Cities Development Initiative for Asia (CDIA)
Integrated Wastewater and Drainage Management for the Cities of Can Tho, Vinh, and Hai Duong, Viet Nam

Recruitment of Consulting Firm
Terms of Reference

I. BACKGROUND

A. Overview

1. The Cities Development Initiative for Asia (CDIA) has agreed to support climate resilient infrastructure investments in the aforementioned cities. The proposed "Integrated Wastewater and Drainage Management Project" for the three cities takes off from ADB and GIZ collaboration in Vietnam. These ToR's outline the scope of work and project context for pre-feasibility study support to the cities of Can Tho, Vinh and Hai Duong, Vietnam.

2. Preparatory discussions between CDIA and the cities commenced in late 2014 and were followed by a CDIA mission in March 2015. The received city applications for CDIA assistance in May 2015 were approved by CDIA in the subsequent month in consultation with the ADB Resident Mission and the GIZ Wastewater and Flood Protection Programs in Viet Nam. The envelope of the application contains the preparation of a pre-feasibility study (PFS) for an *Integrated Wastewater Management and Drainage Project*.

3. The three cities are subject to ongoing GIZ support in wastewater management and flood protection. Building upon the work already undertaken by developing partners, ADB has included all three cities into its pipeline of interventions under the ADB Water and Sanitation Program for Viet Nam (2019-2029). Additionally, City Sanitation Strategies (CSS) have been prepared by ADB employing a rapid appraisal approach for initial review of sanitation improvement in up to 10 cities across Viet Nam. Currently ADB is conducting an Options Study under TA 7885 identifying wastewater infrastructure options in three cities in the Mekong Delta. Further information on the background of wastewater and sanitation in Viet Nam and the situation in the three selected CDIA cities is provided in Annex A to the ToR.

4. The technical assistance in form of a PFS for each of the three cities is going to be financed by CDIA. It is expected to lever infrastructure investment of

(i) $120 million in drainage, flood protection, as well as wastewater collection and treatment in Can Tho,
(ii) $140 million in drainage, flood protection, as well as wastewater treatment in Vinh
(iii) $62.5 million in drainage, flood protection, as well as wastewater collection and treatment in Hai Duong.

B. Program Organisation

1. Implementing Arrangements

5. CDIA has agreed to finance this pre-feasibility study and requires for its implementation a consulting team a minimum of 3 international consultants centrally based in Hanoi, and 8 national consultants either based in Hanoi or spending substantial time in the selected CDIA

cities. The team will be recruited through a firm hired by the ADB in accordance with its procedures. All consultants will report directly to the Team Leader. The work will be undertaken over an 8-month period and will require intermittent consulting inputs amounting to a total of 62 person-months. This will comprise 14 international and 44 national person-months of consulting inputs.

6. The consultancy assignment will be overseen and supported by a Steering Group in each of the three cities established in advance of the assignment's commencement. The Steering Group will be chaired by the Chairman of the Peoples Committee or his designate include representatives from the Department of Construction, Department of Finance, Department of Planning and Investment, Department of Health, Department of Natural Resources and the City Urban Drainage and Wastewater service company. Where felt useful also representatives of the Management Board for Industrial Zones, Department of Agriculture and Rural Development, Fatherland Front, Women's Union should be invited as well. The Consultant Team (and Deputy) Leader; and CDIA representative(s), ADB Viet Nam Resident Mission Representative, GIZ representatives, and representatives of envisioned executing agencies (either Ministry of Construction or Ministry of Planning and Investment) are to be represented as well.

7. Joint CDIA-Steering Group meetings will be scheduled as follows. The schedule may be altered and complemented by other informal support and sector consultative group meetings by mutual agreement:

(i) At mobilization of the consultants team
(ii) Draft inception plan and report (week 5)
(iii) Draft interim report (week 13)
(iv) Draft final report (week 24).

8. The main tasks of the Steering Group are to:

(i) Provide guidance and oversight to all activities carried out under this TOR;
(ii) Review and monitor the progress and performance of the assignment activities;
(iii) Ensure that activities in line with the city's development priorities and optimize the benefit of the stakeholders and participating organizations; and
(iv) Liaise with key stakeholders to ensure smooth implementation and to ensure integration between proposed interventions in the priority sectors.

9. The implementation of the PFS is a collaborative effort between the selected cities and CDIA, and will be undertaken in a participatory manner. To facilitate close cooperation, an operational working group(s) shall be assigned by the Steering Committee to ensure that relevant city departments as well as the main agencies and stakeholders (such as urban poor groups, community based organisations and NGOs) engage with the Consultant Team at a working (day-to-day) level.

10. The three CDIA cities have agreed to provide counterpart contributions in form of logistical, administrative and manpower support expenditure. The contribution is made up of the following:

(i) Office space and facilities (computers, printers, fax machine, internet), utility costs and local transport.
(ii) Support staff as and when required, including primary survey data pertaining to storm water drainage, sewerage, and solid waste management sectors i.e. willingness to pay, any other surveys deemed necessary for the PFS etc.

11. In Hanoi the executing agency (tbc) is expected to provide counterpart contributions in form of logistical, administrative and manpower support expenditure. The contribution is made up of the following:

(i) Office space and facilities (computers, printers, fax machine, internet), utility costs and local transport.

(ii) Support staff as and when required, including data pertaining to storm water drainage, sewerage, and solid waste management

2. Consultancy Support: PFS Team Composition and Consulting Inputs

12. The assignment period is for 8 months. Commencement date is on January to August 2016. A total of 58 person-months are required for the assignment. CDIA encourages diversity in workplace and supports an inclusive work environment. We strongly encourage women to be part of the team. The following team structure, skill sets and person-months are mandatory for the assignment.

Consultant Team	Total
International (Hanoi based)	
1. Team Leader – Civil Engineer	6 months
2. Urban Drainage Specialist	5 months
3. Financial Specialist and Economist	3 months
Total International	**14 person- months**
National	
4. Deputy Team Leader – Water Resources and Watershed Engineering Specialist	7 months
5. Sanitary Engineering Specialist	7 months
6. Urban Drainage Engineer	7 months
7. Financial Specialist and Economist	5 months
8. Social Development Specialist	5 months
9. Resettlement Specialist	3 months
10. Environmental and Climate Change Specialist	6 months
11. Institutional and Capacity Development Expert	4 months
Total National	**44 person - months**
Total Consultants	**58 person - months**

13. Besides the positions mentioned above, the consultants should consider to mobilize the following support staff using the miscellaneous administration and support costs budget line:

(i) Executive Assistant to assist the team in all logistical and administrative aspects to ensure successful implementation of the project including but not limited to meeting and travel arrangements and assisting in the formatting of the reports / main deliverables

(ii) Translators/Interpreters to assist international team-members when conducting meetings with Vietnamese counterparts and to translate reports and documents from Vietnamese to English or from English to Vietnamese
(iii) Draughtsman for preparation of all engineering drawings, schematics, longitudinal sections, elevations, network maps, developing digital elevation models, calculation of area and length.

KEY OBJECTIVE, DELIVERABLES AND MAJOR ACTIVITIES

14. The overall objective of the assignment is to support the cities in identifying investment project packages, at the "pre-feasibility level", that will

(i) improve sanitation infrastructure and capacity in urban management and service
(ii) delivery, improve surface and groundwater quality, and promote private sector
(iii) Participation in the provision of urban services.

15. **Two key deliverables** will be prepared for each of the three cities:

(i) A Long Term Strategic Plan that will guide the cities in making an informed decision on the most appropriate options about sanitation services, land use, and infrastructure funding. This includes the analysis of the current situation with regards to wastewater and drainage performance in the three cities and the development sequence for identified wastewater and drainage interventions / packages.
(ii) A Pre-feasibility Study, that includes preliminary design and cost estimates, preliminary impact analysis and a Design and Monitoring Framework (DMF).

16. **Anticipated major activities** in the three cities include but are not limited to the following:

(i) Identification of wastewater and flooding issues that contribute to environmental degradation, socio economic and climate change vulnerability.
(ii) Conduction of a Socioeconomic Survey and Focus Group Discussions to determine the: (a) demand for wastewater and sanitation improvements, (b) the willingness and ability of potential project beneficiaries to pay for improved wastewater and sanitation services, and (c) the identification of potential beneficiaries to flooding and drainage improvements.
(iii) Development of a Wastewater and Drainage Management – Long Term Strategic Plan for the three cities and preliminary project design as part of the Pre-feasibility Document.
(iv) Preparation of technical, institutional, economic, and financial feasibility analysis for selected short-term (5-years) and medium-term (10-years) phase investments in wastewater and drainage facilities.
(v) Conduction of an institutional (needs) assessment, identify and undertake first measures to strengthen local capacities to plan, implement and manage sustainable wastewater and drainage service delivery by the local government.
(vi) Identify project components / packages and their subsequent technical and financial feasibility, including preliminary project design as well as preliminary socio-economic and environmental impacts and related safeguards.
(vii) Tailoring the identified project components to downstream financing requirements and options, including ADB's Water Supply and Sanitation Program (2019-2029) for Vietnam and the Urban Climate Change Resilience Trust Fund (UCCRTF).

II. DETAILED SCOPE OF SERVICES

A. Scope of Work

17. The PFS will be undertaken in two continuous phases comprising: (i) Phase I – Review and Development of a Long Term Strategic Plan; and (ii) Phase II – Pre-feasibility Study (PFS) for the Integrated Wastewater and Drainage Management for the Cities of Can Tho, Vinh and Hai Duong.

B. Preparatory and General tasks

18. Preparatory and general tasks of the Consultant Team will include but not be limited to:

(i) Undertaking team mobilization, office set up, developing reporting protocols and formats;
(ii) Sensitizing the team on Program's Safeguard actions and requirements;
(iii) Familiarizing with the project area, participating towns, stakeholders, on-going programs, understanding of locally applicable laws and rules;
(iv) Review relevant documents, strategic plans and studies, such as the CSS and the Options studies.

19. In undertaking the two phases the Consultant Team will prepare:

C. Phase 1 – Review and Development of a Long Term Strategic Plan

20. Phase 1 will carry out a preliminary review of the three cities' approach to wastewater and drainage management based on data and plans available. The consultants shall, in close collaboration with relevant stakeholders review and analyze the current situation for wastewater and drainage management for the three cities including:

(i) Description of the physical characteristics of the local watershed and the city itself (land use), the existing effects of urbanization, and descriptions of the individual drainage basins located within the City's urban growth boundary.
(ii) Description of the current situation and identification of critical issues and success factors, incorporating a "performance audit" of wastewater, drainage and storm-water infrastructure conditions in the city and an analysis of the institutional arrangements, organizational processes and capacities that have delivered the current performance and which will influence future performance.
(iii) Surveys and assessments related to identifying the impact and risks of the urban environments to health and sanitation as well as onto the financial outset of the city and the socio-economic livelihoods of the people, particularly the poor and marginalized. Other activities including community preferences and affordability surveys to establish levels of demand and perceptions among key stakeholders, etc. may be undertaken.
(iv) Analysis of the institutional landscape and stakeholder mapping relevant to the cities' priority areas shall be undertaken to set the basis for regular consultations and workshops. Multiple focus group discussions and participatory planning workshops with city officials and relevant stakeholders at regular intervals shall jointly assess current issues and constraints, establish strategic objectives, plan and agree on proposed interventions. These discussions shall take place within cross-sectoral and inter-departmental working groups, moderated and guided by the consultants.

21. Particular attention will be given to ensuring that interventions are appropriate for all sections of the community, including the poor, women and children. It is therefore expected that the strategic plan will:

(i) Cover the entire geographic area of the jurisdiction and describe a range of intended interventions based on current and projected population, geographical and environmental conditions, socio-economic factors and demands of the intended beneficiaries.

(ii) Ensure that women and men from all socio-economic strata, including vulnerable groups, are consulted, considered and/or included in appropriate activities such as socio economic studies, infrastructure assessments, problem identification, demand assessments etc. Data should be provided on a sex disaggregated basis wherever possible. All project reports will include specific consideration of issues related to poor women and men as appropriate at all stages of implementation.

(iii) Identify Service Areas, sanitation problems enumerated in each, along with a description of the possible solutions, ranging from improved on-site treatment through to sewerage systems.

(iv) Ensure that the demand for and affordability of various levels of service will be considered, along with a range of technologies that could be implemented to satisfy these demands.

(v) Ensure that sustainability will be assessed particularly on the ability and willingness of the local government and the community to, in the long term, pay for the improved services.

22. **The Long Term Strategic Plan** will provide the each City with sufficient information and justifications to make an informed decision on the most appropriate options about wastewater and drainage investments required. In particular:

(i) Identify plans for future development and describe agreed drainage and wastewater management interventions, including physical investments over a planning horizon of 20 years.

(ii) Propose a preferred development sequence for the wastewater and drainage systems. The major investments should be grouped into four 5-year periods. A key task in preparing the strategic plan is therefore to determine priorities based on social, environmental and financial considerations. Special attention should be paid to the needs of low-income groups and to the resource tradeoffs associated with providing services to them. The criteria for forming the basis for these recommendations have to be made explicit.

(iii) Propose alternatives on institutional arrangements, organizational processes and capabilities needed to manage, follow up/implement and update the Long Term Strategic Plan.

23. The information that the Long Term Strategic Plan should contain is:

(i) <u>Urban Analysis and Projected wastewater management needs</u> - This section of the Strategic Plan provides estimates of the planning area's wastewater and storm-water needs over the next 20 years, identifying short and long-term needs. In particular:

(a) Based on the current amount of wastewater produced in the planning area, and the estimation of the volume of wastewater to be produced by anticipated development, the consultant shall estimate a future treatment

and storage capacity needed to accommodate wastewater produced by all potential development, divided between serviced areas and areas with onsite systems (identify and include the capacity needed to handle wastewater and septage from existing and anticipated development with onsite systems).

(b) Improvements to drainage systems shall be also identified. A 10 years' time of return shall be considered for the city storm-water drainage analysis. Drainage improvements will require attention to the issue of solid waste disposal to ensure drainage systems can operate effectively.

(ii) Financial Analysis – assess in detail the following:

(a) The operating utilities': (a) financial management capacity; (b) financial state including income statements, balance sheet and cash flow statements, and existing loan repayments; (c) commercial losses to supplement the total picture on Unaccounted for Water; and (d) financing, accounting, budgets and audit procedures. Analyze major constraints to the financial sustainability and the degree of operational subsidies from the local government. Prepare financial projections including revenues, operating and capital expenditures, and debt repayment.

(b) The city's (a) financial management capacity, and (b) financial performance including borrowing capacity and debt service coverage ratios relating to existing and potential new loans. Prepare financial projections including revenues, operating and capital expenditures, and debt repayment.

(iii) Assessment of Urban Climate Change Resilience (UCCR) - Apply the UCCR approach and planning process to develop the climate change resilience of Can Tho, Vinh and Hai Duong's water infrastructure according to the following steps:

(a) Climate Change Risk Analysis, particularly for projections of direct and indirect climate impacts – This step refers to the climate risk assessments by using the range of potential changes in rainfall, temperature, or storms to develop future hazard likelihoods in order to assess the impacts of climate change on the water sector. Extreme weather events that might affect the region should be identified using available information (cities, Vietnam's Climate Agency? etc.), interviews, literature review, and interactive workshop discussions with city stakeholders. Engaging city stakeholders in the development of climate risk assessments conducted by the consultant can build confidence in the findings, and understanding of the uncertainties associated with projections. The extreme weather events should be characterized according to frequency and severity in order to come up with a scale of importance and relevance of such events to the three cities.

(b) Analyzing Vulnerability, particularly those populations within the city who will face high exposure and risk to climate impacts, and who have limited coping capacity with which to weather these impacts - the consultants should examine cities' vulnerability to the identified impacts, in terms of its water-related hard infrastructure and soft infrastructure. The expected frequency and severity of extreme weather events (impacts) are assessed against the city's preparedness represented by the quality and

extent of existing hard infrastructure and management systems (soft infrastructure).

(iv) Wastewater and drainage management options and costs - This section identifies the wastewater treatment options, system requirements, and costs associated with managing the planning area's wastewater over the long term. It is important to consider a variety of options before selecting an approach. In this section, the consultants shall:

(a) describe the wastewater and storm-water management option(s) available and the approach that is best suited to address the current and future needs of the planning area;
(b) explore the different types of systems available to manage wastewater, such as wastewater treatment plants, sewage lagoons, engineered wetlands and on-site systems;
(c) compare the feasibility of different options based on the geography, size, rate of growth and development, and financial capacity of the planning area, affordability, current water rates and possible rate adjustment, existing land use patterns, development direction and densities.
(d) identify the necessary improvements, facilities and services together with indicative investment, operating cost and revenue projections. Identify those components which are suitable for private sector participation.
(e) analyze the current and future assets, financial position and commercial performance for the wastewater and storm-water operator. Forecasts of future performance based on alternative scenarios for service management and development with and without private sector participation, with recommendations on preferred options, will be developed.

(v) Wastewater and drainage upgrade implementation and financing - This section should identify where and when wastewater management systems (including improvements to the storm-water system) are expected in the planning area and how they will be financed. Information in this section will support future land development as designated in the development plan. The consultants shall describe the short and long term projected costs of the selected approach, including maintenance, repair and renewal, and how these costs will be recovered. In particular, they shall:

(a) estimate the capital and operating financing needed to construct, operate and maintain systems, from a life-cycle costing perspective;
(b) estimate the costs of any planned upgrades,
(c) propose a staged implementation of upgrades (timing and location) according a priority approach;
(d) identify methods of financing (ex: property tax increase, capital borrowing, septic dumping fees, utility rates, building permit costs, etc.);
(e) explain how costs to expand or construct new infrastructure will be recovered by the developer and
(f) outline economic and financial analysis and evaluation of development options;
(g) outline, sequenced programmes and budgets for the implementation of the preferred options
(h) the staged implementation and development sequence of the infrastructure investment should be grouped into four 5-year periods and

be determined according to a priority framework based on social, environmental, climate and financial considerations. The criteria for forming the basis for these recommendations have to be prepared by the consultants. To facilitate this, prioritization exercise involving relevant stakeholders will be conducted and facilitated by the consultants.

(vi) Types of wastewater Interventions - There is no restriction on the type (and number) of physical infrastructure interventions, however the strategic investment plan must include staged implementation of a sewerage and drainage system to serve high density areas including appropriate centralized wastewater treatment facilities. The interventions should however be appropriate for the physical, environmental, climate, institutional, and socio-economic and cultural conditions prevailing in the various locations within each of the three cities and should also represent "state of art technology" In addition to sewerage, the following broad types of on-site interventions should be considered by the Consultant:

(a) Upgrading of existing and provision of new community facilities for existing and new individual dwellings, with on-site treatment or decentralized treatment, including use of environmental enhancements such as production of biogas as a bi-product, and recycling of treated wastewater;
(b) Upgrading of individual facilities for existing and new dwellings with individual or shared on-site treatment of waste;
(c) (wastewater facilities for public places (schools, markets, transport terminals, waste dumps etc) with on-site treatment;
(d) Septic tank sludge collection services;
(e) Improvement of existing and development of new facilities for septic tank sludge treatment.
(f) Consultants should also present proposals of appropriate options for: (a) sustainable and green wastewater treatment systems (Lagoons and wetlands, anaerobic digestion, etc.) and (b) reuse of the treated wastewater products effluent and sludge (fertilizers and biogas generation, etc.), development of an effluent and sludge management concept, (e.g. reuse for irrigation, etc.) including layout design, economic/financial evaluation and necessary administrational arrangements

(vii) Types of drainage interventions - Infrastructure such as storm and sanitary sewers, on-site sewage disposal systems, storm runoff detention and infiltration systems, water supply pipelines, treatment plants, industrial pre-treatment facilities, sludge treatment works, and outfalls must be viewed as interrelated systems. The following broad types of stormwater interventions may be considered by the Consultant:

(a) Source control measures: These are measures inside a development, such as a plot, a shopping centre, a parking lot and parks.
(b) Minor or major drainage: The drainage measures taken in an urban basin or sub-basin that can be small for example only with pipes or a major drainage of urban creeks.
(c) Infiltration and percolation: Increase of the infiltration or percolation area of the basin.

(d) Storage: Temporary storage of the water can be developed to decrease the peak flow

(e) Increase flow conveyance: This measure increases the flow capacity of a section by a pipe, canal or increasing the natural flow conditions of a river by changing its sections or by decreasing the flow slope.

(f) The consultant should recommend urban drainage solutions also according to the SUDS (Sustainable Urban Drainage System) concept such as source control solutions, permeable paving, rainwater harvesting and water butts associated with housing, to site wide water management.

(viii) Institutional Review - Tasks to be undertaken include:

(a) Policy/Legal frameworks - describe national and Provincial regulations and legal frameworks that govern the current service delivery of drainage and wastewater collection/treatment systems in the city, including service levels, coverage, cost recovery and subsidies;

(b) In depth details of the institutional situation in the CDIA cities is required, indicating the roles and responsibilities of the concerned institutions. Matters to be addressed include review of organisation, lines of reporting, to whom concerned agencies are responsible, management and staffing of organisation responsible for sewerage and drainage. What qualifications and experience do they have? Assess and describe city stakeholders; assess the current capacity of sewerage and drainage service providers; review institutional and organizational options for drainage/sewerage systems; review capacity building needs for selected service providers and stake holders.

(c) Consult with relevant sub-national government agencies including CPC, DOC, DPI, DONRE, URENCO and active private businesses. Ascertain their plans and proposals for City; review and consider their views and needs during the analysis, assessment and formulation of recommendations;

(d) Assess staffing, organization & competence of organizations responsible for drainage, wastewater disposal and solid waste management and describe stakeholders, including local authorities' attitudes towards urban environmental issues;

(e) Assess the current institutional and organizational situation of drainage and sanitation and its interrelation with the solid waste management sector in the city;

(f) Propose institutional and organizational options for implementation and post-implementation of drainage/sewerage systems and relevant linkages and interventions involving solid waste management in cities, including the public-private-partnership model.

D. Phase 2: Pre-feasibility Study for short and medium term investments

24. Pre-Feasibility analysis will be conducted on agreed and selected interventions programmed for the first and second 5-year period. Reference should be made to CDIA's Pre-feasibility Guidelines in the conduct of this phase. The pre-feasibility study phase will include three inter-related activities:

(i) Technical, financial, social and economic feasibility analysis including preliminary project design in order to make a specific choice of the most appropriate interventions;
(ii) Environmental and Social Safeguard due diligence. In particular, screening and analysis related to environmental impacts (including climate change); social impacts and land related matters, such as acquisition for public purposes and resettlement of communities where it cannot be avoided; and
(iii) Elaboration of the capacity development measures and implementation arrangements.

25. Feasibility analysis and preliminary design- For each City, the Consultant will undertake the following:

(i) Assess the technical, financial, social, and economic feasibility and sustainability and priority of each subproject component, including the phasing of investments for wastewater management
(ii) Prepare a pre-feasibility-level design of the wastewater and storm-water facilities together with their costs and justification. Prepare design layouts, calculations, and cost estimates for each site to a level of detail consistent with the determination of technical feasibility.
(iii) Assess the costs of wastewater collection and treatment and level of cost recovery possible, and determine tariffs needed to ensure sustainable operations. Discuss with cities a phased politically acceptable way of introducing cost recovery tariffs. Assess options and the feasibility of transferring responsibility for wastewater services to a dedicated wastewater utility
(iv) Review the impact and affordability of introducing full and partial cost recovery in wastewater management services in the participating cities. Assess demand on the basis of price, income, and access to alternative supplies. Analyze the affordability of wastewater services and assess willingness to pay for them.
(v) Prepare the wastewater tariff plans, including all the key assumptions used (demand projections, capital structure, cost of capital assumptions - both for debts and equity, operating efficiency, etc.). All subsidies, including cross subsidies across client segments and/or wastewater operations should be spelled out. Specific attention should be paid to affordability of low-income clients. All the social assessment results, including affordability analyses for different segments of clients on their overall costs for water supply, wastewater facilities and other sanitation/environment protection services (i.e. solid waste management, water resource user fees etc.) should be Included.
(vi) Investigate alternative financing schemes for improving urban sanitation, including for example local currency financing, municipal bonds, and public-private partnerships.
(vii) Prepare detailed cost estimates and financing plans for each of the project components and for each of the cities. Prepare the financial arrangements specifying the foreign exchange and local currency costs to be financed by MDBs, central Government, local government, provincial government, other agencies, and beneficiaries, as applicable.
(viii) Conduct comprehensive economic and financial analyses for each subproject and the overall project, using ADB guidelines, and handbooks. Based on past and projected financial statements, compute relevant financial indicators, including, but not limited to, debt service coverage ratios, and operating ratios. Compute for each subproject and the overall project financial internal rates of return (FIRRs), weighted average cost of capital (WACC), and economic internal

rates of return (EIRRs). Analyze the impact of the Project on poverty reduction. Review in detail the distribution of project benefits, net economic benefits, and poverty impact.

26. The consultants shall also perform Environmental and Social safeguards due diligence:

(i) Prepare an initial environmental examination of the Project and a summary initial environmental examination, highlighting the main findings, in accordance with in accordance with the Government's EIA and ADB's Environmental Assessment Guidelines

(ii) Carry out an assessment of potential social and environmental impacts of Project components on the poor and identification of potential adverse impacts and recommend mitigation measures, ensuring that internationally acceptable social and environmental safeguard criteria are built into PFS project recommendations.

(iii) Highlight significant social (urban poverty, gender, minority groups) and environmental issues, and recommend appropriate measures including any necessary resettlement measures in accordance with ADB's Handbook on Resettlement.

(iv) Recommend subproject interventions to address gender imbalances, and interventions to support other vulnerable groups, which will result in poverty reduction and social inclusion strategy under the project.

(v) Review projects against the scenarios developed during the urban climate change resilience analysis to ensure that the resilience of the cities will be improved in response to each future scenario.

27. The Consultant will work closely with the single departments of the city government and relevant utilities to improve organizational processes and capacity of responsible offices with respect to planning, managing and maintaining water and wastewater services. This will be done through capacity development activities such as on-job training on processes and procedures during the implementation of the PFS, cross-sectoral and interdepartmental working group discussions, technical and procedural training activities for selected expert groups. The purpose is to support the city government, its operational agencies and responsible utilities to improve the operational and financial performance in the sector, which are critical for the sustainability of the proposed water and sanitation investments. For each city, the consultants will undertake the following:

(i) Make recommendation for future policies on wastewater facilities to support the short and long-term viability of the services provided. The consultant shall include in his recommendations: a) local legislation and enforcement in coordination with national level; b) possible arrangements between the wastewater service providers and the city government

(ii) Prepare detailed project implementation and phasing schedules for each component and each city, and investigate implementation options. Prepare recommendations for overall project implementation, administration, auditing, monitoring and evaluation.

(iii) A design and monitoring framework (DMF)/log frame matrix following ADB's Guidelines for Preparing a Design and Monitoring Framework will be a key output of the PFS and this must be attached to the final report. Develop the Terms of Reference for in- depth review later at FS stage. Provide an initial assessment of how these issues could affect feasibility/viability of the investment.

III. OTHER REQUIREMENT

A. General Deliverables

28. The general deliverables with timelines of some common reports are indicated in Table 2 below. Administratively, the Consultant Team will report to the CDIA Focal Point (CDIA Core Management Team) based in Manila, the Philippines

Table 2: Deliverables

Type of Report	Time Line
Inception Report	Within 5 weeks of Mobilization
Interim Report	Within 13 weeks of Mobilization
Draft Final Report	Within 24 weeks of Mobilization
Final Report	Within 4 weeks after the final Presentation

29. The Inception Report will set out the detailed approach for the assignment (method, work plan and scheduling).

30. The Interim Report will include: (i) assessments (technical and institutional) of the priority areas (sewerage, storm water drainage, and related solid waste management issues) and municipal financial analysis; (ii) recommendations for improved service delivery through a phased investment programme (Long Term Strategic Plan); and (iii) recommendations for priority investments.

31. The Draft PFS will providing a description of priority infrastructure investments as well as their financing options and will be accompanied by a separate Executive Summary.

32. All draft and final reports should be submitted in 5 hard copies and a softcopy in CD in English and with key elements of the reports translated in Vietnamese. All reports should be submitted to the Steering Group and CDIA Focal Point.

33. The CDIA standard guidance on PFS reporting is downloadable and should be applied or taken into consideration as far as possible and justified.[1] In addition, at the commencement of the assignment CDIA will provide further proforma guidance on the presentation of the PFS.

B. Input Requirements

34. The position, qualification, general scope of work and person-months for key experts is presented in Table 4. The scope of work in the following tables is intended to give an overall indication of the distribution of work between team members, and is indicative but not exhaustive, and in no way relieves the Consultant of any responsibility to fulfill the entire Terms of Reference as detailed herein.

[1] *Pre-Feasibility Study Guideline* available at http://cdia.asia/knowledge/cdia-tools-and-learning-material/

Table 4: List of Key Experts with desired qualifications and general scope of work

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
I	**International Experts**			
1.	Team Leader – Wastewater Management Specialist	• Minimum of a Master's degree in engineering (civil, water supply and sanitation, wastewater management) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have demonstrable experience as a team leader and manager of multi-discipline consulting assignments, with the ability to maintain excellent standards of communication within a consulting team, with counterparts and wider project stakeholders. • Have a minimum of 15 years relevant project experience in integrated wastewater management in medium-size and metropolitan cities; ideally, at least 5 years working in Vietnam with government agencies/ministries and on donor funded projects. • A minimum of 10 years' experience of project management in senior positions in government or donor funded projects in Asia preferably also in Vietnam. • Be fluent in written and spoken English, with excellent report writing skills.	• ensure a participatory design and implementation process in the PFS development, together with the DTL's and other team members, and with the city counterpart ensuring all stakeholders are appropriately consulted (including, affected communities, business sector, NGOs, CBOs and relevant agencies); • coordinate the inputs of the other specialists, delivery of outputs, and quality control; coordinate work with other relevant projects and project outputs; and report to the CDIA; • Lead and co-ordinate the situation analysis, constraints, and needs assessment based on a review of existing plans and policies at national, regional and local level, collection of sound and objective data studies, interviews etc.; • Visit the location(s) of the proposed activity and undertake structured data collection to establish a sound understanding of the development situation being addressed and identify the institutional preparedness and business environment in the wastewater sector identifying the constraints and issues; • develop an Inception and Work Plan in close collaboration with the city and the project team; • Lead the review of all documentation pertinent to the project and supervise the detailed assessment of all wastewater and storm-water management related plans, strategies, policies and reports; • Identify and analyze all relevant data in the development of the PFS and the need for, and design of technical assessment to address potential data gaps; • Lead and contribute to the preparation of the Long Term Strategic Plan and supervise the technical and financial option analysis study for wastewater management infrastructural investment according to the activities outlined in the Scope of Work; • Oversee the dialogue with the cities' stakeholders to identify and select the most responsive infrastructural investment solutions; • Identify and document broad technical, institutional, management and capacity development solution, the recommended phasing of investment in the short to medium term and recommend the priority project components to be design at the PFS level; • Manage the dimensioning of technical specification of the retained most responsive options and review the technical documentation, drawings and main specification of infrastructural investment packages in line with CDIA quality assurance standard for PFS; • Coordinate the preparation of the PFS reports; and submit the completed Initial Development Impact Assessment (IDIA) including the Design Monitoring Framework (DMF) with the draft final report. • Advise and coordinate all stakeholders' consultations/meetings as well as assigned interdepartmental working groups. Manage consultations and workshop in a participatory way wherever possible and appropriate. • Document the PFS through full project description(s), an assessment of project impacts, an economic and financial analysis, a risk assessment, recommend institutional implementation	6

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			arrangements, and the potential for PPPs; • Identify the need for further studies in assessing the feasibility of proposed investments and develop outline TORs for next step studies toward infrastructure investment; • Identify the probable means of financing subsequent feasibility studies and investment projects, including cities own-source funding, private sector (local and national), and donor development loans; • Write, edit and quality assure all main outputs reports (inception report, mid-term report; final report, PFS technical and financial draft and final study documents) in line with CDIA reporting standards. • Assisted by other team members, make a rapid assessment of capacity development needs of the city government, provide on-the-job training, and particularly prepare technical and project development workshops for city officers on identified issues and capacity gaps.	
2.	Urban Drainage Specialist	• Minimum of a Master's degree in engineering (civil, water resources, hydrology) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 15 years relevant project experience in urban drainage and flood risk management in medium-size and metropolitan cities; ideally, at least 5 years working in Vietnam with government agencies and on donor funded projects. • A minimum of 7 years' experience of project management in senior positions in government or donor funded projects in Asia preferably also in Vietnam. • Be fluent in written and spoken English, with excellent report writing skills.	• undertake a review of current water resources and watershed management policy and planning procedures in the project area, including relevant legislation and regulations; and assess national practices in drainage, sewerage and other sources of pollution to impact bodies of water; • review existing plans and studies, especially in regard to drainage and wastewater, and regulatory framework, and support possible communication with the Environmental Ministry or other government bodies; • review hydrological records and trends, watershed conditions, historic floods; and analyze and estimate rainfall and runoff from natural and urban catchments (return period 10, 25, and 50 years); • assess the overall performance of existing flood protection and drainage facilities and assess factors leading to erosion and failure of existing structures and identify and assess the state of unprotected river banks; • develop a storm-water project base map which identifies the watershed areas and subareas, land use and cover types, soil types, existing drainage patterns, and other topographic features. • prepare a conceptual design of a storm drainage system (minor and major systems) with the development of sketches/drawings identifying the basic components of the intended design. • identify and prioritize interventions for storm-water management measures ; • identify the main impacts of urban development on urban drainage and suggest control measures that could be used to mitigate these impacts • Evaluate the types of solids produced in the urban environment: (a) sediments and vegetation produced by rainfall and flow velocity action along the basin; (b) solid waste: residuals generated by people, and evaluate their impact on the river systems and urban drainage system • Assess the current practices of street cleaning and drainage maintenance. • Identify and select appropriate urban drainage measures according to the existing and future urban setting. Aside from the minor and major drainage measure (pipes and drainage of	5

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			creeks) and measure to increase the flow conveyance, evaluate the possibility of construction of temporary storage to decrease the peak flow and to re-use the stored water. • Recommend urban drainage solutions also according to the SUDS (Sustainable Urban Drainage System) concept such as source control solutions, permeable paving, rainwater harvesting and water butts associated with housing, to site wide water management, • Assess the compatibility of storm-water system with the sewage effluent and the options for the wastewater management sector • Assist the TL and team members to come up with cost estimates of the identified urban drainage measures. • Write, edit and quality assure all main outputs reports (inception report, mid-term report; final report, PFS technical and financial draft and final study documents) in line with CDIA reporting standards. • Highlight significant issues to be considered in detail in subsequent feasibility work and identify possible capacity development gaps.	
3.	Financial Specialist / Economist	• Minimum of a Master's degree in financial management, economics, environmental economics or a related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 15 years of experience of working in CBA assessment and in project financial and economic analysis of public urban infrastructure projects preferably in the water and wastewater management sectors in developing countries. • Have working experience in Asia with government agencies at central and local level and on internationally sponsored projects, preferably including experience gained in Vietnam. • Experience in cost assessment modelling based on MS-excel or equivalent. • Be fluent in written and spoken English with excellent report writing skills. • Have the ability to work productively in a consulting team, with counterparts and wider project stakeholders.	• Support and guide technical specialists on data required and forms needed to enable a preliminary costing of infrastructure investment and operation options and quantitative data required for preliminary economic and financial analysis of the recommended responsive solutions based on the requirements of ADB's policies and guidelines. • in conjunction with the engineers and social development and resettlement specialist, develop estimates of costs and benefits (quantifiable and non-quantifiable) for financial and economic analysis of various wastewater and storm-water management options. • carry out the Institutional and Fiscal Assessment of cities and water utilities as described in the scope work. • review and assess the legal, institutional, and administrative aspects of the Wastewater Management Program for the three cities within the provincial contect, and the previous wastewater management activities in the cities. • identify constraints and propose improvements to the administrative and legal basis of wastewater management in the three cities and assist the team leader to prepare recommendations for strengthening and improving the City governments' Wastewater Management activities including the legal framework required. • examine the capacity of the three cities to implement any proposed administrative and legal changes to wastewater management in and describe the organizational arrangements for project implementation and monitoring; and • the institutional arrangements at the city level for land use management will be evaluated, including the need for a greater monitoring and enforcement capability regarding land use practices. • Review and document the capacity of cities and water utilities to mobilize local funding for the project investment and to operate and maintain it sustainably. This analysis should include preferably an examination of revenues and expenditures over the previous 5 years (see also scope of work);	3

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			• undertake financial and economic analyses of the proposed wastewater and storm-water facilities for the Project in coordination with local consultant counterpart and identify the economic risks associated with the project • assess the financial feasibility and loan payback sustainability of the proposed facilities and measures and assess the financial implications of various options of the project components on the City Governments' budget, and estimate the incremental budgetary provisions required to maintain and operate the proposed wastewater and storm-water assets; • based on the financial and economic analysis, support prioritization of the measures to be pursued in the short-term period and formulate investment and financing plans over 20 years and assess the stability of financial resources to meet operation and maintenance costs; • Propose a financing mix (domestic and international grant and loans) for the proposed investment; • Conduct an economic analysis of the PFS priority measures and components of the investment project, including estimation of the Economic Internal Rate of Return (EIRR) taking into account (i) fiscal correction, (ii) correction for externalities and (iii) conversion from market price to accounting price; • Assist in the development of a Scope of Work for potentially needed follow-on financial and economic studies to confirm the feasibility and viability of the proposed project; • Write and edit and quality assure the financial and economic chapters of the PFS reports in line with CDIA reporting standards.	
Sub Total (International)				**14**
I.	**Key National Experts**			
4.	Deputy Team Leader / Water Resources and Watershed Engineering Specialist	• Minimum of a Master's degree in engineering (civil, water resources, hydrology and watershed engineering) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience • Have demonstrable experience in team leadership with the ability to maintain a productive team working environment and excellent communication with project counterparts and wider stakeholders. • Have a minimum of 10 years relevant project experience water resources management in medium-size and metropolitan cities; ideally with government agencies and on donor funded projects • Have a minimum of 5 years' experience in project management in senior positions in government or donor funded projects. • Be fluent in written and spoken English and Vietnamese with good report writing skills.	• Support the International Team Leader in all items related to project management stated above in the TL tasks, particularly to ensure proper coordination and communication within the team as well as externally. • Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Support and contribute to the review of all documentation (plans, strategies, policies, laws and consulting reports, R&D reports) pertinent to the water resources and watershed management in the project area; • Support and contribute the development of the technical assessment establishing capacity (current and planned), demand (current and projected) and service quality, and identifying issues, constraints, and investment and infrastructure gap; • Support the TL and contribute to the preparation of the Long Term Strategic Plan according to the activities and steps outlined in the Scope of Work and prepare the technical dimensioning and specification of technical options regarding the rehabilitation, upgrading and/or new drainage and storm-water infrastructure • Contribute and support other team members to assess the cost (investment and operation) of the proposed options in the various sub-sectors to recommend the most responsive investment project packages.	7

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			• Support and contribute technically to the stakeholder dialogue with potential beneficiaries to select the most responsive option to be retained for project investment; • Support and contribute to the technical dimensioning/ specification of the retained most responsive options for the drainage and flooding sector and provide technical documentation, drawings at appropriate scale and main specification of infrastructural investment packages and their phasing in line with CDIA quality assurance standard for PFS; • Support and contribute to the identification and recommendation regarding institutional, management and capacity development options for the construction of the project investments and their sustainable operation; • Support the environmental and social assessment from the technical solution perspective; • Support and contribute to the writing and edition of the technical chapter and drawings for the PFS reports regarding Drainage Management and Flooding in line with CDIA reporting standards. • Provide on-the-job training and particularly prepare workshops on technical issues.	
5.	Sanitary Engineering Specialist	• Minimum of a Master's degree in engineering (civil, sanitary, water supply and sanitation) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience • Have demonstrable experience in team leadership with the ability to maintain a productive team working environment and excellent communication with project counterparts and wider stakeholders. • Have a minimum of 10 years relevant project experience wastewater management in medium-size and metropolitan cities; ideally with government agencies and on donor funded projects • Have a minimum of 5 years' experience in project management in senior positions in government or donor funded projects. • Be fluent in written and spoken English and Vietnamese with good report writing skills.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Support and contribute to the review of all documentation (plans, strategies, policies, laws and consulting reports, R&D reports) pertinent to the water and wastewater management in the project area; • Support and contribute the development of the technical assessment establishing capacity (current and planned), demand (current and projected) and service quality, and identifying issues, constraints, and investment and infrastructure gap; • Support the TL and contribute to the preparation of the Long Term Strategic Plan according to the activities and steps outlined in the Scope of Work and prepare the technical dimensioning and specification of technical options regarding (a) the rehabilitation, upgrading and/or new centralized wastewater collection, treatment and disposal system for the densely populated urban areas, (b) decentralized sanitation facilities and advanced onsite sanitation facilities for peripheral settlements and poorer populated areas; • Contribute and support other team members to assess the cost (investment and operation) of the proposed options in the various sub-sectors to recommend the most responsive investment project packages. • Support and contribute technically to the stakeholder dialogue with potential beneficiaries to select the most responsive option to be retained for project investment; • Support and contribute to the technical dimensioning/ specification of the retained most responsive options for the wastewater and sanitation sector and provide technical documentation, drawings at appropriate scale and main specification of infrastructural investment packages and their phasing in line with CDIA quality assurance standard for PFS; • Support and contribute to the identification and recommendation regarding institutional, management and capacity development options for the construction of the project investments and their sustainable operation;	7

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			• Support the environmental and social assessment from the technical solution perspective; • Support and contribute to the writing and edition of the technical chapter and drawings for the PFS reports regarding Wastewater Management and Sanitation in line with CDIA reporting standards. • Provide on-the-job training and particularly prepare workshops on technical issues.	
6.	Urban Drainage Engineer	• Minimum of a Master's degree in engineering (civil, water resources, hydrology) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience • Have a minimum of 10 years relevant project experience in urban drainage management in medium-size and metropolitan cities; ideally with government agencies and on donor funded projects • Have a minimum of 5 years' experience of project management in senior positions in government or donor funded projects. • Be fluent in written and spoken English and with good report writing skills.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • undertake a review of current water resources and watershed management policy and planning procedures in the project area, including relevant legislation and regulations; and assess national practices in drainage, sewerage and other sources of pollution to impact bodies of water; • review existing plans and studies, especially in regard to drainage, and regulatory framework and support possible communication with the Environmental Ministry or other government bodies; • review hydrological records and trends, watershed conditions, historic floods; and analyze and estimate rainfall and runoff from natural and urban catchments (return period 10, 25, and 50 years); • support the TL and the Urban Drainage specialist to identify and select appropriate urban drainage measures according to the existing and future urban setting and prioritize interventions in a phased approach; • identify the main impacts of urban development on urban drainage and suggest control measures that could be used to mitigate these impacts • evaluate the types of solids produced in the urban environment: (a) sediments and vegetation produced by rainfall and flow velocity action along the basin; (b) solid waste: residuals generated by people, and evaluate their impact on the river systems and urban drainage system • assess the current practices of street cleaning and drainage maintenance. • in conjunction with the Urban Drainage specialist, recommend urban drainage solutions also according to the SUDS (Sustainable Urban Drainage System) concept such as source control solutions, permeable paving, rainwater harvesting and water butts associated with housing, to site wide water management, • assess the compatibility of storm-water system with the sewage effluent and the project planned activities for the wastewater management sector • assist the TL and team members to come up with cost estimates of the identified urban drainage measures. Write, edit and quality assure all main outputs reports (inception report, mid-term report; final report, PFS technical and financial draft and final study documents) in line with CDIA reporting standards.	7

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
7.	Financial Specialist and Economist	• Minimum of a Master's degree in financial management, accounting, economics or a related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 10 years' experience of working in Vietnam with government agencies/ministries and on donor funded projects dealing with aspects of infrastructure financing and municipal financing. • Have a minimum of 5 years' experience in conducting financial and economic appraisals on infrastructure projects, including financial/cost sustainability and recovery. • Be fluent in written and spoken English and Vietnamese with good report writing skills. • Have the ability to work productively in a consulting team, with counterparts and wider project stakeholders.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Review and document the capacity of the city to mobilize local funding for the project investment. This analysis should include preferably an examination of revenues and expenditures of the city administration over the previous 5 years; • Support the international economist/financial specialist in guiding the technical specialists on data required and forms needed to enable a preliminary costing of infrastructure investment and operation options and quantitative data required for preliminary economic and financial analysis of the recommended responsive solutions; • Support the international specialist to undertake financial and economic analyses of the proposed wastewater management projects and identify the economic risks associated with the projects; • Support and coordinate with the international expert for the preparation of the short-term and medium-term infrastructure investment plan. • Elaborate on various financing options and sources for funding of the proposed project components, including international best practices, PPP arrangements, and other financing mechanisms, with other team specialists and the key stakeholders • Support the institutional development specialists in financial terms in assessing the institutional situation of the city and propose new institutional implementation mechanisms for flood management services; • Support and contribute to the writing and edition of the financial and economic inputs for inclusion in the PFS as directed by the international infrastructure finance specialist.	5
8	Social Development Specialist	• Minimum of a Master's degree in social/policy development, sociology, social anthropology, environmental management, engineering or related discipline, or a combination of a first degree, postgraduate/professional training and extensive relevant experience. • Has a minimum of 10 years' experience of working in Vietnam with government agencies and on donor funded projects. • Has a minimum of 5 years' experience conducting a) social policy analysis and social assessments (poverty reduction and gender) of urban infrastructure projects; institutional assessment and recommendation for sustainable infrastructure projects. • Documented experience of pro-poor, inclusive development and environmental improvements related to urban infrastructure development is an	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Conduct social and poverty impact and needs assessment to ensure that the prioritization of projects in the PFS sufficiently addresses the needs of disadvantaged groups and that the proposed PFS design and implementation are inclusive of the urban poor and are pro-poor and gender-sensitive in orientation. This assessment needs also be reflected in CDIA's Initial Development Impact Assessment (IDIA) to be submitted with the draft final report. • Assist the Team leader in developing inclusive Indicators for the Design Monitoring Framework (DMF) • provide an overview of urban poverty in the three cities in Wastewater Management in particular. Discuss specific social development issues (incl. gender) that may impact the project. Highlighting existing urban development strategies/plans relevant to urban poverty and the relation between the proposed projects and other ongoing initiatives; • Conduct field surveys to assess social, poverty and gender aspects where required. • Develop ideas of design features (general and for sector) on how to ensure that in particular poor and disadvantaged people including women will benefit from the project on long-term. • Develop indicators for poverty reduction (improved access to basic services) to be included in the Design Monitoring Framework (DMF).	5

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
		advantage. • Fluent in written and spoken English with good report writing skills. • Has the ability to work productively in a consulting team, with counterparts and wider project stakeholders.	• ensure maximization of project impacts on the poor with the application of the CDIA checklist for pro-poor and socially inclusive Urban Infrastructure and Development attached to this TOR; • ensure a participatory design and implementation process in the PFS development ; (including beneficiaries, affected people, NGOs and relevant agencies); • design, commission, and supervise rapid household-level socio-economic survey with the purpose to determine: (i) the demand for wastewater and sanitation improvements; (ii) the willingness and ability of potential project beneficiaries to pay for improved wastewater and sanitation services; and (iii) to use this information to inform the selection and preparation of priority program components. • conduct a preliminary social and poverty impact assessment of the proposed infrastructure investments, designing and implementing field surveys when required. • identify potential adverse social impacts and recommend how these can be mitigated, ensuring that internationally accepted social safeguard criteria are built into PFS project recommendations. • assure that investments and cost analysis consider the inclusion of poor groups and access to services is assured and provide information related to pro-poor and inclusive features, expected impacts and approximate investment (U$) for each project component as indicated in Table 2 of the Pro-Poor Checklist • collaborate closely with city counterparts and project stakeholders in undertaking all tasks in the development of the PFS and ensure that the PFS activities are utilized as a capacity development activity through on-the-job training. •	
9.	Resettlement Specialist	• Minimum of a Master's degree in planning, social policy/development, sociology, social anthropology or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 7 years' experience of working in Vietnam with government agencies and on donor-funded projects, preferably ADB. • Have a minimum of 5 years' experience in conducting resettlement and social policy analysis and social assessments (poverty and gender) of urban infrastructure projects. • He/she should be conversant with laws relating to land acquisition, state procedures in implementation of resettlement packages and ADB procedures. • Be fluent in written and spoken English and Vietnamese with good report writing skills.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Ensure a participatory design and implementation process in the Review and Preliminary Project Design of storm water drainage management. • Provide an overview of resettlement issues, number of households/persons affected by the project, urban poverty, gender and vulnerable groups related to storm water drainage management, in particular by following CDIA's checklist for pro-poor and socially inclusive urban infrastructure. • Conduct social and poverty impacts and needs assessment to ensure that the prioritization of proposed investments sufficiently addresses the needs of disadvantaged groups and that the proposed PFS design and implementation are inclusive of the urban poor and are pro-poor and gender-sensitive in orientation. This assessment needs to be reflected in CDIA's Initial Development Impact Assessment (IDIA) to be submitted with the draft final report. • Conduct field surveys to assess social, gender and poverty aspects, where required. • Develop indicators for poverty reduction (improved access to basic services) to be included in the Design Monitoring Framework (DMF). Identify potential adverse social impacts and recommend how these can be mitigated, ensuring that internationally acceptable social	3

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
		• Have the ability to work productively in a consulting team, with counterparts and wider project stakeholders. •	safeguards criteria are built into PFS project recommendations. • Analyze the socioeconomic data to determine the vulnerabilities of communities through resettlement or rehabilitation impacts with particular attention to the poor and women householders • Undertake a preliminary assessment of social and poverty impacts of the proposed project, and address any issues in accordance with ADB's Involuntary Resettlement Policy (1995). • Ensure maximization of project impacts on the poor with the application of the CDIA. Checklist for Pro-Poor and Socially Inclusive Urban Infrastructure Development attached to this ToR. • Estimate: (i) the number of project beneficiaries by area, and then by occupation and income levels; and (ii) the number of adversely affected people by type of impact; and (iii) prepare relevant sections of reports. • Identify any relevant issues for further analysis related to resettlement of people and indigenous people in any subproject sites where the Project will incur significant land and house acquisition or disruption of livelihood, in accordance with ADB's guidelines. • Organize stakeholder consultations to ensure that relevant social aspects are incorporated into local plans and response mechanisms, in particular, responding to the additional burdens placed on women during floods, Identify potential adverse social impacts and recommend how these can be mitigated, ensuring that internationally acceptable social safeguards criteria are built into PFS project recommendations. • Prepare the preliminary social assessment and safeguards in the PFS. • Assist in the development of a Terms of Reference for potential follow-on feasibility studies iden • Familiarize the Consultant Team with the local conditions by organizing field visits, whenever necessary and appropriate. • Conduct awareness and training workshops on social safeguards system for involved city departments and working groups.	
10.	Environmental and Climate Change Specialist	• Minimum of a Master's degree in environmental management, engineering or relevant discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 10 years' experience of working in Vietnam with government agencies and on donor funded urban development projects that include environmental management and safeguard issues. • Have a minimum of 5 years' experience in conducting environmental assessments of urban infrastructure projects in Vietnam. • Be fluent in written and spoken English with good report writing skills.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • Review environmental regulatory framework – national laws, local by-laws and city ordinances, existing plans and studies. Identify the roles and responsibilities of stakeholders in mitigating potential environmental impacts of the proposed project activities; • carry out an Initial Environmental and Climate Change assessment. Highlight key environmental issues including solid waste management; lack of infrastructure and its environmental and health effects as of now or in the future; identify regulatory framework, institutional capacity, and strategies for working with environmental sustainability. Assess the level of climate change awareness, preparedness; areas for mitigation and potential adaptation investment areas. • carry out the Urban Climate Change Resilience assessment as outlined in the scope of work. In particular, support the identification and incorporation of climate change adaptation features into the investment project design and suggest concrete options to ensure positive	6

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
		• Have the ability to work productively in a consulting team, with counterparts and wider project stakeholders	environmental impacts, i.e. propose and prioritize adaptation options to mitigate climate risks. • assess the likely impacts of the proposed project components and measures in accordance with ADB's Environmental Assessment Guidelines (2003), and Vietnam's national environmental regulations; and recommend how these can be mitigated. • Support the preparation of a financing plan for the investments and explore what potential exists to develop the investments through PPPs. • Identify priority investments that are technically, operationally and financially sustainable for the improved performance of the wastewater and drainage system. • if required, prepare a draft initial environmental examination (IEE) for the structural measures under the proposed project in accordance with the Government's EIA and ADB's Environmental Assessment Guidelines • recommend draft environmental management plans for the implementation of structural flood management measures components of the proposed project, including an assessment of the institutional capacity to monitor compliance. • facilitate public awareness consultations in the project area on the findings of the initial environmental examination; • provide on-the-job training to designated counterpart staff of cities and cooperate with the TL in the Capacity Development activities to identify possible capacity gaps. • support the international experts and contribute to the technical dimensioning and specification of technical options regarding (a) the improvement of the existing urban drainage system, (b) wastewater facilities.	
11.	Institutional and Capacity Development Expert	• Minimum of a Master's degree in in public administration (particularly with respect to urban infrastructure sector) or related discipline, or a combination of a first degree, post-graduate/professional training and extensive relevant experience. • Have a minimum of 10 years of relevant work experience on assessing institutional and organizational capacity appraisal of relevant agencies and conducting studies for administrative reform in service sector reform in Asian cities .A minimum of 5 years of relevant work experience in Vietnam. • Preference given to experience of institutional arrangements for water supply, storm water drainage, flood risk management and wastewater management agencies. • Be fluent in written and spoken English and Vietnamese, with excellent report writing skills.	• Facilitate and ensure appropriate participation of cities counterparts and project stakeholders in undertaking all tasks in the development of the PFS; • assess the planning, management and coordination capabilities of public agencies concerned and make specific recommendations for support in this respect. • Support the TL/DTL and other specialists on during the status quo review and conduct an institutional capacity needs assessment of Can Tho, Vinh and Hai Duong City to plan, budget, implement and maintain infrastructure investments in the PFS related fields. • Describe national and provincial regulations and legal frameworks that govern the current service delivery of drainage and wastewater collection/treatment systems in the city, including service levels, coverage, cost recovery and subsidies; • In depth details of the institutional situation in the CDIA cities, indicating the roles and responsibilities of the concerned institutions. Matters to be addressed include review of organisation, lines of reporting, to whom concerned agencies are responsible, management and staffing of organisation responsible for sewerage and drainage. • Assess and describe city stakeholders; assess the current capacity of sewerage and drainage service providers; review institutional and organizational options for drainage/sewerage systems; review capacity building needs for selected service providers and stake holders. • Consult with relevant sub-national government agencies including CPC, DOC, DPI, DONRE,	4

No.	Position	Qualification and Experience	General Scope of Work & Tasks	Person–months
			URENCO and active private businesses. Ascertain their plans and proposals for City; review and consider their views and needs during the analysis, assessment and formulation of recommendations; • Assess staffing, organization & competence of organizations responsible for drainage, wastewater disposal and solid waste management and describe stakeholders, including local authorities' attitudes towards urban environmental issues; • Assess the current institutional and organizational situation of sanitation and its interrelation with the solid waste management sector in the city; • Propose institutional and organizational options for implementation and post-implementation of drainage/sewerage systems and relevant linkages with solid waste management in cities, including the public-private-partnership model. • Assess the institutional capacity of Can Tho, Vinh and Hai Duong City to implement and maintain the identified investment project and describe the organizational arrangements for project implementation and monitoring. • Identify constraints to implementing the project and recommend relevant training programs and institutional strengthening measures that can be implemented to achieve efficient and effective project implementation. • Support the Consultant Team in designing the continuous interaction with relevant stakeholders and involvement of city officials during the PFS implementation • Prepare relevant sections of reports (inception report, mid-term report; final report, PFS technical and financial draft and final study documents) in line with CDIA reporting standards.	
	Sub Total – Key Staff – National			**44**
	Total Key Staff (National + International)			**58**

Annex A

A1 Background Wastewater and Drainage in Vietnam

1. Only 10% of wastewater from urban households in Viet Nam is disposed of safely. The rest of the sewage enters the environment untreated, threatens the health of a fast growing urban population, and pollutes the water used for food production. It has been estimated that inadequate sanitation costs the Viet Nam economy $800 million every year. Even more is lost because river water and groundwater has become unsuitable for essential uses through pollution by untreated household and industrial wastewater

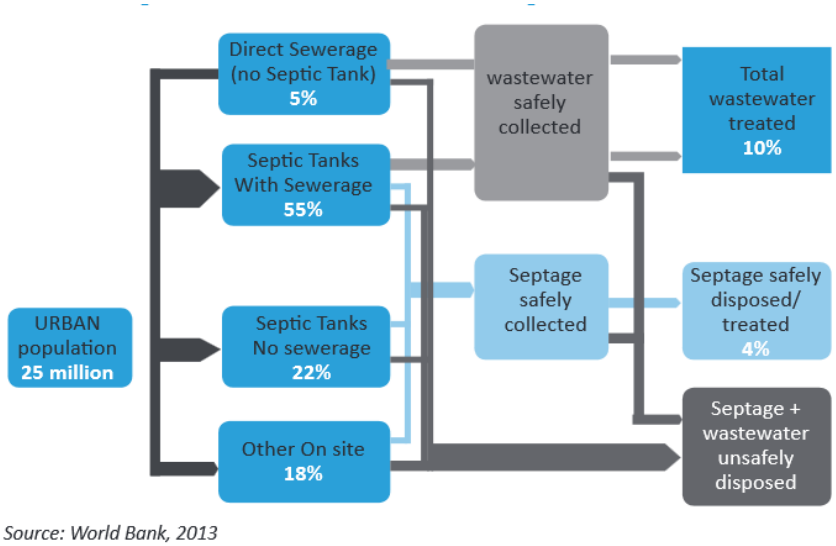
2. Wastewater and drainage project proposals are rarely prepared with a full knowledge of the technical and institutional options available. It is essential to fully consider all feasible plausible sanitation and drainage management options that may suit the particular city before the project is tuned over to a potential financier. In addition, there is a tendency by the responsible government bodies to favor expensive, technically and organizationally difficult to operate conventional sewerage systems that rarely benefit the poor and the peri-urban areas. Poorly planned and operated conventional sewerage damages the environment and miss the opportunity to recycle valuable nutrients and organics.

A1.1 Wastewater – National Policy Framework

3. Since 1998, the Government of Vietnam has initiated policies and provided investment to improve urban sanitation resulting in significant progress in development of the wastewater sector:

- Although 60 percent of households dispose of wastewater to a public system, much of this is directed informally to the drainage system and only 10 percent is treated.
- While 90 percent of the remaining households dispose wastewater to septic tanks, only 4 percent of septage is treated. Fecal sludge management is generally poor in most cities.

4. The current sector performance is illustrated in Figure 1 below



Source: World Bank, 2013

5. Urbanization is moving from 35% last year to 47% by 2020 which is basically 31 million urban people to date and there will be about 43 million in 2020. The current investment is 150 million dollar per year for wastewater. A joint sanitation review by ADB and

World Bank (TBC from H. Jenny) shows that by 2025 due to lack of investments, Vietnam is expected to use 1.3% of their GDP per year because of lack of sanitation.

6. The Legal framework for Vietnam is considered appropriate. Vietnam has passed a decree last August 6, 2014 on "The Drainage and Treatment of Wastewater"2 which regulates the drainage and treatment of wastewater in the urban areas, industrial zones, economic zones, etc. within Vietnam's territory. The decree establishes the fact that all the operating expenses will be recovered on cost recovery and the capital expenditure will be subsidized, connection cost will be borne by the household up to the main pipe and they are mandatory in this particular legislation. There is also a service contract for operation and maintenance. In addition there is a Decree on environmental protection which states that those not connected to the system still have to pay a specified fee. Vietnam also has a wastewater orientation plan that specifies that there should be 60% coverage of the wastewater system by 2050. The construction code provides standards for the use of septic tanks and effluent standard category A&B (basically category A is BOD less than 20 for environmentally sensitive area and category B is BOD less than 50).

7. For water supply, connection is 98% and tariff collection is above 99% and water meters are basically everywhere.

8. All water and wastewater company in Vietnam are corporatized (they call it equitized in Vietnam but still the same as corporatized). Each of them can generate financial statements which are audited. There are 79 water supply companies and 1/3rd of them also takes care of wastewater.

A2 Project-related Background on the CDIA Cities

A2.1 Can Tho

9. The city of Can Tho is the fourth largest city in Vietnam and the largest city in the Mekong Delta. The city's current, drainage and wastewater management infrastructure are under extreme pressure due to rapid urbanization and climate change. Twice a month from September to November, many streets are flooded up to 30 cm even when there is no rain. Domestic wastewater of urban residents has not been treated and discharged directly into rivers and canals in the city. The problem of flooding and environmental degradation due to lack of infrastructure to quickly drain the city during periods of inundation and collect and treat wastewater has significantly negative impacts to the daily life of urban residents as well as the city's economic and social development.

10. Can Tho city's Master Plan on Drainage, Flood Protection and Wastewater Treatment (management) has identified the need for interventions to address, wastewater and drainage issues in the city through phased implementation of hard infrastructure up to the year 2030.

A2.2 Vinh

11. The city of Vinh has existing wastewater treatment facilities, these however have limited coverage within the city and thus, majority (around 70%) of wastewater is disposed of in the environment and ultimately into bodies of water which leads to the contamination of surface and groundwater that heightens the incidence of waterborne diseases. Also, the city gets flooded up to 50- 70 cm during rainy seasons; drainage is generally inadequate to facilitate the draining of flood water and disrupts economic activities and growth in the city.

[2] Government Decree No. 80/2014/ND-CP on the "Drainage and Treatment of Wastewater

A2.3 Hai Duong

12. In the city of Hai Duong wastewater management services are only provided for 1/6th of the city inhabitants. This raises sanitation risks particularly ground and surface water contamination and the proliferation of water borne diseases in unserved areas. The western part of the city is the most susceptible to flooding mainly due to water from the Sat River. Hai Duong's drainage facilities are inadequate to evacuate water during rainy seasons.

13. The Development Plan for Drainage and Sewerage of Hai Duong which was approved by the Provincial People's Committee has identified the need for interventions to address the wastewater and drainage management