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GreenScape CE

3.1.3. Transnational strategy on implementing, integrating and funding CCI/NBS/GI in urban areas

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A. Introduction

Nature-Based Solutions (hereinafter NbS) and Green Infrastructure (hereinafter GI) are increasingly being recognized as pivotal approaches for sustainable urban development across Central Europe and beyond. Despite the benefits they deliver, green areas often lose out in the competition for space as urban populations grow (European Commission, n.d.).

The GreenScape CE project, uniting five Central European urban areas (Zagreb, Metropolitan City of Milan, Ptuj, Szeged, and Warsaw), aims to contribute in reversing this trend by systematically introducing NbS into urban planning and development. This transnational strategy builds on their experiences to guide cities across Central Europe and beyond in integrating NbS and GI as core components of urban policy, planning, and investment decisions. The project is aligned with major international and EU strategies, ensuring coherence with key frameworks such as the European Green Deal, the EU Biodiversity Strategy 2030, the EU Adaptation Strategy, and the Urban Greening Plans initiative, among others.

At its heart, this strategy envisions greener, more resilient cities that leverage nature to address climate change, biodiversity loss, and quality of life challenges. It is intended not as a one-off document but as a long-term, living framework that cities can incorporate into urban planning processes. It aligns with broader urban development goals (mobility, energy, climate adaptation, public health, etc.) and seeks to mainstream NbS into everyday decision-making.

The strategy speaks to policymakers, urban planners, communities, and stakeholders at all levels – providing a roadmap for transnational collaboration and knowledge exchange so that successes in one city can inspire and inform action in others. Ultimately, by embracing NbS, cities in Central Europe can reverse current trends of ecosystem degradation, build climate resilience, and improve citizens' well-being in a cost-effective and inclusive way.

B. Methodological framework

Foundations in the Joint Strategy (D1.5.1)

This Transnational Strategy is grounded in the conceptual framework established by the GreenScape CE *Joint Strategy* (Deliverable D1.5.1). The Joint Strategy emphasizes a **holistic, systemic approach** to NbS and GI that balances social, economic and environmental needs. In particular, D1.5.1 outlines a coherent **planning methodology** for Local Action Plans (LAPs) – a step-by-step process to assess urban contexts and develop tailor-made NbS interventions. It stresses participatory design: local governments coordinate the process in conjunction with communities and stakeholders. For example, GreenScape CE piloted "hackathon" co-creation events and committed to producing model "citizen engagement and co-creation" approaches for NbS planning. These methods have provided the baseline for the Transnational Strategy's orientation towards **community co-creation and consensus-based planning** across Central Europe.

Shared principles and planning approach

The Joint Strategy introduced core guiding principles that have been adopted transnationally. Key among these are **multifunctionality, co-creation, site-specificity, and integration into broader planning**:

- **Multifunctionality:** NbS must deliver *multiple co-benefits*. As the Joint Strategy states, multifunctional interventions provide "multiple and diverse benefits to people and nature in parallel," addressing climate, social and economic challenges simultaneously.
- **Co-creation:** Solutions are developed *with* local communities, not for them. The Joint Strategy makes community engagement a central pillar, noting that co-creation (and co-design, co-implementation and co-management) is a guiding principle for effective NbS. In practice, this means engaging residents, experts and officials through participatory workshops and feedback loops, as reflected in the planning methodology of LAPs.
- **Site-specificity:** Interventions are *tailored to place*. The Strategy emphasizes that NbS/GI measures "ought to be meticulously tailored to each specific location's unique characteristics, challenges, and opportunities". Rather than one-size-fits-all, planning must analyze local needs and land-use patterns to select the appropriate NbS mix.
- **Integrated Planning:** NbS/GI must be mainstreamed into all relevant urban and territorial planning. D1.5.1 calls for an "integrated approach" where NbS plans align with other urban development policies. For example, it advises that NbS action plans be systematically included in spatial plans and infrastructure projects, thus breaking down siloed decision-making.

Each of these principles – born from the Joint Strategy – underpins the Transnational Strategy's vision. By codifying them as shared pillars, the Transnational Strategy ensures consistency across partner cities while allowing flexibility for local adaptation.

Expanding to the transnational scale

Building on the Joint Strategy's foundation, the Transnational Strategy extends these ideas into a region-wide perspective. It envisions **cross-border collaboration and policy alignment** that scale up local lessons to Central Europe. For instance, D1.5.1 explicitly foresees developing "a joint transnational strategy on implementing and funding NbS projects in urban areas" and linking individual NbS into "a coherent GI network that expands outside the city borders". To achieve this, the Transnational Strategy promotes the creation of a **network of cities** across the region, facilitating peer-to-peer learning and shared governance of NbS (as also envisaged in D1.5.1).

At the regional scale, the strategy aligns with EU frameworks (e.g. the Territorial Agenda 2030 and Green Deal) that call for spatial planning of interconnected green networks. In practice, this means harmonizing local action plans so that NbS investments and GI corridors cross municipal and national borders, creating resilience at landscape scale. Finally, the Transnational Strategy emphasizes **coordinated funding mechanisms**. It draws on the Joint Strategy's call to mobilize EU adaptation and biodiversity funds for NbS. By advocating joint financing models and aligning with Central Europe funding programmes, the Strategy seeks to ensure that innovative NbS projects identified at the local level can be upscaled and sustained through regional and EU support.

So, the strategy builds on work already carried out within the project. Each pilot city prepared a Local Action Plan (LAP), identifying priority NbS/GI interventions based on stakeholder workshops, surveys, and analyses carried out through the GreenScape Visual Mapping Platform (GVMP). A common template (Joint Strategy D.1.5.1) ensured coherence across pilots.

The process was participatory: municipalities worked with citizens/students and/ or experts/stakeholders through workshops and hackathons to identify needs and co-design solutions. The LAPs were complemented by the recommendations from Deliverable D.3.1.2 on integrating NbS/GI in urban and spatial plans, as well as insights from the pilot actions. Technical analyses—such as mapping accessibility and ecological connectivity—supported decision-making. Deliverables from WP 2 (manuals, financing guidance, indicators) were incorporated. The strategy was reviewed by the city partners and refined based on contributions from the knowledge partners.

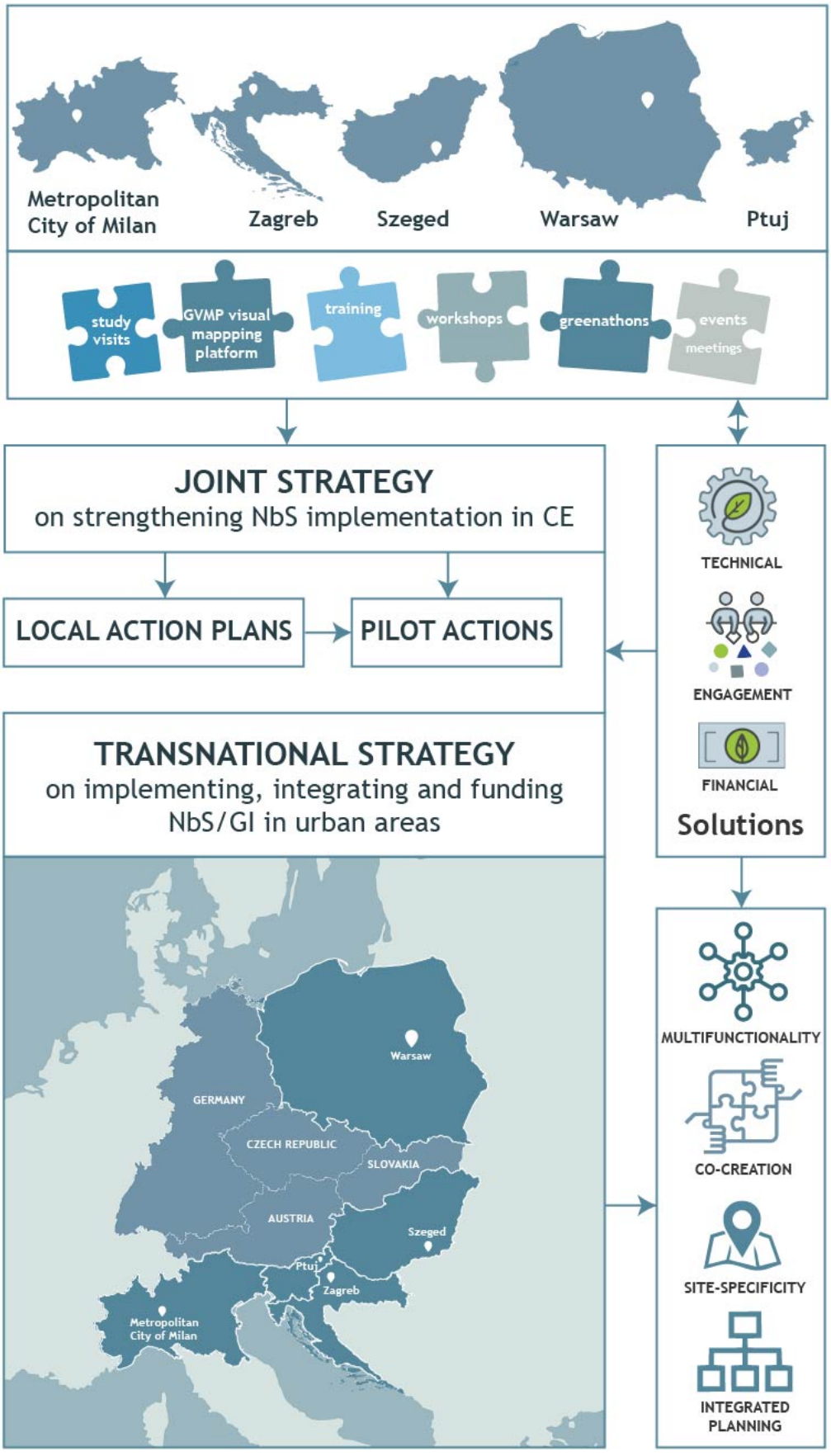

Figure 1. Building the GreenScape CE Transnational Strategy for NbS/GI in urban areas

C. Local Action Plans, Pilot Actions and lessons learned

To tailor the strategy, it is informed by insights from the five GreenScape CE pilot cities. Each pilot demonstrated how NbS can address specific local issues, while revealing common principles for success.

1. Metropolitan City of Milan, Italy

The Metropolitan Action Plan (MAP) of the Metropolitan City of Milan sets out a strategic framework for the integration of NbS into urban and territorial planning across its metropolitan area. **The** MAP aims to support a transition towards more resilient, ecologically functional, and socially inclusive urban environments.

At the heart of the MAP is the "Resilient Trajectory", a strategic pathway with the **Metropolitan Urban Agenda for Sustainable Development based on UN Agenda 2030** focusing on key environmental challenges such as urban flooding, the urban heat island effect, and the scarcity of green space. A central component of the strategy are the NbS and the Sponge concept, that support the diffusion of NbS such as rain gardens, permeable surfaces, infiltration trenches etc. These measures are intended to increase local water retention, improve microclimatic conditions, and foster biodiversity, while also contributing to urban regeneration processes.

The MAP is characterised by a multilevel and intersectoral governance model that fosters cooperation among municipalities, technical agencies, civil society, and private actors. It promotes the integration of NbS into existing planning tools, including the Metropolitan Territorial Plan (PTM) and local Territorial Government Plans (PGTs), thereby ensuring institutional continuity and policy coherence. Priority areas for intervention are identified through spatial and hydrological analyses, allowing for the targeting of actions in zones of high environmental and social vulnerability. The plan also outlines mechanisms for stakeholder engagement, capacity building, and public communication, with a view to ensuring transparency and local ownership.

From a financial perspective, the MAP mobilises national and EU-level funding, including resources linked to the National Recovery and Resilience Plan (PNRR). It also explores innovative financing mechanisms and advocates for the establishment of durable funding frameworks to support the long-term maintenance and scalability of NbS.

The Metropolitan City of Milan pilot focused on strategic planning and mapping of NbS at a metropolitan scale. Leveraging the city's "Resilient Trajectory" for sustainable development, the pilot action created a bottom-up inventory of **NbS** across all 133 municipalities of its metropolitan area. This participatory mapping collected local data on existing and planned NbS, ensuring community input from the ground up. The initiative harmonized NbS information and identified priority intervention areas using GIS analysis. Crucially, Metropolitan City of Milan embedded this approach into its planning instruments – aligning with the Metropolitan Territorial Plan, Sustainable Urban Mobility Plan, and Strategic Plan – so that GI is mainstreamed into regulatory frameworks.

Metropolitan City of Milan's pilot underscores the importance of metropolitan governance in NbS: coordination across municipalities and sectors to integrate green and grey infrastructure. It also highlighted that robust data (a "living" NbS GIS map) and cross-sector collaboration can guide targeted climate adaptation measures at scale. By mapping and planning NbS transversally, the metropolitan city sets an example for other large urban areas on managing NbS networks beyond a single metropolitan areas' boundary.

2. Zagreb, Croatia

The Zagreb LAP is grounded in a spatial-environmental analysis that identifies areas of intervention based on key criteria: level of urbanisation, presence and continuity of green and blue infrastructure, microclimatic pressures (notably urban heat), and potential for multifunctional use of public space. Three pilot zones were selected: Trešnjevka-sjever, Gornja Dubrava, and Sesvete. These areas exhibit both ecological challenges and opportunities for applying NbS through local planning and participatory approaches.

The plan focuses on small-scale, replicable NbS interventions such as:

- Green corridors to restore ecological continuity,
- Community gardens and revitalised public green spaces,
- Rain gardens and bioswales for water retention and infiltration,
- Greening of schoolyards and courtyards to increase permeability and educational value

A key dimension of the LAP is institutional integration. It proposes incorporating NbS into municipal planning instruments, notably the General Urban Plan (GUP) and sectoral strategies linked to climate, environment, and public health. The LAP underlines the importance of cross-departmental coordination and the need for technical and administrative capacity-building within the City of Zagreb's structures.

The plan was developed through a participatory process involving public institutions, expert organisations, NGOs, and citizens. Stakeholder feedback was gathered through thematic workshops and interviews, focusing on identifying locally acceptable solutions and strengthening the legitimacy of the proposed actions. Finally, the LAP includes an evaluation framework for tracking implementation. It proposes qualitative and quantitative indicators across ecological, spatial, and social dimensions—such as added green area, improved connectivity, participation levels, and educational impact.

The City of Zagreb pilot showcases a large-scale NbS retrofit of recreational infrastructure to address urban heat and water challenges. In 2023, Zagreb adopted a Green Urban Renewal Strategy highlighting NbS as key to quality of life and climate adaptation. Within this framework, the pilot project focuses on reconstructing three open-air sports field complexes in Novi Zagreb (a post-war urban district) into modern, climate-resilient sports and recreation spaces. The existing asphalt courts and surroundings were in degraded condition – large impervious surfaces that exacerbated heat islands and poor drainage.

The pilot solution is a comprehensive NbS-driven redesign: the old asphalt will be removed and new multi-use sports fields built with permeable materials to allow rainwater infiltration. Alongside, the plan introduces bioretention systems and rain gardens to manage stormwater on-site, thereby reducing runoff and burden on sewers. New auxiliary facilities (like changing rooms or small community buildings) will be constructed with green roofs and "biosolar" roofs (combining vegetation with solar PV panels), and equipped with rainwater harvesting and solar energy systems.

The design also significantly increases urban greenery: planting rows of trees, shrubs, and drought-tolerant plants around the fields and along paths, to expand shade and improve the microclimate. Amenities like benches, pergolas, water fountains, and climbing plants on fences are included to enhance usability and comfort. By transforming these sports grounds, Zagreb aims to demonstrate NbS benefits in multiple dimensions: cooler local temperatures (through shading and reflective/permeable surfaces), better flood control, on-site energy generation, and more pleasant recreational spaces for the community.

The pilot serves as a model for retrofitting other urban public facilities (e.g. schoolyards, parking lots, playgrounds) with NbS. It underlines the importance of a holistic approach – tackling heat, water, energy, and biodiversity together – and shows that NbS can be integrated into city infrastructure projects without compromising functionality. Zagreb's initiative also stresses the value of monitoring different sites (three

locations were chosen) to compare outcomes, which can inform scaling up similar solutions citywide. Engaging local sports clubs, residents, and stakeholders in the co-design (e.g. choosing sports functions and maintenance models) has been part of the process, ensuring the new green sports parks are embraced and cared for by the community.

3. Warsaw, Poland

The Warsaw LAP aims to improve local climate resilience, enhance ecological and social functions of urban space, and integrate green infrastructure into existing public areas.

The LAP focuses on a specific area within the Bielany District in the northern part of Warsaw. The chosen location features a high proportion of impervious surfaces, fragmented greenery, and significant residential density. It includes public spaces such as school grounds, roadsides, courtyards, and pedestrian routes that present opportunities for NbS interventions.

The plan proposes small-scale, realistic actions, including:

- Creating rain gardens and vegetated infiltration strips to manage rainwater runoff;
- Replacing sealed surfaces with permeable materials;
- Introducing new tree plantings and greening underused spaces to improve shade and biodiversity;
- Enhancing ecological connectivity between scattered green elements;
- Supporting participatory design processes and local awareness.

In addition to the Bielany planning area, the LAP includes a pilot project on Wileńska Street in the Praga-Północ District. This intervention was implemented within the GreenScape CE project and includes blue-green infrastructure such as vegetated basins, permeable paving, and tree planting. It demonstrates how NbS can be introduced even in dense and technically challenging street environments.

The LAP was developed through a participatory process involving municipal departments, local experts, institutions, and residents. Stakeholder input shaped the proposed actions and helped identify feasible and accepted solutions.

The City of Warsaw pilot encompasses a project on urban revitalization and street reconstruction project, the Ulica Wileńska. The main goal is to rehabilitate and modernize the Wileńska streetscape with nature-based solutions, particularly focusing on sustainable stormwater management. This street lies in a dense neighborhood earmarked in Warsaw's Integrated Revitalization Program (to 2022) as needing upgrades to public spaces.

Under the GreenScape CE pilot, the city plans to transform Wileńska by installing green infrastructure that captures and uses rainwater (e.g. rain gardens, bioretention areas, permeable surfaces), planting trees and greenery along the street, and creating pocket parks or green corners for residents. By doing so, the project addresses frequent flooding and heat accumulation in the area and improves its attractiveness and social function. Community studies indicated that parts of Wileńska were underused and lacked appeal for residents – the presence of a tram depot and a hidden green square with a playground signal unrealized potential for a neighborhood hub. The pilot thus not only deploys NbS for climate resilience (reducing runoff and cooling the microclimate) but also seeks to revitalize a public space with community involvement. Residents have been consulted on their needs and desires for the street (e.g. more greenery, seating, safe play areas) as part of the planning.

4. Szeged, Hungary

The Szeged Local Action Plan (LAP) is guided by the city's climate vision of preserving and enhancing a livable, high-quality built and natural environment while minimizing environmental impacts and adapting to climate change. It aligns with Szeged's Climate Strategy goal to increase adaptive capacity and protect residents from growing heat stress. Expanding and improving urban green infrastructure (GI) is central to this plan, with specific objectives to develop climate-smart green spaces (more biodiverse areas and tree canopy), boost CO_2 sequestration, and increase urban water retention. These efforts also support raising public climate awareness and broad partnerships in the city.

Szeged faces rising temperatures, heat waves, flash flooding, droughts, and air pollution. Intense rain events are followed by long dry periods; water is often drained instead of absorbed, stressing urban vegetation. Green areas also compete with other land uses, making protection and expansion of greenery essential.

The plan defines 22 actions (to 2030) across four areas:

- Technical: better planning/design of green spaces, tree planting, water retention (rain gardens, permeable surfaces, micro-forests, improved tree pits).
- Institutional/financial: stronger regulations, funding, involvement of private developers (e.g., green roofs/façades, no net loss of ecosystem services).
- Participatory: public involvement and awareness campaigns.
- Investments: implementation of new parks and tree canopy expansion.

Targets include increasing municipal green areas and reaching 12% green or water coverage by 2027.

Stakeholders and Participation

The plan involves several city departments, the municipal green management company, and political leadership. Stakeholders and citizens contribute through consultations, community planning, and educational activities.

Progress is evaluated annually with clear indicators. Maintenance is integrated into project design (resilient species, proper irrigation, multi-year contractor responsibility). Staff training ensures long-term care and sustainability of new green spaces.

The City of Szeged pilot illustrates a tactical intervention on a city scale with strong community benefits. Szeged's Local Action Plan identified greening public transport infrastructure as a priority, leading to a pilot on "Greening public transport stops". The project involves adding vegetation (e.g. green roofs or walls, planters, trees) to bus and tram stops to reduce the urban heat island effect and improve air quality for commuters. This seemingly small-scale action serves multiple goals: aesthetic improvement, thermal comfort, air pollution reduction, and public well-being. Plants at and around transit shelters absorb CO_2 and pollutants and provide shade, which is especially valuable where vehicle emissions and summer heat are intense.

The pilot's design was informed by Szeged's Green Action Plan (completed in 2024), which evaluated various NbS measures and set criteria for prioritization. A key lesson from Szeged is the effectiveness of targeted micro-NbS in high-use public spaces: even small green installations can yield outsized benefits in mitigating heat and improving comfort for city residents. Additionally, Szeged emphasized community and stakeholder engagement in planning these green stops to ensure local needs were met and to build public support for NbS in everyday urban settings. The success of this pilot suggests that other cities can replicate greening of transit stops or similar "quick win" NbS interventions as part of broader climate adaptation strategies.

5. Ptuj, Slovenia

Ptuj is a medieval city with limited green space in the historic core; larger green areas lie on the fringe, in neighbourhoods, and along the Drava/Lake Ptuj. Key problems include scarce trees, no water-retention system, low canopy cover, poor soils, heat, air pollution, urban heat-island effects, runoff/flood risk, drought risk, and fragmented green systems.

The goal of Ptuj LAP is to improve residents' quality of life, increase climate resilience, and conserve natural resources/biodiversity through NTR in urban and rural parts of the municipality.

Where to act (potential locations).

- Old town: green bands/planters, pergolas, vertical greening; shaded gateways; castle hill and Panorama; improve and protect existing greens.
- Residential areas: rain gardens, green roofs, community gardens, water capture; tree lines; permeable parking.
- Industrial/retail: green roofs/walls, bioretention, shaded/greened parking, vegetated gateways.
- Fringe & countryside: shelterbelts, agroforestry, stream/wetland revitalisation, ecoremediation at Lake Ptuj, floating islands, native plantings.

Actions (preliminary proposals). The LAP lists quick, short-term, and longer-term NTR measures focused on cooling the city, improving tree growth conditions, biodiversity, stormwater management, and shade. Examples include:

- improve urban tree soils (structural soils, nutrients, larger/shared rooting areas, permeable paving),
- replacement/new plantings,
- micro-parks/parklets (incl. temporary pop-ups),
- rainwater harvesting into street furniture,
- pergolas/wire trellises and green walls,
- pollinator-friendly urban greens,
- green islands on parking areas, and
- a green corridor linking the centre to the fringe (e.g., to Ranca).

Example action with parameters. The proposed green corridor along the Drava between the city park and Ranca (continuing by Lake Ptuj) foresees ~1.5 km length (up to 50 m wide), ~3 ha of arranged green space; timeframe "long-term NTR – 2 years"; estimated cost €500,000; funding from municipal, regional, national, private, and EU sources. The plan emphasises iterative co-creation: online surveys, focus groups, walking interviews, public presentations, and collaboration with the municipality. Key stakeholders are the local community, City of Ptuj, users, and landowners. Progress tracking is proposed via an environmental assessment sheet and sensor/expert data on soil compaction/pH, temperature/moisture, canopy density, root structure, arborist vitality assessments, and air pollutants—ensuring NTR decisions are evidence-based.

Ptuj's LAP identified critical challenges: lack of shaded areas and green spaces in the medieval city core, overheating in summer, and flooding issues – problems common to many cities. In response, Ptuj's strategy divided the city into four key zones – the old town center, residential neighborhoods, industrial/commercial zones, and peripheral rural-urban edges – to tailor NbS solutions to each context.

The pilot action concentrated on two types of areas: (1) the historic city center streets (Ulica heroja Lacka and Zelenikova ulica), where green space is scarce, and (2) selected residential neighborhoods (e.g. along Ciril Metodov Drevored and adjacent blocks) where existing green courtyards needed enhancement. Ptuj's

interventions included a suite of NbS measures chosen from its LAP's priority list: for instance, improving street tree growing conditions (using structural soils, providing nutrients, expanding tree pits and using permeable pavements) to ensure healthy urban trees. They also planned green pergolas and trellises along streets for shade, and created pollinator-friendly urban greenspaces to boost biodiversity. Not every idea was implemented (e.g. micro-parks in parking areas were omitted due to lack of suitable space), reflecting the need to adapt solutions to local feasibility.

From Ptuj's experience, the lessons are: a zonal approach can ensure NbS fit the local urban fabric; enhancing existing green assets (like retrofitting street trees and courtyards) can be as important as introducing new features; and even cities with little prior NbS experience can kick-start implementation through structured planning. Ptuj also highlighted the value of community co-creation – involving residents in design – to build acceptance for green changes in historic and residential areas, ensuring the solutions are practical, culturally fitting, and well-maintained by the community over time

6. Common Lessons

Despite differing scales and focus areas, the pilot cities reveal common threads for successful NbS implementation:

- **Strong strategic planning linkages** – each pilot was guided by a local action plan or strategy ensuring NbS align with broader development plans (from metropolitan plans in Milan to city revitalization programs in Warsaw).
- **Community engagement and co-creation** – all pilots actively involved local residents, whether via workshops, surveys, or participatory design of the interventions, which improved the relevance and acceptance of NbS.
- **Multifunctionality** – the NbS chosen often serve multiple purposes (e.g. Zagreb's green sports fields address heat, water, energy, recreation; Szeged's green stops improve both environment and commuter comfort), reinforcing the efficiency of NbS over single-purpose grey solutions.
- **Policy support and regulation** – cities needed to navigate local regulations (planning permissions, historic preservation, etc.) for NbS; having supportive policy frameworks or political buy-in (like Milan's metropolitan agenda or Zagreb's climate programs) greatly facilitated implementation.
- **Maintenance and sustainability** – pilots stressed that NbS are not one-off installations but require long-term maintenance plans, often involving local communities or city services (e.g. Ptuj and Zagreb plan for residents helping with upkeep of plantings).

These lessons inform the transnational strategy, indicating which practices are universally applicable and what pitfalls to avoid when scaling NbS in different urban contexts.

D. Policy and planning frameworks

7. European and national policy instruments

This transnational strategy is anchored in, and reinforced by, several key European and international policies, strategies, and guidelines related to nature-based solutions and green infrastructure. Cities should ensure their NbS efforts contribute to and leverage these broader frameworks:

7.1. EU Green Infrastructure Strategy "Enhancing Europe's Natural Capital"

The EU's Green Infrastructure Strategy ("Enhancing Europe's Natural Capital") promotes a strategically planned network of natural and semi-natural areas delivering ecosystem services and enhancing biodiversity. It underscores that green infrastructure provides benefits like air and water purification, flood protection, and recreational space often at lower cost than grey infrastructure.

The strategy calls on Member States and regions to integrate GI into planning and policy across sectors. It also identifies Natura 2000 protected areas as the backbone of a continental GI network. In urban contexts, this translates to linking city greening with wider ecological networks. Our transnational strategy aligns with this by striving to connect urban NbS into larger networks and by echoing the Commission's guidance that healthy ecosystems, green infrastructure, and NbS should be systematically integrated into urban planning and decision-making.

7.2. EU Urban Agenda – Sustainable Land Use and Nature-Based Solutions

Under the Urban Agenda for the EU, the 2018 Partnership on Sustainable Use of Land and NbS developed an Action Plan with recommendations for European cities. The partnership's general aim is to "ensure efficient and sustainable use of land and natural resources to help create compact, liveable and inclusive European cities for everyone." It highlights cross-cutting links to the UN New Urban Agenda and Sustainable Development Goals, reinforcing that NbS and green infrastructure contribute to global sustainability targets.

The Action Plan includes measures such as improving funding for urban greening, better regulation (e.g. integrating NbS into building codes), and knowledge-sharing platforms. By following this strategy, Central European cities also support the Urban Agenda objectives. Notably, a new Greening Cities Partnership (2023) is updating these actions, emphasizing issues like avoiding urban sprawl, promoting urban green space standards, and fostering "15-minute cities" with ample greenery. Our strategy's pillars of integrated planning and community engagement resonate strongly with the Urban Agenda's call for compact, green, and inclusive urban growth.

7.3. EU Biodiversity Strategy for 2030 and Urban Greening Plans

The EU Biodiversity Strategy 2030 is a cornerstone policy that explicitly addresses cities. It calls on all cities with over 20,000 inhabitants to develop ambitious Urban Greening Plans (also termed Urban Nature Plans) by the end of 2021. These plans should include measures to create new urban forests, parks, green roofs and walls, tree-lined streets, pollinator zones, and other NbS to bring nature back into cities. The goal is to reverse biodiversity loss and improve urban livability.

Our transnational strategy directly supports this mandate by providing a structured approach for cities to formulate and implement such greening plans. It also aligns with the Strategy's targets such as planting at least 3 billion additional trees in the EU by 2030 (many of which will be in urban/suburban areas) and eliminating pesticide use in public green spaces. Cities implementing this strategy will be contributing to the EU's biodiversity goals and can tap into associated funding (e.g. the LIFE program for urban nature, or Horizon Europe calls on NbS). Furthermore, the Green City Accord (a voluntary initiative under this framework) invites cities to commit to increasing green space and biodiversity – Central European cities could collectively join such initiatives to demonstrate leadership.

7.4. EU Nature Restoration Law (2024)

In a landmark development, the Nature Restoration Regulation was adopted in August 2024. It sets binding targets for ecosystem restoration across Europe, including specific targets for urban ecosystems. Notably, the law mandates no net loss of green urban spaces or tree canopy cover by 2030 (compared to 2021 baseline), and thereafter an increasing trend in urban green space until "satisfactory levels" are reached. It also calls for integrating nature restoration measures into city planning. This transnational strategy gives cities a pathway to meet and exceed these requirements: by cataloguing existing green spaces, prioritizing areas for new NbS (especially in districts with deficit of greenery), and monitoring canopy cover changes.

The strategy's emphasis on monitoring aligns with the need to track progress on the no-net-loss goal. Additionally, the restoration law's spirit – to heal degraded ecosystems – is reflected in pilots like Zagreb and Warsaw that convert degraded grey areas into green, functional spaces. Cities implementing NbS can also contribute to connected restoration (e.g. creating pollinator corridors that link urban and rural habitats). Overall, this EU law provides legal impetus and support for urban NbS, and our strategy helps operationalize those obligations on the ground.

7.5. OECD guidelines and reports

The OECD has been actively highlighting the role of NbS in urban resilience and climate adaptation. OECD analyses reaffirm that nature-based solutions can complement or substitute traditional grey infrastructure, often providing the same protection with added co-benefits. For instance, restoring wetlands or creating green areas for water retention can mitigate floods as effectively as concrete basins, while also improving urban biodiversity and amenity. OECD's "Building Climate Resilience in Cities" (2023) emphasizes integrated urban development and adaptation-mitigation synergies via NbS, citing examples like how urban greening can reduce heat-related productivity losses and improve public health. It also outlines principles such as multi-level governance coordination and engaging diverse stakeholders – which are mirrored in our strategy's pillars.

The OECD Principles on Urban Policy (2019) similarly call for cities to deliver well-being through sustainable, inclusive measures – NbS are a clear embodiment of these principles, offering environmental, social, and economic benefits in one. By following this strategy, cities align with OECD guidance that urges scaling up NbS for climate adaptation and treating green infrastructure as essential urban assets for resilience. The strategy also resonates with OECD's view on systemic resilience, requiring cross-sector collaboration and addressing social inequalities (e.g. ensuring all neighborhoods have access to green space). Central European cities can leverage OECD's knowledge (reports, case studies) as part of the transnational knowledge exchange to continually refine their NbS approaches.

7.6. United Nations and Global Guidelines

At the global level, the importance of NbS and urban greening is reflected in the UN Sustainable Development Goals (SDGs) – particularly SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action), as well as SDG 15 (Life on Land). NbS in cities contribute directly to these goals by making cities safer, more inclusive and resilient (SDG 11.7 calls for providing universal access to safe, inclusive and accessible green and public spaces), and by helping adaptation to climate impacts (SDG 13.1 on strengthening resilience). The New Urban Agenda (2016) adopted at Habitat III also encourages countries and cities to integrate climate adaptation and environmental sustainability in urban planning, which includes green and blue infrastructure. Our strategy is a practical vehicle to achieve these global commitments at city scale.

Furthermore, in March 2022 the United Nations Environment Assembly (UNEA-5) achieved a milestone by adopting the first multilaterally agreed definition of Nature-Based Solutions. UNEA defined NbS as "actions to protect, conserve, restore, sustainably use and manage natural or modified ecosystems, that effectively and adaptively address social, economic and environmental challenges, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits.". This definition (which closely aligns with the IUCN's) underlines that genuine NbS must produce both societal and ecological benefits. Our transnational strategy fully embraces this ethos – all recommended actions are evaluated on their ability to solve urban challenges (e.g. reducing heat, flooding, etc.) and deliver co-benefits like improved well-being and biodiversity.

Additionally, UN agencies like UN-Habitat have issued guidance on planning NbS in cities (for example, UN-Habitat's 2022 guide on NbS for climate resilience in urban areas). These stress inclusive, community-led approaches and the need to safeguard the rights of communities and indigenous peoples when implementing NbS. While indigenous rights are less directly relevant in most Central European city contexts, the principle of social safeguards means ensuring NbS do not displace or disadvantage any community – rather, they should uplift urban populations with equitable access to nature. By integrating UN-backed principles into local actions, this strategy helps cities contribute to a global movement of "bringing nature into cities" as a key component of sustainable development.

In summary, cities adopting this strategy will be acting in concert with European policies and global agendas. By doing so, they not only gain access to a wealth of guidance and potential funding, but also ensure that their local actions add up to meaningful regional and global impact. The alignment with these guidelines provides legitimacy and momentum: city leaders can confidently push NbS initiatives knowing they are supported by EU directives, OECD evidence, and UN resolutions. Moreover, framing local projects in the language of SDGs or EU Green Deal objectives can open doors to partnerships and financial instruments earmarked for those objectives.

E. Strategic pillars for Transnational NbS implementation

The vision of this strategy is to mainstream Nature-Based Solutions as a standard component of urban development across Central Europe, thereby creating greener, more climate-resilient, and livable cities. Building on the pilots, the Transnational Strategy identifies several key pillars that any city or coalition of cities should consider when advancing Nature-Based Solutions. These pillars ensure that NbS implementation is integrated, inclusive, and scalable across Central Europe. Moreover, they aim to provide a comprehensive, tailored framework for cities across Central Europe by addressing governance, social, technical, and financial dimensions, and by recognizing that scaling NbS is not just an environmental exercise but a transformative urban development approach. By adhering to these principles, other cities – whether capital metros or smaller towns – can emulate and build upon the GreenScape CE experiences to create greener, climate-proof urban environments.

8. Integrated NbS/GI planning:

Cities should treat NbS/GI as an integral part of urban planning – on par with GI. This means developing city-wide or metro-wide Urban Greening Plans that map existing green assets and potential NbS sites and linking these plans with other sectoral plans (land use, mobility, water management, climate adaptation). For example, Milan's approach of embedding NbS into its territorial and mobility plans ensured green and grey infrastructure are planned together, not separately.

Integrated planning also involves connecting NbS into a network – avoiding isolated green spots. The strategy recommends creating continuous green corridors and linking NbS projects so they collectively form a coherent GI network that can extend beyond individual city borders. Neighboring municipalities or metropolitan regions should coordinate on GI (e.g. rivers, forests, parks) for regional connectivity. Integrated planning is facilitated by tools such as GIS mapping (as done in Metropolitan City of Milan) and including NbS criteria in Environmental Impact Assessments and spatial plans. Ultimately, this pillar echoes EU guidance that healthy ecosystems, GI, and NbS must be systematically integrated into urban planning for sustainable development.

Actions and recommendations:

- **Urban planning instruments:**

  Update or develop city master plans, land-use plans, and local development strategies to explicitly include targets for green space quantity, quality, and connectivity. Introduce instruments like Urban Greening/Nature Plans (as per EU guidance) if not already in place. Ensure these plans are legally or politically endorsed so that they guide decisions on housing, transport, and land development (e.g., designating ecological corridors that must remain unbuilt, mandating green space per capita in neighborhoods, etc.). Use spatial data to map current green/blue infrastructure and identify priority areas for enhancement or restoration.

- **Regulations and standards:**

  Amend building codes and ordinances to support NbS. For example, adopt green roof bylaws (requiring or incentivizing vegetation on roofs of new large buildings), tree protection ordinances (with replanting requirements), and stormwater regulations that prioritize infiltration (e.g., requiring new parking lots to be permeable or to include bioswales). Introduce a **"Green Factor"** or **"Biotope Area Factor"** in zoning (a policy some European cities use to ensure a minimum percentage of a development lot is

vegetated or permeable). Standardize the use of climate-resilient native plant species in public projects. These standards create a level playing field where greening is expected, not optional.

- **Cross-sector alignment**:

  Integrate NbS objectives into sectoral plans – climate action plans (for adaptation and mitigation co-benefits), disaster risk reduction strategies (using GI for flood control, etc.), public health plans (leveraging parks for healthy lifestyles), mobility plans (tree-lined walking/cycling routes), and economic development plans (green jobs in urban forestry, etc.). A practical step is to conduct a "policy audit": reviewing existing strategies to insert NbS where relevant, ensuring consistency across documents. For instance, if a city's climate strategy calls for cooling heat-prone areas, the urban plan should reflect this by zoning for parks or green retrofits in those areas.

- **Transboundary and regional planning**:

  Environmental systems do not stop at administrative borders. Encourage metropolitan or regional authorities to adopt GI strategies that connect across municipalities. The Milan Metropolitan City example shows the value of a regional sponge city plan – tackling water and heat issues at watershed or metro scale. Other regions can establish joint plans for green belts, river corridor restoration, or shared greenway networks linking cities. Cross-border cooperation (between neighboring cities in different countries) can also address shared challenges (e.g., river basins spanning borders, or migratory bird habitats needing coordinated protection).

- **Urban design and public space:**

  Incorporate NbS in urban design guidelines. When (re)designing streets, plazas, or housing areas, follow the principle of *"every project is a greening opportunity."* For example, any new street reconstruction should assess possibilities for adding street trees, permeable sidewalks, or rain gardens (Szeged's practice) rather than automatically replacing like-for-like with concrete. Train city architects and engineers to apply climate-adaptive design principles (shade, water retention, etc.) from the earliest project stages.

- **Monitoring in planning:**

  Embed a monitoring requirement in plans – e.g., the Urban Nature Plan should have key performance indicators (KPIs) and a timeline, and progress should be reviewed annually by a cross-department committee (as Szeged intends with its yearly review meeting involving the Development Office, City Management, Deputy Mayor, etc.). This creates accountability and a feedback loop to adjust policies.

Outcome: Green infrastructure is no longer an afterthought but a *planned network* in the urban landscape. All new developments and public works systematically consider NbS options, guided by policy and enforced by regulation. Over time, this yields a greener urban form – with more parks, connected habitats, tree-lined corridors, and permeable surfaces – enhancing resilience and quality of life.

9. Community engagement and co-creation:

A transnational NbS strategy puts people at the center of greening efforts. Public participation is not only desirable but essential for lasting success of NbS. Each pilot showed that early and continuous engagement of citizens, local businesses, and community groups leads to solutions that reflect local needs and gain public support. The strategy promotes a co-creation model: involve the community in ideation, design, and even implementation of NbS. This can be done through hackathons, neighborhood workshops, "green volunteer" programs, school projects, etc. (as seen in GreenScape CE's hackathon-style events to co-create action plans). By integrating traditional knowledge and residents' ideas, cities can tap into diverse

perspectives and foster a sense of ownership. Public awareness campaigns are also critical – educating citizens about the benefits of NbS (cooler streets, cleaner air, better health) helps build broad consensus.

Moreover, engagement should continue post-implementation: stewardship programs (like Zagreb's plan for residents to help water and maintain new plantings or Ptuj's inclusion of community monitoring) ensure NbS are cared for long-term. This pillar aligns with the principle that urban greening must be inclusive, contributing to social cohesion. Cities beyond the pilots are encouraged to establish participatory platforms (e.g. "urban green councils" or online mapping tools where citizens can suggest NbS) to sustain engagement. Notably, the OECD and UN stress that involving local communities from the start enhances resilience and ensures solutions are equitable. A well-informed and engaged public becomes a powerful champion for scaling NbS region wide.

Actions and recommendations:

- **Public awareness campaigns:**

  Launch sustained public awareness and education campaigns about the benefits of NbS and GI. This could include social media outreach, local media stories, school programs, and public workshops. Focus on practical messages: e.g., how planting trees can reduce summer temperatures in your neighborhood, or how using rain barrels can prevent basement flooding. Use positive, relatable storytelling – perhaps showcase "green heroes" in the community or successful mini-projects by citizens. The aim is to build a broad base of public support so that green initiatives are welcomed. *Example:* Szeged identified specific topics for awareness (like discouraging the use of artificial turf in yards and encouraging rainwater harvesting) and planned to share **DIY guides and good examples** widely. Other cities can adopt a similar approach, tailoring content to local issues.

- **Citizen participation in planning:**

  Implement co-creation and participatory planning processes for NbS projects. Before designing a new park or street retrofit, engage local residents in mapping needs and brainstorming ideas. Techniques include community meetings, participatory design workshops, and interactive online platforms for input. This not only yields designs that meet local needs (and hence will be cared for by locals), but also educates participants about ecological principles. GreenScape CE partners held community gatherings (like Szeged's community assembly in January 2024) to gather ideas – these should be continued and expanded. Consider also establishing formal channels such as a **Green City Advisory Council** including NGO representatives, youth, elderly, business and academia, to advise the municipality on priorities and evaluate progress.

- **Volunteer and community projects:**

  Encourage volunteerism and community-led greening. Many citizens are eager to help if given the opportunity and guidance – whether it's tree planting days, community gardens, river clean-ups, or "adopt-a-tree" watering initiatives during hot months. Cities should facilitate this by providing materials (saplings, tools), technical advice (what to plant where), and recognition (certificates, public acknowledgement). Partner with civil society – for instance, environmental NGOs or resident associations can coordinate volunteers. These activities not only expand what can be done beyond what city staff can handle, but also deepen people's connection to their environment. They become stewards of the spaces they helped create.

- **Educational programs:**

  Work with schools, universities, and cultural institutions to integrate urban nature into education. School programs could include creating green schoolyards (with students involved in design and gardening), citizen science projects to monitor biodiversity in the city, or climate adaptation projects

like measuring temperatures in different neighborhoods. Universities can offer living lab experiences on campus or in the city, or include service-learning in curricula where students contribute to community NbS projects. Public libraries and museums could host exhibits or talks on urban nature. The more people learn from a young age about urban ecology, the more they will value and maintain it.

- **Communication of results:**

  Transparently communicate progress and results of NbS projects to the public. Use easy-to-understand indicators and visuals: e.g., "We planted 5,000 trees this year – that's like 15 football fields of new forest" or "Our new wetland park absorbed X cubic meters of water during the last storm, protecting Y homes from flooding." Also communicate the challenges honestly – if a pilot didn't work as expected, share the lessons learned. Regular communication (via city websites, newsletters, signage at project sites, etc.) keeps the public informed and reinforces the narrative that their city is actively becoming greener and more resilient. It can be motivating to show progress toward goals (perhaps a public dashboard of Urban Greening Plan targets).

- **Equity and inclusion in engagement:** Make special efforts to engage typically underrepresented groups. Tailor outreach to different demographics – for example, workshops in multiple languages for minority communities, accessible events for elderly or disabled residents (like "walk-shops" or guided walks in potential project sites), and timing activities so working people can attend. Recognize that different groups may have different relationships to urban nature (some communities may lack access to parks, others may have cultural practices around gardening, etc.). An inclusive strategy ensures that NbS implementation does not just concentrate in affluent areas but also benefits all neighborhoods, including those historically lacking green space (addressing environmental justice).

Outcome: A populace that is not only supportive of urban greening but actively driving it. When citizens feel ownership – "this is our community garden / green street / park" – they help protect and maintain it, reducing vandalism and reducing maintenance burdens. Public pressure can also keep political leaders accountable to stay the course on greening commitments. In essence, NbS become part of the city's culture and identity (e.g., think of cities that brand themselves as "garden cities" or "forest cities" with pride). Engaged communities also mean more innovation, as people bring forth new ideas and energy that the government alone might not muster.

10. Capacity building and knowledge exchange:

Transitioning from isolated projects to a broader NbS agenda requires building capacity among city officials, planners, and stakeholders. The transnational strategy emphasizes peer-to-peer learning networks and training as mechanisms to accelerate adoption of best practices. GreenScape CE explicitly aimed to "initiate a transnational network of cities" for this purpose. Such a network (formal or informal) allows pilot cities to share their experiences with "replicator" cities and enables collaborative problem-solving across borders.

The strategy recommends Central European cities join forces in communities of practice – for example, through webinars, study visits, or twinning programs (a city with expertise in one type of NbS can mentor another). Additionally, capacity-building workshops should target multiple levels of governance: local technical staff (urban planners, landscape architects, engineers) need training on designing and maintaining NbS, while decision-makers (mayors, councilors) benefit from exposure to the policy and financial aspects of NbS. Breaking "departmental silos" in city administrations is crucial – cross-department training can help urban planners, water engineers, parks departments, etc. coordinate on NbS projects.

The strategy may establish a Transnational NbS Knowledge Hub (perhaps an online platform) to compile guidelines, design templates, plant species databases, maintenance protocols, and case studies suited to Central European contexts (considering climate zones, etc.). This pillar ensures that cities do not reinvent the wheel; instead, they build on collective knowledge. Over time, such cooperation can lead to standardized approaches or toolkits for NbS that any city in the region can adapt (indeed, Metropolitan City of Milan's pilot foresees developing toolkits and guidelines for other towns to adopt its mapping methodology). Investing in capacity building also means engaging with universities, NGOs, and expert organizations (like ICLEI, IUCN, or national environment agencies) to stay updated on innovation in NbS (e.g. new materials, plant varieties, or digital tools for monitoring green infrastructure).

Actions and Recommendations:

- **Capacity building programs**:

  Establish training programs for municipal staff and local professionals (planners, engineers, landscape designers, gardeners) on NbS design, construction, and maintenance. This could involve workshops by experts, demonstration projects serving as training sites, or exchange programs where staff visit other cities' NbS installations. Leverage resources from EU projects (many have produced guidebooks) and organizations like IUCN's Global NbS Standards to educate about best practices and common pitfalls. Make use of the IUCN Global Standard for NbS to evaluate project quality – ensuring they deliver biodiversity benefits alongside social ones.

- **Technical guidelines and toolkits:**

  Develop or adopt practical manuals for different types of NbS (e.g., how to build and size a bioswale, how to select tree species resilient to future climate, how to construct green roofs in Continental climate, etc.). The GreenScape CE pilots collectively identified 17 specific NbS applicable in urban contexts – ranging from bioswales and rain gardens to green walls and pergolas – and detailed their functions. These can form the basis of a "Central Europe NbS Toolkit" that other cities can use, with standard designs and local case studies. For instance, guidelines on converting asphalt surfaces to green areas (desealing) would be very useful given many post-socialist cities have excess paved courtyards.

- **Innovation and demonstration projects**:

  Encourage a culture of innovation by piloting new approaches in controlled settings. For example, designate urban "living labs" or demonstration neighborhoods where cutting-edge solutions (like experimental nature-based water filtration, smart irrigation linked to sensors, urban farming techniques, etc.) can be tested. The EU and national innovation funds can support such pilots. Successful demos should then be scaled up. Additionally, harness technology – e.g., using remote sensing and GIS to monitor green cover change, or employing modeling tools to simulate how NbS reduce flood extents or cool temperatures. Innovative mapping of "urban heat islands" or "flood risk hotspots" can pinpoint where NbS are most needed, improving their efficacy.

- **Maintenance know-how:**

  A frequent challenge is ensuring NbS perform well over the long term. Invest in training and protocols for maintenance of green infrastructure – which is often quite different from traditional grey infrastructure maintenance. For example, maintaining a rain garden involves caring for plants and periodically removing sediment, rather than just cleaning a concrete tank. Create maintenance manuals and schedules for city maintenance departments or contractors. Explore social innovation such as community stewardship programs (where local residents or "Friends of Park" groups help maintain pocket parks or tree pits, with city support). Recognize maintenance as a skilled task and allocate budgets for it to avoid neglect.

- **Collaboration with academia and experts:**

  Partner with local universities, research institutes, and environmental organizations for technical support. For instance, climate scientists can help model projections to inform species selection (planting urban trees that will thrive in 2050 climate, not just today's). Hydrologists or civil engineers can refine the design of nature-based drainage systems for local conditions. Universities could also involve students in NbS projects (internships with the city, design competitions for green space, etc.), building the next generation's capacity. The strategy encourages transdisciplinary collaboration – melding ecology, engineering, urban design, and social sciences to optimize solutions.

- **Peer learning network**:

  Within Central Europe, establish a network or forum for city technical staff to regularly exchange experiences (virtually or in-person). For example, a "Central European Green Infrastructure Practitioners Network" could host quarterly webinars or an annual conference where cities present case studies (like Milan's infiltration trenches or Warsaw's rain garden program) and discuss what technical issues arose and how they solved them. This speeds up collective learning – mistakes made in one place need not be repeated elsewhere. It also helps standardize methodologies (e.g., a common indicator for measuring cooling effect or biodiversity impact), which is something the Urban Agenda Greening Cities partnership is working on with an indicator system.

Outcome: Cities have the human and technical capacity to implement NbS with confidence. Risks of failure are reduced because staff are well-trained and designs are based on tried-and-true guidelines. Maintenance is planned and managed professionally, keeping green infrastructure effective over time. An ongoing exchange of innovation ensures that Central European cities stay at the cutting edge of NbS practices globally.

11. Innovative financing and funding mechanisms:

Implementing NbS at scale will require mobilizing financial resources and linking with funding opportunities. A transnational strategy should provide guidance on sustainable financing models for NbS, acknowledging that maintenance costs and upfront investments can be barriers for cities. The GreenScape CE pilots explored various funding approaches in their local contexts (from municipal budgets to potential EU funds or public-private partnerships).

At the transnational level, the strategy recommends a mix of funding sources: leveraging EU programs (such as the European Regional Development Fund, LIFE programme for the environment, Horizon Europe research funds for innovative NbS, or the new Just Transition and Resilience funds), national and regional government grants, and local sources. Integrating NbS into climate or development projects can unlock climate finance or green recovery funds. For example, Warsaw's Wileńska street greening can be tied to its revitalization budget and also seek climate adaptation funding. Private sector involvement through public-private partnerships (PPPs) or sponsorships is also encouraged – e.g. developers could be incentivized or required (via planning gain or green plot ratio policies) to fund urban green spaces as part of new developments.

The strategy also highlights innovative instruments such as green bonds or climate bonds that cities can issue to raise capital specifically for NbS projects, and payments for ecosystem services schemes (where beneficiaries of urban ecosystem services, like stormwater utilities, contribute to maintaining green infrastructure that reduces runoff). Importantly, any funding strategy should account for long-term maintenance – e.g. creating a maintenance fund or community trust for each NbS project, to avoid the common problem of greenspaces degrading due to lack of upkeep.

Transnational cooperation can help cities collectively advocate for more EU and national support for urban NbS (strengthening the case that NbS contribute to EU climate and biodiversity targets). It can also facilitate sharing of cost–benefit evidence: as more data is gathered (e.g. Zagreb measuring reduced flood damage or health benefits from greening), cities can make a stronger economic justification for NbS investments. In short, this pillar ensures that good ideas are backed by viable financing plans, making large-scale implementation feasible.

Actions and Recommendations:

- **Integrate NbS in budgeting:**

  Treat NbS as essential capital investments. City budgets and medium-term financial plans should include dedicated lines for green infrastructure. For instance, when planning a new fiscal year, allocate a certain percentage of the infrastructure budget to NbS projects (parks, tree planting, green schoolyards, etc.). Encourage participatory budgeting initiatives that allow citizens to vote on local greening projects for funding. Over time, track the return on investment (e.g., cost savings from reduced flood damage or health benefits from cooling) to make the economic case for maintaining or increasing these allocations.

- **EU and national funds**:

  Aggressively pursue external funding opportunities. EU Cohesion Policy funds (ERDF, etc.) in 2021–2027 have priorities on climate adaptation and urban sustainability – NbS projects are strong candidates. LIFE program grants support nature and climate projects; Horizon Europe can fund innovation in NbS; the new EU Mission on Adaptation may fund pilot demonstrators; and the Recovery and Resilience Facility in some countries includes urban greening components. This strategy suggests creating a “Green Finance Task Force” in each city or region: a team that scans upcoming calls and prepares high-quality proposals to secure funds for NbS. National governments might also have climate adaptation funds or environment funds that cities can tap into for tree planting, floodplain restoration, etc. Be ready with shovel-ready project concepts aligned to funding streams.

- **Private sector engagement:**

  Leverage private capital and corporate social responsibility (CSR) for urban greening. Many businesses recognize the value of green cities for attracting talent and customers. Cities can set up sponsorship schemes (e.g., “Adopt a Park/Tree” programs for companies), or Green Infrastructure Funds where companies contribute and in return perhaps get branding or fulfill CSR goals. Public-private partnerships (PPPs) can be structured for certain projects – for example, a developer might build and maintain a public green space as part of a larger real estate project, in exchange for development rights. Explore impact investment and climate finance: there’s a growing market of investors looking to fund projects with environmental and social returns. A city could issue a municipal green bond specifically to finance a portfolio of NbS (with clear metrics on carbon sequestration, flood protection, etc. to satisfy investors) – an approach that has worked in some Western European cities.

- **Economic incentives and disincentives:**

  Use local fiscal tools to encourage NbS on private property. For instance, implement a stormwater fee that charges property owners based on impervious surface area – and offer fee reductions for those who install green roofs, rain gardens or permeable driveways (thus incentivizing them to do so). Conversely, provide direct subsidies or rebates for greening actions (like Warsaw’s citizen rainwater program or tree planting grants for homeowners). Where appropriate, development impact fees can include a component for green infrastructure (developers pay a fee that the city uses to create parks or tree-lined streets in the new development area). In renovation programs, offer co-financing if

building owners incorporate NbS (e.g., thermal retrofitting schemes that also cover adding a green roof or courtyard greening).

- **Maintenance funding and jobs**:

  One challenge is ensuring funds for ongoing maintenance, which often must come from operational budgets. Consider innovative models like establishing a "Green Maintenance Fund" where savings from ecosystem services are reinvested. For example, if a city's NbS reduce water treatment costs or heat health costs, quantify those and channel a portion to maintenance. Partner with social enterprises or cooperatives that maintain green spaces, possibly employing local unemployed or marginalized groups – turning maintenance into a job creation and social inclusion opportunity (with funding support from social programs). Some cities have used advertising rights (e.g., small tasteful ads or naming rights in parks) to generate maintenance revenue, though this should be balanced against public interest.

- **Cost-benefit and asset management**:

  Develop methodologies to account for natural assets in city asset management systems. Some leading cities treat trees and green spaces as assets with a value and depreciation schedule, just like roads or pipes. This accounting approach can institutionalize routine financing (as replacing a tree or soil media becomes part of capital replacement cycles). Use tools to perform cost-benefit analyses of NbS versus grey alternatives for projects; many studies show NbS often have equal or lower life-cycle costs when co-benefits are included. Communicate these benefits in budget discussions to justify funding.

- **Transnational funding cooperation**:

  Central European cities can also join forces to attract funding. For example, a group of cities could propose a joint project to Horizon Europe or Interreg to develop NbS in all their locales (much like GreenScape CE itself). Sharing resources on proposal writing and partnering can increase success. The strategy could lead to a consortium of Central European green cities that collectively lobby for more EU support or partner with international financial institutions (like EIB or World Bank) for regional green infrastructure programs.

Outcome: A robust financial foundation for NbS, reducing reliance on one-off grants and ensuring longevity. With diverse funding streams and economic incentives in place, implementing and caring for green infrastructure becomes financially feasible for cities of varying sizes. Moreover, framing NbS as investments in resilience will help city officials and the public see them as essential infrastructure deserving of funding, rather than amenities or beautification extras.

12. Monitoring, evaluation and adaptive management:

As NbS are implemented across more cities, it is vital to monitor their performance and adapt practices accordingly. The strategy advises establishing clear indicators and monitoring systems for NbS projects – for instance, indicators for temperature reduction, runoff reduction, air quality improvement, biodiversity increase (pollinator counts, tree canopy cover), social usage (number of people using new green spaces), etc. Several pilots included developing evaluation frameworks (Milan's pilot includes a detailed NbS benefits assessment framework).

On a transnational level, cities could agree on a core set of metrics to track progress in urban greening (aligning with EU goals, see next section) – e.g. no net loss of urban green space, percentage increase in tree canopy, or number of NbS projects per city. Regular evaluation reports would help identify which solutions work best in which context and allow for adaptive management. A feedback mechanism is

recommended: lessons learned in one city's implementation (successes or challenges) should loop back into the strategy, updating guidelines for others (this could be facilitated by the knowledge network).

Adaptive management also involves piloting and then scaling: using small-scale experiments (like the GreenScape CE pilots) to test solutions, measure benefits, then refine and expand them. By collectively monitoring outcomes, Central European cities can build a valuable evidence base to refine design standards and maintenance regimes for NbS. This evidence base will also support advocacy and policy change, by demonstrating the tangible impacts of NbS on climate resilience and urban quality of life (e.g. data on how much urban temperatures dropped or how many people benefited can influence policymakers). In sum, a culture of monitoring and learning ensures the strategy remains dynamic and results-driven.

Actions and recommendations:

- **Develop indicator framework:**

  As part of the Urban Greening/Nature Plan, establish a set of **clear indicators** to measure implementation and effectiveness of NbS. These should cover inputs (e.g., budget spent on NbS, number of projects executed), outputs (area of new green spaces created, number of trees planted, volume of rainwater retained, etc.), and outcomes (temperature reduction in heat islands, reduction in flood incidents, biodiversity indices, user satisfaction, health statistics in greened areas, etc.). The Urban Agenda Greening Cities partnership is working on an *indicator system for urban nature restoration* which can serve as a reference. For example, indicators might include **percentage of city area covered by green infrastructure**, **per capita green space**, **% of impermeable area vs permeable**, **bird or pollinator species count in urban habitats**, or **citizens' self-reported connection to nature**. Choose a balanced set of indicators that reflect climate resilience, biodiversity, and social well-being.

- **Baseline assessment:**

  Conduct a baseline assessment of the current state of urban nature and climate vulnerabilities. Many pilots did a "Current State Analysis" (as listed in their action plans) mapping existing GI and identifying gaps. Use that baseline to set targets (e.g., increase tree canopy from X% to Y% by year Z, or reduce runoff volume by Q% in target area after NbS interventions). Baselines also help show improvements over time.

- **Monitoring mechanism:**

  Set up a mechanism or team responsible for data collection and monitoring. This could be within the city administration (e.g., an environmental monitoring unit) or involve partnerships with local universities or citizen scientists (for example, a network of volunteers measuring rainfall infiltration in rain gardens or counting butterflies in wildflower meadows). Take advantage of new technologies: remote sensing (satellite or drone imagery) can track greening progress, IoT sensors can measure soil moisture or temperature in projects, etc. Make sure to include **community monitoring** where possible – people love to see and measure progress in their own neighborhood and it fosters stewardship.

- **Annual or biannual reporting:**

  Produce regular public reports on the progress of the NbS strategy. This could be a stand-alone "State of Urban Nature" report or part of broader sustainability reporting. It should highlight key achievements, trends in the indicators, and also discuss any shortfalls or delays (with reasons). Transparency in reporting builds trust and allows for course correction. For example, if tree survival rates are low in plantings, the report can note this and the city can respond by adjusting species or improving watering regimes.

- **Evaluation of outcomes:**

After a reasonable period (e.g., 5 years), conduct a comprehensive evaluation of the strategy's outcomes and impacts. Engage external evaluators or experts if possible for objectivity. Evaluate things like: Are flood-prone areas now safer? Did heat mitigation NbS actually lower temperatures and reduce heat-related illnesses? Are biodiversity levels improving (more birds, insects)? Is the public more satisfied with their urban environment? Also evaluate the process: which governance innovations worked or not? This evaluation should lead to an updated strategy or action plan for the next phase, incorporating what was learned.

- **Knowledge sharing of results:**

  Feed the knowledge back into the transnational arena. Encourage pilot cities and any city implementing this strategy to share their monitoring results and lessons on international platforms (conferences, publications, the Urban Nature Platform, etc.). Central Europe can contribute significantly to the emerging evidence base on NbS effectiveness, especially underrepresented contexts (like continental climate, post-socialist urban forms, etc.). Also share within national networks so that smaller towns in each country can learn from bigger cities' experiences.

- **Adaptive management:**

  Use monitoring and evaluation findings to **adjust actions**. If data shows certain interventions are not delivering as expected, revisit the design or try alternative solutions. For instance, if a particular tree species isn't surviving the hotter summers, switch to a more drought-tolerant species or provide better care – thus adapting the urban forestry plan. If a community engagement method isn't drawing diverse participation, try a different approach. The strategy itself should be treated as a living document – after a few years, update goals and actions based on what has been achieved and what new challenges or opportunities have arisen (e.g., new funding sources, new technologies, or new climate realities).

Outcome: A strong culture of accountability and learning. Cities and stakeholders can see tangible proof of progress (or lack thereof) and trust that efforts are resulting in real improvements like cooler streets, fewer floods, and richer urban biodiversity. Continuous learning means the strategy stays effective and relevant over time, rather than sitting on a shelf. Moreover, Central European cities collectively build a repository of data and evidence that can influence higher-level policies – for example, providing input to national adaptation plans or the EU's future updates of the Biodiversity Strategy by showcasing what quantifiable benefits urban NbS can yield in this region.

F. Beyond pilot cities: scaling up across Central Europe and beyond

The ultimate goal of this Transnational Strategy is to **transcend the initial pilot areas and enable widespread replication of NbS in cities throughout Central Europe** – and by extension, inspire other regions as well. Key steps to achieve this include:

- **Replication in diverse urban contexts:**

  Central Europe's cities vary from dense capitals to mid-sized towns to smaller historic centers. The strategy's flexible framework allows adaptation to these different scales and contexts. For instance, a large city might focus on city-wide green corridor planning and multiple NbS projects simultaneously, whereas a smaller town might start with one or two priority projects (like greening a central square or riverfront) as a catalyst.

  By documenting the pilot cases, the strategy offers a menu of NbS interventions that others can mix-and-match according to local needs – be it **urban forest parks, green roofs, sustainable drainage systems (SuDS), river restoration, green schoolyards, or transit-oriented greening**. The emphasis on co-creation and local assessment ensures each city's plan is *tailor-made* – addressing its specific climate risks and community priorities. Meanwhile, the transnational knowledge network will capture lessons from any new city that implements these ideas, thus continuously enriching the strategy's knowledge base.

- **Transnational city network and advocacy:**

  Establishing a **Central European "Green Cities" network** is a key recommendation. This network (which could be an outgrowth of the GreenScape CE partnership or a new coalition) would formalize the peer-to-peer exchanges. Cities like Metropolitan are of Milan, Warsaw, etc., can mentor others (e.g. Zagreb and Szeged might share insights with similar-sized cities in the region). Regular meetings, conferences or an online forum can facilitate this. Such a network also strengthens collective advocacy – cities together can lobby national governments or the EU for supportive policies and funding for urban NbS. They can share success stories and data to influence higher-level policies (for example, if several cities demonstrate that green infrastructure reduced flood damages by X% or lowered health costs, it builds the case for more investments in NbS).

  The network can link with existing Europe-wide initiatives, such as the **EU Mission for Climate-Neutral and Smart Cities** (which includes nature-based solutions as part of climate-neutral roadmaps) or the Green City Accord, to ensure Central European cities are well represented and benefitting from continental efforts.

- **Public and stakeholder buy-in across borders:**

  As the strategy is promoted transnationally, it is important to communicate its benefits widely to the public and stakeholders (businesses, developers, academia) in each locale. Showcasing pilot achievements – for example, publishing before-and-after comparisons (pictures and data) of the pilot sites – can create public enthusiasm in other cities ("if they can do it, we can too"). Engaging youth and community organizations in one city can spark interest among their counterparts in another (imagine school exchanges on urban gardening or joint hackathons across cities).

  The strategy should be presented not as a top-down directive but as a **movement for greener, healthier cities** that citizens can rally around. This also involves translating technical plans into accessible messages: e.g. emphasizing that NbS will create cooler neighborhoods, cleaner air, new jobs (in landscaping, urban farming, maintenance), and overall a better quality of life. By framing NbS as a

win-win for environment and people, the strategy can gain political support beyond the pilot champions. Municipal leaders in other cities might be convinced by the public mandate or by seeing the economic opportunities (green jobs, tourism, etc.) that NbS provide.

- **Monitoring progress and maintaining momentum:**

  To ensure the strategy truly goes "beyond pilot cities," we need to track how many new cities adopt NbS and with what results. Setting up a **regional monitoring dashboard** could be useful – for example, an interactive map showing Central European cities and key metrics (area of new green spaces created, number of trees planted, etc. as a result of the strategy's rollout). This could be periodically updated and showcased at events or in reports, celebrating new entries (a bit of friendly competition or benchmarking can motivate cities to do more).

  By 2025 and beyond, the aim would be to see many cities in the region with robust Urban Greening Plans, active NbS projects, and progress toward EU biodiversity and climate targets. In the long run, the strategy envisions **mainstreaming NbS in urban governance**: i.e., it becomes normal for any urban development or regeneration project in Central Europe to consider NbS options from the outset, rather than defaulting to grey infrastructure. When that mindset shift occurs institutionally, the role of the strategy evolves into providing a continuing knowledge resource and forum for innovation, while cities themselves drive implementation.

In conclusion, this Transnational Strategy provides a detailed, tailored roadmap for Central European cities to collectively transition from grey to green. By learning from each other, aligning with European and global guidelines, and engaging their citizens, cities can transform urban spaces into climate-resilient, nature-rich environments. The pilots in Metropolitan City of Milan, Szeged, Ptuj, Warsaw, and Zagreb prove that change is possible and beneficial – now this strategy invites *all* cities in the region (and why not beyond?) to join in "making grey cities greener" and building a network of green, thriving urban landscapes for the future. The challenges of climate change and biodiversity loss are transnational in nature – our response through Nature-Based Solutions must likewise transcend borders, creating a Central Europe where cities are connected not just by roads and rails, but by **green corridors of resilience and hope**.