REQUEST FOR EXPRESSIONS OF INTEREST

KYRGYZ REPUBLIC AIR QUALITY IMPROVEMENT PROJECT (AQIP)

PROVISION OF CONSULTANCY SERVICES FOR

URBAN GREENING FOR IMPROVED AIR QUALITY PROJECT
IN BISHKEK CITY- ALYKULOVA STREET URBAN GREENING
DETAILED DESIGN

Country: The Kyrgyz Republic
Project name: Air Quality Improvement in the Kyrgyz Republic
Loan No./Credit No./ Grant No.: IDA-74340
Assignment Title: Detailed engineering and supervision services for green belt
Reference No. (as per Procurement Plan): AQIP/1.2/CQS/N3-2026

The *Kyrgyz Republic has received* financing from the World Bank toward the cost of the *Air Quality Improvement Project*, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include *urban greening for improved air quality project in Bishkek city- Alykulova street urban greening detailed design, implementation period, expected start date of assignment, etc. ensuring full consistency with the TOR attached*.

The detailed Terms of Reference (TOR) for the assignment *are attached to this request for expressions of interest or can be obtained at the address given below.*

The *Ministry of Natural Resources, Environment, and Technical Supervision (MNRETS) of the Kyrgyz Republic* now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria are (see Attachment 1):

- At least ten (10) years of experience in planning for combined green/grey infrastructure [1] development/investments, including preparation of preliminary and detailed designs, cost estimates.
- Experience in developing design solutions for comprehensive landscape improvement and greening of areas, including the planning of green spaces, the integration of vertical and multi-level greening elements, and the application of modern architectural and planning approaches aimed at improving the urban environment and reducing the impact of adverse factors.

[1] ***"Green infrastructure"*** *includes the greening of streets and public spaces, planting and restoration of trees and shrubs, development of green areas, parks and public gardens, landscape design, irrigation and water conservation systems, and the use of nature-based solutions;* ***"grey infrastructure"*** *includes sidewalks, pedestrian areas, pathways, urban amenities, utility networks, stormwater drainage and water management systems, lighting, street furniture, and other necessary elements of urban infrastructure.*

- At least 7-10 years of experience in preparing environmental and social impact assessments, preparation of environmental and social management plans, stakeholder engagement plans, including Knowledge of the World Bank Environmental and Social Standards, and
- Successful completion of at least one assignment similar or comparable in nature, scale and complexity in the field of architectural and construction design, urban planning, integrated landscaping and territorial development will be considered an advantage.

Key Experts will not be evaluated at the shortlisting stage.

The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" July 2016 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest. In addition, please refer to the following specific information on conflict of interest related to this assignment:

Consultants may associate with other firms to enhance their qualifications, but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

The Consultant will be selected in accordance with the Consultants' Qualifications Selection (CQS) method specified in the World Bank's Procurement Rules.

Further information can be obtained at the address below during office hours 09:00 am to 18:00 pm.

Expressions of Interest must be submitted in writing by email to the address indicated below no later than 2:00 p.m. (Bishkek time, Kyrgyz Republic) on 8 December 2026.

" Kyrgyz Republic Air Quality Improvement Project "
under the Ministry of Natural Resources, Environment, and Technical Supervision of the Kyrgyz Republic
Address: Bishkek city, Erkindik Blvd. 2, office 115.
Phone: + 996 (554) 105002, +996 (999) 089 000
E-mail: *aqip.procur@gmail.com, airqualitypiu@gmail.com, seidanasn@gmail.com*

Attachment 1

KYRGYZ REPUBLIC AIR QUALITY IMPROVEMENT PROJECT (AQIP)

TERMS OF REFERENCE

PROVISION OF CONSULTANCY SERVICES FOR

URBAN GREENING FOR IMPROVED AIR QUALITY PROJECT IN BISHKEK CITY-ALYKULOVA STREET URBAN GREENING DETAILED DESIGN

A. INTRODUCTION

The Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (hereinafter referred as - MNRETS) currently is implementing the project "Kyrgyz Republic Air Quality Improving" (hereinafter the Project), financed by the World Bank.

The development objective of the Project is to i) strengthen the capacity of the Kyrgyz Republic to manage air quality; and ii) reduce emissions of PM2.5 and greenhouse gases in Bishkek City. The first part of the Project is based on the need to build national capacity for an integrated air quality management system (IAMS) to lay the foundation and further expand air quality management (AQM) activities beyond the sectors and Bishkek City which addressed by the proposed Project. The establishment of such an IAMS allows the Cabinet of Ministers of the Kyrgyz Republic to make informed decisions and ensure the sustainability of investments in other priority areas and sectors in the long-term perspective, at the same time addressing key sources of air pollution issues.

The Project has main components and subcomponents:

Component 1: "Strengthening the air quality management system";
Component 2. "Supporting the introduction of clean heating solutions";
Component 3: "Improving urban greening".

Subcomponent 3.1. "Support to urban greening"

This subcomponent of the Project focuses on Bishkek city greening improvement by the implementation of an urban greening pilot, in the form of a green belt with cascading greenery, specifically designed for reducing urban air pollution. This urban greening pilot includes supportive infrastructure such as the construction of locally appropriate irrigation systems but could also include other components such as slope stabilization and other civil works. To ensure the sustainability of the newly created green belt and ensure supply of adequate irrigation water for the underserved areas. This activity will support installation of new borewells, identified by the Bishkek City Mayor's Office, associated irrigation infrastructure, including water-efficient and climate-resilient solutions. The Project will also finance rehabilitation of three monitoring wells located in different parts of the Bishkek City to support improving groundwater monitoring and analysis.

B. OBJECTIVE OF THE ASSIGNMENT

The objective of the assignment is to assist the Bishkek City Mayor's Office and MNRETS by establishing a detailed design for the subcomponent 3.1 "Urban greening support" of Component 3 "Urban greening improvement" of "Kyrgyz Republic Air quality improvement" project on urban greening on Alykulova Street of Bishkek City based on findings from a Technical Analysis Report and to define detailed costing and relevant Terms of Reference (hereinafter-TOR) content including the best way to structure a contract for implementation.

C. SCOPE OF SERVICES

The Consultancy objective is to establish a detailed urban greening for air quality improvement design plan for the designated section of Alykulova Street of Bishkek City, which is approximately 3km in length. The Consultancy shall utilize and further build upon the results from the *Technical Analysis & Conceptual Cascade Greening For Improving Air Quality In Bishkek City* (herein referred to as the 'Technical Analysis Report'). Where possible, urban greening should demonstrate cascading greenery approaches and others optimizing air quality improvement benefits. In addition, when preparing the DED, the Consultant shall ensure close coordination with the ongoing design of the wells and associated infrastructure being undertaken under a separate assignment. The Consultant shall take into account the relevant design solutions, irrigation infrastructure locations and site requirements established under that assignment and ensure that the green belt design is compatible with them.

The design documentation developed by the Consultant shall correspond to the level of detailed design sufficient to support procurement procedures and subsequent implementation of works by the Contractor without the need for further development of design solutions, except for adjustments related to the Contractor's construction methodologies.

The detailed design assignment is divided into three core tasks, each with several associated sub-tasks.

1. **Inception analysis of the current situation and the Technical Analysis Report results including:**

a. Review and conduct detailed analysis of the existing Technical Analysis Report results
b. Detailed site survey and mapping- detailed suitability analysis of locations to do greening for air quality improvement including cascading greening, identifying locations unsuitable for cascading greenery approaches, identifying associated infrastructure requirements to support implementation, etc. This should include Analysis and mapping of existing associated infrastructure along and connecting to the street- such as water irrigation systems, walkways, bike paths, and their existing functional status, overhead cables and their buffer zones.
c. Using the Technical Analysis Report results and other relevant data, select appropriate plant species and minimum plant sizes for each species (must be larger than seedlings) to establish urban greening for air quality improvement solutions, ideally in the form of cascading greenery, while taking into account growth and maintenance requirements.

2. **Environmental and social due diligence and preparation of site specific ESMP** including stakeholder and adjacent property user communication protocols, traffic safety procedures, OHS procedures, waste management procedures, amongst others.

3. **Develop urban, architectural, and landscape detailed designs for Alykulova Street including:**

a. Develop detailed design solutions including:
i) Layout spacing- between all greenery (including cascading greenery designs) and all associated infrastructure
ii) Locations, Sizes, and Designs of Associated Infrastructure (as deemed suitable)- recreation infrastructure such as walkways and bike paths, irrigation layout, and other project infrastructure.
b. Define planting approaches including topsoil, minimum plant sizes, and timeline/order requirements for planting to achieve sustainable growing according to seasons and especially for areas with cascading greenery (i.e. if all should be planted at once, in sequence, etc.).
c. Establish operations and maintenance plans including for all associated infrastructure such as electricity for irrigation or lights.
d. Costs- establish detailed cost estimates for implementing the detailed designs.
e.
f. TOR for implementation- TOR content and the best way to structure the contract for implementing the detailed designs.

Task 1: Inception Analysis

Subtask 1.1: Review Background Information

The Consultants will review the existing pre-feasibility report and all related documents, including relevant documents related to urban planning and infrastructure in the targeted area. These documents will include all design, environmental, land use, and social due diligence content available.

Subtask 1.2: Inception Mission and Report

The Consultant is expected to undertake an inception mission to develop a comprehensive understanding of the project context and conduct preliminary site surveys and stakeholder consultations. The mission should include a kickoff meeting with the Bishkek City Mayor's Office and MNRETS, as well as site visits to the proposed project areas, the Bishkek Botanical Garden, and other green and public spaces within and around Bishkek. The Consultant is expected to have reviewed all background information in advance and have a solid grasp of the proposed project as well as the general situation in Bishkek. Following the inception mission, the Consultant shall prepare and submit an Inception Report, including a detailed workplan, methodology, timeline, and stakeholder engagement approach, for review and agreement by the PIU and the World Bank prior to proceeding with subsequent stages of the assignment. The Consultant is expected to conduct the following works during and after the mission:

1.2.1. Site Surveys and Suitability Analysis

A. Conduct Detailed Site Surveys:

- Perform physical surveys of the designated areas of Alykulova Street to assess terrain, topography, soil types, and micro-climatic conditions.
- Confirm that all proposed interventions are limited to the municipal land allocated for the project and do not affect privately owned land, private assets, or areas under private use or encroachment. No activities involving land acquisition or involuntary resettlement impacts shall be proposed under the assignment.
- Identify potential areas for greening for air quality improvement and where feasible, for cascading greenery approaches, and assess accessibility for implementation activities including proposed site for storage of equipment, facilities, and materials during implementation.
- Review how the existing greenery module concepts could be utilized across the entire project area, and where it is not feasible to use any of the concepts, map reasons and potential alternatives.
- Identify potential barriers to implementation, such as the proximity of utilities (e.g., electrical lines, sewage systems, land ownership or other land access restriction), and suggest mitigation measures.

B. Topographic Survey:

Review and analyze topographic survey across the project areaC. Engineering-Geological Surveys

- Conducting the engineering- geological survey and soil survey across the project area

D. Infrastructure Requirements for Implementation

- Assess existing infrastructure (e.g., drainage systems, access roads, utility lines, and more) to determine additional requirements, including necessary permits, needed for the successful implementation of cascading greenery.

1.2.2. Analysis of Existing Associated Infrastructure

A. Water Irrigation Systems

- The Consultant shall review the available design documentation for borewells and associated irrigation infrastructure developed under a separate assignment.
- The Consultant shall assess the adequacy of the proposed solutions in relation to the requirements of the

Green Belt design, including water demand, spatial layout, and plant selection.

- Where necessary, the Consultant may propose minor adjustments or improvements to the irrigation design to ensure compatibility with the proposed greenery and enhance overall system efficiency and sustainability.
- Any proposed modifications shall be limited in scope, be justified technically and economically, and be coordinated with the Client and the Consultant responsible for the borewells and associated irrigation infrastructure design.

B. Walkways, Bike Paths and Other Recreational Infrastructure

- Assess key design and infrastructure options, including scenarios with and without bicycle and recreational infrastructure, highlighting the main advantages and constraints of each option to support decisions on the final design scope.
- If deemed potentially interesting to include key design and infrastructure options, evaluate the current status of walkways, bike paths, and other recreational infrastructure.

C. Environmental and Social Implications of the recommendations, of the recommended interventions for the water irrigation systems, identified potential risks and impacts during implementation, walkways and bike paths.

1.2.3. Plant and Tree Species Analysis

A. Baseline Survey of Existing Vegetation

- Conduct an inventory of existing plant and tree species in the project area.
- Evaluate any non-native or invasive species that may need to be controlled or removed to prevent ecological disruption or project viability.
- B. Review & Selection of Appropriate Plant SpeciesAssess the suitability of the species in the Technical Analysis Report plant species catalogue and existing plant and tree species for greening for air quality improvement and cascading greenery, considering factors such as root structure, water needs, growth patterns, and resistance to local pests and diseases. Further, assess the suitability of the species identified according to the following:
  - Suitability for cascading greenery, considering local environmental conditions, projected environmental conditions with climate change considerations, and project goals.
  - General suitability of existing tree and plant species already present in the project area for inclusion in the cascading greenery plan.
  - Optimizing spatial use and benefits through evaluating species based on key factors such as canopy/foliage size, root structure (to support slope stabilization and erosion control while avoiding conflicts with infrastructure such as roads and water lines), water needs, growth patterns, and resistance to local pests and diseases.
  - Reducing long-term maintenance requirements for each species, such as pruning, watering, and fertilization, to ensure cost-effective and sustainable greenery management.
  - Native vs Exotic- focus on selecting native species and other well-adapted plants that contribute to biodiversity and ecological resilience while ensuring they align with the cascading greenery's aesthetic and functional goals.
  - Microclimate suitability- recommend species that will thrive in the various microclimates along the stretch identified by Bishkek City Mayor’s Office, considering factors like soil composition, moisture availability, and sunlight exposure.
  - Existing Species Manage (as required)- propose the removal or control of any invasive or non-native species that may disrupt the ecological balance or hinder the success of the cascading greenery initiative.

C. Verify Plant and Tree Species Needs

Water Requirements and Irrigation

- Verify water needs for each species, including the type and frequency of irrigation required, based

on local climate conditions and water availability.

Spacing Requirements

- Verify spacing requirements according to each species' growth potential, root spread, canopy size, and interaction with nearby infrastructure (e.g., roads, utilities, walkways) and ensure these are accounted for in the final detailed designs.
- Verify spacing requirements according to each species' needs to ensure proper spacing to avoid competition for light, water, and nutrients, while optimizing plant growth to achieve the cascading greenery effect.
- Verify spacing requirements for optimal airflow and ventilation needs vs air quality improvement options, when determining spacing, particularly in densely planted areas or locations with existing infrastructure.

D. Alignment with Existing Greenery Policies

- Analyze local urban greening and environmental policies to ensure that the project aligns with city-wide tree-planting initiatives, biodiversity, and conservation goals.
- Ensure species selected for greening meet city-wide objectives for air quality improvement, climate adaptation, and community well-being, while also enhancing the urban aesthetic.
- Collaborate with local authorities to incorporate species that contribute to ongoing or planned greenery projects, ensuring synergy between the cascading greenery and city-wide environmental goals.

The Consultant is to prepare an inception report that will outline their conceptual approach to the implementation of the assignment, considering the requirements of the legislation of the Kyrgyz Republic, as well as the ESS WB. any basic assumptions, methodologies, design principles, questions, roles, a comprehensive work plan etc. This should include a detailed project roadmap that will serve as a guiding document for the consultancy services. The report should include:

- Key observations from the review of background information, taking into account the requirements of the legislation of the Kyrgyz Republic, as well as the World Bank's Environmental and Social Standards (ESS).
- Methodological approach to implementation of the assignment – both overall and by individual stages, including the application of a risk-based approach to environmental and social aspects;
- Key stakeholders, as well as a proposed plan and approach for consultations, workshops, stakeholder engagement activities, and grievance redress arrangements for both project workers and communities located in and around the proposed intervention areas, consistent with the legislation of the Kyrgyz Republic and the World Bank Environmental and Social Standards (ESSs).
- General design principles applied by the Consultant, including the principles aimed at the prevention, minimization, and mitigation of environmental and social impacts,
- Identification of subproject-specific information and gaps in baseline data as required for the preparation of detailed design documentation, including environmental and social baseline data
- Approach and work plan for environmental and social due diligence. The scope, methodology, and contents of the environmental and social assessment shall be further elaborated by the Consultant in the Inception Report for review and agreement by the PIU and the World Bank.
- A detailed work plan with activities for each major task plotted against project duration and the individual tasks integrated into an overall work plan with all important linkages and inter-dependencies shown.
- Working protocols between Bishkek City Mayor's Office, MNRETS, the Consultant, and World Bank, including expectations and agreed review/comment periods.
    - Mechanism for monitoring and reporting on compliance with environmental and social management plan performance indicators throughout the implementation of the greening component of the Project.

Subtask 1.3: Inception Meeting/Workshop and Proceedings

The Consultant will hold an Inception Meeting/Workshop after submission of the draft Inception Report to present the main findings and gain inputs on the approach and work plan. The finalized approach, methodology, and work plan shall be subject to review and agreement by the PIU and the World Bank prior to proceeding with subsequent stages of the assignment.

For this and all workshops, the Consultant is expected to prepare a brief workshop proceedings report, which can be annexed to the final inception report.

Task 1 Deliverables

1.2: Inception Report (including situation and pre-feasibility analysis) (maximum 30 pages)
1.3: Inception Meeting/Workshop and Proceedings (annexed in the final Inception Report)

Task 2: Environmental and Social Risk Management (ESRM)

The Consultant will be tasked with ensuring high-quality due diligence on environmental and social risks and impacts and mitigation thereof, and compliance with Government of the Kyrgyz Republic and the World Bank's Environmental and Social Framework (ESF). This will include preparing a site-specific Environmental and Social Management Plan (ESMP), and Stakeholder Engagement Plan (SEP), consistent with the project's E&S instruments. The project's Labor Management Procedures (LMP) will apply, included where relevant as an axenure in the ESMP.

The environmental and social instruments should be prepared by a dedicated team of experts within the Consultant team that will be expected to commit considerable presence in the field. Timely preparation and quality work are critical to keep overall project preparation on track. The Consultant is expected to produce high-quality, practical documents that are specific to this activity and which informs the design options and detailed engineering designs, and to develop practical and applicable mitigation measures to be complied with during the implementation phase, avoiding generic mitigation measures, in compliance with the national E&S laws and regulations and the project's E&S instruments. The Client would like to emphasize that ESRM due diligence and draft designs should not be parallel processes, and instead ESRM should be fully integrated into preparation of the draft designs. The Client notes that the approach to environmental and social risk management and quality of the team will be part of the evaluation criteria for the assignment.

Subtask 2.1: Environmental and Social Management Plan

The consultant is to (i) prepare a site specific ESMP in accordance with the World Bank Environmental and Social Framework and Government of the Kyrgyz Republic EIA framework, of maximum 20 pages excluding annexes, and (ii) produce mitigation measures to inform the draft design concepts, and contractual mitigation measures for the bidding documents for implementation contracts.

Preparation of the ESMP will include:

- Compliance with World Bank ESF guidelines (please refer to the World Bank Environmental and Social Framework for indicative outlines of ESMP);
- The ESMP should take care to, in addition to mitigating negative impacts, identify opportunities for enhancing environmental, cultural, and social assets in the project area;
- The ESMP should also:
    - Assess land tenure issues, should any exist for the agreed project area, including if livelihoods will be impacted and strategies for mitigation (if relevant).
    - Assess condition of access roads to proposed sites;
    - Assess availability of important utilities such as water shelter, public toilets and

electricity.

- Environmental and Social Management Plans (ESMP) maximum 20 pages (excluding annexures) that include mitigation measures and a monitoring plan for the context and types of potential risks and impacts. In the ESMP the consultant will avoid listing generic mitigation measures and instead focus on providing site-specific technical requirements that respond to the environmental and social impact areas identified in in the inception report, and flagged through stakeholder engagement SEPs for this sub-project to be included in the designs, and bidding documents and include a yearly budget for monitoring. The costs ESMP should be included in the bidding documents and as the bid evaluation criteria. Specific procedures, e.g. for labour, OHS, traffic management, etc. can be detailed as annexures to the report.
- Inclusion of specifications and costs in bidding documents: The Consultant should ensure that mitigation measures, contractor's self-monitoring and relevant costs (e.g. cost for mitigation measures, monitoring, Environmental, Health and Safety (EHS) staff/consultant, equipment, EHS training) are built into the project bidding documents with clear specifications where relevant.

The ESMP should include, *inter alia*, the following considerations, some of which will overlap with other survey and design work undertaken by the Consultant:

- Occupational and community health and safety, including prevention of Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH)
- Traffic management and road safety
- Condition of access road to the proposed recreational sites (if required)– identify improvements and any environmental and/or social impacts of such improvement
- Habitats and biodiversity which may be affected by the project
- Impacts of any tree and vegetation sourcing, e.g. incorporating existing trees in the planting plan
- Offsite facilities such as topsoil and other materials extraction locations
- Resource efficiency (energy use) and pollution prevention and management (e.g. air pollution, hazardous and nonhazardous wastes, pesticides)
- Storage, management and disposal of excavated materials
- Chance Finds procedures should any artefacts be discovered during works
- Screening and mitigation shall also assess the site where the construction camp/ resource stores will be located.

As part of the ESRM the Consultant shall conduct stakeholder engagement consultations to collect opinions, views and concerns of the stakeholders on the proposed project interventions and their impacts. The Consultant shall first identify, analyze and consult all the relevant stakeholders at national, regional, district and community/local levels that include Government Agencies, local NGOs, affected groups and other interested parties in order to obtain their views regarding the proposed construction(s). The consultant must pay particular attention to the disadvantaged groups such as people with disabilities, the elderly, women, youth and children that may be affected by the proposed interventions. Refer to the Project SEP for guidance.

The Consultant will also assist Bishkek City Mayor's Office and MNRETS through the required review and approval processes within the Cabinet of Ministers of the Kyrgyz Republic and the World Bank up to the disclosure of the documents to the public.

- People,
- Eligibility criteria for various categories of affected people and establish cutoff date,
- Methods for valuing affected assets,
- Organizational arrangements and procedures for delivery of entitlements,
- Methods for consultation with and participation of affected people,

- Grievance redress mechanism,
- Budget and funding arrangements,
- Monitoring arrangements,
- Implementation schedule,

Task 2 Deliverables

2.1: Environmental and Social Management Plan, maximum 20 pages (Excluding annexures)
2.2: Site-specific Stakeholder Engagement Plan and records of engagements

Task 3: Detailed Urban, Architectural, and Landscape Designs

Subtask 3.1: Detailed Designs

The Consultant will incorporate all information from the Technical Analysis Report, Tasks 1 and 2 to establish detailed urban, architectural, and landscape designs for the project area. They are expected to go beyond a typical engineering approach to infrastructure design, using stakeholder inputs to create urban, architectural, and landscape design concepts that not only provide basic services but improve infrastructure, economic opportunities, improve mobility, quality of life and enhance urban resilience. To this end the Consultant will build on the review of background documents, data, and desk/field survey work, and consultations to use an urban design approach to show how the proposed project will be situated into the surrounding urban fabric and visualize design alternatives and options – for example the inclusion of a variety of recreational facilities, or water irrigation options.

The design process will include the review and integration of all design-related content from the technical analysis report and previously identified tasks, including site analysis, cascading greenery implementation, species selection, and associated infrastructure. The Consultant will ensure that they build upon the technical analysis report results and will not restart the entire design exercise. They Consultant will also ensure that urban, architectural, and landscape detailed designs align with the overall project goals of greening to improve air quality and reduce PM exposure, urban heat, while supporting additional environmental, social, and recreational benefits. The Consultant shall use knowledge of science-based practices for planning of greening in Bishkek, previously implemented by Botanical Garden under the National Academy of Science. Detailed designs should explicitly include content from the technical analysis report and account for the following considerations:

3.1.1. Optimizing PM Exposure Reduction or Removal

A. Define Optimal Air Quality Improvement Greening Considerations

- Review the Technical Analysis Report results, verify and/or modify greening for air quality improvement and PM exposure reduction suggestions.
- Establish new concepts on greening for air quality improvement and/or PM exposure reduction as is required and including science-based approaches used by the National Academy of Sciences for greenery planning in Bishkek.

3.1.2 Layout Spacing

A. Define Spacing Requirements for Greenery

- Establish minimum through to optimal spacing guidelines for plants, shrubs, and trees to ensure adequate room for growth, air circulation, and aesthetic appeal, while maintaining the cascading greenery effect.
- Ensure spacing takes into account root spread, canopy width, and height potential, preventing overgrowth or competition between species while optimizing air pollution removal and exposure reduction mechanisms.

- Integrate specific plant spacing recommendations based on species growth patterns, water, and soil needs, while considering infrastructure constraints such as roads, utilities, and footpaths.
- Identify Greenery Module size categories for cascading greenery, from the smallest/minimum width dimensions required to establish cascading greenery the largest possible according to the existing landscape. (Note- in subsequent steps this will be overlayed over the project area).

B. Infrastructure Proximity Considerations

- Analyze and map the proximity of existing infrastructure (e.g., roads, utilities, overhead cables, and drainage systems) to cascading greenery areas to ensure a harmonious balance between greenery and infrastructure use.
- Ensure that plant spacing allows for the maintenance and operation of utilities, drainage systems, and irrigation systems, avoiding conflicts that may hinder future access or repairs.

C. Ventilation and Accessibility Needs

- Ensure that greenery spacing supports adequate ventilation and air circulation, while providing optimal conditions for PM deposition, absorption, filtering, and other reduction and exposure reduction mechanisms. This applies particularly in areas near buildings, pedestrian paths, or urban developments where airflow/airflow restrictions may be critical for comfort and safety.
- Include design considerations for accessibility, ensuring that pedestrian walkways, bike paths, and other public spaces remain accessible and unobstructed by trees or overgrowth.

3.1.3 Designs of Associated Infrastructure (pending pre-approval during the inception and conceptual design stages)

- Prepare detailed designs for the infrastructure elements, pending they are agreed and approved during the inception and conceptual design stage by the PIU and the World Bank. They may include bicycle paths, seating areas, upgrades to existing paths, and other supporting public space elements.
- Determine the optimal location, dimensions, materials, and technical specifications of the proposed infrastructure in accordance with local standards, safety requirements, accessibility considerations, and overall landscape integration.
- Walkways and Bike Paths (pending pre-approval and if it will be included in scope of work): Design proposed infrastructure elements that complement the cascading greenery, ensuring they are integrated with the landscape and provide scenic routes through the greenery. Determine the optimal width(s), materials, and surface treatments for bike paths and walkways to ensure durability, safety, and comfort for users according to local standards and best practices. Plan the placement of bike paths, walkways, and associated infrastructure including traffic signs, to maximize public access to greenery while ensuring sufficient distance from planting areas to prevent root damage or interference.
- Public Spaces and Rest Areas (where feasible, beneficial, and pre-approved): Where spatially feasible and deemed beneficial, identify locations for public seating, rest areas, and gathering spaces within the greenery areas, ensuring these spaces provide shade and are accessible for all users. Design these spaces to enhance user engagement with the natural environment, using natural materials and features that blend with the cascading greenery.

3.1.4 Coordination of Infrastructure with Environmental and Social Considerations- note all designs should also ensure that they align with the following principles:

A. Sustainability and Environmental Impact

- Ensure all design concepts prioritize sustainability, minimizing the environmental impact of trees/vegetation, construction, and ongoing maintenance.
- Consider materials with low environmental footprints for walkways, bike paths, and public

infrastructure, ensuring compatibility with the cascading greenery approach.
- Incorporate sustainable practices of using native plant species that require less maintenance and resources.

B. Social and Recreational Benefits
- Design public spaces, walkways, and bike paths, if included in the agreed project scope, with a focus on enhancing social interaction and community engagement.
- Ensure that proposed infrastructure serves as recreational assets for the local community, promoting healthy lifestyles and public appreciation of green spaces.
- Consider the inclusion of educational features (e.g., signage, interactive exhibits) that inform visitors about the cascading greenery project and its ecological benefits

Content of the Urban, Architectural, and Landscape Detailed Designs: The following information should be found within the Detailed Design document:

- Base maps and overlays of the existing urban fabric and proposed project
- Detailed urban / architectural / landscape designs for the entire project area, in which the designs include at minimum:
  - Location specific tree and plant species selection and layouts, including all designs for:
    - Cascading greenery including layout spacing and all other previously mentioned content for all appropriate site.
    - Alternative greening for improved air quality including layout spacing and all other previously mentioned content appropriate for each location that are not appropriate for cascading greenery.
    - Note- it is expected that these design are detailed down to the exact plant or tree species expected to be planted in each location as a landscape design
  - Species catalogue or reference to the existing species catalogue from the Technical Analysis Report
  - Integration of public amenities into the detailed design
  - Anticipated air pollution reduction mechanisms
  - Anticipated PM exposure reduction mechanisms
  - Integration of existing and required associated infrastructure: i.e. where unavailable, recommend efficient irrigation systems (e.g., drip irrigation, rainwater harvesting) that support long-term plant health and sustainability.
    - Note- ensure irrigation systems are integrated with the overall infrastructure design, such as recreational areas and slope stabilization systems.
  - Draft designs for associated infrastructure
  - Thematic maps, diagrams, 2D and 3D drawings, sections, and renderings
  - All other relevant design concept information

Drawing scale requirements: overall layout drawings shall generally be prepared at scales ranging from 1:500 to 1:1000 depending on the size and complexity of the area.

Subtask 3.2: Detailed Urban, Architectural, and Landscape Designs Review Process

The Consultants will conduct one or more consultative meetings or workshop with relevant stakeholders to showcase and obtain feedback on the draft detailed designs. Agreed input from the consultation(s) will be incorporated into the final version of the draft design concepts report.

Subtask 3.3: Defining Planting & Growing Approaches

The Consultant will use the agreed upon detailed design for Alykulova Street to identify the most appropriate plant and tree planting and growing approaches to optimally achieve planting for the project area which will improve air quality and reduce PM exposure with consideration of urban heat. The

Consultant will refer to the Technical Analysis Report plant and tree species catalogue for foundational information and add to it as is required to fulfill the detailed design report to ease implementation. All of this content will be included within the detailed design report.

3.3.1 Planting Approaches & Needs

A. Topsoil and Soil Preparation

- Assess and identify the topsoil requirements for each species, considering soil composition, drainage, and fertility needs.
- Recommend soil preparation methods (e.g., amending with organic matter, improving drainage, adding fertilizers) to optimize growing conditions for each species.
- Ensure that soil preparation aligns with slope stabilization requirements to prevent erosion and improve plant anchorage.

B. Minimum Plant Sizes

- Specify the minimum planting size for each selected species, ensuring that plants are larger than seedlings to facilitate faster establishment and growth. Include species-specific minimum height, diameter, and root ball size requirements.
- Justify the chosen plant size based on factors such as the local climate, expected growth rates, and the need for immediate visual and functional impact (e.g., erosion control, shade provision).

C. Planting Sequence and Timeline

- Develop a detailed planting sequence that considers species growth rates, root development, and the project's air quality, visual, and ecological objectives.
- Determine whether species should be planted simultaneously or in a staged sequence, depending on their growth patterns and the desired cascading greenery effect.
- Prioritize the planting of species that provide immediate soil stabilization or environmental benefits (e.g., erosion control, shading), followed by species that support long-term ecological goals.

D. Establishing Planting Timelines:

Seasonal Considerations:

- Identify the optimal planting season(s) for each selected species, taking into account local weather patterns (e.g., rainfall, temperature) to maximize survival rates and promote healthy growth.
- Recommend planting timelines based on species-specific requirements, ensuring that trees and plants are established during the most favorable climatic conditions.

E. Ordering and Sourcing Timelines:

- Develop a procurement schedule that ensures plant materials are ordered and delivered on time, in line with the appropriate planting season.
- Coordinate with nurseries to ensure trees and plants are grown to the required size before the planting season begins.
- Development and include contingency plans for any delays in plant sourcing or adverse weather conditions that may impact the planting schedule.

Subtask 3.4: Operations and Maintenance Requirements & Project Timeline

The Consultant shall establish a detailed anticipated operations and maintenance requirements inclusive of costs and a forecasted project implementation timeline, as well as any other details deemed relevant to support implementation of the detailed designs. This content will be included within the detailed design report.

3.4.1 Operations and Maintenance Requirements

A. Operations and Maintenance Requirements and Timelines:

- Identify all operation and maintenance requirements for project implementation including considerations for before the plants are established, through to establishment, and long-term post-establishment maintenance.
- Identify timeframes within which these requirements are valid
- Identify all operation and maintenance requirements for project implementation including for associated infrastructure.

B. *Roles and Responsibilities:*

- Outline roles and responsibilities, including respective costs, for each of the operation and maintenance requirements identified.
    - Note- Ensure that operations and maintenance costs are accounted for until the plants are established and following typical local construction requirements for any associated infrastructure.

C. Irrigation and Fertilizer Management Manual for Sustainability

- The Consultant shall prepare a practical Irrigation and Fertilizer Management Manual to support sustainable post-implementation maintenance of the green belt. The manual shall define species-specific and seasonal irrigation schedules, watering volumes and frequencies, fertilizer types and application timing, soil conditioning requirements, plant establishment period protocols, drought-response measures, replacement planting triggers, and roles and responsibilities for contractor and ME "Bishkekzelenstroy". The manual shall include maintenance schedule with indicative annual resource and cost requirements.

3.4.2 Project Timeline

A. Detailed Project Implementation Timeline:

- Develop a detailed project implementation timeline. Include detailed analysis on critical considerations such as:
    - Plant nursery procurement times including ordering plants sufficiently in advance to ensure they have reached minimum planting height at the time of planting
    - Seasonality- ensure planting is aligned with rainfall patterns to optimize the use of rainfall and reduce the reliance on irrigation immediately after planting to enhance potential successes
    - Procurement process requirements- ensure the timeline takes into account potential procurement process delays and provides a sufficient buffer to avoid tree and plant losses prior to planting and/or to ensure minimum plant sizes are obtained prior to planting
    - Environmental and social due diligence- ensure project timelines take into account all potential environmental and social diligence considerations including any potential permissions required for planting
    - Required Associated Infrastructure- ensure that all required associated infrastructure is in place prior to planting, such as water irrigation or walkways, in order to ensure optimal growing conditions and to avoid disturbances post-planting

Subtask 3.5: Draft Implementation TOR & Detailed Costs Estimates

The Consultant shall establish detailed costs estimates and a draft project implementation TOR including advice on the best way to structure a contract for implementation this project.

3.5.1 Detailed Cost Estimates

- Establish detailed cost estimates for project preparation, implementation, operations and maintenance.

NOTE- Detailed Cost Estimates: Prepare confidential detailed cost estimates for implementing the entire project through priced bills of quantities and submit directly to the client as a draft, prior to project

finalization, and as final documents afterwards. This should be a separate report outside of the detailed design report.

3.5.2 Draft Implementation TOR

The draft implementation TOR and technical documentation package shall be prepared in a procurement-ready format and include, at minimum:

- Project description with relevant background and baseline information, including site conditions, existing infrastructure, topographic, geological, hydrogeological and soil data as relevant;
- Scope of works
- Tasks (with detailed descriptions)
- Implementation schedule- including works sequencing, testing, commissioning, plant establishment period, hand-over arrangements, and defect rectification obligations;
- Equipment required- including equipment for project operation and maintenance
- Data and material handover
- Detailed cost estimates based on bills of quantities (BoQ)
- Expertise required: The project documentation shall undergo the State Environmental Expertise (SEE) and State Expertise, with positive expert conclusions to be obtained for the complete set of the developed detailed design and cost estimate documentation.
- Technical Specifications, basis for design, technical performance requirements, minimum plant specifications, aftercare and plant replacement obligations. Technical specification should include approved ESMP.

Technical specifications:

The Consultant shall prepare a set of technical specifications intended for inclusion in the bidding documents for construction. At a minimum, the specifications shall include:

- Requirements for planting material and minimum plant specifications;
- Requirements for soil preparation and planting works;
- Requirements for irrigation systems;
- Requirements for materials and components of associated infrastructure;
- Operation and maintenance requirements during the plant establishment period;
- Environmental and Social Management Plan and necessary stakeholder communication during construction phase to be incorporated into the Contractor's contract.

The specifications shall be formulated in a manner that allows their direct incorporation into the bidding documents.

Other information (where relevant) such as: recommended partnerships/project implementing partners, nurseries to be used, etc. can be included in the draft implementation TOR.

Presentation: For the recommended bid packaging arrangements for the sub-projects, present the draft bidding documents to the Bishkek City Mayor Office, Botanical Garden and MNRETS for review/feedback and agreement including the implementation phases that will depend on available additional financing resources/budgets.

Task 3 Deliverables

3.1: Detailed design report (maximum 60 pages excluding annexes)
3.5.1: Detailed costs estimate report

3.5.2: Draft TOR including technical advice on the best way to structure the implementation contract including an assessment of feasible contracting modalities: (i) conventional civil works contracts and (ii) contracts with extended plant establishment and aftercare obligations, including survival guarantees for planting material replacement for a period of 24–36 months, subject to local market capacity and basic market sounding.

D. DELIVERABLES, TIMING, AND PAYMENTS

The entire assignment is expected to take approximately six (9-12) calendar months from contract signing. The Consultant should strictly abide by the timeframe for the tasks indicated in the table below including preparation and submission of the Reports and Draft TOR. However, the Consultant will be responsible for carrying out revisions, improvements etc. as advised by the Government of the Kyrgyz Republic up to the time the documents get the necessary approvals for commencement of the projects implementation**.**

The following outlines the proposed timing of deliverables, reports and payments:

Task ref.	Deliverable	Months after contract start date	Copies	Payment
1.2	Inception Report including: • Environment and Social Risk and impact identification as per WB ESF and National Guidelines • Stakeholder Engagement Plan	2 moths	___ hard copies in Russian and 1 electronic copy in Russian and English.	10%
2.1	Environmental and Social Management Plan and Stakeholder Engagements	3,5 months	___ hard copies in Russian and 1 electronic copy in Russian and English.	20%
3.1	Detailed Design Report	12months	___ hard copies in Russian and 1 electronic copy in Russian and English.	30%
3.5	Detailed Cost Estimates Report	12 months	___ hard copies in Russian and 1 electronic	35%

			copy in Russian and English.	

The Project Implementation Unit (PIU) at MNRETS and World Bank will review documents and commits to a turnaround of one week for non-technical reports (e.g. inception report, progress reports) and two weeks for technical reports.

The Consultants will be expected to hold monthly meetings with the PIU and World Bank team where they will deliver a presentation on progress with respect to agreed milestones and submit minutes within two days of the meeting.

The Consultant shall submit soft copies of all documents and ten (10) hard copies of the two deliverables for Task 3 to the Bishkek City Mayor Office and PIU.

In addition to reports submitted, the Consultant shall provide:

- Design drawings in editable CAD format;
- A digital map of the greening project in GIS format.

All digital materials shall be delivered to the Client together with the final outputs of the assignment.

E. CONSULTANT PROFILES AND QUALIFICATIONS

The Client is seeking a firm (or a consortium with complementary skills) having a clear vision for sustainable urban development, planning of urban greening, including cascade and vertical greening, experienced in developing practical green solutions for complex technical and social problems in developing cities with institutional and financial challenges, and who are motivated to improve the lives of communities facing air pollution and urban heat and improve the technical skills of the Client and municipal governments.

The Consultant must have general experience in carrying out pre-feasibility or preparation studies, planning and design of relevant infrastructure projects. The Consultant should have:

- At least ten years of experience in planning for combined green/gray infrastructure [2] development/investments, including preparation of preliminary and detailed designs, cost estimates and project implementation schedules.
- Experience in science-based planning for greening in cities, including vertical greening, ecological classification and cascade greening in view of worsening air quality and urban heat.

[2] ***"Green infrastructure"*** *includes the greening of streets and public spaces, planting and restoration of trees and shrubs, development of green areas, parks and public gardens, landscape design, irrigation and water conservation systems, and the use of nature-based solutions;* ***"grey infrastructure"*** *includes sidewalks, pedestrian areas, pathways, urban amenities, utility networks, stormwater drainage and water management systems, lighting, street furniture, and other necessary elements of urban infrastructure.*

- At least five years of experience in preparing environmental and social impact assessments, preparation of environmental and social management plans, stakeholder engagement plans, including familiarity with World Bank Environmental and Social Standards, and
- Have successfully prepared at least one similar assignment (by size and complexity) in an urban or peri-urban environment, experience in Central Asia region will be an asset.

The Client expects that the Consultants will maintain a continuous presence in Kyrgyzstan for the duration of the contract, to ensure the project is kept on track and avoid delays. Consultants should expect to be made available and responsive to the Client for the duration of the assignment.

Team Composition and Structure

The Client understands that the consultant team will require a broad range of specialist expertise and be multidisciplinary in nature to undertake this assignment and as such the Consultants can propose a mix of individuals that include sufficient expertise, each with strong analytical and communication skills.

The Consultant should note that a dedicated team member should also be allocated for environmental and social management due diligence. They should coordinate closely with the design team so that ESRM processes inform the designs but ensure an independent and robust assessment of environmental and social risks and impacts that are free from influence and pressure. The staff member in combination with the larger project team should have sufficient environmental and social expertise to ensure an international standard of quality that meets World Bank and national policies.
The following table outlines the type of key experts expected to be engaged on this assignment.

KEY EXPERT	RESPONSIBILITIES/QUALIFICATIONS
Team Leader/Senior Project Manager	Role: The Team Leader (TL) shall be responsible for the proper conduct of the entire execution of the assignment and shall be the principal contact person between the project teams in Bishkek City Mayor Office and MNRETS. He/she shall also be responsible for ensuring an constituted team of key specialists is deployed to work on the project. Qualifications: The Team Leader must be an experienced project manager with post-graduate qualifications in a field of natural resource management, environment, forestry, urban planning. A minimum of 10 years' experience in a management role for large-scale multi-disciplinary greening or urban development projects, including site management, contract management, OHS The TL must have excellent communication and management skills, Strong expertise in urban planning, architecture, and landscape architecture, urban forestry, nature-based solutuions or environmental management. Proven ability to coordinate teams and manage complex deliverables. Experience working in international projects is preferred. Fluency in written and spoken English is an advantage. .
Senior Urban/Landscape Architect	Role: Lead the development of urban, architectural, and landscape design concepts for cascading greenery. Qualifications: Post-graduate degree in urban planning, architecture, landscape architecture, urban forestry or environment. At least 8 years of experience in urban design and landscape architecture, particularly in urban greening projects.

	Experience designing green spaces, public parks, or sustainable urban landscapes, with a focus on environmental (air quality, urban heat) and social impacts and mitigation Experience in designing green spaces for air quality improvement and/or reduced PM exposure considered a significant asset. Demonstrated experience in site management
Urban Design Specialist	Role: The objective of the Urban Design Specialist is to prepare high-quality urban and landscape architecture designs for urban greening, in collaboration with the Landscape Architect, Urban Environmental Specialist, and the Forestry/Botanist Specialist. Qualifications: Post-graduate degree in urban design, architecture or landscape architecture. At least 6 years of experience in urban design and landscape architecture, particularly in urban greening. Experience designing green spaces, green corridors, public parks, or sustainable urban landscapes, with a focus on environmental and social impacts and mitigation. Demonstrated experience in Monitoring and implementing ESMPs Experience in designing green spaces for air quality improvement and/or reduced PM exposure, as well as urban heat considered a significant asset. Experience designing similar projects. . Written and spoken high proficiency of English and Russian is an advantage.
Forestry/Botanist (Horticulture Expert) Specialist OR Bishkek Botanical Garden (partnership)	Role: Oversee species selection, nursery identification, planting regime, and support the detailed design. Qualifications: Post-graduate degree in forestry, agronomy, botany, horticulture, or a related field. At least 8 years of experience in plant species selection and urban greening projects). Expertise in native and climate-resilient species for biodiversity and urban air quality improvement, cascade greening and vertical greening. Knowledge of plant growth, topsoil, and water requirements, and experience designing planting regimes. Knowledge of science-based approaches in planning greening in cities and methodology for such planning in Bishkek
Senior Social Specialist	Role: Lead the Environmental and Social Risk Management (ESRM), develop the Environmental and Social Management Plan, and ensure stakeholder engagement. Qualifications: Post-graduate degree in environmental or social sciences, sociology, or a related field. At least 8 years of experience in environmental and social impact assessments for urban infrastructure projects. Knowledge of World Bank's Environmental and Social Framework (ESF) policies and stakeholder engagement. Experience working with vulnerable and disadvantaged groups. Expertise in sustainable development practices, biodiversity conservation, and climate change adaptation.

Occupational Health and Safety Specialist	Role: contribute to development of the Environment and Social risk management process, development of the ESMP, and necessary mitigation procedures, site safety procedures, working procedures around the overhead powerlines, etc. monitoring labour conditions for workers, GRM, etc. Qualifications: National qualification in Occupation Health and Safety 5+years of experience in occupational health and safety implementation and management Knowledge of the World Banks Environment and Social Framework and Kyrgyz Republic Labour Laws

Non-Key Experts: In addition to the key staff mentioned above and in consideration of complexity and tight timelines of deliverables, the Consultant may need to engage a strong team of professional experts as the following:

- Junior Urban/Landscape Designer- to assist the Senior Urban Specialist in design drafting, modeling, and rendering.
- Urban forest specialist – to assist Forest Specialist
- Cost Estimation Engineer – responsible for calculating the estimated cost and the expenditures required for project implementation.Irrigation Specialist – responsible for the design, hydraulic calculations, and selection of equipment for irrigation systems.

Criteria for evaluation of the Technical Proposal of the firm receiving the highest score in the evaluation of Expressions of Interest:

The points allocated to each of the following criteria/specialties shall be determined based on the following sub-criteria and corresponding weightings:

- Methodology and Work Plan for the Assignment **– 20%**
- Experience and Qualifications of Key Experts **– 80%**

F. CONSULTANT RESOURCES

Consultants will be responsible for coordination and facilitation of all consultation and workshop events. Costs for workshop facilities/venue, participant travel and allowances, food and refreshments, etc. will be covered by the World Bank from separate project preparation funds.

All costs for consultant resources, travel, accommodation, workshop arrangements and preparations[3], report production and other office costs, and interpretation and translation as required is to be covered by the consultant.

G. SUPPORT TO BE PROVIDED BY THE CLIENT

Management: The Consultant shall undertake the assignment under the overall supervision of the Project Coordinator, Project Implementation Unit (PIU) at MNRETS. The PIU and the Consultant will work closely with the Bishkek City Mayor's Office and the World Bank on the implementation of the assignment. The

[3] Costs for workshop facilities, participant travel and allowances, food and refreshments, etc. will be covered by the Client from separate project preparation funds.

Consultant will also work with the relevant urban authorities and stakeholders (including private sector, NGOs, CBOs, social and environmental organisations and other stakeholders as are relevant).

The following services and facilities will be provided by the PIU:

Data and background information. The PIU will provide the Consultant with access to all available data, information, maps, reports and documents relevant to the consulting services. The Consultant shall be responsible for the accuracy of data and correctness of the information, analysis and interpretation of the data and recommendations thereof.

Access. The PIU will help to arrange site visits and meetings as the Consultant deems necessary to visit and conduct field investigations in connection with performing the services. The PIU will also assist with providing contacts and coordination with key government officials, local authorities and other stakeholders as needed.

Focal points: Bishkek City Mayor's Office and PIU will nominate a focal person to facilitate the Consultant's activities including providing guidance to the Consultant during the assignment duration.