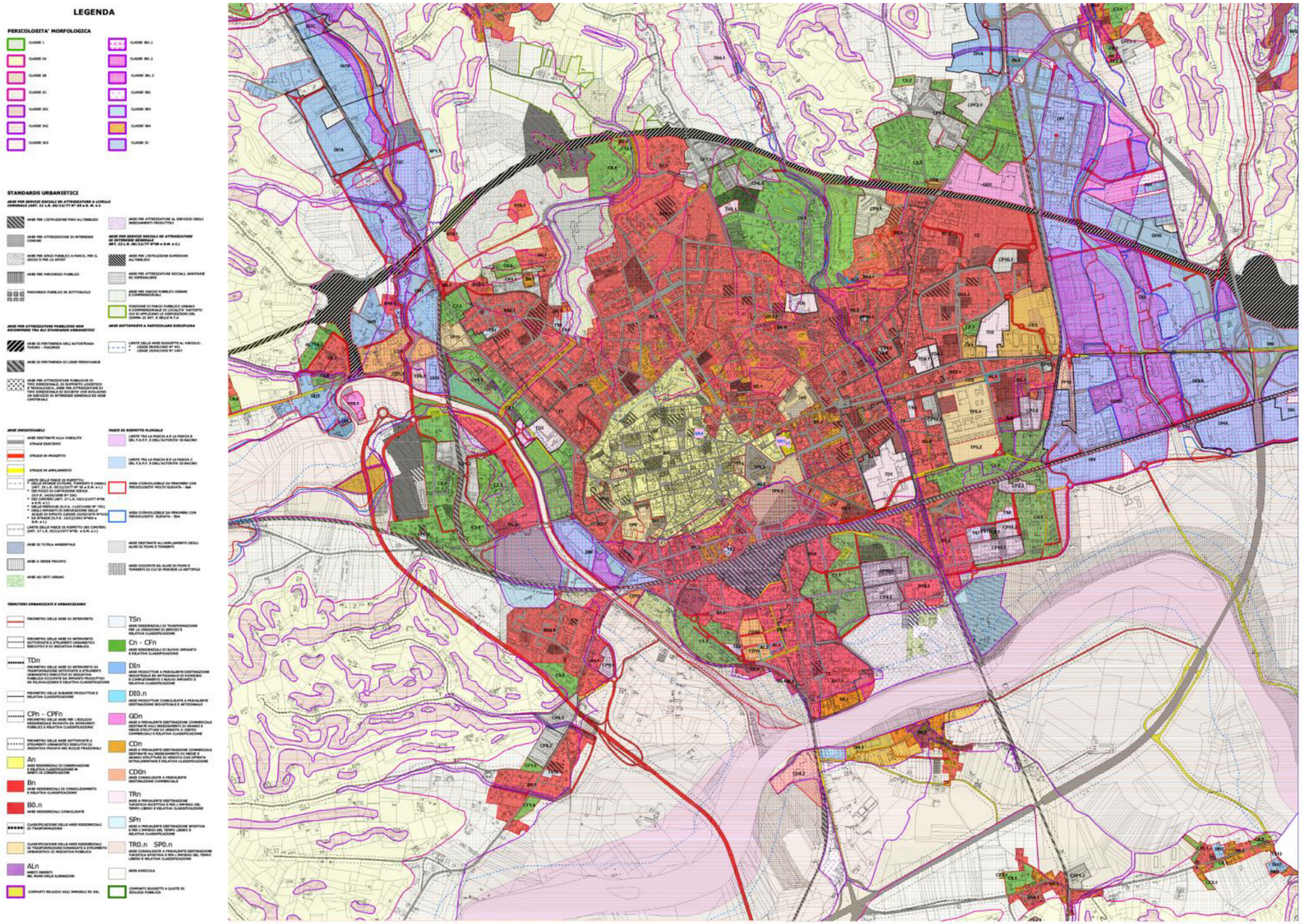

Figure 15 – Zoning Map: Variante Parziale 39 (PRGC of Asti)
Source: Elaborated by the author based on official PRGC documentation, Variante Parziale 39, DGR n. 30-71/200.

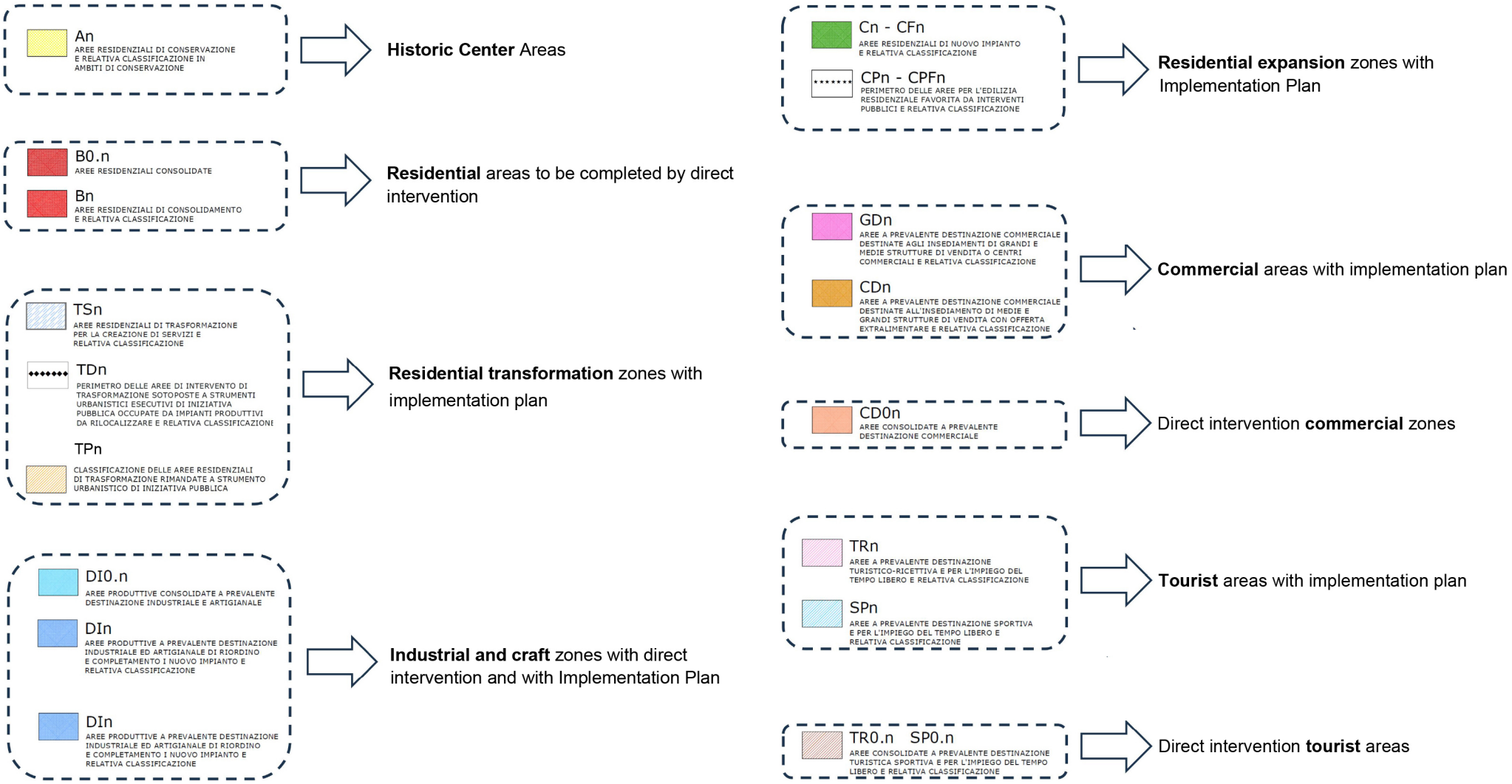

Figure 16 – Functional Grouping of PRGC Zoning Codes
Source: Elaborated by the author based on internal studio analysis and zoning documentation from Variante Parziale 39.

The strategic framework of the PRGC is carried out through a set of planning instruments and implementation tools designed to align the overall vision with its practical application. Among these are regulatory zoning tables, planning directives, detailed implementation plans (piani attuativi), and coordination protocols with supra-local frameworks such as the Regional Landscape Plan (PPR) and the PAESC (Action Plan for Sustainable Energy and Climate). A key component of this system is the use of Schede Norma (standardized regulatory forms), which specify authorized interventions, land-use categories, volumetric thresholds, and environmental constraints for each designated zone. These forms provide a clear basis for governing transformation processes while maintaining consistency with the broader planning strategy. The PRGC also incorporates sectoral overlays addressing specific dimensions—including mobility, environmental infrastructure, and social services—so that zoning decisions remain integrated with functional systems. In areas of environmental or cultural sensitivity, planning directives are further reinforced by constraints derived from the Codice and by PPR classifications, adding an additional layer of territorial accountability. Importantly, the PRGC is conceived as a flexible framework, capable of being updated through targeted variants and strategic revisions, such as the current general variant ex-L.R. 56/1977. This adaptability ensures that the plan remains responsive to evolving needs without compromising its structural coherence. The combination of normative clarity, environmental integration, and institutional coordination positions the PRGC not only as a technical document, but as a strategic device for directing Asti's territorial evolution in line with principles of sustainability and territorial equity.

Environmental sustainability and landscape integration are fundamental pillars of Asti's PRGC, which clearly aligns its strategic approach with regional and national planning tools aimed at safeguarding ecological balance and promoting responsible land governance. The plan integrates the objectives of the Piemonte Regional Landscape Plan (PPR) by incorporating landscape values into its regulatory and interpretive frameworks. This includes the recognition of visibility corridors, protected assets, and the structuring role of rural and agricultural systems within the broader territorial mosaic. Ecological infrastructure—comprising river networks, wooded areas, and agroforestry systems—is not only preserved but actively mapped and factored into the organization of urban expansion and infrastructural interventions. In addition to the PPR, the PRGC is informed by sustainability principles expressed in the Strategic Environmental Assessment (VAS), which evaluates potential impacts on water resources, air quality, biodiversity, and climate resilience. The plan adopts a preventive logic that prioritizes interventions capable of mitigating hydrogeological risk, improving soil permeability, and ensuring continuity across ecological corridors. These objectives are further reinforced by the PAESC, which introduces long-term commitments to energy efficiency, emissions reduction, and climate adaptation. As a result, the strategic approach of the plan does not treat environmental factors as external constraints but as fundamental drivers of spatial decisions. By integrating sustainability objectives with regulatory mechanisms, the PRGC functions as a framework that balances urban demands with territorial integrity, guiding future development in a way that respects ecological thresholds and the cultural distinctiveness of Asti's landscape.

A central component of Asti's planning strategy is the goal of territorial equity through the rationalization of public services and infrastructural accessibility across the municipal territory.

The PRGC recognizes the spatial disparities produced by decades of uneven development, especially between the consolidated urban core and the surrounding rural or peripheral settlements. In response, the plan promotes a multi-access strategy aimed at reinforcing existing infrastructural corridors and improving links between marginalized areas and central service nodes. Rather than proposing new large-scale infrastructures, it emphasizes the optimization of current mobility networks by enhancing their continuity, safety, and permeability. Specific attention is given to facilitating access to supra-local service hubs, such as the hospital, railway station, and major educational institutions, through integrated transport planning and the requalification of underused road segments. Additionally, the PRGC identifies key urban polarities, including historical commercial axes and public spaces, where service intensity can be increased without triggering uncontrolled densification. In the rural areas, planning priorities emphasize the maintenance of essential services and the strengthening of local nodes that connect dispersed dwellings with the urban center. This rebalancing is conceived not only in spatial terms but also in social ones, as the measures seek to reduce disparities in housing quality, access to green spaces, and the provision of social infrastructure—especially for vulnerable groups such as the elderly and residents in isolated contexts. By integrating these considerations into its strategic approach, the PRGC seeks to construct a more balanced territorial system, where accessibility and service provision are no longer concentrated only in the city center but fairly extended throughout the municipal landscape.

The implementation of the PRGC's strategic orientation is deeply rooted in the regulatory precision provided by the Norme Tecniche di Attuazione (NTA), which define in detail the conditions, constraints, and possibilities for transformation across each zoning category. These technical norms operate through a system of coded classifications and tabular data that assign each territorial sector a specific use classification—residential, agricultural, productive, services, or environmental protection—along with related indices and operational parameters. Each zoning code is linked to a defined set of requirements, which cover maximum coverage ratios, volumetric limits, minimum distances, building typologies, and, in many cases, compatibility with existing landscape or environmental regulations. For instance, consolidated residential areas may permit renovation and infill, provided that strict rules of morphological continuity are respected, while expansion areas cannot be developed without the prior preparation of detailed implementation plans (piani attuativi). Agricultural land is subject to stringent restrictions on building volumes and allowable uses, particularly in high-value productive or landscape areas, in line with the strategic aim of reducing soil consumption. In addition, the NTA introduces environmental overlays—such as hydrogeological risk classifications or PPR-based constraints—that provide an interpretive layer to zoning and ensure that regulations remain anchored in territorial conditions. Through this codified framework, the PRGC promotes coherence and transparency in land governance, enabling planners, technicians, and citizens to navigate the municipal spatial system with greater clarity.

An essential element of the PRGC’s spatial strategy is the identification and targeted management of urban regeneration areas, understood as underutilized, obsolete, or morphologically inconsistent parts of the consolidated urban fabric. Rather than being reserved for expansion, these areas are prioritized for requalification, densification, and functional

adaptation to contemporary planning objectives. The criteria used to define regeneration areas include indicators such as building deterioration, gaps in service accessibility, environmental inefficiencies (for example, extensive impermeable surfaces), and spatial discontinuities with the surrounding urban fabric. Once identified, these areas are subject to a differentiated regulatory logic that often relaxes certain regulatory thresholds or offers administrative benefits —such as simplified approval processes or public-private implementation protocols—to facilitate transformation. The PRGC outlines specific "ambiti di riqualificazione urbana" (urban renewal zones) in which development is tied to objectives like improving public space continuity, increasing permeability, restoring typological coherence, or integrating green infrastructure. In these contexts, the plan often calls for design-based approaches that must follow not only with volumetric and morphological standards, but also with qualitative criteria related to landscape integration, visual mitigation, and energy performance. The regeneration strategy aligns with the broader goal of limiting outlying expansion, concentrating investments within the existing city footprint, and enhancing the quality and resilience of the built environment. It is also framed within the regional vision promoted by the PPR and PAESC, which emphasize adaptive reuse, soil protection, and urban metabolism reduction as key levers for sustainable territorial transformation.

The strategic coherence of Asti's PRGC is reinforced through its intentional alignment with supra-local planning tools, particularly the Piemonte Regional Landscape Plan (PPR) and the PAESC (Action Plan for Sustainable Energy and Climate). These documents do not serve as external references but are structurally integrated into the logic and mechanisms of the local land use plan. The PPR provides a framework for interpreting the landscape not as a static background but as an active spatial system composed of landscape units, visibility networks, and protected assets. Following the PPR, the PRGC maps and regulates areas of landscape sensitivity—such as panoramic ridgelines, historical viewpoints, and visibility corridors—by incorporating them directly into the zoning system through dedicated constraints and prescriptive overlays. These spatial values inform not only protection strategies but also development compatibility assessments and morphological guidelines. Simultaneously, the PRGC aligns with the PAESC by integrating energy transition goals into its spatial framework. This includes support for soft mobility corridors, integration of green-blue infrastructure, and promotion of building typologies compatible with energy efficiency standards. The PRGC also limits new land consumption and prioritizes requalification, contributing to the broader objective of reducing the municipality's ecological footprint. This dual alignment demonstrates how local spatial planning is increasingly required to function within a multi-level system of governance, where municipal actions are both guided by and supportive of regional and national strategies for sustainability, resilience, and landscape safeguarding. In doing so, the PRGC reinforces its role not only as a regulatory instrument but as an integrative platform for multi-scalar territorial coherence.

In sum, the strategic orientation of Asti's Land Use Plan reflects an intentional evolution from traditional growth-oriented planning toward a multidimensional framework grounded in environmental responsibility, functional equity, and territorial coherence. Through a tightly structured zoning system, the integration of normative instruments such as the NTA, and alignment with broader frameworks like the PPR and PAESC, the PRGC promotes a planning

culture that is both context-sensitive and forward-looking. Rather than focusing on growth as a quantitative objective, the plan prioritizes the quality of spatial transformations, aiming to regenerate the urban core, mitigate environmental risks, and preserve the integrity of the rural and landscape matrix. This approach recognizes the structural imbalances of Asti's territory—between consolidated and marginal areas, urban centrality and rural spread, regulatory constraints and underlying development pressure—and responds with context-specific strategies tailored to each condition. At the same time, the PRGC positions itself as a dynamic and adaptable tool, capable of responding to shifting demographic, climatic, and institutional conditions without sacrificing coherence or continuity. In doing so, it not only addresses immediate spatial and functional challenges but also establishes the foundations for a long-term territorial project that is compatible with the ecological, cultural, and social identity of Asti.

To complement this strategic orientation, the following land cover maps offer a detailed spatial representation of Asti's current territorial composition as of 2023. Based on regional classification datasets and internal elaborations, these visualizations categorize the municipality's surface into residential typologies, productive and infrastructural zones, agricultural lands, ecological areas, and public green spaces. This classification provides an additional interpretive layer to assess how the spatial logics embedded in the PRGC align with the actual land use patterns observed across the territory.

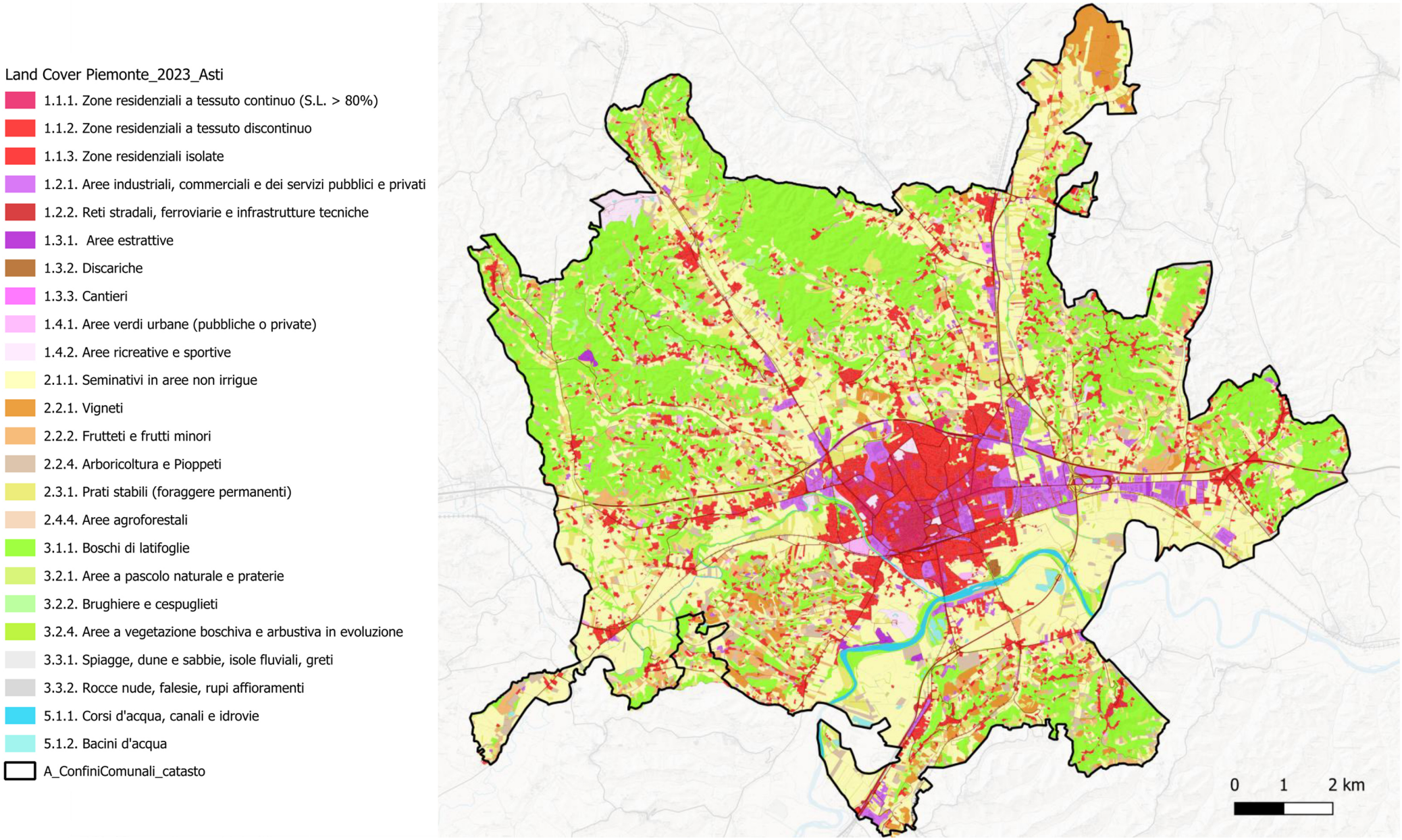

Figure 17 – Land Cover Typologies in the Municipality of Asti (2023)
Source: Elaborated by the author based on Land Cover Piemonte_2023 dataset and unpublished internal studio drafts.

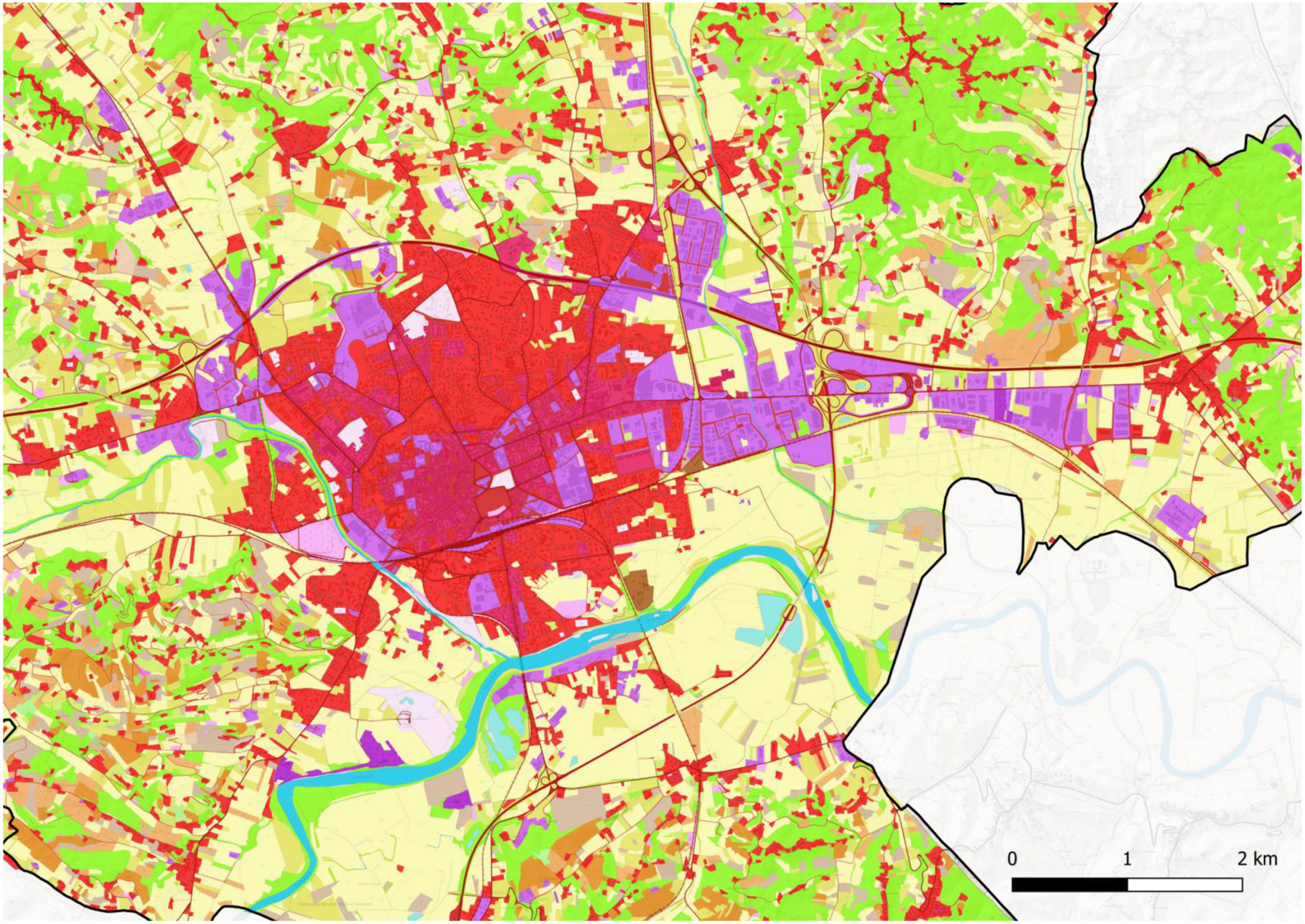

Figure 18 – Land Cover Classification (Zoomed View of Asti Urban Core)
Source: Elaborated by the author based on Land Cover Piemonte_2023 dataset and unpublished internal studio drafts.

5. Piemonte PPR and the Asti Land Use Plan

5.1 Landscape Assets and Planning Constraints

The following subchapters represent a shift from the theoretical and regulatory framework outlined in previous chapters to a more operational and experience-based dimension. From this point onward, the content is drawn directly from my participation in the planning activities carried out during my internship within a technical studio involved in the preliminary study phase of the Asti PRGC variant. It is essential to clarify that the analyses, maps, and observations presented in this section are the result of internally conducted research and GIS-based territorial evaluations, and do not represent official positions, approved documents, or validated planning decisions by the municipal administration. All material refers exclusively to the study and problem-analysis phase, developed for internal purposes using spatial tools such as QGIS, and should be interpreted as a technical exploration of landscape-related constraints within the limits of the planning framework—not as definitive or institutionally approved interpretations.

The identification of landscape constraints was conducted through the processing of geospatial data on legally protected elements, such as wooded areas, watercourses, panoramic viewpoints, and historically designated sites. These constraints were classified by legal and environmental typology and then overlaid onto the municipal base map using GIS tools. Each category was represented by a distinct visual symbol to facilitate interpretation and thematic mapping. The resulting spatial analysis highlighted zones of overlap and concentration, particularly where ecological and scenic assets coincide with urban edges or planned transformation areas. Several of these intersections were found in peripheral sectors, where fragmented settlement patterns come into contact with environmentally sensitive zones. The aim of this phase was to document the territorial distribution of protections, identify potential areas of conflict, and provide a systematic reading of the constraint framework, without moving into prescriptive evaluations or planning proposals.

The spatial distribution of landscape constraints within the municipality reveals a clear territorial differentiation. Significant clusters of protected elements were identified along the Tanaro River corridor, within the wooded areas of Valmanera, and across hillside sectors of notable scenic and ecological value. These zones display a high concentration of overlapping constraints, frequently combining visual safeguards, vegetation cover, and hydrogeological sensitivity. No evaluative conclusions were drawn at this stage; the observations were instead used to outline the structural patterns that define the landscape system and its relationship with the urban fabric. These concentrated areas subsequently provided reference points for cross-analysis with zoning, morphology, and scenic exposure.

An important aspect of the constraint analysis involved observing the intersections between protected landscape elements and zones previously designated for transformation in the existing land use plan. These intersections were mapped to visualize where urban expansion areas—particularly those classified for residential or productive development— overlap with high-value ecological corridors, wooded surfaces, or visually sensitive areas. The analysis

revealed several critical overlaps, especially in edge areas where transformation zones are next to riverbanks, panoramic ridgelines, or protected slopes. In these contexts, the mapping exercise highlighted conditions of spatial tension, but no evaluations were made regarding the compatibility or feasibility of development. The objective remained limited to establishing a descriptive framework of constraint–transformation relationships as a basis for further investigation, without formulating planning responses or regulatory interpretations.

Figure 19 – Comparison of Landscape Assets (Arts. 136 & 157) According to PPR and PRGC
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

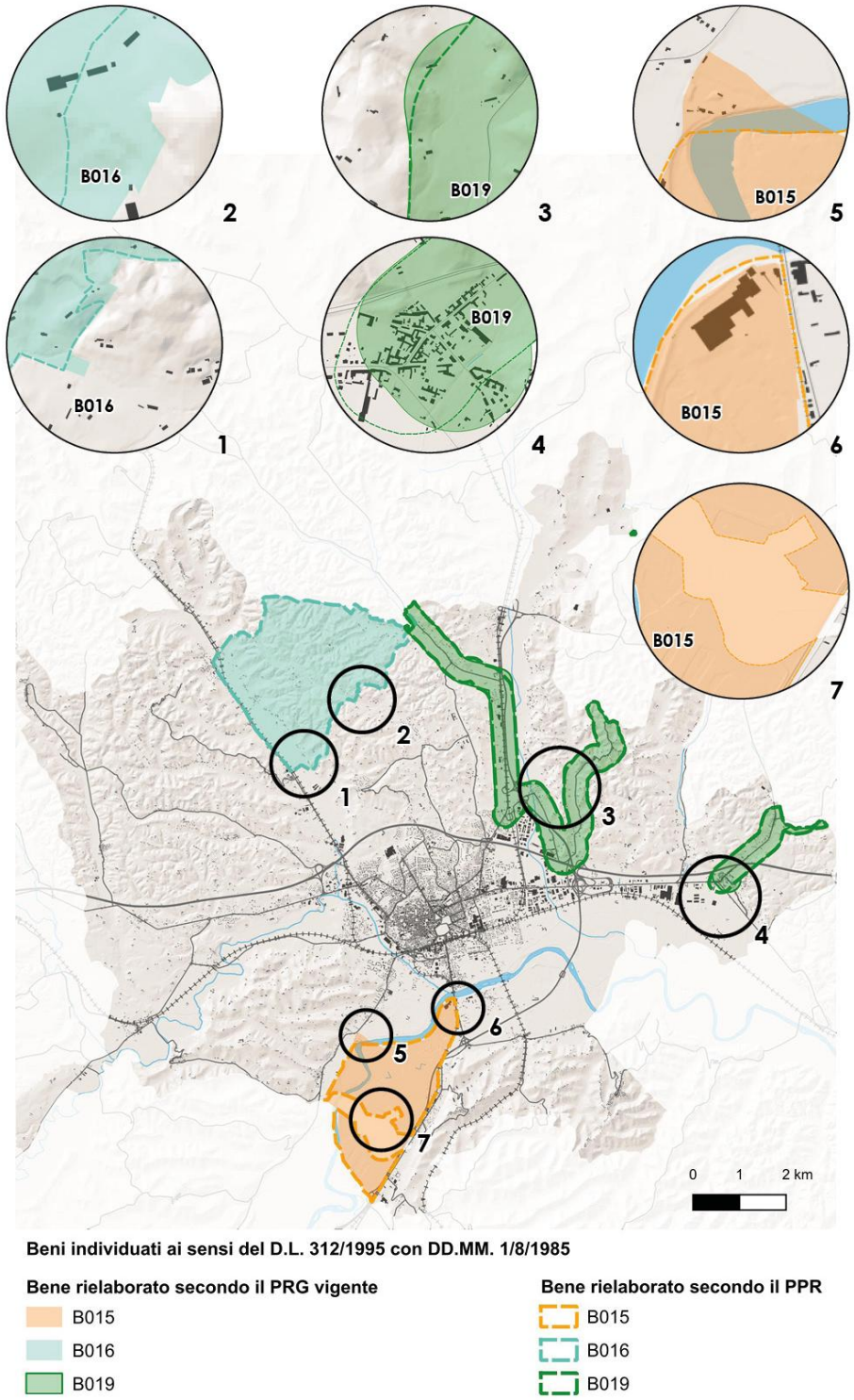

Figure 20 – Comparison of Landscape Assets (Decree 312/1995) According to PPR and PRGC
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

The constraint areas presented above—derived from the first part of the PPR Goods Catalogue—are each supported by specific regulatory sheets outlining applicable prescriptions. These prescriptions are already in force, irrespective of the ongoing adjustment process, and were incorporated accordingly into the mapping comparison. Certain properties extend across

neighboring municipalities and are represented spatially in the cartographic material. A cadastral-based version of the adjustment table (E1) was also produced to support constraint verification and to provide an accurate spatial basis for the construction of the PRGC constraint framework. This version facilitates alignment with cadastral boundaries and improves the readability of constraint perimeters. Most constraint zones drawn from PRGC data show a high degree of alignment with cadastral information, though a few discrepancies persist and may warrant further examination. The applicable rules governing each asset are detailed in Annex b) of the PPR implementation regulation and are cross-referenced with the PRGC NTA and the detailed asset sheets from Annexes 1 and 2 of the PPR's NdA.

To facilitate the analysis of the constraint system, a series of thematic maps were produced through layered visual compositions, each linked to a specific category of protection. This approach made it possible to distinguish more clearly between ecological assets, panoramic viewpoints, hydrographic networks, and culturally designated zones. Alongside the single-category maps, composite overlays were also created to visualize the cumulative intensity of constraints in areas where multiple forms of protection intersect. These thematic layers proved essential in illustrating the spatial organization of constraint clusters and their correspondence with environmental features such as wooded basins, slope formations, and ecological corridors. The layering process did not extend into prescriptive zoning or modification scenarios but was used exclusively to enhance the spatial understanding of constraint distribution, particularly in the context of potential urban–landscape interactions.

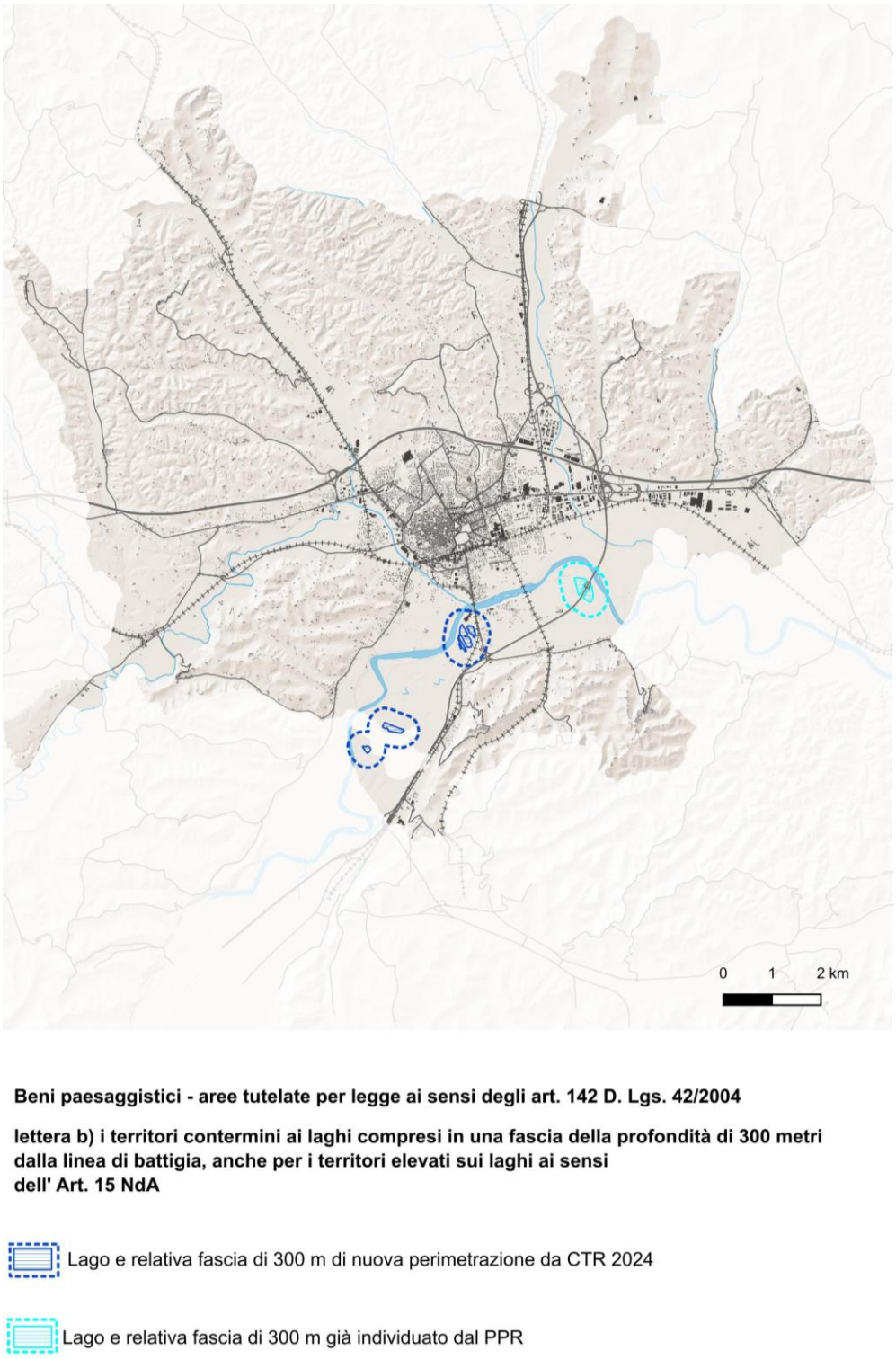

Figure 21 – Areas Adjacent to Lakes Protected Under Article 142, Letter b – Comparison Between PPR and Updated PRGC Perimeters
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

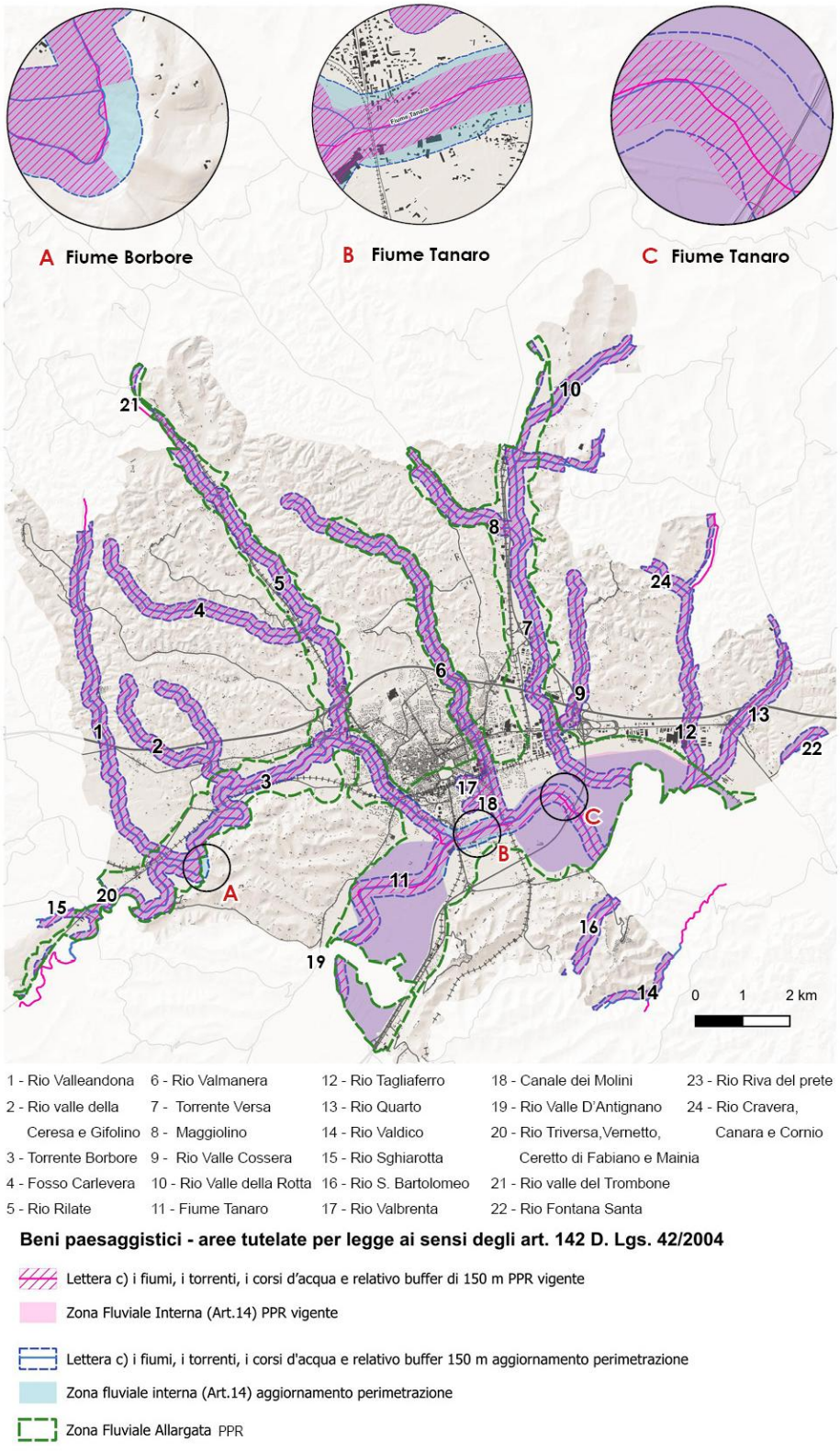

Figure 22 – Watercourses and Buffer Zones Protected Under Article 142, Letter c – Adjustments and Cross-Referencing
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

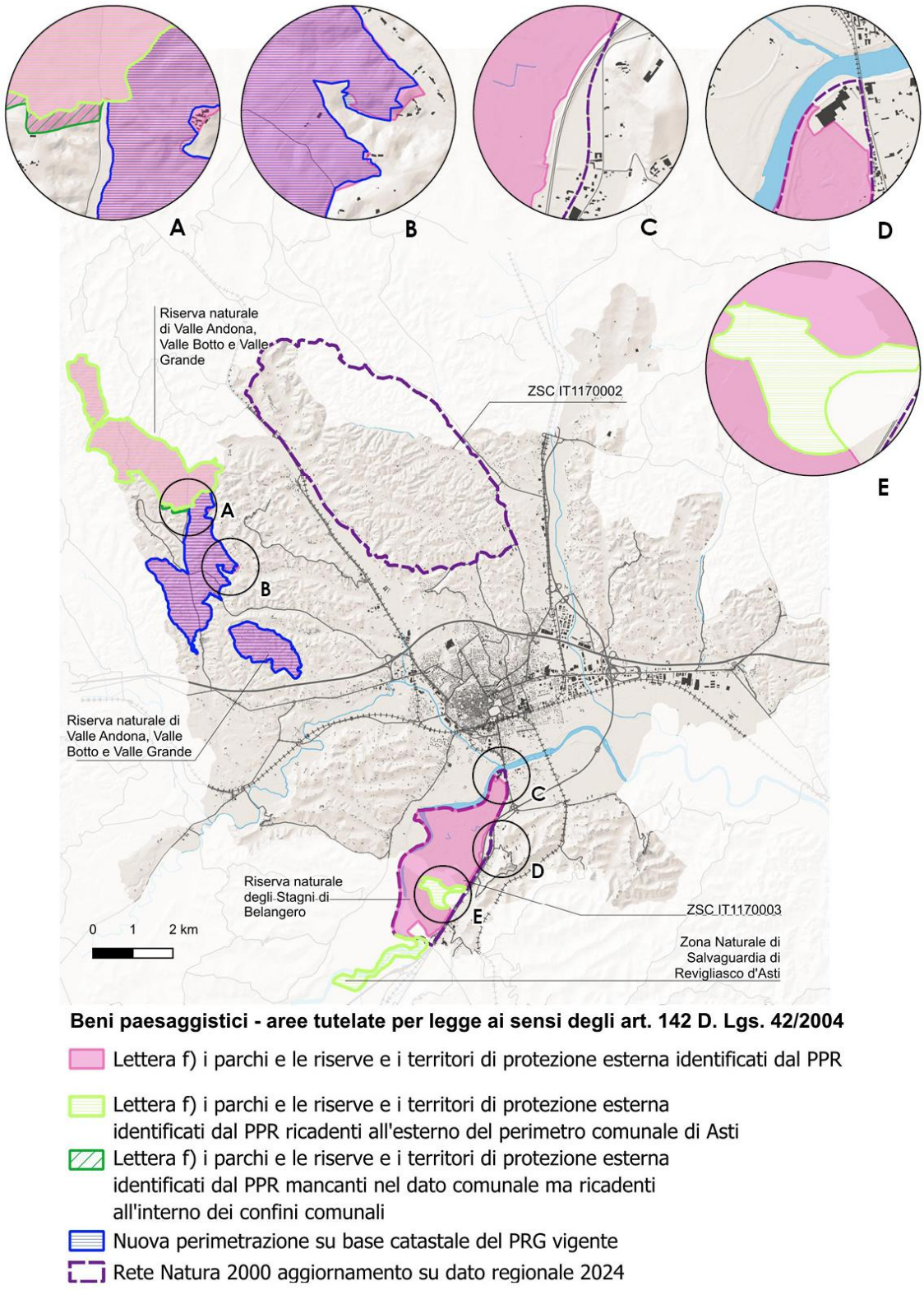

Figure 23 – Protected Areas Under Article 142, Letter f – Including Natura 2000 Sites and External Protection Zones
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

The maps on previous pages show the constraints established under Article 142 of Legislative Decree 42/2004, which include lake perimeters (letter b), buffer zones along watercourses (letter c), and regional or European conservation areas (letter f). These landscape assets are incorporated into both the PPR and PRGC planning frameworks, although the adjustment process revealed some differences in perimeter definition and classification criteria. Particular focus was given to the newly delineated lake buffers and hydrographic corridors, where PRGC data did not fully correspond with regional sources. The mapping of these features strengthens the overall framework of landscape constraint recognition and complements the thematic overlays developed in the previous phase.

The cumulative visualization of constraint layers made it possible to recognize a set of spatially critical edge areas, where the interface between urban expansion and protected landscape elements appeared particularly pronounced. These transitional zones were often characterized by irregular settlement patterns, proximity to ecological networks, and partial visual exposure to panoramic corridors. In several cases, constraint density—reflected by the number of overlapping protections within a single perimeter—reached thresholds that suggested high landscape vulnerability or reduced transformation potential. These findings contributed to the recognition of edge conditions requiring further spatial observation in later phases of the study.

Beyond the areas with concentrated constraints, the analysis also revealed sectors marked by fragmentation or a lack of formal protection, especially in parts of the urban fringe and transitional rural margins. These gaps were not regarded as planning opportunities or regulatory voids but rather noted as recurring discontinuities within the wider landscape protection system. At the same time, they cannot always be considered structural: in some peripheral contexts—where soil conditions, vegetation patterns, or informal land uses vary—such gaps may reflect mapping limitations or classification choices instead of genuine planning inconsistencies. In several cases, isolated natural or visual features, such as tree rows, unrecorded waterways, or informal green corridors, appeared outside the boundaries of recognized constraint zones. Their presence pointed to mismatches between physical landscape elements and official protection limits, raising questions about the completeness and spatial consistency of existing datasets. These observations were treated strictly as technical assessments of spatial conditions and were not intended as prescriptive conclusions.

During the cartographic preparation and spatial analysis of constraint data, certain methodological limitations emerged that influenced the precision and clarity of the resulting maps. Discrepancies were sometimes found between vector geometries obtained from different institutional sources, particularly where base maps and constraint datasets had been produced at different scales or through independent digitization. This occasionally led to minor misalignments at parcel boundaries, wooded perimeters, or riverbanks. In addition, the classification of specific landscape elements—such as small streams or local scenic viewpoints—was sometimes uncertain due to incomplete metadata or vague definitions in the source files. Although these issues did not undermine the overall landscape interpretation, they highlighted the technical challenges of integrating spatial data in multi-source GIS environments. No alterations were made to the datasets; all findings remained confined to the internal study phase.

The thematic maps and layered analyses produced during this phase were used exclusively for internal technical evaluation and exploratory dialogue with planning professionals involved in the early stages of the municipal variant process. These visual materials served to support a shared spatial understanding of constraint distributions, aiding in the recognition of areas where landscape protections interact with zones of urban transformation. The outputs were not presented as formal planning instruments nor proposed as definitive cartographic references but rather functioned as illustrative tools to frame discussions around spatial compatibility and potential areas of attention. Their use was limited to the analytical and preparatory context, and no institutional decisions or approvals were based on these representations.

The constraint analysis phase provided the basis for understanding how the protected landscape elements identified by the PPR are distributed across the municipal territory and how they relate to existing urban dynamics. Using GIS-based thematic mapping, the study documented both areas with high concentrations of constraints and sectors marked by fragmentation or spatial gaps. The results revealed complex interactions between environmental sensitivity, legal protection, and morphological context, offering a descriptive rather than prescriptive overview of the current landscape framework. Although no planning proposals or interpretations were developed, the findings served as a reference for subsequent spatial analyses, particularly those addressing settlement patterns and territorial organization. This framework underpins the next stage of the study, which examines urban morphologies and settlement forms in relation to the identified landscape structures.

5.2 Observing Urban Morphologies and Settlement Patterns in Asti

This section moves from identifying landscape constraints to examining urban form and settlement structure across the municipal territory. Its purpose is to investigate how the physical arrangement of built environments relates to the territorial logic of landscape systems, without advancing proposals or interpretive conclusions. The observations draw on cartographic analysis, morphological studies, and spatial overlays produced during the internship using GIS tools and base mapping sources. The analysis focused on defining settlement patterns—from compact urban centers to dispersed peripheral settlements—and on tracing their connections with protected areas, transitional zones, and structural discontinuities. The aim is to document the spatial organization of existing settlements and to provide a descriptive, non-prescriptive account of their interaction with the surrounding landscape system.

The urban fabric of Asti presents a diverse range of settlement typologies, reflecting both historical development patterns and more recent outlying expansions. The central areas are defined by a compact and continuous built form, often aligned with historic street layouts and characterized by dense blocks and mixed-use structures. Around this core, the transitional zones display a more fragmented and layered morphology, consisting of residential clusters, linear extensions along infrastructure corridors, and irregular open spaces. In the municipality's outer sectors—particularly in the northeast and southern margins—the prevailing pattern shifts to low-density, dispersed settlements, typically made up of single-family dwellings interspersed with agricultural land or residual green areas. This layering of urban forms was mapped and categorized during the study phase to observe how different morphological logics coexist and respond to the underlying landscape and regulatory structures. The purpose was

not to interpret these forms in relation to their planning suitability, but to recognize their spatial characteristics and territorial footprint as part of an observational morphological survey.

The spatial reading of Asti's urban form revealed distinct patterns of morphological continuity and fragmentation across different sectors of the municipality. In the historical core and certain established neighbourhoods, the built environment maintains a strong continuity, with a well-defined block structure and a limited degree of internal voids or interruptions. This morphological coherence gradually weakens toward the outer urban margins, where settlement discontinuities become more evident, especially in zones affected by recent or informal expansion. In several outlying areas, buildings appear loosely distributed, often separated by underutilized spaces, infrastructure corridors, or undeveloped parcels, producing a permeable urban edge condition. These transitions are especially pronounced in areas bordering wooded systems, panoramic ridgelines, or floodplain corridors, where urban form adapts—sometimes incompletely—to the constraints imposed by the surrounding landscape. The mapping of these conditions aimed to describe how built fabric morphology aligns or departs from territorial and environmental structures, without drawing normative assessments or planning evaluations.

An important aspect of Asti's settlement structure is the presence of clear urban–rural transitions, marking the shift from dense, organized cores to more open, low-density edge conditions. These gradients are particularly evident in the northern and eastern sectors, where continuous residential zones give way to agricultural or semi-natural areas within relatively short distances. In some instances, the transition is gradual and defined by intermediate morphologies—such as clustered housing or edge developments—while in others it is abrupt, with isolated buildings directly adjoining protected natural areas. The analysis recorded how these variations in spatial density correspond with landscape constraints, pointing to a connection between settlement expansion and environmental context. No judgment was made on the suitability or sustainability of these gradients; the work remained limited to describing the formal and spatial expressions of transition zones within the municipal structure.

Asti's morphological structure has been strongly influenced by infrastructure corridors and historical territorial axes, which continue to shape the orientation and distribution of the built environment. Major roads and railway lines support patterns of linear expansion, particularly along the eastern and southern edges of the municipality, where residential and productive settlements often follow transport routes. By contrast, the historic center and its immediate surroundings display a radial and concentric form, reflecting pre-modern urban layouts and earlier systems of land division. Together, these infrastructural and historical frameworks have produced morphological imbalances, with some sectors showing structured growth while others appear fragmented or functionally disconnected. The analytical mapping of these elements sought to document their spatial impact on settlement types and territorial hierarchy, without making normative assumptions about planning dynamics or future transformations.

The study of settlement patterns was extended to examine how morphological forms respond to the presence of landscape constraints, particularly in zones marked by topographical variations, wooded areas, and ecological corridors. In hillside sectors and along the Tanaro River, the built environment typically adapts to natural gradients, resulting in curved or stepped development patterns that differ from the grid-based layouts observed in flatter zones. In some

cases, morphological discontinuities—such as sudden shifts in building orientation or density—were observed in direct correspondence with constraint boundaries, suggesting a form of spatial negotiation between urban growth and environmental conditions. In other sectors, the presence of sharp slopes or visual corridors appears to have limited the continuity of construction, creating buffer zones or maintaining open areas within otherwise built-up contexts. These observations were recorded as part of the analytical phase and were not used to draw conclusions regarding design coherence or regulatory suitability. These areas, typically located along the southeastern and western edges of the municipality, show evidence of fragmented growth, with scattered buildings, unstructured road networks, and limited continuity of public spaces or services. The mapping of these conditions revealed structural imbalances in the spatial distribution of urban forms, raising analytical questions about territorial coherence, functional accessibility, and landscape compatibility.

The following maps visualize the distribution, typologies, and infrastructural structure of both urban and rural built environments across the municipal territory.

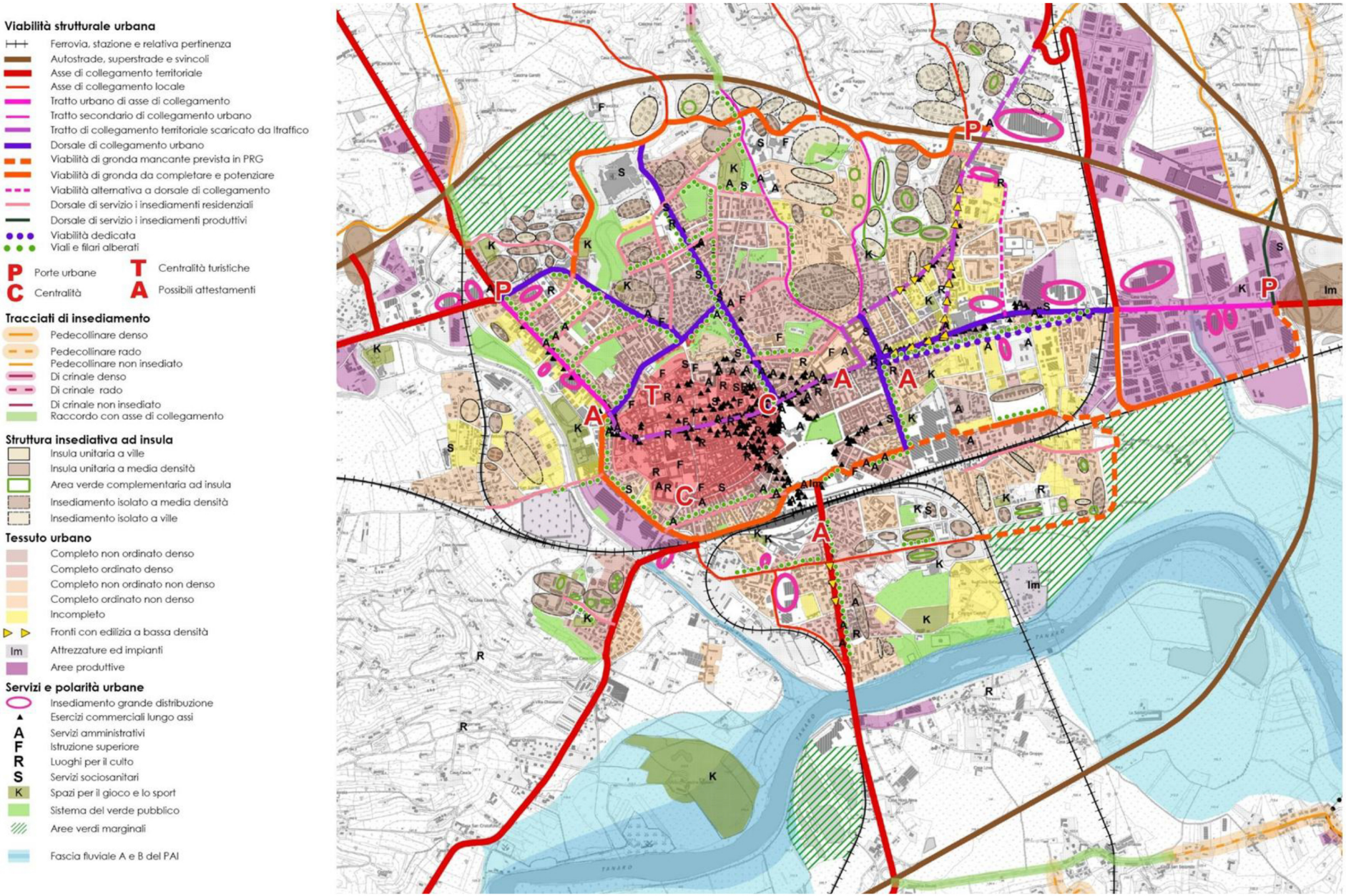

Figure 24 – Urban Built Structure and Service Polarities-Representation of insular typologies, service functions, street network hierarchies, and urban density zones within Asti's central and peripheral sectors.

Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

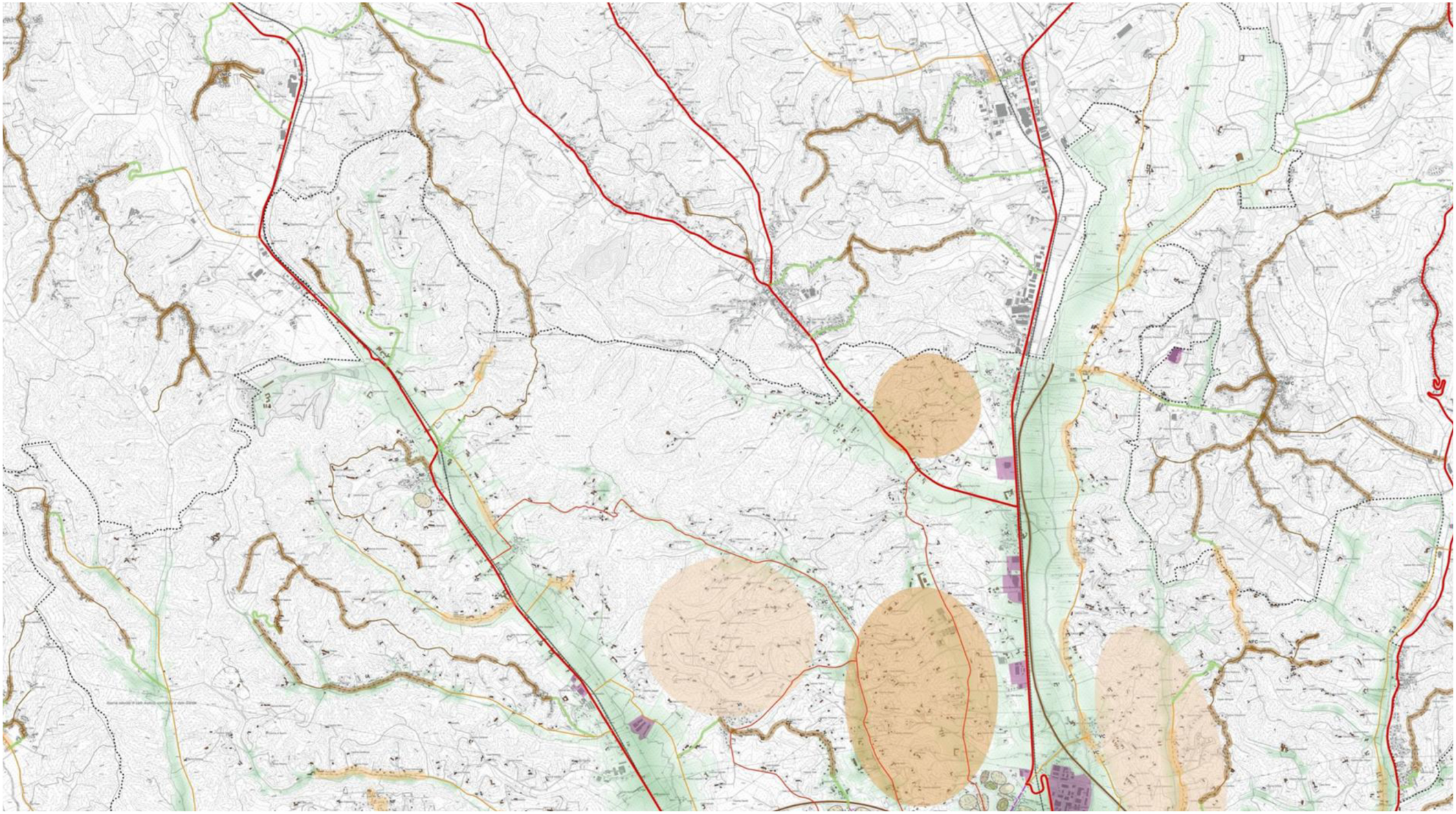

Figure 25 – Rural Built Structure and Peripheral MorphologiesCartographic representation of rural built structures, scattered settlement patterns, and morphological articulation of peripheral areas in the municipal territory.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

The analytical readings carried out in this phase outlined a complex and layered urban structure, where different settlement typologies coexist within a diverse territorial framework. From the compact morphology of the historical core to the fragmented conditions of marginal expansions, the spatial patterns observed reflect both historical processes and interactions with landscape constraints. The variations in density, form, and orientation are closely linked to the presence of environmental, infrastructural, and visual elements, indicating a territorial logic shaped by both natural and human-induced factors. While the observations documented in this subchapter were limited to typological description and spatial relationships, they provided a necessary foundation for the next analytical phase, which focuses on the role of cartographic synthesis and multi-layer mapping as tools for reading and organizing the landscape-urban interface.

The following cartographic representation applies the classification system of morfologie insediative (settlement morphologies) defined in Tavola P4 of the Piemonte Regional Landscape Plan (PPR). This typology consists of 14 standardized categories used to describe the physical structure, density, and spatial configuration of settlements across the region. These classifications form a critical interpretive layer for analyzing the relationship between built form, landscape compatibility, and planning constraints. The categories include both urban and rural settlement types and serve as reference parameters for landscape protection policies and transformation guidelines in the PRGC variant. The map legend refers to each type through the abbreviated codes m.i.1 to m.i.13, listed below with their full description:

m.i.1 - Consolidated urban areas of major centers (Urbane consolidate dei centri maggiori)

m.i.2 - Consolidated urban areas of minor centers (Urbane consolidate dei centri minori)

m.i.3 - Urban fabrics outside centers (Tessuti urbani esterni ai centri)

m.i.4 - Discontinuous suburban fabrics (Tessuti discontinui suburbani)

m.i.5 - Organized specialist settlements (Insediamenti specialistici organizzati)

m.i.6 - Dispersed residential settlement areas (Aree a dispersione insediativa prevalentemente residenziale)

m.i.7 - Dispersed specialist settlement areas (Aree a dispersione insediativa prevalentemente specialistica)

m.i.8 - Specialized building clusters or "islands" (“Insule” specializzate)

m.i.9 - Infrastructure complexes (Complessi infrastrutturali)

m.i.10 - Rural areas in plains or hills (Aree rurali di pianura o collina)

m.i.11 - Systems of rural nuclei in plains, hills, or low mountains (Sistemi di nuclei rurali di pianura, collina o bassa montagna)

m.i.12 - Mountain villages (Villaggi di montagna)

m.i.13 - Rural hilly or mountainous areas with sparse, scattered buildings (Aree rurali di montagna o collina con edificazione rada e dispersa)

These morphology types support a more nuanced spatial interpretation of settlement patterns, particularly in relation to landscape fragility, rural continuity, and perceptual exposure. They are not used for prescriptive zoning but rather as analytical references aligned with the objectives of the PPR and PRGC variant.

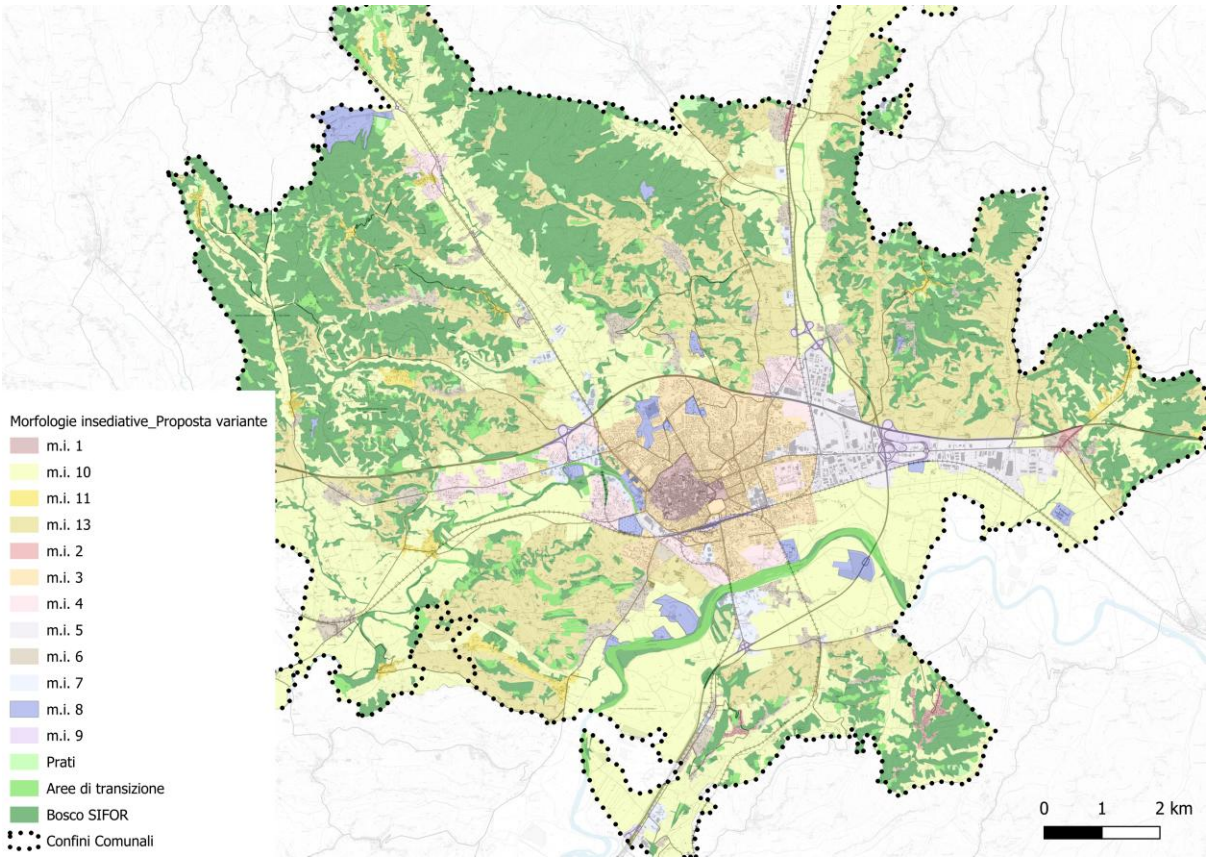

Figure 26 – Proposed Typological Classification of Settlement Morphologies in Asti (Full Territory View) Source: Elaborated by the author based on internal GIS processing and unpublished studio datasets, with classification derived from Regione Piemonte Tavola P4.

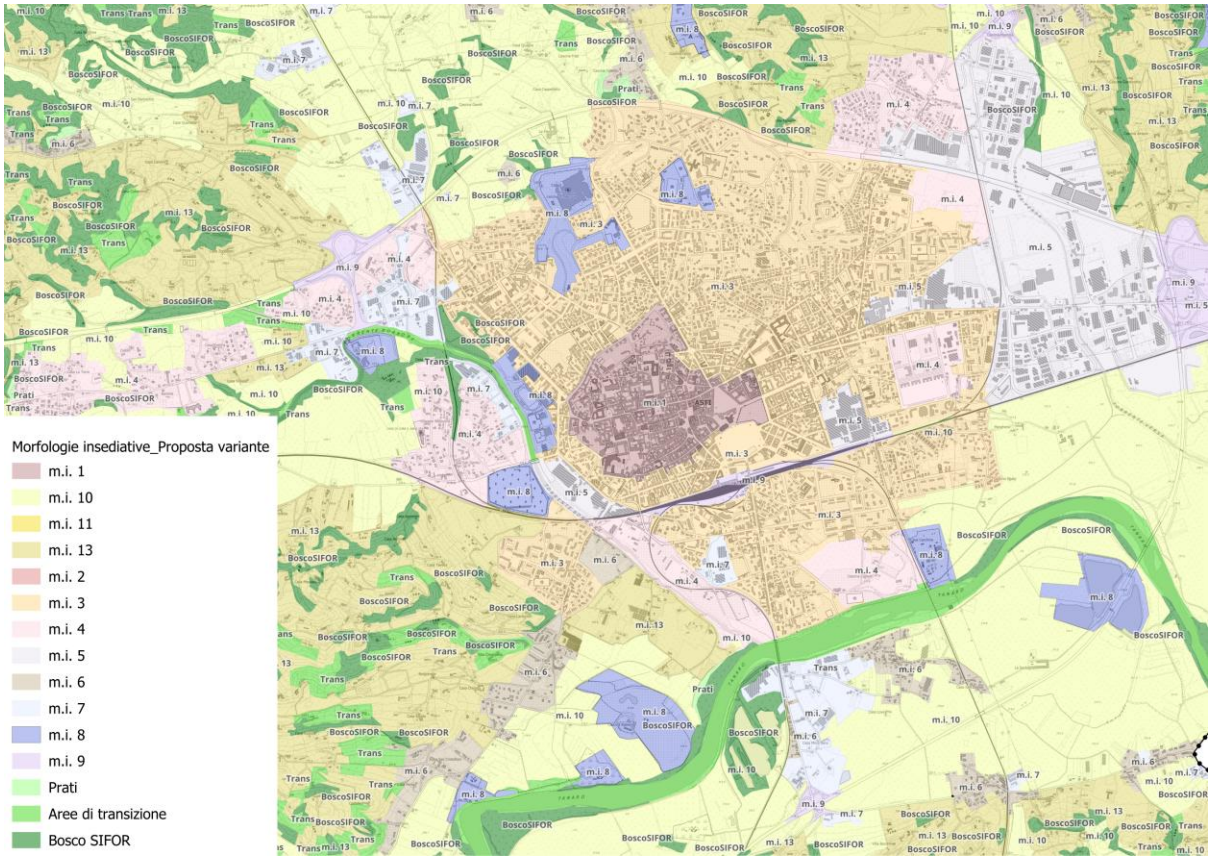

Figure 27 – Settlement Morphologies: Focus on Asti's Central Urban Area
Source: Elaborated by the author based on internal GIS processing and unpublished studio datasets, with classification derived from Regione Piemonte Tavola P4.

5.3 The Role of GIS and Territorial Analysis

This subchapter focuses on the role of cartographic integration and spatial representation in supporting the analytical phase of landscape and urban structure assessment. The use of GIS-based tools allowed for the development of a multi-layered territorial reading, in which legal protections, morphological patterns, and infrastructural systems could be overlaid, compared, and interpreted within a common spatial framework. Cartographic analysis functioned not only as a technical process of data visualization, but as a means of constructing a territorial logic—a way of making visible the relationships between constraint systems and urban form without entering into normative or interpretive frameworks. The maps and thematic compositions presented in this phase were produced exclusively for internal study purposes and were not intended as formal instruments for institutional decision-making. They provided a tool for organizing complex spatial information, highlighting areas of intersection, spatial tension, and territorial discontinuity, and supporting a non-normative, observation-based understanding of the municipal structure.

The cartographic work began with organizing and standardizing spatial datasets within a GIS environment. The base layers included cadastral maps, land-use plans, elevation models, and regional reference datasets, all adjusted to a common projection, resolution, and coordinate system. Care was taken to ensure geometric consistency between institutional data and

analytical overlays, particularly in areas where legal boundaries and physical features did not align. Data cleaning involved correcting topological errors, eliminating duplicate geometries, and aligning vector layers across both the constraint system and settlement morphologies. This initial phase was crucial for establishing a coherent spatial foundation that enabled reliable cross-referencing of landscape protections, settlement structures, and infrastructural elements throughout the analysis.

Once the base structure was established, a series of thematic layers were developed to isolate and visualize key territorial parameters, including landscape constraints, hydrographic elements, panoramic corridors, settlement densities, and infrastructural alignments. Each theme was translated into a dedicated cartographic layer, symbolized with custom styles to enhance readability and support comparison between spatial phenomena. For example, landscape protections were divided according to typology—ecological, visual, historical—while urban fabric was segmented into compact, transitional, and scattered typologies based on building continuity and land cover patterns. This segmentation allowed for a layer-by-layer reading of how specific features interact or differ across the territory, without merging information into generalized composite maps. The thematic approach provided the analytical framework for more advanced spatial cross-referencing and ensured that each category could be interpreted independently and then recombined in later stages.

The maps below illustrate a structured sequence of environmental infrastructure layers developed as part of the thematic segmentation process, including hydrographic systems, agroforestry structures, urban green networks, and their composite territorial synthesis.

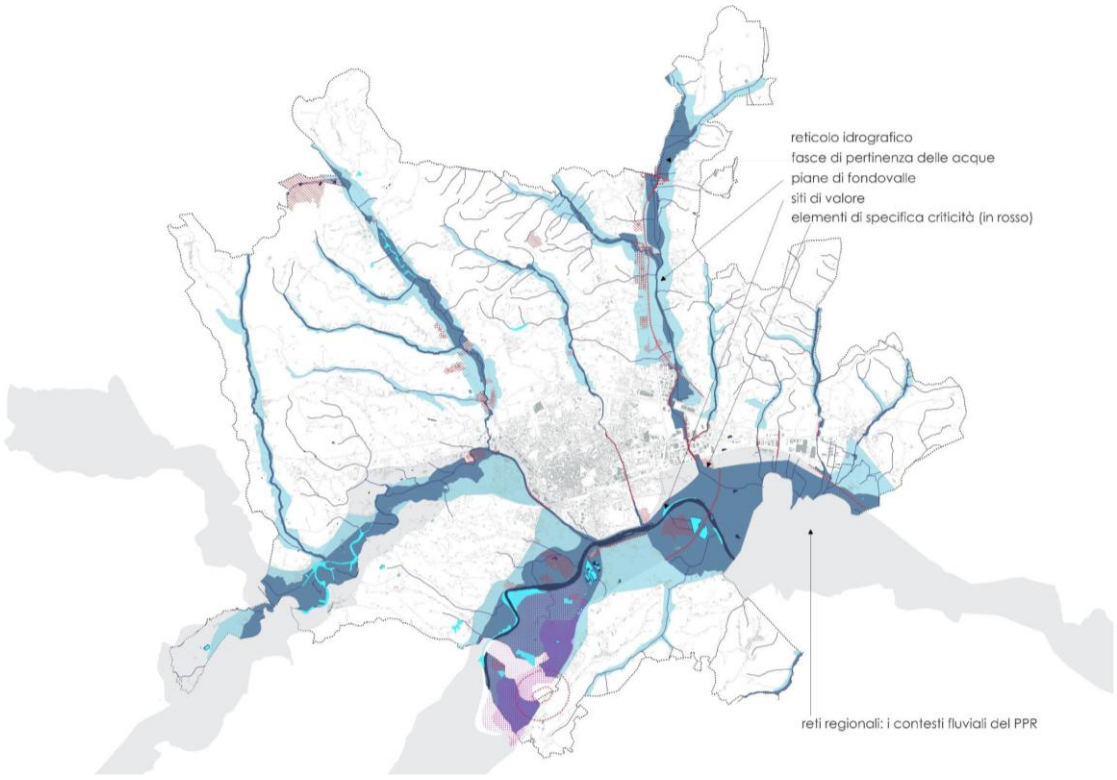

Figure 28 – Hydrographic Infrastructure System
Thematic map representing the primary and secondary hydrographic network, valley-bottom water zones, critical points along infrastructure, and buffer relationships with the Tanaro River corridor.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

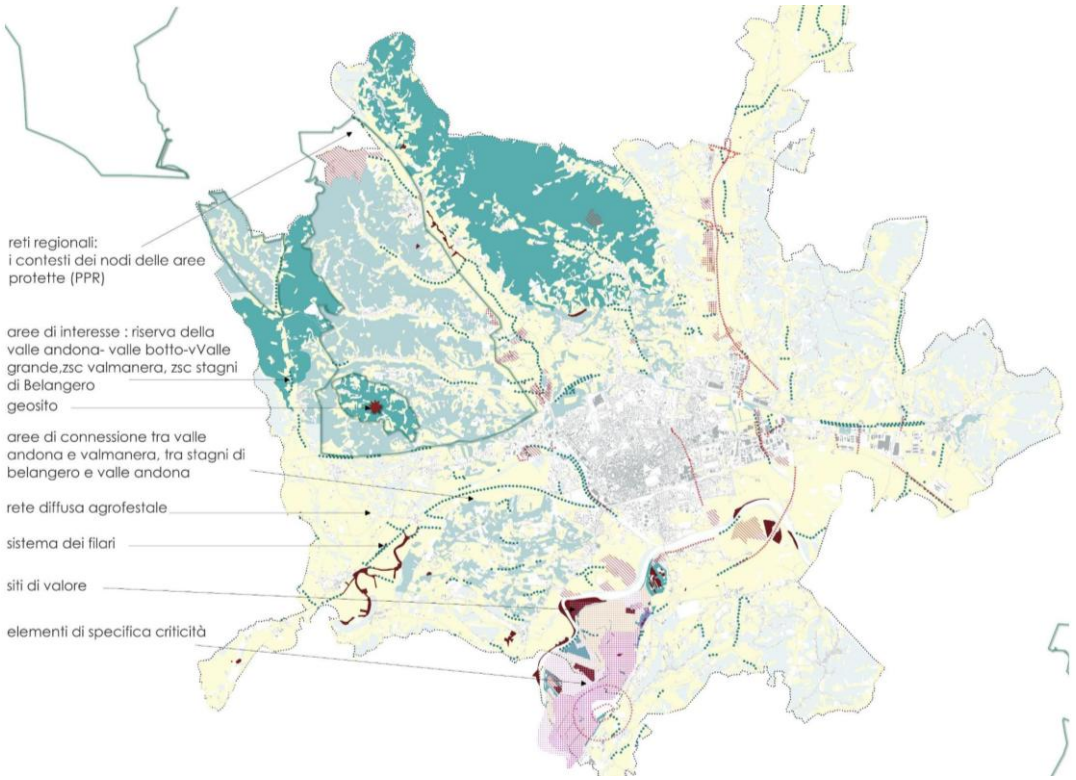

Figure 29 – Agroforestry Structure
Map depicting the agroforestry network, ecological nodes, protected areas, biodiversity corridors, and spatial tensions at rural–urban interfaces.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

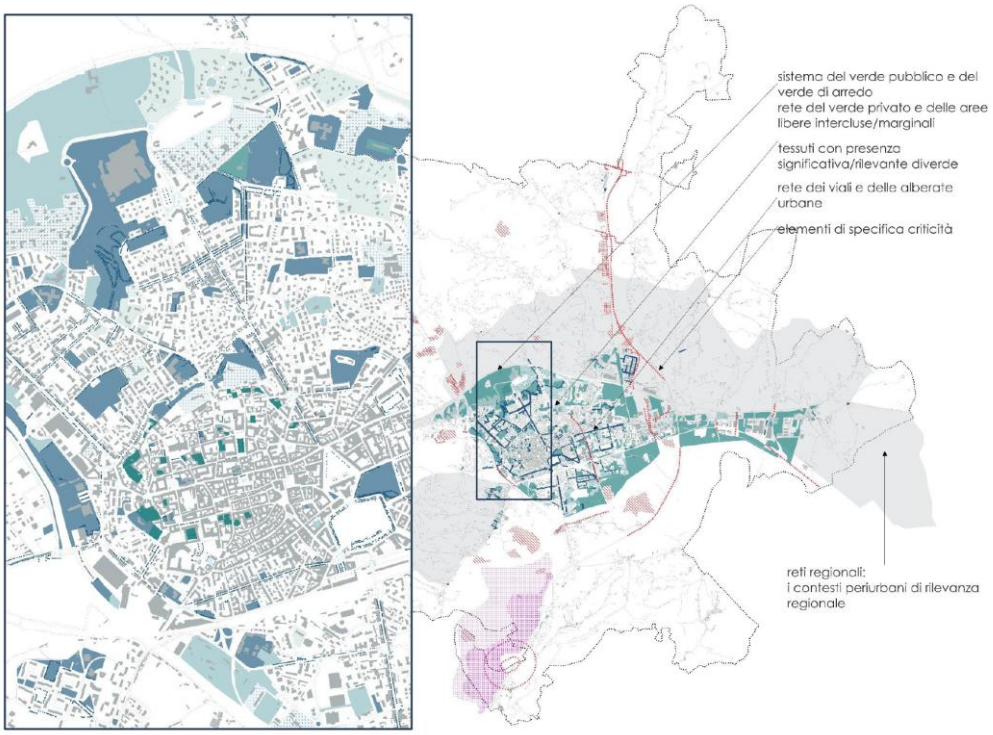

Figure 30 – Urban Green System
Cartographic representation of the urban green infrastructure, including public and private green spaces, tree-lined avenues, and marginal voids within fragmented peripheral fabric.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

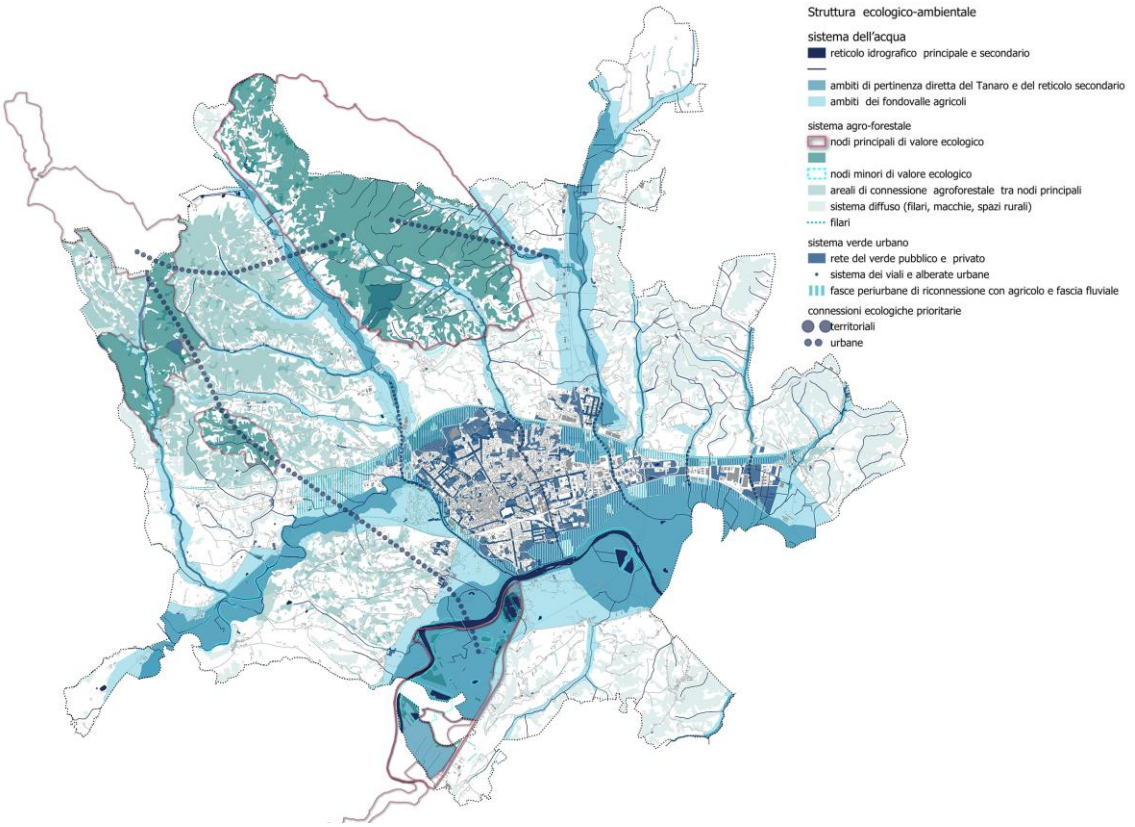

Figure 31 – Territorial Environmental Infrastructure: Synthesis
Composite synthesis of the hydrographic, agroforestry, and urban green systems, identifying potential green–blue corridors and ecologically structured connections at the municipal scale.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

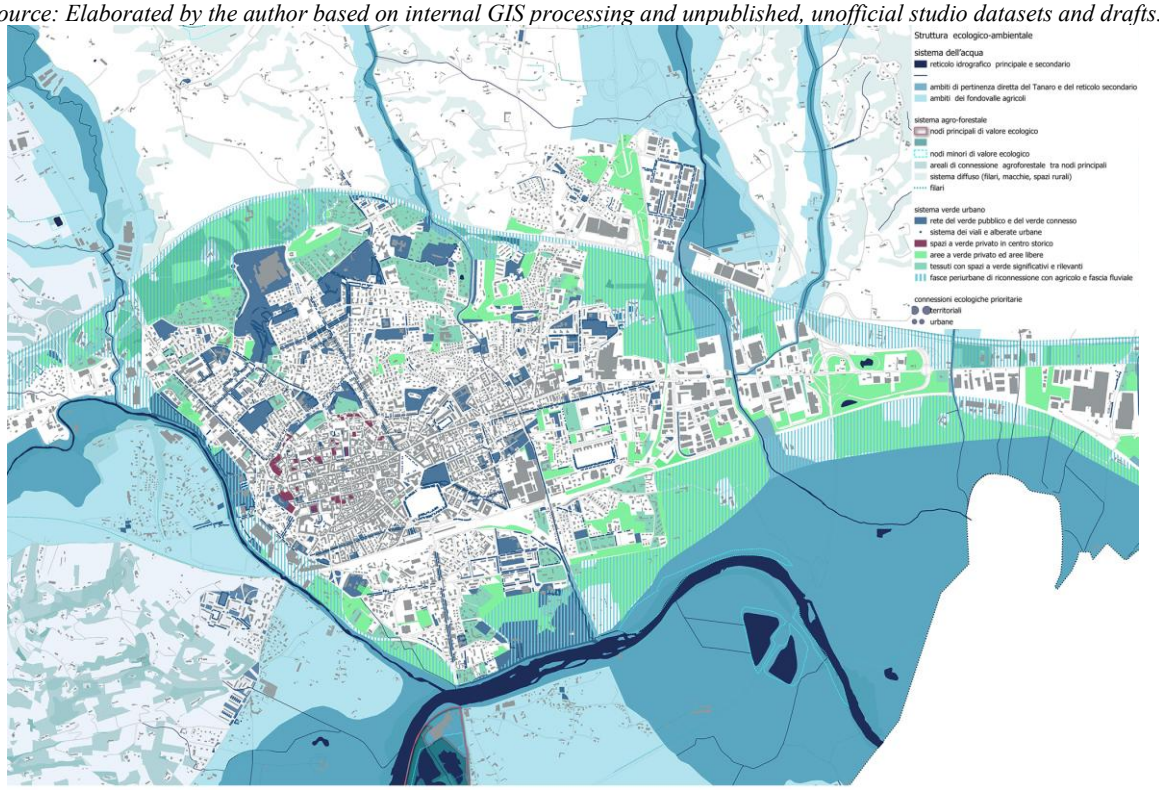

Figure 32 – Urban Environmental Infrastructure: Synthesis Detail
Zoomed cartographic details of the urban-scale environmental infrastructure system, highlighting nodal green spaces, internal voids, and potential connective corridors.
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

Thematic layers were then combined through overlay techniques, enabling the identification of zones where multiple spatial phenomena intersected—such as transformation areas overlapping with protected landscape elements or fragmented settlements near ecological corridors. These overlays made it possible to observe areas of potential spatial tension, particularly in the marginal zones of the municipality, where urban expansion boundaries intersect with wooded systems, floodplain zones, or visually sensitive ridgelines. The intersections were not interpreted in regulatory terms but were highlighted as critical overlaps that warrant further observation based on their complexity and density of protections. In several cases, the cartographic overlays revealed configurations where formal zoning did not correspond closely to the physical or environmental structure of the landscape, suggesting the existence of inconsistencies between spatial logics and planning instruments. These outputs were used strictly within the context of internal analysis and not advanced as recommendations or evaluative positions.

The resulting structure of infrastructural and urban corridors is represented in the following cartographic synthesis.

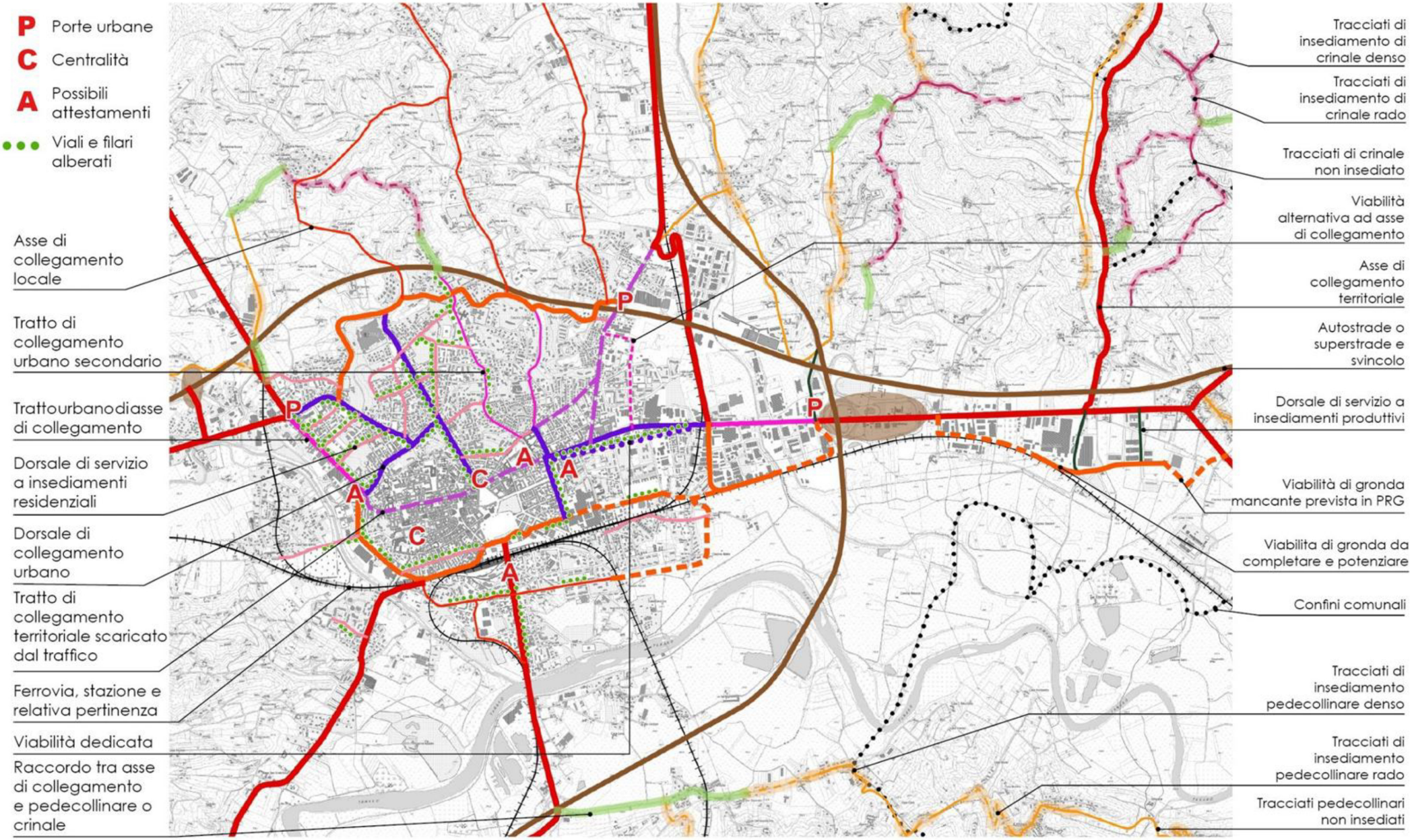

Figure 33 – Territorial Infrastructure System: Urban Access Points, Mobility Corridors, and Structural Connections
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

Building on the thematic overlays, additional analysis was carried out through spatial cross-referencing, in which urban morphological forms were compared with the relative intensity of landscape constraints across different sectors of the municipality. This method involved the creation of graduated intensity maps, which compiled the number and type of overlapping constraints per unit area and then compared these results with classifications of settlement typology and density. The resulting maps highlighted zones where high constraint intensity overlapped with scattered or transitional settlement patterns, particularly along the northeastern and southern outskirts. In contrast, areas of established urban form often displayed lower constraint densities, with some exceptions in zones bordering to panoramic ridges or hydrographic features. This analytical comparison helped to structure a non-normative understanding of how urban and landscape systems coexist or differ, without suggesting compatibility assessments or transformation priorities.

One part of the cartographic analysis focused on integrating visual perception data, especially through the interpretation of panoramic corridors and elevated viewpoints identified in the regional landscape framework. These visual components were mapped as separate spatial layers and combined with topographic data to evaluate viewshed coverage and the potential visibility of landscape features from key public vantage points. Where settlement edges coincided with high-visibility areas—such as ridgelines or open valley fronts—the analysis noted stronger scenic exposure, taken as an indication of greater perceptual sensitivity. This integration provided a broader understanding of landscape presence by extending the analysis beyond material constraints to include immaterial aspects such as visibility and scenic quality. The exercise remained limited to mapping and descriptive interpretation, without moving into impact evaluation or regulatory application.

The analytical process used a multi-scalar cartographic approach that allowed for comparisons between local settlement patterns and broader territorial structures, including ecological corridors, regional infrastructure networks, and landscape units defined at the supra-municipal scale. By moving across scales—from neighbourhood-level analyses to regional overlays—the study showed how local morphologies fit within wider landscape frameworks, highlighting spatial continuities and discontinuities that single-scale mapping might overlook. This method also made it possible to integrate perceptual variables, which are examined in more detail in the following section. In addition, some urban voids and undeveloped areas within the city limits were found to align with ecological patterns that became visible only at larger scales. Overall, this multi-scalar reading underlined the importance of considering territorial structures beyond administrative boundaries, while remaining within the limits of technical observation and descriptive, non-normative analysis.

One of the key outputs of the cartographic analysis was the identification of spatial mismatches between the classifications of existing planning tools and the physical or environmental structures observed on the ground. In several cases, transformation zones established in prior planning phases were found to partially overlap with constraint areas or to extend into zones of high scenic or ecological sensitivity, raising questions about the coherence between regulatory designations and territorial conditions. On the other hand, certain underutilized or open spaces within established areas lacked formal protective status, despite aligning with

regional ecological or visual networks. These findings did not serve as grounds for critique or correction but were recorded as non-evaluative discontinuities that highlight the limitations of existing cartographic representations and zoning classifications. The exercise underscored the role of mapping as a diagnostic tool for detecting inconsistencies and structural disconnects within the urban–landscape interface.

Throughout the study phase, cartography was not treated simply as a tool of representation but as an interpretive device for organizing and understanding the complex relationships between built form, environmental constraints, and spatial hierarchies. The layered mapping approach helped to uncover hidden patterns, spatial imbalances, and territorial rhythms that were not immediately visible in textual planning documents or regulatory maps. In this sense, cartography supported a territorial reading that brought together material, morphological, and perceptual dimensions without reducing them to normative categories. This function was kept within the limits of descriptive observation and did not extend to hypotheses, scenarios, or prescriptive models. Rather, it provided a multidimensional perspective on the urban–landscape relationship, one that remains essential for guiding subsequent stages of spatial analysis.

The cartographic analysis in this phase highlighted the importance of visual integration and spatial layering as methodological tools for territorial study without prescriptive intent. By allowing the simultaneous reading of urban structures, constraint systems, and perceptual dynamics, mapping supported a mode of reasoning that was both analytical and exploratory. This approach helped to frame spatial conditions as relational and context-dependent rather than as fixed or isolated components, underscoring the need to examine the built environment and landscape as co-constructed systems. The methodological limitations encountered—such as inconsistencies in data resolution, overlapping geometries, and only partial alignment between planning and physical layers—also pointed to the inherent challenges of territorial representation. These reflections provide the foundation for the next analytical phase, which turns to visual exposure and scenic considerations, treated not only as aesthetic qualities but as structuring factors in the relationship between perception and planning.

5.4 Visual Exposure and Scenic Considerations: Analytical Insights

This section focuses on the perceptual dimension of the landscape, particularly as it relates to visual exposure, panoramic value, and spatial readability within the territory of Asti. The analytical work conducted during the study phase aimed to document how visual relationships—between built form, open space, and topographic structure—shape the way the territory is experienced and interpreted. Using GIS tools and elevation data, viewshed maps and visibility models were generated to identify zones of scenic relevance, including ridge lines, valley overlooks, and open plains with broad visual fields. These maps were not intended to define visual impact or propose constraints, but to provide a framework for understanding visual structure as a recognized component of territorial analysis. The observations developed in this section extend the previous cartographic readings by focusing specifically on intangible and perceptive aspects of spatial organization.

The following set of intervisibility maps complements the viewshed analyses by illustrating how scenic exposure is experienced from major infrastructural corridors. These visualizations show how the structure of perception unfolds along key road axes, reinforcing the connection between transportation routes and visual dynamics in the landscape.

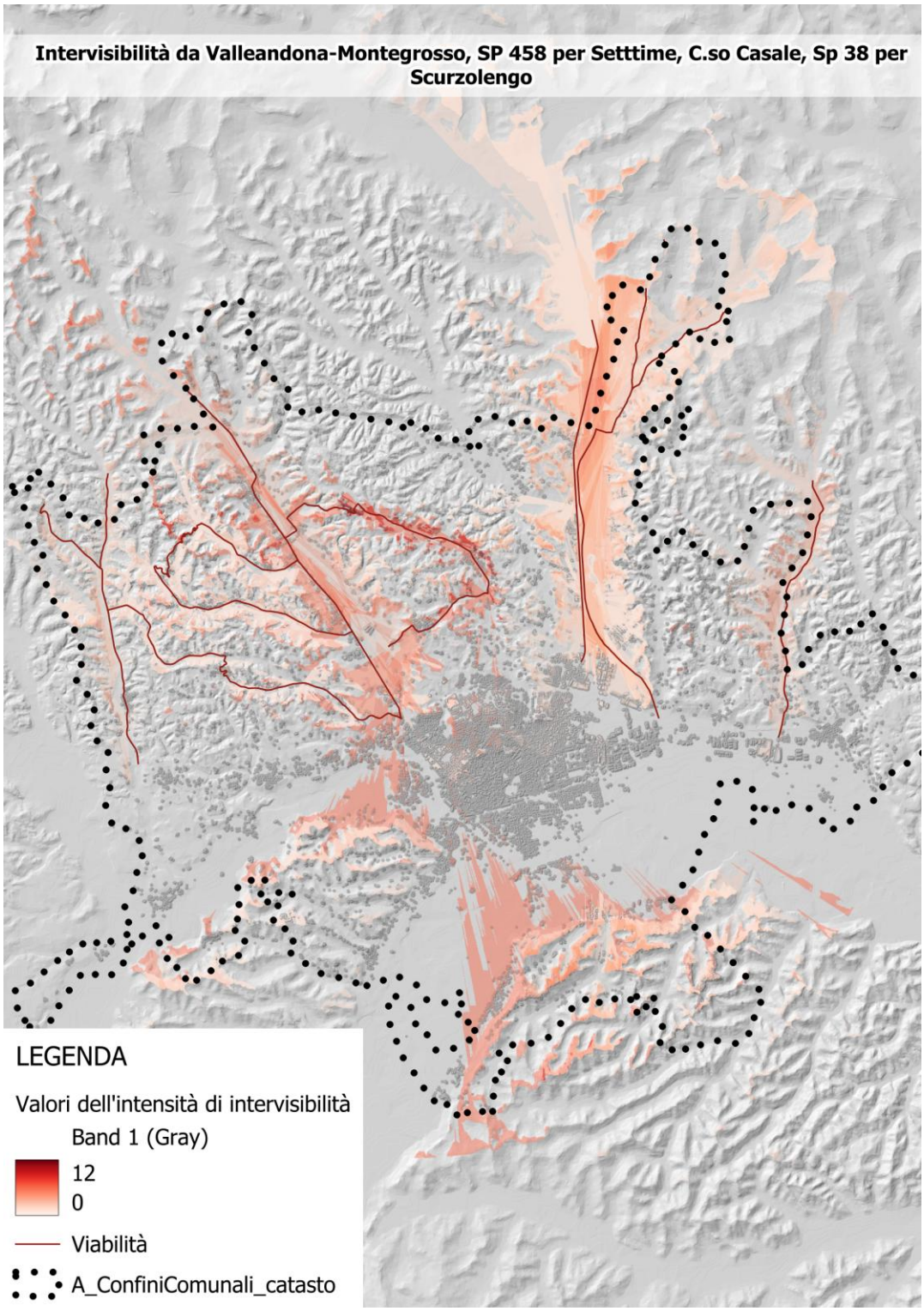

Figure 34 – Intervisibility from Valleandona–Montegrosso corridor, SP 458, and SP 38 (toward Settime and Scurzolengo)
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

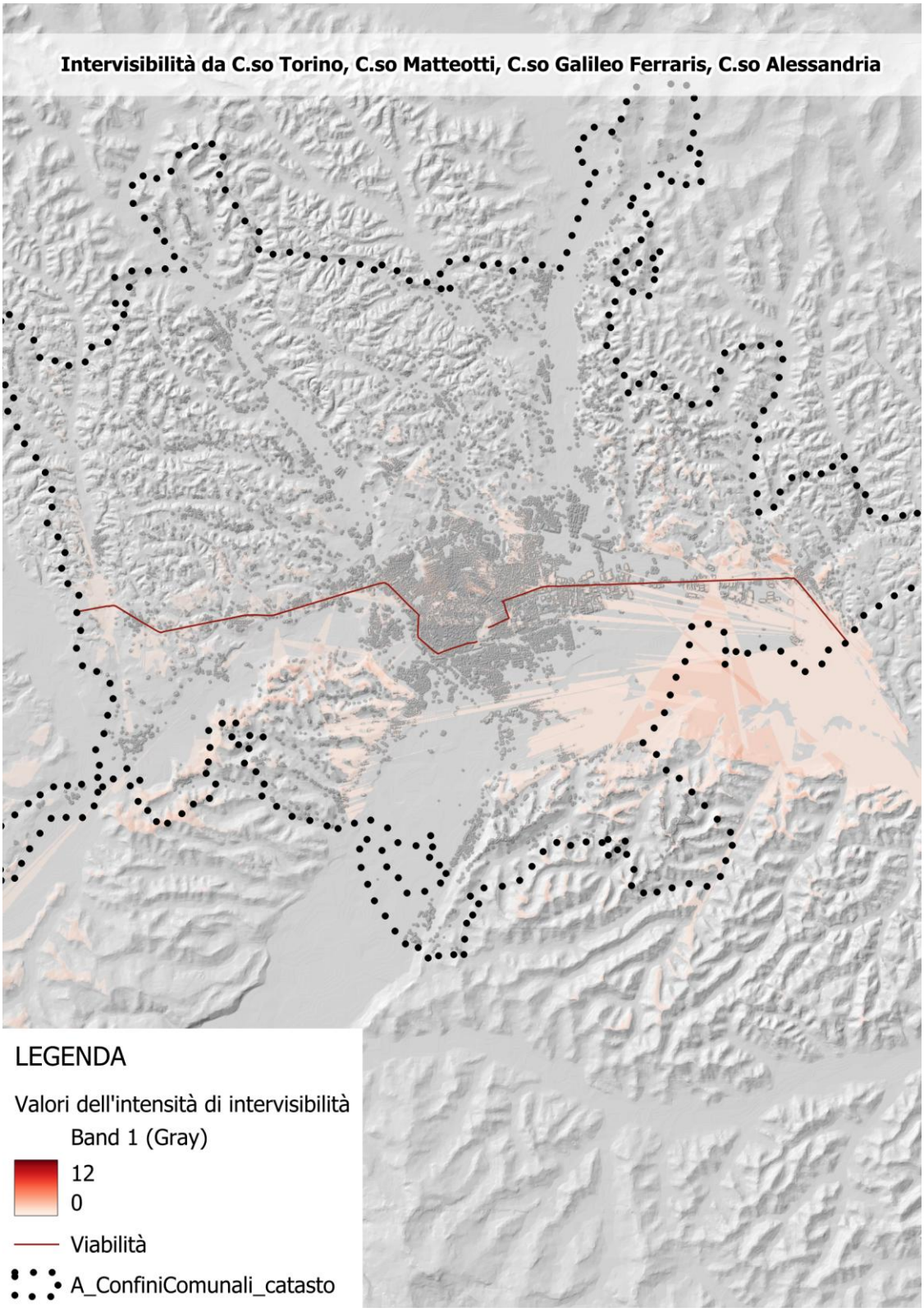

Figure 35 – Intervisibility from Corso Torino, Corso Matteotti, Corso Galileo Ferraris, and Corso Alessandria
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

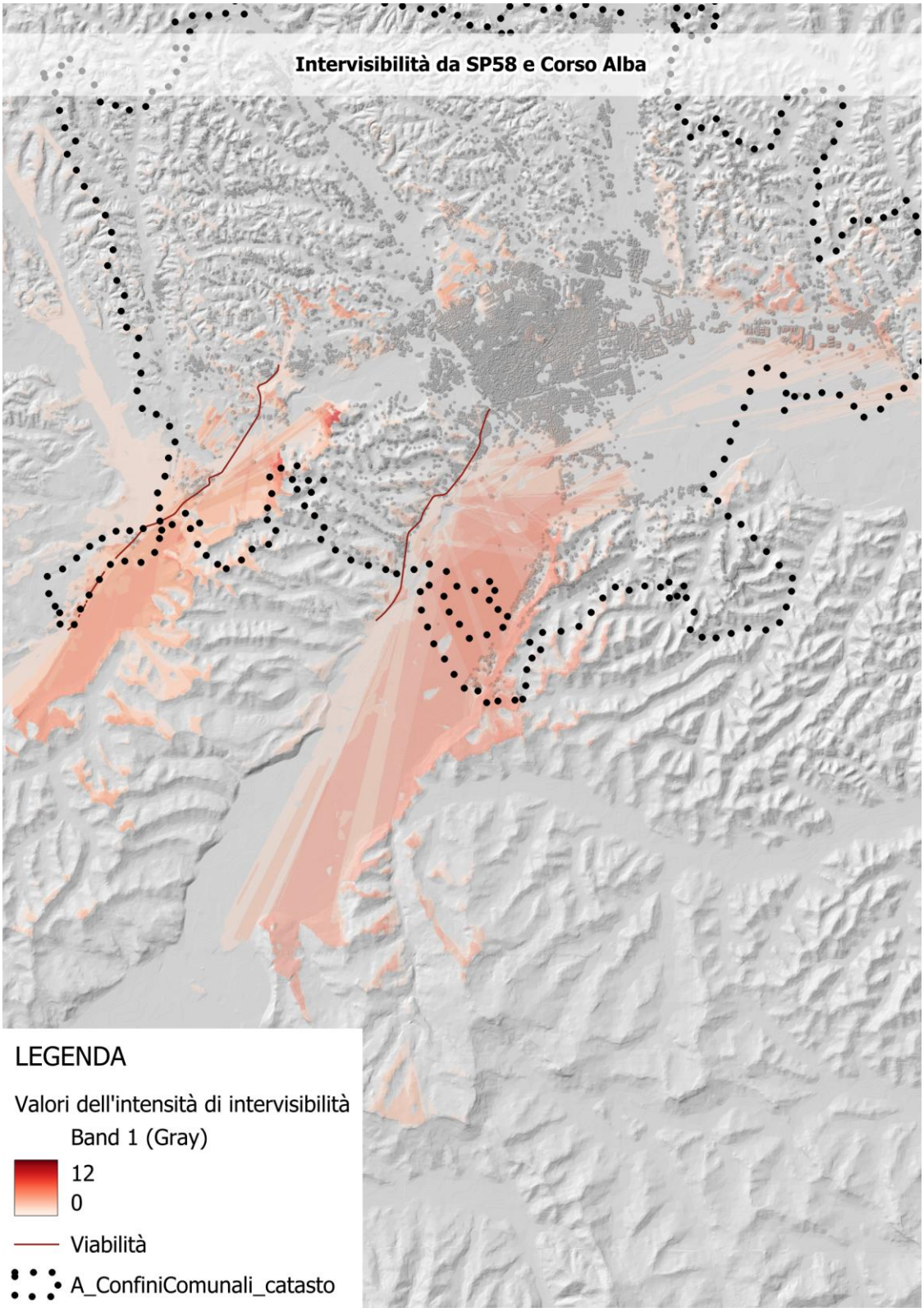

Figure 36 – Intervisibility from SP58 and Corso Alba
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

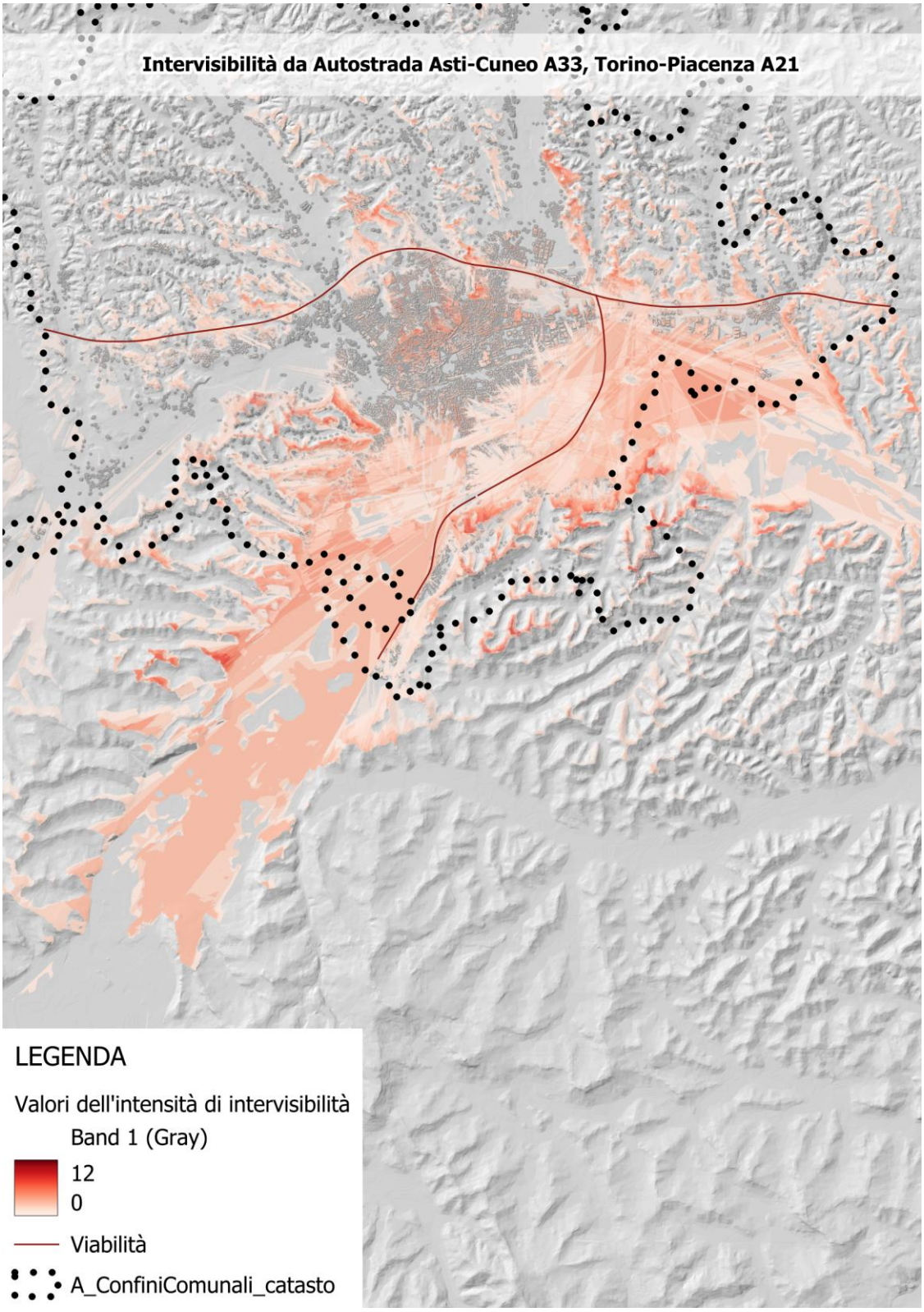

Figure 37 – Intervisibility from A33 Asti–Cuneo and A21 Torino–Piacenza Motorways
Source: Elaborated by the author based on internal GIS processing and unpublished, unofficial studio datasets and drafts.

The mapping of scenic zones combined elevation models, landscape typologies, and established panoramic viewpoints within the municipal territory. Areas of high visual exposure—such as ridgelines, open uplands, and elevated transition areas—were classified by visual range and orientation, which made it possible to identify key panoramic corridors and principal viewpoints. Many of these areas corresponded to landscape features already recognized in regional planning instruments, including hillside systems, river terraces, and agricultural clearings with extended visual axes. In this phase, regulatory filters were applied so that the analysis remained limited to documenting scenic exposure and its overlap with protected areas and settlement edges. The classification provided a spatial basis for interpreting visual structure as a territorial component, contributing to a more complete understanding of landscape presence.

The interaction between urban development and areas of high scenic exposure was most evident in the peripheral sectors of Asti, where the built environment extends toward ridgelines, open valleys, and panoramic corridors. In several instances, residential and productive areas were found close to scenic exposure boundaries, producing conditions where the continuity of scenic depth met construction limits. These areas were not assessed in terms of visual impact or landscape degradation but were recorded as points of perceptual tension, where urban form becomes more prominent in the territorial context and visually engages with surrounding open space. The mapping of these relationships showed that scenic sensitivity is not confined to formally designated protected areas but also extends into transitional zones that lack regulation yet display a high degree of scenic exposure. These observations remained within the scope of spatial reading and did not serve as criteria for zoning recommendations or design guidelines.

To analyze visual exposure, viewshed models were created using digital elevation data and selected observation points located along ridgelines, historic vantage sites, and accessible public open spaces. These models identified areas of maximum perceptual coverage, showing which parts of the territory are visible from key locations and which remain hidden by topographic or vegetative barriers. The results pointed to wide visibility fields along the Tanaro River, in the Valmanera hills, and across the elevated northern slopes, where both natural features and built structures fall within continuous sightlines. No interpretive weighting was applied to these zones; they were simply mapped and classified by range and frequency of exposure. This analysis underscored the territorial role of perception, illustrating how viewshed areas contribute to the experience and spatial identity of the landscape.

The analysis also documented several discontinuities in scenic readability, particularly in urban fringe areas where recent or scattered developments disrupt the continuity of panoramic corridors and open views. In these sectors, visual connections between built form and the surrounding landscape were often partially obstructed by irregular building orientations, fragmented vegetative screens, or residual infrastructures such as parking areas and service roads. These perceptual breaks were not analyzed in terms of landscape quality or coherence, but were recorded as conditions of visual fragmentation, where the coherence of the territorial structure is weakened. In contrast to central areas with clearly framed visual axes and historically layered perspectives, marginal sectors presented more fragmented and incoherent scenic experiences, revealing a spatial tension between form, function, and perception. These

observations contributed to a descriptive understanding of how visual structure is unevenly distributed across the territory and influenced by both morphology and spatial organization.

The spatial analysis identified several cases where areas of high scenic relevance coincide with zones under formal landscape protection or ecological designation. These overlaps were especially evident on the wooded slopes of Valmanera, along panoramic stretches of the Tanaro corridor, and in agricultural clearings framed by linear vegetative structures. In such contexts, the convergence of ecological, historical, and visual values strengthens their role as multidimensional landscape systems. The coexistence of visibility and protection status was not interpreted as a matter of priority or hierarchy but was used to point out locations where perception and policy intersect, often aligning with spatial thresholds or features of territorial identity. These results positioned visual exposure not as a separate perceptual aspect but as a structural element of landscape interpretation, closely tied to wider territorial dynamics.

While the visual exposure analysis offered valuable insights into scenic dynamics, several limitations emerged concerning scale, data generalization, and assumptions about visibility. The viewshed models, for example, relied on digital elevation data and incorporated building heights to improve accuracy, but they did not account for dynamic factors such as seasonal vegetation changes or atmospheric conditions, both of which can strongly affect actual perception. Likewise, the choice of observation points depended on available data and subjective selection criteria, which may have excluded informal or everyday vantage points used by residents. These constraints were recognized as inherent to GIS-based scenic analysis, which—although useful for spatial orientation—represents only a partial approximation of perceptual reality. For this reason, the findings in this section should be seen as cartographic approximations rather than complete visibility assessments, intended to support a wider analytical framework rather than define fixed visual hierarchies.

The analysis of visual exposure and scenic considerations expanded the territorial reading beyond physical form and constraint systems, introducing perception as a spatial variable in the study of landscape–urban relationships. Through viewshed modelling, panoramic mapping, and the identification of perceptual discontinuities, the study documented how visibility contributes to the spatial readability and experiential identity of Asti's territory. The findings did not advance aesthetic judgments or regulatory suggestions but highlighted zones of scenic significance that align with ecological and morphological structures, reinforcing the need to treat perception as an analytical layer in territorial interpretation. The limits encountered in this process also underscored the methodological challenges of mapping immaterial qualities within GIS environments. These reflections form the basis for the next and final section, which addresses the critical issues and methodological limits observed throughout the entire study process.

5.5 Reflections on Critical Issues and Methodological Limits

This final section presents a synthesis of the critical issues and methodological limitations identified during the study phase, as observed through the technical analysis of landscape constraints, urban morphology, cartographic overlays, and visual perception mapping. The reflections provided here are derived from internal evaluations carried out as part of the spatial

assessment and GIS-based work process and are not intended to serve as institutional critiques or planning recommendations. Instead, they aim to document areas of difficulty, tension, or interpretive uncertainty, particularly where existing planning tools, environmental datasets, and spatial representations failed to align with the observed territorial structure. These insights offer a deeper understanding of the analytical boundaries of the study and reinforce the importance of reading the territory as a complex and layered system, rather than a fixed or clear-cut configuration.

One of the most frequent issues observed during the analytical process was the misalignment between formal planning classifications and the actual configuration of the territory. In multiple sectors of the municipality, zoning boundaries associated with transformation areas did not correspond with the environmental or morphological logic of the surrounding landscape. These inconsistencies were particularly evident where planned expansions intersected with zones of visual sensitivity, wooded areas, or fragmented ecological corridors that had not been explicitly considered in the existing planning framework. Rather than interpreting these conditions as planning errors, the study documented them as structural inconsistencies—such as zoning lines crossing ecological corridors or expansion areas conflicting with scenic boundaries. This phenomenon was not uniform but appeared in isolated zones, especially near urban edges, where overlapping systems of constraint and zoning created conditions of spatial uncertainty.

The analytical process also highlighted several technical limitations concerning the quality and compatibility of spatial data, which affected the accuracy and readability of cartographic outputs. Many datasets originated from different institutional sources and were produced with varying resolutions and levels of geometric precision, resulting in small but consequential misalignments when combined in the same GIS environment. These inconsistencies were most evident in constraint layers and base cadastral maps, where mismatches at the parcel scale or along natural boundaries introduced uncertainty into spatial interpretation. Furthermore, some thematic layers—such as local scenic elements or transitional green spaces—were only partially catalogued, leaving gaps that reduced the completeness of the mapping exercise. Taken together, these issues point to the inherent fragility of multi-source territorial data and the difficulties of generating consistent readings across heterogeneous cartographic foundations.

The process of territorial analysis highlighted the difficulty of accurately representing transitional and hybrid landscape zones, where neither urban form nor landscape character is fully dominant. These areas, often located along municipal edges or within zones of fragmented land use, present a mixture of rural, semi-natural, and marginal urban characteristics that resist categorization within standard planning or constraint typologies. From a cartographic perspective, these zones tend to fall into representational gaps, as they are neither fully protected nor fully urbanized, and often lack precise regulatory boundaries or consistent classification within institutional datasets. Their spatial behaviour—irregular, discontinuous, and morphologically complex—complicates attempts to overlay clear constraint logic or settlement patterns. These conditions were acknowledged during the study as structurally indeterminate zones, requiring caution in interpretation and revealing one of the analytical limits of standardized GIS-based approaches.

The analysis of scenic exposure and perceptual relationships, while useful for structuring visual readings of the territory, faced methodological and technical constraints that limited its reliability. The viewshed models were generated from digital elevation data that did not fully capture the effects of built form, vegetation cover, or seasonal change, producing idealized representations of visibility rather than precise perceptual conditions. Moreover, the selection of observation points—based on available data and logical assumptions—left out informal, everyday visual experiences that also shape local landscape identity. These omissions should not be seen as analytical shortcomings but as a consequence of the simplifications required to translate perceptual phenomena into cartographic form. The study recognized these limits and regarded the results as approximations of perceptual structure: useful for territorial orientation but insufficient for impact evaluation or regulatory decision-making.

The reflections presented in this section define the analytical boundaries and methodological conditions under which the spatial study was conducted. Each limitation—whether related to data quality, mapping resolution, landscape uncertainty, or perceptual generalization — revealed the complexity of representing territorial systems through technical means alone. Far from reducing the value of the work, these constraints highlighted the importance of caution, transparency, and methodological awareness in spatial analysis, especially in contexts where planning decisions are still pending. The observations presented in this chapter should be regarded as internal study outputs, prepared for exploratory and diagnostic purposes, without any claim to institutional authority or prescriptive validity. Their main contribution lies in framing a series of critical questions and spatial tensions that arose during the cartographic and morphological study, providing a basis for further reflection in future phases of planning.

6. Conclusions

6.1 Summary of Analytical Findings and Methodological Insights

The research presented in this thesis has underscored the complex relationship between regional landscape planning and municipal urban development, revealing significant challenges in harmonizing objectives, regulatory instruments, and spatial representations. The analysis began with a review of the Italian planning tradition, where the concept of landscape has undergone a major transformation—from a heritage-based approach focused on conservation of exceptional sites, toward a more integrated, systemic understanding of landscape as a dynamic and everyday dimension of territorial governance. Chapter 2 emphasized this conceptual shift by examining the influence of the European Landscape Convention and the evolving understanding of landscape as a structuring principle for spatial policy. This theoretical foundation set out the idea that landscape should not be regarded only as a constraint to be managed, but as a framework through which ecological continuity, perceptual quality, and historical identity are integrated into planning practice. Chapter 3 extended this discussion by detailing the structure and operational logic of the Piemonte Regional Landscape Plan (PPR). Through its cartographic framework and spatial configuration into landscape areas and units, the PPR offers a multi-scalar reference system for identifying values, constraints, and transformation dynamics. Yet, as following chapters demonstrate, this regional vision often struggles to find coherent application at the municipal scale.

Chapter 4 outlined the urban planning framework of the City of Asti, describing its regulatory instruments, territorial categories, and institutional planning logic. The PRGC (Asti's Land Use Plan), implemented through the Norme Tecniche di Attuazione (NTA) and related documents, is largely structured around zoning control, land-use differentiation, and procedural compliance. Although it makes reference to environmental sustainability and urban regeneration, it does not treat the landscape as an organizing principle in the structural sense found in the PPR. Instead, the municipal approach tends to confine landscape elements to predefined regulatory categories—such as environmentally constrained areas, historic centers, or agricultural reserves—without addressing their perceptual, connective, or identity-related roles. This produces a fragmented vision in which the landscape appears as a passive backdrop rather than an active framework for spatial coherence. In addition, the city's zoning logic often reflects pressures linked to urban expansion, infill, and infrastructural upgrades, which can conflict with the more conservative and interpretive orientation of regional landscape policy. These misalignments become clear when the two systems—the PPR and the PRGC—are compared spatially and thematically, as shown in the analytical work of Chapter 5.

Chapter 5 presented a spatial comparison between the regional and municipal planning systems, examining how the objectives and cartographic layers of the PPR were incorporated—or in some cases not incorporated—into Asti's LUP variant. The diagnostic approach applied in this phase consisted of overlaying landscape assets (tavola E1), components (tavola E2), and perceptual corridors (tavola E3) onto the municipal planning framework through GIS analysis. This process revealed critical gaps and partial overlaps between the designated landscape constraints and the local zoning categories. For example, certain areas identified in the PPR as having high scenic or ecological value were categorized in the PRGC as potential

transformation zones or left under low-regulation agricultural designations. Similarly, perceptual axes highlighted in the regional cartography often passed through areas for which the municipal plan had no specific visual or experiential safeguards. These spatial mismatches point to a lack of vertical integration between planning levels and suggest that while the PPR offers a rich interpretive framework, its principles are not automatically absorbed into municipal instruments. The study also found that this disconnection is not simply technical but reflects differing priorities: the PPR is built on interpretation and value recognition, whereas the LUP is designed to manage functional growth and legal conformity.

The methodological framework of the thesis was based on a diagnostic, observation-oriented approach that emphasized technical interpretation rather than normative design. At its core was the use of GIS mapping to compare and analyze spatial layers from both regional and municipal sources. These included PPR constraint tables and zoning categories, as well as VAS-related sensitivity maps, ecological corridors, and areas of transformation outlined in the LUP variant. The GIS platform allowed different planning logics to be overlaid, bringing to light zones of conflict, omission, or conceptual misalignment. This spatial analysis was complemented by a qualitative review of regulatory texts, institutional reports, and technical documents produced at both planning levels. The research also drew on internal materials developed during the studio internship, which offered practical insights into how landscape assets and constraints were addressed in the technical process of plan revision. While these sources provided additional depth, the methodology also faced certain limitations: the absence of fully operational co-planning protocols, the variable interpretive weight of non-adopted documents, and the lack of stakeholder-based perception studies. Even so, the combined use of spatial analysis, regulatory review, and technical documentation established a solid foundation for evaluating the integration between the PPR and the LUP.

The cumulative findings of the thesis support the initial hypothesis that integrating landscape into urban planning remains an incomplete process, particularly in the transition from regional strategy to municipal implementation. The case of Asti shows that even with a sophisticated regional plan such as the PPR of Piemonte—equipped with thematic maps, regulatory categories, and strategic orientations—landscape objectives tend to become diluted or fragmented at the local level. This outcome stems not only from technical mismatches between planning instruments but also from conceptual and institutional gaps. For example, the recognition of landscape as a structuring framework, highlighted in Chapter 2, is not translated into the zoning categories or procedural language of Asti's LUP. The lack of cross-referenced planning logics—such as shared definitions of landscape units, coordinated visibility assessments, or alignment of transformation categories—reflects a planning culture still shaped by functionalist and legally segmented approaches. In this regard, the thesis contributes to the wider debate on planning integration, echoing critiques in Italian and European scholarship about persistent vertical disconnections and the limited practical application of landscape principles in urban governance.

In summary, the research confirmed that while the Regional Landscape Plan offers a comprehensive spatial and conceptual framework, its integration into local planning tools like the Asti LUP is partial, selective, and often reduced to formal compliance. The diagnostic

methodology proved effective in identifying mismatches between landscape values and zoning designations, but also revealed deeper structural limits related to institutional coordination and interpretive translation. Landscape, despite being recognized in high-level planning documents as a central asset of the territory, struggles to assume a guiding role in the urban planning process when confronted with demographic, infrastructural, and political pressures at the local level. These findings open the way for a more refined reflection on how landscape values are operationalized, negotiated, or sidelined in practical planning contexts. The following section explores these dynamics further by examining the specific lessons learned from the technical and spatial analysis of Asti's urban–landscape interface.

6.2 Lessons from the Preliminary Analysis of Asti's Urban-Landscape Interface

One of the primary lessons emerging from the diagnostic analysis concerns the fragmented relationship between Asti's settlement structure and its underlying landscape framework. The city's morphology is the product of multiple historical phases, with a dense historical core surrounded by concentric layers of suburbanization, industrial areas, and infrastructural corridors. When overlaid with the cartographic structure of the PPR—particularly the landscape units and visual-perceptual corridors—a series of inconsistencies becomes visible. The overlay of PPR visual corridors and LUP transformation zones highlights ongoing mismatches—particularly along Asti's urban edges—where ecological and scenic values are insufficiently represented in municipal planning designations. This points to a misalignment not only in zoning categories but also in the broader conceptual reading of the territory: while the PPR frames it as a connective landscape system, the PRGC interprets it as potential development land. The outcome is a tension between identity-oriented landscape interpretation and functionally driven land-use planning.

The cartographic analysis of perceptual dynamics, particularly through PPR tavola E3 (Perception and Scenic Components), reinforced the observation that visual quality and territorial identity are insufficiently considered in the spatial logic of Asti's LUP. The PPR identifies several panoramic corridors and areas of high scenic value that define the visual experience of the landscape, often linked to elevated ridgelines, vineyard mosaics, and historic visual connections between built settlements and open countryside. In several cases, these perceptual systems intersect with areas allocated for urban expansion or infrastructural development in the municipal plan. The zoning categories applied in these areas—such as transformation zones or future development sectors—tend to rely on flat technical criteria, such as accessibility or topographic feasibility, without acknowledging the visual sensitivity or symbolic character integrated in the landscape. This disconnect highlights a broader issue: the perceptual structure of the territory, which is essential to place identity and cultural continuity, is treated as secondary or abstract in the planning logic of the LUP. The failure to translate scenic values into spatial policy undermines one of the PPR's core contributions—its effort to reframe planning around visibility, experience, and the relational quality of space.

Another significant insight relates to the treatment of ecological connectivity and environmental continuity within the municipal planning framework. The PPR, through its recognition of ecological corridors and sensitive landscape units, outlines a territorial vision in which natural systems are not isolated elements but part of a functional and continuous

network. In the case of Asti, features such as the Tanaro River, the Valmanera Woods, and various hillside ecosystems are mapped as nodes within a broader ecological infrastructure. When considered within the framework of the LUP, the connective function of these elements is seldom maintained. The plan generally frames natural areas as environmental buffers or protective zones, separated from the logic of spatial integration. For example, while the PPR stresses the importance of maintaining continuity between wooded areas and riparian systems, the LUP assigns these corridors no formal spatial role beyond basic conservation. This fragmented treatment of ecological systems limits the municipal plan's ability to benefit from the PPR's integrative landscape logic. As a result, opportunities for multifunctional space planning—where environmental, recreational, and perceptual functions could be layered to strengthen territorial resilience and coherence—remain unrealized.

The analysis also exposed a frequent issue in the interpretation and translation into practice of formal landscape constraints, particularly those established under Articles 136 and 142 of the Codice. These constraints, as mapped in the PPR's tavola E1 (Landscape Assets), identify areas subject to legal protection due to their historical, aesthetic, or naturalistic value. Within the territory of Asti, several such zones exist, including hillside belts with panoramic value, historic agricultural landscapes, and wooded areas. However, the municipal planning documents often address these constraints in a minimal or generic way, typically by acknowledging their existence without translating them into meaningful regulatory prescriptions within the zoning framework. For example, zones covered by Article 142 protection may still be categorized in the LUP as general agricultural areas (zone E) or marginal development sectors, with limited specification on how the presence of landscape protection affects development feasibility, road layout, or land-use intensity. This reflects a broader problem of regulatory layering: the coexistence of multiple legal classifications without a coherent integration mechanism leads to planning uncertainty and weakens the regulatory effectiveness of landscape protection at the local level. The lesson here is that without interpretive tools to align landscape constraints with zoning categories, legal protections risk becoming symbolic rather than functional.

Beyond technical and spatial considerations, the analysis pointed to important procedural lessons regarding institutional coordination and governance. One of the most striking findings was the absence of a formal co-planning (copianificazione) process between the Region and the Municipality of Asti during the development of the LUP variant. Although the the Codice establishes co-planning as a fundamental mechanism for aligning regional landscape objectives with local planning decisions, in practice, this constitutional tool was either bypassed or reduced to informal consultation. As a result, the integration of PPR guidelines into the municipal plan depended largely on the technical interpretation of planning offices and consultants, rather than on shared institutional vision. This lack of vertical coordination limited the capacity to resolve interpretive gaps, harmonize spatial categories, or develop a common language for landscape-related decisions. Furthermore, without a structured co-planning phase, the PPR risks being reduced to a reference document rather than a co-determinant of local spatial planning. The case of Asti thus illustrates a broader structural weakness in Italian landscape governance: the disconnection between normative principles and procedural implementation, especially when inter-institutional collaboration is not formally activated.

Taken together, the lessons evident from the case of Asti reveal not only a set of technical and spatial mismatches, but also deeper structural tensions in the way landscape is conceptualized and put into practice within local planning. The misalignment between perceptual systems and zoning logic, the fragmentation of ecological networks, the underuse of legal constraints, and the procedural void left by the absence of co-planning all point to a planning culture still caught between functional land management and interpretive territorial governance. These findings suggest that the constraints to landscape integration are not simply a matter of technical capacity or regulatory complexity, but reflect more fundamental issues of institutional vision, administrative coordination, and planning tradition. The Asti experience, while specific, echoes broader patterns observed across Italy: the persistence of vertical disconnection between planning levels, the marginalization of landscape as a structuring principle, and the limited implementation in practice of regional objectives within urban contexts. The following section builds on these observations by examining the key regulatory and institutional challenges that constrain coherent landscape planning across governance scales.

6.3 Challenges for Policy Recommendations

One of the main challenges highlighted by this thesis is the continuing lack of coherence between regional and municipal planning frameworks, especially in the field of landscape governance. The Piemonte Regional Landscape Plan (PPR) sets out a sophisticated and multidimensional vision—organized around landscape areas, units, perceptual components, and formal constraints—but its translation into local planning instruments remains incomplete and inconsistent. In Asti, the municipal Land Use Plan (LUP) engages with certain aspects of the PPR, such as acknowledging landscape constraints and referencing protected areas, but it does so without a holistic or system-wide rationale, leading to selective incorporation and fragmented application. The gap between regional vision and local implementation is not only procedural but structural, rooted in the design of the planning system itself, where different levels often operate in parallel with misaligned objectives, instruments, and priorities. This disconnection undermines the principle of integrated planning and reflects a wider institutional difficulty in achieving coordination across scales, particularly in contexts where planning cultures and administrative capacities are unevenly developed.

A key contributor to this regulatory incoherence is the divergence in terminology, classification systems, and spatial logic between the PPR and the municipal PRGC. The PPR constructs its framework through the lens of landscape interpretation, using categories such as “ambiti di paesaggio” (landscape areas), “unità di paesaggio” (landscape units), and “componenti percettive” (perceptual components). These categories are structured to express the fundamental relationships between ecological systems, historical identity, and visual coherence. In contrast, the Asti PRGC is organized around zoning codes such as residential, agricultural, industrial, or transformation areas—functional categories grounded in land-use regulation and development control. These two systems do not share a common conceptual foundation, nor do they operate at the same conceptual scale. As a result, areas recognized in the PPR for their ecological or scenic value may be assigned zoning codes in the LUP that permit substantial transformation, without any integrated acknowledgment of the landscape significance. This discontinuity in planning language leads to interpretive uncertainty and

complicates the possibility of spatial coherence. Without a shared vocabulary or cross-referenced classifications, the alignment of landscape policy across planning levels remains structurally constrained and vulnerable to inconsistency.

Regulatory uncertainty is heightened by the coexistence of multiple legal classifications that often lack mechanisms for integration. In Asti, this is especially visible in the overlap between zoning permissions established in the PRGC and the landscape constraints defined by the PPR and national legislation, including Articles 136 and 142 of the Codice. Zoning codes specify authorized uses and development intensities, but they frequently do so without explicit reference to the landscape constraints mapped at the regional level. This disconnect produces situations in which areas formally under protection may still be designated for urban expansion or infrastructure projects, unless the constraint is explicitly restated in municipal regulations. In addition, the legal force of landscape constraints is not always carried through into the procedural language of local planning tools, making compliance dependent on discretionary interpretation rather than systematic alignment. Such fragmented regulatory layering reduces both the clarity and the effectiveness of landscape protection, exposing the planning process to legal ambiguity, weaker accountability, and spatial incoherence. The absence of a unified regulatory framework in which landscape values and zoning codes are jointly structured continues to be a central obstacle to integrated landscape governance.

Another complication stems from the absence of clear enforcement mechanisms and consistent interpretation in the application of landscape-related norms at the municipal level. Even when constraints are formally acknowledged, their effect on planning outcomes depends largely on how local authorities choose to interpret and apply them in administrative practice. This opens the door to selective enforcement, particularly in politically sensitive areas where development pressures intersect with protected or perceptually valuable landscapes. Without binding operational guidelines that translate regional landscape constraints into locally enforceable rules, the municipal planning process becomes highly dependent on individual technical assessments or political negotiation. This inconsistency undermines the normative strength of landscape protection and introduces significant variation in how similar constraints are handled across different contexts or even within the same municipality. Moreover, the absence of regular monitoring and evaluation systems—capable of assessing how landscape objectives are being respected or compromised—further limits institutional accountability. In this regulatory void, the risk is not only the erosion of landscape quality, but the institutional normalization of spatial incoherence, where formal protection exists in theory but lacks the procedural weight to shape outcomes on the ground.

Underlying many of these regulatory and procedural weaknesses are deeper institutional imbalances between regional and municipal authorities, particularly in terms of technical capacity and operational independence. The Region of Piemonte, as the author of the PPR, possesses specialized expertise in landscape analysis, cartographic interpretation, and multi-scalar planning. In contrast, many municipalities—including Asti—lack internal resources or trained personnel capable of translating these regional frameworks into local planning tools. As a result, much of the interpretive responsibility is often transferred to external consultants, whose contribution is important but limited by project scope, tight deadlines, and the

institutional divide between design and governance. Reliance on outside expertise disrupts the continuity of planning logic and can lead to uneven application of regional principles across different parts of the plan. Furthermore, when municipalities lack dedicated landscape offices or interdisciplinary planning teams, they face difficulties in embedding landscape as a central element of their planning process. This imbalance is not only technical but also cultural: while regional planning tends to emphasize value recognition and long-term coherence, local planning is frequently influenced by short-term administrative cycles, budgetary constraints, and immediate land-use demands. Addressing this institutional divide is crucial for achieving meaningful integration of landscape into urban planning.

In sum, the challenges identified in the integration of the PPR with Asti's municipal planning framework reveal a systemic misalignment that extends across conceptual, regulatory, and institutional dimensions. The fragmentation of planning language, the absence of binding integration mechanisms, the reliance on subjective interpretation, and the imbalance in institutional capacities collectively undermine the operational realization of landscape policy. These problems are not isolated to the case of Asti, but illustrative of broader difficulties in implementing integrated planning in Italy, particularly where landscape objectives intersect with urban dynamics. The findings suggest that true coherence in landscape governance requires more than regulatory layering or cartographic overlay; it demands a structural rethinking of how different planning levels collaborate, how responsibilities are shared, and how values such as identity, perception, and continuity are translated into enforceable planning actions. The next section will explore possible directions for overcoming these limitations, not through prescriptive proposals, but through a reflection on how future planning could embrace integration, perception, and territorial belonging as central coordinates of action.

6.4 Perspectives for Future Planning: Toward Integrated and Perceptive Landscapes

One of the key reflections emerging from this thesis is that the landscape, when understood not as a constraint but as a structuring principle, has the potential to serve as a unifying framework across all scales of spatial planning. Rather than being positioned at the margins of urban regulation—as a set of formal protections or scenic values—the landscape can function as the connective tissue that links ecological systems, historical memory, and spatial identity. This approach does not seek to replace existing zoning logics or planning instruments, but to reorient them toward a deeper understanding of place. By anchoring planning decisions in the interpretive layers offered by the landscape—its morphology, visibility, symbolic meaning, and continuity—it becomes possible to pursue spatial development that is not only efficient and legal, but meaningful and contextually coherent. In this view, the landscape is not simply the context to urban transformation, but a platform through which the coherence of that transformation can be evaluated and sustained.

A second perspective concerns the role of visual and perceptual quality as legitimate and essential dimensions of planning. The perceptual structure of the territory—composed of viewsheds, sightlines, symbolic landmarks, and experiential pathways—has long been marginalized in planning practices dominated by quantifiable metrics and legal zoning categories. However, the PPR of Piemonte introduces a perceptual reading of landscape through cartographic tools such as tavola E3, suggesting that the way space is seen,

experienced, and remembered by its inhabitants is foundational to its planning value. Future planning approaches could benefit from systematically integrating these perceptual layers, not as abstract overlays, but as design constraints and orientation tools within urban transformation logic. Recognizing the emotional and cultural significance of visible landscapes—whether from public roads, hilltops, riversides, or historic centers—would allow planners to protect not only ecological function but also territorial identity. In this sense, perception is not a subjective or symbolic dimension alone, but a spatial reality with governance implications. Planning that incorporates visual logic into its frameworks can better respond to community belonging, landscape continuity, and the preservation of shared memory across generations.

The advancement of spatial technologies creates new opportunities to strengthen the role of landscape in planning practice through more integrative and data-driven approaches. Geographic Information Systems (GIS), when applied not only for mapping but also for interpretive analysis, provide powerful means of visualizing the complexity of territorial relationships. In Asti, GIS proved essential for overlaying zoning regulations with landscape constraints, perceptual axes, and ecological corridors, thereby uncovering patterns and mismatches that static, document-based planning would not reveal. Looking ahead, interpretive cartography can move beyond diagnostic use toward anticipatory applications, allowing planners to simulate scenarios, test cross-scale compatibility, and visualize the spatial effects of regulatory choices. The ability to combine diverse data sources—from environmental indicators to social perception surveys—can also support multi-criteria evaluation frameworks that extend beyond land-use efficiency to include cultural, ecological, and experiential values. The potential of these tools, however, depends on their integration into planning processes—not as secondary technical add-ons, but as central instruments of analysis, dialogue, and negotiation among institutions, stakeholders, and the landscape itself.

Another key direction for future planning lies in rethinking the procedures through which landscape policies are constructed, negotiated, and implemented. The disconnection observed between regional and municipal planning in the case of Asti highlights the limitations of a system that lacks structured mechanisms for institutional dialogue and coordinated decision-making. The absence of formal co-planning (copianificazione) processes restricts the capacity of local plans to internalize regional landscape objectives, reducing them to reference status rather than integrating them into the core of municipal policy. To overcome this, future planning efforts could explore procedural innovations that integrate landscape more deeply in planning governance—such as mandatory co-planning frameworks, joint technical committees, or cyclical consultation phases between territorial levels. These mechanisms would not only enhance regulatory coherence but also support a more balanced and negotiated interpretation of landscape values, particularly in contested or transitional zones. Additionally, introducing participatory methods—whether through workshops, visual mapping exercises, or public perception studies—could foster participatory engagement the planning process and give visibility to local narratives often absent from formal documents. In this way, planning can move from institutional fragmentation to collaborative territorial governance.

A shift in institutional orientation may also be required for landscape to assume a central role in future planning. Currently, the role of institutions in landscape governance is often limited

to enforcement—ensuring observance with constraints, issuing permits, and resolving conflicts—rather than engaging in anticipatory interpretation and cultural mediation. However, landscape is not only a legal object; it is a social construct, shaped by memory, perception, and collective meaning. As such, institutions could evolve from acting primarily as regulators to becoming mediators of interpretation, guiding planning processes through a lens that values cultural depth, territorial specificity, and ecological continuity. This would involve training technical staff not only in regulatory analysis but also in landscape reading, perceptual mapping, and participatory engagement. It also requires institutional flexibility to integrate alternative narratives of place that may not fit easily within standardized planning categories. By repositioning their role, institutions at both regional and local levels can contribute to a planning culture that treats landscape as a common good—one that must be interpreted, debated, and shaped collaboratively, rather than simply managed through rules and constraints.

Although this thesis is grounded in the Italian planning tradition, particularly in the framework of the Piemonte PPR and its municipal implementation in Asti, its diagnostic approach and emphasis on landscape as a structuring element offer valuable perspectives for other national contexts—especially those where landscape remains a secondary or overlooked dimension in spatial governance. In this sense, the reflections developed throughout the research may carry comparative significance beyond the Italian case. A particularly relevant context for such a reflection is Iran, my home country, where planning culture and institutional practices reveal a markedly different relationship between landscape and spatial development. In the Iranian context, urban and regional planning systems often operate through rigid, top-down procedures that prioritize land-use control, economic functionality, or infrastructural expansion over the cultural, ecological, and perceptual dimensions of space. When addressed, landscape is often treated as a visual amenity or symbolic element rather than as a spatial structure able to organize settlement patterns, ecological networks, and community identity. Concepts such as co-planning, the integration of landscape areas and units, and the diagnostic use of spatial perception—central to the Italian model examined in this thesis—are still largely missing from the Iranian context. In addition, regulatory fragmentation, weak institutional coordination, and the absence of interdisciplinary tools continue to limit the effective application of landscape values at both national and local scales. This suggests that one of the most relevant lessons from the Asti case may lie not in the replication of specific tools, but in the adoption of a planning culture that recognizes landscape as a foundational layer of spatial policy.

Transferring such an approach to the Iranian context would require a dual transformation—both institutional and cultural. On one hand, planning frameworks must evolve to incorporate landscape as more than a regulatory constraint, developing instruments capable of reading and structuring space according to ecological, historical, and perceptual logics. This involves not only the use of geospatial analysis and multi-layer cartography but the creation of legal and procedural systems that can support integrated territorial visions. On the other hand, a broader cultural shift is needed to position landscape as a shared civic value—one that carries meaning beyond aesthetics or heritage conservation. This would entail engaging local communities, fostering interdisciplinary collaboration, and rethinking the role of planners as interpreters of territorial identity rather than as technicians of zoning regulation. While these changes are ambitious, they resonate with emerging concerns in Iranian cities—such as uncontrolled urban

sprawl, degradation of cultural landscapes, and disconnection between development policies and local identity. In this sense, the planning principles explored in the Italian context—particularly the integration of landscape into multi-scalar governance—may serve as a valuable reference point for reimagining landscape not only as a physical reality, but as a political, ecological, and perceptive foundation for sustainable spatial transformation.

In closing, the integration of landscape into urban and territorial planning should be seen not only as a technical or regulatory goal but also as a cultural project. In its broadest sense, landscape functions as a form of territorial infrastructure—an interpretive framework through which space acquires meaning, continuity, and coherence. Its role in planning extends beyond protection or mitigation to shaping how communities relate to place, how values are expressed spatially, and how development responds to context. The findings of this thesis, based on the case of Asti, indicate that future planning must regard landscape not as a fixed constraint but as a dynamic framework able to mediate between growth and identity, between form and memory. Achieving this requires tools that combine analysis with perception, institutions that pair technical competence with collaboration, and planning cultures prepared to look beyond function to meaning. As landscape becomes more central to questions of sustainability, resilience, and inclusiveness, its integration into planning practice will be indispensable for ensuring that territorial transformation is not only legal and efficient, but also legible, inclusive, and rooted in the values of place.

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