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ACTION PLAN
FOR GREEN INFRASTRUCTURE
MUNICIPALITY OF KYUSTENDIL
2027–2031

КЮСТЕНДИЛ

ЦЕНТАР ЗА РАЗВОЈ
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1. Purpose and scope

The Kyustendil Municipality Green Infrastructure Action Plan for the period 2027–2031 is an operational document for the implementation of the Joint Green Infrastructure Strategy (2026–2036) for the North-East Planning Region and Kyustendil Municipality. The plan transforms the regional vision and strategic objectives into concrete local measures, projects and implementation mechanisms.
The plan defines:

- the spatial and thematic priorities for green and blue infrastructure;
- the measures and projects to be prepared and implemented during the period 2027-2031;
- the methodology and prioritization points;
- the annual schedule, lead organizations and partners;
- monitoring and reporting indicators;
- the indicative budget for each measure and the possible sources of funding.

For capital measures, studies, technical designs, bills of quantities and cost estimates, permits and impact assessments must be prepared in accordance with the applicable Bulgarian and European legislation. The budgets in the Plan are indicative and do not constitute bills of quantities and cost estimates.

2. Strategic and spatial basis

The strategy defines Kyustendil Municipality as a territory with a high value of ecosystem services, based on the mountain and forest territories of Osogovska Planina, Konyavska Planina, Lisets, Chudinska and Milevska Planina; the Struma river system and the local watercourses Banshtitsa, Kolushka, Dragovishtitsa and Bistritsa; city parks and street greenery; mineral waters and balneological spaces; as well as the orchard and rural mosaic landscapes.
The main local challenges are the fragmentation of green spaces, the need for better connectivity between parks, river and spa areas, heat stress in urban areas, degradation of stretches of river banks, erosion and fire risk in hilly-mountainous areas, as well as pressure on traditional orchard and agricultural landscapes.

3. Vision for 2031

By 2031, Kyustendil will lay the foundations of a connected, accessible and climate-resilient network of green infrastructure, uniting city parks and street greenery, river corridors, mineral and balneological spaces, Hisarlaka, suburban green areas, mountain areas and rural orchard landscapes.
The municipality will have a green cadastre and monitoring system, prepared and started projects for the restoration of local rivers, renewed public green spaces, green streets and courtyards, environmentally friendly solutions for rainwater and a clear project portfolio for the next investment cycle.

4. Strategic objectives

Code	Strategic objective	Expected change by 2031
SO1	Connecting and improving the urban green network	Connected parks, street greenery, public green spaces, Hisarlaka and spa areas.
SO2	Restoring the river and blue-green corridors	Improved riverbanks, water regime, biodiversity, access and recreation.

SO3	Climate adaptation and reduction of urban heat	More shade, rain gardens, permeable pavements and climate-resilient parks.
SO4	Conservation of mountain, suburban and rural landscapes	Restored forests, reduced erosion and fire risk, protected orchard mosaics.
SO5	Sustainable balneological, natural and green tourism	An integrated green belt and a network of controlled green tourist routes.
SO6	Institutional governance and cross-border cooperation	Green cadastre, monitoring, partnerships and prepared joint projects.

5. Methodology for prioritization

Prioritization was carried out by multi-criteria analysis. Each measure is evaluated against nine criteria. The base score is from 1 to 5, and the weighted points are calculated according to the formula: base score / 5 × maximum number of points for the criterion. The maximum total score is 100 points.

5.1 Criteria and Weights

Code	Criterion	Max. points	Content of the assessment
C1	Strategic fit	15	Contribution to the vision, goals and priorities of the Strategy.
C2	Climate resilience and risks	20	Effect on floods, heat, drought, erosion and fires.
C3	Environmental benefits and biodiversity	15	Ecosystems, connectivity, native vegetation and habitats.
C4	Social benefit and accessibility	10	Health, recreation, inclusion and number of users.
C5	Urgency and degree of degradation	10	Level of risk, degradation or loss of function.
C6	Technical and institutional feasibility	10	Ownership, documentation, capacity and scope for phased implementation.
C7	Multifunctionality and efficiency	10	Simultaneous environmental, climate, social and economic benefits.
C8	Partnerships and funding	5	Eligibility under European/national programs and partner implementation.
C9	Sustainability and maintenance	5	Durability, realistic maintenance arrangements and responsibility.

5.2 Priority Categories

Points	Category	Planning significance
85–100	Highest	Start-up or preparation in the first two years.
70–84	High	Execution in the current cycle after the prerequisites are provided.
55–69	Medium	Pilot measure or implementation after higher ranking projects.
Under 55	Low	Long-term opportunity or need for a new assessment.

5.3 Procedure

- Verification of compliance with the Strategy and municipal needs.
- Expert assessment of the nine criteria.
- Calculation of weighted points and total score.
- Check dependencies, prerequisites, and schedule.
- Classification in priority category.
- Review of results in 2030 based on new data and project readiness.

6. Spatial and thematic priorities

6.1 City parks, public green spaces and street greenery

City parks, green streets, squares, public courtyards and street greenery should be developed as a connected network. Priority is given to areas with high attendance, insufficient shade, tourist and health function and the possibility of connection with the river and balneological spaces.

- renewal and modernization of the parks;
- preserving mature trees and supplementing street greenery;
- shaded pedestrian and bicycle links;
- micro parks and green pockets;
- inclusive equipment, lighting and accessible walkways.

6.2 Banshtitsa and Kolushka – local urban blue-green axes

Banshtitsa and Kolushka have the potential to improve the water regime, microclimate, biodiversity and public recreation. Priorities include detailed mapping, nature-based riverbank stabilisation, protection of riparian vegetation, waste control and safe public access.

6.3 Struma, Dragovishtitsa, Bistritsa and other watercourses

The wider river network should be protected through riparian green belts, restoration of eroded points, pollution control and carefully planned eco-trails. Interventions should avoid excessive concreting and preserve the natural character of the corridors.

6.4 Balneological, mineral and recreational green spaces

Mineral waters and the balneological tradition are an important part of Kyustendil's identity and economy. Green infrastructure should connect balneological sites, parks, pedestrian areas, cultural heritage and natural spaces in an integrated health and recreation green belt.

6.5 Hisarlaka and connections with the city

Hisarlaka should be considered a key link between the urban area and nature. Priorities include maintenance of forest and park vegetation, erosion control, safe pedestrian connections, viewpoints, rest areas and educational elements, without compromising natural and cultural values.

6.6 Green school and public courtyards

Schools, kindergartens, health and community facilities should become local green cores with shade, climate-resilient species, rain gardens, outdoor classrooms and educational programs.

6.7 Rain gardens and permeable pavements

Bioretention areas, rain gardens and permeable materials should be piloted in public courtyards, car parks, squares and streets affected by local waterlogging, following preliminary hydrological and infrastructure checks.

6.8 Osogovo, Konyavska Planina, Lisets and the forest territories

Mountain and forest systems require measures to restore degraded areas, fire prevention, post-fire restoration, erosion control and development of controlled green tourism routes with native species and natural regeneration.

6.9 Orchard and rural mosaic landscapes

Orchards, meadows, pastures, hedgerows, green field margins and small forest patches should be preserved as part of green infrastructure. Measures should support agrobiodiversity, pollinators, local food, agritourism and soil protection.

6.10 Green cadastre, monitoring and cross-border coordination

The unified GIS base should cover trees, parks, river corridors, balneological green spaces, forest and degraded areas, tourist routes and implemented interventions. The system will be the basis for annual planning, maintenance and joint projects with the North-East Planning Region.

7. Implementation Schedule 2027–2031

2027 – Institutional framework and data

- Creation of a municipal working group.
- Initial stage of green cadastre and GIS.
- Heat, flood, erosion and fire risk mapping.
- Inventory of parks, street greenery, Banshtitsa and Kolushka.
- A selection of pilot schoolyards, rain gardens and micro-parks.
- Preparation of a program for mature and dangerous trees.

2028 – Project preparation and pilot measures

- Concept and technical designs for priority river sections.
- Pilot green school and public courtyards.
- Pilot rain gardens and permeable pavements.
- First stage of green streets, street greenery and shaded points.
- Preparation of the balneological and natural green belt.
- "Green Kyustendil" campaign.

2029 – Urban and river investments

- Restoration of a priority section of Banshtitsa.
- Renewal of parks, public green spaces and neighborhood green spots.
- Expansion of street greenery and shaded pedestrian corridors.
- Riverside measures along Kolushka and selected sections of Struma.
- Launch of connections between Hisarlaka, the city and spa areas.
- Pilot rural green belts in orchard landscapes.

2030 – Expansion and climate adaptation

- Second stage of the river and urban green corridors.
- Expansion of rain gardens and permeable pavements.
- Restoration of degraded forest and eroded areas.
- Development of controlled green tourist routes to Osogovo.
- Expansion of the balneological recreational green belt.
- Mid-term evaluation.

2031 – Consolidation and next cycle

- Completion and technical acceptance of the priority measures.
- Active green cadastre and public presentation of the results.
- Long-term maintenance plans and budgets.
- Evaluation of indicators and benefits.
- Preparation of a new project portfolio.
- Annual report and public forum.

8. Prioritisation scoring matrix

Measures 1–13

№	Measure	C1	C2	C3	C4	C5	C6	C7	C8	C9	Total	Category
1	Green cadastre and GIS	15	9	9	6	8	10	8	5	5	75	High
2	Mapping climate and environmental risks	15	14	10	7	8	10	8	5	5	82	High
3	Master plan for urban green network	15	15	12	9	8	9	9	5	4	86	Highest
4	Renewal of parks and public green spaces	15	17	14	10	8	8	10	5	4	91	Highest
5	Green streets and street greenery	15	17	14	9	8	9	9	5	4	90	Highest
6	Shaded public spaces and bus stops	14	17	11	10	8	9	8	4	4	85	Highest
7	Neighborhood micro-parks	14	14	12	10	7	9	9	5	4	84	High
8	Green school and public courtyards	14	14	11	10	8	10	9	5	5	86	Highest
9	Studies and design for Banshtitsa	15	19	13	7	10	8	9	5	4	90	Highest
10	Restoration of Banshtitsa - stage I	15	20	15	9	10	7	9	5	4	94	Highest
11	Restoration of Kolushka and local watercourses	15	19	15	8	9	7	9	4	4	90	Highest
12	Conservation and eco-paths along the Struma	15	18	15	8	9	8	9	5	4	91	Highest
13	Rain gardens and permeable pavements	15	19	13	8	9	8	10	5	5	92	Highest

C1 Strategy | C2 Climate and risks | C3 Ecology | C4 Social benefits | C5 Urgency | C6 Feasibility | C7 Multifunctionality | C8 Funding | C9 Maintenance

8. Scoring matrix - continued

Measures 14–26

№	Measure	C1	C2	C3	C4	C5	C6	C7	C8	C9	Total	Category
14	Green connection between Hisarlaka and the city	15	17	13	10	8	8	10	5	5	91	Highest
15	Green tourist route to Osogovo	15	14	13	10	8	8	10	5	5	88	Highest
16	Connecting urban and suburban green areas	14	13	14	9	7	8	10	5	5	85	Highest
17	Afforestation of degraded parts of Osogovo	15	15	14	9	8	8	9	5	4	87	Highest
18	Erosion control	15	18	15	7	9	7	9	5	5	90	Highest
19	Post-fire restoration of forest areas	14	18	15	6	9	8	8	5	4	87	Highest
20	Protective green belts in orchard landscapes	14	18	15	6	10	7	8	4	4	86	Highest
21	Agroforestry and pollinator corridors	14	14	15	7	8	8	9	5	4	84	High
22	Ecotourism routes, views and signage	13	12	15	7	7	8	8	5	4	79	High
23	Waste system in recreational and natural sites	13	9	12	9	6	8	9	5	4	75	High
24	“Green Kyustendil” campaign	13	12	10	9	8	9	8	4	4	77	High
25	Annual monitoring, forum and evaluation	12	8	8	10	7	10	8	5	4	72	High
26	Balneological, natural and recreational green belt	14	9	8	7	8	10	8	5	5	74	High

The points are an indicative expert assessment and are subject to confirmation by the Municipality of Kyustendil and the interested parties.

9. Consolidated matrix of measures, priorities and budgets

Measures 1–13

№	Measure	Location	Period	Points	Priority	Indicator	Budget EUR	Lead/partners
1	Green cadastre and GIS	Entire municipality	2027–2029	75	High	Operational database and public overview	180.000	Municipality / communal services
2	Mapping climate and environmental risks	Entire municipality	2027	82	High	Prepared thematic maps	80.000	Municipality / experts
3	Master plan for urban green network	City of Kyustendil	2027–2028	86	Highest	Adopted plan and priority corridors	140.000	Municipality / urban planners
4	Renewal of parks and public green spaces	City of Kyustendil	2028–2031	91	Highest	m² of restored area	850.000	Municipality / communal services
5	Green streets and street greenery	Priority streets	2028–2031	90	Highest	km of landscaped streets; number of trees	650.000	Municipality / communal services
6	Shaded public spaces and bus stops	Urban territory	2028–2031	85	Highest	Number of shaded points	250.000	Municipality / transport operators
7	Neighborhood micro-parks	Densely built-up areas	2028–2031	84	High	Number of locations; m² of greenery	450.000	Municipality / neighborhood communities
8	Green school and public courtyards	Public institutions	2028–2031	86	Highest	Number of facilities; % shade	375.000	Municipality / institutions
9	Studies and design for Banshtitsa	Banshtitsa	2027–2028	90	Highest	Study and technical design	200.000	Municipality / water services
10	Restoration of Banshtitsa - stage I	Banshtitsa	2029–2031	94	Highest	m restored corridor	1.200.000	Municipality / water services
11	Restoration of Kolushka and local watercourses	Kolushka and tributaries	2029–2031	90	Highest	m of improved bank; sites restored	650.000	Municipality / water services
12	Conservation and eco-paths along the Struma	Struma and selected sections	2028–2031	91	Highest	km protected corridor/trail	800.000	Municipality / eco-institutions
13	Rain gardens and permeable pavements	Public locations	2028–2031	92	Highest	Number of systems; m² of paving	600.000	Municipality / communal services

9. Consolidated matrix - continued

Measures 14–26

№	Measure	Location	Period	Points	Priority	Indicator	Budget EUR	Lead/partners
14	Balneological, natural and recreational green belt	Spa and mineral areas	2028–2031	91	Highest	km connected green routes	1.100.000	Municipality / balneological entities
15	Green connection between Hisarlaka and the city	Hisarlaka and urban approaches	2028–2031	88	Highest	km of trails; number of points	550.000	Municipality / culture / tourism
16	Green tourist route to Osogovo	Osogovo	2029–2031	85	Highest	km route; signage	900.000	Municipality / tourist entities
17	Connecting urban and suburban green areas	Urban periphery	2028–2031	87	Highest	km of connected corridors	650.000	Municipality / owners
18	Afforestation of degraded parts of Osogovo	Osogovo district	2029–2031	90	Highest	ha restored area	900.000	Forest Service / Municipality
19	Erosion control	Konyavska mountain and Lisets	2028–2031	87	Highest	ha of stabilised land	650.000	Municipality / forest services
20	Post-fire restoration of forest areas	Risk forest areas	2028–2031	86	Highest	ha restored forest	700.000	Forestry and fire services
21	Protective green belts in orchard landscapes	Rural and orchard areas	2029–2031	84	High	km of green belts	450.000	Municipality / farmers
22	Agroforestry and pollinator corridors	Agricultural lands	2029–2031	79	High	ha/number of pilot farms	300.000	Municipality / associations
23	Ecotourism routes, views and signage	Natural and rural sites	2028–2031	75	High	km routes; number of points	350.000	Municipality / tourism
24	Waste system in recreational and natural sites	Tourist and green areas	2027–2031	77	High	Number of sets; kg of waste	180.000	Municipality / communal services
25	“Green Kyustendil” campaign	Entire municipality	2028–2031	72	High	Number of events and participants	90.000	Municipality / NGO / schools
26	Annual monitoring, forum and evaluation	Entire municipality	2027–2031	74	High	5 reports; forums; evaluation	75.000	Municipality / working group

Total indicative value: 13.320.000 EUR excluding VAT. Estimates should be confirmed through technical documentation, bills of quantities and cost estimates, and market research.

10. Key monitoring indicators

Indicator	Baseline condition	Target by 2031	Method
Public green spaces	It will be determined in 2027.	Increase and qualitative improvement	Green cadastre / GIS
Tree canopy cover	It will be determined	At least +10% in pilot areas	Images / field surveys
New and replaced trees	0 as programme baseline	At least 1.800	Register and acceptance records
Restored river corridors	0 under the Plan	At least 3 km prepared/executed	Designs / field surveys
Rain gardens and permeable pavements	0 as programme baseline	At least 5 pilot locations	Technical acceptance
Green school and public courtyards	It will be determined	At least 10 facilities	Municipal register
Restored forest/eroded areas	It will be determined	At least 50 ha	GIS / Forest Service
Protective green belts	It will be determined	At least 15 km	GIS / field surveys
Green tourist routes	It will be determined	At least 20 km improved/marked	Municipality / tourism
Annual reports and forums	0	5 reports and at least 5 forums	Minutes / reports

The final targets should be confirmed after the baseline values have been established and the technical documentation prepared.

11. Management model

It is proposed to create a Municipal working group for green infrastructure with representatives of urban planning, the environment, communal services, water, forestry, tourism, agriculture, education and finance. The working group will coordinate the annual programme, project preparation, monitoring and cross-border cooperation.

Participant	Main role
Municipality of Kyustendil	Coordination, planning, budgeting, project preparation and reporting.
Utilities and water services	Maintenance, technical implementation, river measures and data.
Forestry and fire services	Afforestation, fire prevention, post-fire restoration and erosion.
Spa, health and tourism entities	Integration of green, recreational and health functions.
Educational and public institutions	Pilot courtyards, education and maintenance.
Farmers and associations	Green belts, agroforestry and protection of orchard landscapes.
Civil society organisations and residents	Consultations, actions and citizen monitoring.
Centre for Development of the North-East Planning Region and cross-border partners	Joint projects, corridors, tourist routes and data exchange.

12. Budget logic and funding sources

Budgets are indicative estimates without VAT. Final values depend on scope, ownership, technical solutions, permits and market prices. Phased funding should be applied: preparation, pilot measures, core investments and maintenance.

Potential sources:

- Budget of Kyustendil Municipality;
- national Bulgarian programs for the environment, water, forests, agriculture, tourism and regional development;
- Interreg IPA Bulgaria–North Macedonia and other programs for territorial cooperation;
- LIFE, Horizon Europe, European Urban Initiative and other EU instruments;
- The strategic plan for agriculture and rural development and applicable agro-ecological measures;
- donor programs, corporate responsibility and appropriate public-private partnerships.

13. Risk Management

Risk	Level	Mitigation measures
Insufficient funding	High	Phasing, project portfolio and diverse sources.
Property and administrative restrictions	High	Early check of ownership, regimes and permits.
Flooding and extreme rainfall	High	Hydrological analyses and nature-based solutions.
Drought and low plant survival	High	Suitable species, irrigation and warranty period.
Fires and post-fire erosion	High	Prevention, monitoring and rapid recovery plan.
Insufficient maintenance	High	Multi-year plans, clear responsibilities and budget.
Pressure on natural and tourist sites	Medium-high	Controlled access, capacity, signage and monitoring.
Weak involvement of local stakeholders	Medium	Early consultations, public forums and partnership actions.

14. Communication and Public Participation

Communication will include public consultations, thematic workshops, school programs, local planting and clean-up actions, a digital map of the measures and an annual forum. Special attention should be paid to agricultural producers, tourist and balneological entities, local communities and users of natural spaces.

15. Monitoring, Reporting and Review

The municipal working group will prepare an annual report on activities, indicators, financial implementation, maintenance and risks. In 2030, a mid-term evaluation and review of the scores will take place. In 2031, a final evaluation and portfolio for the next period will be prepared.

16. Conclusion

The action plan creates a realistic, phased and measurable framework for the development of green infrastructure in Kyustendil. It connects urban greening, river and balneological spaces, mountain ecosystems, orchard landscapes and green tourism offer in a single system.

Successful implementation will depend on timely project preparation, sustainable maintenance, partnerships with local stakeholders, cross-border cooperation and mobilisation of national and European funds. The Plan should be updated according to monitoring results, new climate conditions and available financial resources.