



Pre-Feasibility Study for GSA Drainage and Flood Management Project

May 2012
Executive Summary



A. Background

1. In 2011, the Suva, Lami, Nasinu and Nausori Councils sought technical assistance from the Cities Development Initiative for Asia (CDIA) to help realize the councils' shared vision for the Greater Suva Area (GSA) to become a "well serviced and economically vibrant" urban area. The ensuing CDIA study prepared a 5-Year Medium Term Infrastructure Investment Program (MTIIP) covering eight priority projects in four sectors, namely: urban transport, drainage and flood management, wastewater management and solid waste management. From this project list, two high priority projects in: (i) urban transport and (ii) drainage and flood management were selected by stakeholders for Pre-Feasibility Study (PFS). This Report documents the PFS for the GSA Drainage and Flood Management Project.

B. Project Description

2. The Project will improve drainage and flood management infrastructure in the four GSA council areas. It has been designed to improve the quality of life of GSA residents, support economic growth and enhance the GSA's role as Fiji's main economic center. The Project also aims to strengthen the overall urban drainage and flood management sector by: (i) supporting the establishment of a Department of Urban Drainage (DURD) in the Ministry of Local Government, Urban Development, Housing and Environment (MLGUDHE); (ii) strengthening urban drainage sector planning, management and implementation capacities in MLGUDHE and the GSA councils, and; (iii) strengthening the institutional and policy framework for providing sustainable urban drainage services. It will also promote the participation of citizens, particularly women and the poor in urban drainage management and services.

3. The Project is demand-driven. The four GSA councils selected the Drainage and Flood Management Project to progress to Prefeasibility level, and selected the works necessary to alleviate flooding, ponding and erosion problems throughout the GSA. The proposed Project is inclusive and will benefit all GSA residents. It specifically targets seven informal settlements that are severely affected by floods. It is expected that the Project investments in drainage and related investments in urban transport in the target settlements may act as a catalyst for full settlement upgrading funded by government in partnership with international agencies.

4. The Project supports the Fiji Government's Roadmap for Democracy and Sustainable Socio- Economic Development 2009-2014 which emphasizes capacity development and improved infrastructure as the means to uplift urban services and living standards, induce higher levels of private investment and economic growth and reduce poverty.

5. The Project has five integrated outputs: (i) **Improved Drainage and Stormwater Management:** will construct or upgrade road culverts, open drains and maintenance access roads; (ii) **Protected Riverbanks:** will install bank protection over 2.3km of the Lami and Rewa Rivers; (iii) **Improved River or Stream Flood Management:** will raise a seawall in central Suva; dredge 7km of rivers or streams; construct a weir and line 700m of Waicuku Creek in Nausori, and; raise Quaia bridge in Lami; (iv) **Strengthened Sector Capacity for Planning and Management:** will establish DURD, develop the capacity of MLGUDHE and councils to plan and manage urban drainage and flooding and pilot the extension of council rating system to informal settlements and urban villages; and (v) **Strengthened Capacity for Project Implementation:** will provide consulting support and develop the capacity of MLGUDHE and council staff for project management.

C. Project Rationale

6. **Background:** The GSA is Fiji's largest urban center. Suva City is the national capital and seat of government. The GSA has grown significantly over the past twenty years and has emerged as an important economic, commercial and service center for Fiji and the South Pacific Region. With an estimated population of 256,000 in 2011, the GSA accounts for 29% of Fiji's population, and 57% of its urban population. Driven largely by rural to urban migration GSA's population is forecast to grow by 41,000 to around 297,000 within the next decade, accounting for about two-thirds of the country's total population growth. The urban sector contributes about 60% of Fiji's GDP, with GSA's share estimated at 40%. With the decline in agriculture's contribution to GDP and uncertain tourism outlook, the GSA is expected to contribute an even greater proportion of GDP in future and to become increasingly important to the national economy. Despite its growth opportunities, GSA is experiencing rapid environmental degradation as a result of urbanization which limits its economic growth potential.

7. **Urban Issues and Challenges:** Urbanization in GSA is taking place with weak coordination between sector agencies, insufficient infrastructure and limited consideration for the environment. The results include uncoordinated development, inefficient land use, loss of natural resources, and inadequate access to urban services. The problems are attributed partly to poor urban management, little strategic spatial planning, poor connectivity between urban planning and environmental management, and insufficient investment in infrastructure and community services. A limited but growing awareness of climate change issues is also resulting in unchecked growth of greenhouse gas emissions and a lack of climate change preparedness. The Project will strengthen urban planning and management capacity and develop priority urban infrastructure to help support the GSA's economic growth and protect GSA from the risks of increased flooding.

8. **Pro-Poor Focus:** The urban poor in informal settlements suffer disproportionately from inadequate provision, management and maintenance of drainage infrastructure. Lack of drainage infrastructure and inadequate operation and maintenance (O&M) of existing infrastructure have adverse impacts on their health, well-being and access to jobs and services. The poor are less able to cope with the effects of poor drainage, inadequate sanitation and flooding. An estimated 38% of those in informal settlements live below the poverty line. The Project specifically targets drainage and flood management improvements that will benefit seven informal settlements with more than 7,000 residents.

9. **Poor Drainage and Increased Flooding:** The GSA is susceptible to flooding because of inadequate drainage, intense rainfall, short steep catchments, development on low lying land, limited maintenance, lack of development controls and unsustainable practices in upstream catchments. An estimated 2,000 households and 200 businesses are flooded in GSA several times each year. Flooding problems are worsened by overflowing sewerage systems, lack of drain maintenance or blockages by silt and solid waste. Erosion of land, roads and riverbanks also occurs due to inadequate drainage, poor building practices, steep gradients or lack of erosion protection. The Project will enhance GSA's role as Fiji's main economic centre and improve its competitiveness in the region through prioritized investments in urban drainage infrastructure and services. It advocates maintaining natural drainage paths and floodwater retention areas, improved building controls and catchment management practices.

D. Project Impact and Outcome

10. The expected impact of the overall project is enhanced economic development and improved quality of life and environmental conditions in the Greater Suva Area. The

expected outcome is improved quality, reliability, coverage and efficiency of urban drainage and flood management throughout the four GSA municipalities. This will be achieved through an integrated program of physical and non-physical investments in priority drainage and flood management infrastructure rehabilitation, improvement and extension, together with institutional, regulatory and policy reform and capacity development.

E. Project Cost Estimates

11. The total Project cost, including physical and price contingencies and taxes is estimated at F23.4 million (US\$13.2 million) as shown below.

Estimated Project Cost in \$million

Item	Project Cost per Municipality in F\$m				Total F\$m	Total US\$m
	Lami	Suva	Nasinu	Nausori		
1. Improved Drainage & Stormwater Management	1.5	1.4	1.4	1.4	5.7	3.2
2. Protected Riverbanks	0.8	-	-	1.4	2.2	1.3
3. Improved River & Stream Flood Management	1.5	2.3	0.6	1.5	5.9	3.3
4. Strengthened Planning & Management Capacity	0.3	0.3	0.1	0.3	1.0	0.6
5. Strengthened Capacity for Project Implementation	0.7	0.7	0.4	0.8	2.5	1.4
6. Total Estimated Base Costs	4.8	4.5	2.5	5.5	17.4	9.8
7. Physical & Price Contingencies	1.7	1.6	0.9	1.9	6.1	3.4
8. Total Estimated Project Cost	6.5	6.1	3.4	7.4	23.4	13.2

Notes: 1. Exchange rate: US\$1.00 = F\$1.77; 2. Includes taxes and duties. 3. Based on April 2012 prices.

F. Economic Viability

12. The Project Economic Internal Rate of Return (EIRR) has been calculated on the basis of quantified flood benefits in terms of reduced damages to property and infrastructure. The EIRR of 12% indicates an acceptable social and economic return on investment.

G. Project Financing

13. The suggested project financing structure is an “umbrella” loan/grant from a major development agency (such as a Multilateral Development Bank) with co-financing of selected activities by other development partners. It could be a stand-alone project or integrated into a broader, long term urban development program targeting several infrastructure sectors. A possible funding arrangement using a programmatic approach could include a US\$150-200 million Multi-Tranche Finance Facility (MFF) over 10-15 years whereby groups of projects are implemented in successive phases or tranches. The two priority projects in drainage and flood management and in urban transport could be the 1st tranche of the proposed MFF. Other projects that form part of the MTIIP could be included in subsequent tranches. The long term programmatic approach also provides the opportunity to assist Government with policy reforms in such key areas as: (i) council rates system; (ii) recovery of unpaid rates or fees for urban services; (ii) extending rating areas into informal settlements and urban villages; (iii) land policy including urban development on native land; (iv) upgrading infrastructure in periurban areas prior to incorporation into municipalities; (v) accelerating informal settlement upgrading using a sector approach through the MFF; (vi) strengthening the framework for urban development by reforming outdated and unclear legislation, and formulating sector policies, strategies and investment plans to ensure good governance and sector sustainability.

H. Project Implementation Arrangements

14. MLGUDHE is the proposed Executing Agency. The four GSA councils and Fiji Roads Authority (FRA) are the proposed implementing agencies. A Project Steering Committee comprising representatives of MLGUDHE, the four councils and FRA would provide overall project guidance and direction. Two options are under consideration for project implementation, namely: (i) a Project Management Unit (PMU) comprising MLGUDHE, council and FRA staff, with project implementing offices in each council and FRA, or; (ii) individual Project Implementing Units (PIUs) in the four councils, FRA and in the Department of Local Government (DLG), which would be responsible for urban drainage sector strengthening (Output 4). The MLGUDHE and councils have little experience in implementing externally assisted projects, and will require support in the form of consultants and capacity development. This support will include individual consultants within the PMU or PIUs and two contracted consulting firms for: (i) design and supervision, and; (ii) sector strengthening. The Project also includes community-driven drainage improvements in informal settlements and Fijian villages, whereby communities will plan, design and implement appropriate drainage improvements with assistance of PIUs. The implementation arrangements may need to be modified if the two priority projects are implemented concurrently.

I. Consulting Services

15. Proposed individual consultants within the PMU include: an international procurement specialist, international drainage specialist and a national financial management specialist. They would be engaged at Project start to help establish and train PMU/PIUs and recruit the consulting firms for two consulting packages: Package 1 - Strengthened Capacity for Urban Sector Planning and Management, which would include institutional specialist/team leader; municipal engineering specialist and a legal/regulatory specialist, and; Package 2 – Design and Supervision Consultants for Project Implementation, including design and construction supervision engineers, social specialists, environmental specialists, construction supervisors, topographic surveyors, GIS and CAD drafters, and administration staff

J. Project Benefits and Beneficiaries

16. The Project will support economic development, enhance the urban environment, improve public health, and contribute to better quality, coverage and reliability of drainage and flood management services for an estimated 290,000 people in the GSA by 2018. Those benefitting most are an estimated 1,472 households and 170 businesses which are flooded several times each year. It will also provide qualitative improvement in the lives and health of around 1,220 poor and low income households mostly located in low-lying areas which are severely affected by flooding and ponding several times each year by stormwater contaminated with wastewater. The project is likely to deliver tangible benefits to women by: (i) improving their access to basic drainage infrastructure; (ii) reducing the amount of time spent in preparing for floods, cleaning up and caring for family members who may be adversely affected by floods. The Project may include specific actions that contribute to gender equality and women's empowerment, including equal access to capacity development programs, enhanced gender equity in urban institutions, and increased female representation in project implementation structures and consultation groups.

K. Environment

17. The Project is expected to make significant improvements to quality of life as well as the physical and ecological environment. An initial environmental assessment showed that

the Project is not expected to cause irreversible adverse environment impacts. Any negative environmental impacts are likely to be short-lived, minor, and limited by: (i) carefully selecting project sites; (ii) implementing mitigation measures; (iii) preparing an Environmental Management Plan (EMP); (iv) regularly monitoring implementation of the EMP, and; (v) appropriate capacity building of the PMU, PIU and councils. The EMPs will form part of the construction contract documents. Climate change adaptation measures incorporated in the Project will include: increased minimum pipe sizes to enable improved flushing and minimize accumulation of silt; increased frequency of maintenance to address increased accumulation of silt and debris, and flood plain zoning and improved development controls.

L. Risks

18. The main risks associated with the Project are (i) limited human resources and capacities of MLGUDHE and councils for project implementation; (ii) weak urban planning and management of urban drainage services; (iii) unclear institutional, legal and policy framework for urban drainage; (iv) uncertain funding of O&M costs necessary for sustainable drainage, and; (v) unclear government policy relating to urban drainage. The project incorporates mitigation measures to address these risks, including: (i) institutional strengthening of MLGUDHE and councils to increase their planning, managerial and operational capacities; (ii) establishment of DURD with responsibility for urban drainage sector policy, strategy, coordination, monitoring and technical support; (iii) reforming key legislation for the urban drainage sector to clearly define responsibilities of agencies involved in the urban sector; (iv) consultants with experience in implementing externally assisted projects will help PMUs and PIUs establish effective project management; and (vi) government commitment to allocation of budget for drainage operation and maintenance to make up any revenue shortfalls.