

10 Program Results and Links with Disbursement

Program results, results areas and the disbursement linked indicators (DLIs) are described in this chapter. It starts with results and results areas, and shows how they differ. A discussion on the proposed DLIs completes the chapter.

10.1 Results and Results Areas

The DMF provided the basis for the development of preliminary DLIs. The PPTA Team discussed both the RBL modality concept and the centrality of the results, and the DLIs in detail with the city, provincial and national agencies. The team also obtained useful feedback from consultations with ADB specialists, the ADB's Viet Nam Resident Mission, the World Bank's Country Office and other development agencies.

Agreement was reached with central government agencies, cities and provinces on the approach and methodology to be followed for their development (**Appendix 26**). Key elements of the agreed approach were:

- MPI, MOF, provinces and cities agreed that the indicators will be concrete, measurable, transparent, achievable and time-bound, and they may include development outcomes, outputs, institutional development and financing indicators. They may relate to actions or process results that are essential for strengthening Program performance. Each DLI will have its own price or value, which ADB can use to make disbursements.
- When focused on cities, each DLI category would have a set of indicators specific to the subprojects in the city. Disbursement for each city should be linked to the performance of specific cities, thus not tying up disbursement because of underperformance of one city or subproject.
- DLIs will include indicators monitoring outputs under the program, which will implement Government Decision No: 19/QĐ-UBND, and investments and institutional strengthening aligned with priority activities identified by the GCAPs. The outputs in that Decision include (i) implementation of resilient urban infrastructure investments—including storm water management, flood protection, sanitation, wastewater, solid waste facilities, roads upgrading, low carbon transport, tourism facilities and street lighting, from the green city action plans leading to increased city competitiveness; (ii) increased community awareness for improved environmental practices; and (iii) decision support systems for improved competencies.
- Critical to the design of DLIs for large-scale physical investments will be the need to ensure that the cash flow is adequate for construction. 'Scalability' of results—paying for progress even if it is somewhat less or more than programmed—and the phasing of investments to spread cash flow needs will be crucial. A monitoring and verification system for Results and DLIs has been designed and is presented in **Appendix 26**.
- Based on the various assessments conducted under the PPTA, the Program Action Plan (PAP) that will ensure that country systems utilised will deliver results that are of international standards, and the TA support provided with the Program will both ensure that that this PAP is fully implemented and verify that this is the case.

The Program and the DLIs are structured around four primary sets of activities that will deliver the results. These Result Areas are: (i) performance-based transfers for local infrastructure investments in participating cities; (ii) institutional strengthening for implementation of GrEEEn City investments; (iii) support for national Green City policy development and oversight; and (iv) the establishment of a Green City financing mechanism. In turn, the four major Program Result Areas have associated DLIs. The DLIs are thus focused on:

- *Performance-based transfers.* Under the Program, participating Provincial and/or City People's Committees will receive performance-based transfers to support priority investments in urban infrastructure that have been identified through the GCAPs and reflected in detailed CPC five-year and annual plans. The PMUs within PPCs and CPCs will be responsible for planning and implementing subprojects financed with performance-based transfer funds. Transfer funds will be

reflected in the revenues and expenditures of the CPC annual budgets, and assets incorporated into their asset registers. A more detailed description of the investment program is set out in Chapter 8.

- *Institutional strengthening for implementation in participating cities.* Coordinated by the Lead Agency and supported by technical assistance, this component will prepare, and oversight the implementation of the Program. Support for detailed engineering design, procurement and monitoring of results will be needed, in addition to the oversight of construction in the three cities. Sustainable systems for these activities need to be embedded in city implementing agencies. A more detailed description of the modalities for implementation support—PIA consultants—is provided in **Appendix 20**.
- *National Green City policy development and oversight:* The Program will strengthen the capacities of cities participating in the Program in respect of their ability to plan, finance and implement sustainable urban development. The Program will also further develop national policies, strategies and implementation frameworks for the management of green city urban development, and strengthen capacities for effective oversight of NPUD progress. MOC and MONRE will be the focus for building capacity to support cities in the analysis of urban economies, of urban infrastructure investment needs in relation to the development of the economy, and of financing options. This will inform the development of a national implementation strategy and sequenced national rollout of the NPUD. Annual national consultations and peer-to-peer exchanges will be carried out to feed into this ongoing process of Program development. A detailed review will take place at the Program’s mid-term, with relevant stakeholders, to analyze the lessons learned. A more detailed description of the focus areas and modalities for capacity support, and performance measurement is provided in **Appendix 19**.
- *Green City Financing Mechanism:* This component would seek to establish a Viet Nam Green Cities Fund that would provide catalytic financing to facilitate investment in green economy initiatives that support poverty reduction and promote job creation. The Fund would be focused on Viet Nam’s Cities and will facilitate funding of subprojects that are based on green principles and support efficient, compact cities that utilize low carbon development, the efficient use of available natural resources, and are resilient. The fund will be established within the Viet Nam Development Bank (VDB) and its governing board would comprise representation by the ADB, MPI and funding partners. The Fund would work in close collaboration with local governments across cities in Viet Nam to develop a pipeline of investments that bring private sector participation to tackle infrastructure, climate, and environmental change challenges to sustainable urban development, and to leverage official development assistance (ODA), national and provincial resources. A more detailed description of the focus areas and modalities for GCFM implementation is provided in **Appendix 19**.

10.2 Disbursement Linked Indicators

The DLIs associated with the four Results Areas are summarised as **Table 10-1**, and are detailed in **Appendix 26**.

Table 10-1. Summary DLI Descriptions

DLI	Type ¹	Disbursement Basis ²
1. Improved design, procurement and supervision of Green City subprojects Sub-DLIs – one for each city describing the program	Scalable	Design and supervision contract documentation
2. Construction of planned Green City infrastructure to required quality standards Sub-DLIs – one for each city describing the investments	Scalable	Physical construction
3. National Green City Policy Development	Staged	Adoption of agreed policy technical assistance (TA) recommendations
4. Establishment of Green City Financing Mechanism	Staged	Achieved stages of establishment

Notes:

1. Scalable = paid according to progress; staged = achievement of defined benchmark
2. Quantified results verified by an independent agency

Source: PPTA Consultants.

Table 10.2 sets out the disbursements associated with the DLIs and sub-DLIs, along with the estimates of advance payments.

Table 10-2. DLI Allocation and Advances

Disbursement Linked Indicator	Disbursement Allocated (US\$ million)	Share of Total ADB Financing	Advance (US\$ million)	Advance as % of Disbursement Allocated
DLI 1 - Improved design, procurement and supervision of green city subprojects				
Ha Giang	2.55	1.2%	1.04	40.7%
Hue	4.75	2.3%	1.92	40.5%
Vinh Yen	4.66	2.3%	1.87	40.1%
Sub-total (DLI 1)	11.97	5.8%	4.83	40.4%
DLI 2 - Construction of planned green city infrastructure to required quality standard				
Ha Giang	37.20	18.1%	8.17	22.0%
Hue	69.25	33.7%	14.94	21.6%
Vinh Yen	68.16	33.1%	9.65	14.2%
Sub-total (DLI 2)	174.61	84.9%	32.76	18.8%
DLI 3 - National green city policy development				
Program	9.91	4.8%		0.0%
DLI 4 - Establishment of green city financing mechanism				
Program	9.18	4.5%		0.0%
Total	205.67	100.0%	37.60	18.3%

Note: Financing charges on ADB loans = US\$8.47 million; total loans including financing charges = US\$195.05 million

Source: PPTA Consultants

On the basis that for DLI 1, the advance payment in year 1, 2016, would be equivalent to the amounts required to cover the total cost of the engineering design contracts, and that for 2017 the payment of the construction supervision contracts, annual disbursements are shown in **Table 10-3**. Furthermore the advance for DLI 2 to be made in 2017 would be equivalent to the projected disbursements for 2018. Likewise those required for disbursements in 2018, would be the payments estimatead for 2019, and so on.

Table 10-3. Indicative Disbursement Schedule, DLIs 1 and 2

Disbursement Schedule							
US\$ Million	2016	2017	2018	2019	2020	2021	Total
DLI 1	4.83	7.14	-	-	-	-	11.97
DLI 2	-	32.76	60.83	53.86	21.13	6.03	174.61
Total	4.83	39.90	60.83	53.86	21.13	6.03	186.58
Annual Percentage							
DLI 1	40.4%	59.6%	0.0%	0.0%	0.0%	0.0%	100.0%
DLI 2	0.0%	18.8%	34.8%	30.8%	12.1%	3.5%	100.0%
Total	2.6%	21.4%	32.6%	28.9%	11.3%	3.2%	100.0%
Cumulative Percentage							
DLI 1	40.4%	100.0%	100.0%	100.0%	100.0%	100.0%	
DLI 2	0.0%	18.8%	53.6%	84.4%	96.5%	100.0%	
Total	2.6%	24.0%	56.6%	85.4%	96.8%	100.0%	

Source: PPTA Consultants estimates

The advance for DLI 1 would be some US\$4.83 million in 2016 and that for DLI 2 would be US\$32.76 million in 2017, representing 40% and 19% of the respective loan amounts for disbursement.

Other details in relation to the development of DLIs and their monitoring are further discussed in **Appendix 26** which sets out:

- Definitions, activities, investments, institutional strengthening activities and key 'progress points' at which disbursement is needed.
- Proposed status and values of the indicators at each point.
- Information gathering and verification responsibilities, processes and protocols for the DLIs.

11 Program Action Plan, Technical Assistance and Capacity Development

This chapter describes the Program Action Plan and the proposed technical assistance and capacity development programs.

11.1 Program Action Plan

To implement the Program in an effective way, key actions to build capacity to consistently and efficiently use government mandated standards, procedures and systems have been determined. They are documented in **Table 11-1** which describes the Program Action Plan (PAP). Support for the achievement of these actions has been incorporated into the Institutional and Capacity Development assistance to be provided by ADB grant financing—described in Section 11.3 and detailed in **Appendix 20**.

Table 11-1. Proposed Program Action Plan

Major Gaps and Issues	Actions	Responsible Agencies	Time Frame for Implementation
Results Area 1 – Program Implementation Assistance			
Gaps in coordination of planning, design and quality of delivery of green Infrastructure	Design—Action to bolster effective follow-through of Green elements in design Quality and transparency—Action to strengthen auditing capacity; Action to strengthen monitoring, verification and reporting systems. Impact—Action to ensure safeguards are applied effectively and consistently.	Lead PMU (LPMU)/ PMUs	From 2016
Results Area 2 – Investments			
Potential for slow green infrastructure investment implementation	Quality priority subprojects—Action to strengthen asset management systems to identify priority subprojects. Improved procurement to bolster procurement processes, making them more competitive, transparent and efficient.	LPMU/ PMUs	From 2016
Results Area 3—National green policy, support and oversight			
Weaknesses in the GoV's Green City Policy development and implementation capacities	Policy and institutional strengthening—Action to build policy capacity. Improved Planning—Action to build systems and capacity for GCAPs. Improved Project Development—Action to establish and disseminate best practice in Green City development. Improved implementation—Action to strengthen M&E systems and results verification systems.	MOC, MONRE LPMU/ MOC MOC/ MONRE LPMU/ MOC	From 2016
Results Area 4 – Green City Financing Mechanism (GCFM)			
Gaps in capacity of provinces to raise, channel, disburse and administer	Foster efficient financing of green city investments encouraging the participation of the private	VDB, LPMU, DPIs	From 2016

Major Gaps and Issues	Actions	Responsible Agencies	Time Frame for Implementation
Green City financing	<p>sector—Action to establish a central green cities challenge fund with appropriate financing instruments and flexibility to leverage private sector participation.</p> <p>Improve provincial capacity to originate and administer financing of green cities investments—</p> <p>Action to establish appropriate mechanisms at provincial level to bid for, channel, disburse and administer finance.</p>		

Source: PPTA Consultants

11.2 Overview to Technical Assistance and Capacity Development

Appendix 19 sets out the capacity needs assessment which identifies four broad areas for capacity building support required for the Program at national and city levels: (i) infrastructure investment prioritization and planning; (ii) management of infrastructure subprojects; (iii) technical quality, including procurement, and environmental and social management; and (iv) systems and mechanisms for operations and maintenance and own source revenue enhancement. The priority for capacity building at provincial and city levels is for support to the efficient planning and implementation of green infrastructure investments, and for their sustainable operation. At the national level, the priorities within MOC and MONRE are to (i) institutionalize the capacity to support the performance-based transfer mechanism; and (ii) assist the city administrations to plan and implement green city infrastructure investments using clearly defined, measurable, and achievable results as a reference framework. As part of the Program, the MOC and MONRE will also need to develop an implementation strategy for a Green City component of the NUDP. This will require technical assistance in the form of advisory services from international experts. And the Viet Nam Development Bank and provincial agencies will require technical assistance to implement the GCFM.

Appendix 19 also shows that there is a need to focus assistance on the PMUs in the areas of subproject implementation and monitoring, especially regarding ADB-agreed PAP measures relating to Program management, procurement and disbursement procedures, and social and environmental safeguards. More general requirements have also been identified for institutional strengthening in a number of areas: (i) improving the core competencies of city management in planning and policy, program and project formulation and structuring, and management of service delivery including asset management; (ii) better understanding of PPPs and its processes; (iii) green and sustainable urban planning; (iv) enhancing the capacity of staff within community organizations—how to better communicate with people and communities; (v) further understanding of good practice from urban management abroad; (vi) understanding new approaches to environmental management, climate change adaptation and disaster risk management; and (vi) a need to improve written and spoken English. There was also a request for equipment—computers, printers, copiers as well as new vehicles for site visits. City and national level staff highlighted the importance of providing orientation training to key personnel involved in Program implementation, such as provincial level staff and officials in leadership positions. This would help to garner support for the Program objectives and minimize potential bottlenecks.

Responding to these needs, the PPTA team has designed a set of TA packages which address the institutional strengthening and capacity development priorities set out **Appendix 19**. The following sections summarize the key objectives of, and activities to be undertaken under the proposed contract packages.

11.3 Program Implementation Assistance—Results Area 1

The proposed Project Implementation Assistance (PIA) will help the three coordinating city PMUs with the implementation of the Program. Consulting services will be funded under a single sub-DLI for each city through the ADF loan. In each city the PMUs will engage local domestic consulting firms with a good knowledge of the city as PIA consultants. The consultants will be responsible for supporting the respective PMUs in overall management and implementation of the subprojects, specialist technical support, and in quality assurance and reporting. The assistance will be provided over seven years.

This component will consist of a series of consulting packages secured by the PMUs as detailed in **Appendix 20**. Estimates show the total budget to be approximately US\$13.21 million, some 5% of the total Program cost. The spending on subproject detail engineering design, and preparation bidding documents will be about US\$5.32 million, and the packages for construction supervision are estimated at US\$7.89 million. Overall coordination of consulting services, where necessary, for reporting on the Program will be provided by the lead PMU. The consultants will be required to liaise with each other and with the staff of the PMUs and PPCs. The PIA consultants will have expertise, depending on the sub-components, in each city in:

- Project management.
- Engineering detailed design and construction supervision of drainage, dykes, retention basins, urban roads and bridges, water supply and waste water, solid waste and other types of municipal infrastructure subprojects.
- Geotechnical, structural, mechanical, and electrical engineering.
- Procurement and contract administration.
- Environmental and social safeguards.
- Procurement and financial auditing.

Objectives

The objective of the PIA is to assist the PPCs and DPIs of Vinh Phuc, Thua Thien Hue and Ha Giang and the CPCs of Vinh Yen, Hue and Ha Giang, through the respective PMUs, implement the Program in compliance with national procedures, safeguards and guidelines, as implemented in accordance with the Program Action Plan (PAP).

Scope of Services

The PIA proposed for the three cities will comprise:

- Consulting services in subproject engineering design and documentation, construction supervision, management, and technical support to the PMUs, including specialist engineering expertise, subproject accounting, preparation of subproject administration procedures, manuals and software, and on-the-job training of staff in the PMUs in Program implementation activities.
- Assisting PMUs to ensure compliance of measures implemented in accordance with the PAP regarding procurement, safeguards, environmental monitoring, social monitoring, especially the resettlement action plan, and financial audits; and helping PMUs update and implement subproject resettlement and other plans.

Following national procurement procedures, the PMUs will be required to prepare the necessary terms of reference for these packages.

11.4 National Green City Policy, Support and Oversight—Results Area 3

11.4.1 Green City Policy Component

Appendix 19 sets out the institutional assessment in respect of Green Cities policy and the capacity needs to implement such a policy within the Program. Capacity building support is required at both national and city levels in: (i) defining and documenting Green City policy; (ii) developing Green City Action Plans at city level; (iii) building the technical capacity, including economic, environmental and

social analysis and management skills; and (iv) establishing systems and mechanisms for finance—also relates to results area 4 Green Cities Fund—and implementation.

National Green City policy development and oversight: This activity will support the cities, the MOC and MONRE to further develop national policies, strategies and implementation frameworks for the management of urban development, and strengthen their capacity for effective oversight of participating cities. This complements other primary activities in the Program, though developing an enabling environment for effective local governance and ensuring local performance is effectively monitored. Under this scope, the MOC is responsible for undertaking a more detailed analysis of Green City infrastructure investment needs and financing options, and capturing early lessons learned from the NPUD experience. This will inform the development of an operational strategy to roll-out the Green City aspects of the NPUD nationwide. MONRE is responsible for the development of environmental assessment techniques, which will enable the definition of priority investments that will build city resilience, and the support of DONREs in the application of these techniques, and their integration into city planning and investment prioritization processes.

The proposed Green City Policy (GCP) component at local level will assist the DPIs and PMUs in the participating cities, the MOC, and MONRE with the implementation of the policy strengthening related to GCP, and piloting the institutionalization of GC planning capacity within the DPI of the cities.

Some 25 person months of national consultants and 17 person months of international specialists—total 42 person months—are required to undertake the Green City Policy assistance. Estimates show the total budget to be approximately US\$0.86 million. The highest level of spending will be on policy development and systems supporting implementation of the policy at national and city levels.

The GCP consultants will have expertise in:

- Project management.
- Green engineering design and construction.
- Urban environmental policy.
- Urban climate change mitigation.
- Urban resilience policy.
- Urban economic and competitiveness analysis relating to green economy policies.
- Urban infrastructure finance.
- Urban management.
- PPP modalities for infrastructure project implementation.
- Municipal finance.
- Community awareness and participation programs.

Objectives

The objectives of the GCP are to:

- Assist the PPCs and DPIs of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to institutionalize capacity to undertake GCAPs, and to implement them on a sustained basis.
- Assist the MOC and MONRE to build capacity for implementation of the Green City Infrastructure Program within the NUDDP.

Scope of Services

The GCP proposed for the MOC and three cities will comprise the following:

- Consulting services at national level in urban environmental policy development focused on mitigation and adaptation/resilience activities, and in the development of implementation mechanisms and supporting national guidance.
- Consulting services at city level, supporting DPIs in the institutionalisation of Green City analysis and planning, undertaking GCAPs, and subproject management for GCAP implementation.

Appendix 20 sets out the Outline TORs for this assistance in detail.

11.4.2 Independent Verification Assistance (IVA) Component

Essential to the implementation of the RBL modality is the need for an independent verification of progress in achieving agreed results under the Program. Given the decentralized nature of the Program and that the RBL is the first in such lending in Viet Nam relating to sustainable cities, it was considered that the most appropriate way of maintaining the independence of the verification process while building the needed systems for verification of progress focused on green infrastructure was to engage an independent consultant for the purpose.

The proposed Independent Verification Assistance (IVA) component will assist the MOF, MPI, and the DPIs and PMUs in the participating cities with the oversight of the Program progress, establishing systems, and providing staff resources to verify progress on DLIs 1 and 2. Some 231 person months of national consultants and 19 person months of international specialists—total 250 person months—are required to provide this service. Estimates show the total budget to be approximately US\$3.89 million.

The IVA consultants will have expertise in:

- Project management.
- Engineering design and construction supervision of drainage, dykes, retention basins, urban roads and bridges, water supply and waste water, solid waste and other types of municipal infrastructure subprojects.
- Procurement and contract administration.
- Financial management and accounting.
- Environmental management and monitoring, including ADB environmental safeguards.
- Resettlement, indigenous people, gender issues and monitoring, including ADB social safeguards.
- Monitoring and Evaluation Systems.

Objectives

The objectives of the IVA are to:

- Assist the PPCs and DPIs of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to institutionalise capacity to verify progress on DLIs, and to track such progress on a sustained basis.
- Report to the MOF and MPI on the status of Program implementation, providing an independent validation of progress and the basis of disbursement.

Scope of Services

The IVA proposed for the three cities will be for six years and will comprise:

- Consulting services to design and advise on the adequacy of implementation of systems providing the information to enable verification of Program progress at city and provincial levels.
- Consulting services at national level, but working at city levels, to verify progress on DLIs.

Appendix 20 sets out the Outline TORs for this assistance.

11.4.3 Program Support Component

Central to the effective implementation of the RBL modality will be the capacities of the PMUs to manage the design, procurement and construction of investments under the Program. Given the innovative nature of the RBL modality, and that it is the first loan in Viet Nam relating to sustainable cities, it was considered that significant assistance to cities will be needed, and that this would be most effective and uniformly provided if it was procured as a single grant-financed package.

Consulting services will be provided, as a single package, for support to the PMUs in Program implementation. The Program Support Assistance (PSA) will be provided to cities by a team based in the MOC (VUDA) but to staff in each city based within the PMUs. The consultants will be required to liaise with each other, and with the staff of the PMUs and PPCs. Joint workshops and common training events are envisaged. Some 249 person months of national consultants and 32 person months of international specialists—total 281 person months—are required to provide the Program support. Estimates show the total budget to be approximately US\$2.90 million.

The PSA consultants will have expertise in:

- Project management.
- Engineering design and construction supervision of drainage, dykes, retention basins, urban roads and bridges, water supply and waste water, solid waste and other types of municipal infrastructure subprojects.
- Procurement and contract administration.
- Financial management and accounting.
- Environmental management and monitoring, including ADB environmental safeguards.
- Resettlement, indigenous people, gender issues and monitoring and in the implementation of social development programs, including ADB social safeguards.
- Monitoring and evaluation systems.

In each city, assistance will be provided for general implementation support to PMUs and on-the-job capacity building for Program implementation. Most inputs will be part-time throughout the life of the Program, assumed to be five years. Most inputs are assumed to be provided by local consultants, with international support in key positions, such as a civil/municipal engineer, finance specialist, environment specialist, solid waste management specialist and resettlement specialist.

Objectives

The objectives of the PSA are to:

- Assist the PPCs and DPIs of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to institutionalize capacity to implement the RBL and to operate investments procured under the loan on a sustained basis.
- Institutionalize capacity to support cities in the implementation of green infrastructure investments within the MOC, providing a repository of learning relating to best practice in this area.

Scope of Services

The PSA proposed for the three cities will comprise the following:

- Consulting services in subproject design and documentation, management, and technical support to the PMUs, including specialist engineering expertise, project accounting, preparation of project administration procedures, manuals, and software, and training staff of the PMUs in Program implementation activities.
- Assisting in monitoring and evaluation, procurement, fiduciary and financial management activities to ensure compliance with ADB-agreed regulations and safeguards; environmental and social monitoring, especially the resettlement action plans and financial audits; and helping PMUs update and implement subproject resettlement plans, environmental plans, and gender plans.
- The PSA will also support the State Audit of Viet Nam (SAV) and other auditing activities, in a discrete activity that will be undertaken with the support of contracted national or international expertise as needed and agreed with SAV. This will assist SAV to conduct an annual audit of city expenditures and Program expenditures, and assist in the gathering of information for the verification of DLIs in accordance with the verification protocol.

Appendix 20 sets out the Outline TORs for this assistance in detail.

11.4.4 Capacity Development Component

The capacity development program identified in **Appendix 19** will be delivered through this component. The capacities of the PMUs to manage the design, procurement and construction of works, and of the agencies taking over the assets are the foundation of a more sustainable development of the city. This component will be procured as a single grant-financed package of support to the PMUs during the Program implementation. The Capacity Development Program Assistance (CDPA) will be provided to the cities by a team based in the MOC (ACM) but with staff in each city based within the PMUs. The consultants will be required to liaise with each other and with the staff of the PMUs and PPCs. Joint workshops and common training events are also envisaged. Some 175 person months of national

consultants and 24 person months of international specialists—total 199 person months—are required to provide this assistance. Estimates show the total budget to be approximately US\$2.26 million.

The CDPA consultants will have expertise in:

- Urban institutional development.
- Training needs assessment.
- Specialist project management, engineering, planning, financing, asset management, monitoring and evaluation, environmental design and community development and resilience, procurement and financial management, among others, relating to green city development.

In each city assistance will be provided for capacity development support to PMUs and on-the-job capacity building for Program implementation. Most inputs will be part-time throughout the life of the Program that has been assumed to be five years. Most inputs are assumed to be provided by local consultants, with international support to design courses, and in some cases to deliver them.

Objectives

The objectives of the CDPA are to:

- Assist the PPCs and DPIs of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to build capacity to implement the RBL and to operate investments procured under the loan on a sustained basis.
- Institutionalise capacity to support cities in the implementation of green infrastructure investments within the MOC, providing a repository of learning relating to best practice in this area.

Scope of Services

The CDPA proposed for the three cities will comprise:

- Consulting services in assessment, and delivery of capacity development and training to support to the operation of the PMUs and agencies delegated to manage Program investments, including preparation of assessments, course materials, manuals, and software, and the delivery of courses.
- Institutionalising the capacity to deliver such services in the Academy for Construction Management (ACM), including training of trainers.

A key outcome of the capacity building activities for cities will be the strengthened ability of ACM to deliver a similar type of capacity building program to cities nationwide. All of the course materials, guidebooks, and lessons learned through the delivery of training and technical assistance will inform the next generation of the NPUD. For a select number of topics, a formal certification program will be established with the aim of developing a cadre of trained local staff. As described below, one of the goals of the first phase of the NPUD is to replicate the results-based approach nationwide.

Modalities of capacity building at the city level

Under the Program, the ACM is responsible for developing and implementing a plan to provide orientation, training and *hands-on* specialist technical assistance to participating cities. To accomplish this, a small capacity building team will be formed within the PMU to lead the contracting and coordination of specialist firms and technical advisors. These firms, and individuals, will assist in the assessments and develop, as appropriate, course materials and manuals, deliver training at city level, and provide on-demand and issue-specific technical assistance to cities.

Appendix 20 sets out the Outline TORs for this assistance in detail.

11.5 Green Cities Funding Mechanism—Results Area 4

11.5.1 Overview

The proposed Green Cities Fund (GCF) technical assistance will design and establish a Green Cities Fund within the VDB. The Fund will support PPCs and CPCs in the funding of environmental and resilience investments. The GCF team will comprise VDB staff assigned to the management of the Fund

and external international and domestic consultants who will be located within the VDB. The team will coordinate with the MOF and SBV, end-borrowers and with potential private sector investors, international financial institutions, bilateral donors and multi-lateral development banks, including ADB. The management team will also liaise with urban infrastructure development departments in concerned ministries.

The GCF team will liaise with the provinces, cities, NGOs and other relevant GOV institutions to formulate Fund policies and financing guidelines and disseminate the relevant technical and regulatory information on Green City infrastructure development and finance. The team will provide inputs to these bodies when new urban infrastructure programs are being formulated, for example through GCAPs. Fund policies and access criteria are to be designed to accelerate domestic and external financial support to environmental investments, particularly those involving public-private modalities. The team will provide updated information to donors and private sector investors on GOV policies and regulations related to participation, and lending to provinces and cities for private sector participation (PSP) projects.

11.5.2 Green City Financing Mechanism Component

The proposed Green City Financing component (GCFC) will assist the Viet Nam Development Bank (VDB) with the design and establishment of the Green City Fund to assist in the financing of the Green City Infrastructure Program under the NPUD. Some 98 person months of national consultants and 34 person months of international specialists—total 132 person months—are required to provide the services. Estimates show the total budget to be approximately US\$2.00 million. The highest level of spending will be on financing policy and guidelines development, and on guidelines and systems supporting the funding of viable Green City infrastructure at provincial and city levels.

Consulting Services

Consulting services will be provided as a single package for GCFC policy development and institutionalisation support at province and city level. Overall coordination of consulting services will be provided by the VDB and the DPI in each Province. The consultant teams will be headquartered at the VDB. The consultants will be required to liaise with relevant GoV agencies, and with potential end users and financing partners of the Fund. Joint workshops and common training events are also envisaged.

The consultant advisors to the management team of the Fund will have expertise in:

- Urban environmental financing.
- Urban climate change mitigation and adaptation financing.
- Credit assessment systems.
- Infrastructure project finance.
- Legal aspects of PPP project structures.
- Safeguards systems as they apply to financing institutions.
- PPP procurement and implementation modalities.
- Community and industry outreach, and awareness programs.

Objectives

The objectives of the GCFC are to:

- Assist the VDB to build capacity for financing the Green City Infrastructure Program within the NPUD.
- Strengthen PPCs and DPis of provinces and cities, and particularly the PPCs of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to institutionalise capacity to assess financing options for infrastructure identified under GCAPs and other plans.

Scope of Services

The GCFC for the VDB will comprise:

- Consulting services to establish management processes and systems for the Green City Fund and supporting documentation and guidance.

- Consulting services at provincial and city level, supporting DPIs in the identification of potentially viable green city infrastructure investments, and to support the application and financing process of those investments.

The management team consultants will advise on credit appraisal, funds disbursement processes, and monitoring systems. They will assist the VDB in preparing criteria for, and in assessing applications for, subproject preparation assistance, and in designing systems and criteria for subproject appraisal. They will develop standard covenants and conditionalities for financing instruments. The team and ADB will monitor other approved grants, sub-loans and financing, and review supporting feasibility studies and tender documents, to ensure that the outcomes of the subproject structuring process complies with the covenants and regulations of the Fund.

In close cooperation with the MPI and MOF, the relevant government institutions, GCFC will:

- Assist the EA to disburse Green City Fund financing to PPCs and CPCs, and monitor the Fund accounts in VDB.
- Assist in establishing and administering Trust Funds.
- Assist the VDB to design and operationalise financing instruments—debt, equity, grants, guarantees, etc. relevant to the needs of potential end users of the Fund.
- Assist end-borrowers to develop sustainable green city projects for PSP as pilot subprojects to serve as examples.
- Assist VDB credit officers to improve their outreach, identification and appraisal skills of PSP urban infrastructure subprojects.
- Promote the Green City Fund to provinces and cities, and to private investors, and guide them during subproject preparation to enable them prepare bankable proposals eligible for funding.
- Monitor Green City Fund financed subprojects during the preparation and bid processes.

Appendix 20 sets out the Outline TORs for this assistance in detail.

11.5.3 Green City Fund Implementation Component

To build capacities in practice and to ensure that there is a clear demonstration of the viability of community-based approaches to building resilience, the capacities of the provincial DPIs and agencies acting as funds channeling entities will need to be strengthened. The Green City Fund Implementation (GCFI) component will be procured as a single grant-financed package of assistance of support to the PMUs during Program implementation. The GCFI assistance will be provided to cities by a team based in the VDB but with staff in each city based in the DPIs, and in agencies appropriate to the implementation of the subprojects proposed under this component. The consultants will be required to liaise with each other and with the staff of the PMUs and PPCs. Joint workshops and common training events are also envisaged. Some 136 person months of national consultants and 4 person months of international specialists—total 140 person months—are required to provide the assistance. Estimates show the total budget to be approximately US\$ 1.18 million. A further US\$ 6 million—US\$ 2 million per city—is allocated for investments.

The GCFI consultants will have expertise in:

- Community development and community resilience building.
- Small scale community-based infrastructure development.
- Specialist engineering, planning, and financing skills, among others, as appropriate to chosen subprojects.

In each city, assistance will be provided for community development support to PMUs and on-the-job capacity building for Program implementation. Most inputs will be part-time, and are assumed to be provided by local consultants, with international support from the GCFM, PSA and GCP teams where necessary.

Objectives

The objectives of the GCFI assistance are to:

- Assist the PPCs and DPis of Vinh Phuc, Thua Thien Hue and Ha Giang, and the CPCs of Vinh Yen, Hue and Ha Giang, to implement community-based resilience-building investments channeled through the GCFM as a pilot activity under it.
- Institutionalise capacity to use grant financed support to cities in the implementation of green investments within the VDB, providing a repository of learning relating to best practice in this area.

Scope of Services

The GCFI assistance proposed for the three cities will comprise:

- Consulting services in the assessment and delivery of community-based resilience-building investments at the neighbourhood level.
- Institutionalising capacity to deliver such services in the VDB and DPis.

A key outcome of the GCFI assistance will be testing of modalities to strengthen the ability of community organisations to design and deliver training and awareness programmes, and to deliver small scale resilience-building subprojects with the participation of women and the wider community. The consultants will prepare pilot subprojects for financing. Three subprojects will be prepared of approximately US\$2 million each. This will include the loans program for financing household connections to the tertiary sewer system in Vinh Yen. On the basis of the consultant team's discussions with the agencies and NGOs supporting the development of communities at city level and other representatives of civil society, there is broad support for priority assistance in the following areas:

- Increasing capability to deliver awareness building in the environment and health sectors, through a training and delivery program that can be replicated over time and in different sectors. Capacity building should directly respond to the medium and long-term needs and aspirations of the communities. Consideration will also be given to prioritizing action related to proposed activities contained in the action plans developed under Asian Climate Change Resilience Network (ACCRN) activities, and those of other NGOs.
- Increasing capability to design and deliver sustainable employment creation through a training and project delivery program geared to awareness building and practical skill training for the participants. The program should include close links with existing vocational training entities in each city and also consider the feasibility for establishing a micro-credit facility looking to establish new urban enterprises and further expand existing urban enterprises working in areas that are likely to link to a greener economy.
- Small scale financing for sustainable, local, community-based initiatives to build resilience. The consultants will support VDB and the PMUs to prepare, appraise and disburse financing for the three pilot subprojects to operationalize the funding mechanism at provincial level.

Consideration should be given to the direct appointment of a coordinating organisation to manage and implement the community support modules of the capacity building sub-components. They will work closely with the PMUs, which will disburse funds to the community organisations.

Appendix 20 sets out the Outline TORs for this assistance in detail.

12 Implementation Arrangements

This chapter outlines the proposed implementation arrangement for the Program at provincial and city level and discusses the more limited role of the central agencies in policy and planning. The Executing Agencies (EAs) for the Program will be the Provincial People's Committee (PPCs) of each province, while the Implementing Agencies (IAs) are the Project Management Units (PMUs) set up within each province/city. Roles and responsibilities of the key participating agencies are outlined in this chapter.

12.1 Program Implementation and Management

The Program will be decentralised in implementation, but essential elements of verification; and institutional strengthening will require central coordination. The Program thus requires a high degree of inter-agency coordination—particularly between MOC, MONRE and MOF across central, provincial, and city levels of government.

12.1.1 Provincial Level

Under the decentralized arrangements of the GoV, the provincial authority—represented by the PPC—is the Executing Agency (EA). The PPC is responsible for the assignment of the City People's Committee as the owner of the subprojects, for the review and approval of the city annual plan, the city annual budget, subprojects' feasibility studies and the procurement plan. In this process, the Department of Construction (DOC) is responsible for the verification of detailed designs. The PPC which has the role of approving the master plan and annual budget plan of the CPC must approve implementation of investments and receive and consolidate financial reports.

The PPCs of the relevant provinces have taken a leading role in preparation for implementation of the Program, in Hue and Vinh Yen by creating a PMU led by a senior member of the PPC administration, and at the city level in Ha Giang. Close engagement of the CPCs with the PMUs in the preparation phase will be key to a smooth handover of responsibilities to the cities and their implementation PMUs.

The PPCs will continue to perform a number of important oversight, approval and technical support roles in Program implementation. The key department for coordinating these roles will be the provincial Department of Planning and Investment (DPI) and Department of Finance (DOF), which act as a clearing house, bringing in other technical departments—for example, Department of Transport and Department of Construction—as needed to review the proposals prepared by the cities. Roles to be undertaken by the PPCs will include:

- The review and approval of the investments resulting from the CGAPs, including financial provision for Program investments.
- Outline planning approval for Program subprojects.
- The review and approval of Project Investment Outlines, including basic designs—for larger subprojects, in accordance with applicable thresholds.
- The review of technical and economic reports, including detailed designs—for smaller subprojects.
- The review of detailed designs and cost estimates through the appropriate technical department, most often DOC.
- The review and approval of procurement plans, procurement monitoring, oversight and technical support during implementation.
- Ensuring the liquidation—final closing—of contracts in a timely manner.

Given the Program's nature of ODA investment, and that its Program Action Plan may require actions under the purview of, among others, different provincial authorities, the engagement of the Chairman of the PPC and the provincial departments will be an important driver for success. In particular, DOF, DPI, Department of Agriculture and Rural Development (DARD), which is responsible for irrigation aspects of lakes and rivers, and DONRE are responsible for the approval of the price for land compensation. The DPI will continue to oversight the PMUs in the implementing agencies and act as central contact point for ongoing programming under the Green Cities Infrastructure Program. For this reason it is suggested that a Program Steering Committee of high level officers in the agencies named above, and a Technical Committee of officers actually responsible for approving compliance with standards and procedures, be

established to assist the PMU in obtaining the required cooperation, and timely approvals, from other agencies.

12.1.2 City Level

The primary responsibility for infrastructure delivery rests at the city level. Coordination between the various actors at this level is particularly important to ensure the delivery of an effective and efficient Program with measurable results. At the city level the executive body is the City People's Committee (CPC), headed by a Chairman who receives support from a number of line and public service units. Among these, the Division of Planning and Finance (DPF) is in charge of developing the annual socio-economic development plan and budget, and a Project Management Unit for Basic Infrastructure Investment is tasked with managing infrastructure subprojects under the jurisdiction of the CPC. The Urban Management Division (UMD) implements the master plan through the issuance of construction permits.

As the owner of subprojects, the CPC of each participating city is responsible for managing, planning, integrating and executing the Program. The CPC coordinates the city-wide annual plan and budget—through the DPF, oversees delivery of results—delegated to the PMUs in agencies responsible for the sector in question, and makes any needed adjustments to city Program delivery. The CPC will be the key player in ensuring that outputs and outcomes are met, the DLIs for the city achieved, and disbursements requested. The CPC will provide access to all required information, allowing the independent verification agency (IVA) to rapidly assess results. The CPC will receive technical assistance support from DOC.

The Chairman of the CPC provides overall oversight on resources management, the establishment of any institutional structure required to deliver the Program, its annual planning, effective results monitoring, and reporting and coordination with the city's other investment programs. Assessment of the CPCs, particularly their respective DPF and PMU, reveals that they are relatively experienced with implementing infrastructure investments similar to those of the Program. However, they still lack expertise in environment and social management, procurement, project economic and financial analyses, and certain technical areas needed to ensure the sustainability of service delivery. In anticipation of the investments under the Program, the PMU should look into filling these skill gaps through secondments or external recruitment. Consultants hired under the PIA and PSA contracts will bolster the PMU in respect of Program implementation and management.

Figure 12-1 shows the proposed implementation arrangements at province and city level. The relationship to and role of the Independent Verification Agency referred to in the Figure is described in more detail below.

Figure 12-1. Program Management Arrangements



Source: PPTA Consultants

The PMU will be headed by a Director who will be a senior officer of the PPC or appointed formally by the PPC Chair. The Vice Director will be a senior engineer, urban planner or other suitably qualified individual experienced in the management of ODA projects, and fluent in spoken and written English. The PMU staff will consist of full time individuals, either seconded from PPC or CPC departments or agencies, or suitably qualified contract employees. All staff should be senior professionals fluent in English.

The full-time PMU staff positions will include: civil or municipal engineer experienced in design and supervision of large civil works, including roads and solid waste facilities and preferably with experience in ODA projects; hydraulic engineer experienced in design and supervision of large drainage and waste water projects, preferably with experience in ODA projects; a procurement specialist with experience in ODA projects; a Program accountant with experience in ODA projects; an environmental safeguards specialist with experience in ODA projects; a social safeguards/resettlement specialist; a monitoring and evaluation specialist with experience in ODA projects; a capacity building specialist with experience in ODA-financed capacity development projects; a communications specialist with experience in ODA projects; and a translator familiar with the urban sector, engineering and financial terms. These professionals should have a degree in a relevant discipline, and have at least five years relevant experience.

12.1.3 Central level

The MOC, as the designated coordinator of the NPUD, and with the responsibility of fostering green city investments, and MONRE, which also has a green cities mandate under the Green Growth agenda, will be the principle contact agencies for the Program at the central level. Within MOC, Viet Nam Urban Development Agency (VUDA) will provide policy support to the implementation of the Program. VUDA will develop guidelines on assisting the participating cities on planning and implementing infrastructure investments under the NPUD. VUDA will host the IVA under the Program to verify results. Thus the MOC is also directly responsible for activities contributing to results area 3 of the Program—national policy, support and oversight. In this role, MOC will:

- Provide the focal point for green city policy and planning development under the GCP component of the Program.
- Provide technical advice and support to the cities on achievement of results, conduct regular information gathering and Program support visits to the cities, and compile reports detailing progress and lessons learned under the PSA component.
- Support the design and delivery of the capacity development activities through its Academy for Construction Management (ACM) to strengthen the capacity of the city administrations under the results area 3, capacity development component.

The MOC will develop an implementation strategy for the National Green City Infrastructure Program, which will draw upon the experience of under the GCAP processes and other ongoing activities in relation to urban climate change and resilience. The MOC will carry out the tasks described above using its own staff resources assisted by consultant services as needed.

The MONRE is responsible for guiding the participating cities on planning for resilience and developing related investments. Thus the MONRE is also directly responsible for activities contributing to results area 3 of the Program—national policy, support and oversight. In this role, MONRE will:

- Provide the focal point for green city resilience policy and planning development under the GCP component.
- Provide technical advice and support to the cities on achievement of resilience results.

The Ministry of Finance will be responsible for the release of funds to cities, and the financing and fund flow mechanisms for the Program. The MOF will channel funds to the cities through a commercial bank in accordance with the existing State Treasury system, as a dedicated line item and via the provinces according to the funds flow mechanism set out in Chapter 9, section 4. The MOF is responsible for submission of withdrawal requests to the ADB upon receiving statistics on verified results and advance requests from MOC, and for disbursement of funds to the cities.

Other national ministries and agencies will play complementary roles in accordance with their current functions.

12.1.4 Viet Nam Development Bank (VDB)

The Green Cities Financing Mechanism (GCFM) will comprise the Green Cities Fund and supporting staff and consultant team. They would be housed within the ODA unit of the Vietnam Development Bank (VDB), and the governing board of the Fund would comprise representation by the MPI, MOF, ADB and other funding partners. The consultant technical team will support the development of the required systems and instruments within VDB, and develop capacities in the provinces. The Fund will initially support the PPCs and CPCs of Vinh Phuc, Thua Thien Hue and Ha Giang, in the funding of investments in environmental improvement and resilience.

The GCFM core team will comprise five VDB staff with qualifications in debt finance, guarantees, risk assessment and management, project appraisal and financial fiduciary systems assigned to the management of the Fund, and external international and domestic consultants. VDB provincial offices and outposted national consultants will support the development of provincial subproject development and fund channeling mechanisms. The TORs for the international and domestic consultants are set out in **Appendix 20**. The team will coordinate with the Green City Policy and Oversight consultants based in the MOC, end-borrowers and with potential private sector investors, international financial institutions and bilateral donors and multi-lateral development banks, including ADB.

12.1.5 Independent Verification Agent

The IVA's role is to provide independent confirmation of the results reported by the cities. The IVA will be an independent consultant with a firmly established track record and reputation as an independent standards verification agency. IVA's role will include carrying out the annual Program audit and annual verification of results, which will consist of financial and technical audits, and will verify achievement measured by each of the DLIs. Recognizing that specialized technical skills in infrastructure will be necessary to carry out the IVA role, funding will be provided for that purpose under the IVA TA component described in Chapter 11. The terms of reference and Memorandum of Understanding for the

IVA engagement will be developed by the ADB and MOF and included in the Program Implementation Manual (PIM). The IVA will report the results of the verification audits to MOF and the ADB.

12.2 Stakeholders' Participation and Communications Strategy

12.2.1 Stakeholder Participation Plan

The Stakeholder Participation Plan is in keeping with the equity concern and social inclusiveness of the green cities approach that underlie the Program. It consolidates the actions needed to enable relevant GCAP stakeholders to become involved in activities at various stages of the project. It sets out the mechanisms through which stakeholders are able to contribute to designing, implementing and monitoring GCAP/Program subprojects and activities. **Annex 3 of Appendix 19** summarizes the main elements of the Stakeholder Participation Plan for the three cities. The plan indicates which stakeholders to engage, the objective of their intervention or why they are included, approach and depth of participation, participation methods, who is responsible to make such participation happen, timeline and cost.

Objectives

The Stakeholder Participation Plan for GCAP aims to fulfill the following objectives:

- Provide access to information about GCAP/Program among the stakeholders.
- Establish mechanisms for participation among the different stakeholders.
- Increase sharing of knowledge and experience among stakeholders and use these to minimize risks in GCAP/Program implementation.
- Promote greater degree of ownership and commitment to GCAP among stakeholders.

Principles of Participation

To promote meaningful participation, the plan abides by the following principles:

- *Genuine representation.* Stakeholder representatives should be those identified and agreed upon by the members of the sector or groups they represent. Identification and selection of representatives must be equitable, and one that ensures gender balance.
- *Transparency.* All relevant information about GCAP/Program should be communicated to the stakeholders through various means in a continuous and regular manner. An open line of inquiry at the PMUs should also be maintained.
- *Accessibility.* Information should be made accessible through various means, such as GCAP/Program web page, mass media, leaflets and commune meetings. Information on who may be contacted about GCAP/Program should be clearly specified and circulated.
- *Voluntary.* In no circumstance should any of the stakeholders be coerced to participate. Their involvement in any aspect of GCAP/Program should come out of their own free will, and out of the conviction formed by the correct information they gather about GCAP.
- *Mutual accountability.* The PPCs/CPCs/PMUs as Program implementers should be accountable to the other stakeholders, and vice versa, in terms of information shared, decisions made and actions taken. This sense of accepting responsibility can lead to a more constructive collaboration and partnership whereby both parties become aware of each others' abilities and limitations.

Approaches and Depth of Participation

The plan adopts the approaches and depths to participation developed by ADB (2012) for strengthening participation. These are:

- *Information generation and sharing:* Information is (i) generated by PMU and shared with stakeholders; (ii) independently generated by stakeholders and shared with PMU; or (iii) jointly produced.
- *Consultation:* stakeholder input is requested and considered as part of an inclusive policy, Program or subproject decision-making process.
- *Collaboration:* stakeholders and PMUs work jointly but the former have limited control over decision-making and resources.

- *Partnership*: stakeholders participate in the decision-making process and/or exert control over resources through a formal or informal agreement to work together toward common objectives.

The approaches and depth of participation reflect a continuum of relationships between the PMUs and other stakeholders. The more the stakeholders are involved in decision making and control of resources, the more substantive participation becomes. The depth of participation follows the same principle and is described as low, medium or high. Ultimately, it is the PPCs/CPCs as Program implementers, through PMUs, which should ensure that the stakeholders from civil society and the private sector are able to participate. The details about the approaches and depth of participation can be accessed through: <http://www.adb.org/documents/strengthening-participation-development-results-asian-development-bank-guide-participation>.

Mechanisms for Participation

A number of mechanisms have to be put in place to enable the Stakeholder Participation Plan to take its course. They are:

- *Representation in GCAP management body/GCAP Steering Committee*. This provides better legitimacy, and regularity of the civil society's and private sector's involvement in GCAP/Program.
- *Involvement in work committees*. The city and village level Stakeholder Participation and IEC (SP&IEC) Committees will be established in implementing the stakeholder participation plan and communications strategy—**Appendix 21**. The FF, WU, YU, DOET, DOCST, media, commune officials, VNGOs at city level—plus the schools, media, folk media groups, and motivators team—commune level—will choose their representatives in these two bodies.
- *Job contract*. There are subprojects and jobs under GCAP/Program that may be contracted out to VNGOs, and the private construction companies. Orientation on 3Rs can be contracted to VNGOs in Vinh Yen and Hue. In Ha Giang where there is no NGO, this may be contracted out to Ha Giang USTA. Private companies will participate in the bidding for construction work.
- *Capacity building*. Stakeholders may also participate as recipients of capacity building opportunities under the Program.
- *Monitoring*. At commune level, monitoring teams are usually established for government infrastructure subprojects, which are implemented at the commune level. Representatives from relevant groups are chosen to constitute the committee.

Participation Methods

Methods of participation in GCAP by the various stakeholders can come in any or a combination of methods depending on the objective, the type of stakeholders and resources available. These methods typically include:

- Group meetings—face-to-face gatherings of pre-identified stakeholders to discuss items of interest.
- Public meetings—open accessible method of consulting with community members from different stakeholder groups.
- Workshops—gathering a group to solicit their feedback in a structured format.
- Focus group discussions: open discussion that aims to probe stakeholders' attitudes, concerns, and preferences towards a specific issue with the responses collated at the end.
- Individual in-depth interviews—probing an individual's viewpoints to explore an issue or draw out other related issues.

Budgetary Requirements

The implementation of the Stakeholder Participation Plan will entail a budget of about US\$66,000 for each city. Details are in **Annex 6 of Appendix 21**.

12.2.2 Stakeholder Communications Strategy

The Stakeholder Communications Strategy (SCS), detailed as **Annex 7 of Appendix 21**, coherently defines (i) the objectives of the communications intervention in support of GCAP/Program; (ii) anticipated key risks and challenges that could deter the pursuit of such objectives; (iii) main sectors of stakeholders to be targeted; (iv) key message contents that need to be communicated based on stakeholders' information needs; (v) selection of appropriate media/channels; (vi) main communication approach to be

employed and activities to be undertaken; (vii) timeline for the various activities; (viii) person or unit responsible for the activities or tasks; and (ix) the human and financial resources needed to implement the communications strategy. All these are informed by the results of the stakeholder analysis and the communications assessment.

Objectives

The SCS is designed to pursue three major objectives:

- Create broad awareness about GCAP/Program, and its subprojects among all sectors of stakeholders by insuring a proactive and continuous provision of relevant information.
- Promote transparency of and broad participation in GCAP/Program by insuring two-way communication, dialogue, information sharing and exchange among stakeholders.
- Transform the mindset and practices of stakeholders in keeping with the goals of GCAP/Program in general and of its subprojects in particular.

Key Risks and Challenges and Preventive and Mitigating Measures

In pursuing the above objectives, a number of risks and challenges may be encountered. The measures proposed to prevent or mitigate them are shown as **Table 12-1**.

Table 12-1. Key Risks/Challenges and Preventive/Mitigating Measures

Key risk/challenge	Preventive/mitigating measure
Objective 1—create broad awareness about GCAP/Program	
Credibility of information source	Based on assessment results, CPC officials, and the commune and village leaders are the information sources deemed credible and trustworthy by the stakeholders. They should be attributed and tapped as information sources about GCAP/Program and its subprojects.
Language barrier	All communication materials will adopt the Vietnamese language for its messages.
Literacy level of stakeholders	Messages will be popularized so that they can be understood by at least a 12-year old child. Technical terms will be explained using a combination of definitions, illustrations, photos, analogy, and explanation of processes involved. All communication materials will be pre-tested to insure their legibility and how comprehensive they are.
Opposition from those who will be directly affected by land acquisition	A series of face-to-face meetings between PMU and the affected stakeholders will be scheduled to discuss the Land Law provisions regarding land acquisition, compensation rates, and the procedures to be followed. Agreement between the parties involved will be established first before acquisition is undertaken. In case of resettlement, approval and implementation of the Resettlement Plan will be undertaken before any land acquisition is carried out.
Managing stakeholders' expectations	The overall picture of GCAP/Program, the subprojects, budget and timeline will be presented to the stakeholders early on during implementation. In dialogue and consultations, the stakeholders' perceptions and expectations will be drawn out and levelled off to establish the scope and limits of GCAP/Program and the subprojects. Proactive provision of information about the subprojects will be continuously undertaken to appraise the stakeholders of progress.
Objective 2—Promote transparency of and broad participation in, GCAP/Program	
Identifying legitimate representatives of the stakeholders' sectors	The various stakeholders' sectors will be allowed to choose their legitimate representatives in GCAP/Program related management bodies, committees and activities, especially in information sharing. Umbrella organizations and networks will also be sought for referrals.
Lack of platform, and skills for information sharing and exchange	Mediated platforms for two-way communication will be set up in addition to face-to-face meetings and dialogue. These will include the use of social media—facebook and twitter for example, setting up a website with a page for interactive dialogue, and use of applications via smartphones. Stakeholders will be oriented and trained on access and use of these

Key risk/challenge	Preventive/mitigating measure
	platforms.
Language barrier	All communication materials will adopt the Vietnamese language for its messages.
Objective 3—Transform the mindset and practices of stakeholders in keeping with the goals of GCAP/Program	
Getting stuck at awareness raising	Communications strategy will address the range of behavior change from knowledge to practices. Messages, channels and approaches will be designed to move stakeholders beyond awareness, and on to the adoption of new ways of doing things, consistent with the goals of GCAP/Program—3Rs, sanitation, environmental protection, among others.
Lack of sustained communications efforts for behavior change	Behavior change takes time to achieve. Beyond the Program period, PMUs need to sustain their efforts of promoting behavior change among the target stakeholders. The IEC Committee in PMU will be trained on how to sustain efforts, even beyond the period of ADB funding. The communication activities should be integrated into the government and mass organizations—WU—communication activities

Source: PPTA Consultants

Target Stakeholders, Behavioral Objectives and Key Messages and Channels

The discussion of target stakeholders, the corresponding messages and means or channels of communication forms part of what is called “strategic design.” That is, all these three can only be defined in the context of behavioural objectives that should be pursued for each stakeholder group in line with the behavior change continuum (BCC) or KAP model. Baseline data indicates that all stakeholders outside the government, including civil society and the private sector, have very low knowledge about GCAP/Program and its subprojects. The communications strategy should be able to bring these stakeholders, through the BCC, from gaining knowledge about GCAP/Program until they are able to practice or adopt sustained behavior. The strategic designs for the various groups of stakeholders are listed in **Annex 7 of Appendix 21**.

Crafting Key Messages

Key messages serve as arrowheads for those to be conveyed to stakeholders. These messages must be sharp enough to attract attention and leave the receivers to want more. They must leave an imprint in the minds of the stakeholders. For messages to be noticed, remembered, understood, and acted upon, they must abide by the principles of persuasive and effective communication. These principles are summarized in Table 12-2, with sample messages to illustrate the techniques of how they are applied.

Table 12-2. Principles for Crafting Key Messages

Principle	Explanation	Sample Message
Command attention	Effective messages are those that are easily noticed and remembered. Messages may not be noticed if they are monotonous and bland.	<i>GREEN is not just a color. It stands for livable and resilient cities like Ha Giang—name of city to be changed for Vinh Yen and Hue</i>
Clarify the message	Message must be simple and free from clutter. It will not be remembered if it is not understood.	<i>Why the 3Es in grEEEn? They stand for: environmental sustainability, economic competitiveness, and equity</i>
Consistency counts	Repetition of messages is essential for recall and for better understanding. Say the message over and over in all media.	<i>It is not anymore business as usual. We need to do things differently if we are to be climate resilient. We need to do things differently if we are to pursue sustainable development.</i>
Cater to the heart and head	Emotional value is as important as facts. Try to make an emotional connection before attempting to convey information.	<i>We are among the first Green Cities in Viet Nam. Let us be proud of it. Could be delivered in a form of song or drama</i>

Principle	Explanation	Sample Message
Create trust	People usually act on messages from people they can trust. The message must ring true.	<i>"Genuine urban development should benefit ALL. GCAP does that."- CPC Chair</i>
Communicate a benefit	What's in it for me? A benefit is a strong motivator for people to change their behaviour.	<i>Subprojects will result in cleaner environment, amenities for citizens, investment in tourism, more jobs and increased value of your property.</i>
Call for action	Tell the stakeholders what to do, where to go, whom to call when they need something more about the message.	<i>Call 304-3000; hotline 165-0226; or visit www.gcaphue@gov.vn for inquiry and more information about GCAP. The information here are hypothetical and should be replaced by real ones.</i>

Source: PPTA Consultants

Positioning Message and Logo

Positioning aims to create a distinctive image for GCAP/Program and a foothold in the minds of the stakeholders about what it stands for. Strategic positioning helps to ensure that all stakeholders and participants understand what is the central thrust of the Program. In a way it is synonymous to a "brand" in commercial advertising. Since GCAP embodies the concept and principles of the Secondary Cities Development Program (SCDP), it is suggested that it takes the same tag line of SCDP for its positioning message, with the name of the city included for identification. Hence, for the cities of Ha Giang, the positioning message will be "Ha Giang is a grEEEn City: Doing Things Differently." The same pattern will apply to Vinh Yen and Hue.

The logo and background being used by the PPTA may also be adopted. The three cities also have the advantage of having seen this and it is familiar to the stakeholders; hence, facilitating better identification, recall and retention. But, if each city would like their own positioning message and logo, this may be facilitated during Program implementation by the city level IEC Committee. It suggested, however, that the grEEEn cities logo being used now, still be used in tandem with each city's identifying mark or symbol. All these have to be agreed upon by the various stakeholders with the PMUs during the Program implementation.

GrEEEn Cities : Doing Things Differently



Selecting Appropriate Media and Channels

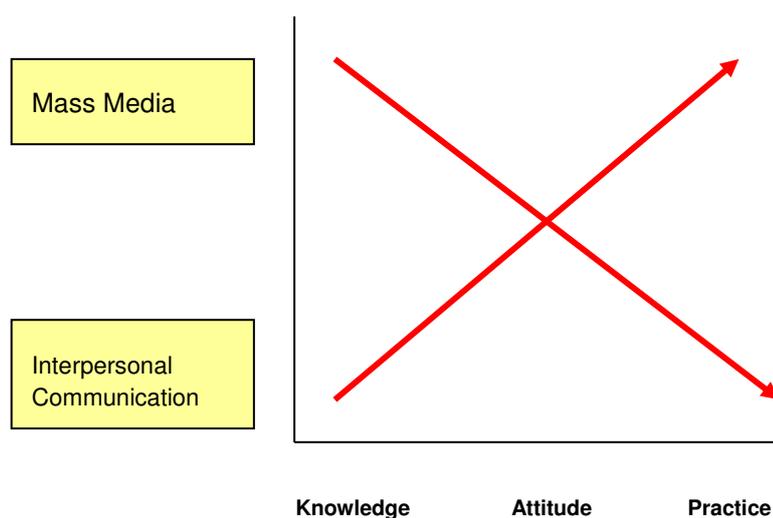
A principle in behavior change communication is that "the more senses are stimulated, the better is the learning," hence, the more likely it is for behavior change to occur. Recognizing that resources are limited, the choice of media or channels should be cost-effective. Hence, the saying "more is not necessarily better."

The simple graph in **Figure 12-2** illustrates the guiding principle in media or channel selection following the behavior change continuum (BCC). It shows that during the knowledge or awareness stage (K), where a mass of stakeholders have to be knowledgeable about GCAP/Program and the subprojects, mass media and outdoor media—TV, radio, newspapers, loud speakers, banners, billboards, and posters—should be the main channels. The mass media can only provide limited "sound bytes"; and are

meant to create the initial stimulus for more information/knowledge seeking and information sharing among the stakeholders. At this stage, interpersonal channels should be kept to the minimum.

To bring the stakeholders towards a favorable attitude, and eventually adopt practices aligned with the goals of GCAP, the mass media have to be gradually complemented by interpersonal channels, such as meetings, consultations and dialogue. At this stage, the limited and general information provided by mass media can be elaborated on and further discussed. This also gives the intended stakeholder groups, the chance to ask questions, clarify, and seek for more information about GCAP/Program and the subprojects. Approval of the Program can only take shape with more detailed information and interpersonal communication. As investment on mass media is reduced, that on interpersonal communication—meetings and dialogues—should be increased. Communication materials, such as leaflets, posters, and video to aid these face-to-face encounters, should be prepared since they will be used as aids during these interpersonal encounters. It is here where the support of local motivators become important.

Figure 12-2. Media Selection Vis-A-Vis Behavior Change Continuum



Source: PPTA Consultants

Development and Production of Communication Materials

Communication materials are external stimuli that catch attention, make people stop and think, something that people can go back to, and provide details which could have been missed by the limited retention capacity of people. They are aids that should accompany the communication activities. Based on the strategic design for the different stakeholder groups, these communication materials are listed in **Table 12-3** to guide what needs to be produced and pretested, and what cost will be incurred. All materials will be in Vietnamese.

Table 12-3. List of Communication Materials to be Produced and Estimated Cost per City

Communication Material	Quantity	Estimated Cost (US\$)
3-minute video on GCAP and the subprojects	1 version	5,000
Leaflets—basic information about the GCAP/Program	2,000 copies	1,000
Posters	1,000 copies	1,200
TV plugs—30-second	3 versions	3,600
Radio plug—30-second	3 versions	3,000
Billboards	1 per subproject (500/unit)	

Communication Material	Quantity	Estimated Cost (US\$)
	- 10 Ha Giang	5,000
	- 7 for Vinh yen	3,500
	- 17 for Hue	8,500
Banners	5 per strategic locations per city	5,000
Theme jingle	1 version	1,000
News releases—newspapers	2 per month	No cost
Mascot	1 version	2,000
TV placement—air time	Once a week for 6 months	3,500
Radio placement—air time	2x a week for 6 months	1500
Sub-total	Ha Giang	31,800
	Vinh Yen	30,300
	Hue	35,300
TOTAL		97,400

Source: PPTA Consultants' estimates

Implementation and Management

Within the PMUs, the Social Programs Coordinator will assist in the social, gender, stakeholder participation and communications (**Figure 12-3**). The staff may be an existing member, and preferably re-assigned to assume the full-time position. To help the Social Program Coordinator is the city level IEC Committee, and at lower levels, the commune level IEC Committee (**Figure 12-3**). The members of these two committees include representatives elected by their sectors. These sectors are those whose mandate, expertise and nature of activities being undertaken, relate more to communications and public education. They include the FF, WU, YU, DOET, DOCST, media, communes' officials at the city level, and expanded to include the elderly, folk media groups and motivators team at the commune level. For each of the committees, a focal point staff member should be assigned to work with Social Programs Coordinator. The roles and tasks of the assigned staff and the IEC Committees are shown as **Table 12-4**. In addition to the Social Programs Coordinator, a web page administrator is also included to be part of the team. This could be the same staff member currently assigned to the PMUs websites.

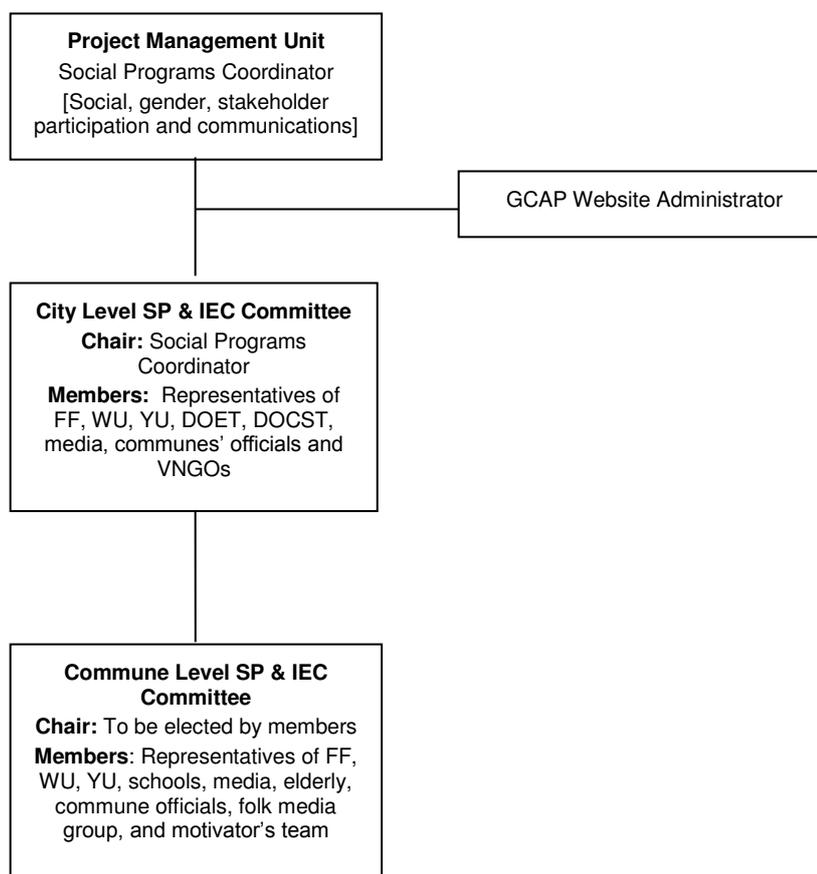
Table 12-4. Roles and Tasks for Implementing the Communications Strategy

Role	Task
Social Programs Coordinator	<p>Member of PMU to represent the social programs component of GCAP/Program</p> <p>Work with focal point staff in city and commune levels to set up the related Committees, and overview their SP & IEC plans.</p> <p>Oversee the implementation of the social programs component of GCAP/Program, which includes social, gender, stakeholder participation and communications strategy</p>
GCAP Web page administrator	<p>Create a GCAP/Program web page in the PMU website and link it with Green Cities Network</p> <p>Prepare GCAP/Program contents for uploading</p> <p>Animate the GCAP/Program web page regularly</p>
City Level Social Programs (SP) and IEC Committee	<p><i>Setting up the Committee</i></p> <p><i>Communication materials production and distribution:</i></p> <p>Coordinate the conceptualization and production of communication materials and ensure that they are produced based on specifications, in good quality and on time.</p> <p>Prepare the distribution plan for all the communication materials—who gets what, how many, how, when and where—and monitor how these materials are reaching the intended stakeholders at city level.</p>

Role	Task
	<p><i>Stakeholder relations and partnerships at city level</i></p> <p>Set up and maintain a directory and profile of stakeholders</p> <p>Liaise, collaborate and partner with stakeholders on city level activities, where their participation and assistance will be needed.</p> <p>Design and conduct stakeholder meetings, seminars, orientation, forums, dialogue and other communication activities as necessary at the city level.</p> <p><i>Monitoring and documentation</i></p> <p>Consolidate monitoring reports submitted by commune level IEC Committee</p>
Commune Level SP and IEC Committee	<p><i>Setting up the Committee</i></p> <p><i>Communication materials production and distribution</i></p> <p>Participate in the conceptualization and production of communication materials</p> <p>Prepare the distribution plan for all the communication materials—who gets what, how many, how, when and where—and monitor how these materials are reaching the intended stakeholders at commune level.</p> <p><i>Stakeholder relations and partnerships at commune level</i></p> <p>Set up and maintain a directory and profile of stakeholders at commune level</p> <p>Liaise, collaborate and partner with stakeholder on commune level activities, where their participation and assistance will be needed.</p> <p>Design and conduct stakeholder meetings, seminars, orientation, forums, dialogue and other communication activities as necessary at the commune level.</p> <p><i>Monitoring and documentation</i></p> <p>Document the different communication activities through photos and video.</p> <p>Conduct regular monitoring of the communication activities.</p> <p>Prepare and submit regularly to the City Level IEC Committee a monitoring report of the implementation of GCAP/Program communications strategy.</p>

Source: PPTA Consultants

Figure 12-3. Management Set up for Implementing the Stakeholder Participation Plan and Communications Strategy



Source: PPTA Consultants

Capacity Building

Training programs for City and commune level SP&IEC Committee members and other parties will be provided in participatory development and strategic communication approaches, methods and tools, drafting key messages, conceptualization and production of communication materials, and monitoring of GCAP/Program participation and communications activities.

Budgetary Requirements

The budget for implementing the Stakeholder Communications Strategy over five years in each city is summarized as **Table 12-5**.

Table 12-5. Budgetary Requirements for Implementing the Communications Strategy for Ha Giang, Hue and Vinh Yen Cities for Entire Program Duration (US\$)

Item	Ha Giang	Vinh Yen	Hue
Communication materials	31,800	30,300	35,300
3R Orientation	8,700	8,700	13,050
Information and education and communication (IEC) training	12,000	10,000	10,000
Special events—launching, Green City Day, competitions, etc.	20,000	20,000	20,000
Allowance for SP&IEC committee members and village motivators	25,000	25,000	30,000
National IEC Consultant Fee for 6 months	18,000	18,000	18,000
Per diem	5,280	5,280	5,280
Total (US\$)	120,780	117,280	131,630
Total for Ha Giang, Vinh Yen and Hue			US\$ 369,690

Source: PPTA Consultants

Continuity and Sustaining Efforts

Communication activities for GCAP/Program is a continuing effort. Messages have to flow continuously, especially in the light of increasing information that is sent to stakeholders. People do not learn at the same pace even if they are exposed to messages at one time. Neither does an entire audience respond at the same time. Circumstances in the cities will change over time. And a new generation of leaders, users, providers and influencers rises. Mechanisms for sustaining the communication efforts for GACP include:

- *Continuous public information.* The adage “out of sight, out of mind” can very well apply to communication and its effects on human behavior. Communication materials, such as posters and radio plugs, are external stimuli to call attention, remind, and help stakeholders to recall. They can be intensive at the start, but the volume and frequency can be reduced in succeeding years. Without some sustained external stimuli, the expected response to GCAP/Program is likely to fade away.
- *Capacity building.* A succession of GCAP/Program communication staff within the PMUs and from the different stakeholder groups, such as the mass unions, schools, and communes, should be assured. When Program implementation ends, at least a skeletal force must still be in place to sustain the communication work. Training of communication practitioners should be planned to meet this need.
- *Identify and work with champions.* A champion can be an individual, a group or an institution who/which makes ideas stick. The champion can be a government agency, such as the CPC, an NGO, an association, a group or an institution, which has become known for its consistent advocacy for a good cause—for example, “Green Cities” principles—and demonstrate what they espouse in their actions. Perhaps this early, it might be difficult to identify one in Viet Nam for GCAP. But during implementation, the three cities might be able to raise champions who can continue the legacy keeping GCAP alive.
- *Networking.* Taking the pioneering journey of applying the 3Es in urban development is knowledge intensive. It will help if Ha Giang, Hue and Vinh Yen cities network with other cities in the world, which have or are pursuing the green cities approach, and learn from their experience.
- *Integration in the formal education curriculum.* The role of formal education in shaping people’s behavior cannot be underestimated. The concept and principles of green cities can be integrated gradually in relevant subjects within primary and secondary schools. In the short term, students are exposed to the concept, align their actions with it, and influence their family, peers, and friends. In the long term, education produces a new breed of Vietnamese people whose culture is more aligned with green cities principles.

12.3 Contract Packaging and Contractor Selection Programs

In accordance with the principles of a RBL, Program, GoV procurement laws and guidelines will be followed. In this case it is not necessary for Procurement Plans to be approved by ADB. Initial draft Procurement Plans have, nevertheless, been prepared—by consultants engaged directly by ADB—although these could be simplified to reduce the procurement burden on the PMUs and suggestions to achieve this have been discussed with the PMUs. For assessing estimated annual contract expenditures, to guide the establishment of achievable DLIs, it is however important to know the timing of contract procurements which lead to the implementation of contracts and, subsequently, the disbursement of funds to consultants and works contractors.

Based on the draft Procurement Plans, more concise Contractor Selection Programs (CSPs) have been prepared for each city. The CSPs for each city include a summary sheet of subproject base costs, and proposals for procurement, and implementation of consulting packages and civil works. These CSPs are included in **Appendix 27**. The annual phasing of procurement and implementation for each package in each city has been assessed, and the estimated percentages of annual expenditures have been fed into a cost and phasing summary table. This is also included in **Appendix 27**. From these figures, annual expenditures have been inserted into the Program costs and financing—**Appendix 24**—to guide the quantification of the DLIs.

12.4 Operations and Maintenance

12.4.1 Introduction

In selecting subproject investments, major considerations have included the need to choose the most feasible and optimal technology, equipment and facilities taking account of the capacities of the relevant agencies to manage, operate and maintain them. Climate-proofing measures incorporated have endeavoured to ensure year-round operation of the facilities.

12.4.2 Operation and Maintenance (O&M) Cost Provision

At present required operation and maintenance costs have not been considered in the feasibility study and basic design reports. Such costs should be considered for the possible investment options to better ensure sustainability. Without adequate, properly funded annual maintenance programs, infrastructure can degrade quickly and design lifetimes are reduced. O&M cost estimates should ideally always be included as part of subproject feasibility studies. Many subprojects within this program include innovative green technologies that are still new to most agencies and professionals in Viet Nam. Thus establishing appropriate O&M programs is even more critical.

Within the Green cities program, the needs for O&M capacity building are most pressing for:

- Wastewater treatment plants and wastewater pumping stations.
- Stormwater low impact development (LID) collection and treatment units—bioretention swales and drainage ditches that have been integrated in most roads and parks subprojects.

For major investments and for public investments requiring more sophisticated technology, a comparison, including life cycle and operation and maintenance costs should be prepared. Subprojects should be evaluated on the basis of medium-term and long-term benefits vs life cycle costs. Operation and maintenance costs, as well the lifetime of infrastructure, should be integrated within the decision making process at the planning phase. A higher quality infrastructure would generally, although not always, have a higher construction cost but would also likely involve lower O&M costs, and would have longer lifetime.

12.4.3 O&M for Wastewater Lift/Pumping Stations

O&M manuals should be produced by the design engineers based on the pump supplier procedures usually set out in manufacturers' information. The adequate operation of combined storm overflows (CSO) and lift/pumping stations is essential for the prevention of floods, good public health and adequate feed to wastewater treatment plants. For the Program cities, a team consisting of a mechanical engineer and two technicians—specialists in pump repairs—and supported by three non-specialized workers should be in charge of the routine functioning of CSOs, pumps and stations. An example of the annual

operation costs of CSO and lift/pumping stations is in **Table 12-6**. Provision should be made for changing pumps after a continuous operation period of about 10 years. Based on this, the costs per unit of flow would be—US\$10.32/year/m³/d; and electric energy costs, US\$7.43 /year/m³/d.

Table 12-6. Cost for O&M of CSO and lift/pumping stations

<i>Operation cost for CSO & lift/pumping stations</i>		
Electric energy unit cost	2 000	VND/kW-h
Daily flowrates	15 000	m ³ /d
Total annual electric energy cost	111 453	USD/year
One Chief-engineer (500 USD/m o.)	500	USD/m onth
Two specialized Technicians (350 USD/m o.)	700	USD/m onth
Three non-specialized Workers (250 USD/mo.)	750	USD/m onth
Total month salaries	1 950	USD/m onth
Total annual salaries	23 400	USD/year
Annual reparation & maintenance (provision)	20 000	USD/year
Grand annual total	154 853	USD/year

Source: PPTA Consultants

12.4.4 O&M of the Wastewater Treatment Plant (WWTP)

For adequate O&M of a WWTP to ensure treatment objectives and standards are met, a team of specialists and workers is required for conducting its routine operation and maintenance. For the planned WWTP, the team should include:

- Plant direction—one senior sanitary engineer.
- Treatment specialists—two chemists or junior engineers in charge of treatment processes control.
- Maintenance specialists: two technicians in charge of electrical and mechanical maintenance.
- Routine manual maintenance—three workers.

If aeration equipment is of low-energy consumption type, the annual treatment operation costs would be as presented in **Table 12-7**. The main expense in biological systems, including some partial aeration, will be on electric energy consumption. The costs in the table are based on a Vietnamese aerated lagoon in Ninh Binh. The right choice of aeration equipment is essential, a bad choice has often been the main cause of operational failure in several Viet Nam cities.

Table 12-7. Typical O&M Costs for a 15 000 m³/d Aerated Lagoon WWTP

<i>Operation cost for treatment plant</i>		
Electric energy unit cost	2 000 VND/kW-h	
Daily flowrates	15 000 m ³ /d	
Total annual electric energy cost for aeration and mixing in aerated lagoons	40 000 USD/year	→
Total annual electric energy cost for aeration in aerated grit removal narrow channel and ventilation towards air treatment	4 000 USD/year	→
Consumption of chlorine for odour oxidation	2 000 USD/year	→
One Director-engineer (500 USD/mo.)	500 USD/month	
Two chemists or junior engineers (350 USD/mo.)	700 USD/month	
Two specialized Technicians (300 USD/mo.)	600 USD/month	
Three non-specialized Workers (250 USD/mo.)	750 USD/month	
Total month salaries	2 550 USD/month	
Total annual salaries	30 600 USD/year	→
Annual reparation & maintenance (provision)	15 000 USD/year	→
<i>Grand annual total</i>	<i>91 600 USD/year</i>	←

Source: PPTA Consultants

Provision should be made for replacement of pumps and mechanical equipment after continuous operation for a period of about 10 years. Based on the above the cost ratios for treatment operation would be—total cost ratio per daily flow rate unit, US\$ 6.11/year/m³/d; and electric energy cost ratio per daily flow rate, US\$ 2.93/year/per m³/d.

12.4.5 O&M of Low Impact Development (LID) Stormwater Onsite Collection and Drainage

Most Green cities' subprojects have integrated LID techniques and infrastructure, such as bioretention swales or drainage ditches to proceed to source treatment and retention of stormwater. These techniques are mainly based on simple filtration and vegetated ditches to collect stormwater. Vegetation plays a key role in maintaining the porosity of the soil media of the system, and strong and healthy vegetation is critical to its performance. LID techniques do, however, need more manual maintenance than conventional drainage. But proper manual maintenance will ensure that underground collection systems are not constrained by solid waste or soil residues. Expensive, heavy equipment pumping needs will then be significantly reduced. Also, damage to wastewater pumping stations will be reduced, in turn lowering maintenance and repair costs. Overall, maintenance costs of systems using natural filtration of stormwater will be much cheaper than conventional drainage maintenance.

Manual maintenance should ensure that the shape of the swale is maintained and that it is not subject to erosion or excessive deposition of debris that may impede the passage of stormwater or increase its hydraulic roughness. With proper training, a service company—URENCOs—or park workers can carry out this maintenance. For detailed maintenance requirements of bioswales, and a maintenance checklist, please refer to the Singapore Design and operation guidelines for Bioswales (link below).

<http://www.pub.gov.sg/abcwaters/abcwatersdesignguidelines/Pages/ABCDesignGuidelines.aspx>

12.4.6 O&M for Urban Roads

There have been many past state and donor funded projects the supporting the development of national, provincial, urban and feeder roads. Historically the most significant risk for inadequate maintenance finance has been at the provincial level. However, past projects have supported initiatives to build capacity at the provincial and city level for improved network management. Many authorities responsible

for the road network now have maintenance management systems. In cities, road and drain maintenance is carried out by City Department of Transport, either using direct labour or under contract.

For the Green Cities Program, **Table 12-8** shows typical O&M costs for road and drainage, embankments and linear parks.

Table 12-8. O & M Costs including Roads, Drainage, Embankments, and Parks

No	Items	Unit	Unit cost	Remark	
			M.VND		
A	Road—Arterial urban roads, and assume that cycle life is 20 years:				
1	Lighting (Electricity):	1km/year	40.88	1,400 VND/1kwat	
	Lighting (change of bulbs, parts) year = 10% investment cost/	1km/year	150	1,500.00 M.VND initial investment cost of lighting system per 1km	
3	Road cleaning (once / month):	1km/year	54		29,200.00
+	Manual labour cleaning—4 person days/month/km	1km/year	6	12 months/ year	
+	Cleaning vehicle (VND 2million) 2 hours/km—both directions	1km/year	48	12 times/ year	
4	Drainage cleaning	1km/year	54		1km
+	Manual labour cleaning (4 person days/ month/km)	1km/year	6		
+	Heavy equipment cleaning (VND2/h) 2 hour/km—both directions)	1km/year	48		
5	Bioswales, plants and soil maintenance		18		
+	Manual labour maintenance—4 person days/ month/km	1km/year	6		
+	Materials—estimate: VND 1million/km/month)	1km/year	12		
6	Road repairs:		1,800.00		
+	Small repairs (refer to Legal basis sheet)	1km/year	800.00	Every 4 years	
+	Major repairs (refer to Legal basis sheet)	1km/year	1,000.00	Every 12 years	
7	Administration fee (10% of total 1 to 6)	1km/year	211.69		
SUBTOTAL O&M COST		per 1km/ year	2,328.57	VND million /year/km, O&M	
Construction unit cost—urban road		VND million/km	50,000.00		
Annual proportion O&M/construction cost		%	5%		
B	Stream and underground Drainage Only				
4	Drainage cleaning	1km/year	54		
+	Manual labour cleaning—4 person days/ month/km	1km/year	6		
	Heavy equipment cleaning (VND 2million) 2 hour/km—both directions	1km/year	48		
7	Administration fee (10% of total 1 to 6)	1km/year	5.40		
SUBTOTAL O&M COST		per 1km/ ear	59.40	VND million/year/km, O&M	
Construction unit cost—stream		VND million/km			
Annual proportion O&M/Construction cost		%	1%		
C	Embankments and linear parks				
1	Lighting (Electricity)	1km/year	40.88	VND 1,400/1kwat	
2	Lighting—change bulbs, parts, etc. = 10% of nvestment cost/ year	1km/year	150	VND 1,500.00 million initial investment cost of lighting system per 1km	
3	Road cleaning—once / month	1km/year	14		
+	Manual labour cleaning—4 person days/ month/km	1km/year	6	12 months a year	
+	Cleaning vehicle—VND 2million/h. 2 hour/km—both directions	1km/year	8	Twice a year	
4	Drainage cleaning	1km/year	6		
+	Manual labour cleaning—4 person days/ month/km)	1km/year	6		
5	Bioswales, plants and soil maintenance		18		

No	Items	Unit	Unit cost	Remark
			M.VND	
+	Manual labour maintenance—4 person days/ month/km	1km/year	6	
+	Materials—estimate: VND 1million/km/month	1km/year	12	
7	Administration fee (10% of total 1 to 6)	1km/year	22.89	
SUBTOTAL O&M COST		per 1km/ year	251.77	VND million/year/km, O&M
Construction unit cost—embankment and linear park		VND million/km	40,000.00	
Annual proportion O&M/construction cost		%	1%	
D	Wastewater treatment plant			
1	O&M	51,500 inhabitants	3,321.75	2 to 6 USD/person equivalent/year
	CAPEX construction cost	51,500 inhabitants	66,435.00	50 to 150 USD/person equivalent/year
SUBTOTAL O&M COST		per 5000 m ³ /d	3,321.75	
Annual proportion O&M/Construction cost		%	5%	
E	Wastewater underground collection systems			
	Drainage cleaning	1km/year	54	
+	Manual labour cleaning—4 person days/ month/km	1km/year	6	
+	Heavy equipment cleaning—VND 2million/h 2 hour/km—both directions	1km/year	48	
	Pumping stations	1 pump/km/year	210	electricity
	Annual preparation and maintenance provision	per km/year	160.56	4% of provision costs
7	Administration fee (10%)	1km/year	42.46	
SUBTOTAL O&M COST		per 1km/ year	306.46	M VND /year/km O&M
Construction unit cost (per km)		VND million/km	4,013.89	
Annual proportion O&M/construction cost		%	8%	

Source: PPTA Consultants

Table 12-9 summarises all O & M costs as a percentage of capital costs.

Table 12-9. O&M Costs as Percentage of Capital Costs

Operation and Maintenance	O&M as Annual % of Construction Costs	Unit Cost	
Roads	5%	2,328.57	M VND /year/km O&M
Stream and underground drainage Only	1%	59.40	M VND /year/km O&M
Embankments and linear parks	1%	251.77	M VND /year/km O&M
Wastewater treatment plant	5%	3,321.75	M VND /year/O&M one plant for 51,500 plan WWTP for 51 500 persons
Wastewater treatment collection	8%	306.46	M VND /year/km O&M

Source: PPTA Consultants

12.4.7 Institutional Framework

The long term performance of green infrastructure relies on appropriate and continuous maintenance. For this to occur, adequately funded annual maintenance plans are required, which would include specific maintenance activities—and the frequency of performing them—for each type of facility. These plans should include indicators for assessing when ‘as needed’ maintenance activities are required. Fact sheets should be prepared with the basic information needed to develop maintenance plans. Regulatory agencies need to identify the responsible maintenance bodies, monitor their performance and ensure that they are adequately funded.

Regulations should officially designate a responsible party to have ultimate responsibility for the continued maintenance of green infrastructure facilities. They would facilitate enforcement necessary to

ensure compliance or address performance problems once facilities are constructed. Regulations would also set out the procedure for maintenance non-compliance. This process should provide informal, discretionary measures to deal with periodic, inadvertent noncompliance, and formal and severe measures to address chronic noncompliance or performance problems. In either case the primary goal of enforcement is to better ensure effective preventive maintenance.

Guidelines should be prepared, which would clearly state inspection and maintenance requirements. The Guidelines should contain comprehensive requirements for documenting and detailing maintenance activities. A facility Operation and Maintenance Manual should be prepared by the respective civil works contractor carrying out the subproject works. This should contain accurate and comprehensive drawings and plans of the completed infrastructure, and detailed descriptions and schedules of inspection and maintenance. The usual 'as built' documentation currently required on all civil works contracts could be adapted for this purpose.

Funding for annual maintenance is critical and provincial and city authorities should recognize that adequate and secure funding is needed for facility inspection and maintenance and thus provide the necessary funding in their budgets.

A major risk related to technical aspects is that the PMUs do not have the capacity to support the introduction of green infrastructure and the preparation of adequate designs, supervision of construction, and monitoring. To avoid this, technical support to the PMUs to ensure satisfactory designs and good quality construction is to be provided under the Program.

12.4.8 O&M Plans

Table 12-9 has shown typical norms based on percentages of capital investment costs to achieve a high level of operation and maintenance. However, the application of these percentages would require a significant amount of funding that is unlikely to be afforded by the responsible agencies. Hence, lower percentage levels, more in keeping with current maintenance funding practice, have been applied to the overall estimates of capital costs of the infrastructure elements of the subprojects to arrive at order of magnitude, annual operation and maintenance costs. These are shown in **Table 12-10**.

Table 12-10. Estimated Minimum Annual Funding Requirement for Operation and Maintenance

Note	1USD=VND 22,000	Base Cost		Minimum Annual O&M Cost			Timing	
	Sub Project	VND Million	US\$ 000's	Min %	VND Million	US\$ 000's	Year to Start O&M	
Hue								
A	Dredging and Embankments:							
1	Dredging and Embankment of Ke Van River	48,750	2,216	1.0%	488	22	2021	
2	Dredging and Embankment of Lakes in Citadel	62,694	2,850	1.0%	627	28	2021	
3	Dredging and Embankment of An Hoa River	74,800	3,400	1.0%	748	34	2021	
4	Improvement of the Citadel Canal/Moat	70,395	3,200	1.0%	704	32	2021	
5A	Rehabilitation/Embankment of Dong Ba River	}					2020	
5B	Rehabilitation/Embankment of An Cuu River		28,433	1,292	1.0%	284	13	2020
5C	Rehabilitation/Embankment of Nhu Y River							2020
6	Dredging and Embankment of Lap River, Kim Long Ward	34,061	1,548	1.0%	341	15	2021	
7	Eco-Channel of the An Van Duong Development Area	122,732	5,579	2.0%	2,455	112	2021	

Note	1USD=VND 22,000	Base Cost		Minimum Annual O&M Cost			Timing
	Sub Project	VND Million	US\$ 000's	Min %	VND Million	US\$ 000's	Year to Start O&M
B	Water Supply and Drainage:						
8	Drainage and Pavements in Four Inner City Wards of Citadel	195,500	8,886	1.0%	1,955	89	2022
9	Water Supply System to Phu Son Solid Waste Management Facility and Villages	18,820	855	5.0%	941	43	2020
C	Green Parks:						
10	Park, Paths, Drainage and Lighting of the in An Van Duong Development Area	142,828	6,492	1.0%	1,428	65	2020
11	Park and Square of the Administrative Area, An Van Duong	116,111	5,278	2.0%	2,322	106	2020
D	Roads						
12	Section of Central Road in An Van Duong New Development Area including Bridge of Nhu Y	64,937	2,952	2.0%	1,299	59	2022
13	Bui Thi Xuan Road	70,348	3,198	2.0%	1,407	64	2022
14	Huyen Tran Cong Chua Road	42,648	1,939	2.0%	853	39	2022
15	Vy Da Bridge and Access Roads	58,090	2,640	2.0%	1,162	53	2022
	Total				17,013	773	
Ha Giang							
A	Drainage and Embankments:						
1	Drainage - Tran Phu & Nguyen Trai Wards	37,563	1,707	1.0%	376	17	2021
2	Drainage - Minh Khai Ward	40,893	1,859	1.0%	409	19	2021
3	Drainage - T1, T2, T3, T4 of Quang Trung Ward	7,546	343	1.0%	75	3	2020
4	Western Embankment-Lo River (old to new Me bridge)	51,863	2,357	1.0%	519	24	2021
5	Embankment & Roads each side of Mien River	241,579	10,981	2.0%	4,832	220	2022
6	Southern Embankment – Me Stream (Old Me bridge to Chang Spillway)	24,571	1,117	1.0%	246	11	2021
B	Solid Waste Management:				-		
7	Improvement to Existing Landfill	19,404	882	2.0%	388	18	2020
C	Roads and Bridges:				-		
8	Upgrading of NR2 (km 286+300 – New Me Bridge)	41,796	1,900	2.0%	836	38	2021
9	Southern Ring Road Improvement	86,585	3,936	2.0%	1,732	79	2021
10	Bridge from NR2 to Southern Ring Road	88,084	4,004	2.0%	1,762	80	2021
	Total				11,173	508	
Vinh Yen							
A	Dredging and Conservation:						
1	Dredging and Landscape Protection of Dam Vac Lake	209,234	9,511	1.0%	2,092	95	2021
B	Wastewater:				-		
2	Collection & Treatment of	308,017	14,001	5.0%	15,401	700	2022

Note	1USD=VND 22,000	Base Cost		Minimum Annual O&M Cost			Timing
	Sub Project	VND Million	US\$ 000's	Min %	VND Million	US\$ 000's	Year to Start O&M
	Wastewater in West Vinh Yen						
3	Tertiary Wastewater Sewers	119,796	5,445	2.0%	2,396	109	2021
C	Green Infrastructure:				-		
4	Green Park Development near Dam Vac Lake	186,444	8,475	1.0%	1,864	85	2021
5	Infrastructure for University Area	254,178	11,554	1.0%	2,542	116	2021
6	Exhibition/ Linkage Centre for Business Support	53,591	2,436	1.0%	536	24	2021
	Total				24,831	1,129	

Source: PPTA Consultants

The order of magnitude funding shown in **Table 12-10** should be provided by the respective provincial/city administrations in the annual budget to the provincial/city agencies responsible for operating and maintaining infrastructure. Although **Table 12-10** sets out order of magnitude funding needs, annual budgets would need to be based on observed needs for periodic maintenance as well as that for routine maintenance. These would be determined each year and **Table 12-9** shows typical, detailed costs for operation and maintenance for the infrastructure elements included in the Program that could be applied to determine the annual budgets. Funding would be through a combination of revenues from user charges, where these are applied—for example in water supply, and solid waste management—and subsidy from the provincial/city administrations.

13 Integrated Risk Assessment and Mitigating Measures

This chapter briefly describes the integrated risk assessment for the Program and the necessary mitigation measures.

13.1 Integrated Risk Assessment

Monitoring and evaluation system. The Program has a strong monitoring and results framework based on the DMF, and assessments have indicated that the institutions proposed to take part at national level have systems for monitoring and evaluation that are mostly adequate to meet the Program reporting needs at the central level. However, it will be necessary to strengthen provincial and city capacities to improve timely implementation and reporting.

Governance and fiduciary systems. Governance and fiduciary systems have been assessed—**Section 6.2**—based on earlier country and sector assessments, and recent analysis and field assessments conducted in accordance with the requirements in the RBL policy.¹²⁸ Financial management and procurement systems, in Viet Nam have improved in recent years through the release of new laws and regulations, but there is some considerable potential for improvement in implementation. Viet Nam, was ranked 119 out of 175 in the Transparency International Corruption Perception Index in 2014. Nonetheless, the government is committed to strengthen anticorruption mechanisms. The Program will help alleviate corruption by improving transparency and making systems more resistant to manipulation. Specific measures to improve the effectiveness, compliance, and efficiency of fiduciary systems have been identified in the detailed action plans to reduce risks associated with using these systems.

Financial due diligence was carried out—**Section 6.2**—in accordance with ADB's methodology.¹²⁹ The financial management systems assessment builds on the general and sector public financial management risk assessments, as well as those undertaken in the preparation of ADB's country partnership strategy with Viet Nam.¹³⁰ The assessment of the government's general financial management system—particularly financial management capacity and procedures for the Program within the MOF, SBV, MOC, VDB, provinces and cities—focused on internal controls, funds flow, accounting, budget management, financial reporting, and audit. The due diligence identified weaknesses in (i) subnational accountability mechanisms and arrangements; (ii) staffing because of a shortage of suitably skilled accountants and auditors; (iii) financial reporting standards and arrangements; and (iv) external auditing, oversight, and public accountability. Risk mitigation has been introduced in the program to manage the weaknesses identified in the financial management systems (**Table 13-1**). The substantial risks associated with the use of the government's financial management arrangements are acceptable given the track record in education and recent system improvements, provided that recommended risk-mitigating actions are undertaken.

A rigorous assessment of procurement systems was also conducted—**Section 6.2**—which also benefits from the findings of an earlier assessment of country and sector procurement systems. Procurement under the Program will follow Vietnamese procurement law and associated regulations, and will exclude high-value contracts in accordance with the RBL policy. Viet Nam has a mature legal framework for public procurement. However, effectiveness of implementation still shows weaknesses, as patterns in procurement results indicate widespread bid rigging and collusion, and oversight mechanisms are ineffective in countering such abuses. Mitigating measures addressing the principal procurement risks have been identified and included in the Program using numerical targets to promote improved procurement practice. It is further noted that whilst the provinces each have extensive procurement experience—collectively by their various departments, the IAs and PMU for Program preparation have inadequate procurement capacity. This will require resolution either by assignment of Program implementation to more experienced agencies, or the secondment of experienced staff to the current agencies.

¹²⁸ ADB. 2013. Piloting Results-Based Lending for Programs. Manila.

¹²⁹ ADB. 2009. Financial Due Diligence: A Methodology Note. Manila.

¹³⁰ Latest CPS risk assessment

Safeguards systems. A diagnostic assessment of the program systems for environmental and social safeguards was conducted in accordance with the due diligence requirements in the RBL policy—**Sections 6.3 and 6.4**. The Program is designed to exclude activities with significant environmental impacts—category A. It is likely that limited adverse environmental impacts may result from subproject activities, particularly during construction and renovation. The Program will minimise activities that have land acquisition, involuntary resettlement, or indigenous people’s impacts. Adequate measures to mitigate such impacts and improve compliance are outlined in the assessment. An action plan to improve safeguards compliance and monitoring has been prepared in line with ADB’s Safeguard Policy Statement (2009) principles, and all applicable environmental laws and regulations of Viet Nam.

13.2 Integrated Risk Assessment and Mitigating Measures

Based on the assessments, the major risks and mitigating measures are summarized as **Table 13-1**.

Table 13-1. Risks Assessment and Mitigation

Risks	Assessment	Mitigation
<i>Results.</i> Administratively novel sector results, such as establishment of green city funding mechanisms, could result in delay. DLI timings out of sync with GoV procurement mechanisms could also result in delays.	Medium	The Program includes a number of strategies to enhance government and stakeholder ownership for the planned reforms, such as training of concerned staff. The Program coordination agency in the MOC has been chosen because of its demonstrated ability to monitor and support city agencies in obtaining results related to infrastructure subprojects. The Program DLIs have also been formulated to be ‘scalable’ and ‘staged’ to encourage performance, and incremental performance improvement, but to avoid penalising cities for small slippages in the Program.
<i>Expenditure and Financing.</i> Inadequate budget allocations and delayed funds releases and execution.	Medium	City DLIs provide incentives for them to allocate adequate budgets for timely execution, and support from the subproject implementation consultants and from the MOC Bureau with the responsibility for verifying achievement will address capacity constraints if necessary. Commitment from PPC on the timely allocation of the counterpart funds to the City. Public Investment Law has ensured budget planning for investment over the medium term—three to five years.
<i>Fiduciary.</i> Inadequate capacity in procuring entities; collusion and bid rigging often result in a single responsive bid, and award prices 0-2% below the cost estimate; oversight agencies fail to uncover abuses; weak compliance monitoring; weak capacity for internal audit.	High	Procurement actions include: (i) Program implementation to be assigned to agencies having sufficient staff with experience of procurement of similar packages; (ii) numerical targets are specified for minimum number of eligible bids, and minimum average discounts below the cost estimate; (iii) capacity building to be provided to oversight agencies on monitoring of procurement and contract management and “red flags” triggering mandatory investigation and /or audit. Financial management actions include: (i) implementation of actions for detailed capacity building measures for provincial accounting staff, PMU accountants, internal and external auditors, as well as enhanced controls over fixed assets; (ii) annual fiduciary reviews; and (iii) support in the verification of both technical and financial results.

Source: PPTA Consultants