

# Project Administration Manual

Project Number: 49107-012  
June 2022

India: Integrated Urban Flood Management for the  
Chennai-Kosasthalaiyar Basin Project – Additional  
Financing

## ABBREVIATIONS

ADB	–	Asian Development Bank
CAG	–	Comptroller & Auditor General of India
DDR	–	due diligence report
DMF	–	design and monitoring framework
EMP	–	environmental management plan
EWCD	–	Elderly, women, children, and persons with disabilities
FMA	–	financial management assessment
GCC	–	Greater Chennai Corporation
GEF	–	Global Environment Facility
GESI AP	–	gender equality and social inclusion action plan
GOTN	–	Government of Tamil Nadu
GRC	–	grievance redress committee
GRM	–	grievance redress mechanism
IEE	–	initial environmental examination
IPP	–	indigenous people plan
MOF	–	Ministry of Finance
NCB	–	national competitive bidding
O&M	–	operation and maintenance
OCB	–	open competitive bidding
PAM	–	project administration manual
PFS	–	project financial statements
PIU	–	project implementation unit
PMU	–	project management unit
PSC	–	project support consultant
PWD	–	Public Works Department
SEMP	–	site-specific environmental management plan
SOE	–	statement of expenditure
SPS	–	Safeguard Policy Statement 2009
TOR	–	terms of reference
TRTA	–	transaction technical assistance

## CONTENTS

	<b>Page</b>
I. PROJECT DESCRIPTION	2
II. IMPLEMENTATION PLANS	5
A. Project Readiness Activities	5
B. Overall Project Implementation Plan	6
III. PROJECT MANAGEMENT ARRANGEMENTS	8
A. Project Implementation Organizations: Roles and Responsibilities	8
B. Key Persons Involved in Implementation	11
C. Project Organization Structure	12
IV. COSTS AND FINANCING	14
A. Cost Estimates Preparation and Revisions	15
B. Key Assumptions	15
C. Detailed Cost Estimates by Expenditure Category	17
D. Allocation and Withdrawal of Loan and Grant Proceeds	19
E. Detailed Cost Estimates by Financier	20
F. Detailed Cost Estimates by Outputs and/or Components	22
G. Detailed Cost Estimates by Year	24
H. Contract and Disbursement S-Curve	26
I. Fund Flow Diagram	28
V. FINANCIAL MANAGEMENT	30
A. Financial Management Assessment	30
B. Disbursement	35
C. Financial management arrangements	37
VI. PROCUREMENT AND CONSULTING SERVICES	41
A. Advance Contracting and Retroactive Financing	41
B. Procurement of Goods, Works, and Consulting Services	42
C. Procurement Plan	43
D. Consultant's Terms of Reference	43
VII. SAFEGUARDS	43
A. Environmental Safeguards	43
B. Social Safeguards	47
C. Common Grievance Redress Mechanism	52
VIII. GENDER AND SOCIAL DIMENSIONS	54
IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION	58
A. Project Design and Monitoring Framework	58
B. Monitoring	62
C. Evaluation	63
D. Reporting	64
E. Stakeholder Communication Strategy	64

X.	ANTICORRUPTION POLICY	65
XI.	ACCOUNTABILITY MECHANISM	66
XII.	RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL	67

## LIST OF APPENDIXES

1.	Procurement Plan
2.	Outline Terms of Reference for Project Support Consultants
3.	Outline Terms of Reference for Institutional Strengthening and Reform Consultants
4.	Design Summary of the Components Supported by the Additional Grant Cofinancing from Global Environment Facility (GEF)
5.	Outline Terms of Reference for Individual Consultants for Supporting GEF Funded Components
6.	Project Description Summary of GEF's Project and the Deliverables for Chennai portion administered by ADB
7.	Contribution to Strategy 2030 Operational Priorities
8.	Sample Outline of Semiannual Environmental Monitoring Report (Template)
9.	Sample Outline of Social Safeguards Monitoring Report During Project Implementation Period
10.	Outline Quarterly Progress Report
11.	Environment Safeguards Quarterly Progress Report Checklist
12.	Social Safeguards Quarterly Progress Report Checklist
13.	Conversion Table
14.	Financial Management Report to be included in the Quarterly Progress Report
15.	Terms of Reference for Audit of ADB Assisted Projects by Comptroller and Auditor General of India
16.	Innovative Flood Management Measures for Increasing Inclusive Flood Preparedness and Sustainable Resilience Improvement
17.	Performance Based Incentive for Strengthening Operational Capacity
18.	Sustainable Operation and Maintenance Improvement Plan for Storm Water Drainage in the Chennai-Kosasthalaiyar Basin
19.	Roadmap for Revenue Enhancement Measures for Greater Chennai Corporation
20.	Gender Equality and Social Exclusion (GESI) Action Plan Monitoring Format
21.	Community Awareness and Participation Plan (CAPP)

### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Government of Tamil Nadu (GOTN) and Greater Chennai Corporation (GCC) are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by GOTN and GCC of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the Loan and Project agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and Loan and Project agreement, the provisions of the Loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

## I. PROJECT DESCRIPTION

1. The project will strengthen climate and disaster resilience in the Chennai-Kosasthalaiyar River basin. It will reduce the exposure of 1.9 million people to seasonal flooding by (i) improving climate-resilient urban flood protection infrastructure; (ii) enhancing the urban flood preparedness of the Greater Chennai Corporation (GCC), the civic body that governs the city of Chennai, and project communities; and (iii) establishing measures for sustaining the operation and maintenance of the stormwater drainage system in the GCC.

2. The Asian Development Bank (ADB) approved on 23 September 2021 a loan of \$251 million to the Government of India for the Integrated Urban Flood Management for the Chennai–Kosasthalaiyar Project, from ADB’s ordinary capital resources. Loan and project agreements were signed on 26 October 2021. The loan became effective on 7 January 2022 and will be closed on 31 December 2027. The project is aligned with the following impact: Chennai City made a safe place to live in, with reduced vulnerability to disaster. The project will have the following outcome: climate and disaster resilience in the Chennai-Kosasthalaiyar River basin strengthened.

3. Additional grant was approved by the Global Environment Facility (GEF) on 18 December 2021. It will help the GCC enhance flood retention in the Kadapakkam Lake through ecosystem restoration. It will demonstrate nature-based solutions for climate change adaptation through rejuvenation of the water body, promoting integrated flood risk management to strengthen disaster resilience, mitigate environmental degradation, and enhance biodiversity. Additional financing will strengthen capacity in the GCC and other stakeholders and increase awareness of the advantages of nature-based solutions for urban flood risk management. It will promote knowledge dissemination and replication through national and global platforms created in partnership with the National Institute of Urban Affairs of India and UrbanShift.

4. **Output 1: Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar River basin.** This will include structural measures such as (i) constructing 588 km of new storm water drains; (ii) rehabilitating or replacing 175 km of storm water drains; (iii) improving 11 km stretches in the Ambattur, Ariyallur, Kadappakkam, and Korattur channels to enhance water-carrying capacity; (iv) constructing one new stormwater pumping station and upgrading one pumping station; (v) constructing 23,000 catchpits at regular intervals in roadside drains to recharge the groundwater aquifer; and (vi) rehabilitating four disaster relief camps and ensuring these are gender-responsive and socially inclusive. The flood modeling adopted in the designs ensures that the proposed storm water drains can safely convey stormwater flow from 1:2-year return period rainfall with a provision to cope with 79 mm per hour and a sea level rise of 21.7 centimeters under the RCP 8.5 scenario to 2050. The hydraulic design of four surplus channels has the capacity to cope with 1:5-year floods, providing safe floodwater discharge during the worst-case scenario combining increased precipitation, a projected sea level rise, and a storm surge caused by a cyclone.

5. The additional financing will enhance flood retention in the 55-hectare Kadapakkam Lake under output 1, thereby contributing to climate adaptation. Desilting will restore water holding capacity in the lake and double its volume from 1.1 million to 2.2 million cubic meters. The project proposes a bund 20 meters wide with a cycle track on the upper tier and a walking path on the lower tier. A bird island is proposed with a 2-hectare forest of various native trees planted using

the Miyawaki method.<sup>1</sup> Recreation will be enhanced by a children's play area, an open-air theater, a library, and hobby fishing and boating facilities, all with features friendly to the elderly, women, children, and persons with disabilities (EWCD). The proposed works will maximize the use of environmentally friendly materials and approaches, reusing dredged soil with geotextile underlay to shore up the bund, paving with fly ash brick, and fencing with shrubbery and trees.

**6. Output 2: Urban flood preparedness of the Greater Chennai Corporation and project communities enhanced.** This will include the following nonstructural measures: (i) GCC endorsement of guidelines on integrating flood hazard zoning with spatial plans and land use, building, and development regulations; (ii) the establishment of the baseline flood resilience index to identify the flood vulnerability, target priority interventions, and establish a framework for continuous improvement throughout Chennai city; (iii) the operationalization of a flood citizen observatory with a software platform to obtain real-time information in flood areas, water levels, and damage; (iv) GCC endorsement of a manual for green infrastructure design including rainwater harvesting; (v) knowledge enhancement in the community, including for women, of the benefits of green infrastructure including rainwater harvesting; (vi) raised beneficiary awareness of flood risks and impacts and the links that connect flooding, solid waste management, house sewerage connections, and the protection of waterbodies, including activities targeting women; and (vii) improved GCC staff capacity to plan and design storm water drainage systems in coordination with the management of solid waste and flood risk. Lessons and good practices from the project will be package into knowledge products and shared with key government officials and sector experts to further promote integrated flood management.

7. Under output 2, the additional financing will (i) enhance capacity in the GCC and other government entities and awareness in local communities of urban water body rejuvenation using nature-based solutions, (ii) promote the replication of nature-based solutions by other cities in Tamil Nadu through the development of an investment readiness road map, (iii) disseminate to other Indian cities knowledge and practices from this demonstration investment as a model for nature-based urban flood risk management, and (iv) strengthen understanding in the GCC and other cities in Tamil Nadu of integrated sustainable urban development through participation in national and global dialogues organized by UrbanShift.

**8. Output 3: Measures for sustaining operation and maintenance of stormwater drainage system established in the Greater Chennai Corporation.** This will include: (i) performance based incentives (PBIs) for zonal offices linked to operational efficiency and the sustainability of storm water drainage systems, (ii) a plan formulated to improve the sustainable and inclusive operation and maintenance (O&M) of storm water drainage systems, (iii) a road map for enhancing municipal resource mobilization by the GCC, (iv) improved knowledge of GCC staff on sustainable O&M of drainage systems, and management of solid waste and flood risk, and (v) improved knowledge and skills of de-silting and conservancy workers on cleaning and maintaining storm water drainage systems. The PBIs will be awarded based on a reporting system and database of key performance indicators for all zonal offices that will be established by 2023, with a focus on improving GCC management of drainage systems with timely maintenance services. The incentive payments will be used for additional activities that support the project's objective. The Sustainable Operation and Maintenance Improvement Plan will enable the GCC to ensure adequate O&M of the created assets, based on the newly established asset management system and the experiences of the PBI program. The Road Map for Enhanced

---

<sup>1</sup> The Miyawaki method places various native trees, plants, and shrubs close to one another so that they grow upward toward the sun. This speeds growth by a factor of 10 and makes plantation 30 times denser, requiring no maintenance for 3 years.

Municipal Resource Mobilization will: (i) provide a strategic implementation plan to improve revenue management in terms of revenue coverage, valuation, liability, collection, and taxpayer services; (ii) strengthen information interlinkage with other utilities; and (iii) promote digital transformation with enhanced data analytics. With robust economic growth and rising populations, the GCC is poised to increase its own municipal revenues. The road map will help it create an enabling framework for efficient, equitable, and accountable revenue management while phasing in improvements that are socially acceptable and operationally efficient.

9. The project design considered bringing in innovative approaches ensuring inclusiveness, resilience and sustainability. These include: (i) innovative flood management measures for increasing inclusive flood preparedness and sustainable resilience improvement; (ii) performance based incentive for strengthening operational capacity; (iii) sustainable operation and maintenance improvement plan for stormwater drainage in the Chennai-Kosasthalaiyar basin; and (iv) roadmap for revenue enhancement measures for GCC. Further details are available in Appendixes 16 to 19.

10. The design summary of the components and outline terms of reference for consultants supported by the additional grant cofinancing from GEF are in Appendixes 4 and 5 respectively. The project description summary of GEF's program including the deliverables for Chennai portion administered by the ADB is in Appendix 6.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table 1: Project Readiness Activities for the ADB Loan**

Indicative Activities	Month-Year													Responsible Agency/ Government	
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22		
Advance contracting actions <sup>a</sup>															GCC
Government budget inclusion <sup>b</sup>															GOTN, MAWS
Retroactive financing actions															GOTN, MAWS, GCC
ADB Board approval															ADB
Loan signing															ADB, MOF, GOTN
Government legal opinion provided															MOF
Loan effectiveness															MOF and ADB

ADB = Asian Development Bank, GCC = Greater Chennai Corporation, GOTN = Government of Tamil Nadu, MAWS = Municipal Supply and Water Supply Department, Government of Tamil Nadu, MOF = Ministry of Finance

<sup>a</sup> Advance contracting actions initiated from Q2 2020.

<sup>b</sup> Government budget inclusion for 1st year implementation

Source: Asian Development Bank.

**Table 2: Project Readiness Activities for the GEF grant**

Indicative Activities	Month-Year										Responsible Agency/ Government
	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	
GEF CEO approval											GEF
Preparation of bidding documents <sup>a</sup>											GCC
Government budget inclusion <sup>a</sup>											GOTN, MAWS
ADB Management approval											ADB
Grant signing											ADB, MOF, GOTN
Government legal opinion provided											MOF
Grant effectiveness											MOF and ADB

ADB = Asian Development Bank, CEO = Chief Executive Officer, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, GOTN = Government of Tamil Nadu, MAWS = Municipal Supply and Water Supply Department, Government of Tamil Nadu, MOF = Ministry of Finance

<sup>a</sup> Government budget inclusion for 1st year implementation

Source: Asian Development Bank.

## B. Overall Project Implementation Plan

11. The project will be implemented from October 2021 (loan signing) to June 2027. The overall project implementation schedule in Table 3 shows key activities on a quarterly basis. The implementation plan will be updated annually and submitted to ADB with contract and disbursement projections for the following year.

Table 3: Overall Project Implementation Plan

Activities	2021			2022			2023			2024			2025			2026			2027					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>A. DMF</b>																								
<b>Output 1. Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar River Basin</b>																								
1.1 Award all works contracts																								
1.2 Complete all civil works <u>funded by the loan</u>																								
1.3 Complete augmentation of capacity of Kadapakkam lake <u>funded by the GEF grant</u>																								
<b>Output 2. Urban flood preparedness of the GCC and project communities enhanced</b>																								
2.1 Draft guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations																								
2.2 Develop FRI for four basins and Chennai city																								
2.3 Draft and adopt FRIF for four basins and Chennai city																								
2.4 Draft green infrastructure design manual																								
2.5 Draft investment readiness road map to replicate nature-based solutions of Kadapakkam lake																								
2.6 Draft concept paper and detailed feasibility report for FCO																								
2.7 Prepare and adopt FCO																								
2.8 Conduct knowledge building workshops on green infrastructure, including rainwater harvesting																								
2.9 Conduct six awareness workshops on flood risks and impacts and links between flooding, SWM, sewerage HSCs and the protection of waterbodies.																								
2.10 Conduct knowledge building workshops on the planning and design of urban drainage systems.																								
2.11 Prepare knowledge product on the good practices and lessons of the project, and conduct a dissemination workshop																								
2.12 Conduct Knowledge dissemination workshops on nature-based urban flood risk management																								
2.13 Participate in Global and National dialogues organized by UrbanShift																								
<b>Output 3. Measures for sustaining operation and maintenance of storm water drainage systems established in the GCC</b>																								
3.1 Prepare and adopt baseline KPIs																								
3.2 Prepare an inclusive Sustainable Operation and Maintenance Improvement Plan																								
3.3 Draft road map for municipal resource mobilisation																								
3.4 Conduct knowledge-building workshops on sustainable operation and management of urban drainage systems																								
3.5 Conduct training on cleaning and maintaining storm water drainage systems for drain desilting and conservancy workers																								
<b>B. Management Activities</b>																								
Mobilize project management and supervision consultant																								
Mobilize institutional strengthening and reforms consultant																								
Mobilize individual consultants supporting GEF-funded components																								
Implement GESI AP																								

DMF = design and monitoring framework, FCO = flood citizen observatory, FRI = flood resilience index, FRIF = flood resilience index framework, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, GESI AP = gender equality and social inclusion action plan, HSC = house service connections, KPIs = key performance indicators, SWM = solid waste management

Source: Asian Development Bank.

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations: Roles and Responsibilities

**Table 4: Project Implementation Roles and Responsibilities**

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
<p><b>State Level Steering Committee</b></p> <p>Chair: Chief secretary</p> <p>Members: Additional chief secretary - MAWS Department; additional chief secretary - Finance Department; principal secretary – PWD; principal secretary-Highways and Minor Ports Department; commissioner, GCC</p>	<ul style="list-style-type: none"> <li>• Provide strategic guidance, high level trouble shooting and oversee the implementation of the project</li> <li>• Facilitate coordination among related departments/agencies</li> <li>• Issue necessary direction that the project is implemented within schedule avoiding bottlenecks</li> <li>• Oversee implementation of components by PWD are aligned and is as per agreed common design</li> <li>• Review and provide policy direction on implementation of the institutional reform agenda</li> <li>• Delegate powers, other than those of making rules, to the project director or other authorities</li> <li>• Ensure timely release of funds to the project.</li> </ul>
<p><b>Executing Agency:</b> Municipal Administration and Water Supply Department, Government of Tamil Nadu.</p> <p>The Executing Agency function shall be carried out by the Executing Department having the following structure: Chairman: Addl. chief secretary - MAWS Department Members: Commissioner, GCC, deputy commissioner (Works) and chief Engineer, GCC</p>	<ul style="list-style-type: none"> <li>• Negotiate, sign and execute the project</li> <li>• Coordinate with Government of India and ADB on major policy level arrangements</li> <li>• Periodically review the project performance and resolve issues</li> <li>• Establish and operationalize PMU</li> <li>• Functions with full power of the Government to take decisions regarding the project</li> <li>• Facilitate obtaining administrative sanction from the government for the overall project and for all the subprojects with PMU and PIU staffing</li> <li>• Ensure timely counterpart funding</li> <li>• Monitor implementation of loan covenant agreed with ADB and issue necessary direction</li> <li>• Overseeing implementation of sustainable O&amp;M Plan</li> <li>• Allocate and release government counterpart funds on time</li> </ul>
<p><b>Implementing Agency</b> Greater Chennai Corporation acting through the PMU.</p> <p><b>PMU</b></p> <ul style="list-style-type: none"> <li>• Project Director: Commissioner, GCC</li> <li>• Deputy Project Director: Deputy Commissioner (Works)</li> <li>• Deputy Project Director (Technical): Chief Engineer (General)</li> <li>• Financial Advisor/CAO</li> </ul>	<ul style="list-style-type: none"> <li>• Approve annual programs and budgets</li> <li>• Coordinate between Government of Tamil Nadu, MAWS Department, and ADB</li> <li>• Procurement oversight for contracts</li> <li>• Ensure timely decisions for efficient procurement and contract management</li> <li>• Monitor and review project performance &amp; progress</li> <li>• Report to ADB</li> <li>• Approve all key process and procedures to be followed</li> <li>• Approve constitution of various committees for evaluation of Bids and approval of contract award</li> <li>• Approve contract award</li> <li>• Make payments for activities performed under the scope of the project based on PIU recommendation</li> <li>• Guide support and monitor PIU in implementing subprojects</li> <li>• Approve variation order in case the budgeted amount exceeds</li> <li>• Approve time extension</li> <li>• Establish project account</li> </ul>

	<ul style="list-style-type: none"> <li>• Ensure auditing of project account&amp; maintenance of all accounts</li> <li>• Provide support to ADB missions</li> <li>• Monitor and ensure the compliance of covenants</li> <li>• Ensure the gender equality and social inclusion action plan is implemented and reported in its terms</li> <li>• Oversee PIU's responsibility to implement safeguards; ensure Resettlement Plans &amp; EMP are implemented as agreed</li> <li>• Ensure grievance redress mechanisms are established and functioning</li> <li>• Recruit PSC and ISRC</li> <li>• Ensure staff turnover of project implementation unit is minimized</li> </ul>
<p><b>PIU</b> Set up within GCC SWD Department. Supported by PSC, ISRC, and individual consultants for GEF</p> <ul style="list-style-type: none"> <li>• Project Manager - I [Chief Engineer (SWD)]</li> <li>• Project Manager – II [Superintending Engineer (SWD)]</li> <li>• Deputy Project Managers: 4 Nos [Executive Engineer (North), Executive Engineer (South), Executive Engineer (Central), Executive Engineer (Drawings). One will act as nodal officer for safeguards. Another one will act as nodal officer for GEF components.</li> <li>• Procurement Specialist [Executive Engineer]</li> <li>• Assistant Executive Engineers – 14 Nos.</li> <li>• Accountants Officer</li> <li>• Administrative Officer</li> <li>• Section Managers – 3 Nos.</li> <li>• Assistants- 3 Nos</li> <li>• Reform/ Capacity Building Specialist – Contract Staff</li> <li>• Social Officer – Contract Staff</li> <li>• Environmental Officer – Contract Staff</li> </ul>	<p><i>General Project Implementation and Management</i></p> <ul style="list-style-type: none"> <li>• Responsible for overall project implementation, and monitoring</li> <li>• Coordinate closely with PMU on project implementation</li> <li>• Manage day-to-day implementation of the subprojects</li> <li>• Establish, maintain, and update the project performance monitoring system</li> <li>• Communicate with ADB, maintain project documents, and submit timely reports to ADB in agreed format</li> <li>• Prepare project completion report</li> </ul> <p><i>Procurement and Recruitment of Works Goods &amp; Consultancy Contracts</i></p> <ul style="list-style-type: none"> <li>• Prepare bidding documents and finalize after addressing comments by ADB</li> <li>• Advertise all packages for procurement</li> <li>• Receive, open and evaluate bids</li> <li>• Submit bid evaluation reports to ADB</li> <li>• Prepare updated procurement plans and submit to ADB for review and approval</li> <li>• Submit annual contract award and disbursement projections.</li> </ul> <p><i>Project Accounting</i></p> <ul style="list-style-type: none"> <li>• Maintain project accounts and project financial records</li> <li>• Facilitate audits</li> <li>• Prepare project accounts</li> <li>• Prepare and submit withdrawal applications</li> <li>• Submit to ADB all audited project financial statements and financial statements pertaining to the project</li> </ul> <p><i>Technical Oversight and Contract Management Support</i></p> <ul style="list-style-type: none"> <li>• Provide technical support and overall guidance</li> <li>• Conduct reviews, and approve detailed engineering designs and estimates</li> <li>• Carry out periodic quality audit of works</li> </ul> <p><i>Contract Management and Administration</i></p> <ul style="list-style-type: none"> <li>• Responsible for Contract management and administration</li> <li>• Monitor and support contract execution</li> <li>• Makes timely decisions on all matters relating to contract execution.</li> <li>• Make timely payments to contractors and consultants</li> </ul> <p><i>Construction Supervision</i></p> <ul style="list-style-type: none"> <li>• Supervision and Monitoring of construction work</li> <li>• Record the measurement of executed works jointly by PSC as appropriate and certify the contractor's bill and recommend for</li> </ul>

	<p>making payments</p> <ul style="list-style-type: none"> <li>• Make interim and final certification of the bills for payment</li> <li>• Inspect the works at appropriate intervals</li> <li>• Inspect works during defect liability period and issue commissioning and completion certificates.</li> <li>• Take full responsibility for operation and maintenance of project facilities.</li> </ul> <p><i>PBI and other Finance Plus elements</i></p> <ul style="list-style-type: none"> <li>• Approve annual performance evaluations under PBI and authorize incentive payments</li> <li>• Administer annual calendar of data collection, verification, evaluation and incentive payments</li> <li>• Administer and revise PBI component as necessary</li> <li>• Prepare and approve Sustainable Operation and Maintenance Improvement Plan, Road Map for Resource Mobilization.</li> <li>• Establish Flood Citizen Observatory, Flood Resilience Index and Framework for Improving Flood Resilience Index</li> </ul> <p><i>GEF Grant</i></p> <ul style="list-style-type: none"> <li>• Contract management and construction supervision</li> <li>• Report and co-ordination of the implementation</li> <li>• Oversee knowledge sharing and capacity building works</li> <li>• Act as city level nodal person, co-ordinate and oversee activities related to Urban Shift</li> <li>• Co-ordinate activities for the secondary town</li> <li>• Arrange and participate in trainings and workshops</li> <li>• Ensure that GEF output requirements are fully met</li> </ul> <p><i>Safeguards Compliance</i></p> <ul style="list-style-type: none"> <li>• Implement and monitor resettlement plans, gender equality and social inclusion action plan and environment management &amp; environment monitoring plans for the subprojects and prepare consolidated reports on these</li> <li>• Overall responsibility for implementing safeguards by monitoring and ensuring compliance with ADB's Safeguards Policy and government requirements</li> <li>• Obtain the right-of-way clearances</li> <li>• Ensure integration of environmental and social safeguards, including land acquisition and gender aspects, as required in all documents, particularly in tender documents</li> <li>• Address grievances related to the project.</li> </ul> <p><i>Reporting/ Meetings</i></p> <ul style="list-style-type: none"> <li>• Conduct review meeting with consultants and contractors at an agreed frequency.</li> <li>• Prepare quarterly progress report describing the physical and financial progress and submit to ADB</li> <li>• Prepare monthly progress reports and submits to PMU including Safeguard Compliances</li> <li>• Record Health and Safety issues, resolve and report to PMU&amp; ADB</li> <li>• Prepare and submit to ADB semiannual environmental and social safeguards monitoring reports during construction phase and until preparation of project completion report.</li> <li>• Prepare and submit progress report of gender equality and social inclusion action plan activities to the PMU &amp; ADB</li> </ul>
ADB	<ul style="list-style-type: none"> <li>• Monitor and review overall implementation in consultation with</li> </ul>

	<p>the PMU/PIU: project implementation schedule, GESI action plan, environment management plan, safeguard compliance etc.; timeliness of budgetary allocations and counterpart funding; project expenditures progress with procurement and disbursement and statement of expenditures.</p> <ul style="list-style-type: none"> <li>• Conduct project review missions, midterm review mission and project completion review mission to assess project implementation progress of all outputs, compliance of loan and grant covenants</li> <li>• Review PMU/PIUs submissions for procurement of goods, equipment, works and services and provide comments and no objection on the submissions</li> <li>• Post on ADB website the updated project information documents and safeguards documents as per disclosure provision of the ADB Safeguards Policy Statement</li> <li>• Check statement of expenditure and disburse the loan and grant funds as agreed in the financing agreements.</li> </ul>
--	---

ADB = Asian Development Bank, CAO=Chief Accounts Officer, EMP = environment management plan MAWS = Municipal Administration and Water Supply, GEF = Global Environment Facility, GESI = gender equality and social inclusion, GCC = Greater Chennai Corporation, ISRC=Institutional Strengthening and Reforms Consultant, Nos = number, O&M=operation and maintenance, PBI = performance based incentive, PIU = project implementation unit, PMU=project management unit, PSC=Project Support Consultant, PWD = Public Works Department, SWD = storm water drain.

Sources: Asian Development Bank and Greater Chennai Corporation.

## B. Key Persons Involved in Implementation

### Executing Agency and Implementing Agency

MAWS Department, GOTN

Shiv Das Meena  
 Additional Chief Secretary  
 Telephone: 044-25670491, Fax: 044-25679866  
 E-mail address: [mawssec@tn.gov.in](mailto:mawssec@tn.gov.in)  
 Office Address: Municipal Administration & Water Supply  
 Department Secretariat, Chennai - 600009.

Greater Chennai Corporation

Gagandeep Singh Bedi  
 Commissioner  
 Phone: 044-25381330; 044-25619200  
 E-mail address:  
[commissioner@chennaicorporation.gov.in](mailto:commissioner@chennaicorporation.gov.in)  
 Office Address: Ripon Building, Chennai-600003.

M.S. Prasanth  
 Deputy Commissioner (Works)  
 Phone: 044 - 25619351/25384231  
 E-mail: [dcworks@chennaicorporation.gov.in](mailto:dcworks@chennaicorporation.gov.in);  
[kosasthalaiyardrainage.chennai2@gmail.com](mailto:kosasthalaiyardrainage.chennai2@gmail.com)  
 Office Address: Ripon Building, Chennai-600003.

**Asian Development Bank**  
 South Asia Urban Development  
 and Water Division

Norio Saito  
 Director

Telephone No: +63 (2) 8632 6923  
E-mail address: nsaito@adb.org

Mission Leader

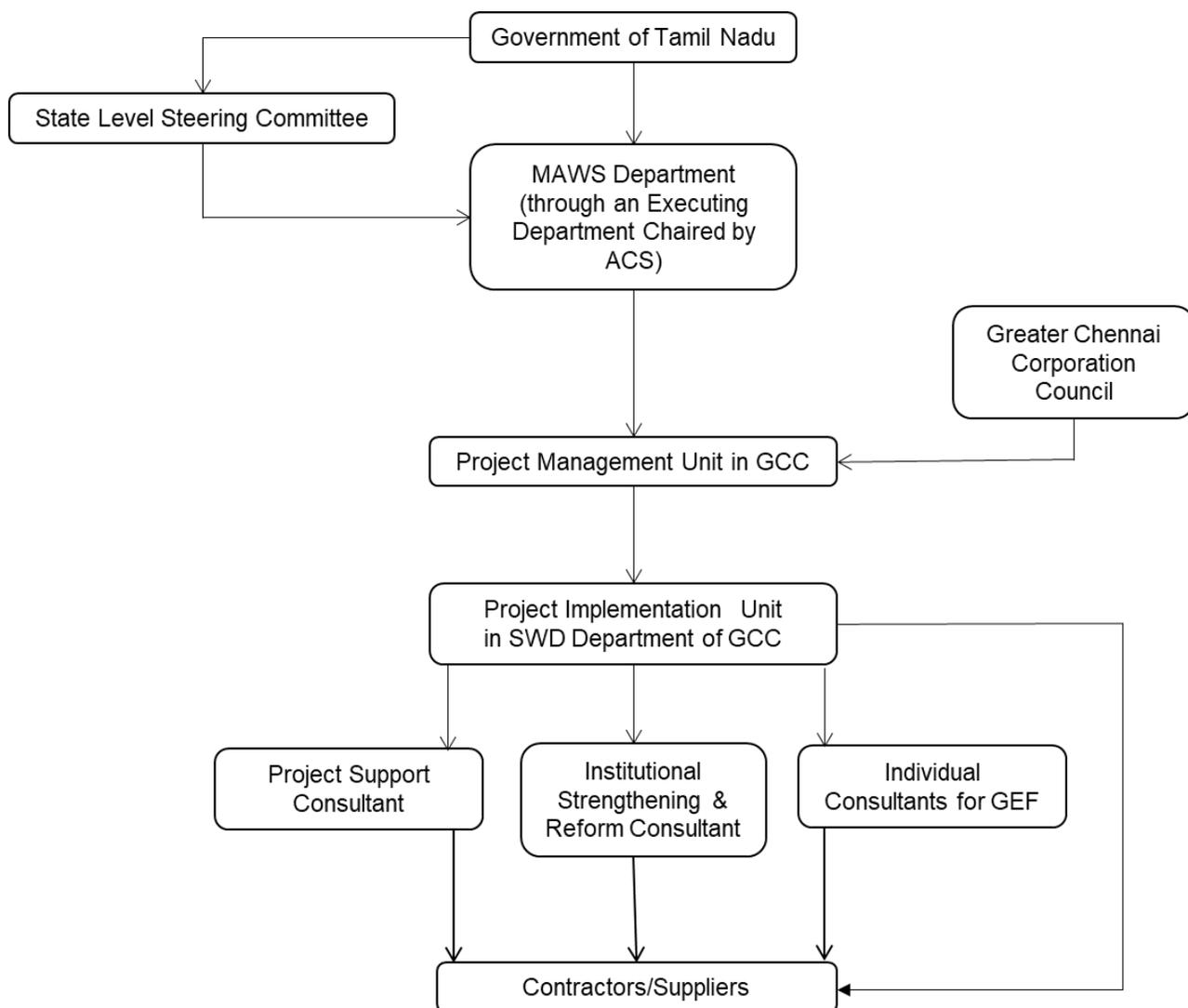
Akira Matsunaga  
Principal Urban Development Specialist  
Telephone No: +63 (2) 8632 5712  
E-mail address: amatsunaga@adb.org

### **C. Project Organization Structure**

12. Municipal Administration and Water Supply (MAWS) Department, GOTN will be the executing agency. A state level steering committee chaired by Chief Secretary will provide overall policy and strategic guidance to the project. There will be an Executive Committee in MAWS with Additional Chief Secretary MAWS as Chairman and Commissioner, Deputy Commissioner (Works) and Chief Engineer from GCC as members with full powers of Government in project related matters. GCC will establish a project management unit (PMU) for the project headed by Commissioner, GCC as Project Director and a project implementation unit (PIU) in the Storm Water Drain Department of GCC headed by Chief Engineer (SWD).

13. The PMU will be constituted with Project Director: Commissioner, GCC; Deputy Project Director: Deputy Commissioner (Works); Deputy Project Director (Technical): Chief Engineer (General) and Financial Advisor/Chief Accounts Officer. The PMU will be responsible for ensuring overall project planning, management, implementation, monitoring, and reporting for the project. The PIU will report and be supported and monitored by PMU to implement the projects in the field and manage contractors. PIU will have overall responsibility of implementation, accounts and audits, safeguards implementation, monitoring and reporting. The PIU will be based in the SWD department of GCC and headed by the Chief Engineer and the Superintending Engineer of SWD Department as Project Managers. PMU shall recruit a Project Support Consultant (PSC) for project management, construction supervision and contract management support; an Institutional Strengthening and Reforms Consultant (ISRC) to support sustainability improvement, resiliency and inclusiveness enhancement, and social safeguards; and individual consultants to support GEF grant funded activities.

**Figure 1: Project Organization Structure**



ACS = Additional Chief Secretary, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, MAWS = Municipal Administration and Water Supply, SWD = storm water drain.  
Source: Asian Development Bank.

#### IV. COSTS AND FINANCING

14. The overall project is estimated to cost \$480.01 million, and its investment plan is shown in Table 5. The Government of India submitted a request for a loan from ADB's ordinary capital resources to help finance the project and for an additional grant co-financing from GEF. The loan will have a 25-year term, including a grace period of 6 years, an annual interest rate determined in accordance with the ADB's LIBOR-based lending facility, a commitment charge of 0.15% per year; and such other terms and conditions set forth in the loan and project agreements. Based on the custom-tailored repayment method, the average maturity is 15.95 years, and the maturity premium payable to ADB is 0.10% per year.

**Table 5: Revised Summary Cost Estimates**  
(\$ million)

Item	Current Amount <sup>a</sup>	Additional Financing <sup>b</sup>	Total
<b>A. Base Cost<sup>c</sup></b>			
1. Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar River basin	396.22	7.20	403.42
2. Urban flood preparedness of the Greater Chennai Corporation and project communities enhanced	8.67	1.39	10.07
3. Measures for sustaining operation and maintenance of storm water drainage system established in the Greater Chennai Corporation	7.13	-	7.13
<b>Subtotal (A)</b>	<b>412.02</b>	<b>8.60</b>	<b>420.62</b>
<b>B. Contingencies<sup>d</sup></b>			
1. Physical	19.58	0.35	19.94
2. Price	28.27	0.53	28.80
<b>Subtotal (B)</b>	<b>47.85</b>	<b>0.89</b>	<b>48.74</b>
<b>C. Financing Charges During Implementation<sup>e</sup></b>			
1. Interest during implementation	9.60	-	9.60
2. Commitment and other charges	1.06	-	1.06
<b>Subtotal (C)</b>	<b>10.66</b>	<b>-</b>	<b>10.66</b>
<b>Total Cost (A+B+C)</b>	<b>470.53</b>	<b>9.49</b>	<b>480.01</b>

Note: Numbers may not sum precisely because of rounding.

<sup>a</sup> Refers to the original amount.

<sup>b</sup> Includes taxes and duties of \$0.98 million to be financed by Government. Such amount does not represent an excessive share of the project cost.

<sup>c</sup> Loan component in April 2021 prices at an exchange rate of \$1.00 = ₹74.80; GEF grant component in November 2021 prices; exchange rate of \$1.0 = ₹74.00 is used.

<sup>d</sup> Physical contingencies are computed at 5.0% for civil works and equipment. Price contingencies are computed at 1.6% - 1.8% on foreign exchange costs and 4.0% on local currency costs, and include provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Includes interest and commitment charges. Interest during construction for the Asian Development Bank loan has been computed at the 5-year United States dollar fixed-swap rate plus a spread of 0.5% and a maturity premium of 0.1%. Commitment charges for Asian Development Bank loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

15. The loan from ADB will finance: (i) part of the civil works and equipment, (ii) consulting services, and (iii) performance-based incentive schemes. The grant from GEF will finance expenditures for enhancing flood retention in Kadapakkam Lake and associated capacity building and knowledge dissemination, or part of: (i) civil works and equipment, (ii) consulting services; and (iii) incremental administrative cost. The GOTN will contribute \$222.13 million equivalent to

cover: (i) part of the civil works and equipment, (ii) part of the consulting services, (iii) part of the incremental administrative costs, (iv) taxes and duties, (v) land acquisition and resettlement, (vi) contingencies, and (vii) financing charges during implementation. The GOTN will provide the project amount (ADB loan plus counterpart fund) to GCC. GOTN has assured that it will meet any financing shortfall to ensure that the project outputs are fully achieved. The revised summary financing plan for the project is in Table 6.

16. Climate adaptation under the additional financing is estimated to cost \$9.49 million as it is classified in Type 2 adaptation intervention. Additional financing from GEF will finance \$6.88 million in adaptation costs (72.5%) and the government will finance \$2.61 million (27.5%). With the additional financing, climate adaptation of the project is estimated to cost \$151.09 million. ADB will finance \$87.00 million in adaptation costs (57.6%), GEF will finance \$6.88 million (4.6%), and the government will finance \$57.21 million (37.8%).

**Table 6: Revised Summary Financing Plan**

Source	Current <sup>a</sup>		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank Ordinary capital resources (loan)	251.00	53.34	-	-	251.00	52.29
GEF (grant) <sup>b</sup>	-	-	6.88	72.53	6.88	1.43
Government	219.53	46.66	2.61	27.47	222.13	46.28
<b>Total</b>	<b>470.53</b>	<b>100.0</b>	<b>9.49</b>	<b>100.0</b>	<b>480.01</b>	<b>100.00</b>

GEF = Global Environment Facility.

<sup>a</sup> Refers to the original amount.

<sup>b</sup> Administered by Asian Development Bank.

Source: Asian Development Bank estimates.

## A. Cost Estimates Preparation and Revisions

17. The cost estimates were prepared based on the detailed project report, where available, and other relevant details of subprojects. The cost estimate model was prepared using Microsoft Excel and is available from the project preparation team and GCC. The cost estimates will be further revised during the implementation by the PIU.

## B. Key Assumptions

18. The following key assumptions underpin the cost estimates and financing plan for the loan component:

- (i) Exchange rate: ₹74.80 = \$1.00 (as of April 2021); and
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 7: Escalation Rates for Price Contingency Calculation for the Loan Component**

	2021	2022	2023	2024	2025	2026	2027	Average
Domestic	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Foreign	1.6%	1.7%	1.7%	1.8%	1.8%	1.8%	1.8%	1.7%

Source: Asian Development Bank estimates.

- (iii) In-kind contributions cannot be easily measured and have not been quantified.

19. The following key assumptions underpin the cost estimates and financing plan for GEF grant component:

- (i) Exchange rate: ₹74. 0 = \$1.00 (as of November 2021); and
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 8: Escalation Rates for Price Contingency Calculation for the GEF Grant Component**

	2022	2023	2024	2025	2026	Average
Domestic	4.8%	4.5%	4.0%	4.0%	4.0%	4.0%
Foreign	1.7%	1.7%	1.8%	1.8%	1.8%	1.8%

Source: Asian Development Bank estimates.

- (iii) In-kind contributions cannot be easily measured and have not been quantified.

### C. Detailed Cost Estimates by Expenditure Category

**Table 9: Detailed Cost Estimates by Expenditure Category for the Loan Component**

Item	Gross (\$ million)	Net (\$ million)		Tax	
<b>A. Investment Costs</b>					
1 Civil Works & Equipment					
a. Storm water drainage systems	391.67	349.71	89.29%	41.96	10.71%
2 Lumpsum provisions	2.67	2.39	89.29%	0.29	10.71%
3 Land acquisition and resettlement	1.87	1.87	100.00%	-	0.00%
4 Project management and capacity development	15.80	14.44	91.43%	1.35	8.57%
a. Project management and capacity development	8.87	7.52	84.75%	1.35	15.25%
b. Capacity development for PBI	6.93	6.93	100.00%	-	0.00%
<b>Subtotal (A)</b>	<b>412.02</b>	<b>368.41</b>	<b>89.42%</b>	<b>43.60</b>	<b>10.58%</b>
<b>B. Recurrent Costs</b>					
1 Incremental administrative costs	-	-	0.00%	-	0.00%
<b>Subtotal (B)</b>	<b>-</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>0.00%</b>
<b>Total Base Cost</b>	<b>412.02</b>	<b>368.41</b>	<b>89.42%</b>	<b>43.60</b>	<b>10.58%</b>
<b>C. Contingencies</b>					
1 Physical contingencies	19.58	19.58	100.00%	-	0.00%
2 Price contingencies	28.27	28.27	100.00%	-	0.00%
<b>Subtotal (C)</b>	<b>47.85</b>	<b>47.85</b>	<b>100.00%</b>	<b>-</b>	<b>0.00%</b>
<b>D. Financing Charges</b>					
1 Interest during implementation	9.60	9.60	100.00%	-	0.00%
2 Commitment charges	1.06	1.06	100.00%	-	0.00%
<b>Subtotal (D)</b>	<b>10.66</b>	<b>10.66</b>	<b>100.00%</b>	<b>-</b>	<b>0.00%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>470.53</b>	<b>426.92</b>	<b>90.73%</b>	<b>43.60</b>	<b>9.27%</b>

PBI = performance-based incentives.

Notes: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring is absorbed in A1. A2 is a provision for construction of a railway culvert. Resettlement costs are covered under A3. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a.

Source: Asian Development Bank estimates.

**Table 10: Cost Estimates by Expenditure Category for the GEF Grant Component**

Item		Gross (\$ million)	Net (\$ million)		Tax	
<b>A.</b>	<b>Investment Costs</b>					
1	Civil Works & Equipment	7.06	6.30	89.29%	0.76	10.71%
2	Project management and capacity development	1.39	1.19	85.40%	0.20	14.60%
	<b>Subtotal (A)</b>	<b>8.45</b>	<b>7.49</b>	<b>88.64%</b>	<b>0.96</b>	<b>11.36%</b>
<b>B.</b>	<b>Recurrent Costs</b>					
1	Incremental administrative costs	0.15	0.13	89.29%	0.02	10.71%
	<b>Subtotal (B)</b>	<b>0.15</b>	<b>0.13</b>	<b>89.29%</b>	<b>0.02</b>	<b>10.71%</b>
	<b>Total Base Cost</b>	<b>8.60</b>	<b>7.62</b>	<b>88.65%</b>	<b>0.98</b>	<b>11.35%</b>
<b>C.</b>	<b>Contingencies</b>					
1	Physical contingencies	0.35	0.35	100.00%		0.00%
2	Price contingencies	0.53	0.53	100.00%		0.00%
	<b>Subtotal (C)</b>	<b>0.89</b>	<b>0.89</b>	<b>100.00%</b>	<b>0.00</b>	<b>0.00%</b>
<b>Total Project Cost (A+B+C)</b>		<b>9.49</b>	<b>8.51</b>	<b>89.71%</b>	<b>0.98</b>	<b>10.29%</b>

Note: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring and resettlement costs are absorbed in A1. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a of Table 9.

Source: Asian Development Bank estimates.

**D. Allocation and Withdrawal of Loan and Grant Proceeds**

**Table 11: Allocation and Withdrawal of Loan Proceeds (ADB Ordinary Capital Resource)**

<b>No.</b>	<b>Item</b>	<b>Amount Allocated for ADB Financing (\$) Category</b>	<b>Basis for Withdrawal from the Loan Account</b>
1	Works and equipment	236,556,000	60.4% of total expenditure claimed
2	Consultancy Services	7,519,000	84.7% of total expenditure claimed
3	Performance Based Incentives	6,925,000	100.0% of total expenditure claimed <sup>a</sup>
	<b>Total ADB Loan</b>	<b>251,000,000</b>	

ADB = Asian Development Bank.

<sup>a</sup> Exclusive of taxes and duties imposed in the territory of the Borrower.

**Table 12: Allocation and Withdrawal of Grant Proceeds (GEF Grant)**

<b>No.</b>	<b>Item</b>	<b>Amount Allocated for GEF Financing (\$) Category</b>	<b>Basis for Withdrawal from the Grant Account</b>
1	Works and equipment	5,645,000	80.0% of total expenditure claimed
2	Consultancy services	1,116,000	80.0% of total expenditure claimed
3	Incremental Administrative Cost	119,000	80.0% of total expenditure claimed
	<b>Total GEF Grant</b>	<b>6,880,000</b>	

GEF = Global Environment Facility.

## E. Detailed Cost Estimates by Financier

Table 13: Detailed Cost Estimates by Financier for the Loan Component (\$ million)

Item	Total Cost \$	ADB Loan		Tax	Government		
		\$	%		Non-Tax	Total	%
<b>A. Investment Costs</b>							
1 Civil Works & Equipment							
a. Storm water drainage systems	391.67	236.56	60.40%	41.96	113.15	155.12	39.60%
2 Lumpsum provisions	2.67	-	0.00%	0.29	2.39	2.67	100.00%
3 Land acquisition and resettlement	1.87	-	0.00%	-	1.87	1.87	100.00%
4 Project management and capacity development	15.80	14.44	91.43%	1.35	-	1.35	8.57%
a. Project management and capacity development	8.87	7.52	84.75%	1.35	-	1.35	15.25%
b. Capacity development for PBI	6.93	6.93	100.00%	-	-	-	0.00%
<b>Subtotal (A)</b>	<b>412.02</b>	<b>251.00</b>	<b>60.92%</b>	<b>43.60</b>	<b>117.41</b>	<b>161.02</b>	<b>39.08%</b>
<b>B. Recurrent Costs</b>							
1 Incremental administrative costs	-	-	0.00%	-	-	-	0.00%
<b>Subtotal (B)</b>	<b>-</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.00%</b>
<b>Total Base Cost</b>	<b>412.02</b>	<b>251.00</b>	<b>60.92%</b>	<b>43.60</b>	<b>117.41</b>	<b>161.02</b>	<b>39.08%</b>
<b>C. Contingencies</b>							
1 Physical contingencies	19.58	-	0.00%	-	19.58	19.58	100.00%
2 Price contingencies	28.27	-	0.00%	-	28.27	28.27	100.00%
<b>Subtotal (C)</b>	<b>47.85</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>47.85</b>	<b>47.85</b>	<b>100.00%</b>
<b>D. Financing Charges</b>							
1 Interest during implementation	9.60	-	0.00%	-	9.60	9.60	100.00%
2 Commitment charges	1.06	-	0.00%	-	1.06	1.06	100.00%
<b>Subtotal (D)</b>	<b>10.66</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>10.66</b>	<b>10.66</b>	<b>100.00%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>470.53</b>	<b>251.00</b>	<b>53.34%</b>	<b>43.60</b>	<b>175.92</b>	<b>219.53</b>	<b>46.66%</b>

ADB = Asian Development Bank, PBI = performance-based incentive.

Notes: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring is absorbed in A1. A2 is a provision for construction of a railway culvert. Resettlement costs are covered under A3. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a.

Source: Asian Development Bank estimates.

**Table 14: Cost Estimates by Financier for the GEF Grant Component (\$ million)**

Item	Total Cost \$	GEF Grant		Government			
		\$	%	Tax	Non-Tax	Total	%
<b>A. Investment Costs</b>							
1 Civil Works & Equipment	7.06	5.64	80.0%	0.76	0.65	1.41	20.0%
2 Project management and capacity development	1.39	1.12	80.0%	0.20	0.08	0.28	20.0%
<b>Subtotal (A)</b>	<b>8.45</b>	<b>6.76</b>	<b>80.0%</b>	<b>0.96</b>	<b>0.73</b>	<b>1.69</b>	<b>20.0%</b>
<b>B. Recurrent Costs</b>							
1 Incremental administrative costs	0.15	0.12	80.0%	0.02	0.01	0.03	20.0%
<b>Subtotal (B)</b>	<b>0.15</b>	<b>0.12</b>	<b>80.0%</b>	<b>0.02</b>	<b>0.01</b>	<b>0.03</b>	<b>20.0%</b>
<b>Total Base Cost</b>	<b>8.60</b>	<b>6.88</b>	<b>80.0%</b>	<b>0.98</b>	<b>0.74</b>	<b>1.72</b>	<b>20.0%</b>
<b>C. Contingencies</b>							
1 Physical contingencies	0.35	-	0.0%	-	0.35	0.35	100.0%
2 Price contingencies	0.53	-	0.0%	-	0.53	0.53	100.0%
<b>Subtotal (C)</b>	<b>0.89</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.89</b>	<b>0.89</b>	<b>100.0%</b>
<b>Total Project Cost (A+B+C)</b>	<b>9.49</b>	<b>6.88</b>	<b>72.5%</b>	<b>0.98</b>	<b>1.63</b>	<b>2.61</b>	<b>27.5%</b>

GEF = Global Environment Facility.

Notes: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring and resettlement costs are absorbed in A1. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a of Table 13.

Source: Asian Development Bank estimates.

## F. Detailed Cost Estimates by Outputs and/or Components

**Table 15: Detailed Cost Estimates by Outputs for the Loan Component (\$ million)**

Items	Total Cost	Output 1		Output 2		Output 3	
		\$	%	\$	%	\$	%
<b>A. Investment Costs</b>							
1 Civil Works & Equipment							
a. Storm water drainage systems	391.67	391.67	100.00%	-	0.00%	-	0.00%
2 Lumpsum provisions	2.67	2.67	100.00%	-	0.00%	-	0.00%
3 Land acquisition and resettlement	1.87	1.87	100.00%	-	0.00%	-	0.00%
4 Project management and capacity development	15.80	-	0.00%	8.67	54.90%	7.13	45.10%
a. Project management and capacity development	8.87	-	0.00%	8.67	97.75%	0.20	2.25%
							100.00%
b. Capacity development for PBI	6.93	-	0.00%	-	0.00%	6.93	%
<b>Subtotal (A)</b>	<b>412.02</b>	<b>396.22</b>	<b>96.17%</b>	<b>8.67</b>	<b>2.10%</b>	<b>7.13</b>	<b>1.73%</b>
<b>B. Recurrent Costs</b>							
1 Incremental administrative costs	-	-	0.00%	-	0.00%	-	0.00%
<b>Subtotal (B)</b>	<b>-</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>0.00%</b>	<b>-</b>	<b>0.00%</b>
<b>Total Base Cost</b>	<b>412.02</b>	<b>396.22</b>	<b>96.17%</b>	<b>8.67</b>	<b>2.10%</b>	<b>7.13</b>	<b>1.73%</b>
<b>C. Contingencies</b>							
1 Physical contingencies	19.58	19.58	100.00%	-	0.00%	-	0.00%
2 Price contingencies	28.27	27.24	96.34%	0.57	2.01%	0.47	1.65%
<b>Subtotal (C)</b>	<b>47.85</b>	<b>46.82</b>	<b>97.84%</b>	<b>0.57</b>	<b>1.19%</b>	<b>0.47</b>	<b>0.98%</b>
<b>D. Financing Charges</b>							
1 Interest during implementation	9.60	9.25	96.34%	0.19	2.01%	0.16	1.65%
2 Commitment charges	1.06	1.02	96.34%	0.02	2.01%	0.02	1.65%
<b>Subtotal (D)</b>	<b>10.66</b>	<b>10.27</b>	<b>96.34%</b>	<b>0.21</b>	<b>2.01%</b>	<b>0.18</b>	<b>1.65%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>470.53</b>	<b>453.31</b>	<b>96.34%</b>	<b>9.45</b>	<b>2.01%</b>	<b>7.77</b>	<b>1.65%</b>

PBI = performance-based incentive.

Notes:

- Numbers may not sum precisely because of rounding.
- The costs of the actual audits of the program are minor and will be borne by the government.
- Environmental monitoring is absorbed in A1. A2 is a provision for construction of a railway culvert. Resettlement costs are covered under A3. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a.

Source: Asian Development Bank estimates.

**Table 16: Detailed Cost Estimates by Outputs for the GEF Grant Component (\$ million)**

Items	Total Cost	Output 1		Output 2	
		\$	%	\$	%
<b>A. Investment Costs</b>					
1 Civil Works & Equipment	7.06	7.06	100.0%	-	0.0%
2 Project management and capacity development	1.39	-	0.0%	1.39	100.0%
<b>Subtotal (A)</b>	<b>8.45</b>	<b>7.06</b>	<b>83.5%</b>	<b>1.39</b>	<b>16.5%</b>
<b>B. Recurrent Costs</b>					
1 Incremental administrative costs	0.15	0.15	100.0%	-	0.0%
<b>Subtotal (B)</b>	<b>0.15</b>	<b>0.15</b>	<b>100.0%</b>	<b>-</b>	<b>0.0%</b>
<b>Total Base Cost</b>	<b>8.60</b>	<b>7.20</b>	<b>83.8%</b>	<b>1.39</b>	<b>16.2%</b>
<b>C. Contingencies</b>					
1 Physical contingencies	0.35	0.35	100.0%	-	0.0%
2 Price contingencies	0.53	0.45	84.4%	0.08	15.6%
<b>Subtotal (C)</b>	<b>0.89</b>	<b>0.80</b>	<b>90.6%</b>	<b>0.08</b>	<b>9.4%</b>
<b>Total Project Cost (A+B+C)</b>	<b>9.49</b>	<b>8.01</b>	<b>84.4%</b>	<b>1.48</b>	<b>15.6%</b>

GEF = Global Environment Facility.

Notes: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring and resettlement costs are absorbed in A1. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a of Table 15.

Source: Asian Development Bank estimates.

## G. Detailed Cost Estimates by Year

**Table 17: Detailed Cost Estimates by Year for the Loan Component (\$ million)**

Item		Total	2021	2022	2023	2024	2025	2026	2027
<b>A.</b>	<b>Investment Costs</b>								
1	Civil Works & Equipment								
a.	Storm water drainage systems	391.67	39.17	93.58	93.58	87.14	51.4.3	21.37	5.42
2	Lumpsum provisions	2.67	-	2.67	-	-	-	-	-
3	Land acquisition and resettlement	1.87	1.87	-	-	-	-	-	-
4	Project management and capacity development	15.80	0.87	1.73	3.55	3.54	3.06	2.59	0.46
a.	Project management and capacity development	8.87	0.87	1.73	1.81	1.81	1.32	0.86	0.46
b.	Capacity development for PBI	6.93	-	-	1.73	1.73	1.73	1.73	-
	<b>Subtotal (A)</b>	<b>412.02</b>	<b>41.91</b>	<b>97.98</b>	<b>97.12</b>	<b>90.68</b>	<b>54.49</b>	<b>23.96</b>	<b>5.88</b>
<b>B.</b>	<b>Recurrent Costs</b>								
1	Incremental administrative costs	-	-	-	-	-	-	-	-
	<b>Subtotal (B)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	<b>Total Base Cost</b>	<b>412.02</b>	<b>41.91</b>	<b>97.98</b>	<b>97.12</b>	<b>90.68</b>	<b>54.49</b>	<b>23.96</b>	<b>5.88</b>
<b>C.</b>	<b>Contingencies</b>								
1	Physical contingencies	19.58	1.99	4.66	4.62	4.31	2.59	1.14	0.28
2	Price contingencies	28.27	0.71	3.39	5.15	6.56	7.34	3.97	1.16
	<b>Subtotal (C)</b>	<b>47.85</b>	<b>2.70</b>	<b>8.04</b>	<b>9.77</b>	<b>10.87</b>	<b>9.93</b>	<b>5.11</b>	<b>1.44</b>
<b>D.</b>	<b>Financing Charges</b>								
1	Interest during implementation	9.60	0.14	0.63	1.33	2.01	2.54	1.91	1.03
2	Commitment charges	1.06	0.36	0.30	0.21	0.12	0.05	0.02	0.00
	<b>Subtotal (D)</b>	<b>10.66</b>	<b>0.50</b>	<b>0.93</b>	<b>1.54</b>	<b>2.13</b>	<b>2.60</b>	<b>1.92</b>	<b>1.04</b>
<b>Total Project Cost (A+B+C+D)</b>		<b>470.53</b>	<b>45.11</b>	<b>106.96</b>	<b>108.42</b>	<b>103.68</b>	<b>67.01</b>	<b>30.99</b>	<b>8.35</b>

PBI = performance-based incentive.

Notes:

- Numbers may not sum precisely because of rounding.
- The costs of the actual audits of the program are minor and will be borne by the government.
- Environmental monitoring is absorbed in A1. A2 is a provision for construction of a railway culvert. Resettlement costs are covered under A3. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a.

Source: Asian Development Bank estimates.

**Table 18: Detailed Cost Estimates by Year for the GEF Grant Component (\$ million)**

Item	Total	2022	2023	2024	2025	2026
<b>A. Investment Costs</b>						
1 Civil Works & Equipment	7.06	1.06	1.83	1.98	1.48	0.71
2 Project management and capacity development	1.39	0.10	0.33	0.56	0.35	0.06
<b>Subtotal (A)</b>	<b>8.45</b>	<b>1.16</b>	<b>2.17</b>	<b>2.53</b>	<b>1.83</b>	<b>0.76</b>
<b>B. Recurrent Costs</b>						
1 Incremental administrative costs	0.15	0.02	0.04	0.04	0.04	0.02
<b>Subtotal (B)</b>	<b>0.15</b>	<b>0.02</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.02</b>
<b>Total Base Cost</b>	<b>8.60</b>	<b>1.17</b>	<b>2.21</b>	<b>2.57</b>	<b>1.87</b>	<b>0.78</b>
<b>C. Contingencies</b>						
1 Physical contingencies	0.35	0.05	0.09	0.11	0.08	0.03
2 Price contingencies	0.53	0.04	0.10	0.16	0.15	0.08
<b>Subtotal (C)</b>	<b>0.89</b>	<b>0.09</b>	<b>0.19</b>	<b>0.27</b>	<b>0.23</b>	<b>0.12</b>
<b>Total Project Cost (A+B+C)</b>	<b>9.49</b>	<b>1.26</b>	<b>2.39</b>	<b>2.84</b>	<b>2.10</b>	<b>0.90</b>

GEF = Global Environment Facility.

Notes: 1. Numbers may not sum precisely because of rounding.

2. The costs of the actual audits of the program are minor and will be borne by the government.

3. Environmental monitoring and resettlement costs are absorbed in A1. The implementation costs of GESI action plan and community awareness and participation plan are covered under A4a of Table 17.

Source: Asian Development Bank estimates.

## H. Contract and Disbursement S-Curve

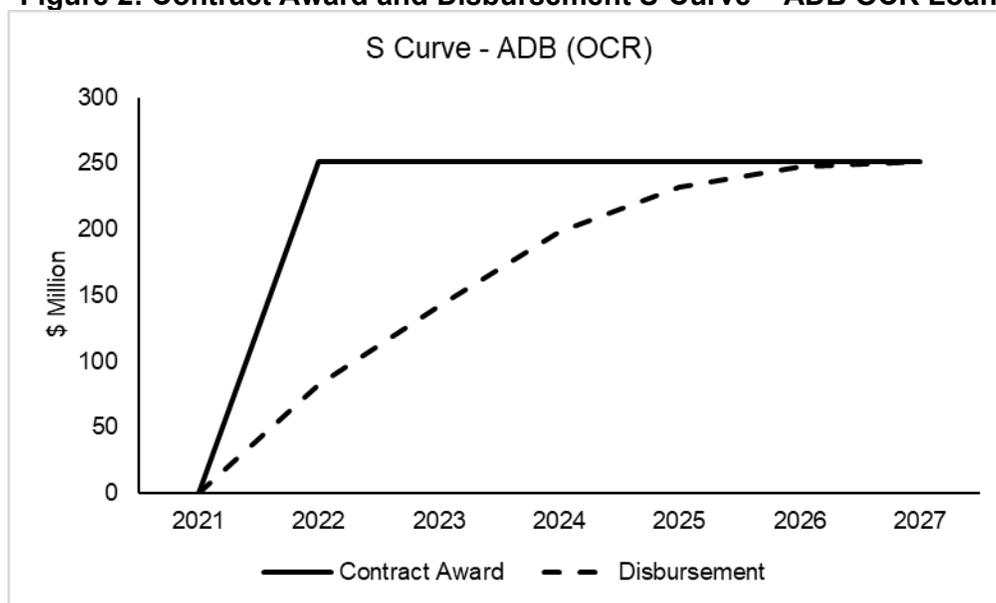
20. Projected contract awards and disbursements of the ADB loan are given in Table 19 and Figure 2 and GEF grant are given in Table 20 and Figure 3.

**Table 19: Projected Contract Awards and Disbursements – ADB OCR Loan (\$ Million)**

Year	Contract Awards (in \$ million)					Disbursements (in \$ million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2021	-	-	-	-	-	-	-	-	-	-
2022	249.30	-	1.70	-	251.00	20.00	21.50	20.50	20.50	82.50
2023	-	-	-	-	-	14.50	16.20	14.50	14.50	59.70
2024	-	-	-	-	-	14.50	15.40	13.40	12.50	55.80
2025	-	-	-	-	-	9.00	10.10	7.80	7.10	34.00
2026	-	-	-	-	-	3.50	5.10	3.40	3.40	15.40
2027	-	-	-	-	-	0.90	0.90	0.90	0.90	3.60
Total	249.30	-	1.70	-	251.00	81.40	62.20	54.50	52.90	251.00

ADB = Asian Development Bank, OCR = ordinary capital resources, Q = quarter.

**Figure 2: Contract Award and Disbursement S-Curve – ADB OCR Loan**

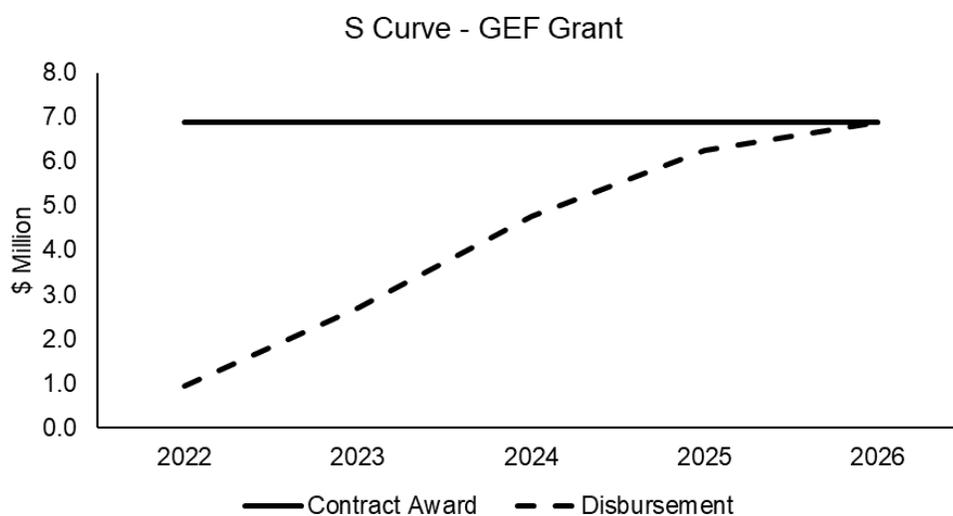


ADB = Asian Development Bank, OCR = ordinary capital resources.

**Table 20: Projected Contract Awards and Disbursements – GEF Grant (\$ million)**

Year	Contract Awards					Disbursements				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2022	-	-	6.88	-	6.88	-	-	0.63	0.31	0.94
2023	-	-	-	-	-	0.31	0.42	0.51	0.51	1.77
2024	-	-	-	-	-	0.51	0.51	0.51	0.51	2.06
2025	-	-	-	-	-	0.51	0.46	0.29	0.23	1.49
2026	-	-	-	-	-	0.31	0.31	-	-	0.62
Total	-	-	6.88	-	6.88	1.65	1.71	1.95	1.57	6.88

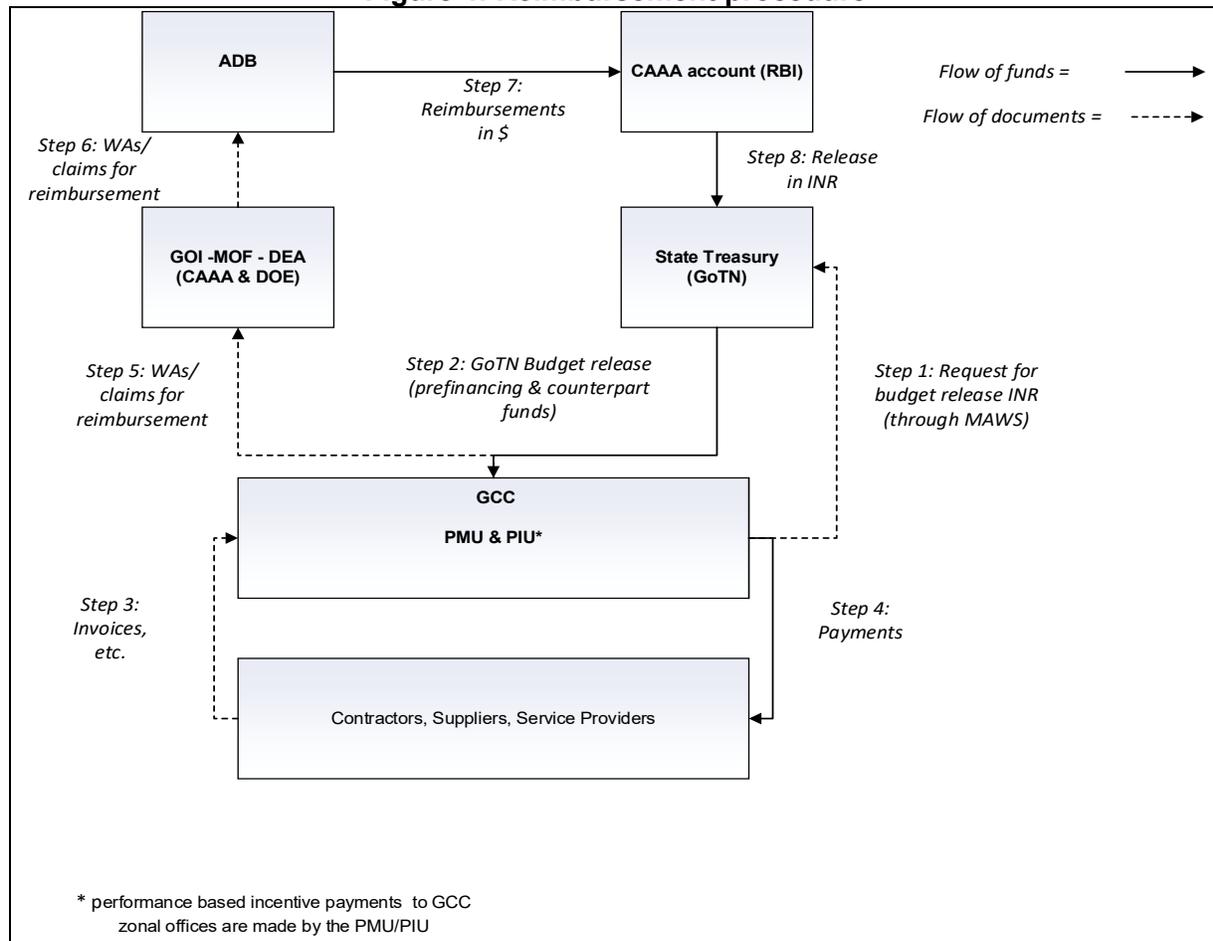
GEF = Global Environment Facility, Q = Quarter

**Figure 3: Contract Award and Disbursement S-Curve – GEF Grant**

ADB = Asian Development Bank, GEF = Global Environment Facility.

## I. Fund Flow Diagram

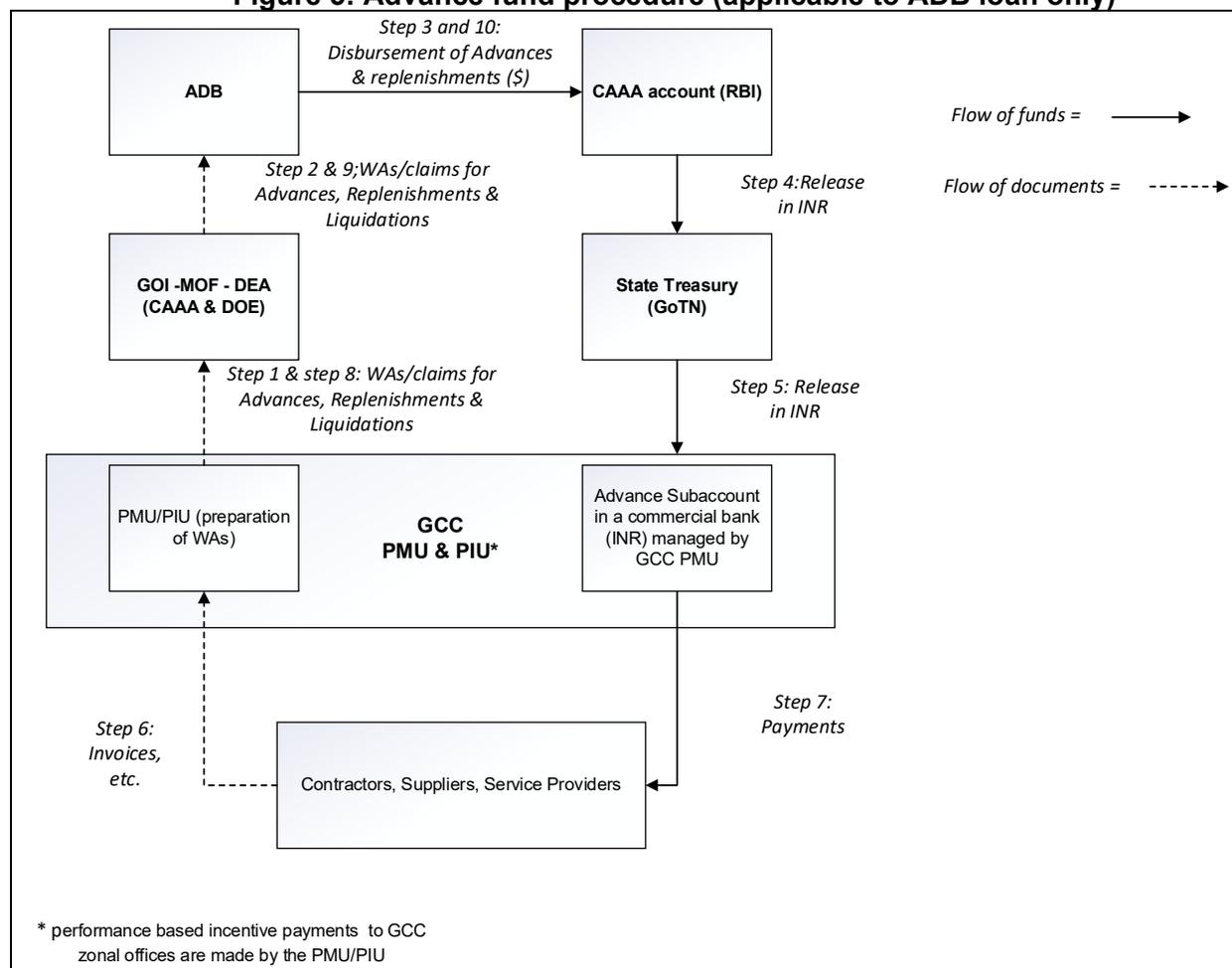
**Figure 4: Reimbursement procedure**



ADB = Asian Development Bank; CAAA = Controller of Aids Accounts and Audit; DEA = Department of Economic Affairs; DOE = Department of Expenditure; GCC = Greater Chennai Corporation; GOI = Government of India; GOTN = Government of Tamil Nadu; INR = Indian rupee; MAWS = Municipal Administration and Water Supply Department; MOF = Ministry of Finance; PIU = project implementation unit; PMU = project management unit; RBI = Reserve Bank of India, WA = withdrawal applications.

### Detailed description:

- **Step 1:** GCC requests a release of funds against the budget allocation. The request is reviewed and cleared by MAWS before being forwarded to the State Ministry of Finance for approval.
- **Step 2:** Subject to approval, the state treasury transfers the funds to GCC
- **Step 3:** Contractor/ Consultants executes the contracts and submits invoices and supporting documents to GCC;
- **Step 4:** GCC makes payments to contractors, consultants, etc.
- **Step 5:** GCC through its PMU prepares withdrawal applications (WAs) requesting ADB to reimburse against the ADB loan or GEF grant, the eligible percentage of the incurred expenditures and submits these using the ADB Client Portal for Disbursement (CPD) to CAAA/DEA/MOF
- **Step 6:** WAs are authorized by CAAA/DEA/MOF and subsequently received & reviewed by ADB
- **Step 7:** ADB disburses the eligible portion claimed in the WAs in \$ to the CAAA account maintained in RBI.
- **Step 8:** The funds are transferred in INR to the State treasury account of GOTN.

**Figure 5: Advance fund procedure (applicable to ADB loan only)**

ADB = Asian Development Bank; CAAA = Control Aids, Accounts and Audit; DEA = Department of Economic Affairs; DOE = Department of Expenditure; GCC = Greater Chennai Corporation; GOI = Government of India; GOTN = Government of Tamil Nadu; INR = Indian rupee; MOF = Ministry of Finance; PIU = project implementation unit; PMU = project management unit; RBI = Reserve Bank of India, WA = withdrawal applications.

#### Detailed description:

- **Step 1:** GCC through its PMU prepares a Withdrawal Application (WA) requesting for an initial advance against the ADB loan equal to 6 months cash needs and submit the WAs using the ADB Client Portal for Disbursement (CPD) to CAAA/DEA/MOF;
- **Step 2 & 9:** Withdrawal applications are authorized by CAAA/DEA/MOF and subsequently reviewed by ADB,
- **Step 3:** ADB disburses the advance in \$ to the CAAA account maintained in RBI
- **Step 4:** The funds are transferred in INR to the State treasury account of GOTN
- **Step 5:** within 5 working days after the receipt, the state treasury transfers the funds to the advance subaccount maintained in a commercial bank;
- **Step 6:** Contractor, Consultants etc.. submit an invoice to GCC
- **Step 7:** GCC incurs expenditures as part of the project and make payments to contractors, etc.
- **Step 8:** GCC through its PMU prepares WAs liquidating the advance and asking for a replenishment (as required) and submits the WA using the ADB Client Portal for Disbursement (CPD) to CAAA/DEA/MOF
- **Step 9:** WAs are authorized by CAAA/DEA/MOF and subsequently received and reviewed by ADB
- **Step 10:** ADB disburses the eligible portion of the WA in \$ to the CAAA account maintained in RBI.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

21. A financial management assessment (FMA) has been conducted for the GCC, in accordance with ADB's Guidelines.<sup>2</sup> The FMA found that GCC has adequate financial management capacity to: (i) record the required financial transactions, (ii) provide reliable annual financial statements and audit reports in a timely manner, and (iii) safeguard the financial assets.

22. The pre-mitigation financial management risk is assessed as substantial. The identified financial management risks include the following: (i) accounts staff lack knowledge of ADB financial reporting and audit requirements and disbursement procedures because the GCC has not previously implemented an ADB assisted project; (ii) no internal audit function exists; (iii) noncompliance issues have been identified by the statutory auditor; and (iv) the GCC statutory auditor may not be able to conduct any audit of the project financial statements in a timely manner. The risks will be mitigated by: (i) engaging an accounts and finance expert to support the project; (ii) providing training on ADB financial reporting and audit requirements and its disbursement procedures; and (iii) including comprehensive financial information in quarterly progress reports. The project financial statements will be audited annually by an auditor using auditing standards acceptable to ADB. The detailed financial management risks and mitigations measures are provided in the Table below.

**Table 21: Financial Management Inherent and Control Risk Assessment**

Risk	Risk Assessment	Proposed Mitigation Measures
<b>A. Inherent Risks</b>		
1. Country-Specific Risks (India)	<b>MODERATE</b> <ul style="list-style-type: none"> <li>• The financial standards and capacity in Government of India's public and private sector are sound. India has a strong accounting profession although most levels of the government still use a cash basis of accounting.</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
2. Entity-Specific Risks (GCC)	<b>MODERATE</b> <ul style="list-style-type: none"> <li>• There are strong institutional mechanism and legislative framework for budgeting, accounting, and audit in a time-bound manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
3. Project-Specific Risks	<b>MODERATE</b> <ul style="list-style-type: none"> <li>• No project-specific risks are identified.</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
<b>Overall Inherent Risk</b>	<b>MODERATE</b>	
<b>B. Control Risks – GCC and PMU (implementing agency)</b>		

<sup>2</sup> ADB. 2015. [Financial Management Technical Guidance Note: Financial Management Assessment](#). Manila

Risk	Risk Assessment	Proposed Mitigation Measures
1. Implementing Agency	<p style="text-align: center;"><b>MODERATE</b></p> <ul style="list-style-type: none"> <li>GCC has established a PMU and a PIU to implement the project. GCC has experience in managing externally financed projects with World Bank and KfW. However, the projects were operated through TNUIFSL and as result GCC may have limited experience with financial reporting and disbursement procedures of an externally financed project. GCC has no experience in handling ADB financed projects.</li> </ul>	<ul style="list-style-type: none"> <li>GCC's financial management capacity needs to be strengthened to comply with ADB's financial management requirements as outlined in the sections below.</li> </ul>
2. Funds Flow	<p style="text-align: center;"><b>MODERATE</b></p> <ul style="list-style-type: none"> <li>GOTN allocates ADB loan, GEF grant, and counterpart funds to GCC through MAWS department using the budgetary mechanism. GCC/PMU will make payment to contractors and consultants based on the progress. There has been no delays in the release of counterpart funding in the past, however the COVID-19 pandemic result in a delay in GOTN budget.</li> <li>GCC has no prior experience in ADB's disbursement procedures or systems</li> </ul>	<ul style="list-style-type: none"> <li>The advance fund disbursement procedure may be used for ADB loan portion.</li> <li>The SOE threshold will initially be set up to a ceiling of max USD 100 000 for individual payments.</li> <li>Training to be provided in ADB disbursement procedures and systems.</li> </ul>
3. Staffing	<p style="text-align: center;"><b>MODERATE</b></p> <p>The chief accounts officer is currently assigned to the PMU and an accounts officer has been assigned to the PIU. Moreover, SWD department has five dedicated accounts staffs with experience in implementing the WB financed project but the existing staff lack experience in ADB's financial reporting and audit requirements.</p>	<ul style="list-style-type: none"> <li>An accounts and finance expert to be hired to support the PMU as part of the PSC.</li> <li>Continuous training to be provided in ADB's disbursement procedures as well as financial reporting and audit requirements.</li> </ul>
4. Accounting Policies and Procedures	<p style="text-align: center;"><b>SUBSTANTIAL</b></p> <ul style="list-style-type: none"> <li>GCC follows accrual-based accounting system as per Government of India approved National Municipal Accounting Manual. However, some non compliance issues have been noted in the past including that not all entity level income and expenditures are recorded on an accrual basis. Moreover, the manual may not fully cover ADB's reporting requirements and the GCC budget codes differ from the expenditure categories in the PAM.</li> </ul>	<ul style="list-style-type: none"> <li>Separate books of accounts to be maintained under the project.</li> <li>Detailed financial management instructions and reporting templates have been included in the PAM.</li> <li>A conversion table will need to be developed to facilitate the alignment of GCC expenditure categories/budget codes with the expenditure categories and outputs defined in the PAM.</li> <li>All project financial records and supporting documentation are to be orderly filed and made</li> </ul>

Risk	Risk Assessment	Proposed Mitigation Measures
		<p>available for auditors and ADB for inspection staff as necessary.</p> <ul style="list-style-type: none"> <li>• Ensure all entity level income and expenditures are recorded on an accrual basis of accounting (as recommended by the Statutory Auditor).</li> </ul>
5. Internal Audit	<p style="text-align: center;"><b>SUBSTANTIAL</b></p> <ul style="list-style-type: none"> <li>• There is no in-house internal audit function. However, LFAD of GOTN conducts concurrent audit including post audit of all the transactions. Dedicated staffs of LFAD are available in GCC. Concurrent audit will also be conducted for this project.</li> </ul>	<ul style="list-style-type: none"> <li>• The project will be covered by the LFAD concurrent audit. The PMU and PIU will monitor and resolve all concurrent audit recommendations in a timely manner.</li> </ul>
6. External Audit (entity level)	<p style="text-align: center;"><b>MODERATE</b></p> <ul style="list-style-type: none"> <li>• External audit is conducted by LFAD in accordance with the statutory requirements. The audit is completed up to FY2018–2019. In general, the audit completed within 12 months after the fiscal year end.</li> </ul>	<ul style="list-style-type: none"> <li>• GCC must ensure the AEFS is submitted to ADB within one month after being approved and preferably within 12 months after the end of the fiscal year.</li> </ul>
7. External Audit (project level)	<p style="text-align: center;"><b>SUBSTANTIAL</b></p> <ul style="list-style-type: none"> <li>• Since the audit for the entity would generally get completed only by end of next financial year, there is a risk that the audit of the project financial statements may not be finalized within six months after end of eth fiscal year as required by ADB. Moreover, the LFAD does not have the experience to conduct the audit in accordance with ADB's requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Project audit to be conducted by CAG or an independent firm of chartered accountants empaneled by the CAG in accordance with international standards on auditing and agreed TORs between DEA, ADB and CAG.</li> <li>• The Auditor is to be sensitized in ADB's audit requirements and the agreed TORs between DEA, ADB and CAG.</li> <li>• Audit report and management letter to be submitted to ADB within 6 months after the end of the fiscal year.</li> </ul>
8. Reporting and Monitoring	<p style="text-align: center;"><b>MODERATE</b></p> <ul style="list-style-type: none"> <li>• The financial statements are prepared using the integrated accounting system. The financial reports of the project can be generated from the software using GCC chart of accounts. However, the financial reports will need to be further customized to be in line with the expenditure categories and outputs of the PAM.</li> <li>• The standard financial reports prepared by GCC may not fully satisfy ADB's requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• The expenditure categories used in the financial reports will be aligned with the expenditure categories in the PAM.</li> <li>• Financial information to be included in the QPRs in a format agreed with ADB and to be submitted to ADB within 45 days after the end of the quarter.</li> </ul>

Risk	Risk Assessment	Proposed Mitigation Measures
		<ul style="list-style-type: none"> <li>The project financial statements are to be prepared following the reporting templates included in the audit TORs agreed between DEA, ADB and CAG.</li> </ul>
9. Information Systems	<p style="text-align: center;"><b>MODERATE</b></p> <ul style="list-style-type: none"> <li>An integrated enterprise level software system is in place since 2010. All transactions are carried out only using this software. The project transactions will be recorded in the project module of the software and the financial reports will be further adjusted in excel. Data is stored at Government data center at Chennai.</li> </ul>	<ul style="list-style-type: none"> <li>The PMU is to make use of ADB financial management systems including the CPDs and the LFIS to reconcile the project books of accounts and ADB's disbursement records and track Withdrawal applications.</li> </ul>
<b>Overall Control Risk</b>	<b>SUBSTANTIAL</b>	
<b>Financial management risk</b>	<b>SUBSTANTIAL</b>	

ADB = Asian Development Bank, AEFS = audited entity financial statement, APFS = audited project financial statement, CA = chartered accountant, CAG = Comptroller and Auditor General, CPD = client portal for disbursements, DEA = Department of Economic Affairs, FY = Financial Year, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, GOTN = Government of Tamil Nadu, LFAD = Local Fund Audit Department; LFIS = Loan Financial Information Services, MAWS = Municipal Administration and Water Supply; PAM = project administration manual, PIUs = project implementation units, PMU = project management unit, QPR = quarterly progress report, SWD = storm water drain, TNUFSL = Tamil Nadu Urban Infrastructure Financial Services Limited, TOR = terms of reference, USD = United States dollar.

23. ADB and GCC have agreed to implement an action plan as key measures to address the deficiencies. The financial management action plan is provided in the Table below.

**Table 22: Financial Management Action Plan**

Area	Agreed action	Responsibility	Timeframe	Status
Staffing	Engage an accounts and finance expert to support the project as part of the PSC.	GCC	within 1 month after loan effectiveness	Implemented.
Capacity building	Undertake Training in ADB's financial management requirements (including Financial reporting and audit) as well as disbursement procedures and systems (LFIS, CPD etc).	ADB & GCC	By inception mission	Implemented.
Concurrent audit	<ol style="list-style-type: none"> <li>(1) Request LFAD to include the project in its concurrent audit plan.</li> <li>(2) Resolve recurrent audit observations in a timely manner</li> </ol>	GCC	<ol style="list-style-type: none"> <li>(1) By loan effectiveness</li> <li>(2) Quarterly.</li> </ol>	<p>Implemented.</p> <p>Ongoing (continuous process)</p>

	and include the status of all material concurrent audit observations in the quarterly progress reports submitted to ADB.			
Accounting – entity level	Ensure all entity level income and expenditures are recorded on an accrual basis of accounting (as recommended by the Statutory Auditor).	GCC	By the end of FY2021/22	Ongoing. To be implemented within the specified timeframe.
Accounting – project level	(1) Develop a conversion table <sup>3</sup> to facilitate the alignment of GCC expenditure categories/budget codes with the expenditure categories and outputs outlined in the PAM;  (2) All project records and supporting documentation to be orderly filed in the PIU, backed up regularly and made available for auditors and ADB for inspection as necessary.	GCC	(1) within one month after loan effectiveness  (2) Continuous	Ongoing. To be implemented within the specified timeframe.  Implemented (continuous process)
Financial reporting	(1) Include comprehensive Financial information to in the QPRs in a format agreed with ADB <sup>4</sup> (2) Prepare project financial statements using the reporting templates included in the audit TORs agreed between DEA, CAG and ADB.	GCC	(1) Within 45 days after each quarter.  (2) Within 2 months after the end of each fiscal year.	(1) And (2) Not yet due. To be implemented within the specified timeframe.
External audit - Project level	1) Engage CAG or a CAG empaneled audit firm for the	GCC	(1) Within one-quarter after the	(1), (2), and (3) Not yet due. To be

<sup>3</sup> An indicative template for a conversion table is included in Appendix 13.

<sup>4</sup> An indicative template for financial information to be included in the QPRs is included in Appendix 14.

	<p>project audit using the audit TORs agreed between CAG, ADB and DEA.<sup>5</sup></p> <p>2) Submit the APFS including a management letter to ADB within six months after the end of the fiscal year.</p> <p>3) Resolve all material audit observations and report the status of the observations in the QPRs;</p>		<p>loan effectiveness</p> <p>(2) Within 6 months after the end of fiscal year.</p> <p>(3) Within 6 months after the date of the audit report</p>	implemented within the specified timeframe.
External audit – Entity level	Submit the AEFS to ADB annually in English language.	GCC	Annually within 1 month after the approval of the AEFS by the relevant authority.	Not yet due. To be implemented within the specified timeframe.
Information systems	Adjust the accounting software to ensure separate books of accounts are maintained for the project and automate the project financial reporting to the extent possible.	GCC	Within the first quarter of project implementation.	Ongoing. To be implemented within the specified timeframe.
Information systems	Use the ADB's LFIS to reconcile project accounts with ADB's disbursement records.	GCC	On a quarterly basis	Ongoing. To be implemented within the specified timeframe.

ADB = Asian Development Bank, AEFS = audited entity financial statement, APFS = audited project financial statement, CAG = Comptroller and Auditor General, CPD = client portal for disbursements, DEA = Department of Economic Affairs, GCC = Greater Chennai Corporation, LFIS = loan financial information system, PAM = project administration manual, PIU = project implementation unit, PSC = project support consultant, QPRs = quarterly progress reports, TOR = terms of reference.

## B. Disbursement

### 1. Disbursement Arrangements for ADB Funds and funds directly administered by ADB

24. The ADB loan and GEF grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time),<sup>6</sup> and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement

<sup>5</sup> Agreed audit TORs included in Appendix 15.

<sup>6</sup> The handbook is available electronically from the ADB website (<http://www.adb.org/documents/loan-disbursement-handbook>).

policies and procedures is available.<sup>7</sup> Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

25. The GCC through its PMU and PIU will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting all supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

26. **Advance fund procedure.** The PMU may apply for the advance fund procedure for the ADB loan to the Government of India. After approval from the Government of India, an advance account will be established and maintained by Controller of Aid, Accounts and Audit (CAAA) for the ADB loan. The GCC through its PMU will be responsible for the preparation of liquidation/replenishment of the advance account. The currency of the advance account is United States dollar. The advance account is to be used exclusively for the ADB loan share of eligible expenditures. The CAAA, who established the advance account in its name, is accountable and responsible for proper use of advances to the advance account. In addition, a subaccount will be maintained in a commercial bank by the GCC PMU, for the ADB loan, receiving the Indian rupee from CAAA through the treasury of GOTN. The GOTN will ensure funds received from CAAA are transferred in full to the respective Subadvance account within 5 working days of the receipt of the advance or replenishment.

27. The total outstanding advance to the advance accounts should not exceed the estimate of ADB's share of expenditures to be paid through the advance account for the forthcoming 6 months. The GCC through its PMU and PIU may request for initial and additional advances to the advance account based on an Estimate of Expenditure Sheet<sup>8</sup> setting out the estimated expenditures to be financed through the subadvance account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by the PMU and PIU in accordance with the ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) when liquidating or replenishing the advance account.

28. **Statement of expenditure procedure.**<sup>9</sup> The statement of expenditure (SOE) procedure may be used for reimbursement of eligible expenditures and liquidation of advances. The ceiling of the SOE procedure is the equivalent of \$100,000 per individual payment. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application (WA) to ADB.

29. **Disbursement of performance based incentives.** The Performance Based Incentives will be disbursed by the PMU/PIU to the zonal offices of the GCC, subject to the following: (i) a duly authorized request for disbursement submitted by the zonal office and supported by a report outlining the achievements against the agreed performance indicators; (ii) an evaluation report prepared by the Institutional Strengthening and Reforms Consultant (ISRC) verifying the performance of the zonal office and duly approved by the PMU; and (iii) an approval by the PMU to disburse the performance based incentive to the zonal office. When claiming the expenditures incurred as part of the performance based incentives, the supporting documentation listed below

---

<sup>7</sup> [Disbursement eLearning](#).

<sup>8</sup> Estimate of Expenditure sheet is available in Appendix 8A of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

<sup>9</sup> SOE forms are available in Appendix 7B and 7D of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

must be submitted to ADB together with the WA or later upon request, if SOE ceiling is exceeded. Otherwise, retained by GCC for annual audit of project financial statements and/or ADB's review. ADB reserves the right to request submission of such documents, if deemed necessary.

**Table 23: Supporting Documents for Performance Based Incentives**

Category/item	Supporting documentation to be submitted to ADB (upon request)	Supporting documentation to be retained
Performance Based Incentives	<ul style="list-style-type: none"> <li>a) Duly authorized request for disbursement (indicating the date, amount, bank account details, reference to the budget allocation/budget line, etc.) submitted by the Zonal Office; and,</li> <li>b) Official receipt, bank transfer record or other proof of payment by the PMU/PIU.</li> </ul>	<ul style="list-style-type: none"> <li>a) Documentation evidencing the approval of the disbursement of performance based incentive by the PMU;</li> <li>b) Report outlining the achievements against the agreed performance indicators submitted by the zonal office; and,</li> <li>c) an evaluation report prepared by the ISRC and approved by the PMU</li> </ul>

ADB = Asian Development Bank, ISRC = institutional strengthening and reforms consultant, PIU = project implementation unit, PMU = project management unit.

30. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is stipulated in the *Loan Disbursement Handbook* (2017, as amended from time to time). Individual payments below such amount should be paid by GCC or GOTN and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB. The borrower should ensure sufficient category and contract balances before requesting disbursements. Use of ADB's Client Portal for Disbursements (CPD) system is mandatory for submission of withdrawal applications to ADB.<sup>10</sup>

## 2. Disbursement Arrangements for Counterpart Fund

31. The government counterpart funds will be sufficiently allocated in the budget annually. GCC will be responsible for preparing disbursement projections and requesting budgetary allocations for the project, including counterpart funds to the Government of Tamil Nadu. All disbursements under government financing will be carried out in accordance with the regulations of the Government of India and the GOTN and accounting principles acceptable to ADB.

### C. Financial Management Arrangements

32. **Financial Management capacity enhancement plan.** In order to ensure sufficient knowledge in ADB's Financial Management requirements, including procedures and related systems, GCC through its PMU and PIU must ensure that each financial and accounts staff assigned to the project undertake the following actions within the first 3 months working with the project:

<sup>10</sup> The CPD facilitates online submission of WA to ADB, resulting in faster disbursement. The forms to be completed by the Borrower are available online at <https://www.adb.org/documents/client-portal-disbursements-guide>.

- (i) Become aware of the ADB and national anticorruption policy and whistle blowing mechanisms;
- (ii) Master project legal agreements including the financial covenants and the relevant sections of the PAM, as well as the ADB Loan Disbursement Handbook;
- (iii) Obtain user/reader rights (as required) to ADBs systems including: the CPD and the Loan and Grant Financial information Service (L/GFIS); and
- (iv) Familiarize themselves with ADB's reporting requirements including the agreed format for project financial statements and Audit Terms of References (TORs ) for audit of ADB assisted projects, agreed with the CAG, the DEA and ADB.

33. In addition, the PMU and PIU should on a yearly basis liaise with ADB to take advantage of other Financial Management resources and training events organized by ADB, especially in the first 2 years of project implementation.<sup>11</sup>

34. **Accounting and financial reporting.** GCC will maintain, separate books and records by funding source (ADB loan, GEF grant, Government counterpart financing etc.) for all expenditures incurred under the project in accordance with government's accounting laws and regulations – cash basis of accounting, which are consistent with international accounting principles and practices. GCC will prepare project financial statements in accordance with government regulations and following the financial statements template provided in the Standardized Terms of Reference for audit of ADB assisted projects, agreed with the CAG of India, the DEA and ADB. Accordingly, the expected disclosures in the project financial statements should include the following:

- (i) Statement of cash receipts (by financing source: ADB loan, GEF grant, and GOTN) and payments (by expenditure category) for the current reporting period, past reporting period, and cumulative to date;
- (ii) Statement of expenditure by category and financier for the year/period end;
- (iii) Statement of advance/imprest subaccount;
- (iv) Statement of disbursement, disclosing all funds claimed from ADB by disbursement method, total expenditure claimed for the current reporting period, past reporting period, and cumulative to date. The notes of the financial statements should include a detailed list of all withdrawal applications submitted to, and the amounts paid by ADB as follows: (a) withdrawal application number; (b) the amount claimed and currency; (c) time period in which expenditures were incurred; (d) date submitted; (e) disbursement method; and (f) the amount disbursed by ADB;
- (v) Disbursement claimed under SOE procedure for the reporting period;
- (vi) Statement of appropriation vs. actual expenditures. Any significant variances must be duly explained;
- (vii) Expenditure by output/components for the current reporting period, past reporting period, and cumulative to date; and
- (viii) Notes to the Financial Statements disclosing the used accounting standards and policies and other relevant information and explanations.

35. The expenditure categories and outputs used in the financial reports will be aligned with the expenditure categories of the PAM. The audit TORs agreed between ADB, CAG and DEA and the reporting templates are attached as Appendix 15.

---

<sup>11</sup> ADB e-learning courses include: ADB Disbursement eLearning course and Cash Basis IPSAS for ADB Project Financial Reporting.

36. In order to provide timely information on the project's financial progress and the status of financial management to the project management, GOTN and ADB, GCC through its PMU and PIU will ensure that the detailed financial information is included in the Quarterly Progress reports to be submitted to ADB within 45 days after the end of the quarter. The information will include at least the following:<sup>12</sup>

- (i) Cumulative contract awards financed by the ADB loan, GEF grant, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets – for ADB financing compare the actual contract awards with the contract award curve included in the PAM). Any significant variances between planned and actual contract awards are to be explained;
- (ii) Cumulative disbursements from the ADB loan, GEF grant, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets – for the ADB financing compare the actual disbursement with the disbursement projections as per the S-curve included in the PAM). Any significant variances between planned and actual disbursements are to be explained;
- (iii) Re-estimated costs to completion, need for reallocation within ADB loan or GEF grant categories, and whether an overall project cost overrun is likely;
- (iv) Reconciliation of project records and ADB disbursement records for the ADB loan and GEF grant for the financial year to date and cumulative from project inception to end of the reporting period. Any discrepancies and outline follow-up actions required are to be explained;
- (v) Variance analysis including budget vs actual expenditures and physical vs financial progress, with significant deviations explained;
- (vi) Summary of the status of financial covenants (if any) as outlined in the legal agreement;
- (vii) Summary of the status of Financial management in the project including: a) any problems in the existing financial management arrangements and /or flow of funds and b) any significant changes occurred during the reporting period (e.g. financial management staff turnover, implementation of new financial systems, emerging financial management related risks etc.);
- (viii) Summary of the status of: (a) the financial management action plan outlined in the PAM; (b) recommendations and actions raised by ADB as part of the Audited Project Financial Statements (APFS) review (if any); and (c) financial management related recommendations agreed during ADB review missions (if any); and
- (ix) Summary of the status of Status of past audit observations (resolved/ pending).

37. Detailed financial reports may be included as an annex to the progress report as agreed with ADB. Sample template for the financial information to be included in the quarterly progress report is included as Appendix 14.

38. To ensure the correctness and completeness of the project's disbursement records, GCC through its PMU and PIU shall conduct: (i) monthly reconciliations of the advance subaccount; and (ii) quarterly reconciliation of the project accounts, and ADB's disbursement data available in the Loan and Grant Financial Information Services (L/GFIS). Any discrepancies and/or reconciliation items will be promptly followed up on to ensure these are resolved in a prompt manner. The differences between amounts claimed and the amounts disbursed will be disclosed and explained in the withdrawal application register, in the quarterly progress reports and in the notes of the project financial statements.

---

<sup>12</sup> Detailed Financial reports may be attached to the quarterly progress reports to allow for more detailed analysis.

## D. External Auditing and Public Disclosure

39. GCC will cause the detailed project financial statements to be audited by an independent auditor acceptable to ADB and in accordance with international standards on auditing (ISA) or national equivalents<sup>13</sup> and the audit TORs agreed between ADB, CAG, and DEA.<sup>14</sup> The audited financial statements and the management letter will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the executing agency.

40. The audit report will include three separate auditor's opinions, on the following (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; and (ii) whether the proceeds of the ADB loan and GEF grant were used only for the purpose(s) of the project. The audit report must also be accompanied by a management letter containing audit observations and recommendations for improvements in internal control and other matters coming to the attention of the auditor during the audit examination. The management letter should also include management's response to the audit observations. From the second year onward, the management letter must also include a follow-up on previous years audit observations. In case the auditor does not issue a management letter, the auditor must issue a written confirmation that no internal control issues were identified as part of the audit.

41. Moreover, the audited entity financial statements (AEFS) of GCC, together with the auditor's report, will be submitted in English to ADB within 1 month after their approval by relevant authorities.<sup>15</sup>

42. The government and the GCC have been made aware of ADB's policy on delayed submission of audited project financial statements, and the requirements for the statements being of satisfactory and acceptable quality.<sup>16</sup> If the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed, then ADB reserves the right to require an additional auditor, as mutually agreed with the borrower, to complete the audit in a satisfactory and timely manner. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

---

<sup>13</sup> Audit standards promulgated by the CAG or the Institute of Chartered Accountants of India (ICAI)

<sup>14</sup> CAG or a chartered accountant firm empaneled by CAG.

<sup>15</sup> In accordance with the statutory requirements, the statutory auditor (Local Fund Audit Department) is expected to give an opinion and to prepare a report after verifying the Annual Financial Statement (Accounts) of GCC. The audit opinion is to be prepared in a standard format and is given in the name of Audit Certificate. When this Certificate is attached to the Annual Financial Statement, the accounts become an auditor certified accounts. The annual financial statements of GCC are expected to include at least the balance sheet, income and expenditure account and notes.

<sup>16</sup> Following is ADB's policy on delayed submission of audited project financial statements:

- (i) When audited project financial statements are *not received by the due date*, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements *have not been received within 6 months after the due date*, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest/advance accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan and grant may be suspended if the audit documents are not received within the next 6 months.
- (iii) When audited project financial statements *have not been received within 12 months after the due date*, ADB may suspend the loan.

43. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Access to Information Policy 2018.<sup>17</sup> After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.

44. **ADB Loan and GEF Grant closure.** In order to close the ADB loan and GEF grant accounts in a timely manner and to comply with ADB's requirements, GCC will ensure that the following measures are undertaken:

- (i) All ADB loan and GEF grant financed expenditures are incurred before or by the loan and grant closing dates;
- (ii) All withdrawal applications including liquidations of the advance account are submitted to ADB preferably by the loan closing date but in no case later the end of the winding up period; that is, within four months after the end of the loan closing date;
- (iii) Any unutilized advances are refunded to ADB within two months after the end of the winding up period;
- (iv) The final project financial statements (PFS) are prepared in a timely manner and include all expenditures incurred up to the loan and grant closing date as well as up to the final withdrawal application. The final PFS is to include a reconciliation of the project account and the ADB disbursement records for the fiscal year and cumulatively from inception. Any differences must be disclosed and explained;
- (v) All past external project audit observations have been duly addressed;
- (vi) The final project financial statements are audited by independent auditors as agreed with ADB and the APFS and the management letter are submitted to ADB as soon as possible after the loan and grant closing date; and
- (vii) All projects financial records are filed in an orderly manner, backed up electronically and stored in a secure location for a for at least one year following receipt by ADB of the final APFS or 2 years after the loan and grant closing date, whichever is later.

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

45. All advance contracting and retroactive financing will be undertaken in conformity with ADB Procurement Policy and Regulations for ADB Borrowers (2017, as amended from time to time). The Borrower, GOTN and GCC have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

46. **Advance contracting.** Advance contracting will apply for: (i) civil works, (ii) equipment, and (iii) consultants. Advance contracting that may be completed and concluded includes: (i) prequalification (if applicable) of contractors, preparation of procurement documents,

---

<sup>17</sup> Access to Information Policy: <https://www.adb.org/documents/access-information-policy>.

procurement, bid evaluation and award for civil works packages; and (ii) recruitment of consultants.

47. **Retroactive financing.** Retroactive financing refers to ADB's financing of project expenditures incurred and paid for by the borrower prior to the effectiveness of the loan agreement but not earlier than 12 months prior to the signing of the loan agreement. Except as otherwise agreed with ADB, the expenditures incurred for (i) civil works, (ii) equipment, and (iii) consulting services that are eligible for advance contracting will be eligible for retroactive financing. The maximum amount of eligible expenditures is equivalent of 20% of the ADB loan amount. Retroactive financing does not apply to the GEF grant.

## **B. Procurement of Goods, Works, and Consulting Services**

48. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Policy (2017, as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The Government has opted for the e-bidding system developed by the National Informatics Center (NIC) in work contracts which ADB already approved.

49. Before the start of any procurement, ADB and the government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Policy (2017, as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time). In the event of discrepancy, ADB Procurement Policy and Regulations shall prevail.

50. Procurement Post Review (sampling) shall be either conducted as part of project review missions or organized as distinct post review missions on an ad hoc basis, which ADB finds to be most efficient. The post review (sampling) shall be conducted in accordance with Guidance Notes on Procurement Review.

51. An 18-month procurement plan indicating review procedures, goods, works, and consulting service contract packages and open competitive bidding (national and international) has been prepared and is on Appendix 1.

52. All consultants will be recruited according to ADB's Procurement Policy (2017, as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The recruitment of consultants will not follow the e-bidding system.

53. A consultancy firm, PSC with estimated 530 person-months of key personnel will be recruited to support PIU for project management as well as design and supervision of subprojects, ensuring compliance with ADB's requirements. An estimated 198 person-months of key personnel will be recruited under a consulting firm as ISRC for sustainability improvement including performance based incentive program to zonal offices, inclusive sustainable operation and maintenance improvement plan with support from PSC, a road map for municipal resource mobilization of GCC; resiliency and inclusiveness enhancement including flood resilience index (FRI) for the river basins and Chennai city and prepare framework for Improving flood resilience (FIFR), flood citizen observatory system; and social safeguards including the support for GESI activities and Involuntary resettlement.

54. Individual consultants with 98 person months shall be recruited to support implementation of the components under the GEF grant.

### C. Procurement Plan

55. The procurement plan (Appendix 1) is prepared in accordance with the generic or ADB's country-specific template prepared by the Procurement, Portfolio and Financial Management Department. The procurement plan provides: (i) a list of goods, works, and consulting services contract packages that will be processed over the next 18 months with milestone dates for activities; (ii) the proposed methods for procurement of such contracts that are permitted under the loan agreement; and (iii) the related ADB review procedures. The procurement plan will be updated by the PMU for approval by ADB, at least annually, and more frequently if necessary, and should cover the next 18 months of procurement activity. A delay in loan and grant effectiveness, other start-up delays, and delays during implementation will require an unscheduled procurement plan update. ADB will review each updated procurement plan prior to its publication.

### D. Consultant's Terms of Reference

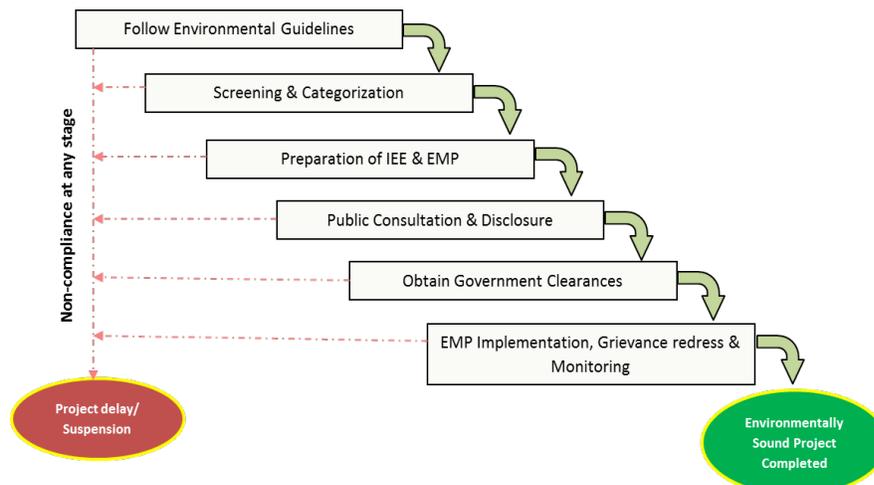
56. The terms of reference for PSC, ISRC, and individual consultants for the GEF grant are detailed in Appendix 2, Appendix 3, and Appendix 5, respectively.

## VII. SAFEGUARDS

### A. Environmental Safeguards

57. The project's environmental safeguards process and important requirements of ADB Safeguards Policy Statement (SPS) 2009 are depicted in Figure 6 below. Table 24 below provides a summary of environmental safeguards compliance requirements that will be followed during project implementation.

**Figure 6: Process of Environmental Assessment**



EMP = environmental management plan, IEE = initial environmental examination.

**Table 24: Summary Environmental Safeguard Compliance Requirements**

<b>Project Stage</b>	<b>Compliance Requirements</b>
<b>Prior to loan effectiveness</b>	Environmental unit established in PIU, Safeguards and Gender Nodal Officer and Environmental Officer appointed
<b>Project preparation (preliminary &amp; detailed design)</b>	All the regulatory clearances / approval requirements of subproject identified IEE, including EMP, prepared for Category B project. Meaningful consultations with stakeholders and affected people conducted, and information disclosed
<b>Bidding process</b>	IEE is approved by ADB prior to bid invitation
	IEE for GEF component is updated with additional consultations and approved by ADB prior to bid invitation or bid submission at latest subject to the pandemic restrictions. Biodiversity expert (individual) is engaged by GCC immediately after the grant is available, prior to commencement of works at latest.
	IEE, including EMP, included in the bid
	IEE provisions and compliance requirements is explained to bidders in pre-bid meeting
	All the regulatory clearances / approvals are in place for subproject prior to award of contract.
	IEE, including EMP, included in construction contract
<b>Construction</b>	GRM established prior to start of construction
	Contractor complied with all pre-construction procedures including preparation of construction health & safety plan, traffic management plan, establishment of labor camps as per the EMP provisions etc.,
	Site-specific EMPs (SEMPs) prepared by Contractor and approved by PIU prior to start of construction
	SEMP implemented by contractor during construction
	Monitoring conducted by PIU
	Identified, assessed and reported any new/unanticipated impacts and/or non-compliances, and necessary corrective actions implemented
	Semiannual EMR submitted to ADB and disclosed on ADB website
	All the sites are cleaned up and restored as required prior to issuance of work completion certification to the contractor
<b>Operation</b>	All the operational stage regulatory clearances/ approvals are in place prior to start of operation
	Environmental monitoring report submitted to ADB annually and disclosed on ADB website until PCR is issued

ADB = Asian Development Bank, EMP = environmental management plan, EMR = environmental monitoring report, GEF = Global Environment Facility, GCC = Greater Chennai Corporation, IEE = initial environmental examination, GRM = grievance redress mechanism, PCR = project completion report, PIU = project implementation unit, REA = rapid environmental assessment, SEMP = site-specific environmental management plan.

58. The Project is classified as category B for environment as per ADB SPS 2009. GCC has prepared an initial environmental examination (IEE) report including an environmental management plan for the proposed improvement of storm water drainage systems. The project is located in urban and peri-urban areas along the Bay of Bengal coast. The IEE shows project activities unlikely to have significant adverse environmental impacts that are unprecedented or

irreversible. Project locations are not within or adjacent to environmentally sensitive areas. Predicted impacts are short term, site-specific, and experienced mainly during construction, and they can be mitigated or minimized to acceptable level with good construction practices and the mitigation measures defined in the environmental management plan, which has a health and safety plan specific to coronavirus disease (COVID-19). No works will be commenced in Coastal Regulation Zone until the clearance is obtained. The IEE has been disclosed on ADB and GCC websites and will be updated prior to contract award.

59. The additional financing (GEF) component is also classified as category B for environment as per ADB SPS 2009. A draft IEE, including biodiversity assessment, is prepared for the GEF grant component to improve the flood retention capacity and rejuvenate Kadapakkam lake. The lake is seasonal and has no endangered species of flora or fauna. IEE shows impacts are not significant and potential impacts are mainly due to construction. Lake rejuvenation will likely have notable environmental benefits and enhance biodiversity. Public consultations were conducted during the IEE, and feedback considered in the project design. The IEE has been disclosed on ADB and GCC websites. GCC will conduct further consultations, consider feedback in project design, and will update the IEE and submit to ADB's concurrence prior to bid invitation or bid submission at latest subject to the COVID-19 pandemic restrictions.

60. **Roles and Responsibilities.** Municipal Administration and Water Supply (MAWS) Department of GOTN is the executing agency for the project and GCC is the implementing agency. A PMU reporting to the MAWS Department is established within GCC and a PIU in the storm water drain department of GCC. The PMU shall ensure environmental management plans (EMPs of both loan and GEF grant components) to be implemented as agreed while the PIU shall have overall responsibility for implementing environmental safeguards by monitoring and ensuring compliance with ADB's Safeguards Policy and government requirements, obtaining the right-of-way clearances and ensuring integration of environmental safeguards in all documents, particularly in tender documents. PIU shall also prepare and submit to ADB periodic environmental safeguards monitoring reports. One Executive Engineer in the PIU shall be the nodal officer for environmental and social safeguards and gender who will be responsible to oversee all safeguards related activities. PIU shall have an Environmental Unit headed by a dedicated environmental officer appointed to manage project's compliance with environmental safeguards requirements of ADB SPS. S/he will be supported by the environmental expert and the environmental safeguards support staff of the PSC. A biodiversity specialist (individual consultant) engaged under GEF component, will support PIU/PSC in design review and approval, supervision and monitoring of lake rejuvenation. Each contract package shall have the contractor's environmental safeguards officer and safety engineer/ accident prevention officer for regular site supervision and management of EHS during construction. The contract of GEF component shall have a biodiversity expert with experience in forestry / plantation in Miyawaki method as part of contractor personnel. Lake Management Committee comprising various stakeholders including representatives from civil societies will oversee water and environmental quality monitoring of lake rejuvenation.

61. The individual roles and responsibilities for environmental safeguards implementation at PIU, PSC and Contractors' level are further described below:

**Environmental Officer at PIU with support from field engineers of PIU**

- (i) Review and finalize project environmental category;
- (ii) Oversee preparation of IEEs; confirm existing IEEs/EMPs are updated based on detailed designs;

- (iii) Oversee update of IEE (GEF component) for changes in design of components and submit to ADB for review, approval, and disclosure prior to award of contract
- (iv) Ensure that EMPs are included in bidding documents and civil works contracts;
- (v) Provide oversight on environmental management aspects of the project and ensure EMPs are implemented by contractors;
- (vi) Facilitate and ensure compliance with all government rules and regulations regarding site and environmental clearances, as well as any other environmental requirements (e.g., location clearance certificates, environmental clearance certificates, etc.), as relevant;
- (vii) Supervise and provide guidance to the contractor to properly carry out the environmental monitoring as per the monitoring plan;
- (viii) Review, monitor, and evaluate the effectiveness with which the EMPs are implemented, and recommend corrective actions to be taken as necessary;
- (ix) Consolidate monthly environmental monitoring reports for different packages and submit semiannual monitoring reports to ADB (see the format in Appendix 5);
- (x) Ensure timely disclosure of final IEEs/EMPs in locations and form accessible to the public; and
- (xi) Address any grievances brought about through the grievance redress mechanism in a timely manner.

**Environmental Expert of PSC with support from Environmental Safeguards Support Staff of PSC**

- (i) Assist in prepare/update REA checklist;
- (ii) Assist in identification of sites/components in compliance with exclusion criteria and project environmental selection guidelines;
- (iii) Assist in update/prepare IEE report;
- (iv) Provide guidance and oversee work of EHS supervisor;
- (v) Assist in conduct public consultation and information disclosure;
- (vi) Monitor the implementation of EMP by contractor; report effectiveness and identify the need for corrective actions; work closely with Environmental Officer of PIU;
- (vii) Assist in review monthly EMP implementation reports submitted by contractors;
- (viii) Oversee and provide guidance to contractors on environmental monitoring (air, noise, etc.);
- (ix) Assist in preparing semiannual Environmental Monitoring Reports;
- (x) Assist in grievance redress, and ensure redress; and
- (xi) Provide regular on-site training programs to contractors site staff and supervisors.

62. **Civil works contracts and contractors.** EMPs are to be included in bidding and contract documents and verified by the PIU. The contractors are required to appoint an environment safeguards officer and a safety engineer/accident prevention officer to ensure Environment, Health and Safety (EHS) requirements are adequately implemented as per the EMP during civil works. The contractors are to carry out all environmental mitigation and monitoring measures outlined in their contract. They are required to submit to PIU, for review and approval, a site environmental management plan (SEMP) including: (i) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program as per SEMP; (iv) site-specific OHS plan in accordance with the Health and Safety Plan (COVID-19); and (v) budget for SEMP implementation. No works are allowed to commence prior to approval of SEMP.

- (i) A copy of the EMP/approved SEMP will be kept on-site during the construction period at all times. The EMP included in the bid and contract documents. Noncompliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance;
- (ii) The PIU will ensure that bidding and contract documents include specific provisions requiring contractors to comply with: (i) all applicable labor laws and core labor standards on: (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the project sites; and

63. **Prohibited investment activities.** Pursuant to ADB's SPS 2009, ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the ADB SPS 2009.

## **B. Social Safeguards**

64. **Involuntary resettlement.** The project is classified as category B for involuntary resettlement as per ADB's SPS. No private land acquisition is envisaged and all works are proposed in government land and road margins. The project involves construction of two pumping stations proposed on government land free from encumbrance, and construction and reconstruction of storm water drains in road margins, with only temporary income loss and damage to structures like ramps, steps and cement concrete floorings and improvements to existing canals that are free from encroachment. No physical or permanent economic displacement is anticipated. The temporary impacts arising out of excavation of trenches for construction of storm water drain and reconstruction of existing drains will be avoided by constructing the drains along the road margin within the right-of-way of city corporation/ highways department roads, by working at night time and by providing temporary access to businesses and residences for undisturbed movement of people.

65. GCC has prepared three resettlement plans for the proposed project. No private land acquisition is envisaged in the proposed project. Temporary livelihood impacts as well as loss of minor structures such as steps or ramps during construction and reconstruction of storm water drains are anticipated. Efforts have been made in detailed design to avoid or minimize resettlement impact through careful design of the alignment of feeder drains, collector drains and arterial drain through available, existing right-of-way of the entire 588 km length of proposed new storm water drains and the alignment passes through National Highways, State Highways and Corporation Roads. In case any of the assessed impacts are possible to avoid during civil works, no compensation needs to be paid. Any such avoided impacts will be carefully documented with photographic evidence during construction and consultations with persons assessed as affected in the updated draft resettlement plans.

66. The Kadapakkam Lake to be rejuvenated by the GEF grant is in government land and free of encumbrances. No land acquisition, or physical or permanent economic displacement, is envisaged. The safeguard category for involuntary resettlement of GEF-funded component is classified as C. The land acquisition and resettlement due diligence report has been prepared for the component which will be updated and reconfirmed for final impact, if any, following the detailed design and detailed measurement survey.

67. **Indigenous peoples.** The project is classified as Category C for indigenous peoples as per ADB's SPS (2009). Scheduled tribes comprise only 0.22% of the population of Chennai. Indigenous peoples are assimilated into urban society, and do not retain such defining characteristics of scheduled tribes as distinctive culture, shyness, geographical isolation, or social and economic backwardness. No direct or indirect impacts are anticipated on the dignity, human rights, livelihood systems or territories, or natural or cultural resources that are used, owned, occupied, or claimed by indigenous peoples as their ancestral domain or assets. Hence, there is no need for an indigenous peoples plan for this subproject. For the GEF-funded component, based on field visit and consultations, no tribal population was found in the areas surrounding the Kadapakkam Lake.

68. **Roles and Responsibilities.** The PMU shall have overall responsibility for monitoring and ensuring compliance with ADB's SPS 2009, safeguards requirement on involuntary resettlement. The PMU will also support resolution of grievances escalated to the third level of grievance redress mechanism (GRM).

69. **Project implementation unit.** The PIU is responsible for implementation, internal monitoring and reporting on social safeguards and grievance resolution, for project components. A Nodal Officer (safeguards and gender) in the rank of Executive Engineer will be responsible for environmental and social safeguards and gender and will be reporting to the Superintending Engineer. The nodal officer safeguards and gender at PIU will be supported by a social officer, who will be responsible for social safeguards and gender. The PSC social and resettlement expert will support the field level officers and the PIU social officer and nodal officer safeguards and gender in social safeguards compliance.

70. The nodal officer safeguards and gender in the PIU with assistance from PIU social officer, PSC social and resettlement expert and ISRC gender expert will:

- (i) update phase wise resettlement plans in accordance with this project's involuntary resettlement principles and ADB's SPS, 2009), in case of any alignment/design change during field verification, prior to start of construction and submit to ADB for review, final approval, and disclosure prior to award of contract;
- (ii) update due diligence report of the GEF-funded components for changes in design or location of components proposed under the grant and submit to ADB for review, final approval and disclosure prior to award of contract;
- (iii) ensure disclosure of the project entitlement matrix and the structure and process of GRM to all affected persons where loan and grant components are proposed;
- (iv) ensure payment of compensation and R&R assistances prior to commencement of civil works, if avoidance is not feasible;
- (v) monitor resettlement plan implementation during construction;
- (vi) ensure that escalated grievances are resolved/addressed through the GRM in a timely manner, and take quick corrective actions where necessary to facilitate the redressal of grievances;
- (vii) engage in ongoing meaningful consultations with stakeholders, affected persons and schools (staff, student and parents); and
- (viii) support Superintending Engineer, the member secretary, for the effective functioning of the project GRM and maintain the records.

71. At field level, the respective contract package site in charge Executive Engineers and their Assistant Executive Engineers will be responsible for social safeguards compliance with the

assistance from PSC social and resettlement expert, the ISRC gender expert and the contractor's social safeguards specialist:

- (i) disclose the construction schedule to the affected persons and beneficiaries along the sections where drain work is proposed along with details of traffic arrangement and contact details of the GCC engineer and contractor's site engineer;
- (ii) disclose the resettlement plans including project entitlement matrix and the structure and the process of GRM to all affected persons;
- (iii) identify, document and mitigate temporary impacts arising out of construction of storm water drain;
- (iv) identify, document and compensate and / or restore impact to encroached structures, as a result of construction of storm water drain;
- (v) confirm with affected persons, receipt of payment of compensation and R&R assistances prior to commencement of civil works, if impact avoidance is not feasible;
- (vi) submit periodically, details of temporary impacts, impact to encroached structures, measures adopted for avoidance, payment for and/or restoration of affected encroached structures;
- (vii) assist affected persons in resolving their grievances through the GRM in a timely manner, and take quick corrective actions where necessary to facilitate the redressal of grievances;
- (viii) engage in ongoing meaningful consultations with stakeholders, affected persons; and
- (ix) responsible for implementation of the Resettlement Plans, any impact avoidance and mitigation measures specified in the due diligence reports and provide data and information on both loan and grant components to the nodal officer (safeguards and gender) at PIU for monitoring and reporting purpose.

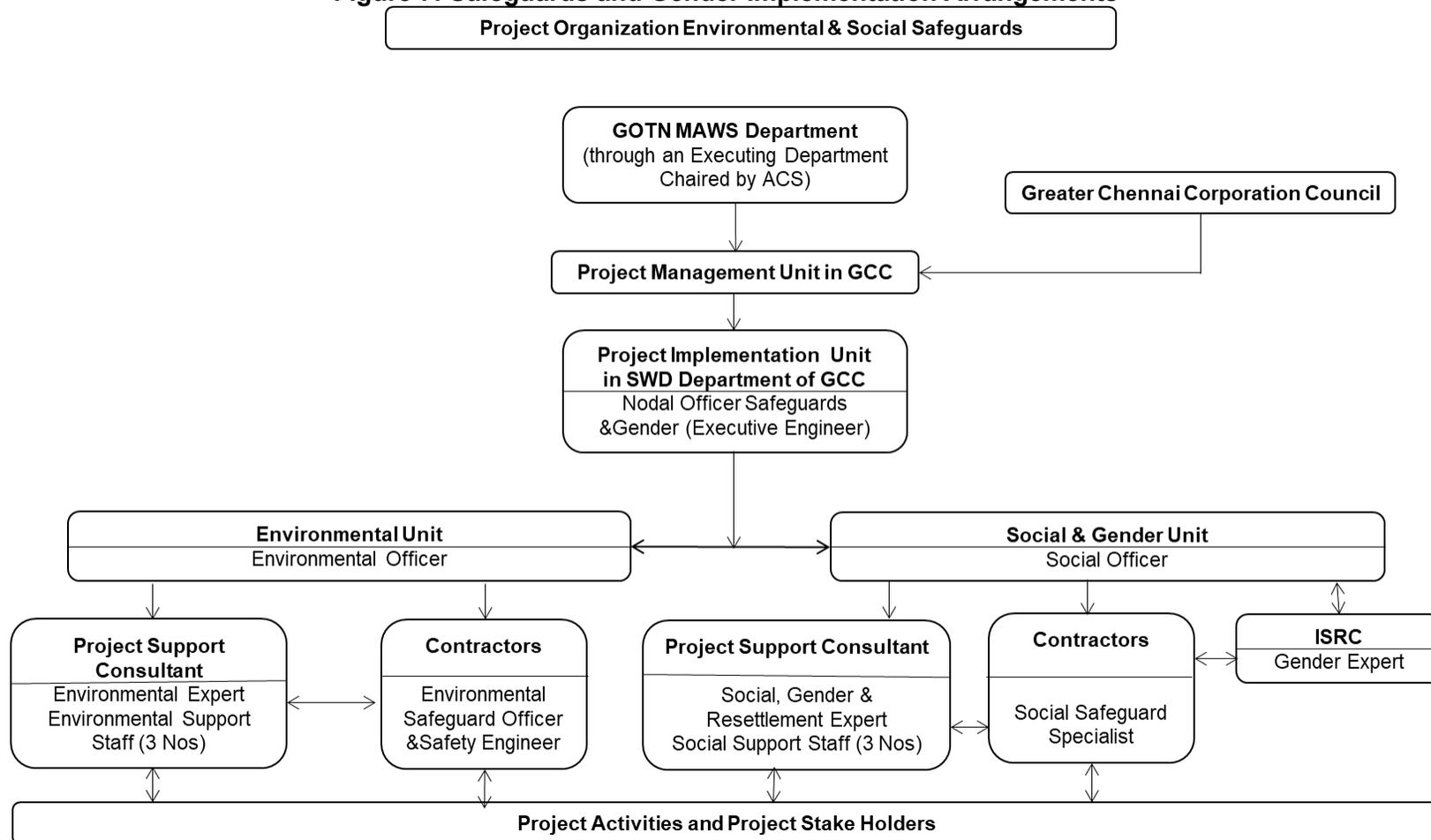
72. The social and resettlement expert of the PSC and gender expert of ISRC will coordinate and assist PIU social officer, contract package site in charge Executive Engineer, and the Assistant Executive Engineer and the contractor's social safeguards specialist in all the safeguard related activities of the project and the implementation of the resettlement plans. The PSC social and resettlement Expert will be responsible for the following tasks:

- (i) updating of the resettlement plans and due diligence report, if there is any design change or impacts documented resulting from detailed measurement survey during finalization of detailed engineering design;
- (ii) assist field level officers in ensuring social safeguards compliance;
- (iii) provide guidance to PIU, field level GCC officers and contractor's social safeguards specialist and oversee the resettlement plan implementation;
- (iv) assist field level GCC officers and supervise contractor's social safeguards specialist in carrying out assessment of temporary impacts and/or impact to encroached structure, mitigating impacts, and submitting periodic reports;
- (v) assist in conduct of public consultation and information disclosure;
- (vi) monitor the implementation of the resettlement plans, identify deviations or laxity, if any, and prepare corrective action plan and report to PIU social officer;
- (vii) assist in preparing of monthly quarterly resettlement plans implementation progress reports for submission to Superintending Engineer, PIU;
- (viii) assist in preparing semiannual social safeguards monitoring reports;
- (ix) assist in grievance redress; and
- (x) provide regular on-site training programs to GCC field staff and contractors site engineers and supervisors.

73. The contractor's social safeguards specialist with the guidance of the PSC social and resettlement expert and ISRC gender expert will:

- (i) assist field level officers in ensuring social safeguards compliance;
- (ii) ensure no storm water drain civil works are undertaken in sections where compensation and assistances are not paid and / or temporary access is not provided;
- (iii) in consultation with the field level GCC officers, inform all persons along the sections where excavation and construction of storm water drain is proposed about the time line and the measures taken to minimize and avoid impacts;
- (iv) undertake assessment of temporary impacts and/or impact to encroached structure along sections where storm water drain civil works are proposed, mitigate impacts in consultation with PIU social officer and PSC social and resettlement expert;
- (v) provide data and information as required by PIU;
- (vi) undertake public consultation and information disclosure with the support of the field level GCC officers, PSC social and resettlement expert and PIU social officer; and
- (vii) assist and if required represent the affected persons in resolution of grievances.

**Figure 7: Safeguards and Gender Implementation Arrangements**



ACS = Additional Chief Secretary, GCC = Greater Chennai Corporation, GOTN = Government of Tamil Nadu, ISRC = Institutional Strengthening and Reform Consultant, MAWS = Municipal Administration and Water Supply, SWD = stormwater drain, TL = Team Leader.

### C. Common Grievance Redress Mechanism

74. A grievance redress mechanism (GRM) will be established at three levels and will cover both environment and social issues of project components, interdepartmental concerns related to utility shifting and/or damages to utilities, and improvements proposed to Kadapakkam Lake under the GEF grant. The GRM will be established to evaluate, and facilitate the resolution of affected persons concerns, complaints, and grievances related to social and environmental issues related to the project in a time-bound manner. GRM will be accessible, inclusive, gender-sensitive and culturally appropriate for receiving and facilitating the resolution of affected persons' grievances related to the project. GCC has a well-established public grievance and redressal system to address concerns, complaints and grievances related to the various functions and services of GCC.<sup>18</sup> The project GRM to be well integrated with the existing public grievance redress system of GCC.

75. The GRM will be disclosed to the affected communities and households prior to the mobilization of contractors for the project. The PIU safeguard officers will be responsible for registration of grievances, disclosure and communication and timely resolution of grievances. Complaint registers will be maintained at contractor's site office(s), PIU and PMU levels with details of complaint lodged, date of personal hearing, action taken and date of communication sent to complainant. Registration of grievances will be facilitated by the contractor's social expert. Contact details and the process of grievance redressal will be disclosed to the project affected communities through leaflets.

76. Affected persons will have the flexibility of conveying grievances/suggestions by submitting the grievance/suggestion in writing, through telephone call to Executive Engineer, PIU safeguard officers, or by writing in the complaints register at the Division Office or by submitting grievance/suggestion by e-mail to GCC. Further, affected persons and/or persons can convey their grievances/suggestions through the public grievance and redressal system of GCC either through internet or by calling the telephone number '1913' or by writing to the Commissioner.

### D. Grievance Redressal Process

77. In case of grievances that are immediate and urgent in the perception of the complainant, the Executive Engineer on-site will provide the most easily accessible or first level of contact for quick resolution of grievances. Contact phone numbers and names of the concerned Executive Engineer, PIU safeguard officers, contractors and that of the public grievance redressal system will be displayed at all construction sites at visible locations. The second level will be a four member committee with the Superintending Engineer (SWD), GCC acting as its convenor. Third level will be the appellate level with the Chief Engineer (General) and Deputy Commissioner (Works).

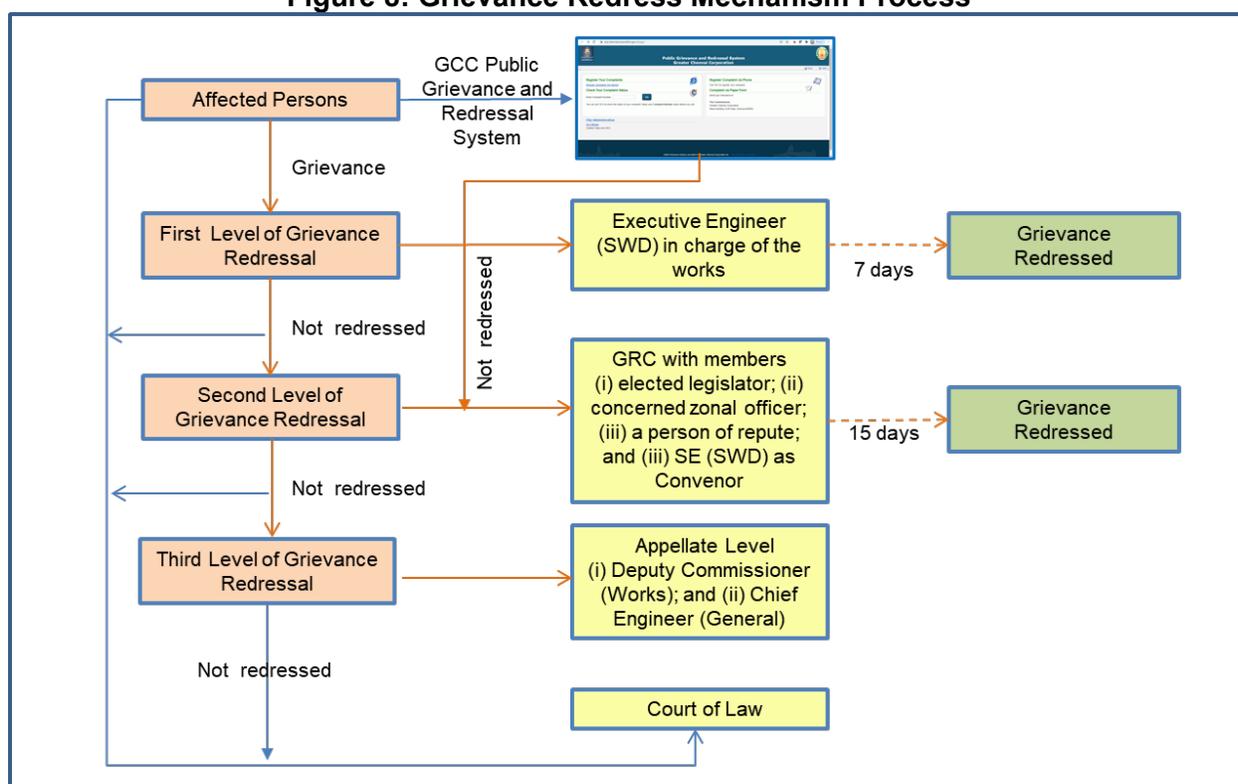
- (i) **1st Level Grievance.** The phone number of the site in charge Executive Engineer and of the public grievance redressal system should be made available at the construction site signboards. The contractors and field unit staff can immediately resolve grievances on-site and seek the advice of the Executive Engineer as required, and resolve grievances within seven days of receipt of a complaint/grievance;
- (ii) **2nd Level Grievance.** All grievances that cannot be redressed within seven days at field level will be reviewed by the GRC at PIU level comprising of 4-members,

<sup>18</sup> <https://erp.chennaicorporation.gov.in/pgpr/>

with preferably one member being a woman. The committee will have any one elected member of the legislature, concerned zonal officer, a person of repute and standing in locality, nominated by the Commissioner, GCC and the Superintending Engineer (SWD) acting as its convenor; and

- (iii) **3rd Level Grievance.** All grievances that cannot be redressed within 15 days at PIU level, will be placed before the Chief Engineer (General), who will consult with Deputy Commissioner (Works) in grievance resolution.

**Figure 8: Grievance Redress Mechanism Process**



GCC = Greater Chennai Corporation, GRC = grievance redress committee, SE = Superintending Engineer, SWD = Storm Water Drain.

78. **Court of Law.** Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

79. **ADB Accountability Mechanism.** In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB headquarters or the ADB India Resident Mission (INRM). The complaint can be submitted in any of the official languages of ADB's developing member countries.

## VIII. GENDER AND SOCIAL DIMENSIONS

80. The Project area is located in northern part of the GCC and covers three zones viz. Zone I: Thiruvottiyur, Zone II: Manali, and Zone III: Madhavaram and part of three other zones viz. Zone VI: Thiru Vi Ka Nagar, Zone VII: Ambattur, and Zone VIII: Anna Nagar. The project area includes 394 slums that house 11.6% of the population. Many of these slums are located alongside water courses and low-lying areas, making the poor more vulnerable to urban floods. These people are more likely to live at substandard housing in flood-prone zones. They have limited awareness of flood risks, inadequate access to basic services, and insufficient capacity to cope with flooding. While improved flood protection infrastructure will directly benefit all residents in the project area, the socially excluded and vulnerable groups—income poor, women, older people, children, persons with disabilities—are anticipated to greatly benefit from the proposed project.

81. The project design is pro-poor and gender-responsive. It is classified *effective gender mainstreaming* (EGM). A gender equality and social inclusion action plan (GESI AP) has been prepared (Table 25), with a focus on capacity building of stakeholders, human capital development and institutional development. It includes the following targets: (i) rehabilitation of four GCC relief camps into gender-responsive and socially inclusive camps;<sup>19</sup> (ii) community safety features in the design of storm water drains;<sup>20</sup> (iii) mapping of flood induced livelihood loss to women and men in three pilot slums, followed by a training needs assessment; (iv) livelihood trainings for at least 50 vulnerable slum dwellers, including at least 50% women; and (v) preparation and approval of an inclusive sustainable, operation and maintenance improvement plan with gender-responsive and socially inclusive features.<sup>21</sup> The GESI AP was further updated to align with the revised DMF incorporating component of the GEF grant. The proposed GESI indicators respond to GEF's new Policy on Gender Equality. The updated GESI AP includes the following additional indicators of the GEF funded component: (i) incorporation of elderly, women, children, and persons with disabilities (EWCD)-friendly features in the design of Kadapakkam Lake complex;<sup>22</sup> (ii) workshops and trainings to enhance knowledge of participants including 40% women from Indian cities on nature-based solutions for integrated flood risk management; and (iii) global and national dialogues to enhance knowledge of GCC staff and Government of Tamil Nadu including at least 40% women staff on integrated sustainable urban development.

82. A series of trainings, awareness generation programs and behavior, change, communication (BCC) campaigns are included in the GESI AP. These include (i) trainings and capacity development of community members in green infrastructure investments, rain water harvesting, link between flooding, solid waste management and protection of waterbodies, with a

<sup>19</sup> A gender-responsive and socially inclusive relief camp will have the following features: (i) at least one female worker or caretaker with supplies of sanitary napkins, soap, a basic first aid kit with medicines; (ii) safe spaces (affording privacy and security) for women, especially nursing mothers and adolescent girls; (iii) separate, well-lit and clean toilets for men and women, with barrier-free access for people with disabilities and older persons; water, hooks, ledges and shelves in the toilet; (iv) provisions for washing and disposal of menstrual products; (v) regular (daily) visits by female student volunteers and awareness generation on mechanism to address women's vulnerability to violence and trafficking; (vi) regular interaction between volunteers and people with disabilities within the relief camp; and (vii) helpline numbers displayed on walls.

<sup>20</sup> Community safety features include covered storm water drains to prevent accidents, barricading arrangements at all construction sites, chain link fencing along open drain sections, immediate restoration of interruption to street lighting system due to construction activities, helpline numbers for women etc.

<sup>21</sup> The O&M manual will include a community awareness and information dissemination component, including women's participation in O&M of drains.

<sup>22</sup> EWCD-friendly features include safety rails, signages, child, elderly and persons with disability compatible toilet facilities, separate toilet facilities for women and men, accessible pathways, side benches, drinking water facilities, rain shelters, illumination along pathways, display of emergency contact numbers etc.

target to ensure 50% participation of women; (ii) trainings for eight committees of women self-help-group (SHG) federations (two in each zone) and one committee of transgenders in rescue, relief and rehabilitation; (iii) trainings for technical staff of GCC on planning and design of storm water drainage systems, solid waste and flood risks; and sustainable operation and management of urban drainage systems, solid waste and flood risks with targets to ensure participation of women staff; (iv) trainings for GCC, PMU, and PIU staff on gender mainstreaming and social inclusion and gender-responsive and socially inclusive flood management (v) trainings for 100 de-silting and conservancy workers, including at least 80% of women workers in cleaning and upkeep of storm water drainage systems.

**83. Implementation arrangement.** The executing agency, Municipal Administration and Water Supply Department, will endorse the GESI action plan and ensure that the PIU, under overall supervision of the PMU, will implement, monitor and report progress regularly. The Executive Engineer (Safeguards and Gender Nodal Officer) will have overall responsibility related to implementation of the GESI action plan. He/she will guide and monitor the PIU Social Officer in implementation of the GESI action plan and routine collection and maintenance of sex disaggregated data. The Social Officer of the PIU will be responsible for day-to-day implementation, monitoring and reporting of the GESI action plan; consolidation of the quarterly GESI action plan update and its submission to ADB. He/she will also be the gender focal point to facilitate coordination. He/she will coordinate all public awareness campaigns conducted by the PIU. The ISRC will include a Gender Expert (consultant), who will support the PIU in implementation, monitoring and reporting of the GESI action plan and will be responsible for conceptualizing, planning and organizing the trainings and workshops mentioned in the GESI action plan, ensuring participation of women in trainings and awareness campaigns and conducting pre and post-activity assessments to assess learning gains. The Gender Expert will assist the PIU in setting up a monitoring system for the GESI action plan.

**84.** The GESI action plan has clear targets, responsibilities, and timeframe to ensure effective implementation, monitoring and reporting of GESI affected persons activities. The revised GESI action plan monitoring matrix is in Appendix 20. The budget for GESI action plan implementation has been absorbed in ISRC budget.

**Table 25: GENDER EQUALITY AND SOCIAL INCLUSION ACTION PLAN**

Activities	Indicators/Targets	Responsibility	Time Frame
<b>Output 1. Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar River Basin</b>			
1.1 Enhance community safety in SWD design and construction	(i) Community safety features <sup>a</sup> integrated in SWD design and construction	PMU/PIU	Year 1 onwards
1.2 Rehabilitate existing flood relief camps	(ii) Four GCC relief camps (one in each project zone) rehabilitated to be gender responsive and socially inclusive camps <sup>b</sup>	PMU/PIU supported by PSC and ISRC	Year 1 onwards
	(iii) Physical distancing arrangements <sup>c</sup> and WASH facilities available at four rehabilitated GCC relief camps		
1.3 Incorporate EWCD-friendly features in Kadapakkam lake complex	(iv) <u>EWCD-friendly features incorporated in the Kadapakkam lake complex (GEF-funded)<sup>d</sup></u>	PMU/PIU, ISRC, GEF-funded consultants	<u>Year 1 onwards (GEF)</u>
<b>Output 2. Urban flood preparedness of the GCC and project communities enhanced</b>			
2.1 Develop capacities of community members on green infrastructure investments and rainwater harvesting	(v) By 2025, at least 200 persons (including at least 50% women) among project community trained and reported increased knowledge on <u>importance, features, examples, and maintenance of</u> green infrastructure schemes including rainwater harvesting (2021 baseline: not applicable)	ISRC, PMU, PIU	Year 1–4
2.2 Create awareness among community members (specifically targeting women) on flood risks, impacts, and vulnerability	(vi) <u>By 2025</u> , at least 200 persons (including at least 50% women) reported increased knowledge on flood risks, impacts, links between flooding, solid waste management, sewerage service house connections, and the protection of waterbodies through six awareness workshops conducted in the Project area (2021 baseline: not applicable)	ISRC Gender Consultant in oversight of PMU and relevant PIU	Year 1–3
	(vii) Audience segmented BCC campaigns conducted targeting 200 people in slums in project area (including at least 50% women) on flood risks and impacts, <u>measures to address vulnerabilities of women, children, the elderly, and people with disabilities</u>		
2.3 Strengthen institutional capacity of GCC, PMU, PIU, and project consultants	(viii) By 2025, at least 50% of GCC technical staff (SWD Department) in the project area, including 80% of women technical staff, reported increased knowledge on planning and design of storm water drainage systems, solid waste, and flood risks (2021 baseline: 0)	PMU/PIU supported by ISRC	Year 1–4
	(ix) At least 90% of GCC, PMU, PIU, project consultants, including 80% of women staff, reported increased knowledge of gender mainstreaming and social inclusion and gender responsive and socially inclusive flood management		
2.4 Build resilience of flood affected low-income communities, especially women	(x) Extent and nature of flood induced livelihood loss to women and men in three pilot slums in project area mapped and training needs assessment conducted.	PMU/PIU supported by ISRC	Year 1 onwards
	(xi) Fifty vulnerable slum dwellers (including at least 50% women) trained to increase employability or alternative livelihoods		
	(xii) Eight committees of women SHG federations (2 in each zone) and one committee of transgenders trained to work in rescue, relief, and rehabilitation		
2.5 Enhance knowledge on nature-based urban flood risk management through workshops and trainings	(xiii) <u>At least 50 participants from Indian cities (including at least 40% women) reported increased knowledge on nature-based urban flood risk management through workshops and trainings (GEF-funded) (2022 baseline:0)</u>	PMU/PIU, ISRC, and GEF-funded consultants	<u>Year 1-4 (GEF)</u>

2.6 Enhance knowledge of GCC and Government of Tamil Nadu on integrated sustainable urban development through global and national dialogues	(xiv) At least 10 officers of GCC and Government of Tamil Nadu (including at least 40% women) reported increased knowledge on integrated sustainable urban development through global and national dialogues (GEF-funded) (2022 baseline:0)	PMU/PIU, ISRC, GEF-funded consultants	Year 1-4 (GEF)
<b>Output 3. Measures for sustaining operation and maintenance of storm water drainage systems established in the GCC</b>			
3.1 Prepare an inclusive O&M plan and manual.	(xv) By 2025, a gender-responsive and socially inclusive sustainable operation and maintenance improvement plan <sup>e</sup> prepared and adopted. (2021 Baseline: Not applicable)	PMU/PIU, PSC, Contractors	Year 1 onwards
3.2 Strengthen staff performance on operation and management of urban drainage systems, solid waste, and flood risks	(xvi) By 2025, at least 50% of GCC technical staff (SWD Department) in the project area, including 80% of women technical staff, trained, and reported increased knowledge on sustainable operation and management of urban drainage systems, solid waste, and flood risks (2021 baseline: 0)	PMU/PIU, PSC, ISRC	Year 1 onwards
3.3 Train drain de-silting and conservancy workers, including women, in cleaning and maintaining storm water drains	(xvii) By 2025, 100 de-silting workers and conservancy workers (including at least 50 women workers) reported increased knowledge and skills of cleaning and maintaining storm water drainage systems. (2021 Baseline: 0)	PMU/PIU, PSC, Contractors, ISRC	Year 1 onwards

BCC = behavior, change, communication, EWCD = elderly, women, children, and persons with disabilities, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, ISRC = institutional strengthening and reforms consultant, MHM = menstrual hygiene management, O&M = operation and maintenance, PIU = project implementation unit, PMU = project management unit, PSC = project support consultant, SHG = self-help group, SWD = storm water drain, WASH = water, sanitation and hygiene.

- <sup>a</sup> Community safety features include covered storm water drains to prevent accidents, barricading arrangements at all construction sites, chain link fencing along open drain sections, immediate restoration of interruption to street lighting system due to construction activities, helpline numbers for women, etc.
- <sup>b</sup> A gender-responsive and socially inclusive relief camp will have the following features: (i) at least one female worker or caretaker with supplies of sanitary napkins, soap, a basic first aid kit with medicines; (ii) safe spaces (affording privacy and security) for women, especially nursing mothers and adolescent girls; (iii) separate, well-lit and clean toilets for men and women, with barrier-free access for people with disabilities and older persons; water, hooks, ledges and shelves in the toilet; (iv) provisions for washing and disposal of menstrual products; (v) regular (daily) visits by female student volunteers and awareness generation on mechanism to address women's vulnerability to violence and trafficking; (vi) regular interaction between volunteers and people with disabilities within the relief camp; and (vii) helpline numbers displayed on walls.
- <sup>c</sup> Physical distancing measures include: (i) ground markings with spacing of 2.5 feet for queues to collect food, essentials, medical supplies and fetching water within the camp; (ii) demarcated visiting areas for officials/any other visitors to the camp; and (iii) display of notices on the importance of physical distancing and other safety measures.
- <sup>d</sup> EWCD-friendly features include safety rails, signages, child, elderly and persons with disability compatible toilet facilities, separate toilet facilities for women and men, accessible pathways, side benches, drinking water facilities, rain shelters, illumination along pathways, display of emergency contact numbers etc.
- <sup>e</sup> The O&M manual will include a community awareness and information dissemination component, including women's participation in O&M of drains.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

### A. Project Design and Monitoring Framework

85. The revised project design and monitoring framework (DMF) is shown below. It strikes out content for deletion and underlines content to be added.

<b>Impacts the Project is Aligned with</b> Chennai City made a safe place to live in, with reduced vulnerability to disaster (City Disaster Management Plan) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks and Critical Assumptions</b>
<b>Outcome</b> Climate and disaster resilience in the Chennai–Kosasthalaiyar River basin strengthened	By 2028: 1.9 million people living in the flood-prone areas of the Chennai–Kosasthalaiyar River basin protected from flood risk from a 1:2-year return period rainfall (2021 baseline: 0) (OPs 3.2 and 4.1) <sup>b</sup>	GCC reports, including rainfall data, flood area records, and flood-affected people records	A: The precipitation level and sea level rise will be within climate change projections under the RCP 8.5 scenario.  R: Delay in the completion of other planned water body restoration and channel rehabilitation projects under the Public Works Department may limit full realization of expected benefits. <sup>c</sup>
<b>Outputs</b> 1. Climate-resilient urban flood protection infrastructure improved in the Chennai–Kosasthalaiyar River basin	By 2027: 1a. 588 km of new stormwater drains constructed (2021 baseline: 0) (OPs 1.3.1; 3.2.5; and 4.1.2) 1b. 175 km of stormwater drains upgraded (2021 baseline: 0) (OPs 1.3.1; 3.2.5; and 4.1.2) 1c. 11 km stretches in four primary channels (Ambattur, Korattur, Kadappakkam, and Ariyallur) rehabilitated (2021 baseline: 0) (OPs 1.3.1; 3.2.5; and 4.1.2) 1d. One stormwater pumping station of 200 kW upgraded, and one new stormwater pumping station of 200 kW commissioned (2021 baseline: 0) (OPs 1.3.1; 3.2.5; and 4.1.2)	1a.–1g. Project quarterly progress report, GCC annual reports	R: Heavy monsoons exceeding projections may delay construction.  R: Surge in prices of materials and prolonged impact of COVID-19 on movement of goods and services may result in cost overrun and delay in project completion.

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	<p>1e. 23,000 catchpits with rainwater harvesting structures constructed (2021 baseline: 0) (OPs 1.3.1; 3.2.5; and 4.3.1)</p> <p>1f. Four GCC disaster relief camps (one per project zone) rehabilitated, with gender-responsive and socially inclusive features (2021 baseline: 0) (OPs 1.3.1; 2.5.2; and 4.1.2)<sup>d</sup></p> <p><u>1g. By 2025, water retention capacity of Kadapakkam Lake (55 hectares) augmented to 2.2 million cubic meters with nature-based solutions and EWCD-friendly recreational facilities<sup>e</sup> (GEF-funded). (2022 baseline: 1.1 million cubic meters) (OP 1.3.1; 2.5.2; 3.3.3; and 4.3.1)</u></p>		
<p>2. Urban flood preparedness of the GCC and project communities enhanced</p>	<p><b>Integrated urban planning</b></p> <p>2a. By 2024, guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations endorsed by the GCC (2021 baseline: no guideline) (OPs 3.2.4 and 4.3.1)</p> <p>2b. By 2025, baseline FRI and FRI framework for four river basins and the entire Chennai City established (2021 baseline: not applicable) (OP 4.2.1)</p> <p>2c. By 2024, manual for green infrastructure design, including rainwater harvesting, endorsed by the GCC (2021 baseline: not applicable)</p> <p><u>2d. By 2025, investment readiness road map to replicate nature-based solutions of Kadapakkam lake adopted for at least one other city in Tamil Nadu (GEF-funded). (2022 baseline: not applicable) (OP 3.3.4)</u></p> <p><b>Citizen's engagement and awareness</b></p> <p>2e. By 2025, FCO for Chennai City operationalized (2021 baseline: not applicable) (OP 6.2.4)</p> <p>2f. By 2025, at least 200 persons (including at least 50% women) in project community reported increased knowledge on green infrastructure schemes, including rainwater harvesting; flood risks and impacts; and the links between flooding, solid waste</p>	<p>2a. and 2c. GCC council resolutions</p> <p>2b. and 2d. Project quarterly progress report</p> <p>2e.–2j. Pre- and post-training survey and assessment</p>	<p>R: Competing priorities and turnover of key GCC staff disrupt business continuity and delay completion of target outputs.</p>

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	<p>management, sewerage service house connections, and the protection of water bodies (2021 baseline: not applicable) (OPs 2.5 and 4.3.2)</p> <p><b>Institutional capacity building and knowledge dissemination</b></p> <p><u>2g. By 2025, at least 50% of GCC technical staff (Storm Water Drain Department) in the project area, including 80% of women technical staff, reported increased knowledge on planning and design for stormwater drainage systems and management of solid waste and flood risks (2021 baseline: 0) (OPs 2.2; 4.3.2; and 6.1.1)</u></p> <p><u>2h. By 2026, at least two knowledge products on good practices and lessons on integrated urban flood management published and presented to at least 100 key government officials and sector experts, of whom at least 80 participants reported increased knowledge (2021 baseline: 0)</u></p> <p><u>2i. By 2025, at least 50 participants from Indian cities (including at least 40% women) reported increased knowledge on nature-based urban flood risk management through workshops and trainings (GEF-funded) (2022 baseline: 0) (OP 2.5)</u></p> <p><u>2j. By 2025 at least 10 officers of GCC and Government of Tamil Nadu (including at least 40% women) reported increased knowledge on integrated sustainable urban development through global and national dialogues (GEF-funded) (2022 baseline: 0) (OPs 2.5; 4.3.2; and 6.1.1)</u></p>		
3. Measures for sustaining O&M of stormwater drainage system established in the GCC	<p>3a. By 2023, a key performance indicator-based stormwater drainage operation performance <i>improvement</i> system established in 12 out of 15 zonal offices of the GCC (2021 baseline: not applicable) (OP 6.2.1)</p> <p>3b. By 2025, Sustainable Operation and Maintenance Improvement Plan of stormwater drainage system with gender-responsive and socially inclusive features approved by the GCC (2021 baseline: not applicable) (OPs <u>2.3.2</u>; 3.2.2; and 4.3.1)<sup>f</sup></p>	3a.–3c. GCC annual report, GCC budget	R: Change in leadership may affect momentum on reform program.

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	<p>3c. By 2024, road map for municipal resource mobilization approved by the GCC (2021 baseline: 0) (OP 4.2.2)</p> <p>3d. By 2025, at least 50% of GCC technical staff (Storm Water Drain Department) in the project area, including 80% of women technical staff, reported increased knowledge on sustainable O&amp;M of stormwater drainage systems and management of solid waste and flood risks (2021 baseline: 0) (OPs 2.2; 4.3.2; and 6.1.1)</p> <p>3e. By 2025, 100 drain desilting workers and conservancy workers (including at least 50 women workers) reported increased knowledge and skills of cleaning and maintaining stormwater drainage systems (2021 baseline: 0) (OP 2.2)</p>	<p>3d.–3e. Pre- and post-training survey and assessment</p>	

<p><b>Key Activities with Milestones</b></p> <p><b>1. Climate-resilient urban flood protection infrastructure improved in the Chennai–Kosasthalaiyar River basin</b></p> <p>1.1 Award all works contracts by June 2021</p> <p>1.2 Complete all civil works funded by the loan by June 2027</p> <p><u>1.3 Complete augmentation of capacity of Kadapakkam lake funded by the GEF grant by December 2024</u></p> <p><b>2. Urban flood preparedness of the GCC and project communities enhanced</b></p> <p>2.1 Draft guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations by June 2023</p> <p>2.2 Develop FRI for four basins and Chennai City by December 2022</p> <p>2.3 Draft and adopt FRI framework for four basins and Chennai City by December 2024</p> <p>2.4 Draft green infrastructure design manual by December 2023</p> <p><u>2.5 Draft investment readiness road map to replicate nature-based solutions of Kadapakkam lake by December 2025.</u></p> <p><u>2.6 Draft concept paper and detailed feasibility report for FCO by December 2023</u></p> <p><u>2.7 Prepare and adopt FCO by December 2024</u></p> <p><u>2.8 Conduct knowledge-building workshops on green infrastructure, including rainwater harvesting, by June 2025</u></p> <p><u>2.9 Conduct six awareness workshops on flood risks and impacts and the links between flooding, solid waste management, sewerage house service connections, and the protection of water bodies by June 2024</u></p> <p><u>2.10 Conduct knowledge-building workshops on the planning and design of urban drainage systems by June 2025</u></p> <p><u>2.11 Prepare knowledge products on the good practices and lessons of the project, and conduct a dissemination workshop by July 2026</u></p> <p><u>2.12 Conduct knowledge dissemination workshops on nature-based solutions for urban water body rejuvenation by December 2025</u></p> <p><u>2.13 Participate in Global and National dialogues organized by UrbanShift by December 2025.</u></p> <p><b>3. Measures for sustaining O&amp;M of stormwater drainage system established in the GCC</b></p> <p>3.1 Prepare and adopt baseline key performance indicators by December 2022</p> <p>3.2 Prepare an inclusive sustainable O&amp;M improvement plan by December 2024</p> <p>3.3 Draft a road map for municipal resource mobilization by December 2023</p> <p>3.4 Conduct knowledge-building workshops on sustainable operation and management of urban drainage systems by June 2025</p> <p>3.5 Conduct training on cleaning and maintaining stormwater drainage systems for drain desilting workers and conservancy workers by June 2025</p> <p><b>Project Management Activities</b></p> <p>Mobilize project support consultant by July 2021</p>
--

Mobilize institutional strengthening and reforms consultant by November 2021  
 Mobilize individual consultants supporting GEF-funded components by September 2022  
 Implement gender equality and social inclusion action plan from July 2021 to June 2027  
 Review missions, midterm review, and preparation of progress and annual reports

#### Inputs

Asian Development Bank: \$251.00 million (regular ordinary capital resources loan)  
 Cofinancing from Global Environment Facility: \$6.88 million (grant)  
 Government: ~~\$249.53~~\$222.13 million

A = assumption; COVID-19 = coronavirus disease; EWCD = elderly, women, children, and persons with disabilities; FCO = flood citizen observatory; FRI = flood resilience index; GCC = Greater Chennai Corporation; GEF = Global Environment Facility; km = kilometer; kW = kilowatt; O&M = operation and maintenance; OP = operational priority; R = risk; RCP = Representative Concentration Pathway.

- <sup>a</sup> Greater Chennai Corporation. 2017. [City Disaster Management Plan](#). Chennai.
- <sup>b</sup> A 1:2-year return period rainfall corresponds to rainfall intensity of 68 mm per hour. People protected from flood risk is the number of people not subjected to any kind of inundation on days when the rainfall intensity published by India Meteorological Department's Redhills rain gauging station is less than 68 mm per hour. It is calculated by deducting the population of reported inundation areas within the project area as per GCC records from the total population of the project area. The minimum number from such daily calculations in a year is reported as the project outcome.
- <sup>c</sup> Other planned projects include (i) water body restoration in Ambattur lake, Korattur lake, Retteri lake, Sadayankuppam lake, Ariyalur lake, Kadapakkam lake, Madhavaram Periyathoppu lake, and Kolathur lake; and (ii) channel rehabilitation in Ratteri South channel, Ratteri North channel, and Puzhal channel.
- <sup>d</sup> A gender-responsive and socially inclusive relief camp will have the following features: (i) at least one female worker or caretaker with supplies of sanitary napkins, soap, and a basic first aid kit with medicines; (ii) safe spaces (affording privacy and security) for women, especially nursing mothers and adolescent girls; (iii) separate, well-lit and clean toilets for men and women, with barrier-free access for people with disabilities and older persons; water, hooks, ledges, and shelves in the toilet; (iv) provisions for washing and disposal of menstrual products; (v) regular (daily) visits by female student volunteers and awareness generation on mechanism to address women's vulnerability to violence and trafficking; (vi) regular interaction between volunteers and people with disabilities within the relief camp; and (vii) helpline numbers displayed on walls.
- <sup>e</sup> EWCD-friendly features include safety rails, signages, child, elderly and persons with disability compatible toilet facilities, separate toilet facilities for women and men, accessible pathways, side benches, drinking water facilities, rain shelters, illumination along pathways, display of emergency contact numbers etc.
- <sup>f</sup> The Sustainable Operation and Maintenance Improvement Plan identifies the institutional, technical, financial, and social requirements to ensure the sustainable operation and maintenance of the stormwater drainage system. It will include community responsibility and participation, including women's participation.

#### Contribution to Strategy 2030 Operational Priorities

Expected values and methodological details for all OP indicators to which this operation will contribute results are detailed in Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 2).

Source: Asian Development Bank.

86. **Contribution to ADB Results Framework:** Expected values and methodological details for all OP indicators to which this operation will contribute results are detailed in Contribution to Strategy 2030 Operational Priorities provided in Appendix 7.

## B. Monitoring

87. **Project performance monitoring.** Within 6 months of loan effectiveness, the PIU will establish a project performance management system (PPMS) using the targets, indicators, assumptions, and risks in the DMF. The PIU with the support of PSC and ISRC will expand and develop the DMF into a monitoring and evaluation (M&E) framework considering other relevant monitoring parameters in addition to those included in the DMF. The PPMS will be disaggregated by income levels, sex and with specific focus on the vulnerable and women. The baseline data corresponding to indicators and targets set out in the DMF and M&E framework will be generated by PIU with support from PSC within 12 months of loan effectiveness. Based on the M&E framework which incorporates the initial baseline data, the PIU will prepare quarterly, midterm and annual monitoring reports using the same indicators and submit the reports to ADB

throughout project implementation. These PIU's quarterly reports will provide information necessary to update ADB's project performance reporting system. Results of a comprehensive completion survey will be included in the project completion report.

88. **Compliance monitoring.** PMU on behalf of GOTN will monitor compliance of loan and grant covenants, including that relating to policy, legal, financial, economic, environmental, social safeguards and others and ensure compliance with loan covenants and assurances. All noncompliance issues, if any, will be updated in quarterly progress reports together with remedial actions. The MAWS Department and ADB review missions (at least twice a year) will also monitor the status of compliance with loan and grant covenants and raise the noncompliance issues with the MOF and GOTN and agree on remedial actions.

89. **Safeguards monitoring.** Monitoring and reporting of the implementation on safeguards requirements and procedures will be prepared by the PIU with assistance of PSC. The status of safeguards implementation will be discussed at each ADB review mission and with necessary issues and agreed actions recorded in aide-mémoires. PIU will include in the quarterly progress reports, monitoring of compliance against safeguard covenants, summary status of grievance resolution. PIU will also submit separate semiannual environmental and social safeguards monitoring reports to ADB within 30 days from the end of each reporting period (Jan-June and July-Dec), which will be reviewed and disclosed on ADB's and project's websites. The semiannual social and environmental monitoring reports and the QPR sections on safeguards will be prepared and compiled by the PIU with the assistance of PSC. The status of safeguard implementation, issues, and corrective actions including associated cost and schedule are to be clearly reported to ADB. During operation, PIU will submit environmental monitoring reports annually to ADB until the project completion report is issued. The outline of the semiannual environmental monitoring report is in Appendix 8 and the outline of the semiannual social safeguards monitoring report is in Appendix 9. ADB will also carry out annual environmental and/or social (including gender) reviews of the project.

90. **Gender and social dimensions monitoring.** Status of the implementation of the GESI AP will be discussed at each ADB review mission. The GESI AP monitoring matrix (Appendix 20) with updated data on progress against targets will be included in quarterly progress reports. Sex disaggregated data will be collected and reported in the quarterly GESI AP progress reports along with project QPRs. The ISRC Gender Expert will support the PIU in implementation, monitoring and reporting on the GESI Action Plan.

## C. Evaluation

91. The government and ADB will jointly review the project at least twice a year. This includes (i) the performance of the PIU, consultants and contractors; (ii) physical progress of subprojects and effectiveness of safeguards including the GESI AP; (iii) compliance with loan assurances; and (iv) assessment of subproject sustainability in technical, financial, and social terms. In addition to the regular loan reviews, the government and ADB will undertake a comprehensive midterm review in the third year of project implementation to identify problems and constraints encountered and suggest measures to address them. Specific items to be reviewed will include (i) appropriateness of scope, design, implementation arrangements, and schedule of activities; (ii) assessment of implementation pace against project indicators; (iii) effectiveness of capacity building programs; (iv) compliance with safeguard measures; (v) extent to which the GESI AP is being implemented; (vi) lessons learned, good practices, and potential for replication; and (vii)

any changes recommended. Within 6 months of physical completion of the project, the GOTN will submit a project completion report to ADB.<sup>23</sup>

#### **D. Reporting**

92. The GOTN will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statement together with the associated auditor's report, should be adequately reviewed.

93. PIU will provide ADB the following reports, all of which are subject to web disclosure in compliance with ADB's Access to Information Policy (2019).

- (i) quarterly progress reports in a format consistent with ADB's project performance reporting system within 15 days of the end of each quarter;<sup>24</sup>
- (ii) semiannual safeguards monitoring reports;<sup>25</sup>
- (iii) consolidated annual reports including: (a) progress achieved by output as measured through the DMF indicator's performance targets; (b) key implementation issues and solutions; (c) updated procurement plan; and (d) updated implementation plan for next 12 months;
- (iv) a project completion report within 6 months of physical completion of the project; and
- (v) audited consolidated project financial statements and associated auditor's report within 6 months of the end of each fiscal year.

#### **E. Stakeholder Communication Strategy**

94. The project intends to maximize transparency by communicating project information to the stakeholders by various means. GCC, with support from project preparatory consultants, prepared a revised gender-sensitive inclusive community awareness and participation plan (CAPP) for the project (Appendix 21). The CAPP's success will be determined by the effectiveness of a coordinated and well-delivered communication strategy, which will promote the cooperation of communities based on their understanding and acceptance of the project and its objectives. It will also require effective interagency coordination between the executing agency, related government department, and the community stakeholders at the grass-root level. The communication strategy will be inclusive, targeting all beneficiary households and especially the poor and the vulnerable groups whose voices are not generally heard and whose participation is often weak in decision-making processes.

95. To maximize reach, communication tools such as community consultations, inclusive and gender focused meetings, seminars, training, school activities and campaigns will be used. Public service advertisements, talks and messages using local electronic and print mass media; billboards; and interpersonal communication by consultants and local government staff will be implemented. Messages related to nature-based solution for rejuvenation of water bodies and

---

<sup>23</sup> Project completion report format is available at: *ADB website*.

<sup>24</sup> An outline is provided in Appendix 10.

<sup>25</sup> An outline is provided in Appendixes 8 and 9.

integrated spatial plans for managing flood risks will be disseminated through appropriate medium of communication. Engagement with farmers and communities residing around Kadapakkam Lake will be ensured, and the consultations on project scope and benefits will be conducted throughout the project cycle. The project communication strategy also includes a project website disclosing key project related information, including the scope, cost, and financial and institutional arrangements, safeguards reports such as IEE, resettlement plans, and DDR, and progress on procurement, contract awards, and disbursements. The ISRC will be responsible for implementation of CAPP activities. Progress on CAPP implementation will be summarized and included in the quarterly progress reports. Records of the means of verification for CAPP indicators and targets will be maintained by the PMU and PIU.

96. For the GEF component, multiple stakeholders including CSOs working with vulnerable groups like women, children and economically weaker sections will be regularly consulted. A range of information, education, and communication (IEC) activities will be undertaken such as meetings, distribution of awareness material including posters and pamphlets, and public events to create awareness. Community members will be involved in preparing and designing the IEC materials. The IEC activities will be supported by a Lake Management Committee (LMC). The committee comprising the concerned stakeholders including representatives from civil society organization(s) will be constituted before the commissioning of rejuvenation work of Kadapakkam Lake, to review maintenance, oversee water and environmental quality monitoring, and make coordinated works to resolve any operational issues. The LMC will have members from various stakeholder agencies subject to government approval, such as Greater Chennai Corporation, Public Works Department, Chennai River Restoration Trust, Agriculture Department, Tamil Nadu Pollution Control Board, CSOs working on nature-based restoration of water bodies, Eco Clubs as well as CSO's working with vulnerable communities like women, children and socially and economically backward community groups.

## **X. ANTICORRUPTION POLICY**

97. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>26</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB financed activity and may not be awarded any contracts under the project.<sup>27</sup>

98. To support these efforts, relevant provisions are included in the loan and grant agreement and regulations and the bidding documents for the project. All contracts financed by ADB in connection with the project will include provisions specifying the right of ADB to audit and examine the records and accounts of the GCC, PIU, contractors, suppliers, consultants, and other service providers as they relate to the project. ADB will disseminate ADB's Anticorruption Policy, 1998 to GOTN, GCC, PMU, PIU, PSC and ISRC.<sup>28</sup>

99. Project-specific measures to enhance governance and prevent corruption, designed with the stages of project implementation and the disbursement chain in mind, include (i) the requirement for PIU to follow government rules and procedures for all expenses including cash

<sup>26</sup> [Anticorruption Policy](#): The PMU/PIU is required to ensure that the awardee is not on the OAI complete list when the contract is to be awarded. The attention should be paid particularly for any procurement under post review.

<sup>27</sup> ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

<sup>28</sup> ADB's Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

and the proper and accurate maintenance of financial records, (ii) establishing a project website at PIU to provide transparency on project details including procurement and (iii) displaying Citizen Charter in wards affected by the project.

100. The project intends to maximize transparency, as described in sections above. Full information disclosure and participatory monitoring at both the central and the local levels are expected to be effective in reducing the risk of corruption and improving governance at central and local levels.

101. Within 12 months of project effectiveness, the PIU will establish systems to receive and resolve complaints/grievances or act upon reports from stakeholders on misuse of funds and other irregularities relating to the project as outlined in the GRM including but not limited to grievances due to safeguard issues. The GRM will: (i) be independent and with no conflict of interest with the project city wards; (ii) make public of the existence of the GRM; (iii) review and address grievances of stakeholders of the project, in relation to either the project, any of the service providers, or any person responsible for carrying out any aspect of the project; and (iv) proactively and constructively responding to them.

102. ADB's Anticorruption Policy designates the Office of Anticorruption and Integrity as the point of contact to report allegations of fraud or corruption among ADB financed projects or its staff.<sup>29</sup> The Office of Anticorruption and Integrity is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail, or e-mail at the following numbers/addresses:

e-mail at [integrity@adb.org](mailto:integrity@adb.org) or [anticorruption@adb.org](mailto:anticorruption@adb.org)

phone at +63 2 8632 5004

fax to +63 2 8636 2152

by mail at the following address (Please mark correspondence Strictly Confidential):

Office of Anticorruption and Integrity

Asian Development Bank

6 ADB Avenue, Mandaluyong City

1550 Metro Manila, Philippines

## **XI. ACCOUNTABILITY MECHANISM**

103. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>30</sup>

### **Contact details:**

<sup>29</sup> ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

<sup>30</sup> Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>

Secretary  
Compliance Review Panel  
Asian Development Bank  
6 ADB Avenue  
Mandaluyong City  
1550 Metro Manila, Philippines

Tel + 63 2 632 4149

Fax +63 2 636 2088

E-mail: [crp@adb.org](mailto:crp@adb.org)

Web: [www.compliance.adb.org](http://www.compliance.adb.org)

## **XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

104. The first draft of PAM has been prepared and agreed upon at the loan negotiations on 10 August 2021. It has been updated and agreed upon at the grant negotiations on XX XX 2022. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM, including revision to contract awards and disbursement s-curves.

## PROCUREMENT PLAN

### Basic Data

Project Name: Integrated Urban Flood Management for the Chennai-Kosasthalaiyar Basin Project		
Project Number: 49107-009 IND (loan) and 49107-012 IND (GEF grant)	Approval Number: TBD	
Country: India	Executing Agency: Municipal Administration and Water Supply Department, Government of Tamil Nadu	
Project Procurement Classification: Category: B	Implementing Agency: Greater Chennai Corporation (GCC)	
Procurement Risk: Low		
Project Financing Amount: \$480.01 million ADB Financing: \$251.00 million Grant Cofinancing from GEF: \$6.88 million Government: \$ 222.13million	Project Closing Date: December 2027 (loan)	
Date of First Procurement Plan: 31 January, 2020	Date of this Procurement Plan: 18 January 2022	
Procurement Plan Duration (in months): 18	Advance contracting: Yes (loan), No (GEF grant)	e-GP: Yes <a href="https://www.tntenders.gov.in/nicgep/app">https://www.tntenders.gov.in/nicgep/app</a>

### A. Methods, Review and Procurement Plan

Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works and consulting services.

Procurement of Goods and Works	
Method	Comments
Open Competitive Bidding (OCB) for Goods	Prior review
Request For Quotation for Goods	Post review
Open Competitive Bidding (OCB) for Works	Loan: Prior review for initial five contracts and all contracts greater than \$10.0 million; and post review (sample basis) of all other contracts GEF grant: Prior review
Request For Quotation for Works	Post review

Consulting Services	
Method	Comments
Quality- and Cost-Based Selection for Consulting Firm	Prior review
Direct Contracting for Individual Consultant	Prior review

### B. List of Active Procurement Packages (Contracts)

The following table lists goods, works and consulting services contracts for which the procurement activity is either ongoing or expected to commence within the procurement plan's duration.

Goods and Works							
Package Number	General Description	Estimated Value (in US\$ Million)	Procurement Method	Review	Bidding Procedure	Advertisement Date (quarter, year)	Comments
	<b>Phase 1 Bidding</b>						
GCC/KB/01	Construction of integrated storm water drain in <b>North Ambattur</b>	2.83	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference

	<b>Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 1 - Outfalls 1 to 5)						applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/02	Construction of integrated storm water drain in <b>North Korattur Lake watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 2 - Outfall 1)	21.15	OCB	Prior	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/03	Construction of integrated storm water drain in <b>Korattur Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 3 - Outfall 2 to 12)	6.47	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/04	Construction of integrated storm water drain in <b>Puzhal South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 4 - Outfall 1)	5.06	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/05	Construction of integrated storm water drain in <b>Puzhal South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 5 - Outfall 2 and 3)	8.01	OCB	Prior	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

GCC/KB/06	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 6 - Outfall 1 Part 1)	14.88	OCB	Prior	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/07	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 7 - Outfall 1 Part 2)	10.71	OCB	Prior	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/08	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 8 - Outfall 1 Part 3)	18.50	OCB	Prior	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/09	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 9 - Outfall 2)	1.99	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/10	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of	7.86	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document:

	Greater Chennai Corporation (Package 10 - Outfall 3)						Small civil works e-GP: Yes
GCC/KB/11	Construction of integrated storm water drain in <b>Retteri Lake Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation	1.76	OCB	Post	1S2E	Q2/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
	<b>Phase 2 Bidding</b>						
GCC/KB/12	Construction of integrated storm water drain in <b>Retteri South Surplus Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 12 - Outfall 1)	5.15	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/13	Construction of integrated storm water drain in <b>Retteri South Surplus Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 13 - Outfall 2 and 4)	12.59	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/14	Construction of integrated storm water drain in <b>Retteri South Surplus Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 14 - Outfall 3 Part 1)	18.51	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/15	Construction of integrated storm	17.47	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of

	water drain in <b>Retteri South Surplus Watershed</b> and <b>Captain Cotton Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 15 - Outfall 3 Part 2 of Rotteri south & Outfall 1 of Captain Cotton Canal)						bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/33	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 33 - Outfall1 to 4 )	11.26	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/34	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 34 - Outfall5 and 6 )	3.01	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/35	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 35 - Outfall7 )	4.06	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

GCC/KB/36	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 36 - Outfall 8 to 13)	7.36	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/37	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 37 - OutfallIPS1 and Pumping Station PS1)	17.23	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/38	Construction of integrated storm water drain in <b>North Buckingham Canal Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 38 - OutfallIPS2 and Pumping Station PS2)	14.34	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/39	Construction of integrated storm water drain in <b>North Coast Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 39 - OutfallJ1)	5.12	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

GCC/KB/41	Construction of integrated storm water drain in <b>North Coast Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 41 - OutfallJ3 to J8)	5.84	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/42	Construction of integrated storm water drain in <b>North Coast Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 42 - OutfallJ9 to J13)	5.59	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/43	Construction of integrated storm water drain in <b>Otteri Nalla Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 43 - Outfall1 to 4)	7.27	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/44	Improvement to Ambattur and Korattur canals in Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 44)	19.67	OCB	Prior	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/45	Improvement to Kadappakkam and Ariyallur canals in Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 45)	8.09	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

GCC/KB/46	Constructing catchpits with rainwater harvesting structures in existing storm water drains in Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 46)	4.61	OCB	Post	1S2E	Q3/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
	<b>Phase 3 Bidding</b>						
GCC/KB/16	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 16 - Outfall 1 to 2 )	4.66	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/17	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 17 - Outfall 3,4, 5 and 10)	5.22	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/18	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 18 - Outfall 6, 7, 9 and 12)	4.48	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/19	Construction of integrated storm water drain in <b>Puzhal Surplus</b>	13.19	OCB	Prior	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference

	<b>South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 19 - Outfall 8)						applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/20	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 20 - Outfall 13,14)	2.32	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/21	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 21 - OutfallGP1,GP2 aad GP3)	6.87	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/22	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 22 - OutfallGP4)	5.76	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/23	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 23 -	4.48	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

	OutfallGP5, GP6, GP7 and GP8)						
GCC/KB/24	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 24 - OutfallGP9 and GP10)	15.23	OCB	Prior	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/25	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 25 - OutfallGP11)	11.78	OCB	Prior	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/26	Construction of integrated storm water drain in <b>Puzhal Surplus South Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 26 - OutfallGP12,GP13 ,GP14,GP15)	7.15	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/27	Construction of integrated storm water drain in <b>Puzhal Surplus North Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 27 - Outfall1 to 5)	5.04	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/28	Construction of integrated storm water drain in <b>Puzhal Surplus</b>	6.09	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference

	<b>North Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 28 - Outfall6 to 8)						applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/29	Construction of integrated storm water drain in <b>Puzhal Surplus North Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 29 - Outfall9 to 13, 15 to 18)	10.89	OCB	Prior	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/30	Construction of integrated storm water drain in <b>Puzhal Surplus North Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 30 - Outfall14 and Outfall HP-1 to HP-6)	9.33	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/31	Construction of integrated storm water drain in <b>Puzhal Surplus North Watershed</b> of Kosasthalaiyar basin in the extended areas of Greater Chennai Corporation (Package 31 - OutfallHP-7 to HP-8)	9.35	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes
GCC/KB/32	Construction of integrated storm water drain in <b>Puzhal Surplus North Watershed</b> of Kosasthalaiyar basin in the extended areas of	3.60	OCB	Post	1S2E	Q4/2020	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document:

	Greater Chennai Corporation (Package 32 - OutfallHP-9 to HP-12)						Small civil works e-GP: Yes
GCC/Kadapakkam/01	Ecosystem restoration of Kadapakkam Lake in Chennai Kosasthalaiyar Basin	7.06	OCB	Prior	1S2E	Q2/2022	Advertising: National Prequalification of bidders: No Domestic preference applicable: No Advance Contracting: Yes Bidding Document: Small civil works e-GP: Yes

<b>Consulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (in US\$ Million)</b>	<b>Selection Method</b>	<b>Review</b>	<b>Type of Proposal</b>	<b>Advertisement Date (quarter, year)</b>	<b>Comments</b>
GCC/KB/CS 01	Project Support Consultant (PSC)	7.98	QCBS	Prior	FTP	Q1/ 2020	Non-Consulting Services: No  Type: Firm Assignment: National Quality-Cost Ratio: 80:20 Advance Contracting: Yes e-GP: No
GCC/KB/CS 02	Institutional Strengthening and Reform Consultant (ISRC)	2.0	QCBS	Prior	FTP	Q3/ 2021	Non-Consulting Services: No  Type: Firm Assignment: National Quality-Cost Ratio: 80:20 Advance Contracting: Yes e-GP: No
GCC/Kadapakkam/CS 01	Individual Consultants	1.39	Individual Consultant Selection	Prior	STP	Q2/2022	Type: Individual Assignment: National Advance Contracting: Yes e-GP: No

### **C. List of Indicative Packages (Contracts) Required under the Project**

The following table lists goods, works and consulting services contracts for which the procurement activity is expected to commence beyond the procurement plan duration and over the life of the project (i.e. those expected beyond the current procurement plan duration).

<b>Goods and Works</b>						
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (in US\$)</b>	<b>Procurement Method</b>	<b>Review</b>	<b>Bidding Procedure</b>	<b>Comments</b>
None						

<b>Consulting Services</b>						
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (in US\$)</b>	<b>Selection Method</b>	<b>Review</b>	<b>Type of Proposal</b>	<b>Comments</b>
None						

## OUTLINE TERMS OF REFERENCE FOR PROJECT SUPPORT CONSULTANTS

### 1. Objective of the Assignment

GCC through a consultant has prepared the detailed project report (DPR), including detailed engineering designs, bidding documents and IEE through their own resources and ADB has engaged individual consultants to provide support for advance actions. The project is expected to have high readiness with all consulting and works packages at advanced stages of procurement or awarded by loan approval. Advance contracting will be undertaken by GCC and retroactive financing will be used for civil works and consulting services.

The entire scope is proposed to be executed in multiple contract packages. Packages are grouped so that work areas are geographically contiguous and hydraulically isolated. Initial packages and packages over a given threshold shall be subject to ADB's prior review and the remaining shall be for post review (sample). Bidding is proposed to be in three phases.

The objective of the PSC is to provide assistance to the Employer (GCC) in successfully delivering the project meeting all requirements of GCC and ADB. This includes design and procurement support as required, project management, performance monitoring, contract management, day-to-day construction supervision, construction quality control and quality assurance along with preparing reports, including ADB's reporting requirements. PSC shall be responsible for effectively leading and taking initiative to manage, execute and implement the project activities by effective project and contract management and construction supervision. PSC will support the PMU in project management activities and PIU in design, procurement and contract management issues. PSC will assist and carry out on-the-job training as a routine part of their activities. PSC shall also oversee, monitor and report safeguards related issues as mandated under ADB's Safeguards Policy Statement, 2009.

### 2. Scope of Services

The scope of services of the PSC includes the following:

#### a. Design Review

- Review the DPR and revise or update if found necessary;
- Prepare and/or update safeguards documents;
- Undertake surveys and investigations and prepare DPR, detailed designs, technical specifications, cost estimates, bid documents and safeguard documents for any additional areas if found necessary within the basin as advised by GCC;
- Validate surveys and have the existing hydraulic model verified and improved, if found necessary, and accordingly update the detailed design;
- Prepare/review bid documents for works packages that are to be tendered;
- Update the DMF indicators for the evaluation of the project results by validating baseline, current values and targets; and
- Advise on improvement and/or introduction of innovative approaches in project design.

#### b. Procurement

- Review of tender drawings against the verified and approved hydraulic model and update where necessary;
- Review and update technical specifications, cost estimates and BoQs. Ensure they are in accordance with standard engineering practices followed in India; and

- Provide technical support during the tendering process to ensure an efficient procurement process for works and equipment (e.g. responding to technical queries, organization of site visits and participation in pre-bid meetings, preparing addenda to the bidding document if needed, providing support in bid evaluation, preparing letter of award (LoA), and contract agreement etc.

#### **c. Support for technology upgrading and innovation in storm water management**

- Identify opportunities and recommend designs, technologies, and processes to simplify execution and/or operations and maintenance, and to minimize CAPEX and OPEX;
- Support GCC and ISRC in formulating long-term operations strategies for comprehensive drainage management in Chennai;
- Formulate draft guidelines integrating flood hazard zoning with spatial plans and land use, building and development regulations;
- Help GCC in preparing a green infrastructure design manual for smaller municipal works with prototypes and drawings;
- Provide technical inputs into the public awareness campaigns to be organized by the ISRC on the link between flooding, solid waste management and protection of water bodies; and

#### **d. Construction supervision**

- Prepare a construction supervision manual;
- Verify the good for construction drawings prepared by the contractor and approve;
- Map all the utilities above and below ground in GIS that are falling within the alignment and assist in shifting of utilities as required;
- Lay out sites for various components involved in the project, including field verification of lines and levels;
- Advise the client on best practices and innovative approaches in construction, develop site-specific construction methodology for complex work and supervise all works;
- Carry out duties as Engineer and/or Engineer's Representative within the context of provisions of Works and Supply Contracts. This includes day-to-day supervision of construction works at all work fronts by engaging qualified field engineers, recording measurements and preparing contractors' claims;
- Conduct regular field visits to project sites during civil works activities and conduct independent assessment on safeguard compliance;
- Establish and operate a construction quality control lab to ensure quality of concreting work and provide periodic quality test reports;
- Undertake regular quality checks of works at contractor's field labs, plant labs and consultant's own lab and maintain quality check record, issue quality approval certificates and ensure corrective actions are taken as required by test results;
- Establish quality assurance system, including verification of source of material and certifications;
- Carry out necessary quality control activities and certify that the quality of the works conforms to the technical specifications and drawings;
- Assist third-party inspections, if necessary, as decided by the Employer;
- Develop and implement an e-measurement system with electronic measurement book./ as per existing procedures adopted in GCC; and

- Obtain as built drawings from the contractors and submit the same to the client after verification in the field and certification for its correctness.

#### **e. Contract and Project management**

- Support and assist GCC in contract administration and compliance of contractual conditions;
- Prepare a project management manual;
- Prepare MS Project based project scheduling and implement it in contract execution. Assist the PIU in preparing annual work plan, detailed implementation schedule and budget using management tools;
- Design and operationalize an effective project performance monitoring system (PPMS) to track progress taking into account the targets defined in the project's design and monitoring framework;
- Advice and support the PMU and the PIU on contract management issues on a regular basis;
- Assist the PIU in maintaining proper accounts with all ledger and control systems; Support GCC to execute the actions identified under the Financial Management Action Plan in the FMA prepared during ADB due diligence;
- Develop and set up an MIS for the project and monitor physical and financial progress of works and prepare monthly, quarterly and annual progress reports, identifying critical issue;
- Develop Quality Assurance System & Quality Management & Control Plan and prepare Quality Compliance Reports;
- Engage with all the stakeholders to achieve timely completion of contractual obligations on the part of Contractors and the Client;
- Assist in compliance with regulatory clearances. Assist in obtaining various permits, for the implementation of the project;
- Prepare Traffic Management Plan for project implementation;
- Develop standard operating procedures (SOPs) for safety in construction and advise and supervise on safety and security of the laborers, supervising and monitoring officials and public during project implementation;
- Ensure compliance of ADB safeguard requirements with regular field monitoring, identification of issues and resolution and prepare various documents related to safeguards implementation and monitoring, including Environmental and Social Safeguards;
- Assist Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement;
- Prepare and submit work completion report, including as built drawings in editable format in AutoCAD or similar software;
- Assist the Employer for resolution of all contractual issues, including examining the contractor's claims for variations/time extensions, additional compensations etc. and prepare recommendations following the provisions of the contract agreements;
- Accompany the Client in meetings as and when necessary;
- Assist the Client to prepare for ADB review missions;
- Prepare and ensure timely submission of all documents related to project management, monitoring and reporting as agreed by GOTN, GCC and ADB; and
- Prepare Project Completion Report.

## f. Operations management

- Considering the entire project, including the plants & equipment furnished by the manufacturers, suppliers & contractors, prepare an Operation and Maintenance Manual for stormwater drainage in the Kosasthalaiyar basin of GCC, which should also include existing drains;
- Create an asset management system for SWD with asset classification hierarchy;
- Create a GIS based inventory of existing drainage assets and new assets constructed under the project according to the adopted classification system and prepare an asset management plan for SWD in the Kosasthalaiyar basin of GCC; and
- Carry out trainings for GCC staff on design, construction and maintenance of SWD. Prepare a GIS based drainage basin map for Kosasthalaiyar basin in GCC including all existing and newly constructed assets.

## 3. Detailed Tasks

Without limiting the scope, the PSC shall work in close liaison with the GCC officials (PMU and PIU) and undertake the following tasks. The consultant shall bear in mind that he should perform all necessary activities and tasks to fulfill the overarching objectives of the assignment and perform all tasks that reasonably fall under this scope. The tasks listed below are some further elaboration of the scope, but the consultant shall identify all necessary activities and tasks for full accomplishment of the successful completion of the project to high quality, and reflect these in the consultant's work plan and methodology. Consultant will involve all stakeholders in validation of prepared documents and supervision of works.

### 3.1 Inception, Design Review and Procurement

- (a) Collect and critically review available documents related to the project like DPRs, loan documents, contract documents of awarded contracts and other reports relevant for the project;
- (b) Develop a stakeholder engagement strategy for the project, identify key stakeholders and requirements for engagement with different groups, interacting early with major stakeholders;
- (c) Conduct a kick-off workshop with GCC officials, other stakeholders and line departments;
- (d) Get familiar with the project's design monitoring framework, the indicators, baseline and target values;
- (e) Update the project implementation schedule, if required;
- (f) Prepare final templates of monthly / quarterly reports to be approved by GCC and ADB;
- (g) Collect and get familiar with the hydrological and hydraulic models developed for the project. Identify any critical issues that need attention of GCC and suggest corrective steps if required;
- (h) Critically review the tender drawings prepared by the design consultant against the model and identify errors or omissions;
- (i) In cases where there are any omitted or additional areas or additional works or new project components in the basin that GCC decides to include under the project, or in cases where the already identified packages are yet to be tendered, the consultant shall:
  - Conduct required surveys and studies by engaging qualified firms or using its own resources;

- Prepare detailed designs in line with the principles and concepts adopted in the overall network design and maintaining lines and levels enabling total integration to the overall network;
  - Prepare detailed drawings for the components;
  - Conduct all relevant design calculations and prepare supplementary maps and drawings, schedules, charts, notes and reports etc. and furnish to the PIU in editable format;
  - Prepare cost estimates and bill of quantities;
  - Prepare variation orders in case it is proposed under an ongoing package, or prepare bidding documents if new component;
  - Prepare resettlement plans and IEE/EMPs based on project site conditions and update safeguards documents as required (e.g. due to change in alignment, construction methodology, unanticipated impacts, etc.);
  - Prepare BOQ items for implementation of EMP;
  - Prepare bid documents following ADB's approved standard bid document, including all sections of bid documents, tender drawings, bill of quantities and safeguard documents;
  - Assist GCC in conducting bidding process, prepare clarifications to the bidders queries, prepare addendum if required;
  - Support GCC during bid opening, assist in bid opening procedures, prepare the bid opening record, and carry out the bid evaluations according to pre-defined criteria and ADB's Procurement Guidelines; determining whether the bidder is eligible, substantially responsive to the stipulations presented in the tender documents;
  - Prepare bid evaluation reports (technical and financial) in accordance with the relevant reporting requirements of ADB. Ensure that the report is transparent and sufficiently informative instead of merely stating "complied", "yes" or "no" and complies with ADB format requirements;
  - Assist GCC in preparing the agenda for contract negotiations and assist GCC during these contract negotiations; and prepare minutes of meeting accordingly;
  - Prepare draft and final contract documents, including all annexes and letter of acceptance for GCC; and
  - Assist GCC in informing the unsuccessful bidders.
- (j) Critically examine and advise GCC with suitable solutions for any design related issues raised by the contractor.

### **3.2 Construction Supervision and Contract Management Support:**

The Supervision and Monitoring activity will commence after award of the first contract(s). The project supervision includes general and site supervision of works, the preparation of initial operation activities, continuous management and monitoring, periodic reporting and participation in the acceptance of works. General and site supervision of works shall be performed on a continuous basis. The PSC shall provide construction supervision services through the Resident Engineers (REs), the field engineers and quality control engineers supervising on a day-to-day basis at work sites. GCC's field engineers shall associate with the consultant's team in construction supervision and contract management.

In principle, the PSC shall carry out the tasks of the Engineer in accordance with the General Conditions of Contract. The day-to-day supervision and administration of the contractors would be primarily handled by the PSC. However, the final and official approvals on contractual matters

shall be issued to Contractors by the GCC's Project Manager. In order to expedite daily supervision, the PSC shall have the authority to provide comments on the Contractor's submissions directly to Contractor (always with copy of any communication to GCC). In addition, to ensure effective site supervision by the PSC staff, they shall have authority on three main topics in the field as listed below and GCC authorities will delegate powers to the PSC accordingly.

- I. Occupational Health and Safety: Authority to issue instructions to the Contractor regarding safety breaches and in case of severe breaches to stop the work.
- II. Environmental and Social Safeguards: Authority to issue instructions to the Contractor regarding noncompliance on environmental and social management issues and in case of severe breaches to stop the work.
- III. Use of concrete: Authority to prevent the use of concrete or asphalt which is not compliant with the specifications and to prevent pouring of concrete where there are concerns regarding the reinforcement or inadequate concrete compaction equipment and placing of asphalt without adequate paving and rolling machineries.

Indicative list of specific tasks related to supervision and management includes:

- (a) Identifying risks which could hamper the implementation and developing appropriate proposals for risk mitigation. The Consultant shall regularly discuss risks and mitigation measures with the GCC and document relevant results in the Project monitoring records;
- (b) Establishing a good working relationship with all the stakeholders and seeking their views on issues that require their attention and apprising them at regular intervals on progress;
- (c) Conducting regular consultations on relevant aspects of Project implementation with the GCC and requesting support from GCC as needed (e.g. with clearances or to participate in consultations, etc.);
- (d) Providing the necessary staff as well as office, technical equipment and vehicles, which are required for the execution of services. The Consultant will put in place adequate staff to deal with the project scope and mobilize team members as and when necessary and in line with the contract;
- (e) Support GCC in the management of the Project regarding all technical and financial matters as well as all matters required for Project implementation as per requirement of ADB;
- (f) Coordinate with the GCC and all other relevant local institutions and organizations as well as with ADB;
- (g) Engage with the public, the civil society, beneficiaries with view to promoting the benefits of the Project and the responsibilities of the beneficiaries. Establish a clear and feasible approach to ensure meaningful stakeholder consultation and communication, as well as their participation as relevant in the project implementation;
- (h) Elaborate and follow-up of the project planning (scope, time, budget, quality control). Develop an overall project delivery/work program/schedule for each contract using MS Project by defining critical steps or milestone, estimating duration and sequencing of activities and arrange its review and approval by the PIU;
- (i) Execute the approved work program and notify immediately if there is any requirement for changes. Take any corrective measures to ensure that the works are executed as approved or amended;

- (j) Support the PIU in the preparation of the required documents for obtaining required permits and ensuring land availability prior to starting construction work. Assist the PIU in preparing required documents and drawings. This should include all efforts to ensure required land can be handed over to the Contractor latest at signing of the construction contracts. However, it is confirmed that land acquisition process (if required), receipt of construction permits, and power supply are the final responsibility of the PIU;
- (k) Develop the Project Quality Assurance, Quality Management and Control Plans identifying critical milestones, standards, project performance requirements and monitor progress, and identify solutions to eliminate causes of unsatisfactory performance.
- (l) Ensure that the project activities are also integrated with ongoing activities or operations, if any, so that there are minimal disruptions.
- (m) Prepare a construction supervision manual which identifies the roles, responsibilities and authority of the supervision team and the involved stakeholders. In addition, the manual should prepare the supervision team for day-to-day recording of works through providing forms such as, but not limited to:
  - Daily construction record
  - Weekly report
  - Monthly report
  - Timesheets
  - Stormwater drain record sheet
  - Manhole inspection sheet
  - Concrete pouring request form and concrete pour record sheet
  - Site defect record sheet
  - Dayworks record
  - Site photographs
- (n) Conduct regular field visits to project sites during civil works activities and conduct independent assessment on safeguard compliances;
- (o) Develop and implement an electronic measurement book/ as per existing procedures adopted in GCC, for measurements of works and supplies and preferring contractor's claim bill.
- (p) Certify the contractor's invoice / payment application and facilitate timely payment of contractors' claims and support in preparing disbursement claims for submission to ADB on time.
- (q) Prepare and implement a concise project management manual with SOPs for efficient management of the Project.
- (r) Coordinate and liaison with the GCC, Contractor(s) and other relevant institutions including:
  - Organization of monthly site-meetings with the Contractor(s), GCC, and other key stakeholders concerned;
  - Preparation and circulation of minutes of meetings.
- (s) Carry out in principle all tasks of the Engineer, including among others:
  - Coordinate with GCC and arrange site handover to contractors;
  - Contract and claim management; advice GCC on contractual obligations and establish early warning systems to minimize financial impacts from compensation events and subsequent claims.

- Review and recommend for approval the contractor's work program, staffing and material schedules and method statements and supervise its implementation.
  - Control of the validity of the Contractor's documents such as advance payment certificates, insurance policies, bank guarantees, etc.;
  - Review and recommend for approval contractor's designs, construction drawings, specifications and shop drawings and monitor and supervise the construction, delivery and installation wherever required;
  - If necessary, make amendments to the design with approval by GCC;
  - Quality and quantity control for all works and supplies via day-to-day inspection of the Contractor's work;
  - Install and operate at its cost a quality control lab with all necessary equipment to certify the quality of concrete used in the work;
  - Ensure that the Contractor is only using permanent and temporary construction material in compliance with the technical specifications and works requirements; review and recommend for approval the contractor's proposed material specification, schedule of supply and source;
  - Time and expenditure control; supervise the construction work progress vs. the approved work program and ensure that delays are being kept to minimum and, wherever possible, the contractor takes corrective measures to put the project back on track as per the planned schedule;
  - Supervise the contractor's construction activities, ensuring that all construction is undertaken as designed, or in accordance with approved variations to the original design, and that all quality standards and specifications are met;
  - Take joint measurements with the representatives of GCC and the contractor;
  - Measure and certify all quantities billed by the contractor, review and recommend for approval of the Contractor's running and final bills, and issuance of the corresponding "Payment Certificates" to the GCC/Employer;
  - Assist GCC in dealing with any variation including preparing / recommending the quantities and rates, preparing change orders etc;
  - Ensure visibility according to ADB requirements;
  - Maintain daily site records on prevailing weather conditions, labor, availability and operational condition of key plant, disputes between employers and staff as well as between contractor and local residents, and all other observations that may be of importance in case of any arbitration or legal disputes;
  - Review and recommend for approval the Contractor's reports, as built drawings, operation manuals, maintenance plans, etc as required under the contract;
  - Supervise the Contractor's testing and commissioning of the constructed works and supplies;
  - Advise and suggest on issuance of Operational Acceptance Certificate to the Contractor within specified time after completion of tests and commissioning are completed;
  - Prepare a snag list and assist GCC in the preparation of provisional acceptance, if accepted;
  - Prepare the 'substantial completion report' prior to technical handover.
  - Inspect and certify all completed works and participate in the take-over of works;
- f) Prepare and submit, after completion of the works, a report giving all information about the "as built conditions" including as built drawings, test reports etc. The Consultant shall prepare and supply to PIU the complete set of records and drawings of the works "as built" as soon as possible after the Taking Over Certificate is issued and in any case within 28 days of the date of issuing this Certificate. The Consultant shall check and

supply to PIU the O&M manuals for all equipment and plants incorporated in or associated with the works within the same time period as specified above;

- g) Reporting on project progress and risks in accordance with the reporting requirements of ADB;
- h) Examine whether the arrangements applicable to the disbursement procedure agreed between the Employer and ADB, which are to be submitted to the Consultant, are fulfilled;
- i) Prepare quarterly reports on progress on Design and Monitoring Framework as agreed on between the Government and ADB. Carry out any surveys or studies required for such reporting; and
- j) Support GCC in dealing with all matters related to dispute resolution in the event of a contractual dispute.

### **3.3 Tasks Related to Environmental, Social, Occupational Health and Safety (ESHS) Issues during Construction Supervision**

- a) Observance of the Contractor's compliance with all contractual ESHS standards in accordance with ADB requirements.
- b) Draft IEE/EMP and resettlement plans have been prepared and provided in each bid document. Both documents in each contract shall be critically reviewed and updated with view to the Detailed Design or updated designs. These requirements are important and should be observed, monitored and reported from the inception phase on in all documents to be prepared by the PSC.
- c) Inform the Contractor that relevant contract shall not commence prior to the Consultant's approval and satisfaction of appropriate measures in place to address ESHS risks and impacts;
- d) Approve after due revision Contractor's site-specific Environmental Management Plans (EMPs) and, during the execution of the works, instruct the Contractor to update the EMPs if it becomes necessary (e.g. due to unanticipated impacts, change in site, change in construction method etc.). The revised version shall highlight the new elements incorporated in the document;
- e) Supervise the Contractor's implementation of the EMPs and report quarterly on compliance of the Contractor with the EMP and ESHS Works Requirements (as provided in section 6 of bid document); This includes health and safety performance and conformance with labor and working condition standards in case of severe ESHS violations (and in particular OHS risks to life), the Consultant shall suspend the work at that stretch until the Contractor has rectified the situation;
- f) Document Contractor's non-conformances. Review and approve the Contractor's proposals for remedial action/s and their timeframe for implementation. Follow-up on correction/remediation;
- g) Follow-up on the results of any inspections or audits by labor, health and safety or environmental regulatory authorities;
- h) Check if the Contractor provides instructions and trainings to workers, Subcontractors and Suppliers (in particular those for major supply items) to assure that they understand their respective ESHS requirements and that the Contractor complies with the Code of Conduct;

- i) Advise the Contractor on the ESHS risks and impacts of any design change proposals and the implications for compliance with IEE, EMP, consent/permits and other relevant project requirements;
- j) Review the Contractor's monthly progress reports, and check if detected nonconformities are documented and analyzed and are addressed by corrective actions; Documentation shall include a digital photograph and with captions to provide a visual illustration, explicitly indicating the location, date of inspection and the non-conformity in question;
- k) Follow-up on the resolution of any complaints or grievances in relation to ESHS;
- l) Inform the Employer on any ESHS related situation that might arise which could jeopardize the successful completion of the Project. Reflect such situations in the periodic reporting.
- m) Update the resettlement plans prepared for each contract package whenever there is a design change. Oversee implementation of resettlement plan. Ensure that no works are commenced without implementing the resettlement plan, including compensation for temporary impacts.
- n) Supervise that nonconformities are addressed through measures adapted to the severity of the situation and which include but are not limited to the suspension of works and/or of payments in accordance with the contract.
- o) Prepare and submit monthly, quarterly and semiannual safeguards monitoring report.
- p) Collect and provide data required for implementation and monitoring of GESI Action Plan and CAPP. Prepare and submit necessary reports that will enable the PIU to report compliance. (There shall be a separate consultant for consolidating and finalizing reports for these components)
- q) Ensure that the GRM established for the project is in place and is working effectively. Ensure proper documentation and support in speedy redressal of grievances.

**3.4 Tasks related to final completion and taking over** (services to be delivered up to consultancy contract period): PSC shall have responsibilities during the Defect Liability Period (DLP) and Final Taking Over Period. This includes period from post-construction activities up to the final acceptance of works through the Performance Certificate of the individual packages. The Consultant shall carry out inspections during the DLP in order to ensure the execution of all remedial works by the package contractor and to ensure a proper monitoring of the work's performance. On expiry of the DLP the Consultant shall assist the Employer in the final acceptance of works and in issuing a Certificate confirming that the constructions/installations were completed successfully in accordance with the specified performance level (Performance Certificate).

The major tasks to be performed during the DLP of the individual packages shall comprise for each package:

- a) Supervision of project completion and corrective measures, final testing and inspection of works and assistance in the final acceptance and taking over of works;
- b) Preparation of a list of deficiencies identified and required corrective measures;

- c) Verification of project results, recommendations on future operation management and final reporting on the project activities;
- d) Identification of required corrective measures;
- e) Assist GCC in dealing with settlement of all disputes that may arise between GCC and the contractors;
- f) Prepare performance certificates;
- g) Hand over all project documents in editable format;
- h) Assist GCC on the preparation and implementation of final acceptance of works at the end of the DLP; and
- i) Prepare the Project Completion Report.

### **3.5 Tasks related to operational sustainability**

- a) Prepare an asset register;
- b) Prepare an asset management plan and train the GCC team on asset management;
- c) Prepare and update GIS based basin map;
- d) Prepare an Operations and Maintenance Manual and train the GCC staff on advanced techniques in O&M of storm water drains and flood management;
- e) Support ISRC to prepare an operational sustainability improvement plan; and
- f) Identify gaps in capacity (staff and skills) and advise on capacity building requirements, outsourcing requirements, and plan and support in implementing capacity building program.

## **4. Duration and Location of the Services**

The consultancy assignment is for 48 months duration. The Consultant will establish and maintain a fully operational project office throughout the implementation period at a suitable location in Chennai. The office should be fully equipped to match the functions and tasks of the Consultant's project management, works supervision and capacity building role. In selecting the office location, the Consultant should consider traveling requirements to construction sites and proximity to the GCC's head office. Equipment and services to be provided by the Consultant for its use must include adequate furniture, computers, IT, modeling and CAD equipment, printers, photocopy and telecommunication/communication facilities (Internet, mobile internet access, video, cameras and other mobile communication equipment), and communications facilities allowing the team to have an uninterrupted and efficient implementation of Project activities. Consultant will also establish a well-equipped testing laboratory, which will at least include cube testing machine, sieve analysis equipment, survey equipment for use of field engineers, etc. Any hardware required for performing supervision services will be borne by the consultant. Transport shall be ensured through owned or rented vehicles and all field level technical support staff will be provided motorbikes, properly equipped and insured to comply with safety requirements - or adequate transport allowance shall be provided so they may use their own motorbikes. Project personnel, including the supervision team, shall be mobilized as per project requirement.

## **5. Detailed Outputs of the assignment**

### **5.1 Key Timelines or Milestones**

PSC shall adhere to the following timelines:

1. Time schedule of Deliverables as per 5.3 below,
2. Work Plan for each Civil Works Contract under the construction supervision services and timely completion of contracts, and
3. Any other, as specified in the Contract between PSC and the Client.

## 5.2 Team Composition and Qualification Requirements

Team Composition for the Project Team of the PSC is as below:

<b>A</b>	<b>Key Personnel</b>	<b>Person-months</b>
1	Team Leader cum Project Management Specialist	45
2	Resident Engineer	45
3	Hydrological and flood modeling expert	6
4	Utility Expert	6
5	Storm Water Design Engineer	12
6	Procurement cum Contract Management Specialist	12
7	Social, & Resettlement Expert	42
8	Environmental Expert	42
9	Assistant Resident Engineers (6 Nos)	200
10	Electromechanical Engineer	6
11	Project Performance and Monitoring cum MIS Specialist	12
12	Quality Control Engineers (2 Nos)	84
13	Accounts and Finance Expert	12
14	GIS Specialist	6
<b>B</b>	<b>Non Key Personnel - Technical</b>	
15	Quality Monitoring Field Engineers (6 Nos)	200
16	Hydraulic modeler	12
17	Quantity Surveyor (5 Nos)	180
18	Field Engineers Gr 1 (68 Nos)	1,700
19	Field Engineers Gr 2 (20 Nos)	750
20	IT Engineer	45
21	Safeguard support staff - Environmental and social (6 Nos)	216

The educational qualification and experience required for each position and terms of reference of each position (in addition to the Tasks as set out in the Scope of Services as per clause 6) of the Project Team of the PSC are as follows:

<b>S. No.</b>	<b>Position</b>	<b>Qualification and Experience Requirement</b>	<b>Responsibility</b>
<b>Key Experts</b>			
1	Team Leader cum Project Management Specialist	<ul style="list-style-type: none"> <li>Graduate Civil Engineer</li> <li>Master in Hydraulics/ Environmental/ Construction Management</li> <li>Total 20 years of experience in construction / project management of infrastructure projects with minimum 5 years in leadership roles.</li> <li>Experience in multilateral funded projects will be preferred</li> <li>Experience in FIDIC contract conditions</li> <li>Experience in drainage projects would be required</li> </ul>	<ul style="list-style-type: none"> <li>Responsible for overall project management, construction management, quality assurance and administration of the contracts under the project and implementation of works as per design;</li> <li>Provide training on best practices in construction management;</li> <li>Support in preparing Project Completion Report and progress reports</li> <li>Preparing and updating Implementation Schedules, including coordination with</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
			PMU/PIU for implementation works; <ul style="list-style-type: none"> <li>• Monitor that the supervision of contract packages of all construction works are in accordance with the contractual obligations and in compliance with sound engineering practices;</li> <li>• Support the Employer in finalizing the variation orders, notices to the contractor as per the contract stipulations.</li> <li>• Advise the Employer on disputes which may arise with the Contractor</li> <li>• Support the Employer in undertaking required activities and documentation required for commissioning of project facilities and issuance of provisional or final acceptance certificates as per contractual terms and conditions</li> <li>• Monitor contract-wise progress and against contract schedules, identify and bring into notice of the Employer any potential variations during implementation, assist the Engineer in recording the reasons for delay and identify remedial actions, if any</li> <li>• Review specifications and contract conditions to ensure its compliance, quality and conformity specified in the contract agreement.               <ul style="list-style-type: none"> <li>• Lead preparation of green infrastructure manual</li> <li>• Support GCC in complying with all ADB requirements</li> </ul> </li> </ul>
2	Resident Engineer	<ul style="list-style-type: none"> <li>• Graduate Civil Engineer</li> <li>• Diploma in Construction Management</li> <li>• Total 15 years of experience in construction / contract management with minimum 3 years in leadership roles.</li> </ul>	<ul style="list-style-type: none"> <li>• Handling responsibility of Team leader in his absence</li> <li>• Responsible for overall construction management, quality assurance and administration of the contracts under the project and</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
		<ul style="list-style-type: none"> <li>• Experience in drainage projects would be required</li> <li>• Experience in computer-based contract management</li> <li>• Experience in multilateral funded projects will be preferred</li> <li>• Experience in FIDIC contract conditions</li> </ul>	<p>implementation of works as per design;</p> <ul style="list-style-type: none"> <li>• Provide training on best practices in construction management;</li> <li>• Support in preparing Project Completion Report and progress reports</li> <li>• Preparing and updating Implementation Schedules, including coordination with PMU/PIU for implementation works;</li> <li>• Monitor that the supervision of contract packages of all construction works are in accordance with the contractual obligations and in compliance with sound engineering practices;</li> <li>• Support the Employer in finalizing the variation orders, notices to the contractor as per the contract stipulations.</li> <li>• Advise the Employer on disputes which may arise with the Contractor</li> <li>• Support the Employer in undertaking required activities and documentation required for commissioning of project facilities and issuance of provisional or final acceptance certificates as per contractual terms and conditions</li> <li>• Monitor contract-wise progress and against contract schedules, identify and bring into notice of the Employer any potential variations during implementation, assist the Engineer in recording the reasons for delay and identify remedial actions, if any</li> <li>• Review specifications and contract conditions to ensure its compliance, quality and conformity specified in the contract agreement.</li> <li>• Input in developing O&amp;M Manual and Asset Management Framework</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
3	Hydrologic and flood modeling expert	<ul style="list-style-type: none"> <li>• Post graduate in water resources or environmental engineering</li> <li>• Graduate Civil Engineer</li> <li>• Minimum 10 years experience in hydrological and flood modeling</li> <li>• Expertise in working with modeling software</li> </ul>	<ul style="list-style-type: none"> <li>• Developing hydrodynamic model of the basin</li> <li>• Checking and updating the available models</li> <li>• Provide input in flood zone mapping</li> <li>• Provide input for developing early flood warning and forecast system</li> <li>• Input in preparation of green infrastructure manual</li> </ul>
4	Utility Expert	<ul style="list-style-type: none"> <li>• Graduate civil engineer</li> <li>• Experience in design and construction of urban infrastructure</li> <li>• Experience in utility management &amp; operation</li> </ul>	<ul style="list-style-type: none"> <li>• Utility planning</li> <li>• Updating drainage master plan</li> <li>• Preparation of O&amp;M Manual</li> <li>• Preparation of asset management strategy &amp; plan</li> </ul>
5	Storm Water Design Engineer	<ul style="list-style-type: none"> <li>• Graduate Civil Engineer</li> <li>• Preferably a master degree in Environmental engineering or equivalent degree.</li> <li>• Minimum 8 years of experience in design/implementation of drainage/ sewerage network</li> <li>• Excellent experience in computer-based network designs</li> <li>• Design and Construction experience Pumping Station will be preferred.</li> </ul>	<ul style="list-style-type: none"> <li>• Review &amp; approval of detailed design of the drainage network</li> <li>• Review and approval of drawings for construction purposes</li> <li>• Design/redesign the drainage network based on changed situation to match with existing system</li> <li>• Conduct Checking as built drawings, etc.</li> <li>• Assist in implementation of drainage contracts</li> <li>• Field visit for the quality and supervision check and recommendations for quality implementation</li> <li>• Assist in review and approval of contract variations</li> <li>• Provide inputs related to green infrastructure manual</li> <li>•</li> </ul>
6	Procurement cum contract management specialist	<ul style="list-style-type: none"> <li>• Graduate Civil Engineer</li> <li>• Minimum total 8 years of experience in procurement /contract management</li> <li>• Experience in multilateral funded projects will be preferred</li> <li>• Experience in FIDIC contract conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for preparing bid document and conducting bidding process</li> <li>• assisting in overall contract management and administration of the contracts, implementation of work as per contract;</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
			<ul style="list-style-type: none"> <li>• Contract management and Performance Monitoring of the contractors</li> <li>• Assist in resolving contractual issues during implementation</li> </ul>
7	Social, & Resettlement Expert	<ul style="list-style-type: none"> <li>• Post graduate degree in social science or equivalent stream</li> <li>• Minimum 8 years of experience in preparing safeguard documents and safeguard compliance monitoring</li> <li>• Experience in ADB/ World Bank funded projects would be preferred</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation/updating of social safeguards documents (resettlement plan or due diligence reports) for all contracts, in accordance with ADB's Safeguard Policy Statement, 2009.</li> <li>• Interact regularly with the design engineers and ensure assessment of alternatives based on consideration of social impacts is factored into detailed design.</li> <li>• Work in close coordination with the Environment Specialist to ensure that the EMP includes measures to avoid, minimize or mitigate involuntary resettlement impact</li> <li>• Conduct meaningful stakeholder consultations and ensure that the issues and concerns of stakeholders are addressed and felt needs incorporated. Undertake detailed documentation of such consultations.</li> <li>• Ensure implementation and compliance of social safeguards for all contracts</li> <li>• Prepare safeguard and implementation report on monthly, quarterly and semiannual basis</li> <li>• Develop, organize and deliver training programmes on social safeguards and workshops for the staff of the PMU/PIU of GCC and Contractors in accordance with the Capacity Building Programme as specified in the resettlement plan.</li> <li>• Supervise implementation of social safeguards of the contracts, if any.</li> <li>• Support GCC in setting up the project grievance redress</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
			mechanism and assist in public grievance redressal
8	Environmental Expert	<ul style="list-style-type: none"> <li>• Post graduate degree in Environmental Engineering/ Environmental Science</li> <li>• Minimum 8 years of experience in preparing environmental safeguard documents (IEE/EMP) and safeguard compliance monitoring</li> <li>• Experience in ADB/ World Bank funded projects would be preferred</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare/update IEE/ EMP documents of all contracts and ensure adequacy under ADB's Environmental Assessment Guidelines, 2003, and the updated Safeguard Policy Statement, 2009.</li> <li>• Interact regularly with the sector specialists of the PSC and integrate environmentally sound practices into the detailed design of project components</li> <li>• Advise PMU/PIU of GCC for compliance with statutory clearances</li> <li>• Work out the site-specific mitigation measures for components as required</li> <li>• Ensure implementation and compliance of EMP of all contracts</li> <li>• Develop, organize and deliver environmental training programmes and workshops for the staff of the PMU/PIU of GCC and Contractors and in accordance with the Capacity Building Programme as specified in the IEE</li> <li>• Preparation of Activity Plans as identified in IEE (these include Site Management Plans, Waste Management Plans, circulation/traffic plan during construction, Occupational Safety Plans, etc)</li> <li>• Supervise the implementation of the Environmental provisions by the Contractors.</li> <li>• Review the Contractors' Environmental Implementation Plans to ensure compliance with the IEE</li> <li>• Develop good practice construction guidelines to assist the contractors in implementing the provisions of IEE</li> <li>• Prepare and submit regular environmental monitoring and implementation progress</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
			<p>reports on a monthly, quarterly and biannual basis</p> <ul style="list-style-type: none"> <li>• Support public grievance redressal</li> <li>• Provide inputs related to green infrastructure manual</li> </ul>
9	Assistant Resident Engineers (6 Nos)	<ul style="list-style-type: none"> <li>• Graduate Civil Engineer</li> <li>• Total 8 years of experience in construction / contract management</li> <li>• Experience in drainage projects would be required</li> <li>• Experience in computer-based contract management</li> <li>• Experience in multilateral funded projects will be preferred</li> <li>• Experience in FIDIC contract conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for construction management, quality assurance and administration of the contracts and implementation of works as per design;</li> <li>• Preparing progress reports</li> <li>• Preparing and updating Implementation Schedules, including coordination with PIU for implementation works;</li> <li>• Monitor that the supervision of contract packages of all construction works are in accordance with the contractual obligations and in compliance with sound engineering practices;</li> <li>• Support the Employer in finalizing the variation orders, notices to the contractor as per the contract stipulations.</li> <li>• Support the Employer in undertaking required activities and documentation required for commissioning of project facilities and issuance of provisional or final acceptance certificates as per contractual terms and conditions</li> <li>• Monitor contract-wise progress and against contract schedules, identify and bring into notice of the Employer any potential variations during implementation, assist the Engineer in recording the reasons for delay and identify remedial actions, if any</li> <li>• Record measurement, billing and ensure timely payment to the contractors</li> <li>• Ensure compliance of quality and specifications of contracts under implementation by witnessing regular tests etc</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
10	Electro mechanical Engineer -	<ul style="list-style-type: none"> <li>• Bachelor's degree in electrical /mechanical engineering</li> <li>• Post graduate degree in Electrical/ Instrumentation will be preferred</li> <li>• Minimum 10 years' experience in designing, construction supervision and quality assurance of electrical and mechanical pumping station equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare bid document including specification and bill of quantity for drainage pumping stations</li> <li>• review and approval of electrical/mechanical layout design/ drawings for drainage pumping stations</li> <li>• inspect electrical mechanical equipment to be supplied at the project</li> <li>• supervise installation of electrical mechanical equipment at pumping stations</li> <li>• supervise trial run/ commissioning of the equipment</li> <li>• prepare and submit operation maintenance manual for all the installed equipment</li> <li>• inspect operation of the equipment during DLP</li> <li>• Support in instrumentation and communication for flood warning system</li> </ul>
11	Project Performance and Monitoring cum MIS Specialist	<ul style="list-style-type: none"> <li>• Bachelor's Degree in Engineering / Planning</li> <li>• Degree/Diploma/Certification in IT</li> <li>• Minimum 8 years of experience in project management, monitoring and reporting of infrastructure projects.</li> <li>• Experience in developing and operationalizing computer-based management information system</li> <li>• Experience in ADB/ World Bank funded projects would be preferred</li> </ul>	<ul style="list-style-type: none"> <li>• Reconfirm the baseline indicators of the project for outcome and output monitoring of the project and develop monitoring parameters as per the indicators.</li> <li>• Develop an appropriate Project Performance Monitoring System (PPMS), forms and monitoring schedule in cohesion with the design and monitoring framework of the project;</li> <li>• Set up systems and procedures for Project management, implementation and monitoring of the progress;</li> <li>• Assist in preparing PPMS for the Program and ensure that the necessary independent inputs are in place when and where required;</li> <li>• Preparation of Performance Monitoring Reports and quarterly progress reports</li> <li>• Prepare monthly, quarterly and annual report formats and prepare reports</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
			<ul style="list-style-type: none"> <li>• Support in preparation of assets register and assets management plan</li> <li>• Lead preparation of e-Measurement system</li> <li>• Input to asset management framework and register</li> </ul>
12	Quality Control Engineers (2 Nos)	Post Graduate degree with minimum 5 years of experience or Graduate degree in civil engineering with minimum 7 years of experience in construction supervision and quality assurance programs	<ul style="list-style-type: none"> <li>• Ensure establishment of quality field labs at all contracts</li> <li>• Establish quality control system at all civil works contracts</li> <li>• Collection of samples of materials and concrete etc</li> <li>• Witnessing testing of material and concrete samples in filed labs</li> <li>• Independent testing of material and concrete samples as per contractual requirement</li> <li>• Ensure quality implementation of works Issuing quality certificates for works during each payment</li> </ul>
13	Accounts and Finance Expert	<ul style="list-style-type: none"> <li>• Post graduate degree in accounting</li> <li>• A professional accounting qualification with minimum 7 years' experience</li> <li>• Experience in ADB financed projects</li> </ul>	<ul style="list-style-type: none"> <li>• Support in preparing and maintaining project accounts</li> <li>• Advice on accounting and auditing</li> <li>• Support in preparing financial and operational plans</li> <li>• Support in preparing e-Measurement system</li> <li>• Support in executing the Financial Management Action Plan provided in FMA.</li> </ul>
14	GIS Specialist	<ul style="list-style-type: none"> <li>• Degree in Civil Engineering/ Post graduate degree in Geography/Geology/Planning</li> <li>• Certificate of qualification in developing GIS</li> <li>• Experience in developing GIS based drainage and flood management in at least one project</li> </ul>	<ul style="list-style-type: none"> <li>• Support GCC in establishing and maintain a GIS based drainage basin map</li> <li>• Incorporating existing and new assets related to the project onto GIS platform</li> <li>• Support in preparing asset register and asset management plan</li> <li>• Support in flood hazard area mapping and flood warning system</li> </ul>
<b>Non-Key experts – Technical</b>			
15	Quality Control Engineers (5 Nos)	Graduate degree in civil engineering with minimum 3 years of experience in construction supervision and quality assurance programs	Provide field level support to Quality Control Engineers by inspection and sample collection and preparation of test reports

S. No.	Position	Qualification and Experience Requirement	Responsibility
16	Hydraulic Modeler	Civil/Environmental/Water Resources Engineer with Post Graduate Degree Minimum 5 Years' experience in modeling Proficiency in using software modeling tools like StormCAD, SewerGEMS, HEC-RES etc	Support Hydrological modeling expert and IT expert by developing computer models and related software and providing outputs as required
17	Quantity Surveyor (5 Nos)	<ul style="list-style-type: none"> <li>Graduate Civil Engineer with 5 years experience or Diploma in civil engineering with 10 years of</li> <li>Experience in quality assurance and measurements of works items and billing of works</li> <li>Experience in preparation of rate analysis, Schedule of Rates, BOQ, Cost Estimates etc. for Works.</li> </ul>	<ul style="list-style-type: none"> <li>Periodical Inspection and measurements of works</li> <li>Billing of executed works/ verification and approval of contractors' running / interim / final bills</li> <li>Prepare rate analysis, Schedule of Rates as required</li> <li>Prepare BOQ, Cost Estimates etc. for new works if required.</li> <li>Review, analyze and recommend contract variations in light of contract provisions</li> </ul>
18	Field Engineers Gr 1 (68 Nos)	<ul style="list-style-type: none"> <li>Post Graduate Engineer with 2 years of experience or Graduate Engineer with 3 years of experience or Diploma Engineer with 7 years of experience (Civil or Electrical as per work requirement) in construction supervision and quality assurance programs</li> </ul>	<ul style="list-style-type: none"> <li>Data collection</li> <li>Survey and investigations of all project related works</li> <li>construction supervision of works including levels, alignment and quality of works</li> <li>witnessing sample collection and testing in field lab and concrete plant</li> <li>Recording measurements, billing etc.</li> <li>Performance Monitoring of the contractors</li> </ul>
19	Field Engineers Gr 2 (20 Nos)	<ul style="list-style-type: none"> <li>Graduate Engineer or Diploma Engineer with 3 years of experience (Civil or Electrical as per work requirement) in construction supervision and quality assurance programs</li> </ul>	<ul style="list-style-type: none"> <li>Data collection</li> <li>Survey and investigations at all project related works</li> <li>construction supervision of works including levels, alignment and quality of works</li> <li>witnessing sample collection and testing in field lab and concrete plant</li> <li>Recording measurements, billing etc.</li> <li>Performance Monitoring of the contractors</li> </ul>
20	IT Engineer	<ul style="list-style-type: none"> <li>Graduate Engineer (IT/Computer Science) / MCA etc.</li> <li>Postgraduate qualification in computer science/ computer application/ IT will be preferred</li> </ul>	<ul style="list-style-type: none"> <li>Develop an e-Measurement system for the project construction works</li> <li>Preparation and management of Computer/IT system for</li> </ul>

S. No.	Position	Qualification and Experience Requirement	Responsibility
		<ul style="list-style-type: none"> <li>• Experience in setting of computer net work</li> <li>• Experience in computer-based project and contract management tool</li> </ul>	Project Management and Reporting system <ul style="list-style-type: none"> <li>• Prepare Monthly and Quarterly Reports</li> <li>• Preparing activity schedule</li> <li>• Project and Contract Management/ Monitoring</li> <li>• Performance Monitoring of the contractors</li> <li>• Project Completion Report</li> </ul>
21	Safeguard support staff - Environmental and social (6 Nos)	Post graduate degree in social science/ Environmental science or equivalent stream with minimum 2 years of experience in preparing safeguard documents/ implementation	<ul style="list-style-type: none"> <li>• Monitoring of implementation of environmental &amp; social Safeguards as per ADB guidelines</li> <li>• Public grievance redressal</li> </ul>

### 5.3 Reporting Requirements and Time Schedule for Deliverables

PSC shall have regular interaction and report to the PMU / PIU at all stage of project implementation. PSC shall submit the required reports in two hard copies (spiral-binded, A4-size, with text, tables and maps / graphics) and a soft copy. All submissions shall be addressed to the Project Director/Superintending Engineer and copied to PIU.

Type of Report	Time / Frequency of Submission	Target Content (non-exhaustive)
<b>Construction Management</b>		
Inception Report	Within 30 days of Mobilization	Understanding about the project, local conditions, project organization, methods for project execution, staff mobilization status and mobilization plan, tools and templates to be adopted in contract and project management.
Quality Control and Supervision Manual	Within 1 month of Mobilization	Technical procedures, responsibility matrix, site record templates, test specifications, etc.
Project Management Manual	Within 2 months of Mobilization	Standard procedures for scientific management of the project aiming avoidance of time and cost overruns.
MS Projects based construction schedule of each contract package	Upon mobilization of contractor for the corresponding package	Activities and tasks with milestones. Resource planning schedule
Electronic Measurement Book	Within one year of mobilization	Different modules for recording measurements, check measuring, approval of measurements, preparation of running bills with hierarchical approval protocols etc. Should carefully include all requirements for government procedures and audit requirements.
Monthly Progress Report	For each calendar month, within 7 days of next month	Describing works and services performed and issues encountered during the reporting month and scheduled activities; Include information regarding any design changes

Type of Report	Time / Frequency of Submission	Target Content (non-exhaustive)
		highlighted during field verification survey data of project or change of alignment by contractor w.r.t. to DPR / detailed design. Include a broad overview of the physical and institutional progress achieved, and recommend corrective actions to the PIU and PMU. Also indicate the work to be performed during the coming month and mobilization schedule.
Quarterly Progress Report	For each quarter, within 15 days of next quarter	Describing in detail the implementation progress of all project components with issues highlighted. Safeguard implementation and compliance reports
Project Completion Report - Draft	1 month before Completion Date	Record of final BOQs, As built drawings, test reports, warranties, achievement of targets, variations (if any) in time and cost, field books and other records
Project Completion Report - Final	15 days after Completion Date	Training needs assessment, training plan,
Training Guidelines and Plan	Within 6 months of Mobilization / Biannually	
Training Evaluation and Report	Within 1 month of Training Program	Compilation of feedback and impact evaluation with need for review / revision of existing Training Plan (if any)
Operation & Maintenance Manual	Within 15 months of Mobilization	Technical procedures for the appropriate operation and maintenance of the project facilities
Asset Register and Asset Management Plan	Towards midterm of completion of contract packages.	Asset list and procedures for management.
As built drawings with necessary reports and documents	Upon completion of each contract package	
<b>Social and Environmental Safeguard Compliance</b>		
Social and Resettlement Plan Monitoring	Biannually, with Quarterly Report	Updates on social and resettlement safeguard monitoring, improvements / remedial measures; Present the activities and achievements for each indicator/target of the resettlement plan at each contract, compensation eligible and disbursed; and provide an analysis of facilitating factors and challenges during the quarter and actions undertaken.
Environmental Monitoring Report	Biannually, with Quarterly Report	Updates on Safeguard Monitoring, compliance, improvements / remedial measures
<b>Other</b>		
Subproject Appraisal Reports (SAR), concept and Detailed Project reports	As necessary	New / updating of SARs with subproject details, designs and cost estimates, social and environmental safeguards, etc.

Type of Report	Time / Frequency of Submission	Target Content (non-exhaustive)
(DPRs), bid documents, bid evaluation reports		
Change orders and variation requests	As necessary	

**6. Clients Input and Counterpart Personnel**

The Client will make available to the consultants support facilities including all relevant and available reports, documents, maps, and photographs etc. The Client will provide suitable counterpart staff to work in the PMU and PIUs.

Arrangements for the establishment of office accommodation, operation and regular maintenance of office facilities, communications facilities (telephone, fax, and internet), computers, transport, stationery, establishment and regular maintenance of material testing lab and other relevant materials will have to be arranged by the consultants.

**7. Information to facilitate Proposal preparation: None**

## OUTLINE TERMS OF REFERENCE FOR INSTITUTIONAL STRENGTHENING AND REFORM CONSULTANTS

### I. Project Background

The Government of Tamil Nadu has requested support from ADB for the proposed Integrated Urban Flood Management for the Chennai-Kosasthalaiyar Basin Project to support the Greater Chennai Corporation (GCC) in Tamil Nadu to increase its resilience to extreme weather events by (i) improving urban flood protection infrastructure while recharging groundwater, (ii) enhancing urban flood preparedness of GCC and communities, and (iii) establishing measures for sustaining operation and maintenance of storm water drainage systems in GCC.

Chennai city is the fourth largest metropolitan area in India with an estimated present population of about 10.7 million. It plays an important role in the state and national economies. Chennai is part of the East Coast Economic Corridor, has a successful information technology services sector and is known as India's "Detroit" for its booming automobile sector. Rapid urbanization has fueled the local economy but it has been challenging to keep pace with the demand for urban services while protecting its fragile environment. Chennai's location on the highly exposed southeast coast of India and its relatively flat topography at low elevation make it susceptible to several water related challenges. These include cyclones, storm surges and slow dewatering during monsoon, which are exacerbated by the effects of climate change like a projected annual sea level rise of 4.6 mm per year and increasingly intense rainfall with an overall reduction in annual precipitation. In the last decade, the city has been facing more frequent and intense extremes of floods and droughts.

In 2015, Chennai experienced unprecedented floods breaking a 100-year record of rainfall over a 24-hour period after a month of heavy rains. The city continues to experience localized flooding and waterlogging during each monsoon, particularly where the drainage is undeveloped or inadequate. Floods destroy property and livelihoods while increasing the vulnerability of poor and marginalized groups. In 2019, Chennai experienced a severe drought with water levels in its reservoirs dropping below 10% of capacity.

Chennai residents and industries are increasingly vulnerable to frequent, intense, hazardous and destructive floods. Water retention capacity of the city's waterbodies is reduced through encroachment of waterways due to rapid and haphazard urbanization; development without consideration of the area's hydrology; a lack of climate and disaster proof land use plans; and by clogging of drains with silt and garbage. There is insufficient capacity for flood water retention due to inadequate and deteriorated flood protection infrastructure; inadequate operations and maintenance (O&M); and weak physical linkages between water bodies.

Chennai's water crises also pose a great opportunity to plan for a more resilient future in line with the Tamil Nadu Sustainable Water Security Mission ensuring more strategic, holistic and integrated interventions addressing the interconnected problems causing floods. GCC has prioritized restoration and protection of its water bodies to increase stormwater retention capacity through recharge of its groundwater aquifer. GCC has been building an integrated flood management system while aiming to expand the stormwater drainage system throughout its jurisdiction. Development partners have been supporting GCC to improve drainage in the Adyar and Cooum river basins in the central zone (World Bank) and the Kovalam river basin in the south (KfW). Given the city's high risk for climate related disasters, GOTN and Government of India have planned to strengthen the stormwater drainage network in the remaining river basin, the Kosasthalaiyar and has requested for the Asian Development Bank's (ADB) financial support.

The Kosasthalaiyar basin spans 3,757 square kilometers (km<sup>2</sup>) across two states – Tamil Nadu and Andhra Pradesh. The proposed project is limited to the Kosasthalaiyar basin within GCC's geographic boundary. The project area has about 1.44 million people over 128 km<sup>2</sup>, or 13% of GCC's population and 30% of its land area. The project area includes 8 major lakes and 71 minor tanks. The outfall channels in the project area were designed to convey 1:50 year flood flows. About one-third of the existing drains have the capacity to convey 1:2 year flood flows. About 63% of the project zone is flood-prone, with 15.6 km<sup>2</sup> having high or very high vulnerability.

To address the project requirement, the government has requested a loan of \$251.0 million from ADB's regular ordinary capital resources to help finance the project. The project is estimated to cost \$470.5 million. The proposed project aims to address many of the root causes of floods in Chennai through construction of flood management assets in the Kosasthalaiyar basin, facilitating GCC and by strengthening capacity of the GCC. Gaps in GCC's capacity shall be identified and strengthened through the project to ensure sustainability of the investments. The proposed outputs are summarized below.

**Output 1: Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar river basin.** This will include structural measures such as: (i) construction of 588 kilometers (km) of new storm water drains; (ii) rehabilitation or replacement of 175 km of storm water drains; (iii) improvements of 11 km stretches in the Ambattur, Ariyallur, Kadappakkam, and Korattur channels to enhance water-carrying capacity; (iv) construction of one new water pumping station and the upgrading of one existing pumping station; (v) construction of 23,000 catchpits at regular intervals in roadside drains to recharge the groundwater aquifer; and (vi) rehabilitation of four disaster relief camps to be gender-responsive and socially inclusive. The flood modeling adopted in the designs ensures that the proposed storm water drains can safely convey stormwater flow from 1:2-year return period rainfall with provision to cope with 79 millimeters per hour (mm/hr) and sea level rise of 21.7 centimeters under RCP 8.5 scenario to 2050. The hydraulic design of four surplus channels have capacity to cope with 1:5-year flood providing safe floodwater discharge during the worst-case scenario combining increased precipitation, projected sea level rise, and a storm surge caused by a cyclone.

The additional financing will enhance flood retention in the 55 hectare Kadappakkam Lake under output 1, thereby contributing to climate adaptation. Desilting will restore water holding capacity in the lake and double its volume from 1.1 million to 2.2 million cubic meters. The project proposes a bund 20 meters wide with a cycle track on the upper tier and a walking path on the lower tier. A bird island is proposed with a 2-hectare forest of various native trees planted using the Miyawaki method. Recreation will be enhanced by a children's play area, an open-air theater, a library, and hobby fishing and boating facilities, all with features friendly to the elderly, women, children, and persons with disabilities (EWCD). The proposed works will maximize the use of environmentally friendly materials and approaches, reusing dredged soil with geotextile underlay to shore up the bund, paving with fly ash brick, and fencing with shrubbery and trees.

**Output 2: Urban flood preparedness of the GCC and project communities enhanced.** This will include the following nonstructural measures: (i) GCC endorsement of guidelines on integrating flood hazard zoning with spatial plans and land use, building, and development regulations; (ii) the establishment of the baseline flood resilience index to identify the flood vulnerability, target priority interventions, and establish a framework for continuous improvement in the whole of Chennai city; (iii) the operationalization of a flood citizen observatory with a software platform to obtain real-time information in flood areas, water levels, and damage; (iv) GCC endorsement of a manual for green infrastructure design including rainwater harvesting; (v)

knowledge enhancement in the community, including for women, of the benefits of green infrastructure; (vi) raised beneficiary awareness of flood risks and impacts and the links that connect flooding, solid waste management, house sewerage connections, and the protection of waterbodies, including activities specifically targeting women; and (vii) improved GCC staff capacity to plan and design storm water drainage systems in coordination with the management of solid waste and flood risk. Lessons and good practices from the project will be package into knowledge products and shared with key government officials and sector experts to further promote integrated flood management.

Under output 2, the additional financing will (i) enhance capacity in the GCC and other government entities and awareness in local communities of urban water body rejuvenation using nature-based solutions, (ii) promote the replication of nature-based solutions by other cities in Tamil Nadu through the development of an investment readiness road map, (iii) disseminate to other Indian cities knowledge and practices from this demonstration investment as a model for nature-based urban flood risk management, and (iv) strengthen understanding in the GCC and other cities in Tamil Nadu of integrated sustainable urban development through participation in national and global dialogues organized by UrbanShift.

**Output 3: Measures for sustaining operation and maintenance of storm water drainage system established in GCC.** This will include: (i) performance based incentives (PBIs) for zonal offices linked to operational efficiency and the sustainability of storm water drainage systems; (ii) a plan formulated to improve the sustainable and inclusive operation and maintenance (O&M) of storm water drainage systems; (iii) a road map for enhancing municipal resource mobilization by the GCC; (iv) improved knowledge of GCC staff on sustainable O&M of drainage systems and management of solid waste and flood risk; and (v) improved knowledge and skills of de-silting and conservancy workers on cleaning and maintaining storm water drainage systems. The PBIs will be awarded based on a reporting system and database of key performance indicators for all zonal offices that will be established by 2023, with the focus on improving GCC management of drainage systems with timely maintenance services. The incentive payments will be used for additional activities supportive of the project's objective. The Sustainable Operation and Maintenance Improvement Plan will enable the GCC to ensure proper O&M of the created assets during the life of the project, based on the newly established asset management system and the experiences of PBI program. The Road Map for Enhanced Municipal Resource Mobilization will: (i) provide a strategic implementation plan to improve revenue management in terms of revenue coverage, valuation, liability, collection, and taxpayer services; (ii) strengthen information interlinkage with other utilities; and (iii) promote digital transformation with enhanced data analytics. With robust economic growth and rising populations, the GCC is poised to increase its own municipal revenues. The road map will help it create an enabling framework for efficient, equitable, and accountable revenue management while phasing in improvements that are socially acceptable and operationally efficient.

## 1. Project Organization Structure

The Government of Tamil Nadu through the Municipal Administration and Water Supply Department will be the executing agency. A PMU is established in GCC for overall project management. A PIU is established in GCC storm water drainage department which will be responsible for the project implementation.

A Steering Committee chaired by Chief Secretary, GOTN has been formed to periodically monitor progress, address policy issues and ensure interagency coordination, including with PWD on restoration of larger water bodies and channels. GCC will ensure the establishment and regular

meetings of a dedicated Steering Committee (SC) for the Project to discuss relevant topics regarding its implementation, further cooperation between stakeholders and address existing grievances.

Commissioner, GCC would be the Project Director. Deputy Commissioner (Works) and Chief Engineer (General) shall be the Deputy Project Directors. For this Project, GCC has assigned dedicated staff within its Storm Water Drain (SWD) Department for the establishment of a PIU, which is headed by the Chief Engineer and Superintending Engineer as Project managers.

A Project Support Consultant (PSC) is proposed to be engaged to support GCC (PMU and PIU) in project management, supervision and contract management etc. The Institutional Strengthening and Reforms Consultant shall support in the soft components of the project as detailed out in this TOR. GCC will recruit a consulting firm in accordance with ADB's Procurement Policy, 2017 and Procurement Regulations for ADB Borrowers, 2017.

## **2. Objective of the Assignment**

The objective of the assignment is to support GCC in developing and implementing a performance based incentive mechanism for O&M of storm water drainage and bringing in other innovative-finance plus elements. Targeted action towards ensuring sustainability of assets created shall be supported. The consultant shall also support in activities related to gender equality and social inclusion and also in various capacity building and awareness building initiatives.

## **3. Duration and Location of the Services**

The consultancy assignment is for 48 months duration. The Consultant will establish and maintain a fully operational project office throughout the implementation period at a suitable location in Chennai. The office should be fully equipped to match the functions and tasks of the Consultant's as per terms of reference. In selecting the office location, the Consultant should consider traveling requirements to construction sites and proximity to the GCC's head office. Equipment and services to be provided by the Consultant for its use must include adequate furniture, computers, IT equipment, printers, photocopy and telecommunication/communication facilities (Internet, mobile internet access, video, cameras and other mobile communication equipment), and communications facilities allowing the team to have an uninterrupted and efficient implementation of Project activities. Any hardware required for performing services will be borne by the consultant. Transport shall be ensured through owned or rented vehicles and all field level support staff will be provided motorbikes, properly equipped and insured to comply with safety requirements - or adequate transport allowance shall be provided so they may use their own motorbikes. Project personnel, shall be mobilized as per project requirement.

## **4. Scope of Services**

### **A. Support in establishing measures for sustaining operation and maintenance of storm water drainage systems in GCC.**

1. Developing and successfully implementing a performance based incentive program with specific target and goals

The project includes establishing a KPI based Performance Improvement System for O&M of storm water drainage in GCC Zonal offices. The consultant shall fine tune the already developed concept and support the Zonal Offices in establishing the KPI based system, achieving good KPI scores and getting the incentives related to the KPI score.

The major tasks related to this are:

- (i) Design the Performance Based Incentives Program (PBI) in line with the concept paper already developed and included in the PAM. Define KPIs and develop systems for establishing and monitoring KPI scores.
- (ii) Review the Definitions and verification protocol for PBI and recommend modifications that may be required in the verification protocol including in the methodology for data collection and reporting.
- (iii) Propose a verification methodology consistent with the approved verification protocol that would include methodology and timelines for initial data collection, desk verification and sample field verification.
- (iv) Propose an annual calendar for performance assessment clearly outlining a) the timelines for initial submissions from the Zonal Offices, b) desk verification, c) field verification for Zonal Offices d) finalization of performance assessment and incentive calculation, e) release of incentive payments to Zonal Offices and f) receipt of expenditure statements from Zonal Offices.
- (v) Provide an online data submission tool for performance assessment extracting data from the existing IT infrastructure and where necessary additional information submission (data, supporting documents)
- (vi) Support PIU in dissemination and awareness building workshops with Zonal Offices; support specific queries of Zonal Offices regarding the performance assessment.
- (vii) Based on the approved verification methodology and annual calendar for performance assessment carryout performance assessment of participating Zonal offices. As per the performance assessment requirement seek data from other agencies (such as Local Fund Audit, GCC, contractors etc).
- (viii) Submit questionnaire to Zonal Offices for listing databases and documents to be made available to the field verification team
- (ix) Conduct field verification, with an entry meeting for the officials of the Zonal Offices and an exit meeting listing issues identified (in writing); receive written feedback.
- (x) Based on the desk and field verifications and feedback received from Zonal Offices and other stakeholders, complete the annual performance assessment of participating Zonal Offices and calculate the incentive payment; identify factual errors and seek clarifications as may be required; receive and incorporate written feedback from stakeholders.
- (xi) Submit written report to PIU with recommended incentive payments
- (xii) Present the results of annual performance assessment to PMU; based on written feedback received from PIU, carryout revisions in the report and document the reasons for revisions.
- (xiii) Prepare Zone specific summaries of shortfall in performance and corrective measures in performance, data collection, reporting, documentation etc. that the Zonal Offices should take
- (xiv) Based on the annual performance assessment, suggest modifications in the verification methodology and/or other changes required in the PBI Component.
- (xv) Repeat the performance assessment cycle till end of assignment; based on the experience of performance assessment, propose revisions.
- (xvi) On completion of the performance assessment cycles, submit a final report to PIU documenting the implementation. Prepare a case study in the form of a short report, a power point presentation and a 12minute audio-visual clip with participation and feedback from stakeholders.
- (xvii) Support PIU in all other aspects of performance assessment and incentivizing.

## 2. Preparation of sustainable operational plan with support from PSC

The project design carefully considered long-term sustainability of the assets created under the project and targets to develop a 'Sustainable Operation and Maintenance Improvement Plan (SOMIP) for SWD to be implemented by GCC. The consultant shall develop the plan through appropriate data collection, stakeholder consultations, workshops, field works, high level discussions and support GCC in adopting the SOMIP. The plan should be inclusive- should include a community awareness, information dissemination and participation component, including women's participation. The necessary technical and engineering support for developing the plan shall be provided by the PSC. The PSC scope includes support to GCC in formulating long-term operations strategies for comprehensive drainage management in Chennai. The plan should clearly indicate short-, medium- and long-term strategies for sustainable operation.

The SOMIP of SWD shall:

- (i) Take inputs from the asset management plan prepared by the PSC.
- (ii) Identify, define and propose improvement measures the core issues related to sustainability including institutional sustainability (such as enhanced autonomy of zonal offices, information systems for SWD); operational sustainability (technical issues, technical training requirements etc.); financial sustainability (such as enhanced O & M budget allocation, supporting revenue actions by GCC such as own source revenue, earmarking of Central Finance Commission devolution, and establish maintenance reserve accounts) and social aspects (like beneficiaries awareness raising etc.).
- (iii) Address with clear problem description and solutions for improvements in (i) Inputs & Processes – Related to reporting (database, KPI based reporting, periodicity & schedule), standard operating procedures (related to de-silting, upkeep and use of machinery, removal of solid waste in SWD systems; street sweeping, illegal dumping of sewage etc), project management (inspection, contract milestones & achievement, use of materials), financial aspects (tax collection, audit, budget allocation & utilization) and social aspects (beneficiary awareness, behavioral change, etc); (ii) project and functional level outputs – Like coverage of storm drainage network; storage capacity of water bodies, rainwater harvesting systems; construction and rehabilitation of storm water drains, energy efficiency of pumping systems etc; and (iii) outcomes such as incidence of flooding; contamination of storm water with sewage; rainfall runoff ratio, quality of outfall etc.
- (iv) Help in allocating appropriate O & M budget - The SOMIP will forecast likely O & M expenditure for SWD in GCC and the project area in particular (considering ongoing construction as well as those proposed under project). Elaborating the form in which GCC will adopt these provide handholding support to GCC to adopt these forecasts and commit to making these allocations in its yearly budget.
- (v) Provide a well defined reporting mechanism with required infrastructure and human and ITC resources for zonal offices on storm water drain maintenance activities and flooding status. These would include schedule, reporting formats, time line and accountability mechanisms for periodic survey of drains to identify maintenance activities required, preparation of physical and financial estimates, tendering of works after approval by GCC, progress in key milestones in maintenance, completion of de-silting and repair works prior to monsoon, status of flooding/ inundation and post monsoon activities.

- (vi) Ensure the O&M of the assets to be created by the project. Identifying issues related to sustaining the indicator based performance during the life of the project and list actions and timelines.
- (vii) Regularly monitor and report the implementation progress and results of PBI.

### 3. Preparing Road Map for Municipal Resource Mobilization

The road map shall provide sound basis to enable GCC to design and implement municipal revenue reform (including property tax) in the short and medium term. The reform will include revenue administration reform (in the short term) and revenue policy reform (in the medium term).

Tasks related to this include:

- (i) Conduct assessment of major sources of municipal revenues of GCC in terms of land-based sources (taxes and fees); fees and fines; revenue assignments by the state and shared revenues, duty on transfer if property (surcharge on stamp duty); income from municipal properties; Grants; and Others if any
- (ii) Carry out a High level Situational Analysis and Strategic Assessment. This would:
  - (a) Analyze revenue performance, establishing comparisons with relevant benchmarks based on national and international best practices. Performance indicators should include cross-sectional and time-series trend analysis to identify potential challenges and opportunities for improvement. For each of the revenue sources (for example, property tax), the consultant will gather information, as available, to create a table of revenue performance indicators that includes relevant revenue collected for last five years, of the amount of collected revenue as a % of the GDP/GSDP, total government taxes, and total local government taxes, among others. Revenue performance statistics should also be calculated per revenue source (for example, property tax revenue per capita and per household). To develop the revenue performance parameters, relevant data may be sourced from other utilities/departments if required;
  - (b) Analyze revenue policy and administration reports, provisions in the legislation to revise base, basis and periodicity of revision. The analysis shall include revenue base for each source (for example, land and properties are the base for property tax, parking space area is the base for parking fee etc); basis of levy; periodicity of updating the base and basis for each revenue sources. If not updated, then identify the reasons for non-revision of base, basis or periodic revisions. [For example, property tax survey to identify unassessed and under assessed properties have not been conducted for more than a decade. Similarly, base rate for property tax has not been revised since 1998. Reason for not conducting the survey and not revising the base rate needs to be addressed for property tax as well as other sources of revenue];
  - (c) while conducting this analysis, focus should be on revenue base coverage (what is included and excluded), revenue base assessment, revenue liability assessment and revenue collection and enforcement per revenue source to the extent possible. Also, relevant ratios such as coverage, valuation, and collection/enforcement ratios should be calculated.
- (iii) Identify the relevant national and international best practices with revenue sources of urban local bodies and the revenue administration practices and potential for adopting the best practices in GCC;

- (iv) Identify sources of revenue leakages and suggest potential measures to reduce the revenue leakages;
- (v) Explore efficiency in billing, recovery and accounting;
- (vi) Explore efficiency in transfer from Government/ other authorities to GCC in case of assigned shared revenues;
- (vii) Analyze historical collection performance in relation to arrear and current demand;
  - (a) Explore areas of seamless integration within GCC departments, and other utilities with revenue department of GCC to improve revenue sources and to provide an ease of access to services to the citizen;
  - (b) Explore the need for IT system to improve the revenue management including the application of big data analytics; availability of sufficient skilled human resources for revenue mobilization with respect to the norms. If required suggest updating the norm based on best practices;
  - (c) Evaluate the dispute resolution mechanism for citizens on levies; and
  - (d) Develop a Strategic assessment identifying the key challenges and opportunities.
- (viii) Carry out assessment of the existing and possible land value capture tools (Besides property tax) in GCC area in terms of Scope and coverage; Powers to levy (delegation); Revenue sharing arrangements in case of levy being carried out by the local development authority / other departments; and potential sources based on review of international best practices.
- (ix) Prepare a road map with set of recommendations for each of the suggested enhancement measures including land value capture mechanism. Such road map should include: an estimate of potential value in absolute terms; targeted efficiency in levy; required investment and maintenance obligations; the sustainability level with which the proposed change can be managed and legal feasibility.
- (x) Prepare a strategic implementation plan along with time line for each revenue source, both existing and new sources. Such action plan should include:
 

Revenue/tax base coverage:

  - (a) For each revenue source, review and evaluate relevant data management system and procedures, including tax declaration forms and procedures, third-party information form and procedures, any other applicable forms/documents.
  - (b) Review and evaluate relevant data management “business processes” to identify options to streamline operational procedures to collect, record, verify and analyse the data and the flow of documents in a timely, efficient and transparent manner.
  - (c) Propose improvement to data management system and procedure to ensure comprehensive base coverage. This should enable to significantly improve collection and more accurate revenue forecasting.
  - (d) Document and disseminate such improved revenue data management system into a revenue data management manual for training and operational purposes. Organize relevant training program for data collectors and data managers.

Revenue Assessment/Valuation:

  - (e) For each revenue source, review and evaluate the revenue assessment/valuation system and procedures, including the appropriateness in valuation approaches chosen, the sources of available market information, the institutional framework, and human resources capacity.
  - (f) Review and evaluate “business processes” for each revenue source to

proposed streamlining of the operational procedure to collect, record, verify and analyse market information in a timely and efficient manner.

- (g) Design operational manuals to be used to estimate base value for relevant revenue source. These manuals can be used to guide and monitor revenue assessment/valuation and training for revenue officers.
- (h) Design and conduct valuation of revenue source and/or revaluation strategy.

#### Revenue/tax Liability Assessment and Revenue/Tax Billing

- (i) Review and evaluate, where applicable, the tax liability assessment system and procedures, including the effectiveness of tax liability assessment methods chose (such as self-declaration, self-valuation, or self-assessment) and the institutional and human resource capacity.
- (j) Review and evaluate the revenue billing system and procedures, the appropriateness of methods chosen.
- (k) Design the appropriate revenue/tax liability assessment and billing manuals.

#### Revenue Collection and Enforcement

- (l) For each revenue source, review and evaluate the collection and payment methods and procedures (for example, due dates, installment options, payment locations, notices and receipts), the efficiency and effectiveness of the methods chosen, and the institutional human resource capacity.
- (m) Review the available incentive and discount provided for timely and complete payment. Also review available enforcement measures (sanctions, penalties). Evaluate their effectiveness and appropriateness and explore options for enhancing improve taxpayer compliance initiatives and enforcement measures.
- (n) Review and rationalize enforcement measures against noncompliance in consultation with the legal system/law enforcement to ensure justice and transparency.
- (o) Develop recommendations for streamlining operational procedure for revenue collection and enforcement in a timely, efficient and transparent manner.
- (xi) Design operational manuals for revenue collection and compliance management (enforcement). These manuals can be used to guide, monitor, and train responsible staff in implementing the procedures.
- (xii) Taxpayer Service, Appeals and Dispute Resolution
  - (p) dispute resolution mechanism for streamlining the operational procedures for providing resolution on timely, efficient and transparent manner.
- (xiii) Design and oversee implementation of database/IT System for revenue management including application of big data analytics. Procedure on seamless interlinkages between IT system within GCC as well as linkages of GCC's IT system with other external agencies. Objective is to enhance data/information for revenue management as well as provide better municipal services.
- (xiv) Introduce suitable analytical tool to improve the collection efficiency, variations in rates, revenue leakages and other suitable solutions to increase the revenue source with existing tax data.
- (xv) Suggest suitable assessment methodology by comparing with other cities.
- (xvi) Identify the areas where the legal framework of GCC needs an amendment to have an enabling provision for revenue enhancement measures.
- (xvii) Prepare the road map with the recommendations categorized in terms of Short and Medium Term with the short term addressing basic revenue management

measures which are legally feasible in revenue administration areas and the medium term recommendations should be those that involve legislative amendments in revenue policy areas or major systemic improvement. The recommendations should include the resources and the cost estimate to implement the roadmap.

#### 4. Imparting training to GCC staff

- (i) Training at least 50% of GCC technical staff in the project area, including 80% of women technical staff, on sustainable operation and management of storm water drainage systems, solid waste and flood risks.
- (ii) Training 100 drain de-silting workers and conservancy workers (including at least 20% women) on the skills of cleaning and upkeep of storm water drainage systems.
- (iii) Scope under the above two trainings include training needs assessment, preparing necessary training modules, identifying participants and trainers, arranging and conducting training, documenting and pre and post-training evaluations.

### **B. Enhancing capacity of the GCC and project communities in urban flood preparedness and disaster resilience.**

#### 1. Establishing Flood Resilience Index (FRI) for the river basins and Chennai city and Preparing Framework for Improving Flood Resilience (FIFR)

Since rainfall is an unpredictable probabilistic event further complexed due to the impacts of climate change whatever structural measures implemented for flood control cannot prevent floods. Thus, the urban community needs to learn to live with floods. When an urban community becomes able to accept, resist, recover and learn from flood events it is considered as resilient to flood disaster. Towards this the community needs to have improved systems covering actions related to the three different parts of flood risk management cycle - preparedness, response and recovery. The flood resilience of urban system has five dimensions related to flood hazard, exposure, and vulnerability - natural, economic, social, physical, and institutional: (i) Natural dimension describes the space where urban area is located with different ranges for variables like available water bodies, percentage of existing slope or flat areas, drainage capabilities, etc; (ii) Economic dimensions define increase of households in line with population growth rates and employment as direct link to economic growth; (iii) Social dimensions explore available resources, health status, knowledge and flexibility as well as connections within the community; (iv) Physical dimensions evaluate existing structural measures, protection, communication network, human safety (eg. emergency shelter), etc; and (v) Institutional dimension considers existence of flood management plans, policies, regulations, evacuation plans. The evaluation of the city's standing as regards to each constituents of these dimensions will give a clear picture of the urban community's flood resilience. This is done with set of indicators that are grouped under dimensions.

The Flood Resilience Index of the city is a number reflecting the cities performance related to defined indicators under each dimension which reflects the city's positioning on a flood resilience perspective. Establishing FRI aims to put in place a scientific framework that could lead to targeted actions to increase the resiliency through reducing flood hazards, exposure, and vulnerability. The process of calculating FRI include computing the weighted mean index of the scores of all indicators related to each dimension and reporting the average weighted mean index as the FRI for the city.

The tasks include:

- i) Carrying out necessary stakeholder consultations, workshops, data collection, field verification and documentation. Studying cases from abroad and suitably linking it to the local situation.
- ii) Establishing the framework and calculate FRI for the four basins within the Chennai City and for the entire City through (i) consultations and field trips to identify the possible indicators related to each dimension; (ii) reviewing the FRIs and frameworks for other Indian and foreign cities if any (iii) finalizing the indicators and assigning weightage to each (the most important variables that are contributing higher level of resilience gets higher weights) and (iv) collecting and collating all information required for scoring. The consultant shall carryout (i) scoring, (ii)reporting FRI through proper documents and data and (iv) comparing it with other bench-mark cities in India (if available) and abroad.
- iii) After establishing the FRI the consultant shall identify areas of weaknesses/challenges and measures required for improving FRI. This will lead to establishing a framework for improving flood resilience (FIFR). The improvement measures in addition to enhancing structural elements shall include formulating and adopting diverse regulations such as institutional, urban planning and design, architectural design, public participation, financial stimulation, etc. The ISRC shall support in developing/updating such regulations and its adoption.
- iv) Periodic evaluation and reporting of FRI shall be done by the consultant till assignment completion.

## 2. Establishing and operationalizing Flood Citizen Observatory for Chennai City

One of the mechanisms to ensure citizens' involvement in the flood management cycle is by engaging citizens enabled by information and communication technologies (ICTs) such as sensor technologies and social media, generating relevant information and promoting demand-driven policy responses. Chennai has the potential for increased citizen participation in flood risk management through such mechanisms.

Citizen Observatory is a software platform to obtain voluntary information on a topic through different devices like web browser, mobile application or SMS. The project proposes to develop a Flood Citizen Observatory (FCO) for Chennai city that could be used to share information pertinent to floods. This can be effectively used not only to share the damages caused by flood but also to prevent or minimize impacts of flood events.

The approach broadly involves selecting many volunteers in each ward and zone areas, providing them awareness, developing suitable platforms/approaches for sharing information related to flood (such as flooded areas, water levels in lakes, channels and the riverbed), analyzing and using that information for decision-making. The volunteers acting as human sensors locally observe important parameters of flood risk management. There shall be well defined categories and subcategories in the data collection platform so that the volunteer can easily identify the category that best represents his observed scenario. To send a report, volunteers can use social media platforms, SMS, e Mails, mobile application and/or a web site. Due to the uncertainty about the credibility of this information, reports are checked by representatives of the governmental agencies (could be a cell in GCC) before they are made available online. This will provide data from large areas where it is not possible or cost-effective to do measurement in real-time to estimate the likelihood of a flood or to plan rescue/evacuation. Additionally, the information so gathered could be used for the development of flood maps or risk maps for the affected population

and in estimating damages, compensations and relief works. The platform could also be expanded to enable citizens to participate in awareness campaigns, call for rescue support, submit the grievance, and provide the suggestions for urban planning improvement.

The tasks related to this include:

- (i) developing the framework with consultations, case studies, data collection and workshops;
  - (ii) adopting a web-based cloud sourcing platform for data collection and analysis;
  - (iii) developing a mobile app and web site for use by volunteers to share data and see responses;
  - (iv) selecting and training citizen volunteers;
  - (v) establishing a cell in GCC to coordinate the FCO; and
  - (vi) making the FCO operational.
3. Imparting training and conducting awareness campaigns
- (i) Train at least 200 persons (including at least 50% women) among project community on green infrastructure schemes and rain water harvesting;
  - (ii) Conduct, with the technical support of PSC, 6 awareness workshops (with total of 200 people and 50% participation of women) on flood risks and impacts and the links between flooding, solid waste management, sewerage service house connections, and the protection of waterbodies, conducted in the project area;
  - (iii) Train with the support of PSC at least 50% of GCC technical staff (SWD Department) in the project area, including 80% of women technical staff on planning and design for storm water drainage systems, solid waste and flood risks.
  - (iv) Train with the support of the PSC eight committees of women self -help-group (SHG) federations (2 in each zone) and one committee of transgenders on rescue, relief and rehabilitation; and
  - (v) Scope under the above includes training needs assessment, preparing necessary training modules, materials for training and workshops, identifying participants and trainers, arranging and conducting training/workshop, documenting and pre- and post-evaluations.

### **C. Improving the existing flood relief camp to be gender-responsive and socially inclusive, and climate and epidemic -resilient**

The consultant shall support rehabilitating 4 GCC relief camps (one in each project zone) to be gender-responsive and socially inclusive camps with following features: at least one female worker/caretaker with supplies of sanitary napkins, soap, a basic first aid kit with medicines; safe spaces (affording privacy and security) for women, especially nursing mothers and adolescent girls; well-lit and clean toilets for women with disabled friendly access, water, hooks, ledges and shelves in the toilet and provisions for washing and disposal of menstrual products; regular (daily) visits by female student volunteers and awareness generation on women's vulnerability to violence, trafficking etc; regular interaction between volunteers and people with disability within the relief camp; helpline numbers displayed on walls. The camps will have physical distancing arrangements and WASH facilities. The consultant shall assess the requirements and with support from PSC design and oversee implementation of the camps. Any civil works or goods required shall be procured from the provisional sum of the consultant following agreed ADB procurement procedure.

#### **D. Implementing the gender equality and social inclusion action plan and monitoring and reporting on gender equality results.**

The major tasks under this shall include:

- (i) Conduct a baseline user satisfaction sample survey in project ULBs that would help to measure livability in project cities with respect to the population's satisfaction with improved drainage in particular, to ascertain that poor and female headed households are in fact benefiting as intended.
- (ii) Conduct GESI AP workshops for PMU, PIUs and GCC staff & awareness activities as indicated in the GESI AP for all relevant stakeholders. At least 90% of GCC, PMU, PIU, NGO staff, including 80% of women staff, reported increased knowledge of gender mainstreaming and social inclusion and gender-responsive and socially inclusive flood management
- (iii) Conduct gender and other related trainings to contractors and laborers.
- (iv) Conduct focus group discussions (FGDs) at regular intervals with relevant stakeholders with an objective to address social concerns without affecting planned project progress.
- (v) Assistance to PIU in implementation of GESI AP. Assist in implementing all actions identified in the GESI AP for the project. Ensure that project monitoring formats include GESI AP indicators and reflect sex disaggregated data.
- (vi) Document and report GESI AP implementation progress every quarter.
- (vii) Assist the PIU and GCC in ensuring participation of women and socially excluded groups (specially slum dwellers) in all relevant meetings, BCC and awareness raising campaigns conducted as part of the project.

#### **E. Designing and implementing IEC and participatory activities under the Consultation and Participation Plan**

The major tasks related to this include information dissemination and implementation of the consultation and participation plan, which would entail but would not be limited to the following:

- (i) Mapping of relevant stakeholders. Identify stakeholders in each ULB through participatory interactions with key stakeholders. Ensure that stakeholder mapping process includes the socially excluded and vulnerable. Also ensure that the mapping activities are planned keeping in mind special needs of women and other socially excluded groups;
- (ii) Develop a customized/appropriate communication strategy;
- (iii) Review existing Information Education & Communication (IEC) materials, media campaigns of various departments and suggest options to converge;
- (iv) Develop all IEC materials including those for print and visual media, ensuring that IEC material is gender focused and messaging does not reinforce stereotypes and spearhead in rolling out IEC activities;
- (v) Conduct campaigns on drainage, solid waste management (SWM), waste segregation etc;
- (vi) Create awareness on grievance redress mechanisms available under the program;
- (vii) Conduct awareness campaigns on the project related to benefits and implementation timelines. The stakeholders will include elected representatives (counselors) and community members with equitable representation of women/girls. The objective is to facilitate PMU/PIUs towards smooth implementation of civil works and provide support towards addressing concerns and mis-conceptions of general public affecting project progress;

- (viii) Documentation of mass events, consultations, workshops, seminar, trainings etc will include participant list, sex disaggregated participant data, event objectives, methodology, agenda and feedback from participants. A template that covers all these aspects can be created to ensure consistency in reporting;
- (ix) Designing and disseminating audio-visual content (3 short videos at different stages of the project) for awareness raising and information dissemination on key features and benefits of the project, including gender mainstreaming initiatives;
- (x) Organizing radio programs (1 per year for 3 years) such as panel discussions (including high level officials, representatives of community-based organizations and technical staff of the project) on the project and its benefits, including benefits to women and vulnerable;
- (xi) Short term impact assessment methodology will be developed to assess impacts created within community of awareness generation campaigns and activities. This will be supplemented with photographic evidence wherever applicable;
- (xii) Conduct evaluation of all the awareness programs and report; and
- (xiii) Conducting periodic review of implementation capacity and suggesting corrective measures.

## **F. Knowledge Products**

Knowledge products and materials showcasing the innovative features of the project for improving resiliency, inclusiveness, and sustainability will be developed, to enable replication of good practices to other cities in Tamilnadu and to other cities and countries.

## **G. Baseline, midterm, and end-line surveys**

Conduct baseline, midterm, and end-line user satisfaction sample surveys in project areas that would help to measure livability in project cities with respect to the population's satisfaction with improved drainage, to ascertain that poor and female headed households are in fact benefiting as intended.

## **5. Outputs / report requirements**

The outputs/reports shall include Inception report with work plan, implementation framework, monitoring formats and time lines;

- (i) For Performance Based Incentive component:
  - (a) PBI Design Report;
  - (b) Updated definition and verification methodology;
  - (c) Baseline information for all zones;
  - (d) Report on data shortfalls, gaps in IT and reporting systems, Zonewise
  - (e) Guidance notes/manuals;
  - (f) Annual performance assessment calendar;
  - (g) Annual Independent verification reports for each Zone;
  - (h) Annual performance assessment reports;
  - (i) Annual incentive calculation reports; and
  - (j) Report on recommendations for scaling up;
- (ii) Baseline Socio Economic Report with data of vulnerable and female headed households to be benefited by the investment project;
- (iii) User satisfaction survey reports;
- (iv) Monthly progress update to PIU/ on CAPP, GESI affected persons implementation;
- (v) Semi Annual Reports on progress of preparation and implementation of SOMIP, PBI and Road Map for revenue mobilization;

- (vi) GESI and CAPP quarterly updates and reports;
- (vii) Evaluation reports of campaigns and training programs;
- (viii) Concept Paper and detailed Framework for FCO;
- (ix) Concept paper for FRI;
- (x) Framework for Improving FR;
- (xi) High level situation analysis, strategic assessment, work plan on municipal resource mobilization;
- (xii) Report on revenue management systems and revenue enhancement options with a separate report on land value capture mechanisms;
- (xiii) Draft and Final Road Map for Municipal resource Mobilization;
- (xiv) All required IEC materials;
- (xv) Monthly and quarterly progress reports;
- (xvi) Assignment Completion Report; and
- (xvii) Any other reports as appropriate.

## 6. Team Composition, their qualification and experience requirement

SI. No.	Position	Person-Months	Qualification & Experience
A	<u>International Key Expert</u>		
	Flood Resilience & Flood Control Expert	6	Degree in Water Resources or Environmental or Flood Management. Minimum 10 Years relevant experience
B	<u>National Key Experts</u>		
1	Team Leader Cum Flood Expert	44	Degree in Water Resources Engineering or Environmental Engineering or Flood Management. Minimum 15 Years relevant experience
2	Urban Taxation Expert	8	PG Degree in Finance or MBA. Minimum 10 Year relevant experience in Municipal Financing
3	Legal Expert	4	Post-graduation in law. Minimum 5 Year experience in legal aspects of urban and municipal policies and regulations
4	Urban Planner	4	Post-graduation in Urban Planning. 10 year experience in urban policies and reforms
5	M&E Cum IT Expert	22	Degree in Computer Science or IT or Master of Computer Application. Minimum 5 year experience in urban data systems and related infrastructure.
6	Social & Community Development Specialist	22	PG in social sciences. 15 year relevant experience
7	Public Communication Specialist	22	PG degree in mass communication or Journalism. 5 years relevant experience.
8	Gender Specialist	22	PG in social science and 10 year experience in gender-sensitive and inclusive development projects.
9	Reporting and Documentation Specialist	22	Master degree and experience in computer-based documentation and reporting of urban data
10	Capacity Development Expert	22	Post graduate degree in education/training. 10 year experience in training and capacity development

	National Key Experts Subtotal	192	
C	Non- Key Experts (Social, Awareness, Communication, Gender, IT, Field Verification Staff etc.)	132	

**7. Clients Input and Counterpart Personnel**

The Client will make available to the consultants support facilities including all relevant and available detailed project reports, concept report documents, town maps and Kosasthalaiyar Basin maps, tender document and drawings, costs estimates, and photographs of earlier executed works etc. The Client will provide suitable counterpart staff to work in the PMU and PIUs which will include One Superintending Engineer, 3 to 4 Executive Engineers, 10-12 Assistant Executive Engineer/Assistant Engineers, 3 to 4 draft man, Accounts officer, etc

Arrangements for the establishment of office accommodation, operation and regular maintenance of office facilities, communications facilities (telephone, fax, and internet), computers, transport, stationery and all consumables will have to be arranged by the consultants.

**8. Information to facilitate Proposal preparation:**

Concept report, detailed project reports, town maps and Kosasthalaiyar Basin maps, and photographs of earlier executed works safeguard document **etc.**

**9. COVID-19 mitigation:**

Due to the outbreak of COVID-19, the commencement and completion dates and other implementation arrangements for this assignment are to be considered as indicative only. The final dates and implementation arrangements will be agreed with the first-ranked [candidate] [firm] at contract negotiations taking into consideration the prevailing situation with COVID-19 at that time.

## **DESIGN SUMMARY OF THE COMPONENTS SUPPORTED BY THE ADDITIONAL GRANT COFINANCING FROM GLOBAL ENVIRONMENT FACILITY (GEF)**

1. The additional grant cofinancing from the GEF will help the GCC enhance flood retention in the Kadapakkam Lake through ecosystem restoration. It will demonstrate nature-based solutions for climate change adaptation through rejuvenation of the water body, promoting integrated flood risk management to strengthen disaster resilience, mitigate environmental degradation, and enhance biodiversity. Additional financing will strengthen capacity in the GCC and other stakeholders and increase awareness of the advantages of nature-based solutions for urban flood risk management. It will promote knowledge dissemination and replication through national and global platforms created in partnership with the National Institute of Urban Affairs of India and UrbanShift.

2. The additional financing will enhance flood retention in the 55 hectare Kadapakkam Lake under output 1, thereby contributing to climate adaptation. Desilting will restore water holding capacity in the lake and double its volume from 1.1 million to 2.2 million cubic meters. The project proposes a bund 20 meters wide with a cycle track on the upper tier and a walking path on the lower tier. A bird island is proposed with a 2-hectare forest of various native trees planted using the Miyawaki method.<sup>31</sup> Recreation will be enhanced by a children's play area, an open-air theater, a library, and hobby fishing and boating facilities, all with features friendly to the elderly, women, children, and persons with disabilities (EWCD). The proposed works will maximize the use of environmentally friendly materials and approaches, reusing dredged soil with geotextile underlay to shore up the bund, paving with fly ash brick, and fencing with shrubbery and trees.

3. The additional financing will (i) enhance capacity in the GCC and other government entities and awareness in local communities of urban water body rejuvenation using nature-based solutions, (ii) promote the replication of nature-based solutions by other cities in Tamil Nadu through the development of an investment readiness road map, (iii) disseminate to other Indian cities knowledge and practices from this demonstration investment as a model for nature-based urban flood risk management, and (iv) strengthen understanding in the GCC and other cities in Tamil Nadu of integrated sustainable urban development through participation in national and global dialogues organized by UrbanShift.

4. The grant support shall finance both physical and non-structural components. These components will be supported by the PSC and ISRC financed by the loan (Appendixes 2 and 3) and the individual consultants financed by the GEF grant (Appendix 5)

(i) The physical works proposed include the following components. All of these are in GEF Output 2.1.2 indicated in Appendix 6.

	<b>Components</b>
1	Desilting and deepening of lake 142,570 cum
2	Provision of shallow ponds in the inlet area such that first flush water which are typically polluted and carries sediments will be deposited in the pond bottom and only relatively clear water will spill over the weir in the shallow pond.
3	Rejuvenation of inlet and outlet channels
4	Rehabilitation of surplus weirs – 2 Nos

<sup>31</sup> The Miyawaki method places various native trees, plants, and shrubs close to one another so that they grow upward toward the sun. This speeds growth by a factor of 10 and makes plantation 30 times denser, requiring no maintenance for 3 years.

5	Rehabilitation of tank sluices - 3 Nos
6	Strengthening of bund and new bund formation 3 km (Clearing of vegetation and bund formation with clay core, boulders and excavated good earth from the site and using geo textile and turfing to control soil erosion).
7	Providing foot path arrangements (using precast fly ash kerb and fly ash pavers)
8	Construction of peripheral drain around the bund
9	Construction of bio fencing along the lake bund
10	Making an urban forest using native species (Miyawaki method), bio fencing, installation of irrigation facilities for soft landscapes
11	Construction of entrance arch/plaza (With water feature, pathway, pergola and planting materials- using fly ash pavers, cobble stone and precast structure).
12	Children's Park and Play Field (using precast fly ash pathway, outdoor play equipment's, open lawn, sculpture using recycled materials, construction of open air theatre, skating ground).
13	Construction of administrative block with library (using fly ash bricks)
14	Provision for boating arrangements with safety equipment's (floating boat jetty, arrangement using HDPE pontoon)
15	Precast structures, shaded seats (seating and canopies, mushroom structure act as a rainwater collector)
16	Construction of toilet blocks (using fly ash bricks, terracotta ventilators, art works on outer wall) <sup>32</sup>
17	Lighting system (LEDs for streetlights, bollards, high mast lights, post tops, laser lights etc)
18	Construction of pump room
19	Construction of control room
20	Construction of collection tank for sewage
21	Supply and fixing of dust bins (3 bins for segregation) tilting type
22	Supply and fixing of signages
23	Implementing the environmental management plan
24	Constructing bore well and R.O treated water facility

(\*) The major components including items 10 and 12 should incorporate elderly, women, children, persons with disabilities-friendly features in the designs.

(ii) The project will also include non-structural measures as listed below. The corresponding GEF outputs are indicated in the description of each component.

<sup>32</sup> Community members (youth) living in low-income settlements in the project area and students of fine arts in Chennai will be tapped in the implementation of art works.

	<b>Components</b>
1	Establish a coordination group of relevant Chennai and Tamil Nadu government entities and document and integrate lessons learned on coordination into the planning processes of participating Government entities (GEF Output 1.1.1)
2	Prepare guidelines for restoration urban water bodies using nature-based solutions (NbS) and share it with other departments in GCC and other relevant government entities such as CMDA, Revenue Department & Public Works Department (GEF Output 1.1.2)
3	Train GCC staff and urban practitioners in the use and application of the guidelines and tools developed to undertake integrated spatial plans for managing flood risks and water body restoration through NbS (GEF Output 1.1.4)
4	Advance knowledge, communications and learning for local communities and government bodies (GEF Output 2.1.3)
5	Support another city in Tamil Nadu on preparing NbS based solutions for rejuvenating water bodies and integrating them into the City Flood Management system (GEF Output 3.1.1)
6	Establish business case through valuation study in Lake Kadapakkam to quantify the economic, social, and environmental benefits from the NbSs and encourage private sector participation in water body restoration projects (GEF Output 3.2.1)
7	A zone-based performance scheme incentivizing expansion of 'green space' (GEF) and creation / maintenance of stormwater drainage (ADB) for GCC (GEF Output 3.2.2)
8	Conduct capacity building conducted for Chennai and Tamil Nadu urban development entities, civil society, private sector on urban green financing (GEF Output 3.2.3)
9	<p>Make knowledge products, good practices and tools available to national, state and city authorities as well as other stakeholders through the NULP linked to UrbanShift. This includes:</p> <ul style="list-style-type: none"> <li>(i) developing a project specific website integrated within NULP and other knowledge platforms of NIUA including linkage with UrbanShift website to share the knowledge products and tools developed under the UrbanShift;</li> <li>(ii) compiling good practices, experiences, guidelines, lessons learned and policy recommendations from project activities and uploading to the platform (undertaken as part of city work) and shared with UrbanShift, including recommendations on policies and development control regulations for integrating these aspects into development and investment planning by States and Cities;</li> <li>(iii) Creating and finalizing knowledge products based on lessons learned of training modules on sustainable urban planning, urban finance, climate resilience etc;</li> <li>(iv) developing policy framework for assessing impact of development plans and investment decisions on climate mitigation and adaptation to integrate climate change consideration into urban development planning and investment decisions; and</li> <li>(v) conducting national sustainable cities communication campaign (including surveys before and after the campaign) to Inform cities of the platform and the available knowledge products and capacity-building efforts and to encourage their participation in the national dialogues and scaling-up of ambition on sustainable urban development, with their commitments captured on the platform (GEF Output 4.1 including Outputs 4.1.1 to 4.1.5)</li> </ul>

10	<p>Enhance capacity and awareness of Indian city stakeholders to undertake integrated sustainable urban development addressing climate change, biodiversity, and land degradation challenges through GCC conducting:</p> <ul style="list-style-type: none"><li>(i) at least three virtual or in-person workshops /training sessions for other cities in the state, in collaboration with state institutions and NIUA, and targeting at least 40% women participation, to share experiences with integrated sustainable planning approaches demonstrated in respective primary target city;</li><li>(ii) training of trainers workshop for State level Urban Development Institutes of at least 3 States in collaboration with NIUA and</li><li>(iii) 3 National Dialogues conducted in partnership with NIUA and NULP to disseminate knowledge and experience gained from implementing project activities and for peer-to-peer learning from other efforts in the country (GEF Output 4.2 including Outputs 4.2.1 to 4.2.3)</li></ul>
11	<p>Enhance understanding of GCC in integrated sustainable urban development through participation in capacity building and awareness raising activities of the UrbanShift. This includes:</p> <ul style="list-style-type: none"><li>(i) participation of GCC and another city in Tamil Nadu (secondary city) stakeholders in three National Dialogues organized by UrbanShift and</li><li>(ii) participation of GCC and another city in Tamil Nadu (secondary city) stakeholders in global UrbanShift- activities such as UrbanShift City academies, UrbanShift Regional forum and UrbanShift Global peer-to-peer exchanges (GEF Output 4.3 including Outputs 4.3.1 to 4.3.2)</li></ul>

## **OUTLINE TERMS OF REFERENCE FOR INDIVIDUAL CONSULTANTS FOR SUPPORTING GEF FUNDED COMPONENTS**

### **1. ADB/GEF SUSTAINABLE CITIES SPECIALIST / CHENNAI PROJECT COORDINATOR**

#### **Objective**

Co-ordinate activities related to implementation of the project and act as a link between GCC, ADB, UNEP and GOI. Provide guidance, technical direction and administrative support for the GEF financed elements of the project and contribute successfully to developing road map for secondary city intervention. Coordinate with and lead the rest of the consultant team

#### **Scope of work**

- Manage relationships and communications between MoHUA, NIUA, Tamil Nadu State Government, ADB, GCC, UNEP, ICLEI and other key stakeholders
- Maintain close interaction with GCC project implementation unit to ensure coordination of GEF co-financed activities with loan project implementation
- Ensure project workplan and budget targets are rigorously monitored and on schedule
- Provide technical direction, guidance and support to specialists which are part of team at task implementation level, for Chennai as well as the proposed replication city
- Support procurement processes, contracting and human resources management
- Prepare technical and financial reports for ADB, GEF and GCC as required, including guidelines for protection of urban water bodies in Chennai, which can be extended to other cities
- Facilitate and support project performance monitoring, knowledge-sharing, learning and evaluation
- Represent the project at conferences, seminars, workshops and other events
- Facilitate and arrange for project evaluation and prepare related reports
- Co-ordinate for ensuring partnership of GCC, GOTN and Replication city officials in conferences and workshops arranged by GEF, NIUA and other agencies
- Establish coordination group of related Chennai and GoTN entities (GEF Output 1.1.1.a)
- Co-ordinate activities for secondary city, guide preparation of road map for replication with support from NBS and subject experts (GEF Output 3.1.1)
- Support valuation study and establish business case for green financing (GEF Output 3.2.1)
- Develop project specific website integrated within NULP and other knowledge platforms of NIUA including linkage with UrbanShift website to share the knowledge products and tools developed under the UrbanShift (GEF Output 4.1.1)
- Draft policy framework for assessing impact of development plans and investment decisions on climate mitigation and adaptation to integrate climate change consideration into urban development planning and investment decisions (GEF Output 4.1.4)
- Support participation in national sustainable cities communication campaign (including surveys before and after the campaign) (GEF Output 4.1.5)
- Conducts, at least three virtual or in-person workshops /training sessions for other cities in the state, in collaboration with state institutions and NIUA (GEF Output 4.2.1)
- Conduct training of trainers workshop for State level Urban Development Institutes of at least 3 States in collaboration with NIUA (GEF Output 4.2.2)
- Conduct national dialogues at city level in coordination with NIUA and NULP and encourage participation of city in other national dialogues (GEF Output 4.2.3)

- Ensure and arrange for participation of target and replication city stakeholders in global UrbanShift- activities like UrbanShift City academies; UrbanShift Regional forum and UrbanShift Global peer-to-peer exchanges (GEF Outputs 4.3.1 and 4.3.2)

### **Deliverables**

- Workplan and budget for GEF co-financed elements of project
- Annual GEF Project Implementation Reports
- Quarterly ADB technical and financial reports

### **Qualifications:**

- Post-graduate level education (Master degree) in relevant field, including urban geography / planning, civil, climate science, environmental economics, architectural sciences, etc
- At least 10 years of demonstrable experience in design and implementation of urban resilience and development programs and projects in India
- Deep understanding of root causes of environmental and climate issues which affect urban agglomerations in India, and currently viable and appropriate solutions and approaches to address these effectively
- Demonstrable track record working on integrated urban development issues
- Ability to work with and coordinate a multi-disciplinary team of specialists
- Familiarity with policies and processes of ADB and the GEF, and
- Strong communications and document preparation skills

### **Duration**

48 Months

## **2. NATURE-BASED SOLUTIONS (NBS) SPECIALIST**

### **Objective**

Oversee and ensure that principles of nature-based approaches to waterbody restoration as envisaged in the design are adopted in restoration of Kadapakkam lake and ensure these with appropriate modification as required are integrated into the road map for the replication city.

### **Scope of Work**

- Guidance and review of technical assessments and studies carried out by the vendors and consultants
- Advise project implementation unit on related technical assistance requests
- Organize and deliver technical trainings, webinars, and workshops
- A multi-stakeholder engagement plan for NbS awareness
- Contribute to preparation of Green Infrastructure Manual
- Prepare guidelines for restoration urban water bodies using NbS measure and present to related agencies (GEF Output 1.1.2.c and 1.1.2d)
- Facilitate integration of NBS in various sectoral plans and policies (GEF Output 1.1.4 and 4.1.4))
- Oversee the implementation to ensure adoption of NbS in execution. (GEF Output 2.1.2)
- Develop a roadmap for replication city (GEF Output 3.1.1)
- Provide advice and quality control for the replication investment (GEF Output 3.1.1)
- A zone-based performance scheme incentivizing expansion of 'green space' (GEF) and creation / maintenance of stormwater drainage (ADB) for GCC

- Design of capacity development toolkit and modules on NbS (GEF Output 4.1.3)

#### **Deliverables**

- Roadmap for replication city
- A multi-stakeholder engagement plan for NbS awareness
- Capacity development toolkit and modules
- Guidelines for restoration urban water bodies using NbS measure

#### **Qualifications:**

- Masters' degree in biology, natural sciences, environmental management or related field
- At least 7 years of work experience in relevant field including implementation experiences in other nature-based water body restorations in India
- Awareness and understanding of principles of nature-based solutions, internal quality assurance and quality control procedures to ensure high quality investments
- Strong communications and document preparation skills

#### **Duration**

8 months

### **3. KNOWLEDGE AND LEARNING SPECIALIST**

#### **Objectives**

Document good practices related to NbS for flood risk management in Chennai and disseminate.

#### **Scope of Works**

- Contribute to project monitoring and tracking of project indicators as per GEF and ADB requirements
- Contribute to preparation of project related technical reports for GEF, ADB, GCC, NIUA / MoHUA and other stakeholders
- Document lesson learned from different GOTN entities (GEF Output 1.1.1b)
- Prepare project briefs, scene-setters, explainers, blogs, social media posts, press releases and other communications and knowledge products as required (GEF Output 2.1.3)
- Communicate experience with local communities (GEF Output 2.1.3)
- Design and conduct capacity development, learning and knowledge sharing events in collaboration with project partners (GEF Output 3.2.3)
- Compile good practices, experiences, guidelines, lessons learned and policy recommendations from project activities for uploading to the platform and shared with UrbanShift (GEF Output 4.1.2 and 4.1.3)

#### **Deliverables**

- All project knowledge and learning materials /products /events and reports

#### **Qualifications**

- Bachelors' degree in development communications, multi-media design, visual media, journalism, conservation sciences, education or related field
- Minimum 5 years of relevant experience coordinating and producing knowledge and learning materials, preferably for externally funded programs and projects in urban development and/or climate change

- Proficiency with Microsoft Office and other graphic software applications
- Demonstrated capacity to conduct research and prepare concise analytical reports and presentations
- Excellent English writing and oral skills, with equal proficiency in Tamil preferred

**Duration**

42 months

**4. *SUBJECT EXPERTS/SPECIALISTS***

To be developed based on requirement of expertise (such as biodiversity specialist, monitoring and evaluation for GEF's mid-term review and terminal evaluation, etc)

**PROJECT DESCRIPTION SUMMARY OF GEF'S PROJECT AND THE DELIVERABLES  
FOR CHENNAI PORTION ADMINISTERED BY ADB**

The additional grant financing is a part of GEF's program in India, Livable Cities in India: Demonstrating Sustainable Urban Planning and Development through Integrated Approaches under Sustainable Cities Impact Program ('GEF's Program'). ADB is one of the implementing agencies, administering the activities for Chennai while the other is UNEP for Surat and Pune.

The description of GEF's Program is shown below with the deliverables for Chennai part (***bold italic***). It also indicates the deliverables that each individual consultant is assigned for.

**Component 1 – Evidence-based sustainable and integrated planning**

*Outcome 1: Key stakeholders in target Cities adopt evidence-based sustainable and integrated city development planning approaches*

**Output 1.1: Greater Chennai Corporation (GCC) and key stakeholders have access to knowledge, tools, and systems for data collection to undertake integrated spatial plans for managing flood risks and water body restoration through nature-based solutions (NBS). (ADB Led)**

	<b>Deliverable</b>	SC	NB	KL
1.1.1	Coordination group of relevant Chennai and Tamil Nadu government entities strengthened to guide the developments of deliverables and their validation			
	<b><i>a</i></b> <b><i>Coordination group of relevant Chennai and Tamil Nadu government entities established</i></b>	X		
	<b><i>b</i></b> <b><i>Lessons learned on coordination documented and integrated into planning processes of participating Government entities</i></b>			X
	Tools for gender responsive and inclusive integrated spatial plans for managing flood risks and water body restoration through NbS			
	a Guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations for urban planning, based on baseline data collected and analysed for the GCC plan area (co-financed by ADB)			
1.1.2	b Manual for Green infrastructure design including rainwater harvesting (co-financed by ADB)			
	<b><i>c</i></b> <b><i>Guidelines for restoration urban water bodies using NbS measures (funded by GEF)</i></b>		X	
	<b><i>d</i></b> <b><i>Guidelines for restoration of urban water bodies through NbS shared with other departments in GCC and other relevant government entities such as CMDA, Revenue Department &amp; Public Works Department.</i></b>		X	
	Enhanced ICCC			
1.1.3	a Flood Resilience Index (FRI) and Flood Citizens Observatory (FCO) developed and integrated with the ICCC to monitor and guide the flood resilience of Chennai with participation of citizens (co-financed by ADB)			
1.1.4	<b><i>GCC staff and urban practitioners are trained in the use and application of the guidelines and tools developed to undertake integrated spatial plans for managing flood risks and water body restoration through nature-based solutions (NbS)</i></b>		X	

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

### Component 2 – Investments in low emission, resilient and nature-based solutions

*Outcome 2: Key stakeholders in target cities apply tools, knowledge and experiences to develop sustainable investment projects for low-emission resilient Urban development*

**Output 2.1: GCC has knowledge and experience to design sustainable investment projects using NbS for low-emission resilient development. (ADB Led)**

	<b>Deliverable</b>	SC	NB	KL
2.1.1	Urban flood prevention, management and resilience enhanced for 1.9 million residents within the Chennai-Kosasthalaiyar River Basin (ADB-GCC co-finance)			
2.1.2	<b>Lake Kadapakkam water body restoration and public recreation area established through nature-based approach (GEF funded) - Main component of GEF funding</b>		X	
2.1.3	<b>Knowledge, communications and learning advanced for local communities and government bodies (GEF funded)</b>			X

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

### Component 3 – Innovative financing solutions for cities

*Outcome 3: Target cities increasingly adopt innovative financing solutions and business models to scale up green urban solutions*

**Output 3.1: City authorities in replication cities have tools, experience, sustainable investment framework based on demonstration work in main target cities**

	<b>Deliverable</b>	SC	NB	KL
3.1.1	<b>TA provide to another city in Tamil Nadu on NbS based solutions for rejuvenating water bodies and integrating them into the City Flood Management system</b>	X	X	
3.1.2	TA provided to Agra on Low-emission resilient compact Metro Corridor plan for development along the Metro Line under implementation			
3.1.3	TA provided to Puducherry on integrated low emission coastal zone plan and list of investments identified			

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

**Output 3.2: GCC has innovative financing solutions and business models for increasing engagement of private sector in green nature based urban investments. (ADB Led)**

	<b>Deliverable</b>	SC	NB	KL
3.2.1	<b>Business case established through valuation study in Lake Kadapakkam to quantify the economic, social, and environmental benefits from the Nbs and encouraging private sector participation in water body restoration projects.</b>	X		

3.2.2	<b>A zone-based performance scheme incentivizing expansion of 'green space' (GEF) and creation / maintenance of stormwater drainage (ADB) for GCC</b>		X	
3.2.3	<b>Capacity building conducted for Chennai and Tamil Nadu urban development entities, civil society, private sector on urban green financing</b>		X	

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

#### Component 4- Knowledge Exchange and Capacity Building

*Outcome 4: Increasing number of Indian City authorities and stakeholders use the knowledge, tools, best practice examples, made available on National Urban Learning Platform (NULP), hosted by NIUA, and linked to UrbanShift, to develop and implement integrated sustainable development plans and investments.*

**Output 4.1: Knowledge products, good practices and tools are made available to national, state and city authorities as well as other stakeholders through the NULP linked to UrbanShift.**

	<b>Deliverable</b>	SC	NB	KL
4.1.1	<b>Develop Project Specific Website integrated within NULP and other knowledge platforms of NIUA including linkage with UrbanShift website to share the knowledge products and tools developed under the UrbanShift.</b>	X		
4.1.2	<b>Compilation of good practices, experiences, guidelines, lessons learned and policy recommendations from project activities under components 1, 2 and 3, for uploading to the platform (undertaken as part of city work) and shared with UrbanShift, including recommendations on policies and development control regulations for integrating these aspects into development and investment planning by States and Cities.</b>			X
4.1.3	<b>Creation and finalization based on lessons learned of training modules on sustainable urban planning, urban finance, climate resilience etc. based on primary target city (undertaken as part of each city work).</b>		X	X
4.1.4	<b>Policy framework for assessing impact of development plans and investment decisions on climate mitigation and adaptation to integrate climate change consideration into urban development planning and investment decisions.</b>	X		
4.1.5	<b>National sustainable cities communication campaign (including surveys before and after the campaign) to:</b> <i>i. Inform cities of the platform and the available knowledge products and capacity-building efforts (output 4.2)</i> <i>ii. Encourage their participation in the national dialogues</i> <i>iii. Encourage them to scale-up ambition on sustainable urban development, with their commitments captured on the platform</i>	X	X	

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

**Output 4.2: Indian City stakeholders' capacity and awareness enhanced to undertake integrated sustainable urban development addressing climate change, biodiversity, and land degradation challenges.**

	<b>Deliverable</b>	SC	NB	KL
4.2.1	<b><i>Each primary target city conducts, at least three virtual or in-person workshops /training sessions for other cities in the state, in collaboration with state institutions and NIUA, and targeting at least 40% women participation, to share experiences with integrated sustainable planning approaches demonstrated in respective primary target city.</i></b>	X		
4.2.2	<b><i>Each Primary target city conducts training of trainers workshop for State level Urban Development Institutes of at least 3 States in collaboration with NIUA</i></b>	X		
4.2.3	<b><i>3 National Dialogues conducted in partnership with NIUA and NULP to disseminate knowledge and experience gained from implementing project activities and for peer-to-peer learning from other efforts in the country.</i></b>	X		

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

**Output 4.3: Primary target city authorities and relevant state authorities gain enhanced understanding of integrated sustainable urban development through participation in capacity building and awareness raising activities of the UrbanShift.**

	<b>Deliverable</b>	SC	NB	KL
4.3.1	<b><i>Participation of primary and secondary city stakeholders in three National Dialogues organized by UrbanShift (Two dialogues by Urban Shift and one supported by the project)</i></b>	X		
4.3.2	<b><i>Participation of target and replication city stakeholders in global UrbanShift- activities:</i></b> <ul style="list-style-type: none"> <li>- <b><i>UrbanShift City academies</i></b></li> <li>- <b><i>UrbanShift Regional forum</i></b></li> <li>- <b><i>UrbanShift Global peer-to-peer exchanges</i></b></li> </ul>	X		

(Consultants: SC = Sustainable Cities Specialist, NB = Nature-Based Solution Specialist, KL = Knowledge and Learning Specialist)

## CONTRIBUTION TO STRATEGY 2030 OPERATIONAL PRIORITIES

OP No.	Corporate Results Framework Indicators (Outputs and Outcomes)	Expected Value	Methods and Comments
1.3.1	Infrastructure assets established or improved (number)	1	One integrated urban flood management system will be commissioned in the Chennai-Kosasthalaiyar basin comprising 588 km of new stormwater drains, 175 km of upgraded stormwater drains, 11 km rehabilitated stretches in four primary channels, one upgraded and one new stormwater pumping stations, 23,000 catchpits with rainwater harvesting structures, and four GCC disaster relief camps rehabilitated with gender-responsive and socially inclusive features. <u>The system will also include rejuvenation of Kadapakkam Lake to augment the water retention capacity of 2.2 million cubic meters (GEF-funded).</u>
2.2	Women and girls completing secondary and tertiary education, and/or other training (number)	8  8  50	Number of women GCC technical staff expected to increase knowledge on planning and design for storm water drainage systems and management of solid waste and flood risks.  Number of women technical staff reported increased knowledge of sustainable operation and maintenance of storm water drainage systems and management of solid waste and flood risks.  Number of female drain de-silting workers and conservancy workers reported increased knowledge and skills of cleaning and maintaining storm water drainage systems.
<u>2.3.2</u>	<u>Measures on gender equality supported in implementation (number)</u>	<u>1</u>	<u>A sustainable O&amp;M improvement plan of storm water drainage system with gender-responsive and socially inclusive features approved by GCC.</u>
2.5	Women and girls with increased resilience to climate change, disasters, and other external shocks (number)	100  <u>20</u>  <u>4</u>	Total number of women increasing knowledge on green infrastructure schemes including rainwater harvesting, flood risks and impacts, and the links between flooding, solid waste management, sewerage service house connections, and the protection of waterbodies.  <u>Total number of women reported increased knowledge on nature-based urban flood risk management through workshops and trainings (GEF-funded)</u>  <u>Number of women officers of GCC and Government of Tamil Nadu expected to increase knowledge on integrated sustainable urban development through global and national dialogues (GEF-funded)</u>

OP No.	Corporate Results Framework Indicators (Outputs and Outcomes)	Expected Value	Methods and Comments
2.5.2	Climate- and disaster-resilient infrastructure assets and/or services for women and girls established or improved (number)	4  1	Number of GCC relief camps rehabilitated with gender-responsive and socially inclusive features.  <u>Number of sets of EWCD-friendly recreational facilities in the Kadapakkam lake complex (GEF-funded).</u>
3.2	People with strengthened climate and disaster resilience (number).	1.9 million	People protected from flood risk from a 1:2 year return period rainfall.
3.2.2	Gender-inclusive climate and disaster resilience capacity development initiatives implemented (number)	1	A sustainable O&M improvement plan of storm water drainage system with gender-responsive and socially inclusive features approved by GCC.
3.2.4	National and subnational disaster risk reduction and/or management plans supported in implementation (number)	1	Guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations will be endorsed by GCC.
3.2.5	New and existing infrastructure assets made climate and disaster resilient (number)	1	One integrated urban flood management system will be commissioned in the Chennai-Kosasthalaiyar basin comprising 588 km of new stormwater drains, 175 km of upgraded stormwater drains, 11 km of rehabilitated stretches in four primary channels, one upgraded and one new stormwater pumping stations, and 23,000 catchpits with rainwater harvesting structures constructed.
<u>3.3.3</u>	<u>Terrestrial, coastal, and marine areas conserved, restored, and/or enhanced (hectares)</u>	<u>55</u>	<u>Total number of hectares of Kadapakkam lake area to be restored with increased water retention with nature-based solutions (GEF-funded).</u>
<u>3.3.4</u>	<u>Solutions to conserve, restore, and/or enhance terrestrial, coastal, and marine areas implemented (number)</u>	<u>1</u>	<u>Investment readiness road map adopted to replicate nature-based solution of Kadapakkam Lake to other cities in Tamil Nadu (GEF-funded).</u>
4.1	People benefiting from improved services in urban areas (number)	1.9 million	People protected from flood risk from a 1:2 year return period rainfall.
4.1.2	Urban infrastructure assets established or improved (number)	1	One integrated urban flood management system will be commissioned in the Chennai-Kosasthalaiyar basin comprising 588 km of new stormwater drains, 175 km of upgraded stormwater drains, 11 km of rehabilitated stretches in four primary channels, one upgraded and one new stormwater pumping stations, 23,000 catchpits with rainwater harvesting structures , and four GCC disaster relief camps rehabilitated with gender-responsive and socially inclusive features.

OP No.	Corporate Results Framework Indicators (Outputs and Outcomes)	Expected Value	Methods and Comments
4.2.1	Measures to improve regulatory, legal, and institutional environment for better planning supported in implementation (number)	1	FRIF system established.
4.2.2	Measures to improve financial sustainability supported in implementation (number)	1	Roadmap for municipal resource mobilization will be prepared and adopted by GCC.
4.3.1	Solutions to enhance urban environment implemented (number)	1 1 1 1	Catchpits with rainwater harvesting structure constructed.  Guidelines for integrating flood hazard zoning with spatial plans and land use, building and development regulations will be endorsed by GCC.  A sustainable O&M improvement plan of storm water drainage system with gender-responsive and socially inclusive features approved by GCC.  <u>Kadapakkam Lake will be rejuvenated with nature-based solutions (GEF-funded).</u>
4.3.2	Urban climate and disaster resilience capacity development initiatives implemented (number)	1 1 1 1	Awareness raising for community members on green infrastructure schemes including rainwater harvesting, flood risks and impacts, and the links between flooding, solid waste management, sewerage service house connections, and the protection of waterbodies.  Training for GCC technical staff to increase knowledge on planning and design for storm water drainage systems, solid waste and flood risk.  Training for GCC technical staff to increase knowledge of sustainable operation and maintenance of storm water drainage systems.  <u>Participation of GCC and Government of Tamil Nadu officers in global and national dialogues to increase knowledge on integrated sustainable urban development (GEF-funded).</u>
6.1.1	Government officials with increased capacity to design, implement, monitor, and evaluate relevant measures (number)	30  30	Total number of GCC technical staff reported increased knowledge on planning and design for storm water drainage systems and management of solid waste and flood risk.  Total number of GCC technical staff reported increased knowledge on sustainable operation and maintenance of storm water drainage

OP No.	Corporate Results Framework Indicators (Outputs and Outcomes)	Expected Value	Methods and Comments
		10	<p>systems and management of solid waste and flood risk.</p> <p><u>Total number of the officers of GCC and Government of Tamil Nadu reported increased knowledge on integrated sustainable urban development through global and national dialogues (GEF-funded).</u></p>
6.2.1	Service delivery standards adopted and/or supported in implementation by government and/or private entities (number)	12	KPI-based stormwater drainage operation performance improvement system will be established in 12 out of 15 zonal offices of the GCC.
6.2.4	Citizen engagement mechanisms adopted (number)	1	One FCO platform will be established and operationalized in Chennai City.

EWCD = elderly, women, children, and persons with disabilities, FCO = flood citizen observatory, FRIF = flood resilience index framework, GCC = Greater Chennai Corporation, GEF = Global Environment Facility, km = kilometer, kw = kilowatt, KPI = key performance indicator, O&M = operations and maintenance, OP = operational priority.  
Source: Asian Development Bank.

## SAMPLE OUTLINE OF SEMIANNUAL ENVIRONMENTAL MONITORING REPORT (TEMPLATE)

### A. INTRODUCTION

- Overall project description and objectives
- Environmental category as per ADB Safeguard Policy Statement, 2009
- Environmental category of each subproject as per national laws and regulations
- (i) Project Safeguards Team

Name	Designation/Office	E-mail Address	Contact Number
1. PSC			
2. PMU			
3. PIUs			
4. Consultants			

- Overall project and subproject progress and status
- Description of subprojects (package-wise) and status of implementation (preliminary, detailed design, ongoing construction, completed, and/or O&M stage)

Package Number	Components/ List of Works	Status of Implementation (Preliminary Design/Detailed Design/Ongoing Construction/Completed/O&M) 1	Contract Status (specify if underbidding or contract awarded)	If Ongoing Construction	
				%Physical Progress	Expected Completion Date

### B. Compliance status with National/State/Local statutory environmental requirements

<sup>1</sup> If ongoing construction, include %physical progress and expected date of completion

Package No.	Subproject Name	Statutory Environmental Requirements <sup>2</sup>	Status of Compliance <sup>3</sup>	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish <sup>4</sup>

**C. Compliance status with environmental loan covenants**

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

**D. Compliance status with the environmental management plan (refer to EMP TABLES in APPROVED IEE/s)**

- (ii) Confirm if IEE/s require contractors to submit site-specific EMP/construction EMPs. If not, describe the methodology of monitoring each package under implementation.

**Package-wise Implementation Status**

Package Number	Components	Design Status (Preliminary Design Stage/Detailed Design Completed)	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
			Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractor/s (Yes/No)		

<sup>2</sup> Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)

<sup>3</sup> Specify if obtained, submitted and awaiting approval, application not yet submitted

<sup>4</sup> Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 2 trees for every tree, etc.

- (iii) Identify the role/s of Safeguards Team including schedule of on-site verification of reports submitted by consultants and contractors.
- (iv) For each package, provide name/s and contact details of contractor/s' nodal person/s for environmental safeguards.
- (v) Include as an appendix all supporting documents including signed monthly environmental site inspection reports prepared by consultants and/or contractors.
- (vi) With reference to approved EMP/site-specific EMP/construction EMP, complete the table below
- (vii) Provide the monitoring results as per the parameters outlined in the approved EMP (or site-specific EMP/construction EMP when applicable).
- (viii) In addition to the table on EMP implementation, the main text of the report should discuss in details the following items:
  - (i) Grievance Redress Mechanism. Provide information on the establishment of a grievance redress mechanism and capacity of grievance redress committee to address project related issues/complaints. Include as appendix Notification of the GRM (town-wise if applicable).
  - (ii) Complaints Received during the Reporting Period. Provide information on the number, nature, and resolution of complaints received during the reporting period. Attach records as per GRM in the approved IEE. Identify safeguards team member/s involved in the GRM process. Attach minutes of meetings (ensure English translation is provided).
    - Confirm if any dust was noted to escape the site boundaries and identify dust suppression techniques followed for site/s.
    - Identify muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads.
    - Identify type of erosion and sediment control measures installed on-site/s, condition of erosion and sediment control measures including if these were intact following heavy rain;
    - Identify designated areas for concrete works, chemical storage, construction materials, and refueling. Attach photographs of each area.
    - Confirm spill kits on-site and site procedure for handling emergencies.
    - Identify any chemical stored on-site and provide information on storage conditions. Attach photograph.
    - Describe the management of stockpiles (construction materials, excavated soils, spoils, etc.). Provide photographs.
    - Describe the management of solid and liquid wastes on-site (quantity generated, transport, storage, and disposal). Provide photographs.
    - Provide information on barricades, signages, and on-site boards. Provide photographs.
    - Checking if any activities are being taken out of working hours and how that is being managed.

**Summary of Environmental Monitoring Activities (for the Reporting Period)<sup>5</sup>**

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
<b>Design Phase</b>						
<b>Pre-Construction Phase</b>						
<b>Construction Phase</b>						
<b>Operational Phase</b>						

<sup>5</sup> Attach Laboratory Results and Sampling Map/Locations.



Site No.	Date of Sampling	Site Location	Parameters (Monitoring Results)						
			pH	TDS	Total Hardness	Sulfate	Chloride	Fe	Pb

**Noise Quality Results**

Site No.	Date of Testing	Site Location	LAeq (dBA) (Government Standard)	
			Day Time	Night Time

**SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS**

- Summary of follow-up time-bound actions to be taken within a set timeframe.
- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of the environmental site inspection report
- Other

**SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT**

Project Name

Contract Number

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DMA: \_\_\_\_\_

LOCATION: \_\_\_\_\_

GROUP: \_\_\_\_\_

WEATHER CONDITION:

INITIAL SITE CONDITION:

CONCLUDING SITE CONDITION:

Satisfactory \_\_\_\_\_ Unsatisfactory \_\_\_\_\_ Incident \_\_\_\_\_ Resolved \_\_\_\_\_ Unresolved \_\_\_\_\_

INCIDENT:

Nature of incident: \_\_\_\_\_

Intervention Steps:

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

**Inspection**

Emissions	Waste Minimization
Air Quality	Reuse and Recycling
Noise pollution	Dust and Litter Control
Hazardous Substances	Trees and Vegetation

Site Restored to Original Condition

Yes

No

Signature

---

**Sign off**

---

**Name**  
**Position**

---

**Name**  
**Position**

## SAMPLE OUTLINE OF SOCIAL SAFEGUARDS MONITORING REPORT DURING PROJECT IMPLEMENTATION PERIOD

Following requirements of the ADB Safeguard Policy Statement (2009) and the *Operations Manual* section on safeguard policy (OM F1), borrowers/clients are required to establish and maintain procedures to monitor the status of implementation of safeguard plans and ensure progress is made toward the desired outcomes. For projects categorized as A or B in Involuntary Resettlement and/or Indigenous People, the Borrowers/clients are required to submit semiannual monitoring reports for ADB review. The level of detail and comprehensiveness of a monitoring report is commensurate with the complexity and significance of social safeguards impacts (IR) and with the current status of project implementation phase.

This outline can be used for periodic monitoring report (semiannual) and resettlement plan completion report to start the civil works in the impacted areas. A safeguard monitoring report may include the following elements:

### **A. Executive Summary**

This section provides a concise statement of project scope and impacts, key findings and recommended actions.

### **B. Background of the Report and Project Description**

This section provides a general description of the project, including:

- (i) Background/context of the monitoring report which includes the information on the project, project components, safeguards categorizations and general scope of the social safeguards impacts.
- (ii) Information on the implementation progress of the project activities, scope of monitoring report and requirements, reporting period, including frequency of submission and changes in project scope and adjusted safeguard measures, if applicable
- (iii) Summary table of identified impacts and the mitigation actions.

### **C. Scope of Impacts**

This section outlines the detail of

- Scale and scopes of the project's safeguards impacts,
- Vulnerability status of the affected people/communities,
- Entitlements matrix and other rehabilitation measures, as applicable, as described in the approved final resettlement plans.

### **D. Compensation and Rehabilitation<sup>1</sup>**

This section describes the process and progress of the implementation of the safeguards plan and other required activities as determined in the plan. This includes:

- Payment of the affected assets compensation, allowances, loss of incomes, etc. to the entitled persons;
- Provisions of other types of entitlement as described in the matrix and implementation of livelihood rehabilitation activities as determined in the plan.

Quantitative as well as qualitative results of the monitoring parameters, as agreed in the plan, should be provided.

---

<sup>1</sup> Depending on the status of the final detail design during the submission of the report this activity might not yet started. Provide the information on the expected date the activity to be conducted instead.

**E. Public participation and consultation**

This section describes public participation and consultations activities during the project implementation as agreed in the plan. This includes final consultations with APs during resettlement plan finalization after the completion of detail design; the numbers of activities conducted; issues raised during consultations and responses provided by the project team, implementing NGOs, project supervision consultants, contractors, etc.

**F. Grievance Redress Mechanism (GRM)**

This section described the implementation of project GRM as design in the approved resettlement plan. This includes evaluations of its effectiveness, procedures, complaints receive, timeliness to resolve issues/ complaints and resources provided to solve the complaints. Special attentions should be given if there are complaints received from the affected people or communities.

**G. Institutional Arrangement**

This section describes the actual implementation or any adjustment made to the institutional arrangement for managing the social safeguards issues in the projects. This includes the establishment of safeguards unit/ team and appointment of staff in the executing agency/implementing agency; implementation of the GRM and its committee; supervision and coordination between institutions involved in the management and monitoring of safeguards issues, the roles of NGO and women's groups in the monitoring and implementation of the plan, if any.

**H. Monitoring Results - Findings**

This section describes the summary and key findings of the monitoring activities. The results are compared against previously established benchmarks and compliance status (e.g., adequacy of IR compensation rates and timeliness of payments, adequacy and timeliness of IR rehabilitation measures including serviced housing sites, house reconstruction, livelihood support measures, and training; budget for implementing EMP, resettlement plan, timeliness and adequacy of capacity building, etc.). It also compared against the objectives of safeguards or desired outcomes documented (e.g. IR impacts avoided or minimized; livelihood restored or enhanced; If noncompliance or any major gaps identified, include the recommendation of corrective action plan.

**I. Compliance Status**

This section will summarize the compliance status of the project activities with the loan covenants, ADB SPS (2009) on SR 2 and the approved final resettlement plan(s).

**J. Follow-up Actions, Recommendation and Disclosure**

This section describes recommendations and further actions or items to focus on for the remaining monitoring period. It also includes lesson learned for improvement for future safeguards monitoring activities. Disclosure dates of the monitoring report to the affected communities should also be included. A time-bound summary table for required actions should be included.

**Appendix 1**

- (i) List of affected persons and Entitlements; and
- (ii) Summary of resettlement plan with entitlement matrix.

**Appendix 2**

- (i) Copies of affected person's certification of payment (signed by the affected persons);
- (ii) Summary of minutes of meetings during public consultations; and

(iii) Summary of complaints received and solution status.

## OUTLINE QUARTERLY PROGRESS REPORT

### **General instructions regarding QPRS**

The quarterly progress reports should follow the format outlined below and are to be submitted to ADB within 15 days after each quarter. In case of delays or incomplete information, ADB will submit a reminder to the executing agency/implementing agency. Repeated delays or incomplete information may have a negative impact on the project performance ratings, will be reflected on the project completion report and may be discussed during review missions and TPRMs.

### **A. Introduction and Basic Data**

Provide the following:

- (i) ADB loan number, project title, borrower, executing agency(ies), implementing agency(ies);
- (ii) Project objectives; impact and outcome; and project outputs
- (iii) total estimated project cost and financing plan;
- (iv) status of project financing including availability of counterpart funds;
- (v) dates of approval, signing, and effectiveness of ADB loan;
- (vi) original and revised (if applicable) ADB loan closing date and elapsed loan period based on original and revised (if applicable) loan closing dates; and
- (vii) date of last ADB review mission.

### **B. Utilization of Funds (ADB Loan, [GEF Cofinancing](#), and Counterpart Funds)**

Provide the following:

- (i) fund flow arrangements and project investment;
- (ii) cumulative contract awards financed by the ADB loan, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets - for the ADB financing compare the actual contract awards with the contract award curve included in the PAM). Include an analysis of significant variances between planned and actual contract awards;
- (iii) cumulative disbursements from the ADB loan, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets – for the ADB financing compare the actual disbursement with the disbursement projections as per the S-curve included in the PAM). Include an analysis of significant variances between planned and actual disbursements;
- (iv) re-estimated costs to completion, need for reallocation within ADB loan categories, and whether an overall project cost overrun is likely; and
- (v) reconciliation of project records and ADB disbursement records (LFIS/GFIS) for the reporting period and cumulative from project inception to end of the reporting period. Explain reasons for discrepancies and outline follow-up actions required (if any). Attach a detailed reconciliation by withdrawal applications.

*(sample Project Data Sheet and Loan/Grant Utilization table available at INRM)*

### **C. Project Purpose**

Provide the following:

- (i) status of project scope/implementation arrangements compared with those in the report and recommendation of the President, and whether major changes have occurred or will need to be made;
- (ii) an assessment of the likelihood that the immediate development objectives (project purpose) will be met in part or in full, and whether remedial measures are required based on the current project scope and implementation arrangements;
- (iii) an assessment of changes to the key assumptions and risks that affect attainment of the development objectives; and
- (iv) other project developments, including monitoring and reporting on environmental and social requirements and progress status of gender equality and social inclusion action plan implementation that might adversely affect the project's viability or accomplishment of immediate objectives.

*(sample project results profile, safeguard matrix available at INRM)*

#### **D. Implementation Progress**

Provide the following:

- (i) assessment of project implementation arrangements such as establishment, staffing, and funding of the PMU or PIU;
- (ii) information relating to other aspects of the executing agency's internal operations that may impact on the implementation arrangements or project progress;
- (iii) progress or achievements in implementation since the last progress report;
- (iv) assessment of the progress of each project component, such as,
  - a) Recruitment of consultants and their performance;
  - b) procurement of goods and works (from preparation of detailed designs and bidding documents to contract awards); and
  - c) the performance of suppliers, manufacturers, and contractors for goods and works contracts;
  - d) overall performance of the project.
- (v) assessment of progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets);
- (vi) assessment of current status or progress in meeting development objectives of each target indicator defined in the Design and Monitoring Framework (DMF), indicating problems or potential Problems related to the achievement of development objectives. Each project output is assessed by comparison with the actual performance of the original plan; and
- (vii) an assessment of the validity of key assumptions and risks in achieving the quantifiable implementation targets.

*(sample procurement plan, physical/financial monitoring matrix table available at INRM)  
(Status on agreed action plan of last review mission)*

#### **E. Compliance with Safeguards and Covenants**

Provide the following:

- (i) the borrower's compliance with policy loan covenants such as sector reform initiatives and executing agency reforms, and the reasons for any noncompliance or delay in compliance;
- (ii) the borrower's and executing agency's compliance with project-specific loan covenants associated with implementation, environment, and social dimensions;
- (iii) the borrower's and executing agency's compliance with financial loan covenants (if any) as outlined in the loan and project agreement. If any financial ratios required as part of the financial covenants, then these should be calculated and disclosed using the latest entity level financial statements or reports that are available. Also outline any actions being undertaken as part of ensuring the specified financial ratios are achieved/maintained.

*(sample covenant matrix available at INRM)*

#### **F. GESI Action Plan and CAPP Implementation**

- (i) Provide the GESI Action Plan Monitoring Matrix, with details of activities undertaken in the quarter, as well as cumulative achievements until the reporting quarter. The GESI AP monitoring format can be found in Appendix 20.
- (ii) Include summary of CAPP activities undertaken in the quarter (the CAPP can be found in Appendix 21).

#### **G. Financial Management**

Provide the following:

- (i) summarize the status of Financial management in the project including: a) any problems in the existing financial management arrangements and /or flow of funds and b) any significant changes occurred during the reporting period (e.g. financial management staff turnover, implementation of new financial systems, emerging financial management related risks etc.);
- (ii) Summarize the status of: a) the financial management action plan outlined in the PAM; b) recommendations and actions raised by ADB as part of the APFS/AEFS review (if any); and c) financial management related recommendations agreed during ADB review missions (if any); and
- (iii) Summarize the status of Status of past audit observations (resolved/ pending)

#### **H. Major Project Issues and Problems**

Summarize the major problems and issues affecting or likely to affect implementation progress, compliance with covenants, and achievement of immediate development objectives. Recommend actions to overcome these problems and issues (e.g., changes in scope, changes in implementation arrangements, and reallocation of loan proceeds).

*(sample matrix table available at INRM)*

#### **I. Plan for Next Quarter**

Provide the targets of the project for the following quarter, in terms of procurement, contract awards, disbursements, physical progress, etc.

**ENVIRONMENT SAFEGUARDS QUARTERLY PROGRESS REPORT CHECKLIST<sup>1</sup>**

Activity	Yes / No	Remarks (If Answer Is No)
<b>A. For subproject packages under bidding</b>		
1. IEEs cleared by ADB?		
2. IEEs/EMPs included in the bidding documents?		
3. Are there changes in the scope of work of the cleared IEEs?		
4. Core labor standards and environment, health and safety (EHS) incorporated in Section 8 (or appropriate section) of the bid documents?		
5. BOQ line item includes EMP requirements?		
6. IEE disclosed in form and language understood by stakeholders and affected persons (APs)?		
<b>B. For subproject packages with contracts awarded (no works yet)</b>		
1. All statutory clearances/permits obtained?		
2. Each contractor appointed EHS and/or safety officer?		
3. Baseline regarding condition of roads, agricultural land and other infrastructure prior to start of transportation of materials and construction has been recorded?		
4. Contractor has established tie-ups with local hospitals/clinics for emergencies on-site?		
5. For DBO packages, detailed design completed and updated IEE submitted to ADB?		
6. For civil works packages, site-specific EMP submitted to ADB?		
<b>C. For subproject packages with contracts awarded and works ongoing</b>		
1. Contractors have appointed EHS and/or safety officer on-site per subproject package?		
2. Site-specific EMP posted on-site?		
3. Contractors' records of accidents / incidents submitted to PMU on a monthly basis?		
4. Contractors provided PIU with a notification/incident report of any accident(s) within 24 hours of its		
5. Reports of complaints/grievances reported monthly to PIU?		
6. Records of information disclosure/consultations submitted by PIUs to PMU monthly?		
7. Records of site inspection by PIU submitted to PMU monthly?		

<sup>1</sup> This checklist should provide the Project's general compliance to environment safeguards during the reporting period. The indicators are aligned with project loan agreement, PAM, IEEs and ADB's Sustainable Development Safeguards Division Safeguards project performance rating. The detailed environmental safeguards compliance status should be provided in the semiannual environmental monitoring report.

**SOCIAL SAFEGUARDS QUARTERLY PROGRESS REPORT CHECKLIST<sup>1</sup>**

Activity	Yes / No	Remarks (If Answer Is No)
<b>A. For subproject packages under bidding</b>		
1. resettlement plans/DDR/IPP cleared by ADB?		
2. resettlement plans/DDR/IPP included in the bidding documents?		
3. resettlement plan includes cut-off-date?		
4. Are there changes in the scope of work of the cleared resettlement plans/DDR/IPP?		
5. ID cards prepared for APs and distributed?		
6. Are specific actions identified in resettlement plan/IPP, if any, that are required of the contractor for impact avoidance or mitigation, incorporated in bid documents?		
7. BOQ line item includes any requirements specified in resettlement plan/DDR/IPP?		
8. resettlement plan/IPP disclosed in form and language understood by stakeholders and affected persons (APs)?		
9. Consultations with stakeholders and affected persons/IP held?		
10. Is the GRM in place and GRC constituted?		
<b>B. For subproject packages with contracts awarded (no works yet)</b>		
1. All NOCs/land transfers obtained?		
2. Agreement of sale/transfer and third-party certificate obtained for negotiated settlement/voluntary donation?		
3. All compensation paid in full?		
4. Detailed measurement survey conducted jointly by contractor, project consultant and PMU/PIU?		
5. All community concerns and grievances related to specific sites mitigated through consultations or agreed actions?		
6. All common property resources (CPR, including small shrines, trees of worship etc.) identified and plan for continued access prepared?		
7. Each contractor designated social safeguards and grievance registration officer?		
8. For DBO packages, detailed design completed and updated resettlement plan/DDR/IPP submitted to ADB?		
9. For DBO packages, serial no. 1-7 accomplished?		
<b>C. For subproject packages with contracts awarded and works ongoing</b>		
1. Contractors have appointed social safeguards and grievance registration officer per subproject package?		
2. Site-specific signages with date of start and end of construction and contact number for		

<sup>1</sup> This checklist should provide the Project's general compliance to social safeguards during the reporting period. The indicators are aligned with project loan agreement, PAM, resettlement plans and ADB's Sustainable Development Safeguards Division Safeguards project performance rating. The detailed social safeguards compliance status should be provided in the semiannual social monitoring report.

grievances and safety instructions for general public posted on-site?		
3. Grievance registration register available at each work site?		
4. Site fencing/protection works etc. undertaken before start of physical construction work?		
5. Contractors provided PIU with a notification/incident report of any grievance or unanticipated impact within 24 hours?		
6. Reports of complaints/grievances reported monthly to PMU?		
7. Records of information disclosure/consultations submitted by PIUs to PMU monthly?		
8. Records of site inspection by PIU and PSC submitted to PMU monthly?		
9. Records of site inspection by PSC submitted to PMU monthly?		

### CONVERSION TABLE

Project transactions are recorded in the accounting software using GCC's chart of accounts as. In order to compare the project performance with the planned costs, the project financial reports must follow the expenditure categories outlined in the PAM. Moreover, the disbursement categories used for withdrawal application must follow the ones outlined in the loan agreement.

The conversion table outlined below is meant to facilitate the alignment of GCC's chart of accounts with the expenditure categories outlined in the PAM and to generate financial in a format required by ADB.

<b>GCC chart of accounts for recording expenditures (Major/minor and subhead of account)</b>	<b>Financial reporting: Expenditure category as per the PAM - for financial reporting purposes</b>	<b>Remarks</b>
Insert the expenditure account related to civil works here	Civil works	
Insert the expenditure accounts related to consulting services here	Consulting services	
Insert the expenditure accounts related to Project administration here	Project administration	
Insert the expenditure accounts related to Maintenance here	Maintenance	

## **FINANCIAL MANAGEMENT REPORT TO BE INCLUDED IN THE QUARTERLY PROGRESS REPORT**

### **General Instructions**

The financial information in the format outlined below are to be included in the quarterly progress reports (QPRs) to be submitted to ADB within 45 days after each quarter. In case of delays or incomplete information, ADB will submit a reminder to the executing agency/implementing agency. Repeated delays or incomplete information may have a negative impact on the project performance ratings and may be discussed during review missions.

### **Section A. Utilization of Funds (ADB Loan, and Counterpart Funds)**

In this section include the following information:

- i. Overall status of project financing including the adequacy and timeliness of counterpart funds;
- i. cumulative contract awards financed by the ADB loan, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets – for ADB financing compare the actual contract awards with the contract award curve included in the PAM). Include an analysis of significant variances between planned and actual contract awards; Provide contract-wise details as per annex 2
- ii. cumulative disbursements from the ADB loan, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets – for the ADB financing compare the actual disbursement with the disbursement projections as per the S-curve included in the PAM ), Include an analysis of significant variances between planned and actual disbursements;
- iii. Reconciliation of project records and ADB disbursement records (LFIS/GFIS) for the reporting period and cumulative from project inception to end of the reporting period. Explain reasons for discrepancies and outline follow-up actions required (if any). Attach a detailed reconciliation by WA as per Annex 1; and,
- iv. re-estimated costs to completion (if required), need for reallocation within ADB loan categories, and whether an overall project cost overrun is likely.

### **Section B. Financial Management**

In this section, include the following information:

- i. Summary of the Financial management arrangements in the project including: a) any problems in the existing FM arrangements and/or flow of funds and b) any significant changes occurred during the reporting period (e.g. FM staff turnover, implementation of new financial systems, emerging FM related risks etc.);
- ii. Summary of the status of each agreed action in the FM action plan outlined in the PAM. Attach a detailed log as per Annex 4;

- iii. Outline the status of recommendations and immediate actions provided by ADB as part of the APFS/AEFS review (if any) and FM related recommendations agreed during ADB review missions (if any). Attach a detailed log as per Annex 5; and,
- iv. Summarize the status of Status of past audit observations (if any). Attach a detailed log as per Annex 3.

Annexes: Attach the following annexes to the report when submitting it to ADB:

1. Annex 1: Statement of Cash receipts (by financing source) and payments (by expenditure category for the reporting period, year to date, and cumulative;
2. Annex 2: ADB loan/grant disbursement report including a detailed reconciliation (by Withdrawal application) of project records and ADB disbursement records (LFIS) for the fiscal year to date and cumulative;
3. Annex 3: Contract register/List of signed contracts
4. Annex 4: Status of past audit observations (resolved/ pending);
5. Annex 5: Status of FM action plan (complied/ongoing)
6. Annex 6: Status of FM related actions agreed during ADB review missions (if any).

**Annex 2. Disbursement report for the Fiscal Year to Date and Cumulative including Detailed Reconciliation (by Withdrawal Application) of Project Records and ADB Disbursement Records (LGFIS) – separate reports to be generated for each financing source (e.g ADB loan, ADB grant etc. as applicable).**

<b>Statement of Disbursement by ADB Financing Source for the year ended DD/MM/YYYY</b>				
<b>Statement of Disbursement</b>	<b>Notes</b>	<b>Reporting period</b>	<b>Fiscal year to date</b>	<b>Cumulative Project to Date</b>
<b>ADB loan/grant- Funds claimed during the year</b>	A			
Reimbursement				
Advance Fund				
Direct Payment				
<b>Subtotal</b>				
Expenditure incurred not yet claimed	B			
<b>Subtotal</b>				

**Note A: Detailed Reconciliation (by Withdrawal Application) of Project Records and ADB Disbursement Records (LFIS)  
for the Fiscal Year to Date and Cumulative  
-separate reports to be generated for each financing source (e.g ADB loan, ADB grant etc. as applicable)**

GCC										
WA Details			Per project records/APFS (Amount recorded in the project Financial statements as reimbursement, direct payment, etc..)				Per ABD disbursement records LFIS/GFIS (actual Paid)			Remarks
Withdrawal application No (WA)	Disbursement method (reimbursement, direct payment, etc..)	Time period covered in the WA	Date	In local currency (as recorded in project records/ financial statements)	exchange rate	USD equivalent (A)	Value date	In USD (B)	Difference (A-B)	Reason for difference (i.e. timing forex. Pending rejected)
1		1-31.3.2020								
2										
3										
etc..										
<b>Total - Fiscal year to Date</b>										
<b>Total Cumulative</b>										

**Note B: Provide a breakdown of expenditures incurred but not yet claimed from ADB including the eligible portion for ADB.**

## Annex 3: Status of Signed Contracts Cumulative to date

Contract Information											
Description *	Contract Description	Contract Start	Contract End	Supplier/Contractor Name	Contract No.	Total Contract Value	Total Contract Amount Invoiced to date	Total Disbursed on Contract	Total Undisbursed Amount	Responsible entity	Financing source (ADB loan, etc.)
1. Civil works											
2: Equipment/supplies											
3. Consulting services											
<b>Total</b>											

\*Classified a per expenditure categories outlined in the PAM.

**Annex 4: Status of External Audit Observations – Cumulative from Inception to End of Reporting Period**

Responsible Entity:	External Audit Recommendation	Date of the Recommendation	Planned Actions to Address the Recommendation	Responsibility	Current Status of the Planned Action (pending /resolved)	Remarks

**Annex 5: Status of Financial Management Action Plan**

<b>Key Risk</b>	<b>Risk Mitigating Activity</b>	<b>Time line</b>	<b>Responsible Entity</b>	<b>Current status (implemented/Pending)</b>	<b>Remarks (including an action plan in case of noncompliance)</b>

**Annex 6: Status of FM related actions agreed during ADB review missions or TPRMs**

Date of the review mission	Agreed actions	Time line	Responsible Entity	Current status (implemented/Pending)	Remarks

**TERMS OF REFERENCE FOR AUDIT OF ADB ASSISTED PROJECTS BY  
COMPTROLLER AND AUDITOR GENERAL OF INDIA**

**Background:**

ADB provides assistance in the form of Loan and/or Grant for the implementation of project and/or program by the executing agencies (executing agency) identified by the central/state government. In order to facilitate the same, a loan/grant agreement is executed between ADB and central government for each individual loan/grant and a project agreement is executed between ADB and the executing agency for each project/subproject. The disbursement of loan is governed by the *ADB Loan Disbursement Handbook* which provides for various disbursement procedures viz, Direct payment procedure, Reimbursement procedure, Commitment Letter procedure and Imprest Account procedure. The project agreement stipulates that the executing agency shall (i) maintain separate accounts for the project and if the executing agency is revenue earning, then for its overall operations also (ii) have such accounts and related financial statements<sup>1</sup> (balance sheet, statement of income and expenses and related statements) audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; and (iii) furnish to ADB, promptly after their preparation but in any event not later than six (6) months (or 9 months if specifically approved) after the close of the fiscal year to which they relate as applicable, certified copies of such audited accounts and financial statements and the report of the auditor relating thereto (including the auditor's opinion on the use of loan proceeds and compliance with the covenants of the loan/grant agreement as well as on the use of the procedures for Imprest Account, Second Generation Imprest Account (SGIA), Statement of expenditures (SOE), Force Account Works and Simultaneous Application for sub-loan approval and Withdrawal (SAW)), where applicable, all in the English language.

The executing agencies for all sovereign loans are subject to audit by the Comptroller and Auditor General of India (Supreme Audit Institution of the country). In order to comply with the requirement of audit as referred in above para, the following terms of reference should be pursued with respect to the loan/grant/project agreement executed for availing the ADB's assistance.

**Objective:**

Article 14(xi) of the Agreement establishing the Asian Development Bank (The Charter) States that 'Proceeds of any loan made, guaranteed, or participated by the Bank are used only for the purposes for which the loan was granted and with due attention to consideration of economy and efficiency'. In addition, Article 14(xiv) of the Charter requires ADB to be guided by sound banking principles in its operations. To fulfill the requirements of Article 14 (xi) and (xiv) of the Charter, ADB requires borrowers/project executing agencies to submit audited Project accounts (APA) and audited financial statements (AFS).

ADB requires the borrower and the project executing agency to have the required financial statements for each year audited by an independent auditor acceptable to ADS, and in accordance with standards on auditing that are acceptable to ADB. An audit of such financial statements includes: (i) an assessment of the adequacy of accounting and internal control systems with respect to project expenditures and other financial transactions, and to ensure safe custody of project financed assets, (ii) a determination as to whether the borrower and project implementing entities have maintained adequate documentation on all relevant

---

<sup>1</sup> Preparation of balance sheet, statement of income and expenditure shall depend on the legal status of the project executing/implementing agency and shall apply to autonomous bodies or corporation until extended legally to other types of organization such as government departments.

transactions, including statement of expenditures (SOE), Force Account Works and Simultaneous Application for sub-loan approval and Withdrawal (SAW)) where applicable, (iii) confirmation that expenditures submitted to ADB are eligible for financing and identification of any ineligible expenditures, (iv) compliance with loan/grant covenants and ADB's requirements for project management and (v) compliance with the use of procedures for Imprest Account (implementing agency)/Second Generation Imprest Account (SGIA)/SOE/force account works/SAW, where applicable.

The objective of the audit of the Project Financial Statement (PFS) is to enable the auditor to express a professional opinion as to whether (i) the PFS present fairly, in all material respects, the sources and applications of project funds for the period under audit examination, (ii) the funds were utilized for the purposes for which they were provided, (iii) loan covenants have been complied with and (iv) expenditures shown in the PFS are eligible for financing under the relevant loan/grant agreement. In addition, where applicable, the auditor will express a professional opinion on the use of the procedures for implementing agency, SGIA, SOE, Force Account Works and SAW and whether adequate supporting documentation has been maintained to support claims made by project management for reimbursement of expenditures incurred under the SOE, Force Account Works and SAW method of reimbursement where applicable.

The books of account that provide the basis for preparation of the PFS are established to reflect the financial transactions of the project and are maintained by the project executing/implementing agency – [ ] Project Implementation unit and the participating divisions.

#### **Standards:**

The audit will be carried out in accordance with the Auditing Standards promulgated by the Comptroller and Auditor General of India. The auditor should accordingly consider materiality when planning and performing the audit to reduce audit risk to an acceptable level that is consistent with the objective of the audit. Although the responsibility for preventing irregularity, fraud, or the use of loan/grant proceeds for purposes other than as defined in the legal agreements remain with the borrower, the audit should be planned so as to have a reasonable assurance of detecting material misstatements in the PFS.

#### **Scope:<sup>2</sup>**

In conducting the audit, special attention should be paid to the following:

- (a) All external funds have been used in accordance with the conditions of the relevant legal agreements and only for the purposes for which the financing was provided. Relevant legal agreements include the Loan/Grant Agreement, the Project Agreement, and the Minutes of Negotiations;
- (b) Counterpart funds have been provided and used in accordance with the relevant legal agreements and only for the purposes for which they were provided;
- (c) Financial covenants of the loan agreement have been complied with

---

<sup>2</sup> In response to identified project risks, the scope may be expanded to include a report or the expression of an opinion on specific aspects of the operation such as internal controls, compliance with Bank procurement policies, or efficiency and effectiveness in the use of loan/grant proceeds.

- (d) All necessary supporting documents, records, and accounts have been kept in respect of all project transactions including expenditures reported via SOEs/IAs/SGIAs/Force Account Works/SAW where applicable. Clear linkages should exist between the books of account and reports presented to the ADB; and
- (e) The project accounts have been prepared in accordance with consistently applied Government Accounting Standards<sup>3</sup> and present fairly, in all material aspects, the financial situation of the project at the year end and of resources and expenditures for the year ended on that date.

### **Project Financial Statements:**

The contents of Project Financial Statements (PFS) are specific to the sector, the project design and the type of implementing entity. These formats therefore vary from one project to another. The formats of PFS are prepared in consultation with the implementing entity during the preparation of the project.

The Project Financial Statements should include:

- A. In a nonrevenue-earning entity, or for the audit of project accounts, the annual financial statement may consist of the Statement of Receipts and Payments on project transactions. Other schedules of value or cumulative expenditures by category such as civil works, equipment, consultancy services, training and capacity building, administrative costs, expenditure by financier, statement of disbursement under SOE procedure, imprest account, cumulative work-in-progress, assets and inventories and a summarized reconciled bank statement are to be attached. See Annexure 1-8 for examples of reporting formats that could be prepared for a project implemented by core government departments.
- B. For a revenue earning entity, a balance sheet, income statement and cash flow statement accompanied by supplementary statements or schedules supporting the basic statement (e.g., inventories, schedule of assets, outstanding loans, aging of receivables, etc:).
- C. Statement of Disbursement: The PFS include a reconciliation between expenditure reported as per the statement of sources and application of funds and expenditure claimed from ADB through SOE, documented claims (direct payment and reimbursement), commitment letter procedure, force account works or SAW where applicable. An example is shown at Annexure 3.
- D. Other statements or schedules as may be applicable in particular circumstances and as specified in the relevant loan/grant agreements. In particular, Statement of Appropriation Vs. Actual (Annexure 9) and Statement of Expenditure by Output (Annexure 10) shall be prepared and prepared to the project financial statements. These statements shall not be subject to audit.

---

<sup>3</sup> Until such time as the pronouncements of the Government Accounting Standards Advisory Board are accepted and prescribed by the Ministry of Finance, the Accounting Standards followed by the Government of India will be defined by the General Financial Rules, PWD codes; Treasury codes and similar financial rules and codes as are in effect and applicable to the operations of the project.

- E. Management Assertion: Management should sign the PFS and provide a written acknowledgment of its responsibility for the preparation and fair presentation of the financial statements and an assertion that project funds have been expended in accordance with the intended purposes as reflected in the financial statements. An example of a management assertion letter is shown at Annexure 11.

**Statement of Expenditure (SOE), Imprest Account (implementing agency), Second Generation Imprest Account (SGIA), Force Account Works, Simultaneous Application for Sub-Loan Approval and Withdrawal (SAW):**

During the course of the audit of the PFS, the auditor is required to audit all SOE, implementing agency, SGIA, Force Account Works and SAW for withdrawal applications made during the period under audit examination. The auditor should apply such tests as the auditor considers necessary under the circumstances to satisfy the audit objective. In particular, these expenditures should be carefully examined for project eligibility by reference to the relevant financing agreements. Where ineligible expenditures<sup>4</sup> are identified as having been included in withdrawal applications and reimbursed against, these should be separately noted by the auditor.

**Audit Report**

An audit report on the PFS should be prepared in accordance with the Auditing Standards promulgated by the Comptroller and Auditor General of India. Those standards require an audit opinion to be rendered related to the financial statements taken as a whole, indicating "unambiguously whether it is unqualified or qualified and if the latter, whether it is qualified in certain respects or is adverse or a disclaimer of opinion". In addition, the audit opinion paragraph will specify whether, in the auditor's opinion, (a) loan proceeds have been used as covenanted in ADB Loan / Project Agreement (b) financial covenants of loans have been complied with (c) with respect to SOEs, Force Account Works and SAW, where applicable, adequate supporting documentation has been maintained to support claims to ADB for reimbursement of expenditures incurred; and (d) except for ineligible expenditures as detailed in the audit observations, if any, appended to the audit report, expenditures are eligible for financing under the Loan/Grant Agreement. Relevant CAG Auditing Standards are reproduced in Annexure 12. A sample audit report wordings for unqualified opinion is shown at Annexure 13.

The PFS and the audit report should be received by ADB not later than six (6) months (or 9 months if specifically approved) after the close of the fiscal year to which they relate as specified in the loan/project agreement. The auditor should also submit two copies of the audited accounts and audit report to the Implementing Agency.

The audit report is issued without prejudice to CAG's right to incorporate the audit observations in the Report of CAG of India for being laid before Parliament / State or UT Legislature.

**Management Letter**

In addition to the audit report on the PFS, the auditor may prepare a management letter containing recommendations for improvements in internal control and other matters coming to the attention of the auditor during the audit examination. Where such a management letter is prepared by the auditor, a copy of the same will be supplied to ADB. Else, a written advice may be made that no management letter was prepared together with the audit report on the PFS.

---

<sup>4</sup> Refer to ADB's Operation Manual (OM) Section H3 and Safeguard Policy Statement

**General**

The auditor should be given access to any information relevant for the purposes of conducting the audit. This would normally include all legal documents, correspondence, and any other information associated with the project and deemed necessary by the auditor. The information made available by the auditor should include, but not be limited to, copies of ADB's project appraisal document, the relevant legal agreements, a copy of these guidelines and a copy of ADB's financial management assessment of the project entity. It is highly desirable that the auditor become familiar with other ADB policy document such as ADB guidelines on financial management and analysis of projects chapter 5 title reporting and auditing, PAI 5.07 on submission of audited project accounts and financial statements, OM section J7/BP on project accounting, financial reporting and auditing. The auditor should also be familiar with ADB's *Loan Disbursement Handbook* – July 2012 (or as amended from time to time)

**Name of the Executing Agency**  
**Name of the Implementing Agency**  
**Name of the Project**  
**Loan/Grant No.**

**STATEMENT OF RECEIPTS AND PAYMENTS**  
**REPORT FOR THE YEAR/PERIOD ENDED XX, XXXX**

in (INR) '000

Particulars	Note Reference	During the Current Year for 12 month period	During the Previous Year for 12 month period	Cumulative Project to Date As at [end of CURRENT year]
<b>Opening balance<sup>1</sup> (A)</b>				
<b>Receipts</b>				
Funds received from Government <sup>2</sup>	4			
ADB Loan <sup>3</sup>	6			
ADB Grant <sup>3</sup>	6			
Co-financier 1	7			
Co-financier 2	8			
Beneficiary contribution (if any)	9			
Other receipts such as interest income, sale from disposals of fixed assets, etc.	10			
<b>Total Receipts (B)</b>				
<b>Total (C = A + B)</b>				
<b>Payments</b>				
<b>Investment Costs<sup>4</sup></b>	11			
Civil Works				
Mechanical and Equipment				
Environment and Social Mitigation				
Consultants				
a. Project Management				
b. Capacity Development				
Others				
<b>Subtotal (D)</b>				
<b>Recurrent Costs</b>	12			
Salaries				
Accommodation				
Equipment Operation and Maintenance				
Others				
<b>Subtotal (E)</b>				
<b>Total Payments</b>				
<b>Financing Charges During Implementation (F)</b>	13			
<b>Total Project Cost (G = D + E + F)</b>				
<b>Closing Balance (C – G)</b>				

<sup>1</sup> If cash balance are controlled by the entity, indicating cash balance, imprest account and SGIA balance separately

<sup>2</sup> These will include external assistance received by Government for the project.

<sup>3</sup> This shall include amounts received in the Bank Account as well as amounts deemed to be received against direct payments made by ADB to the suppliers of goods and services under Direct Payment procedure and Commitment Letter procedure

<sup>4</sup> Expenditure categories are based on the cost allocation table as per Loan/Grant Agreement

Notes 1 to x of the financial statements form an integral part of these financial statements

(Annexure 2)

**Name of the Executing Agency**  
**Name of the Implementing Agency**  
**Name of the Project**  
**Loan/Grant No.**

**STATEMENT OF EXPENDITURE BY CATEGORY AND FINANCIER**  
**REPORT FOR THE YEAR/PERIOD ENDED XX, XXXX**

in (INR) '000

Particulars	Percentage of financing <sup>1</sup> 1	ADB <sup>4</sup>		Co-Financier		Government		Total Expenditure 8
		Actual Expenditure		Actual Expenditure		Actual Expenditure		
		Amount 2	% 3	Amount 4	% 5	Amount 6	% 7	
<b>Investment Costs<sup>2</sup></b>								
Civil Works								
Mechanical and Equipment								
Environment and Social Mitigation								
Consultants								
Project Management								
Capacity Development								
Others								
<b>Subtotal (A)</b>								
<b>Recurrent Costs</b>								
Salaries								
Accommodations								
Equipment Operations and Maintenance								
Others								
<b>Subtotal (B)</b>								
<b>Total Cost (C=A+B)<sup>3</sup></b>								
<b>%Total Project Cost</b>								
<b>Total Project Cost for [insert prior year period]</b>								

<sup>1</sup> The financing percentages for ADB funds should directly correlate to the financing percentages in the allocation table(s) of the financing agreement(s).

<sup>2</sup> Expenditure categories are based on the cost allocation table as per Loan/Grant Agreement

<sup>3</sup> The figures shown against various categories of expenditure should agree with the current year's payment in Annexure 1, Statement of Receipts and Payments.

<sup>4</sup> This shall include total expenditure claimed from ADB under various disbursement procedures, i.e. direct payment, reimbursement, imprest account and commitment letter.

Notes 1 to x of the financial statements form an integral part of these financial statements

**Name of the Executing Agency**  
**Name of the Implementing Agency**

[NAME OF THE ENTITY/PROJECT]

Loan/Grant No.

FOR THE YEAR ENDED [YEAR END DATE]

**Statement of Disbursement**

Details of the disbursement by method are given below:

in (INR) '000

Statement of Disbursement	Note	Current Year	Prior Year	Cumulative Project to Date
<b>ADB Fund claimed during the year</b>				
Reimbursement <sup>3</sup>	6.1	10		
Imprest Fund <sup>3</sup>	6.2	10		
Direct Payment	6.3	10		
Commitment Letter	6.4	10		
<b>Subtotal</b>	(A)	40		
<b>Total Expenditure made during the year<sup>1</sup></b>				
Less:	(B)			
Expenditure not yet claimed	(C)			
Borrower's share <sup>2</sup>	(D)			
<b>Total Eligible Expenditure claimed (B – C – D = E = A)</b>	(E)			

<sup>1</sup> The total expenditure as per Statement of Receipts and Payments.

<sup>2</sup> This should tally with the Government share included in Statement of Expenditure by category and financier (Column 6)

<sup>3</sup> Includes both claims using SOE and full supporting documentation

Notes 1 to x of the financial statements form an integral part of these financial statements

**[NAME OF THE COUNTRY/IMPLEMENTING AND EXECUTING AGENCY]  
 [NAME OF THE ENTITY/PROJECT]  
 [ADB LOAN REFERENCE]  
 NOTES TO THE FINANCIAL STATEMENTS  
 FOR THE YEAR ENDED [YEAR END DATE]**

1. Project Nature and Activities

1.1 *Description of the Project, the nature of activities, commencement and expected completion dates. Mention location, domicile, legal form, controlling implementing agency/ executing agency, brief nature of the project outputs,*

1.2 Give legislative framework

*Insert as relevant*

2. STATEMENT OF COMPLIANCE

These financial statements have been prepared in accordance with approved accounting standards, as applicable in India. This refers to the cash basis of accounting applied with due regard to the General Financial Rules, PWD Codes, Treasury Codes, and similar financial rules and codes as are in effect and applicable to the operations of the Project.

3. SIGNIFICANT ACCOUNTING POLICIES

3.1 Financial Statements

This comprises of the Statement of Receipts and Payments, the Statements of Expenditure by Category and Financier, the Statement of Disbursement and related notes and appendices to the financial statements

3.2 Basis of measurement

Financial statements have been prepared under the historical cost convention and on *[cash/ accrual]* basis of accounting

3.3 Changes in Accounting policies

*Describe changes in accounting policies, if any*

3.4 Fund Flow mechanism

*Describe the fund flow mechanism, in particular, whether the implementing agency/executing agency control funds or whether all payments are centralized*

3.5 Advances and other receivables

*Describe treatment of advances against expenditures*

### 3.6 Cash and cash equivalents

*Cash equivalents comprise [define components of cash]. Explain if the entity controls unspent advances, only petty cash, or has a nil balance, as applicable*

### 3.7 Accrued and other liabilities

*Disclose any major liabilities which have not been accrued under the cash basis policy*

### 3.8 Income

*i) Describe nature of different types of income and how they are recognized. For example grants, sale of proceeds of fixed assets, interest income on bank accounts etc.*

*ii) [Include if applicable] Free of cost office space, electricity and certain other services provided by {insert name} are not valued and accordingly, are not recognized in these financial statements as income of the Project.*

### 3.9 Foreign currency transactions and translation

#### (a) Functional and presentation currency

Items included in the financial statements of the Project are measured using the currency of the primary economic environment in which the entity operates (the functional currency), which is the Indian Rupee (INR).

#### (b) Transactions and balances

Transactions in foreign currency are converted at the exchange rate prevailing at the date of transaction. Foreign currency bank balances are re-stated at the year end rate, and the resulting gains/losses are recognized in the statement of receipts and payments account. Conversion Rate: USD \$ 1 = INR \_\_\_\_ as of 31 March \_\_\_\_

### 3.10 Allocation of Common Costs

*Describe how common costs are allocated to different output/activities*

### 3.11 Interest Expenses and Financial Charges

*Describe how financial charges are treated and recorded. For example if these are not allocated to the Project by the CAA.*

#### Funds Received from the Government

*Give details of the government budgeting and funding mechanism*

in (INR) '000		
Current Year	Prior Year	Cumulative Year to date

Government Counterpart funding  
Amount Reimbursable to Government

\_\_\_\_\_

Total

=====

4. DATE OF AUTHORIZATION

These financial statements have been authorized for issue by the \_\_\_\_\_ of  
\_\_\_\_\_ on .....

**Name of the Executing Agency**  
**Name of the Implementing Agency**

[NAME OF THE ENTITY/PROJECT]

Loan/Grant No.

NOTES TO THE FINANCIAL STATEMENTS  
 FOR THE YEAR ENDED [YEAR END DATE]

5. Funds Received from ADB

*Give key terms and conditions of the loan, including date of loan agreement, loan effectiveness date, key terms and conditions, disbursement schedule, commitment fee and interest rates etc.*

in (INR) '000

ADB Source of Funds – Method of Withdrawal	Note Reference	During the Current Year	During the Previous Year	Cumulative Project to Date
ADB Loan				
- By Reimbursement Method	6.1			
- By Imprest Account <sup>1</sup>	6.2			
- By Direct Payment	6.3			
- By Commitment Procedure	6.4			
ADB Loan Total				
ADB Grant				
ADB Loan and Grant Total				

<sup>1</sup> This should agree with the advances/replenishments net of refunds in Statement 6.2.

5.1 Funds Received from ADB through Reimbursement Method

*Give details, if necessary*

(Annexure 6)

**Name of the Executing Agency**  
**Name of the Implementing Agency**

[NAME OF THE ENTITY/PROJECT]

Loan/Grant No.

NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED [YEAR END DATE]

5.2 Reconciliation of the Imprest Account and the Bank Statement is given below

**STATEMENT OF IMPREST ACCOUNT**  
**FOR THE YEAR/PERIOD ENDED XX, XXXX.**

		in (INR) '000
	Prior Year	Current Year
<b>Balance brought forward from previous period</b>	<b>100</b>	<b>140</b>
Add:		
Advance <sup>1</sup>	200	200
Replenishment received during the year/period <sup>1</sup>		
Interest Earned	10	10
<b>Subtotal (A)</b>	<b>310</b>	<b>350</b>
Deduct:		
Payments made during the year/period	150	150
Replenishment /Liquidation <sup>1</sup>	50	
Expenditure yet to be claimed	100	
Amount refunded during the year/period	20	20
<b>Closing Balance (B)</b>	<b>140</b>	<b>180</b>
As per bank statement (copy attached)	140	180

1 Withdrawal application-wise references required

6.2.1 The US \$ equivalent notational amount held at the RBI in respect of the above Imprest Account balance is \_\_\_\_\_ US \$ (bank statement attached)

6.3 Details of Payments made directly by ADB are given below

*(Add relevant details here)*

6.4 Details of payments made through commitment procedure

*(Add relevant details here)*

6.5 Details of Grants

*(Give relevant details for grants)*

(Annexure 7)

Name of the Executing Agency  
Name of the Implementing Agency

[NAME OF THE ENTITY/PROJECT]

Loan/Grant No.NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED [YEAR TO DATE]

6.6 Details of disbursement claimed under the Statement of Expenditure (SOE) Procedure are given below

**DISBURSEMENT CLAIMED UNDER STATEMENT OF EXPENDITURE (SOE) PROCEDURE  
FOR THE YEAR/PERIOD ENDED XX, XXXX**

in (INR) '000

W/A No.	SOE Sheet No. 2	Category 3	Total Amount Paid 4	ADB Financing % <sup>1</sup> 5	Net Eligible Expense 6 (4x5)	Amount Reimbursed 7	Imprest Fund Replenished/ Liquidated 8	Total Disbursement Using SOE Procedure 7 + 8 = 9
00001	1	Civil Works	100	80%	80	60	20	80
00002	2	Mechanical and Equipment						
	1	Consultants						
	2	Salaries						
00005	3	Accommodation						
	1	Environment and Social Mitigation						
	2	Equipment Operation and Maintenance						
		<b>Total</b>						
		<b>Total for [prior year]</b>						

<sup>1</sup> The financing percentages within the table for ADB funds are as per loan agreement Schedule 3.

**Name of the Executing Agency**  
**Name of the Implementing Agency**

**[NAME OF THE ENTITY/PROJECT]**

**Loan/Grant No.**

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED [YEAR END DATE]**

in (INR) '000

Current Year	Prior Year	Cumulative Project to Date
-----------------	---------------	----------------------------------

7 – 13

*If any of the amounts given on the Statements of Receipts and Payments require further detail or Breakdown, provide this here against relevant Note*



**Name of the Executing Agency**  
**Name of the Implementing Agency**  
**Name of the Project**  
**Loan/Grant No.**

**EXPENDITURE BY OUTPUT COMPONENTS**

In INR '000

	Unallocable common costs			Output 1 <sup>1</sup>			Output 2			Output 3			Total Expenditure		
	Prior Year	Current Year	Cum to Date	Prior Year	Current Year	Cum to Date	Prior Year	Current Year	Cum to Date	Prior Year	Current Year	Cum to Date	Prior Year	Current Year	Cum to Date
Investment Costs															
Civil Works															
Mechanical Equipment															
Environment and Social Mitigation															
Consultants															
a. Project Management															
b. Capacity Development															
Others															
Subtotal (A)															
Recurrent Costs															
Salaries															
Accommodation															
Equipment Operation and Maintenance															
Others															
Subtotal (B)															
Total Cost (C=A+B)															
% Total Project Cost															

<sup>1</sup> Allocate the expenditure to the different Project Output Components as per the Loan Agreement. Add as many columns as required. For common costs allocated, specify the sharing ratios in the note 3.10

**Example of a Management Assertion Letter**

(Project Letterhead)

(To Author)

(Date)

This assertion letter is provided in connection with your audit of the financial statement of the \_\_\_\_\_ Project for the year ended \_\_\_\_\_. We acknowledge our responsibility for the fair presentation of the financial statements in accordance with the cash basis of accounting followed by the Government of India, and we confirm, to the best of our knowledge and belief, the following representations made to you during your audit:

- The project financial statements are free of material misstatements, including omissions.
- Project funds have been used for the purposes for which they were provided.
- Project expenditures are eligible for financing under the Loan/Credit agreement.
- There have been no irregularities involving management or employees who have a significant role in internal control or that could have a material effect on the project financial statements.
- We have made available to you all books of account and supporting documentation relation to the project.
- The project has complied with the conditions of all relevant legal agreements, including the Financing Agreement, the Project Agreement, the Project Appraisal Document, the Minutes of Negotiations, and the Borrower's Project Implementation Plan.

---

(Project Director / Chief Executive Officer)

---

(Chief Finance Officer / Senior Finance Officer)

**Excerpt from CAG Auditing Standards (2<sup>nd</sup> Edition, 2002) Chapter IV, Reporting Standards****12. The form and content of audit opinion and report.****12.1 The form and content of all audit opinions and reports are founded on the following general principles:**

- (a) **Title.** The opinion or report should be preceded by a suitable title or heading, helping the reader to distinguish it from statements and information issued by others.
- (b) **Signature and date.** The opinion or report should be properly signed. The inclusion of a date informs the reader that consideration has been given to the effect of events or transactions about which the auditor became aware up to that date (which, in the case of regularity (financial) audits, may be beyond the period of the financial statement).
- (c) **Objectives and scope.** The opinion or report should include reference to the objectives and scope of the audit. This information establishes the purpose and boundaries of the audit.
- (d) **Completeness.** Opinions should be appended to and published with the financial statements to which they relate, but performance reports may be free standing. The auditor's opinions and reports should be presented as prepared by the auditor. In exercising its independence CAG may acquire information from time to time, which in the national interest cannot be freely disclosed. This can affect the completeness of the audit report. In this situation the auditor should consider the need to make a report, possibly including confidential or sensitive material in a separate, unpublished report.
- (e) **Addressee.** The opinion or report should identify those to whom it is addressed, as required by the circumstances of the audit engagement and local regulations or practice. This is unnecessary where formal procedures exist for its delivery.
- (f) **Identification of subject matter.** The opinion or report should identify the financial statements (in the case of regularity (financial) audits) or area (in the case of performance audits) to which it relates. This includes information such as the name of the audited entity, the date and period covered by the financial statements and the subject matter that has been audited.
- (g) **Legal basis.** Audit opinions and reports should identify the legislation or other authority providing for the audit.
- (h) **Compliance with standards.** Audit opinions and reports should indicate the auditing standards or practices followed in conducting the audit, thus providing the reader with an assurance that the audit has been carried out in accordance with generally accepted procedures.
- (i) **Timeliness.** The audit opinion or report should be available promptly to be of greatest use to readers and users, particularly those who have to take necessary action.

## Report of the Comptroller and Auditor General of India

To

(Project Implementing Authority)

### Report on the Project Financial Statements

We have audited the accompanying financial statements of the \_\_\_\_\_ Project financed under Asian Development Bank Loan No. \_\_\_\_\_, which comprise the Statement of Receipts and Payments, the Statement of Expenditure by Category and Financier, the Statement of Disbursement<sup>1</sup> and related notes for the year ended \_\_\_\_\_.

#### OR

In case of PIA maintaining Balance Sheet balance sheet and statement of income and expenditure following part may be substituted:

We have audited the accompanying financial statements along with Balance Sheet balance sheet, income and expenditure statement and Cash Flow Statement and related statements of the \_\_\_\_\_ Project financed under Asian Development Bank Loan No. \_\_\_\_\_, for the year ended \_\_\_\_\_,

These statements are the responsibility of the Project's management. Our responsibility is to express an opinion on the accompanying financial statements based on our audit.

We conducted our audit in accordance with the Auditing Standards promulgated by the Comptroller and Auditor General of India. Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. Our audit examines, on a test basis, evidence supporting the amounts and disclosures in the financial statements. It also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements present fairly, in all material respects, the sources and applications of funds of Project for the year ended [insert date] in accordance with Government of India accounting standards.<sup>2</sup>

---

<sup>1</sup> Insert titles of other required statements and schedules included in or annexed to the project financial statements, if any.

<sup>2</sup> Until the Ministry of Finance prescribes adoption of the accounting standards pronounced by GASAB or other body such as IPSAS, the accounting standards followed by the Government of India shall be the cash basis of accounting

In addition, in our opinion;

(a) Proceeds of the loan from ADB have been utilized for the purposes as per ADB Loan / Project Agreement

(b) Financial covenants in the loan agreement [name and number of loan] dated [date of loan] have been complied with

(c) (i)(a) With respect to SOEs, adequate supporting documentation has been maintained to support claims to the Asian Development Bank for reimbursements of expenditures incurred; and (b) except for ineligible expenditures as detailed in the audit observations, if any, appended to this audit report, expenditures are eligible for financing under the Loan Agreement.

(ii)(a) The Imprest Accounts give a true and fair view of the receipts collected and payments made during the year ended---; and (b) these receipts and payments support Imprest Account liquidations/replenishments during the year.

This report is issued without prejudice to CAG's right to incorporate the audit observations in the Report of CAG of India for being laid before Parliament/State or UT Legislature.

[Auditor's Signature]

[Auditor's Address]

[Date<sup>3</sup>]

---

applied with due regard to the General Financial Rules, PWD codes, Treasury codes and similar financial rules and codes as are in effect and applicable to the operations of the project.

<sup>3</sup> The report should be dated as of the date to which the auditor has become aware of and considered the effects of events and transactions. This is generally the final date of fieldwork, as opposed to the date of signing the audit report.

## **INNOVATIVE FLOOD MANAGEMENT MEASURES FOR INCREASING INCLUSIVE FLOOD PREPAREDNESS AND SUSTAINABLE RESILIENCE IMPROVEMENT**

The project design carefully considered bringing in innovative approaches targeting inclusive flood preparedness, and sustainable resilience improvement. ISRC shall support GCC in conceptualizing and operationalizing these.

### **1. Establishing Flood Resilience Index (FRI) and a Framework for Improving Flood Resilience (FIFR) for the river basins and Chennai City**

Since rainfall is an unpredictable probabilistic event further complexed due to the impacts of climate change whatever structural measures implemented for flood control cannot prevent floods. Thus, the urban community needs to learn to live with floods. When an urban community becomes able to accept, resist, recover and learn from flood events it is considered as resilient to flood disaster. Towards this the community needs to have improved systems covering actions related to the three different parts of flood risk management cycle - preparedness, response and recovery. The flood resilience of urban system has five dimensions related to flood hazard, exposure, and vulnerability - natural, economic, social, physical, and institutional: (i) Natural dimension describes the space where urban area is located with different ranges for variables like available water bodies, percentage of existing slope or flat areas, drainage capabilities, etc; (ii) Economic dimensions define increase of households in line with population growth rates and employment as direct link to economic growth; (iii) Social dimensions explore available resources, health status, knowledge and flexibility as well as connections within the community; (iv) Physical dimensions evaluate existing structural measures, protection, communication network, human safety (eg. emergency shelter), etc; and (v) Institutional dimension considers existence of flood management plans, policies, regulations, evacuation plans. The evaluation of the city's standing as regards to each constituents of these dimensions will give a clear picture of the urban community's flood resilience. This is done with set of indicators that are grouped under dimensions.

The Flood Resilience Index of the city is a number reflecting the cities performance related to defined indicators under each dimension which reflects the city's positioning on a flood resilience perspective. Establishing FRI aims to put in place a scientific framework that could lead to targeted actions to increase the resiliency through reducing flood hazards, exposure, and vulnerability. The process of calculating FRI include computing the weighted mean index of the scores of all indicators related to each dimension and reporting the average weighted mean index as the FRI for the city. With support from ISRC consultants the project shall try to establish an FRI for the four basins within the Chennai City and for the entire City. The activities include (i) consultations and field trips to identify the possible indicators related to each dimension; (ii) reviewing the FRIs and frameworks for other Indian and foreign cities (ii) finalizing the indicators and assigning weightage to each (the most important variables that are contributing higher level of resilience gets higher weights); (iii) collecting and collating all information required for scoring;(iv) scoring and (v)reporting FRI and comparing it with other bench-mark cities in India and abroad.

The next stage after establishing the FRI is to identify areas of weaknesses/challenges and measures required for improving FRI. This will lead to establishing a framework for improved flood resilience (FIFR). The improvement could be done in addition to enhancing structural elements by formulating and adopting diverse regulations such as institutional, urban planning and design, architectural design, public participation, financial stimulation, etc. The ISRC shall support in

developing the framework. Once the framework is established periodic evaluation and reporting of FRI could be considered.

## **2. Providing a Flood Citizen Observatory (FCO) for the Chennai-Kosasthalaiyar Basin**

Engineering works reduces flood risk reduction well but more than that is required to manage floods effectively. Several nonstructural measures are adopted towards this purpose. Stakeholder participation in decision-making related to flood management is one such measure of particular importance. This requires establishment of public participation mechanisms to ensure citizens' involvement in the flood management cycle. One of such mechanism is engaging citizens enabled by information and communication technologies (ICTs) such as sensor technologies and social media, generating relevant information and promoting demand-driven policy responses. Chennai has the potential for increased citizen participation in flood risk management through such mechanisms.

Citizen Observatory is a software platform to obtain voluntary information on a topic through different devices like web browser, mobile application or SMS. In this case a Flood Citizen Observatory (FCO) shall be developed and used to share information pertinent to floods. This can be effectively used not only to share the damages caused by flood but also to prevent or minimize impacts of flood events.

The approach broadly involves selecting many volunteers in each ward and zone areas, providing them awareness, developing suitable platforms/approaches for sharing information related to flood (such as flooded areas, water levels in lakes, channels and the riverbed), analyzing and using that information for decision-making. The volunteers acting as human sensors locally observe important parameters of flood risk management. There shall be well defined categories and subcategories in the data collection platform so that the volunteer can easily identify the category that best represents his observed scenario. To send a report, volunteers can use social media platforms, SMS, e Mails, mobile application and/or a web site. Due to the uncertainty about the credibility of this information, reports are checked by representatives of the governmental agencies (could be a cell in GCC) before they are made available online. This will provide data from large areas where it is not possible or cost-effective to do measurement in real-time to estimate the likelihood of a flood or to plan rescue/evacuation. Additionally, the information so gathered could be used for the development of flood maps or risk maps for the affected population and in estimating damages, compensations and relief works. The platform could also be expanded to enable citizens to participate in awareness campaigns, call for rescue support, submit the grievance, and provide the suggestions for urban planning improvement.

The activities include (i) developing the framework with ISR consultant's support; (ii) adopting a web-based cloud sourcing platform for data collection and analysis; (iii) developing a mobile app and web site for use by volunteers to share data and see responses; (iv) selecting and training citizen volunteers; (v) establishing a cell in GCC to coordinate the FCO and (vi) making the FCO operational.

## PERFORMANCE BASED INCENTIVE FOR STRENGTHENING OPERATIONAL CAPACITY

### Performance Based Incentive - Design Summary

#### Project Design

1. The Asian Development Bank (ADB) intends to support the proposed Integrated Urban Flood Management for the Chennai-Kosasthalaiyar Basin of the Greater Chennai Corporation (GCC) in Tamil Nadu. This will increase Chennai's resilience to extreme weather events by (i) strengthening the city's urban flood protection infrastructure, (ii) strengthening GCC's planning and capacity for urban flood management, and (iii) improving GCC's operational performance.
2. One of the proposed outputs is strengthening the operational capacity of GCC through a Performance Based Incentive (PBI) program (US\$ 7 Million). This component would provide funds to GCC for zonal level green infrastructure creation and for sustainable O & M expenditure in storm water drain management. GCC will allocate the funds to each zonal office based on their performance on a set of performance indicators. Thus, this component is designed to incentivize zonal offices to improve their performance in O & M of storm water drains and thus improve overall GCC performance.
3. This output has been designed consultatively with GCC. Based on initial discussions with GCC a workshop was organized on December 30, 2019. The officers of the Storm Water Drain department participated in the workshop and provided suggestions on approach and possible indicators. A draft note on possible indicators was prepared based on this workshop and shared with GCC. Follow-up discussions were held with GCC prior to and during the pre-fact finding mission in October-November 2020. A summary of the design considerations is provided in Annexure 4.
4. **Scope and objective:** The Performance Based Incentive (PBI) would provide financing to GCC to support improvements in storm water drainage operations and maintenance by zonal offices. The financing provided to GCC would be distributed among zonal office based on Performance Indicators. The grants would be used by the zonal offices for Eligible Expenditure. For each item of expenditure, procurement systems of GCC and GOTN would be applicable.
5. **Size:** US\$ 6.9 Million, to be implemented over three financial years, beginning in the financial year 2023-24 (i.e financial year April 1 2023 to March 31 2024).The financing to be provided in each year would be fixed as per Table 1. The distribution of this amount among various zonal office of GCC will be based on the performance of the individual zonal offices.

**Table 1 – Year-wise allocation of PBI to GCC**

SI No	Performance Year	Allocation	Disbursement Year
1	2023–2024	US \$ 2 million	2024–2025
2	2024–2025	US \$ 3 million	2025–2026
3	2025–2026	US \$ 2 million	2026–2027
	<b>Total</b>	<b>US \$ 7 Million</b>	

1. **Performance Year** refers to the period for which the performance of the zonal offices in the Performance Indicators will be assessed. To illustrate Performance Year 2023-24 implies

that the performance of the various zonal offices will be measured for the period starting April 1, 2023 and ending on March 31, 2024.

2. **Disbursement Year** – Year in which the disbursement of incentive will be made to the zonal offices. This will be the year following the Performance Year.
3. **Target recipients:** The financing will be provided to GCC and would be distributed among zonal offices of GCC. The Performance Based Incentive (PBI) will be in addition to the normal zonal budget for capital and O & M.
4. **Eligible Expenditure:** The zonal office can utilize the grants they receive for creating green infrastructure and for expenditure in sustainable O & M activities related to storm water drains such as purchase of machinery (Eligible Expenditure provided in Annexure 1)
5. **Performance Indicators:** The following are the Performance Indicators (PIs) which would be assessed. Detailed definition, evaluation methodology and data sources are provided in Annexure 2.

**PI 1: Regular reporting of zonal offices on storm water drain maintenance activities and flooding status.** These would include survey of drains to identify maintenance activities required, preparation of physical and financial estimates, tendering of works after approval by GCC, progress in key milestones in maintenance, completion of de-silting and repair works prior to monsoon, status of flooding/ inundation and post monsoon activities.

**PI 2: Completion of maintenance activities**

- (i) Maintenance and repair works completed in storm water drain structures as compared to budget
- (ii) Length of storm water drains de-silted (in kms of drains)
- (iii) Quantity of de-silting completed (by weight of silt removed)

**PI 3: Incidence of flooding/ inundation in the zone.** The number of incidents of flooding in a year in each zonal office.

6. **Weightage:** The weightage for each zonal office. The weightage is calculated based on two parameters, a) population in the zonal office as per Census 2021 if available, else as per latest official records maintained by GCC and b) road length of each zone as per official records maintained by GCC. The weightage of each zone as per current information is provided in Annexure 3. These weightages are tentative and will be updated by GCC on or before March 31, 2023 and thereafter will remain unchanged.
7. **Performance Score:** The performance of each zonal office during a Performance Year would be scored based on the methodology provided in Annexure 2. The total grant available for a Performance Year would be allocated among the zonal offices as follows

**Table 2 – Allocation of PBI based on performance**

1	2	3	4	5	6	7	8	9
SI No	Zonal Office	Weightage for Zone	Score in PI 1	Score in PI 2	Score in PI 3	Total Score (4+5+6)	Weighted Score (Column 7*)	Allocation (A * Column 8 / Z)

							Column 3)	
1	Zonal Office 1	W1	Z11	Z12	Z13	Z1	W1 * Z1	A * Column 8/ Z
2	Zonal Office 2	W2	Z21	Z22	Z23	Z2	W2 * Z2	A * Column 8/ Z
3	Zonal Office 3	W3	Z31	Z32	Z33	Z3	W3 * Z3	A * Column 8/ Z
--								
--								
15	Zonal Office 15	W15	Z151	Z152	Z153	Z15	W15 * Z15	
	Total	Total Weightage will be 100					Sum of Column 8 = Z(say)	Total Allocation will be equal to A

**Note**

A = Total allocation to GCC in the Performance Year as per Table 1

W = Weightage for each zone based on the population and road length as per Annexure 3

Z = Sum of weighted score of all zones

Zab = Performance score of Zone a in Performance Indicator b. a = 1 to 15, b = 1 to 3. The scores will be calculated for each PI based on the methodology in Annexure 2.

**8. Performance Evaluation:** The performance evaluation of each zone would be carried out in the year following the Performance Year, i.e the performance evaluation for the Performance Year 2023-24 will be carried out after March 31, 2024.

**9. Disbursement**

- (i) Based on anticipated and interim performance evaluations, a provisional amount for each zone as Performance Based Incentive(PBI) would be included in the budget. After completion of performance evaluation, the final amount of PBI would be incorporated in the revised budget for the zone.
- (ii) To illustrate, based on anticipated performance in the Performance Year 2023-24, a provisional allocation for each zone would be made in the budget for the year 2024-25. The performance of the zones during April 1, 2023 to March 31, 2024 will be assessed in the first quarter of 2024-25. Based on the final performance score, the final allocation for each zone will be included in the revised budget for 2024-25.
- (iii) If a zonal office has not utilized the PBI allocations for a Disbursement Year, the undisbursed amount will be added to the allocation for the zone for the next year. Thus, a zonal office may carry forward unutilized amounts till the completion date for the Project. Any unutilized amounts on completion of the Project will lapse.

**10. Funds Flow**

- (i) Zonal offices shall submit their performance details and based on the evaluation report prepared by ISRC and approved by Project Director, PIU shall disburse fund to the Zonal offices.
- (ii) The zonal offices will follow the applicable procurement norms of GCC and GOTN for utilization of PBI allocated to them

- (iii) PBI will be utilized only towards Eligible Expenditure
- (iv) GCC will follow its existing funds flow procedures for approval of expenditure and disbursement

**11. Implementation arrangements**

- (i) The PBI component would be administered by the Chief Engineer (or head of the department) of Storm Water Drain department (SWDD) of GCC.
- (ii) The Chief Engineer SWDD will be responsible for setting annual performance requirements for each PI, estimating anticipated performance based on interim evaluations, recommending provisional budget allocations for the next Disbursement Year based on anticipated performance, conducting performance evaluation on completion of the Performance Year and recommending final allocations based on performance score.
- (iii) Commissioner GCC is responsible for approving the performance evaluation, the final performance scores and the final PBI allocation to each zonal office.
- (iv) The Chief Engineer of the SWDD will be responsible for deciding the final weightages for each zonal office based on Census 2021 population, official data on road length and official data on zonewise population in the absence of Census 2021 data.
- (v) The Chief Engineer of the SWDD will recommend any amendments or revisions to this PBI manual. The Commissioner of GCC will be the approving authority for any amendments or revisions in PBI to enable ease of implementation.

**12. Annual Calendar of activities**

- (i) The administration of PBI will follow the annual calendar of activities as below. Chief Engineer SWDD has the discretion to amend the annual calendar as required.

SI	Activity	Schedule	Remarks
1	Finalization of weightages for each zone	Prior to March 31, 2023	There will be no further revisions to weightages after April 1, 2023.
2	Finalizing reporting requirements and zonewise performance targets (for flooding incidents, O & M targets) and deadlines for the following Performance Year	On or before March 31 of the previous year	
3	Periodic assessment of performance	As required	
4	Provisional evaluation of performance	Prior to [November 30] of each year	SWDD may amend this date to fit with budget calendar
5	Recommending provisional allocation in the budget for next Disbursement Year based on provisional evaluation	Prior to [November 30] of each year	SWDD may amend this date to fit with budget calendar
6	Performance evaluation for each PI based on the methodology in Annexure 2	Between April 1 and June 30 of the following year	
7	Recommending final allocations based on Performance Score of each zonal office	On or before August 31 of each Disbursement Year	SWDD may amend this date to fit with deadline for finalizing revised budget estimates

8	Recommending any changes to PBI	On or before December 31 and such changes will take effect from the following year	
9	Approval of any changes to PBI by Commissioner, GCC	On or before February 28 and such changes will take effect from the following year	
10	Disclosure of performance report of zonal offices and final allocation	Within 15 days of recommendation of final allocation	
11	Reports to ADB on procurement, disbursement, utilization and other subjects as required under the Project	As per the requirements of the Project	

**13. Information availability and measures required to improve data quality.** At present, only two metrics are tracked by the storm water drain (SWD) department,

- (i) annual de-silting work (target set based on visual inspection. Performance measured based on visual inspection and weighing of quantity) and financial progress and
- (ii) incidence of flooding tracked by manual reporting by zonal offices

14. The SWDD department needs to develop reporting formats covering inspection, routine maintenance activities, preparation of estimates for de-silting and repairs, tendering, supervision of works, reporting of completion, regular reports on flooding, periodic surveys on infrastructure availability and condition etc. A draft format is provided in Annexure 2. The SWDD department also needs to set performance targets for the number of incidents of flooding for each zone after taking into account historical flooding in the zone and infrastructure availability. Updated reporting formats and performance targets should be prepared by SWDD before commencement of the first Performance Year, i.e before March 31, 2023. GCC will be able to utilize the services of ISRC for this purpose.

### **Annexure 1 – Eligible Expenditure**

1. Green Infrastructure -For undertaking design and construction of green infrastructure projects within the Zones
2. Sustainable O & M expenditure in Storm Water Drain management – For purchasing equipment and machinery required for sustainable operation and maintenance.

### **Annexure 2 – Performance Indicators and Evaluation Methodology**

<b>PI 1</b>	<b>Regular reporting of zonal offices on storm water drain maintenance activities and flooding status</b>
Definition	Percentage of required periodic reports substantially completed and submitted in time by zonal offices
Description	The SWDD will issue standard reporting format from zonal offices. This would cover a) survey of SWD structures to identify maintenance requirements and submission of physical and financial estimates to SWDD, b) tendering and contract signing for maintenance activities c) completion of maintenance and de-silting activities in time prior to monsoon and d) monitoring of vulnerable flooding spots and inundation spots during monsoon.

	The SWDD department will finalize the reporting format and the reporting frequency or deadline for the submission of reports. A draft reporting schedule is provided below.
Performance Measurement and Score	Expressed in percentage - Number of substantially complete periodic reports submitted by zonal offices on or before the deadline / Number of periodic reports required to be submitted by the zonal offices
Responsibility for evaluation	SWDD department will assess if the report is submitted in time and if it is substantially complete. Evaluation will be verified by the Chief Engineer SWDD. Final performance scores will be approved by Commissioner, GCC.
Data sources	Reporting requirement and calendar specified by Chief Engineer – SWDD as per draft schedule below. Periodic reports submitted by the zonal offices on or before the deadline.
Maximum Score	The maximum score for a zonal office in this indicator will be 100.

#### Format A - Draft Reporting schedule for zonal offices

SI No	Reporting requirement	Frequency	Reporting period	Number of reports to be submitted in a Performance Year	Number of substantially complete reports submitted in time
	<b>Inspection Reports</b>				
1.	Walking visual inspection report	Monthly	April to March	12	
2.	Post heavy rainfall inspection report	As instructed by CE SWDD	As per instructions	As per instructions	
3.	Pre-monsoon inspection report	Monthly	August, September	2	
4.	Post monsoon inspection report	Monthly	January, February	2	
5.	Encroachment report	Quarterly	April to March	4	
6.	Water flow test				
7.	Flooding hotspot identification	Pre-monsoon	September	1	
	O & M works report				
8.	De-silting estimates	Pre-monsoon	As per deadline provided by CE SWDD	1	
9.	O & M estimates for structures	Pre-monsoon	-do-	1	
10.	Progress report for de-silting	Weekly/ Fortnightly	-do-		
11.	Completion report for de-silting	Pre-monsoon	-do-	1	
12.	Flooding report	Every six hours, days with rainfall	As per actual rainfall days		

		in zone in excess of x hours			
	Budget preparation				
13.	Draft budget estimates for the zone	Once in a year	As per deadline provided by CE SWDD	1	
14.	Final budget estimates for the zone	Once in a year	-do-	1	
15.	Revised budget estimates for the zone	Once in a year	-do-	1	
16.	Annual Storm Water Drain performance report (including infrastructure availability, O & M activity, flooding etc)	Once in a year	-do-	1	
	Total number of reports to be submitted by zonal office			A	B
	Performance Score for the Zone in PI 1 = B/A in %				

Note: Schedule To be finalized by SWDD on or before March 31 of each year.

PI 2	Completion of maintenance activities
Definition	<p>Percentage completion of storm water drain maintenance activities on time during the Performance Year expressed as an arithmetic average of</p> <ul style="list-style-type: none"> <li>(i) Percentage completion of approved work plan for de-silting, maintenance and repair works (measured in Rs Crores completed/ Rs Crores approved contract value)</li> <li>(ii) Kilometers of storm water drains de-silted as compared to approved work plan</li> <li>(iii) Quantity (in tons) of silt gathered and deposited at the designated disposal site as compared to estimates in the approved work plan</li> </ul>
Description	<p>During the Performance Year, the zonal offices prepare estimates of de-silting and maintenance works required to be carried out. Based on available budget, the SWDD approves the works and tenders are issued. The zonal offices are responsible for supervision of contractors and completion of tendered works. This performance indicator will measure percentage completion of works before the specified deadline for completion (pre-monsoon). Maintenance work of SWD structures would include manholes, junction sumps, gutters, street inlet, catch basins, detention tanks, pumping stations and outfall structures.</p> <p>The performance will be measured in three areas</p> <ul style="list-style-type: none"> <li>a) Overall completion of de-silting, maintenance and repair works. The completed value will be compared to the contract value.</li> <li>b) Number of kms of drains de-silted. This will be compared with the approved estimates for de-silting.</li> <li>c) Quantity (in tons) of silt gathered and deposited at the designated disposal site as compared to estimates in the approved work plan.</li> </ul>
Performance Measurement and Score	<p>Performance score for the Zone in PI 2, expressed in percentage, arithmetic average of</p> <ul style="list-style-type: none"> <li>a) Actual value of O &amp; M works completed and payments approved / Contracted value of O &amp; M works</li> <li>b) Actual length of storm water drains de-silted as per completion report and payments approved / Length of storm water drains approved for de-silting by SWDD department</li> <li>c) Quantity (in tons) of silt gathered and deposited at the designated disposal site, as measured and payments approved / Quantity estimates in the work plan approved by SWDD department.</li> </ul> <p>Only the quantum of work completed and certified prior to the deadline specified by the SWDD department would be considered. However, processing of claims and bills may be completed after the deadline as long as certification of completion of works/ inspection are completed before the deadline.</p>
Responsibility for evaluation	<p>Certification of completion of works and physical inspections will follow current procedures.</p> <p>Based on approved payments and official inspection reports, the zonal office will submit its self-assessment report to SWDD department</p>

	<p>which will review and finalize the performance score for each zonal office (with or without revisions as necessary). Evaluation will be verified by the Chief Engineer SWDD. Final performance scores will be approved by Commissioner, GCC.</p>
Data sources	<p>The work estimates proposed by the zonal office and approved by the SWDD (with or without modifications). The SWDD department will specify the deadline for completion of works. Completion will be assessed as per approved payments and official inspection records (length of drains de-silted, quantity of silt removed)</p>
Maximum Score	<p>The maximum score for a zonal office in this indicator will be 100. The maximum score for each sub-parameter will be 100.</p>

<b>PI 3</b>	<b>Incidence of flooding/ inundation in the zone.</b>
Definition	Expressed in percentage, Number of incidents of flooding as compared to target set by SWDD for each zone
Description	<p>The SWDD will determine annual targets for the number of incidents of flooding permitted in each zone. The target will be fixed for each zone depending on its features, the infrastructure available and previous history of flooding. Thus the target for each zone may vary.</p> <p>For each zone the SWDD will fix a “Desired Target” and a “Maximum Permitted.” The targets will be applicable for each rainy day during which the rainfall exceeded a minimum threshold (mm per four hour block).</p> <p>The definition of flooding would be as per the standard definition used by GCC. The definition of flooding/ inundation would include i) depth of stagnation and ii) duration of stagnation and iii) extraordinary hourly rainfall beyond which any incidence of flooding would be excused.</p> <p>A zone will receive a 100% score if it achieves Desired Target and proportionately lesser score till Maximum Permitted.</p>
Performance Measurement and Score	<p>Maximum number of incidents of flooding permitted (M) = Maximum Permitted x Number of days when rainfall exceeded threshold</p> <p>Desired number of incidents of flooding (D) = Desired Target x Number of days when rainfall exceeded threshold</p> <p>Actual number of incidents of flooding reported (A) = Flooding reported by the zonal office + direct flooding complaints received by GCC but not reported by zonal office</p> <p>Expressed in percentage,</p> <p>Performance Score for the zone in PI 3 = <math>D/A</math>, if <math>A &lt; M</math>  Performance Score for the zone in PI 3 = 0, if <math>A \geq M</math></p>
Responsibility for evaluation	<p>SWDD will be responsible for evaluation.</p> <p>The SWDD will determine, for each zone, the number of days in which rainfall exceeded the threshold. The SWDD will also determine instances of extraordinary rainfall when flooding incidents would be excused.</p> <p>SWDD will be deciding authority for ascertaining the actual number of incidents of flooding based on a) reports from zonal office and b) direct flooding complaints</p>

	received by GCC. Direct flooding complaints would mean any complaint received by GCC in person, in writing, telephone or electronic format. Evaluation will be verified by the Chief Engineer SWDD. Final performance scores will be approved by Commissioner, GCC.
Data sources	Targets set by SWDD for each zone Actual number of rainy days in each zone determined by SWDD Actual number of incidents of flooding reported by each zonal office Direct flooding complaints received by GCC
Maximum Score	For this indicator, the performance score for a zone may exceed 100.

### Annexure 3 – Weightages for each zone

SI No	Zonal Office	Population Census 2021 or GCC official data	Road Length as per GCC official data	Weightage (W)
1	2	3	4	5 = [Column 3/ A*50] + [Column 4/ B * 50]
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
	<b>Total</b>	<b>A</b>	<b>B</b>	<b>100</b>

Note: To be finalized by SWDD on or before March 31, 2023 and will remain unchanged thereafter.

### Annexure 4 – Background to design of Performance Based Incentive

Context that influences the design of PBI

- Limited use of information systems:** At present, only two metrics are tracked by the storm water drain (SWD) department,
  - annual de-silting work (target set based on visual inspection. Performance measured based on visual inspection and weighing of quantity) and financial progress and

- (ii) incidence of flooding tracked by manual reporting by zonal offices
2. **Separation in roles:** SWD involves two parallel structures, a) the SWD department of Headquarters which undertakes capital investments and select canal de-silting operations and b) 15 zonal offices which are responsible for operations and maintenance of SWD, de-silting of drains as well as other urban services. The zonal offices have multiple responsibilities (such as solid waste management, street lighting etc). Therefore their management attention to SWD will be divided. The PBI is primarily focused on introducing a performance orientation within the zonal offices towards SWD. Thus the performance indicators will have to be restricted to the activities that fall within the responsibility of zonal office. Other indicators that zonal offices do not control (e.g de-silting of canals, overall budget allocation for storm water drain activities, progress in capital investment etc) cannot be used in the PBI.
3. **Size of PBI:** The proposed PBI outlay (7 Million US\$) is significant compared to annual O & M expenditure on storm water drain management SWD (SI no 4 below). However it is insignificant compared to overall O & M expenditure across all services; or when compared to capital expenditure on SWD or on all services. This indicates that
- (i) PBI is not large enough to create behavior change or dramatic improvements through incentives
  - (ii) It has the potential to significantly increase investments or allocation to O & M processes
  - (iii) It has the potential to maintain attention on measuring improvements around which there is already a consensus; and adequate resources are available

Sl. No	Size of GCC finances compared to annual PGB outlay	Multiple of PBI
1	Overall recurring expenditure of GCC	278 times
2	Overall capital expenditure of GCC	153 times
3	Overall capital expenditure on SWD	52 times
4	O & M expenditure in SWD	2.6 times
5	O & M expenditure in the zones for all services	66 times

Source: GCC budget analysis (2015–2016 to 2019–2020)

4. GCC is one of the eligible entities for receiving the proposed performance linked grants of the Central Finance Commission. It is eligible for performance based grants of approximately 49 Million US\$ in 2020-21. Grants in future years are likely to be based on improvements in air quality and solid waste management (as proposed in the interim report of the Central Finance Commission). The PBI will be competing for management attention with these incentives which are 21 times higher. Therefore the design of the PBI should not be complex and it should not require excessive attention from the management of GCC.
5. Based on this context, the following guiding principles have been followed in the design of PBI
- (i) The activities should be within the scope of work of the zonal offices
  - (ii) The performance should focus on the next three to five year priorities; number of indicators should preferably be three
  - (iii) They should directly influence better performance in SWD
  - (iv) It should be possible for zonal office to improve performance without major investments or budget allocations, i.e within the current management capability of the zonal offices. This is since, the PBI component will complete before the benefit of ongoing and future investments are realized.

- (v) The performance evaluation should not require major investments in data systems or technology which are not yet being considered by GCC

proposed indicators

6. Based on detailed consultations with GCC, a list of 32 indicators have been identified. The following table lists and assesses the suitability of performance areas. They are organized as a) Inputs/ Processes, b) Outputs, c) financial parameters, d) project completion and c) Outcomes. The suitability is assessed based on the following parameters

- (i) Their relevance to improved SWD performance
- (ii) The readiness of GCC to measure these areas
  - i. Are the indicators suitable for PBI, i.e can they measured objectively and certified by an external agency
  - ii. Does GCC have the required information systems at present
- (iii) Suitability of the performance area to PBI
  - i. Does the proposed project or agreed counterpart action contribute to improvement in performance area
  - ii. Is the size of the PBI component (or other project inputs) proportionate to the effort required for improvement

7. Based on detailed consultations with GCC, the following three indicators are proposed for inclusion in PBI

- (i) **Process indicator: Regular reporting of zonal offices on storm water drain maintenance activities and flooding status.** These would include survey of drains to identify maintenance activities required, preparation of physical and financial estimates, tendering of works after approval by GCC, progress in key milestones in maintenance, completion of de-silting and repair works prior to monsoon, status of flooding/ inundation and post monsoon activities.
- (ii) **Output indicator:** Percentage completion of maintenance activities
  - i. Percentage of maintenance and repair works completed in storm water drain structures
  - ii. Percentage of targeted storm water drains de-silted (in kms of drains)
  - iii. Percentage of estimated de-silting completed (by quantity of silt)
- (iii) **Outcome indicator:** Percentage reduction in flooding/ inundation as compared to target.

## List of indicators considered

	Performance Area	Relevance for SWD	Readiness for measurement		Suitability for PBG	
		Does this indicator directly improve SWD performance	Ability to measure and certify performance for the purpose of PBG	Does GCC have the required information systems at present	Ability of project or planned counterpart action to improve performance	Size of incentive (or project inputs) in relation to effort required for improvement
<b>I</b>	<b>Inputs and Process</b>					
<b>IA</b>	<b>Reporting</b>					
1	KPI based reporting system implemented	High	High	No	High	High
2	Database on urban management implemented					
3	Regular reporting of ground water levels	High	High	Alongwith Ground Water department	High	High
4	Timely submission of reports from Zonal offices	High	High	No	High	High
<b>IB</b>	<b>SoPs</b>					
5	Availability of SoPs	High	High	No	High	High
6	Uptime of desilting machinery	High	Moderate	GCC feedback needed	High	Moderate
7	Utilisation percentage of desilting machinery	High	Moderate	GCC feedback needed	High	Moderate
8	Preventive maintenance of key SWD structures (catch pit, manhole doors, rain water harvesting structures, sunken wells etc)	High	Moderate	No	High	Moderate
9	Desilting of major canals	High	High	Manual	High	Moderate
10	Desilting of drains	High	High	Manual	High	Moderate
11	Coverage of daily road sweeping	High	High	Yes	High	Low
12	Percentage of solid waste collected	Moderate	High	Yes	High	Low
13	Illegal emptying of sewage into SWD detected	High	Moderate	GCC feedback needed	Moderate	Low
<b>IC.</b>	<b>Project Management</b>					
14	Periodic oversight and inspection by engineers	High	Moderate	GCC feedback needed	High	High
15	Contractor milestones approval as per schedule	High	Moderate	GCC feedback needed	High	High
16	Certification of design mix and material certificate of contractors	High	High	GCC feedback needed	High	High
17	Instance of non compliance by contractors	High	High	GCC feedback needed	High	High
18	Timely completion of projects	High	High	GCC feedback needed	High	High

		Relevance for SWD	Readiness for measurement		Suitability for PBG	
	Performance Area	Does this indicator directly improve SWD performance	Ability to measure and certify performance for the purpose of PBG	Does GCC have the required information systems at present	Ability of project or planned counterpart action to improve performance	Size of incentive (or project inputs) in relation to effort required for improvement
<b>ID</b>	<b>Financial</b>					
19	Property tax collection	Low	High	Yes	Moderate	Low
20	Timely audit	Low	High	Yes	High	High
21	O & M Budget allocation for SWD	High	High	Yes	High	High
22	O & M budget utilisation for SWD	High	High	Yes	Moderate	High
<b>II.</b>	<b>Outputs (both project level and function level)</b>					
23	Coverage of storm water drainage network (Service Level Benchmark of GoI)	High	High	Yes	High	High
24	Kms of SWD(new construction)	High	High	Yes	High	High
25	Kms of SWD rehabilitated	High	High	Yes	High	High
26	Storage capacity of water bodies	High	High	Yes	To check	High
27	Community RWH structures rehabilitated	High	Moderate	To assess	To check	High
28	Energy efficiency of pumping stations	Moderate	High	Yes	To check	High
<b>III</b>	<b>Outcomes</b>					
29	Incidence of flooding (SLB)	High	Moderate	No	High	Low
30	Contamination of SWD with sewage	High	High	To assess	Low	Low
31	Runoff to rainfall percentage	High	To assess	To assess	To assess	Low
32	Quality of outfall	High	High	To assess	Low	Low

## **SUSTAINABLE OPERATION AND MAINTENANCE IMPROVEMENT PLAN FOR STORM WATER DRAINAGE IN THE CHENNAI-KOSASTHALAIYAR BASIN**

The project design carefully considered long-term sustainability of the assets created and accordingly included for components to ensure sustainability. These are (i) a performance Based Incentives system to orient attention and incentivize key activities; (ii) 'Sustainable operation and maintenance plan of SWD' to be prepared by consultants under the project and implemented by GCC and (iii) O & M budget size to be forecast and adopted by GCC prior to completion of construction and (iv) training and public awareness raising.

The Sustainable Operation and Maintenance Plan (SOMIP) of SWD to be prepared by ISRC shall target the following:

- (i) Ensuring the O&M of the assets to be created by the project. Since PBI will be a three year program to be completed before the project completion, the SOMIP shall identify issues related to sustaining the indicator based performance during the life of the project and list actions and timelines.
- (ii) Appropriate O&M budget allocation
  - The SOMIP will forecast likely O & M expenditure for SWD in GCC and the project area in particular (considering ongoing construction as well as those proposed under project).
  - GCC would adopt these forecasts and commit to making these allocations in its yearly budget. Form in which GCC will adopt these shall be elaborated.
- (iii) Taking inputs from the asset management plan prepared by the PSC.
- (iv) Including institutional, technical, financial, and social requirements for sustainable OM.

The plan shall identify core issues related to sustainability including institutional sustainability (such as enhanced autonomy of zonal offices, integrated information systems with SWD); operational sustainability (technical issues, technical training requirements etc.); financial sustainability (such as enhanced O&M budget allocation, supporting revenue actions by GCC such as own source revenue, earmarking of Central Finance Commission devolution, and establish maintenance reserve accounts) and social aspects (like beneficiaries awareness raising etc.)

The plan shall provide a well defined reporting mechanism with required infrastructure and human and ITC resources for zonal offices on storm water drain maintenance activities and flooding status. These would include schedule, reporting formats, time line and accountability mechanisms for periodic survey of drains to identify maintenance activities required, preparation of physical and financial estimates, tendering of works after approval by GCC, progress in key milestones in maintenance, completion of de-silting and repair works prior to monsoon, status of flooding/ inundation and post monsoon activities.

The plan shall address with clear problem description and solutions for improvements in the following areas:

- (i) Inputs & Processes – Related to reporting (database, KPI based reporting, periodicity & schedule) standard operating procedures (related to de-silting, upkeep and use of machinery, removal of solid waste in SWD systems; street sweeping, illegal dumping of sewage etc), project management (inspection, contract milestones & achievement, use of materials) and financial aspects (tax collection, audit, budget allocation & utilization);

- (ii) Project and functional level outputs – Like coverage of storm drainage network; storage capacity of water bodies, rainwater harvesting systems; construction and rehabilitation of storm water drains, energy efficiency of pumping systems etc;
- (iii) Outcomes such as incidence of flooding; contamination of storm water with sewage; rainfall runoff ratio, quality of outfall etc.

## ROADMAP FOR REVENUE ENHANCEMENT MEASURES FOR GREATER CHENNAI CORPORATION

1. The objective of is to provide sound basis to enable GCC to design and implement municipal revenue reform (including property tax) in the short and medium term. The reform will include revenue administration reform (in the short term) and revenue policy reform (in the medium term).

2. **Revenue Management System.** The preparation of road map shall include the assessment and analysis of the revenue management system:

(i) Assessment of major sources of municipal revenues of GCC in terms of:

- i. Land-based sources (taxes and fees);
- ii. Fees and fines;
- iii. Revenue assignments by the state and shared revenues
- iv. Duty on transfer if property (surcharge on stamp duty);
- v. Income from municipal properties;
- vi. Grants; and
- vii. Others if any

(ii) High level Situational Analysis and Strategic Assessment.

- (e) Analyze revenue performance, establishing comparisons with relevant benchmarks based on national and international best practices. Performance indicators should include cross-sectional and time-series trend analysis to identify potential challenges and opportunities for improvement. For each of the revenue sources (for example, property tax), the consultant will gather information, as available, to create a table of revenue performance indicators that includes relevant revenue collected for last five years, of the amount of collected revenue as a % of the GDP/GSDP, total government taxes, and total local government taxes, among others. Revenue performance statistics should also be calculated per revenue source (for example, property tax revenue per capita and per household). To develop the revenue performance parameters, relevant data may be sourced from other utilities/departments if required;
- (f) Analyze revenue policy and administration reports, provisions in the legislation to revise base, basis and periodicity of revision;
  - (a) revenue base for each source (for example, land and properties are the base for property tax, parking space area is the base for parking fee etc);
  - (b) basis of levy;
  - (c) periodicity of updating the base and basis for each revenue sources. If not updated, then identify the reasons for non-revision of base, basis or periodic revisions. [For example, property tax survey to identify unassessed and under assessed properties have not been conducted for more than a decade. Similarly, base rate for property tax has not been revised since 1998. Reason for not conducting the survey and not revising the base rate needs to be addressed for property tax as well as other sources of revenue];
  - (d) while conducting this analysis, focus should be on revenue base coverage (what is included and excluded), revenue base assessment, revenue liability assessment and tax collection and enforcement per revenue source to the extent possible. Also, relevant rations such as coverage, valuation, and collection/enforcement rations should be calculated.

- (g) Identify the relevant national and international best practices with revenue sources of urban local bodies and the revenue administration practices and potential for adopting the best practices in GCC;
- (h) Identify sources of revenue leakages and suggest potential measures to reduce the revenue leakages;
- (i) Explore efficiency in billing, recovery and accounting;
- (j) Explore efficiency in transfer from Government/ other authorities to GCC in case of assigned shared revenues;
- (k) Analyze historical collection performance in relation to arrear and current demand;
- (l) Explore areas of seamless integration within GCC departments, and other utilities with revenue department of GCC to improve revenue sources and to provide an ease of access to services to the citizen;
- (m) Explore the need for IT system to improve the revenue management including the application of big data analytics; availability of sufficient skilled human resources for revenue mobilization with respect to the norms. If required suggest updating the norm based on best practices;
- (n) Evaluate the dispute resolution mechanism for citizens on levies; and
- (o) Develop a Strategic assessment identifying the key challenges and opportunities.

**3. Land Value Capture.** In addition, an assessment of the existing and possible land value capture tools (Besides property tax) shall also be done in GCC area in terms of

- i. Scope and coverage.
- ii. Powers to levy (delegation).
- iii. Revenue sharing arrangements in case of levy being carried out by the local development authority / other departments; and potential sources based on review of international best practices.

**4. Roadmap on Revenue Enhancement.** Based on the above a road map with set of recommendations for each of the suggested enhancement measures including land value capture mechanism shall be prepared. The road map should include:

- i. An estimate of potential value in absolute terms.
- ii. Assessment of efficiency in levy.
- iii. Adequacy to meet the investment and maintenance obligations.
- iv. Identify the sustainability level with which the proposed change can be managed;
- v. legal feasibility and
- vi. For each revenue source, both existing and new sources, prepare an strategic implementation plan along with time line. Such action plan should include:

**Revenue/tax base coverage:**

- a) For each revenue source, review and evaluate relevant data management system and procedures, including tax declaration forms and procedures, third-party information form and procedures, any other applicate forms/documents.
- b) Review and evaluate relevant data management “business processes” to identify options to streamline operational procedures to collect, record, verify and analyse the data and the flow of documents in a timely, efficient and transparent manner.
- c) Propose improvement to data management system and procedure to ensure comprehensive base coverage. This should enable to significantly

- improve collection and more accurate revenue forecasting.
- d) Document and disseminate such improved revenue data management system into a revenue data management manual for training and operational purposes. Organize relevant training program for data collectors and data managers.

#### **Revenue Assessment/Valuation:**

- e) For each revenue source, review and evaluate the revenue assessment/valuation system and procedures, including the appropriateness in valuation approaches chosen, the sources of available market information, the institutional framework, and human resources capacity.
- f) Review and evaluate “business processes” for each revenue source to proposed streamlining of the operational procedure to collect, record, verify and analyse market information in a timely and efficient manner.
- g) Design operational manuals to be used to estimate base value for relevant revenue source. These manuals can be used to guide and monitor revenue assessment/valuation and training for revenue officers.
- h) Design and conduct valuation of revenue source and/or revaluation strategy.

#### **Revenue/tax Liability Assessment and Revenue/Tax Billing**

- i) Review and evaluate, where applicable, the tax liability assessment system and procedures, including the effectiveness of tax liability assessment methods chosen (such as self-declaration, self-valuation, or self-assessment) and the institutional and human resource capacity.
- j) Review and evaluate the revenue billing system and procedures, the appropriateness of methods chosen.
- k) Design the appropriate revenue/tax liability assessment and billing manuals.

#### **Revenue Collection and Enforcement**

- l) For each revenue source, review and evaluate the collection and payment methods and procedures (for example, due dates, installment options, payment locations, notices and receipts), the efficiency and effectiveness of the methods chosen, and the institutional human resource capacity.
- m) Review the available incentive and discount provided for timely and complete payment. Also review available enforcement measures (sanctions, penalties). Evaluate their effectiveness and appropriateness and explore options for enhancing improve taxpayer compliance initiatives and enforcement measures.
- n) Review and rationalize enforcement measures against noncompliance in consultation with the legal system/law enforcement to ensure justice and transparency.
- o) Develop recommendations for streamlining operational procedure for revenue collection and enforcement in a timely, efficient and transparent manner.
- p) Design operational manuals for revenue collection and compliance management (enforcement). These manuals can be used to guide, monitor, and train responsible staff in implementing the procedures.

### **Taxpayer Service, Appeals and Dispute Resolution**

- q) dispute resolution mechanism for streamlining the operational procedures for providing resolution on timely, efficient and transparent manner.

### **Revenue Administration System/Information Technology**

- r) Design and implementation of database/IT System for revenue management including application of big data analytics.
- s) Procedure on seamless interlinkages between IT system within GCC as well as linkages of GCC's IT system with other external agencies. Objective is to enhance data/information for revenue management as well as provide better municipal services.

5. Based on the assessment and analysis the road map shall also identify the areas where the legal frame work of GCC needs an amendment to have an enabling provision for revenue enhancement measures.

6. The recommendations should be categorized in terms of Short and Medium Term with the short term addressing basic revenue management measures which are legally feasible in revenue administration areas and the medium term recommendations should be those that involve legislative amendments in revenue policy areas or major systemic improvement. The recommendations should include the resources and the cost estimate to implement the roadmap.

## GENDER EQUALITY AND SOCIAL EXCLUSION(GESI) ACTION PLAN MONITORING FORMAT

Date Prepared:

**Project Title:****Country:****Project No.:****Loan No.:****Grant No:****Type of Project:****Approval and Time line/Duration of the Project: Gender Category:****Mission Leader:****Name of Gender Specialist/ Gender Focal Point: Quarter Covered by Update:****Project Impact: Project Outcome:**

Activities, Indicators, Baseline, Targets, Time Frame and Responsibility	Progress to Date		Issues and Challenges (Please include reasons why an activity was not fully implemented, or if targets fall short, or reasons for delay, etc.)
	Progress for the Quarter (This should include information on progress for the current quarter-- qualitative and quantitative updates (sex disaggregated data))	Cumulative Progress (This should include information on progress (qualitative and quantitative updates including sex disaggregated data) from the start of the implementation of the GESI AP to the previous quarter's progress report.)	
<b>Output 1. Climate-resilient urban flood protection infrastructure improved in the Chennai-Kosasthalaiyar River Basin</b>			
<b>Activity1.1</b> Enhance community safety in storm water drain design and construction			
<b>Indicator/Target 1.</b> Community safety feature <sup>a</sup> integrated in storm water drain (SWD) design and construction. <b>Baseline:</b> Not Applicable <b>Time Frame:</b> Year 1 onwards <b>Responsibility:</b> PMU/PIU			

<b>Activity 1.2</b> Rehabilitate existing flood relief camps.			
<b>Indicator/Target 2.</b> Four GCC relief camps (one in each project zone) rehabilitated to be gender-responsive and socially inclusive camps <sup>b</sup> <b>Baseline:</b> Not applicable <b>Time Frame:</b> Year 1 onwards <b>Responsibility:</b> PMU/PIU supported by PSC and ISRC			
<b>Indicator/Target 3.</b> Physical distancing arrangements <sup>c</sup> and WASH facilities available at four rehabilitated GCC relief camps. <b>Baseline:</b> Not applicable <b>Time Frame:</b> Year 1 onwards <b>Responsibility:</b> PMU/PIU supported by PSC and ISRC			
<b>Activity 1.3</b> Incorporate Elderly, Women, Children, and persons with Disability (EWCD)-friendly features in Kadapakkam lake complex <sup>d</sup>			
<b>Indicator/Target 4.</b> EWCD-friendly features incorporated in the Kadapakkam Lake complex (GEF-funded). <b>Baseline:</b> Not applicable <b>Time Frame:</b> Year 1 onwards (GEF) <b>Responsibility:</b> PMU/PIU, ISRC, GEF-funded consultants			
<b>Output 2. Urban flood preparedness of the GCC and project communities enhanced</b>			
<b>Activity 2.1</b> Develop capacities of community members on green infrastructure investments and rain water harvesting.			

<p><b>Indicator/Target 5.</b> By 2025, At least 200 persons (including at least 50% women) among project community trained and reported increased knowledge on importance, features, examples, and maintenance of green infrastructure schemes including rainwater harvesting (2021 baseline: not applicable)  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1-4  <b>Responsibility:</b> ISRC, PMU, PIU</p>			
<p><b>Activity 2.2</b> Create awareness among community members (specifically targeting women) on flood risks, impacts, and vulnerability.</p>			
<p><b>Indicator/Target 6.</b> By 2025, at least 200 persons (including at least 50% women) reported increased knowledge on flood risks, impacts, links between flooding, solid waste management, sewerage service house connections, and the protection of waterbodies through six awareness workshops conducted in the Project area  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1-3  <b>Responsibility:</b> ISRC Gender Consultant in oversight of PMU and relevant PIU</p>			

<p><b>Indicator/Target 7.</b> Audience segmented behavior change communication (BCC) campaigns conducted targeting 200 people in slums in project area (including at least 50% women) on flood risks and impacts, measures to address vulnerabilities of women, children, the elderly and people with disabilities.</p> <p><b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1-3  <b>Responsibility:</b> ISRC Gender Consultant in oversight of PMU and relevant PIU</p>			
<p><b>Activity 2.3</b> Strengthen institutional capacity of GCC, PMU, PIU, and project consultants.</p>			
<p><b>Indicator/Target 8.</b> By 2025, at least 50% of GCC technical staff (SWD Department) in the project area, including 80% of women technical staff, reported increased knowledge on planning and design of storm water drainage systems, solid waste and flood risks</p> <p><b>Baseline: 0</b>  <b>Time Frame:</b> Year 1-4  <b>Responsibility:</b> PMU/PIU supported by ISRC</p>			
<p><b>Indicator/Target 9.</b> At least 90% of GCC, PMU, PIU, project consultants, including 80% of women staff, reported increased knowledge of gender mainstreaming and social inclusion and gender-</p>			

<p>responsive and socially inclusive flood management.  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1-4  <b>Responsibility:</b> PMU/PIU supported by ISRC</p>			
<p><b>Activity 2.4</b> Build resilience of flood affected low-income communities, especially women.</p>			
<p><b>Indicator/Target 10.</b> Extent and nature of flood induced livelihood loss to women and men in three pilot slums in project area mapped and training needs assessment conducted.  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1 onwards  <b>Responsibility:</b> PMU/PIU supported by ISRC</p>			
<p><b>Indicator/Target 11.</b> Fifty vulnerable slum dwellers (including at least 50% women) trained to increase employability or alternative livelihoods.  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1 onwards  <b>Responsibility:</b> PMU/PIU supported by ISRC</p>			
<p><b>Indicator/Target 12.</b> Eight committees of women self-help-group (SHG) federations (2 in each zone) and one committee of transgenders trained to work in rescue, relief and rehabilitation.  <b>Baseline:</b> Not applicable  <b>Time Frame:</b> Year 1 onwards</p>			

<b>Responsibility:</b> PMU/PIU supported by ISRC			
<b>Activity 2.5</b> Enhance knowledge on nature-based urban flood risk management through workshops and trainings			
<b>Indicator/Target 13.</b> At least 50 participants from Indian cities (including at least 40% women) reported increased knowledge on nature-based urban flood risk management through workshops and trainings (GEF-funded) <b>Baseline:</b> 0 <b>Time Frame:</b> Year 1-4 (GEF) <b>Responsibility:</b> PMU/PIU, ISRC, and GEF-funded consultants			
<b>Activity 2.6</b> Enhance knowledge of GCC and Government of Tamil Nadu on integrated sustainable urban development through global and national dialogues			
<b>Indicator/ Target 14.</b> At least 10 officers of GCC and Government of Tamil Nadu (including at least 40% women) reported increased knowledge on integrated sustainable urban development through global and national dialogues (GEF-funded) <b>Baseline:</b> 0 <b>Time Frame:</b> Year 1-4 (GEF) <b>Responsibility:</b> PMU/PIU, ISRC, and GEF-funded consultants			

<b>Output 3. Measures for sustaining operation and maintenance of storm water drainage systems established in the GCC</b>			
<b>Activity 3.1</b> Prepare an inclusive O&M plan and manual.			
<b>Indicator/Target 15.</b> By 2025, a gender-responsive and socially inclusive sustainable, operation and maintenance improvement plan <sup>e</sup> prepared and adopted. <b>Baseline:</b> Not applicable <b>Time Frame:</b> Year 1 onwards <b>Responsibility:</b> PMU/PIU, PSC, Contractors			
<b>Activity 3.2</b> Strengthen staff performance on operation and management of urban drainage systems, solid waste and flood risks			
<b>Indicator/Target 16.</b> By 2025, at least 50% of GCC technical staff (SWD Department) in the project area, including 80% of women technical staff, trained and reported increased knowledge on sustainable operation and management of urban drainage systems, solid waste and flood risks <b>Baseline:</b> 0 <b>Time Frame:</b> Year 1 onwards <b>Responsibility:</b> PMU/PIU, PSC, ISRC			
<b>Activity 3.3</b> Train drain de-silting and conservancy workers, including women, in cleaning and maintaining storm water drains			

<p><b>Indicator/Target 17.</b> By 2025, 100 de-silting workers and conservancy workers (including at least 50 women workers) reported increased knowledge and skills of cleaning and maintaining storm water drainage systems.</p> <p><b>Baseline:0</b>  <b>Time Frame:</b> Year 1 onwards  <b>Responsibility:</b> PMU/PIU, PSC, Contractors, ISRC</p>			
--	--	--	--

- <sup>a</sup> Community safety features include covered storm water drains to prevent accidents, barricading arrangements at all construction sites, chain link fencing along open drain sections, immediate restoration of interruption to street lighting system due to construction activities, helpline numbers for women, etc.
- <sup>b</sup> A gender-responsive and socially inclusive relief camp will have the following features: (i) at least one female worker or caretaker with supplies of sanitary napkins, soap, a basic first aid kit with medicines; (ii) safe spaces (affording privacy and security) for women, especially nursing mothers and adolescent girls; (iii) well-lit and clean toilets for men and women, with barrier-free access for people with disabilities and older persons; water, hooks, ledges and shelves in the toilet; (iv) provisions for washing and disposal of menstrual products; (v) regular (daily) visits by female student volunteers and awareness generation on mechanism to address women’s vulnerability to violence and trafficking; (vi) regular interaction between volunteers and people with disabilities within the relief camp; and (vii) helpline numbers displayed on walls.
- <sup>c</sup> Physical distancing measures include: (i) ground markings with spacing of 2.5 feet for queues to collect food, essentials, medical supplies and fetching water within the camp; (ii) demarcated visiting areas for officials/any other visitors to the camp; and (iii) display of notices on the importance of physical distancing and other safety measures.
- <sup>d</sup> EWCD-friendly features include safety rails, signages, child, elderly and persons with disability compatible toilet facilities, separate toilet facilities for women and men, accessible pathways, side benches, drinking water facilities, rain shelters, illumination along pathways, display of emergency contact numbers etc.
- <sup>e</sup> The O&M manual will include a community awareness and information dissemination component, including women’s participation in O&M of drains.

**1. Comments/ Remarks:**

**Accomplished by:** \_\_\_\_\_

**Date Accomplished:**

## COMMUNITY AWARENESS AND PARTICIPATION PLAN (CAPP)

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
Planning and subproject identification on stage	GCC officials including representatives from central and south zones, officials from other GOTN departments like water resource department, CMDA, Revenue Department, PWD, elected representatives	Meetings – all proposed project features and scope including water body restoration through nature-based solutions (NbS) and elderly, women, children, and persons with disabilities (EWCD)-friendly features <sup>a</sup>	Consultations on: project scope and design issues; integrating learnings from other multilateral projects that were/are implemented	Project scope defined	1. Feedback notes and minutes documented and shared 2. Consolidated 2/3 pager note on lessons learned and agreed decisions	PMU/PIU supported by PSC, ISRC and GEF grant consultants	Year 1	GESI # (i) and (iv)
	Beneficiaries including women, poor and vulnerable groups; elected representatives from the ground level; community groups; NGOs; women groups, farmer community and other lake water user communities	Meetings/ consultations – all proposed project features and scope including water body restoration through nature-based solutions (NbS) and EWCD friendly features  Dedicated consultations with farmer community and the community around Kadapakkam Lake on benefits of capacity	Consultations on project scope and design issues; integrating learnings from other multilateral projects that were/are implemented, local issues and contextual requirement integrated in planning and initial design	Project scope consolidated	1. Feedback notes and minutes documented and shared 2. Notes and minutes documented and shared	PMU/PIU supported by PSC and ISRC and GEF grant consultants	Year 1	GESI# (i) and (iv)

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
		augmentation and EWCD-friendly features <sup>b</sup>						
	Project beneficiaries and stakeholders including women	Multiple social media platforms (e.g. Facebook, Instagram, YouTube etc.) with direct link to the GCC website <sup>c</sup>	Awareness about the project features through social media	Multiple social media platforms		PMU/PIU supported by ISRC	Year 1- 4	GESI# (i) and (iv)
Detailed design stage	Community members and beneficiaries including women poor and vulnerable groups, elected representatives, farmers and community groups around Kadapakkam Lake	BCC campaigns conducted especially in slums with multiple groups including youth groups, school children, health workers, women groups, vulnerable groups  Dedicated consultations with farmer community and the community around Kadapakkam lake on benefits of capacity augmentation of Kadapakkam Lake	Awareness and BCC campaigns on project benefits and costs, gender and social inclusion issues, women's empowerment including health and domestic violence issues, women and the community's responsibilities related to water conservation, linkages between proper SWM drainage and flooding,	1. Number of meetings, consultations, FGDs	Consultation reports in project documents, GESI status updates	PMU/PIU supported by ISRC	Year 1-3	GESI# (vii)

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
			disaster resilience and protection, and discussion on water body restoration through NbS and EWCD-friendly features.					
		Customized T-shirts with BCC slogans and project logo	Women and vulnerable groups/ young people in slums and project staff (PMU/PIU/ ground workers and consultants)	1.The activity will be continued for at least 3 years.  2. At least 1500 T-shirts (500 T-shirts*3 years=1500 T-shirts) distributed and used by the target group	Project reports like MPR/QPR	PMU/PIU supported by PSC, ISRC	Year 1-3	GESI# (vii)
Implementation stage	PMU/PIU functionaries; project contractors; consultants; beneficiaries.	1. Workshops/trainings  2. Signboards  3. Wall painting with BCC messages at relief camps	1. Workshops/trainings conducted for contractors, GCC staff, consultants to sensitize them on community safety features	1. Workshops/trainings conducted  2. Number of signboards installed	Project reports like MPR/QPR, GESI status update, TPRM briefing sheets	PMU/PIU supported by ISRC, GEF grant consultants and, project contractors	Year 1-4	GESI# (viii)

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
			<p>with EWCD-friendly support in planning and design of storm water drainage systems, solid waste, and flood risks, including safety measures to be adopted during construction, water body restoration through NbS.<sup>d</sup></p> <p>2. Helpline numbers for women displayed on signboards along storm water drains</p> <p>3. The walls of the relief camps painted with BCC messages on gender issues, do's and don'ts during flood</p>	3. Walls painted with BCC messages at relief camps				

<b>Project Cycle</b>	<b>Target Group</b>	<b>CAPP Activity and Tool/s</b>	<b>Consultation and Participation Target</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Responsibility</b>	<b>Time Frame</b>	<b>GESI indicator number</b>
	Community members including women, poor and other vulnerable groups	Training	Training conducted to develop capacities of community members on importance, features, examples, and maintenance of green infrastructure schemes and rain water harvesting	At least 200 persons including at least 50% women trained	GESI status updates, project reports like MPR/QPR, and TPRM briefing sheets	PMU and PIU supported by ISRC	Year 1- 4	GESI # (v)
	Farmers and community groups around Kadapakkam Lake	Consultations	Dedicated consultations with farmer community and the community around Kadapakkam Lake on benefits of capacity augmentation of Kadapakkam lake	Number of consultations	Project reports like MPR/QPR,	PMU and PIU supported by GEF consultants	Year 3-4	

<b>Project Cycle</b>	<b>Target Group</b>	<b>CAPP Activity and Tool/s</b>	<b>Consultation and Participation Target</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Responsibility</b>	<b>Time Frame</b>	<b>GESI indicator number</b>
	GCC technical staff in the project area; community members including women, poor and other vulnerable groups	Workshop	Awareness on flood risks, impacts, links between flooding, solid waste management, sewerage house service connections, and the protection of water bodies	6 awareness workshops with total of 200 people and 50% participation of women			Year 1- 3	GESI # (vi)
	Staff of GCC, PSC, PMU, PIU, and consultants	Training workshop	Develop capacities of project technical staff including women staff	At least 90% of staff, including 80% of women staff, reported increased knowledge of gender mainstreaming and social inclusion and gender-responsive and socially inclusive flood management	MPR/QPR/ GESI status updates	PMU/PIU supported by ISRC	Year 1-4	GESI # (ix)

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
	Women groups; SHGs; youth groups; transgenders; and other vulnerable people	Training	Community training on rescue, relief and rehabilitation for women SHGs and committee of transgenders	1. Eight SHGs and one committee of transgender trained in rescue, relief and rehabilitation.  2. Issuance of ID cards to the SHG /volunteer teams	GESI status updates, project reports like MPR/QPR, TPRM briefing sheets	PMU/PIU supported by ISRC	Year 1 onwards	GESI # (xii)
	Project beneficiaries and project stakeholders including women	Leaflet	Leaflet covering Kadapakkam Lake restoration through NbS and other project features including flood protection	200 hardcopy leaflets for circulation	Soft copy of the document	PMU/PIU supported by ISRC	Year 3-4	
	Project beneficiaries and project stakeholders including women	Audio-visual production	Audio-visual production covering all key initiatives of the project, including gender mainstreaming activities, and flood protection and initiatives around	3 short videos		PMU/PIU supported by ISRC and relevant consultants (professionals)	Year 1-4	

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
			Kadapakkam Lake with commentary on lessons learned and before and after conditions documented. The production/s to be shared with NULP and other knowledge platforms of NIUA.					
		Radio programs-panel discussions (including high level officials, representatives of community-based organizations and technical staff of the project) on the project and its benefits, including benefits to women and vulnerable groups; as well as project initiatives featuring NbS		One radio program each year (for three years)		PMU/PIU supported by ISRC	Year 1- 4	
Post-project implementation	Beneficiary households, communities and institutions	Multiple benefit monitoring tools including personal interviews/FGDs	On all key components-achievements-gaps	Feedback notes of the meetings, project PPMS.		PMU/PIU supported by PSC	Year 4	

Project Cycle	Target Group	CAPP Activity and Tool/s	Consultation and Participation Target	Indicators	Means of Verification	Responsibility	Time Frame	GESI indicator number
In all meetings and other events, physical participation to be restricted / minimized and virtual participation encouraged. All activities to be conducted maintaining health and safety protocols for Covid-19. Media reports creating positive feedbacks about the project to be covered under stakeholder communication strategy.								

<sup>a</sup> EWCD-friendly features include safety rails, signages, child, elderly and persons with disability compatible toilet facilities, separate toilet facilities for women and men, accessible pathways, side benches, drinking water facilities, rain shelters, illumination along pathways, display of emergency contact numbers etc.

<sup>b</sup> Consultations will be conducted with farmer community and the community around Kadapakkam Lake on the proposed technical design, scope of work, benefits of capacity augmentation (from 1.1 million cubic meter to 2.2 million cubic meter), schedule of work and EWCD components as proposed for Kadapakkam lake water body restoration through NbS.

<sup>c</sup> The website will be developed/updated as part of the communication strategy for the project.

<sup>d</sup> Training of project staff and contractors will ensure that uniform messages related to the project are conveyed to the community by them during formal and informal interactions.

BCC= behavior change communication; CMDA= Chennai metropolitan development authority; CSO = civil society organization; EWCD = elderly, women, children, and persons with disabilities; FGD= focus group discussion; GESI=gender equality and social inclusion; GCC= Greater Chennai Corporation; GOTN= Government of Tamil Nadu; IEC= information education communication; ISRC= Institutional Strengthening and Reform Consultant; NbS= nature-based solutions; NIUA= national institute of urban affairs; NULP= national urban learning platform; PIU= project implementation unit; PMU= project management unit; PSC= project support consultants; PWD= public works department; MPR= monthly progress report; QPR= quarterly progress report; SHG= self-help group; TPRM= tripartite review meeting; SWM= solid waste management.