

Australia Indonesia Partnership

Kemitraan Australia Indonesia



PROGRAM DESIGN DOCUMENT URBAN WATER SUPPLY AND SANITATION COMPONENTS WATER AND SANITATION INITIATIVE - INDONESIA



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Jim Coucouvinis

Jakarta, July 2010

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ACRONYMS

ADB	Asian Development Bank
AIPD	Australia Indonesia Partnership for Decentralisation and the AIPEG
AIPEG	Australia Indonesia Partnership for Economic Governance
AMPL	Air Minum Penvehatan Lingkungan (Water and Environmental Sanitation)
APBN	Anggaran Pendapatan dan Belania Negara
AusAID	Australian Agency for International Development
BAPPENAS	National Development Planning Agency
BI	Bank Indonesia
BPD	Regional Development Bank
BPKP	Central Agency for Development Audit
BPP SPAM	Supporting Agency for Water Supply System Development
	Community-driven Development
CLTS	Community-led Total Sanitation
DAK	Special sector-specific block grant from central to local government
	General block grant from central to local governments
DBH	Dana Baai Hasil (Revenue Sharing Fund)
DGCK	Directorate General Cinta Karva (Ministry of Public Works)
DOCK	Dewan Perwakilan Rakvat Daerah (Local Legislature)
	Denartemen Pekeriaan Ilmum
סופ	Design Summary and Implementation Document
EV	Fiscal Vear
GoA	Government of Australia
Gol	Government of Indonesia
GT7	German Technical Cooperation
ומחו	Infractructure Development Program Loan
	Infractructure Enhancement Grant(s)
IEGI	Infractructure for Growth Initiative
	International Einancial Institutions
Indii	Indenocia Infrastructura Initiativa
	Japan International Cooperation Agency
	Vocamatan Development Program
	Local Government
	Multilateral Development Banks
MDG	Millennium Development GoAl(s)
MoE	Ministry of Einance
	Ministry of Homo Affairs
	Ministry of Dublic Works
	Millistry OF Public WORKS
	On granting agreements
	Output based aid
	Office of Development Effectiveness (ODE)
	Third Water Supply and Sanitation for Low Income Communities
PAIVISIIVIAS	Derugahagan Deerah Air Minum (Local government owned water company)
	Wastowater Services Company (Panjarmasin)
	Pamarintah Daarah (Local government)
	Indeperian Water Supply Association
	Providential Pagulation
	Presidential Regulation
	National Drogram for Community Empowerment
	Roval Notherlands Embassy
	Royal Neurerialius Erribassy
SAIVIIVIAS	Community-Dased Samualion Program
	Justamanie Development Group
JUSEINAS	Tochnical Assistance
IA	

TOR	Terms of Reference
UPP	Urban Poverty Program
USAID	United States of America Aid Agency
UWSSWG	Urban Water Supply and Sanitation Working Group
UWSSP	Urban Water Supply and Sanitation Project
WASAP	Water and Sanitation Program
WASPOLA	Water and Sanitation Policy and Action Planning
WATSAN	Water and Sanitation
WB	World Bank
WSI	Water and Sanitation Initiative
WSLIC	Water and Sanitation for Low Income Communities
WSS	Water and Sanitation Sector

EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

The Water and Sanitation Initiative (WSI) was announced by the Government of Australia (GoA) in December 2008. Its core objectives are to:

- Expand access to water supply and sanitation services, particularly for the poor, women, and children in schools;
- Make water and sanitation services more sustainable by supporting sector reform and capacity building;
- Improve the health and quality of life of the poor and vulnerable by increasing their understanding of good hygiene practices, as well as by expanding their access to water supply and sanitation services.
- Enhance aid effectiveness and complement other programs

The approved funding for WSI is AUD 300 million, of which AUD 100 million will be channelled through multilateral development agencies and AUD 200 million to bilateral country programs. Implementation of bilateral programs is expected to be completed by end-June 2011. Indonesia will be one of the main beneficiary countries, with an increased allocation of AUD 60.5 million having been confirmed in June 2009.

Candidate components for an Indonesia WSI program totalling AUD 35 million were identified by an AusAID mission in June-July 2008. The resultant *Concept Document* was endorsed in December 2008 and a design consultant was engaged in February 2009. The subsequent decision to substantially increase the funding allocation, coupled with important and rapid developments in Indonesia's WATSAN sector required significant changes to this, with a revised concept document being considered at the Review Meeting held on August 26, 2009. This document proposed four core components:

- Rural Water & Sanitation (AUD 22.5 million); to be implemented through extension of the committed PAMSIMAS program, with indicative allocations of AUD 12 million for water supply, AUD 8 million for sanitation, and AUD 2.5 million for program socialisation;
- Urban Water Supply (AUD 20 million): to pilot the implementation of a new output-based incentive grants scheme (the '*Water Hibah*') aimed at promoting increased and sustainable local government investment in expanding water connections;
- Urban Sanitation (AUD 10 million): to prepare investment plans for sewerage systems in four large cities and to expand sewerage and sanitation services in Banjarmasin and Surakarta; and
- A Sector-wide Civil Society component (AUD 5 million).

In addition, provision of AUD 3 million was made for program management, monitoring & evaluation, and verification services.

The Review Meeting endorsed the amended concept and instructed, among other decisions, that designs be prepared for the urban water supply and urban sanitation components. The proposed designs, which address the first two WSI objectives, are described in this document. Responses to Review Meeting instructions relating to other components and to the overall management of the WSI Indonesia program are presented in separate documents.

URBAN WATER SUPPLY

Context

The pace of Indonesia's urban growth over the past decade has outstripped its very limited investment in urban water supply infrastructure, with the percentage of urban population served by piped water having consequently declined from 39 percent to 31 percent, during the past ten years. Under-investment is attributable to several factors, including rapid decentralisation – with the pace of function transfer having outstripped the development of institutional capacities and the poor financial condition of many water utilities (PDAMs) in the wake of the 1997 financial crisis.

GOI is now according a high priority to mobilising new investment, as is clearly evidenced by recent concerted policy reforms. These reforms include:

- Improved tariff-setting guidelines for PDAMs (*through Government Regulation 16/2005 and Minister of Home Affairs Regulation 23/2006*): these are designed to enable PDAMs to recover costs and earn a return on assets while also providing affordable lifeline tariffs for poor households (through cross-subsidy between customers);
- **Debt restructuring** for PDAMs which have defaulted on loan repayments to MoF (*through Minister of Finance Decree PMK 120/2008*): this provides for partial or full write-off of interest arrears and penalties, in return for specific governance improvements and other undertakings (including implementation of the tariff guidelines);
- Central Government Loan Guarantee and Interest Subsidy scheme to assist PDAMs seeking to obtain commercial loans (through Presidential Regulation 29/2009): this scheme is available to PDAMs which have a 'healthy' audit rating or have been approved to participate in the debt restructuring program;
- Incentive grants ("Water Hibah") scheme for new piped water connections (to be implemented using the new grants mechanism established by *Minister of Finance Regulations PMK 168 and 169/2008";* this will provide lump-sum grants to local governments for new piped water connections which have been independently verified to be delivering water.

The pace at which this strategy has been developed is impressive. The debt restructuring scheme was established shortly before the WSI Identification Mission in October 2008, while the *Water Hibah* and the Central Government Loan Guarantee and Interest Subsidy schemes were devised subsequent to the approval of the WSI Indonesia Concept Document and in parallel with the preparation of the Design Summary and Implementation Document (DSID).

WSI Urban Water Supply Component

The WSI urban water supply component is designed with the triple objective of expanding piped water coverage in urban areas (and especially areas with a high proportion of low-income households), improving the financial sustainability of PDAMs, ¹ and assisting GOI to pilot a much larger and broader *Water Hibah* program. The output-based design incorporates features developed by two small demonstration projects now being implemented in Jakarta and Surabaya with support from the Global Partnership for Output-Based Aid (GPOBA).

¹ PDAM sustainability depends on having a mix of customers to enable cross-subsidy of lifeline tariffs for poor households. WSI funding will support connection programs in neighbourhoods with an above average proportion of low income households.

The WSI funds will support the delivery during 2010 of 70,000 new connections serving around 420,000 persons in up to 25 cities. The grant amount will be Rp.2 million per connection for the first 1,000 connections and Rp.3 million thereafter, to a ceiling connection limit per local government *(Kota /Kabupaten).* For a program of 3,000 connections, the aggregate grant amount is expected to cover approximately 45 percent of the incremental investment cost. The WSI funds will be channelled to local governments (PEMDAs) – referred to throughout as Local Governments or LGs – using the newly developed grant channelling procedures *(PMKs 168 and 169)* and will pioneer their use for channelling donor funds for output-based programs.

Participation in the WSI-funded program is voluntary and is open to local governments which commit to injecting equity into their PDAMs in an amount at least equal to the grant they receive. To be eligible, their PDAMs must: (a) have sufficient water treatment capacity available to serve the proposed customer base expansion; (b) meet the key eligibility requirements for the Central Government Loan Guarantee and Interest Subsidy scheme; and (c) have a sound distribution expansion program prepared and ready for implementation in 2010. In addition, LGs/ PDAMs must be able to demonstrate their capacity and intent to pre-finance their programs. A screening process has been conducted by the Ministry of Public Works in consultation with MoF and AusAID and, as of end-October, 15 of the 25 invited local governments had already formally confirmed their intent to participate.

As indicated above, the WSI *Water Hibah* component was developed in parallel with – and contributed to – the development of GOI's water sector strategy, and it enjoys the strong and active support of BAPPENAS (the National Development Planning Agency) and the Ministries of Finance and Public Works. Its timing coincides with the first annual phase of a broader *Hibah* grant program that is expected, *inter alia*, to support delivery of circa 1.5 million new water connections over the period 2010-2014. Funding for this medium-term program is expected to be sourced from the *Anggaran Pendapatan dan Belanja Negara (APBN)* and donors.

URBAN SANITATION

Context

The dominant form of sanitation in Indonesia's cities is still self-provision using septic tanks. These are often poorly constructed, resulting in seepage into aquifers and hence into shallow wells used for household water supplies. De-sludging tends to be conducted infrequently, with private contractors commonly dumping sludge in rivers or drains rather than proper disposal facilities.

Indonesia's kampung improvement projects, which were implemented in the 1980s and early 90s, featured construction of communal toilet and bathing facilities (MCKs), although these were not very successful. More recently, GOI through its SANIMAS program has been providing small matching grants to support construction of communal septic tanks and connections to small groups of households.

While the use of self-provided septic tanks is inappropriate in densely populated urban areas – and especially areas which lack access to piped water supplies – construction of sewerage systems is costly and households' willingness to pay is perceived to be low. This has led GOI to prioritise provision of drinking water services, while piped sanitation has received little attention or funding. Only 11 cities currently have some form of sewerage system, serving just one percent of Indonesia's urban population.

However, the GOI approach to sanitation is now changing rapidly, as evidenced by the National Policy and Strategy for the Management of Wastewater Systems issued by the Minister of Public

Works (MPW) in December 2008. This document addresses five key themes: (i) increasing access to sanitation for urban and rural communities with priorities to low income households; (ii) increasing the role of the community and the private sector in provision of sanitation services; (iii) developing a regulatory framework for management of sanitation; (iv) building capacity for institutions and personnel involved in wastewater management; and (v) increasing investment and developing alternative funding sources for wastewater infrastructure.

The *Sanitation Road Map*, prepared jointly by BAPPENAS and the Ministries of Public Works, Health and Home Affairs, presents proposals for its initial implementation phase covering the period 2010-2014. Key targets for urban areas include increasing the number of cities with piped sewerage from 11 to 15; increasing the coverage urban sewerage systems to 20 percent of the respective populations; and engaging with 330 cities / towns to prepare sanitation strategies with sound financing plans. The SANIMAS program will continue, with the communal clusters later being connected to sewers (and their septic tanks being de-commissioned).

GOI's policy and strategy for *urban* sanitation has evolved rapidly during the period in which the WSI Indonesia component was being developed and designed. However, implementation challenges for urban sanitation works are more formidable due to the more limited institutional capacities at the local level.

WSI Urban Sanitation Component

The urban sanitation component is designed to support the implementation of GOI's *Sanitation Road Map* and comprises two sub-components:

- support for connecting up to 10,000 households to improved sanitation facilities in Banjarmasin and Surakarta using a combination of sewerage and on-site sanitation; and
- preparation of sewerage investment plans for four cities to the standards required to secure financing from an MDB

SEWERAGE CONNECTIONS

During preparation of the Design Summary and Implementation Document, GOI and GOA requested that a significant proportion of the WSI Indonesia allocation be used to finance increased access to improved sanitation for urban households. Following the decision in June 2009 to increase substantially the size of the Indonesia allocation, the design team was asked to explore ways of supporting the extension of existing sewerage systems during 2010. The only feasible option identified was to employ an output-based hibah scheme broadly similar to that developed for urban water supply.

The intent is that WSI will provide lump sum grants for new, working connections to existing piped sewerage systems and for connections of poor households to new communal on-site systems which are designed to be served later by sewerage extension. Within the tight design timeframe, it has been possible to identify three candidate cities – Banjarmasin and Surakarta – which have existing sewerage systems and also definite plans and available pre-financing for their extension during 2010.

The design envisages WSI supporting the delivery of: sewerage/sanitation services to approximately 10,000 households from an identified demand of 8,600 new sewerage connections, and 3,000 connections to new communal on-site systems In total, these are expected to serve around 60,000 persons. The grant amounts will be Rp.5 million per new sewerage connection and Rp 2 million per communal on-site system connection, with individual aggregate grant limits being set for each city.

The WSI funding is expected to cover approximately 60 percent of the aggregate incremental investment cost. As with the *Water Hibah* scheme, WSI funds will be channelled to local governments using *PMK 168 / 169* procedures.

The characteristics of the existing sewerage systems and the institutional arrangements for their management are quite different in each of the cities. The **Banjarmasin** system was developed between 1995 and 2002 as part of the World Bank-funded Kalimantan Urban Development Project. It is now managed by a separate wastewater management company (PDAL), which is one of just two in Indonesia (the other is in Jakarta). The network currently serves central and northern areas of the city and has a total of around 3,200 connections. There is ample treatment plant capacity available, and the city has plans to add a further 15,000 connections. Preliminary screening being undertaken by IndII-funded consultants indicates that it will be possible to construct a total of 3,000 connections in 2010.

The **Surakarta** sewerage system was constructed during 1995-2001 as part of the Semarang Surakarta Urban Development Project with funding from the World Bank. The sewerage system consists of two wastewater treatment plants with capacity for 84L/sec, 12km of trunk sewer of diameter 600mm to 1300mm, and 70 km of secondary and lateral sewers of diameter 300 mm to 500 mm. The sewer system serves 10,800 connections. The PDAM is responsible for operating the sewerage system and includes a wastewater section and technical director in its organisation.

The proposed implementation arrangements are similar to those already developed for the *Water Hibah* scheme. While the timeframe for finalising these, compliant with prevailing budget management and grant channelling regulations, is extremely tight, the responsible GOI agencies have signalled their strong commitment to finding solutions that will enable the WSI funds to flow within the completion deadline.

SEWERAGE INVESTMENT PLANS

Preparation of sewerage investment plans for priority four cities supports the implementation of the *Sanitation Road Map* and needs to commence quickly if its targets are to be met. The Ministry of Public Works has already initiated screening of 17 candidate cities, with technical assistance being financed by the IndII Facility. To be eligible for assistance, local governments will be required to commit to proceeding with plan implementation on a pre-defined cost sharing basis with GOI, and to demonstrate that this commitment has been endorsed by the local parliament.

In preparing the sanitation investment plans, particular attention will be given to ensuring coverage of poor neighbourhoods. To this end, poverty assessments will be conducted and possible constraints to participation of poor households identified. Options for localised service provision and subsequent connection to the sewer network will be developed where appropriate. The findings of the assessments and the resultant plans will be disseminated at workshops with the local governments.

SAFEGUARDS

Both components will have positive environmental, health, and gender equality impacts. During implementation, appropriate measures will be taken to optimise these, including through socialisation and consultation processes. Efforts will also be made to ensure those with disabilities benefit from the investments, although it must be recognised that the government's role involves provision of connections and does not extend inside the home.

MANAGEMENT ARRANGEMENTS

The WSI Indonesia allocation will be channelled to GOI through amendment of the existing IndII Facility Subsidiary Arrangement. A draft of the needed changes has already been tabled with the Ministry of Finance and it is anticipated these can be finalised rapidly once the design of the urban water and urban sanitation components is approved.

It is intended that the implementation of both components will be overseen by an expanded IndII Facility Managing Contractor team. In addition to being the only feasible option within the tight time constraint, this will also ensure synergy with other WATSAN activities being funded by IndII, and serve to minimise overhead costs. Extension of the scope of the managing contractor services is permitted by its contract, and the details of a proposed contract amendment are now being discussed. A key feature of the proposal is the creation of a new position of "Technical Director – Water & Sanitation" to oversee WSI- and IndII-funded WATSAN activities.

MONITORING AND EVALUATION

A monitoring and evaluation plan has been prepared for the two components and included in Section 5.

RISKS

The main identified risks relate to the challenge of implementing the *Water and Sanitation Hibah* programs within the exceedingly tight timeframe. Addressing this will require continuing intensive interaction with GOI agencies during the programs' further preparation, and careful progress supervision. Fiduciary management risks will be addressed through the engagement of qualified and reputable firms to conduct baseline surveys and verify new connections.

CHAPTER 1: WATER SUPPLY COMPONENT

1.1 WATER SECTOR ANALYSIS AND STRATEGIC ISSUES

Indonesia's national and sub-national governments have improved their delivery of basic services covering health, education, water supply and sanitation. But much more needs to be done. The pace of decentralisation and regional autonomy has outstripped the capacity of local government (LG) to supply these basic services. The level of piped water systems in urban centres has steadily declined since 1998 due to reduced investment. Before decentralisation, much investment came from central government programs. Since then, investment in the urban water sector has been largely limited to the funding capacity of water utilities (PDAM), which for the most part are severely limited in their capacity to generate investment funds. Beset by poor governance and institutional inefficiency, more than half are burdened with existing debt and are not sufficiently creditworthy to access commercial bank loans. Thus, their investment has not kept pace with the speed of urbanisation or the need to maintain and replace depreciating PDAM assets. At the same time, studies show that LGs have largely ignored the need to invest in the water sector.

The current Government of Indonesia (GoI) policy for the urban water sector is therefore to increase investment by LGs; improve the creditworthiness of the PDAM; and assist PDAM to access commercial lending for expansion of services. More generally, achieving better governance of the urban water sector is expected to lead to sustainable increases in service coverage – especially for the poor, in keeping with Millennium Development Goals. The Water and Sanitation Initiative (WSI) is aligned with these Goals.

1.1.1 Analysis of Problems and Issues in the Water Supply Sector

Transferring responsibility for delivery of municipal services to LGs has produced mixed results. In the water sector, there is a prevailing view within LGs that PDAMs are responsible for water supply services and should provide them without LG assistance. While the responsibility under law for the provision of water supply rests with the LG, most have established PDAMs as fully owned companies. The water infrastructure assets that were previously been owned by LGs and, in some cases central government, have been incompletely transferred to PDAMs, although the PDAMs make use of these assets.

Matters are further complicated by overlapping responsibilities for water service delivery. While LGs may have established PDAMs, they nonetheless continue to deliver some water services. The LG provides services directly through its own budget funds, which it usually deploys through the Ministry of Public Works (*Dinas Pekerjaan Umum, or* DPU/MPW). The dividing line between the PDAM area of operations and that of the LG varies, but is generally tied to the sub-district capital or IKK (Ibu Kota Kecamatan). At one end of the scale, some district governments require their PDAMs to be totally responsible for IKK water supply; other LGs build the IKK physical assets and hand them over to the PDAM to operate; and some build and operate IKK water supply services through their public works department.

Another layer of complexity is added by the continuing involvement of the central government's Directorate General for Human Settlements (DGHS) within the Ministry of Public Works (MPW). The DGHS has an annual budget to assist with the construction of IKK water systems which are handed over to LGs, who in turn operate them through their MPW or require the PDAM to operate them. Within this framework, LGs see their ongoing responsibilities for direct provision of water services as a financial and administrative burden. Not surprisingly, most LGs see their responsibility for water supply as limited to the direct disbursement of DAK funds through the MPW; and see the PDAM as

being solely responsible for providing urban water services. However, nearly all of the PDAMs are undercapitalised and the majority operate with tariffs set significantly below the full cost recovery rate – a situation they find difficult to remedy despite recent regulations allowing them to set their tariffs at cost-recovery rates. The net result is that investment in new water supply assets is not keeping pace with the depreciation of existing assets. And, as urban populations increase, the percentage of the urban citizens served by piped water has declined from 39 to 31 percent during the past decade.

1.1.2 GOI Water Sector Policy and Strategy

Gol's policies and strategies for the water sector are informed by its overarching emphasis on poverty reduction. The Gol has a comprehensive poverty reduction policy delivered through a suite of programs under the umbrella of PNPM (*Program Nasional Penangulan Kemiskinan*), or the National Community Empowerment Program (NCEP). Most PNPM programs are "open-menu", and selection of water/sanitation intervention is a choice for the participating community. PAMSIMAS is a dedicated water and sanitation (WATSAN) program and is the Gol flagship program for delivering rural WATSAN services to the poor. The PAMSIMAS program, and indeed all of the PNPM programs, use the community-driven development model as the main program delivery modality. The *Water Hibah* program, described in detail in the next section, is set to become Gol's main mechanism for increasing access to piped water for poor urban households.

The enactment of decentralisation and regional autonomy legislation, first in 1999² and later in 2004³, irrevocably changed the development of the Indonesian water and sanitation sector (WSS). This legislation not only mandated responsibility for development of the WSS sector to the LG, but also specifically excluded central government from initiating and implementing projects in water supply and sanitation. This, together with the widespread default on loans by PDAMs and local governments after the monetary crisis, launched Gol on a path of sector reform which has been consistent in its objectives and unwavering in its progress. Clarification of the role and responsibility of the different levels of government is given in *Government Regulation PP 38/2007*⁴. Although the initial focus of reform initiatives by the Government has been on the water sector, more recent attention is now being given to sanitation.

1.1.3 GOI initiatives for urban water supply development

As Gol undertakes initiatives designed to increase access to piped water, it faces disparate conditions at the local level. At one end of the spectrum, a few large and medium cities with more effective LGs and well managed PDAMs have been able to substantially expand customer numbers while covering their full costs. At the other end, many small district PDAMs have no prospect within the foreseeable future of operating on a commercially sustainable basis. Located between these extremes are more than half of the 330-plus PDAMs who have defaulted on their debt service payments to the Asian Development Bank (ADB) and World Bank loans, on-lent by the Ministry of Finance (MoF), and are therefore unable to access new debt finance.

² Law 22 of 1999 on regional autonomy and law 25 of 1999 on fiscal balance.

³ Law 33 of 2004 and Law 33 of 2004 revising laws 22 and 25 respectively.

⁴ Government Regulation on the Division of Responsibilities between Government, Provincial government and Local government, PP38/2007.

Gol recognises that different strategies will be needed for different groups of PDAMs, and is focusing initially on those that are already 'healthy'⁵ or have the potential to quickly become healthy through management reform and financial restructuring. The strategy adopted for this group aims both at promoting PDAM sustainability and accelerating provision of new water connections; it has four main elements:

- (a) Tariff reform
- (b) Debt restructuring
- (c) Central government loan guarantee and interest subsidy scheme
- (d) Output-based grant scheme (Water Hibah).

(a) Tariff reform: Minister of Home Affairs Regulation 23/2006 seeks to put urban water supply on a sustainable footing by requiring LGs to set PDAM tariffs at a level that enables full cost recovery. Cross subsidies should allow the poor to pay a low tariff for their basic water needs.

(b) Debt restructuring: This voluntary program, established by MoF *Regulation PMK 120/2008*, provides for partial or full write-off of a PDAM's accumulated interest arrears and late payment penalties. In return, the PDAM and the LG must agree to a number of governance conditions including: implementation of a full cost recovery tariff; appointment of PDAM senior management based on fit and proper testing; preparation of sound medium-term business plans; backstopping by the LG of repayment of the restructured loan; and authorisation for MoF to 'intercept' General Block Grant (DAU) or Revenue Sharing Fund (DBH) payments in the event of non-compliance.

(c) Central government loan guarantee and interest subsidy scheme: This scheme, authorised by *Presidential Regulation No.29*⁶ signed on 23 June 2009, is designed to assist PDAMs to secure medium-term investment financing from commercial banks on affordable terms. It is open to PDAMs that have a healthy performance audit rating, or that have secured MoF's approval to participate in the debt restructuring program. The central government will guarantee 70 percent of the outstanding loan amounts, with the LG undertaking to repay 30 percent if the guarantee is called. In addition, the central government will provide a subsidy for interest payments of up to 5 percent, to bring the loan interest rate down to the Central Bank (Bank Indonesia) reference rate.

(d) Output-based grant (Water Hibah) scheme:

The GoI has enacted a new regulation in November 2008 [PMK 168/169 2008] for channelling grants to local governments. This is a significant initiative allowing both national funds and external funds to be transferred to local governments as grants. The GoI is applying this new channel to transfer a total of Rp. 7.1 trillion in 2010 as grants to local governments. Of that, approximately Rp. 270 billion [AUD 33 million] is expected to be transferred to 35 local governments as grants for water supply.

The GoI has designed the *Water Hibah* program to reward local governments that invest in PDAMs to improve water services. The *Water Hibah* initiative was designed following the recommendations of the World Bank Water and Sanitation Program (WASAP)⁷. The aim of the *Water Hibah* is to unlock LG financial reserves and direct some of these funds as equity investment in the PDAMs. The outputbased design draws on successful international experience by similar programs, and on recent incentives programs implemented in Indonesia (Surabaya Output-Based Aid [OBA]⁸, PAMJaya OBA⁹,

⁵ Gol PDAM rating system established by the State Audit Agency and Ministry of Public Works based on an index of financial, operational, and administrative indicators. Categories are Healthy, Less Healthy, and Sick.

⁶ Provision of Guarantees and Interest Rate Subsidies by Government for commercial borrowing by PDAM for the acceleration of provision of water supply, PP 29/2009.

⁷ WASAP is funded by a Dutch Trust fund implemented through the World Bank.

⁸ Expansion of Water Services to Low Income Areas of Jakarta, World Bank Output Based Aid [P096686]

⁹ Expanding Piped Water Supply to Surabaya's Urban Poor, World Bank Output Based Aid [P105590]

and the Ministry of Public Works PDAM incentives program¹⁰). The scheme was formally proposed to the National Development Planning Agency, BAPPENAS, by the Ministry of Public Works in April 2009, and enjoys very strong support within MoF.

These initiatives have taken shape at a remarkable pace, particularly given the number of central government agencies involved. At the time of the WSI identification mission, the debt restructuring strategy had been defined but little thought had been given to assisting PDAMs to access commercial financing or to the design of an output-based scheme for accelerating new connections. While some details remain to be fleshed out, the MoF, BAPPENAS and the DGHS have confirmed strong support for AusAID to proceed rapidly with piloting the *Water Hibah* scheme and developing sound governance arrangements.

1.1.4 Lessons learned

The proposed WSI program components can benefit from previous 'lessons learned", keeping in mind that the objective of the *Water Hibah* is to stimulate LG investment in water utilities as the most sustainable long-term path for growth in water sector infrastructure:

Success will be linked to Gol commitment: The unprecedented speed and commitment of the Gol to put its water initiatives in place reflects very strongly on its commitment and ownership of the reform agenda.

Implementation should be through GoI *delivery mechanisms*: The *Water Hibah* is designed to be implemented through GoI systems and agencies. This will enhance program sustainability and effectiveness. Use of AusAID procedures will be limited to some core technical assistance components for program preparation and management.

Local government program ownership is essential: A key failing of past development has been the lack of engagement and ownership of the water sector by LGs, arising from unsustainable investments by central government in PDAMs. The investments over the past 25 years have been largely viewed by LGs as central government assets and many remain on the asset register of the DGHS.

The *Water Hibah* addresses sustainability in the water sector by rewarding LGs that promote better performance from their PDAMs. The *Water Hibah* grants flow directly to the LGs to invest in the PDAMs and not to the PDAMs, as had mostly been the case prior to regional autonomy. The primary objective is to mobilise local government capital investment in PDAMs, resulting in increased service delivery by the PDAM and more importantly, sustainability of that improvement through clear ownership by the local government and improved management. It will pioneer the large-scale application of output-based support for local government services. If this pilot application of the output based on-granting mechanism by MoF proves effective, it can also potentially be applied to other sectors¹¹.

1.1.5 Other donors supporting urban water

Donor programs supporting PDAM debt restructuring include the World Bank WASAP(B) and WASAP(I). WASAP(B) is assisting 14 PDAMs to prepare corporate plans for medium-term investment

¹⁰ MPW support to 19 healthy PDAMs for FY 2009 for implementing new connections.

¹¹ MoF is also initiating application of the on-granting mechanism to the education and health sectors.

as a criterion for entry into the debt restructuring program and access to the credit support scheme for commercial lending. It will expand by another 20 PDAMs in a subsequent stage. WASAP(I) is a water sector financing study that is identifying constraints in financing in the water sector at the LG level through work with nine LGs.

The USAID Environmental Sanitation Program is working with 18 PDAMs, supporting technical and financial capabilities for sustainable development. These PDAMs will be part of a pipeline for grant applications under the AusAID and GoI *Water Hibah* schemes.

Consultations with GoI and development partners during the WSI preparation confirmed a high level of interest from both ADB and World Bank in the *Water Hibah* funding model. A number of options for co-financing grants and multilateral development bank loans have been considered as future funding to support the GoI investment target.

1.1.6 The WSI Water Hibah within the AusAID Indonesia WSS program

AusAID has a long history in Indonesia's water and sanitation sector which in recent years has centred on WSLIC/ PAMSIMAS (Water Supply and Sanitation for Low Income Communities) / (Third Water Supply and Sanitation for Low Income Communities) and WASPOLA (Indonesia Water Supply and Sanitation Policy Formulation and Action Planning). These initiatives focus mostly on supporting village-level, community-managed programs, in part due to a lack of traction on the part of GoI in resolving impediments to much needed investment in urban water and sanitation.

WASPOLA is in its third-stage extension and is now operating as a facility. It focuses on supporting the GOI with policy implementation and development activities in water supply and environmental sanitation. Both the WASPOLA facility and PAMSIMAS are funded under the Infrastructure for Growth Initiative (IFGI) and have committed funding of AUD 10 million each, which will be channelled through their respective World Bank trust funds.

IndII has been funded under IFGI and supports the Gol's efforts to tackle urban water supply and sanitation issues and, in particular, to promote the sustainable development of institutionally managed services in the larger cities. The IndII facility commenced operations in mid-2008, and its Management Board (including AusAID Minister-Counsellor and Assistant Minister-level Gol membership) has directed that WSS will be one of two priority sectors.¹²

The IndII managing contractor is charged with managing imprest account funds totalling around AUD 40 million; it is envisaged that a significant part of this will be directed to technical assistance services to support preparation and implementation of near-term investment programs; development of policies, strategies and action plans for longer-term investments; and identification and preparation of a medium-term urban water supply and sanitation activity pipeline for possible future AusAID support.

1.1.7 Alignment with ODE recommendations

WSI program objectives are closely aligned with the findings and recommendations of the Office of Development Effectiveness (ODE) evaluation report on WSS assistance in Indonesia¹³, namely

¹² The other is transport.

¹³ Independent Evaluation of Australian Aid to Water Supply and Sanitation Services, Indonesia Draft Country Working Paper, March 2009.

extension of support for water and sanitation services to rural poor through PAMSIMAS, and greater attention to urban water supply through support to PDAMs and LGs through the *Water Hibah* program. The *Water Hibah* marks the first entry by AusAID into urban water supply support since the decentralisation and regional autonomy. The main components of WSI are at the centre of GoI focus of water and sanitation sector reform and align with the primary recommendations of the ODE findings for the sector.

1.1.8 Linkage to IndII and other AusAID programs

The positioning of WSI as an additional component of IndII (see Section 3: Proposed Management Arrangements) allows increased flexibility and mutual support among WSI and related IndII programs. A significant portion of IndII activities are related to water supply and sanitation, such as the 20 PDAM programs directly supporting the future *Water Hibah* implementation. Others are less directly linked but can be leveraged to enhance program delivery and program effectiveness. The positioning also allows the WSI program to be "confined" to three components with well-defined outputs, while supporting technical assistance can be provided through the IndII activities program.

The WSI is well placed to link with and support the upcoming AusAID-funded AIPD (Australia Indonesia Partnership for Decentralisation) and the AIPEG (Australia Indonesia Partnership for Economic Governance) through activities that focus on decentralisation of water supply, strengthening LG service delivery (in both sanitation and water), debt restructuring (of PDAMs), and in general the improving in governance of the WATSAN sector at both the local and central government level. Decentralised public finance is another area with strong synergies with these two AusAID initiatives, particularly with regard to piloting the Hibah as a new mechanism for intergovernment transfers to finance infrastructure.

1.1.9 Engagement with development partners

A large number of stakeholders and GoI implementing departments, including MoF and BAPPENAS, have been involved in *Water Hibah*. This engagement started early, with the design of the *Water Hibah* by the GoI under WASAP(I) program, which led to employing the *Water Hibah* as a key trigger for the third tranche of the World Bank IDPL. Intensive dialogue led by the DGHS, MoF, Bappenas, and the World Bank has resulted in the submission by DGHS of a proposal for implementation of a national *Water Hibah*. Subsequently, AusAID has taken the lead in the dialogue with GoI partners as the time schedule for the WSI is in advance of the GoI partner program which will commence later in 2010.

The engagement and dialogue on the *Water Hibah* and other donor programs with linkages to the Hibah has resulted in the establishment of an urban water sector donors' forum chaired by DGHS, the *Urban Water Supply Sector Working Group (UWSSWG)*. Members include bilateral and multilateral donors, civil society groups and NGO and local/international financial institutions (IFIs) involved with the urban water supply sector in Indonesia.

Representatives from the Ministry of Public Works, BAPPENAS, MoF, Ministry of Home Affairs (MoHA), Central Agency for Development Audit (BPKP), Supporting Agency for Water Supply System Development (BPP-SPAM), World Bank, ADB, The Royal Netherlands Embassy, Japan International Cooperation Agency (JICA), AusAID, USAID and the Indonesian Water Supply Association (PERPAMSI) are the initial members of this working group.

More formal engagement with Gol was established through the Indll Board once the WSI was identified as a program to be implemented through Indll under the existing *Subsidiary Arrangement*. The table below illustrates the levels of engagement of development partners.

Water Hibah	
Partnership	
Primary Partner	Gol (MoF, DGHS, Bappenas)
Stakeholders	Selected LGs (+/-25)
Delivery	
Delivery Method	On granting via Gol budget
Agreement type	Revised Gol GoA Subsidiary Arrangement
Design Document	World Bank WASAP(I) Consultant design document.
Resources	
Additional Pasauroas	Verification Consultant
Additional Resources	M&E consultant
Timeframe	
	World Bank and GoI (MoF, BAPPENAS, DGHS) complete design of <i>Water Hibah</i> program, 200 LGs and 1,500,000 connections.
00	AusAID collaborates on design.
Q2 Apr- Jun 2009	AusAID leads consultation with GoI and World Bank for AusAID component (20-/+ LG and up to 60,000 connections).
	Supporting documentation to World Bank design prepared covering safeguard issues.
	Appraisal Peer Review
Q3 Jul - Nov 2009	IndII finalises proposal including project implementation manual (PIM), and prepares establishment of BI Imprest Account.
Q4 Dec 2009	Urban <i>Water Hibah</i> begins

Table 1: Engagement with Development Partners

Table 2: Structure of AusAID assistance to WSS – Indonesia

	Infrastructure for Growth Initiative	Water and Sanitation Initiative (WSI)	PAMSIMAS Trust Fund	WASPOLA Facility Trust Fund	
	Indil (AUD 40 M) ¹⁴	AUD 60.5 M ¹⁵	AUD 10 M	AUD 10 M	
SECTOR	WATSAN Components Institution Managed Urban Water supply and Sanitation	 Mainline initiatives delivering improved water and sanitation services: 	T/a Support & Village grant component (AUD 10 M)		
Urban Water	 Technical Assistance to PDAMs for business plans and credit worthiness 	 Water Hibah AUD 20 M Approximately 70,000 households served with piped water 420,000 beneficiaries. 		Supports development of WSS policy initiatives from	
Rural Water		 Rural sector via PAMSIMAS Village grants AUD 12 M Approximately 400 villages with 550,000 pop. receiving water services. 	Support to 100 villages for WSS development. 150,000 pop. Receive water services	Gol Supports implementation of	
Urban Sanitation	 Urban Sewerage AUD 3 million MSMHP Capacity Building 	 Urban Sewerage AUD 10 million Technical Assistance for wastewater master plans for 5 cities AUD 5 M Small Investment Grants (Sewerage and extension AUD 5 M – resulting 10,000 new connections 60,000 beneficiaries) 		Aural WSS policy developed under WASPOLA 1&2. Links rural WSS policy with PAMSIMAS implementation.	
Rural Sanitation		 PAMSIMAS Village grants AUD 8 M Approximately 400 villages with 800,000 pop. receiving sanitation benefits. PAMSIMAS AUD 2.5 M Support with socialisation of the program to new villages. 	Support to 100 villages for WSS development. 200,000 pop. Receive sanitation benefits. Vehicle for scaling up Rural WSS policy under WASPOLA		
Urban and Rural WSS	•	Civil Society Component AUD 5M	•	•	

 ¹⁴ AUD 40 million for all infrastructure.
 ¹⁵ Includes AUD 3 million for management costs, surveys etc.

1.1.10Rationale for proposed WSI Indonesia program

The *Water Hibah* is one of four centrepiece GoI initiatives to reform the water sector, which aim to strengthen LG commitment to improved water services. The four initiatives of tariff reform, debt restructuring, credit enhancement to PDAMs and the *Water Hibah* work in concert to deliver greater and sustainable investment to water utilities. The *Water Hibah* aims to improve governance of the water sector at the local government level by demonstrating to local government the returns of greater investment in their water utilities. As noted earlier, the DGHS has proposed a GoI *Water Hibah* program that targets up to 200 local governments and aims to achieve 1,500,000 new water connections through a stimulus grant of Rp.3 trillion (AUD 350 million) during the period 2010 to 2014. The proposed WSI *Water Hibah* will pilot the program with AUD 20 million funding targeting 70,000 new connections in up to 25 LGs by June 2011.

The program will contribute to the achievement of MDG Goals and targets including: improving the wellbeing of the poor; increasing gender equality; reducing child mortality and improving maternal health; extending the coverage of safe water and sanitation services to the community; combating water borne diseases; and improving the environment.

WSI Water Hibah	Gol and Partner Program	Description
Water supply incentive grant (<i>Water Hibah</i>) to approximately 25 selected LGs yielding 70,000 new connections.	National Water Supply incentives grant program for approximately 150-200 LGs.	Output based grant for expansion of water service delivery determined by the increase of working service connections by the PDAM above a pre- project baseline with minimum achievement of 50 percent poor urban households.

Table 3: WSI Water Hibah in relation to partner programs

1.2 DESCRIPTION OF THE WSI WATER HIBAH PILOT PROGRAM

The WSI *Water Hibah* is a pilot of the government's water supply incentives grant – an initiative to stimulate local government investment in the water sector. It is one component of a comprehensive restructuring of the water sector by the GoI which also includes tariff setting, credit finance to PDAMs and debt restructuring.

The proposed WSI *Water Hibah* is for approximately 70,000 connections to be implemented by June 2011.

1.2.1 Objective of the Water Hibah

The objective of the WSI *Water Hibah* is to increase the water service coverage in selected local governments by up to 70,000 connected households, 50 percent of which will be poor households.

The higher level outcome is to increase investment from participating LGs in their respective PDAM as a first step towards greater responsibility by LGs for water services. The investment of LG budget funds as equity in the PDAM is an important step in the process to improve governance of the water sector. Acceptance of responsibility by LGs for their water sector achieves sustainable improvements in service coverage to the community and increased and better services for poor households.

Support to Gol Objectives: The WSI *Water Hibah* will support the Gol in increasing service coverage by an additional 1.5 million connections from 2010 to 2014 and achieving the MDG for water. It will support the policy and strategy initiatives of the Gol to unlock municipal funding as part of the broader strategy to make PDAMs more credit worthy and better able to access commercial sources of finance.

Delivery within Gol Systems: The Water Hibah will be delivered fully through the existing Gol administrative and regulatory framework using the recently established on-granting mechanism for OBA, PMK 168/169. The grant funds will be placed on budget in a MoF special account in Bank Indonesia. Funds disbursement will be authorised by a Gol-appointed authorised signatory of the special account. The Gol will monitor and report on the disbursement of the funds of the special account through the WSI project management structure, to AusAID and to the IndII Facility Management Board.

1.2.2 Addressing WSI program objectives

The design of the WSI *Water Hibah* addresses all WSI global objectives. Table 4 below demonstrates how the *Water Hibah* addresses each global objective of WSI, namely:

- (a) expanding access to water supply and sanitation services;
- (b) making water and sanitation services more sustainable by supporting sector reform and capacity building;
- (c) improving the health and quality of life of the poor and vulnerable by increasing their understanding of good hygiene practices, as well as by expanding their access to water supply and sanitation services; and
- (d) enhancing aid effectiveness and complement other development agencies' programs.

Table 4: WSI program objectives

	(a) Expand access to water supply and sanitation services	(b) Make water and sanitation services more sustainable	(c) Improve health and quality of life of the poor	(d) Enhance aid effectiveness and complement other programs
Water Hibah	Strongly supports this objective on a broad national scale. This is a key component of the Gol initiative to achieve 1.5 million new water supply connections. This component targets a minimum of 50 percent new connections to poor households.	Strongly supports this objective on a national scale because it goes to the core of strengthening LG capacity and responsibility for maintaining investment in their water enterprises. It also includes capacity building for pro-poor and gender-responsive service provision.	Strongly supports this objective through priority for increased access by the poor to piped water supply. The health and wellbeing of the poor and vulnerable will especially benefit through improved access to water.	Strongly supports this objective by piloting the Gol initiative which will provide a single vehicle for channelling assistance to the water sector in a comprehensive and coordinated manner.
Sewerage and Sanitation Expansion	Strongly supports this objective directly through expanded system coverage for service delivery.	Strongly supports this objective through support to LG initiatives for system expansion.	Supports this objective directly through increased access to wastewater disposal via sewers reducing land requirements for on-site facilities in poor areas. The health and wellbeing of the poor and vulnerable will especially benefit through improvements in environmental sanitation.	Strongly supports this objective by the pilot application of direct donor support to local governments implementing sewerage/sanitation expansion using Gol on-granting mechanism.
Wastewater Investment Plans	Strongly supports this objective directly through preparation of wastewater investment plans which will be suitable to secure donor funding and are ready to implement by Gol and local government.	Supports this objective through the integration of sewerage in dense urbanised areas with communal, on-site facilities for poor households not served by the sewer system.	Strongly supports this objective through integration of on-site sanitation facilities for the poor, with investment in sewerage. The health and wellbeing of the poor and vulnerable will especially benefit through improvements in environmental sanitation.	Strongly supports this objective through provision of investment plans suitable for other donor and IFI funding in line with the Gol priorities for sanitation in 2010-2014.

1.2.3 The Water Hibah Design

The rationale for the *Water Hibah* initiative is to provide a stimulus to LGs to invest funds in water utilities and expand the water supply system.- through a MoF grant, the *Water Hibah*. The value of a specific grant will be determined by the increase in service connections of the water utility, and paid only *after* the connections have been made and verified. The local governments that are eligible to participate must meet selection criteria set by the Executing Agency (see section 1.16).

The selected LGs will sign an "On-granting agreement" with the MoF which specifies the terms and ceiling of the grant. The value of the grant will be set at a progressive rate of Rp 2 million (AUD 240) per connection for the first 1,000 and Rp 3 million (AUD 360) per connection for the additional connections up to the agreed ceiling. The On-granting agreement will define the areas of responsibility and authority of the parties, and the implementation parameters. The LG will pre-finance the associated investments, and the new works will be executed by the PDAM. The DGHS will execute the program on behalf of the GoI.

Once the agreement is signed, the Executing Agency (which will be the DGHS), will conduct a baseline survey within the designated area of the proposed expansion. The WSI *Water Hibah* will be implemented in parallel with the GoI *Water Hibah* program¹⁶ and will help to set implementation procedures and protocols. The sequence of events and activities is summarised in the following table.

1	Selection of the LG	The selection process is initiated by the Executing Agency (DGHS) and gives priority to LGs with excess available water, but which need expansion of the distribution system to reach new customers.
2	Selection of the expansion area(s)	The LG proposes the areas for the expansion of the water service. The areas will be those with the greatest concentration of poor households.
3	Setting of the grant size	The DGHS sets the initial ceiling of new connections that will be supported by the grant based on the available water for distribution, capacity of LG to finance, and the available connections in the proposed expansion area. There is provision for adjusting the ceiling based on a mid-term performance assessment.
4	Signing the Grant agreement	The MoF signs a grant agreement with the LG for the target number of connections and a total value of grant to be disbursed in tranches, for each 500-1000 working connection achieved. The grant is tied to the minimum ratio of 50 percent poor to non-poor connections. The agreement gives the right to WSI to appoint independent verification consultant on behalf of DGHS.
5	Baseline survey	The DGHS conducts a baseline survey using an IndII appointed consultant to define the unconnected households, as well as gather basic data of the households within the designated expansion areas.
6	Implementation of the expansion.	The PDAM implements the expansion using their normal contracting procedure and pre- financing the works with PDAM funds and funds from LG. A review at mid-term will allow the DGHS and WSI to reallocate grants from lagging to high performing LGs.
7	Verification.	Upon completion of the expansion, the LG requests verification from the DGHS. The DGHS uses the baseline consultant engaged under WSI to conduct the verification survey which confirms every working connection added to the designated expansion area.
8	Disbursement	The LG applies for disbursement of the grant to the DGHS which authorises the MoF to pay the grant.

Table 5: Activity sequence

¹⁶ The Gol *Water Hibah* program aims to achieve 1,500,000 new connections in the period 2010 – 2014. The 2010 Gol program has an allocation of approximately AUD 35 million.

9	Monitoring	Monitoring continues throughout and conforms to the requirements of the Monitoring and Evaluation Framework (MEF). Operational monitoring is the responsibility of WSI/IndII and GoI [MoF/MPW].
10	Reporting	Reporting conforms to the requirements of the MEF. Operational reporting is undertaken by WSI/IndII and GoI [MoF/DGHS].

1.2.4 Selection of Participating Local Governments and PDAMs

The selection of the participating local governments and PDAMs has been proceeding in parallel with the preparation of the WSI. The DGHS has taken the lead in this activity and has set basic governance and operational criteria as prerequisites for entry into the program:

- (a) The PDAMs either have no debt arrears or have been accepted into the Gol debt restructuring program.
- (b) The local government is prepared to invest funds as equity into the PDAM.
- (c) The PDAM has spare delivery capacity for the increased connections.
- (d) The PDAM has a program for implementation in 2010 and has budget funds to pre-finance the expansion with support from local government equity.
- (e) There are sufficient poor households to take up 50 percent of the proposed increase in house connections.

DGHS has conducted a series of workshops to socialise the program and evaluate candidate LGs and PDAMs. Further meetings are planned with mayors and district heads candidate local governments to finalise commitments to the program. There have been intensive discussions undertaken between DGHS and MoF for the completion of the Project Implementation Manual (PIM), and draft ongranting agreements.

1.2.5 Identification of Target Areas for the Hibah

The initial identification of the target areas will be done by the local government and the PDAM. The identification criterion is to determine those areas with the highest concentration of un-served poor households; more than one area may be so defined. The selected area(s) will be defined by street boundaries and be noted in the on-granting agreement between the LG and Gol. Once defined, the baseline survey will determine the number of unconnected houses within the designated area(s). The baseline survey will also define the number of poor households using the following Gol criteria¹⁷:

- a house area equal to or less than 60 square metres;
- access road equal or less than 4 metres wide;
- electricity connection equal or less than 900 VA or no electricity connection.

A household will be classified as poor if it meets all three of these criteria. IndII will also undertake its own surveys.

¹⁷ Based on the criteria for the Surabaya OBA funded by World Bank but more stringent on road width and electricity supply (Surabaya used 6m, and 1,300 VA)

1.2.6 Poverty Targeting

The *Water Hibah* will not be applied exclusively for connections to poor households. Under the Ministry of Home Affairs) MOHA tariff-setting regulation¹⁸, provision is made for a low tariff designed to enable the poor to meet their basic water needs, and for the associated cost to be offset by cross-subsidies from other customers. The PDAMs therefore need a mix of connections to achieve a feasible and sustainable expansion of their services. The first level of poverty targeting is the selection of the expansion areas by the LG/PDAM for the greatest concentration of poor households. Second-level targeting uses the criteria defining poor households above. Through this mechanism, the *Water Hibah* aims to meet a minimum of 50 percent poverty coverage from new connections.

1.2.7 Baseline Survey and Verification

The IndII will follow GoI implementing regulations for the *Water Hibah*. Under these regulations the Executing Agency, DGHS, has responsibility for the verification of works covered by the Hibah. However the GoI has agreed with AusAID that the verification will be carried out by an independent consultant engaged by WSI on behalf of DGHS.

Because the *Water Hibah* is being implemented as an output-based grant, there is a need to conduct a baseline survey before implementation, to establish the level of unconnected households in the designated expansion area. IndII has made provision for carrying out this component because of the short lead time available. Outline terms of reference for this consultant are in Annex 5.It is proposed to use the baseline consultant to carry out the verification under WSI funding.

The primary objective of the baseline consultant is to identify the unconnected households within the designated expansion area. This will require a survey of every unconnected household working from a list of existing PDAM customers. In addition to identifying the unconnected households the survey will collect secondary data including: (i) existing sources of water; (ii) cost of daily water vs consumption; (iii) household size; (iv) gender and age profile of the household; and (v) presence of people with disabilities. This secondary data will be used to assess how the LGs and the PDAMs have responded to gender and poverty issues in the implementation of the WSI *Water Hibah*.

The verification will be conducted by the baseline survey consultant once the new service connections have been installed and have been operating for more than three months. The LG will request verification to the DGHS who will mobilise the verification team. The verification consultant will verify every household for which the PDAM has claimed a new connection. The verification consultant will confirm directly with the householder that: (i) a water connection has been made and is working satisfactorily¹⁹; (ii) the connection has been operating for three months or more; and (iii) the householder has paid two months of water bills²⁰. Indll has engaged a national professional to design the questionnaire for the baseline survey and verification.

1.2.8 Awareness of the Poverty and Gender Issues

The WSI *Water Hibah* is not prescriptive on how LG achieve the pro-poor target of 50 percent of new connections; similarly, gender and disabilities aspects are not expected to be significant factors in the

¹⁸ Minister of Home Affairs decree 23/2006 on Allowable Tariffs for PDAMs

¹⁹ Satisfactorily means substantially continuous service with adequate pressure to reach all water outlets in the house, and of a quality suitable for consumption.

²⁰ Two months is sufficient since the water bills are issued one month in arrears.

delivery of the services. Nevertheless, the WSI will collect data as part of the baseline survey on poverty coverage, and gender composition of beneficiaries, as well as other social parameters. This will be used in the MEF to assess how the individual LGs responded and if, in fact, issues relating to gender or people with disabilities are a differentiating factor in implementation.

The consultant conducting the baseline survey will engage with the LG and PDAM to ensure that the implementing agencies at the LG level are aware of the pro-poor requirements of the *Water Hibah* as well as other socially inclusive aspects of gender and people with disabilities, so that the LG can:

- increase awareness and understanding of pro-poor approaches and gender equality with regard to piped water service provision, including AusAID and GoI policies;
- develop innovative and acceptable measures to increase the participation of the poor in its *Water Hibah* program;
- ensure information about the *Water Hibah* provides all community members, (including the poor, women and people with a disability) with information about the water connection program and its benefits.

1.2.9 Cost Estimate of the Water Hibah

The *Water Hibah* grant has been set in the range of 35 percent to 44 percent of the average cost of a new connection, although some connections may cost less, while others more. Setting the grant at a fixed rate for a fraction of the average cost of the deliverable output removes the need for complex auditing and verification of implementation costs. An explanation of how the unit cost estimate for the grant was derived is given in Table 6, while Table 7 indicates comparative WSI sector costs. The exchange rate used for the cost is Rp. 8,300/ AUD which allows for a coverage of approximately 70,000 new connections.

	Rp Billion ^A		
System component	Low	High	
Intake augmentation		2	
Transmission main or pumping		3	
Treatment augmentation	5	8	
Distribution network	10	10	
Reticulation piping	14	14	
Connection ^B	3	3	
Total	32	40	
Water Hibah (grant)	14	14	
Grant as percent of investment	44 %	35%	

Table 6: Cost estimate for PDAM system expansion for 5,000 connections

Notes:

A. High and low cost estimates refer to the extent of usable existing capacity within the system of the PDAM. A low estimate indicates available spare capacity and minimal requirements for additional system expansion.

B. The connection fee is usually recoverable from the customer. In the case of poor households, how this is done is up to the PDAM. These costs indicate that it is possible to fully subsidise the connection to poor households.

C. The level of the grant indicates the level of leverage and

Component		AUD Million				Comments
	Indll		WSI			
	08/09	09/10	09/10	10/11	тот	
<i>Water Hibah</i> Preparation	0.15					Under current IndII funding.
<i>Water Hibah</i> Baseline survey		0.5				Proposed under IndII funding
Water Hibah			8	12	20	To be transferred as Gol grants to LG for approximately 70,000 connections.
DAMSIMAS			12	8	20	Additional support for expanded coverage 400 Villages.
PAINISIMAS			1.2	1.3	2.5	Support with additional socialization and training T/A
Sowerogo			2	3	5	Sewerage and Sanitation Hibah
Sewerage			3	2	5	Investment plans 4 cities
Sanitation Hibah Capacity Building			0.7	0.2	1.2	
Civil Society			1.2	2.8	4	
WSI Post management cost verification, and technical review.			2.15	0.65	2.8	
Total	0.65		30.25	30.25	60.5	

Table 7: WSI costs

1.2.10Disbursement of Water Hibah Grants to Local Governments

The MoF will disburse grant funds on submission by DGHS of a certificate verifying that conditions precedent for disbursement have been met. AusAID funds will be disbursed through a special account established by MoF in Bank Indonesia (BI). The MoF will submit requests to AusAID for replenishment of the special account together with documentation verifying that the funds have been disbursed in accordance with the conditions of the special account, and the *Water Hibah* program.

1.3 IMPLEMENTING ARRANGEMENTS

It is proposed that the WSI and the *Water Hibah* be managed through the existing IndII facility, thus maximising the best use of available resources to AusAID Jakarta, and existing arrangements with GoI. The resources and budget to manage WSI will be integrated into the existing IndII contract through a suitable contract amendment. The GoA *to* GoI *agreement* for the implementation of the WSI *Water Hibah* will be incorporated into the existing Subsidiary Arrangement through an exchange of letters between GoI and GoA.

1.3.1 Water Hibah Implementation

The *Water Hibah* will be implemented using GoI procedures and mechanisms, and managed by the Ministry of Public Works (DGHS) as the Executing Agency. The implementation will comply with existing GoI regulations concerning the use of grant funds through the GoI budget, and the transfer of grant funds to participating sub-national governments²¹. Coordination and oversight of the WSI *Water Hibah* program will be through the IndII Board and a WSI Technical Team established to review the WSI components.

The *Water Hibah* grant funds will be placed on the GoI national budget and deposited in a special account established by Ministry of Finance. The funds will be channelled to participating sub-national governments following procedures defined in on-granting agreements between the MoF and the individual sub-national governments. The *WSI Water Hibah* implementation procedure will follow the same basic procedure of the GoI *national Water Hibah* program, except that it will lead the GoI program by one budget cycle. In both programs, continuity and uniformity of practice and procedures will be ensured from DGHS's involvement as the executing agency.

1.3.2 Monitoring and Evaluation Arrangements

The Monitoring and Evaluation Framework (MEF) for the WSI is outlined in Section 5 of this document. Operational monitoring and oversight of the *Water Hibah* will be the responsibility of the DGHS on behalf of the GoI, and the responsibility of IndII on behalf of AusAID. The baseline surveys will be conducted as one activity and will be funded by IndII.

Verification of the connections is the responsibility of DGHS; however DGHS and AusAID have agreed that WSI will provide funds for engagement of the baseline survey consultant to carry out the verification with oversight from IndII.

The verification process will include the *Badan Pendukung Pengembangan Sistem*. *Penyediaan Air Minum* (BPPSPAM) agency of the Ministry of Public Works (DGHS) as the relevant *de-facto* regulatory body for the water sector. BPPSPAM is currently responsible for the performance audits of the PDAM, collaboratively with the *Badan Pengawasan Keuangan dan Pembangunan* (BPKP) – Indonesia's national audit agency. This will ensure that the installed connections meet the operational criteria set out in the *Project Implementation Manual* and the on-granting agreement.

1.3.3 Program Implementation Schedule

The implementation of the WSI *Water Hibah* will be completed during one Gol budget cycle (January 2010 to December 2010). Some carryover of implementation will be possible into 2011 to expend PDAM funds, although local governments' funding will need to be disbursed during 2010. Critical milestones of the implementation have been identified as follows:

²¹ Ministry of Finance Regulation 168 and 169 of 2008 on the transfer of grants between national and sub-national governments of Indonesia.

Table 8: Implementation Schedule

	Activity Milestone	Time Frame	Action
1	MoF Advises Budget for FY 2010	Nov 9- Nov 14	MoF confirms budget based on existing SA
2	Peer Review Water Sanitation Hibah	23 Nov.	
3	LG Sign Grant Agreements	25 Nov- 27 Nov	Subject to successful peer review
4	LG Confirm Budgets	25 Nov – 31 Dec	Subject to successful peer review and before a final deadline of 31 Dec 2010.
5	LG Invest Equity in PDAM	1 Jan 2010 onwards	This action can take place any time after budget approval and subject to LG procedure. It is required as a condition of disbursement of the grant.
6	Baseline Surveys	1 Jan 2010	Should be completed before implementation starts in approximately May 2010.
7	Complete DED	1 Jan – 28 Feb	Starts with the new budget. Some PDAM have designs substantially complete; some may need more time.
8	Tender	1 Mar – 30 May	Normal tender period is 40 days. Some will be delayed until end-May.
9	Construction	1 May- 31 Dec	Some will begin early with DED and tender. Estimated construction period is 6-9 months. Some may extend beyond December 2010.
10	Review Progress and Reallocation of Grant	1 Jul – 30 Aug	By 1 July progress will indicate laggards and achievers and allow re-allocation of grant ceilings.
11	Revision of LG Budgets	1 Aug – 30 Sep	The budgets will need to be revised to accommodate revised grant allocation and identify those LGs that did not file budget requests by the 31 December 2009 deadline.
12	Equity Investment By LG to PDAM	1 Sep – 31 Oct	This can happen after the budget revision and responds to the grant reallocation as well as the LGs that missed the earlier 31 December 2009 deadline
13	Earliest Verification and first Tranche LG Grants	15 Oct 2010 onwards	This can happen after first connections are completed and at least three months after construction.
14	Latest Verification and Last Tranche LG Grants	30 Apr 2011	This allows two months for disbursement of the grant and closure of the grant special account.

1.3.4 Preparation for the Water Hibah program implementation

Preparation for the Water Hibah is on-going in parallel with the design process, and includes:

Selection of local governments and PDAMs: This is completed. A list of 25 LGs and PDAMs has been selected to participate in the *Water Hibah*. The selection has been carried out by DGHS in conjunction with the WSI preparation team. The list of LGs and PDAMs, together with the potential new connections covering poor households, is given in Annexe 3.

Preparation of the Water Hibah Project Implementation Manual: This has been completed and issued by the DGHS as the executing agency.

Preparation of a standard on-granting agreement: Although still in preparation, the on-granting agreement will define the size of the grant pledged to the LG; and areas selected for water services expansion. It will also contain criteria for the increase or decrease of the grant, based on achievement of implementation milestones by each LG. Finally, the agreement will contain the criteria for the verification and disbursement of the grant.

Selection of socialisation consultants to support implementation: WSI will allocate funds to select and appoint a consultant to assist with the socialisation of the *Water Hibah* to LGs and securing signed on-granting agreements. The socialisation consultant will disseminate the pro-poor objectives and target coverage of the program and means of achieving the poverty coverage targets.

Revision of the existing Indll Subsidiary Agreement: This is on-going; a draft revised agreement has been prepared, and there are no foreseeable significant difficulties with finalising the draft. The revisions will be put into effect through an exchange of letters between the signatories of the existing agreement. Figure 1 below indicates key implementation stages, including those listed above.

1.3.5 Fund Channelling – Water Hibah

The channelling of the *Water Hibah* funds will require establishment by MoF of a special account in Bank Indonesia. The terms and conditions for operation and replenishment of the special account will safeguard the critical aspects of implementation of the *Water Hibah* program. The signatory will be a Gol-appointed officer in MoF. The special account will be credited with an initial deposit equivalent to approximately three months' disbursement requirements. Replenishment of the special account will follow rules for reconciliation of expenditure, in accordance with the revised *Subsidiary Arrangement* and *Water Hibah Project Implementation Manual (PIM)*.

CHAPTER 2: SANITATION COMPONENT

2.1 SANITATION SECTOR ANALYSIS AND STRATEGIC ISSUES

The present status of Indonesia's sanitation sector reflects a history of reliance on self-provision of sanitation by property owners, with the predominant form of urban sanitation being self-provided septic tanks by most commercial and institutional buildings and residential properties.

Each Local Government (LG) is responsible by law to provide a service for the safe disposal of sanitary waste. However, this has been largely limited to the collection of septic tank waste from individual properties and its disposal to government-operated sludge disposal facilities. Private operators also provide this service but are not well regulated. The accepted practice for construction of septic tanks allows seepage into the surrounding groundwater. Many of the private de-sludging operators discharge septic sludge waste into rivers and drains rather than at approved disposal facilities.

Only eleven cities have piped sewerage systems, and in total these serve little over one percent of the Indonesian urban population.

The urban poor rely on publicly provided facilities through local government programs assisted by the national government. The Community-Based Sanitation program, SANIMAS, is the main vehicle for assistance to the poor. Indonesia is on track to meet its Millennium Development Goal (MDG) target for urban sanitation with 81.8 percent²² coverage, however there is low coverage in poor and slum areas. Sanitation coverage in rural areas is at just 60 percent but is still on track to meet the MDG. As in urban areas, coverage is disproportionately low among the poor. Table 9 below illustrates comparative access to sanitation facilities.

		Access to	n Facilities (percent of p	(percent of population)		
	oC	int Monitorin	g Program	UNDP-GOI MDG Report ²³ 2007 (SUSENAS data)		
	MDG	2006	Projected 2015	MDG	2006	
Urban	82	72	80	78.8	81.8	
Rural	69	41	43	59.6	60	
Total	73	55	63	65.5	69.2	

Table 9: Access to sanitation

2.1.1 Analysis of problems and issues in the sanitation sector

The urban sanitation sector is characterised by a very low level of municipal infrastructure for wastewater collection, treatment and disposal. To date, wastewater disposal has been seen as the property owner's responsibility, which has led to an almost universal adoption of septic tanks. However, use of septic tanks is not appropriate in densely populated urban environments where their prevalence and the absence of sewerage has led to severe pollution of shallow ground water aquifers. In the absence of a PDAM connection, this same shallow aquifer is used by more than 50 percent of the urban population as the primary water source.

²² Report on the Achievement MDG in Indonesia, UNDP, Bappenas 2007
A part of the problem is that sewerage infrastructure is much more costly than water supply and does not have the immediately noticeable private benefits of a piped water supply. For many years, it was the policy of DGHS to prioritise water supply investment ahead of sewerage. Very few sewerage schemes were built and those that have been are very modest.

The LGs have also placed a low priority on sewerage and have only spent their DAK allocation on modest communal sanitation programs. The total DAK for water and sanitation is Rp 1.14 trillion for 440 LGs, which is only about AUD 300,000 per year for water and sanitation for each LG; the bulk of this has usually been used for water. The government and community have a poor understanding of the benefits of sanitation and it is only now that the central government is initiating a comprehensive program for 2010-2014.

2.1.2 GOI urban sanitation policy and strategy

Gol's sanitation policies are in keeping with its overall emphasis on poverty reduction and an "open menu" approach that allows communities to select interventions. For urban sanitation, the main initiative continues to be SANIMAS²³, and the allocation of sector-dedicated DAK. However, a Gol objective for expansion of sewerage is the interception of existing (and planned) communal SANIMAS schemes by the sewer system, thereby greatly improving the efficiency and coverage of the communal sanitation under SANIMAS.

The Gol's evolving sanitation strategy is enunciated in the decree of the Minister for Public Works issued on December 2008 (*PMPU 16/2008*), *National Policy and Strategy for Development of Wastewater Management Systems*.²⁴ The implementation of the strategy is defined in the *Sanitation Road Map* which is a joint effort by the ministries of DGHS, Home Affairs, and Health, coordinated by BAPPENAS under the Sanitation Working Group (*Air Minum Penyehatan Lingkungan*, or AMPL). The Policy addresses five areas: (i) increasing access to sanitation for urban and rural communities with priority for low income households; (ii) increasing the role of the community and the private sector in provision of sanitation services; (iii) development of a regulatory framework for management of sanitation; (iv) building the capacity of institutions and personnel involved in wastewater management; and (v) increasing investment and developing alternative funding sources for wastewater infrastructure. The *Sanitation Road Map*²⁵ details the sanitation objectives from 2010 to 2014. It aims to increase urban sanitation coverage to 80 percent and rural coverage to 60 percent; increase the number of cities with sewerage from 11 to 16, and increase the coverage of these sewer systems to 20 percent of the respective urban populations; and engage 330 cities and towns to prepare sanitations strategies which have agreed financing plans.

²³ SANIMAS is a GoI incentive program for local government development of community based sanitation in low income urban areas. The community size is limited to approximately 100 households who are organized and assisted to make a preferred choice from three sanitation options: i) A communal amenities block with water stand pipe, bathing, and toilet facilities; ii) shared septic tanks (3-5 households); or iii) shallow sewer connections to a communal septic or Imhoff tank. The last two options require households to have access to water. Cost is shred 30:60:10 between central, local governments and the community. The total cost is constrained to about USD 30,000 or about Rp. 300 million. The community is responsible for operation, maintenance, and collection of user fees.

²⁴ Kebijakan dan strategi nasional pengembangan system pengololaan air limbah permukiman, PMPU 16/2008.

²⁵ The Sanitation Road Map is to achieve 330 cities with City Sanitation Strategies, provide 16 cities with sewerage (11 existing and 5 new) with a coverage of 5 percent of the total city population.

2.1.3 Gol initiatives in urban sanitation

Before the decentralisation and autonomy initiatives of 1999, GoI had provided funding for sanitation facilities through central government programs. Since 2003 GoI introduced the Special Allocation Grants (DAK²⁶) for local government. The DAK allocation is sector specific but still lumps together water, sanitation, solid waste and drainage into one generic allocation. For example the 2008 DAK allocation of Rp. 21.2 trillion approximately Rp. 1.14 trillion was allocated to the generic water and sanitation sector for some 451 local governments. This is an average allocation of Rp. 2.5 billion or AUD 300,000 for each local government. Aside from its sector-specific DAK allocation to LGs, most of GoI's limited investment in urban sanitation has been directed to communal sanitation facilities for the poor. Early programs provided MCK (Washing, Bathing, and Toilet communal units) but these had a high record of failure and were not sustainable because end-user communities had not been involved in design and site selection for the facilities. Over time the DGHS improved the concept for delivery of communal sanitation and this led to the SANIMAS program. Under SANIMAS, the central government provides a 30 percent grant for communal sanitation facilities constructed using a community-based development approach. The LG provides approximately 60 percent of the funding for SANIMAS and the community provides about 10 percent in-kind contribution.

To date the attention of the Gol to sewerage has been limited to initiatives from the donor community. It is only in the lead up to the forthcoming 5 year development plan 2010-2014 that the Gol has confronted the need for comprehensive sanitation services for cities and towns. The Gol program for sewerage during 2010-2014 will provide five cities with new sewer systems and increase coverage of existing sewer systems to 20 percent of the population of these cities. The WSI sanitation component is directed at supporting precisely those two objectives firstly by providing bankable sewerage projects into a pipeline for funding by MDB's and secondly by supporting expansion of existing sewerage systems through the Sanitation Hibah. A further objective of the government is to progressively connect existing communal systems to future expansions of sewerage systems, thereby eliminating the problems with onsite treatment associated with communal schemes but retaining connections to households. This transition stage is built into the WSI sanitation hibah component and is discussed in later sections.

The GoI has put an emphasis on assistance for the preparation of bankable sewerage projects that can be financed by donors and international financial institutions. The selection of the five cities for development of new sewerage systems is being done in close consultation with the GoI and potential downstream MDB lenders.

2.1.4 Lessons learned from sanitation projects in Indonesia

As with water initiatives, the key lessons learned concerning sanitation programs in Indonesia centre around sustainability of interventions. In the case of communal systems, sustainability is strongly correlated with the degree of inclusion of the community during planning and implementation. Sustainability is further strengthened by community operation and maintenance of facilities with back-up support from LG agencies as required. This is the general format of the SANIMAS intervention which is proving successful.

In the case of municipal owned and operated infrastructure such as septic tank sludge treatment facilities, and sewerage installations, the sense of ownership is a more relevant factor in

²⁶ Historic DAK Allocations from MoF data are: 2003, 2004, 2005, and 2006 respectively Rp. 2,3 trillion; Rp. 2,8 trillion; Rp. 4 trillion, dan Rp. 11,6 trillion

sustainability. Because most of the past installations were either built or paid for by central government LGs have generally not prioritised maintenance and operation of these facilities.

The WSI sanitation component will apply the *Water Hibah* mechanism for implementation of the sanitation component. The use of the Hibah mechanism promotes greater sustainability of the investments and greater engagement and ownership of the new infrastructure by local government. Past practice with sewerage implementation has been to deliver these projects through the central agencies and transfer the infrastructure assets to local government for operation and upkeep. Although this is an effective way to build the system it has had mixed results with the subsequent operation and upkeep by local government. The Hibah mechanism requires engagement and commitment of the local government from the outset and should result in improved sustainability of services from the sewerage infrastructure in the long run. The GoI regulations for channelling grants to LGs are quite generic and while the GoI does not yet have a national program for applying the Hibah mechanism to sanitation, the DGHS has formulated an implementation manual to use for this purpose.

To promote ownership of the program by GoI, the use of specific AusAID procedures and facilities will be limited to some core technical assistance for program preparation and management. The rest of the program will be essentially implemented by GoI in line with the implementation of the parent partner components.

2.1.5 Other donors supporting wastewater

The World Bank and the Government of the Netherlands (GoN) are supporting sanitation though the Indonesia Sanitation Sector Development Project (ISSDP) under the WASAP trust fund. Their support includes solid waste and drainage as well as wastewater management. The ISSDP developed the concept of city sanitation strategies which incorporate the commitment of LG and other stakeholders for implementation. During its first phase, the ISSDP produced six city sanitation strategies²⁷ and strategies for a further six cities are under preparation. Two of the first six cities, Banjarmasin and Surakarta have been selected as the recipients of the WSI Sanitation Hibah in support of the city sanitation strategies. The WSI wastewater Hibah program in Banjarmasin and Surakarta closely supports the wastewater component of the ISSDP city sanitation strategies. An expansion of the city sanitation strategy to 330 cities and towns over the next five years is a key component of the Gol sanitation program and is a daunting challenge. The Gol has actively solicited support for technical assistance and for the implementation from bilateral agencies.

The interagency AMPL working group originally established under WASPOLA, provides coordination between donors and the government in matters of water supply and sanitation policy. In addition to GoI representatives, AMPL includes non-governmental parties such as PERPAMSI. The Water and Sanitation Policy Assistance Project (WASPOLA) supported by Australia has provided support to AMPL.

A Sanitation Technical Team has been formed with a five-member secretariat to focus on matters of national sanitation policy and implementation. This is supported by the ISSDP and the World Bank's Water and Sanitation Program. The WASPOLA Facility is providing overall guidance and coordination on the implementation of the sanitation road map.

The ADB is assisting with preparation of the Metropolitan Sanitation Management and Health project (MSMHP) in which components of communal sanitation, sewerage, solid waste, and drainage

²⁷ Surakarta , Blitar, Banjarmasin , Denpasar, Payakumbuh Jambi

improvements comprise an integrated program for sanitation in Yogyakarta, Medan and Makassar. Due to programming difficulties the sewerage component for Makassar has been removed from the forthcoming MSMHP loan because it has not met the readiness criteria of both Gol and ADB. AusAID is assisting with the preparation of the environmental impact assessment for the Makassar sewerage component which will support the inclusion of the Makassar sewerage in a future ADB loan. Gol has recently requested assistance from AusAID to complete the feasibility studies for Makassar sewerage to bring the project up to readiness for appraisal and funding under and ADB loan. In response to this, Makassar has been included as a candidate city to for the final selection of the cities for the sewerage investment plans prepared under WSI. The commitment of other donors/MDBs for ongoing and forward programs is shown in Table 10.

Cities with Sewerage	Gol Priority for New Sewerage	ADB MSMHP	WASAP (D) GoN	World Bank Fwd Program	JICA
Jakarta	Bogor city	Medan	Payakumbuh	Bandung Expansion	Denpasar Sewerage
Medan	Surabaya	Yogyakarta	Denpasar		Jakarta
Yogyakarta	Palembang	Makassar	Blitar		
Solo	Bandar Lampung		Surakarta		
Bandung	Batam		Banjarmasin		
Cirebon			Jambi		
Tangerang					
Banjarmasin					
Balikpapan					
Samarinda					
Denpasar					

Table 10: Other donor activities

2.1.6 Alignment with ODE recommendations on WSS assistance in Indonesia

The objectives of the proposed WSI sanitation component are closely aligned with the findings and recommendations of the ODE evaluation report on WSS assistance in Indonesia²⁸, namely extension of support for urban sanitation services including poor urban households. The proposed *Sanitation Hibah* for sewerage connections and for communal on-site facilities to urban poor directly aligns with the ODE recommendations.

2.1.7 Engagement with development partners

The WSI sanitation component has been shaped by the views of GoI partner agencies and development partners delivering sanitation development programs to GoI. Initial discussions with

²⁸ Independent Evaluation of Australian Aid to Water Supply and Sanitation Services, Indonesia Draft Country Working Paper, March 2009.

Gol identified assistance with preparation of wastewater investment plans as a first priority. Gol sees this as a mechanism for securing external funds to meet its ambitious development program.

Continued engagement has been established with DGHS and World Bank through earlier involvement in the PAMSIMAS preparation, and subsequently with the establishment of the PAMSIMAS Trust Fund to support additional technical assistance and supplementary village grants to approximately 100 villages.

The development of the program for the WSI included close consultations with both DGHS and the World Bank to define the extent and target locations of the assistance, as well as critical programming aspects to ensure disbursement within the WSI time frame.

Engagement in the *Water Hibah* has involved a much larger number of stakeholders and Gol implementing departments. Engagement started early with the design of the *Water Hibah* by the World Bank WASAP(I) program, which led to its appraisal as a key trigger for the third tranche of the World Bank IDPL. Gol stakeholders include the MoF, BAPPENAS, and DGHS. The use of the Hibah mechanism allows the Gol to channel loans from MDB's as grants to LGs thereby breaking a long time constraint over external funding to the water and sanitation sector. There is considerable interest from both World Bank and ADB on the application of the AusAID model of the Hibah mechanism to allow MDB loans to be transferred to local governments as grants for sanitation development programs. Close collaboration between AusAID and development partners has started on this aspect and is continuing. Current revisions to the Gol regulations will make this process easier to implement by allowing both output based grants and conventional grant financing to be provided under the Hibah mechanism.

More formal engagement with Gol on the water and sanitation components will be through the IndII Board, since the WSI program is to be implemented through IndII under the existing *Subsidiary Arrangement*. The table below illustrates the levels of engagement of development partners.

	Banjarmasin and Surakarta Sewerage extensions	Wastewater Investment Plans
Partnership		
Primary Partner	Gol	Gol
Stakeholders	DGHS, BAPPENAS, LGs	DGHS, BAPPENAS, LGs
Delivery		
Delivery Method	On granting via Gol budget.	AusAID executed T/A by direct consultant contract.
Agreement type	Expansion works via <i>On-granting agreement</i> with LG.	Covered under existing SA
Design Document	Gol design by national consultant and reviewed by international consultants.	Design by international and local consultants
Resources		
Additional Resources	Design review	City selection, preparation of scope, and TOR
	Supervision	by Indii consultant.
Timeframe		
Q4	Complete design review including environmental impact assessment and revised	Dialogue with GoI (DGHS, BAPPENAS) and LG. Agree on cost sharing. Agree on

Table 11: Engagement with development partners – WSI sanitation component

with an anticipated 60 percent of poor households in the service area taking

a connection.

	Banjarmasin and Surakarta Sewerage extensions	Wastewater Investment Plans		
	cost.	implementation arrangements.		
Oct-Dec 2009	Appraisal Peer Review			
Q1	Sign On-granting agreement.	Selection of consultants		
Jan-Mar 2010	Commence construction			
Q2 Apr-Jun 2010	Construction	Commence studies		
Q1	Verification of connections and disbursement	Complete studies		
Jan-Mar 2011	of grant			

2.1.8 Rationale for inclusion in WSI

The GoI has embarked on a significant initiative to roll out extensive improvements on sanitation and sewerage. Much of this will depend on the commitment of the donor community to support the program. The objectives of the GoI strategy align strongly with AusAID objectives for WSI and ODE recommendations for water and sanitation services in Indonesia. Furthermore, during discussions on the formulation of the WSI program, the GoI expressed a very strong preference for provision of sewerage infrastructure and investment studies for sewerage which could be offered to the donor community for funding. The WSI sanitation component is directed at this, noting that improved management and treatment of human waste in urban areas brings health and economic benefits to the whole community. Moreover, improved environmental sanitation particularly benefits vulnerable groups, such as the poor, the young, the elderly and people with chronic illness and disability.

WSI Sanitation	Gol and Partner Program	Description
 Investment Plans for five city sewerage systems. 	 Extend the number of cities with sewerage from eleven to fifteen. 	 Preparation of investment plans capable of securing funding from IFIs
 Extend sewerage for Banjarmasin and Surakarta by 10,000 	 Extend the sewerage coverage of fifteen cities to 20 percent. 	and including provision of services to poor neighbourhoods.
connections.		 Provide grants to Banjarmasin and Surakarta LGs to extend existing sewer system by 10,000 connections

Table 12: WSI sanitation in relation to partner programs

2.1.9 Addressing WSI Objectives

Table 4 (Section 1.2.2) demonstrates how the proposed program addresses each global objective of WSI, namely: expanding access to water supply and sanitation services; making water and sanitation services more sustainable by supporting sector reform and capacity building; improving the health and quality of life of the poor and vulnerable by increasing their understanding of good hygiene practices, as well as by expanding their access to water supply and sanitation services; and enhancing aid effectiveness and complement other development agencies' programs.

2.2 DESCRIPTION OF THE WSI SANITATION COMPONENT

The support to the GoI sanitation program is directed at urban sanitation infrastructure. The WSI assistance comprises two components:

- (a) *Sanitation Hibah* Grants to local governments of Banjarmasin and Surakarta for new services for up to 10,000 households through a mix of sewerage and communal on-site sanitation, and,
- (b) support with preparation of wastewater investment plans for five (5) cities for implementation by Gol.

The *Sanitation Hibah* Grants will follow the same implementation procedure as the *Water Hibah*. This procedure is briefly re-iterated in this section, highlighting any differences with *Water Hibah* process.

2.2.1 The Banjarmasin Sewerage System

Banjarmasin's wastewater system was built through the World Bank funded Kalimantan Urban Development Project from 1995 to 2002; the sewerage system was initially operated by the PDAM. In 2006 the Local Government established a Wastewater Company, (PDPAL) the only wastewater company outside Jakarta, transferred the assets of the sewerage system to PDPAL and invested equity into the PDPAL to extend the system. The system serves a northern catchment with about 2000 connections and a central catchment of about 1,200 connections. PDPAL has prepared a detailed program to expand the system by 15,000 connections and there is spare capacity in the northern and central catchments although the collection sewers have not been extended to supply the treatment plant.

Indll has engaged a consultant²⁹ to evaluate the capacity and performance of the existing sewer system operated by PDPAL and the readiness for implementation of the WSI expansion program in 2010. The consultant has reported that the PDPAL could implement up to 4,600 connections to the existing sewerage system with minor extensions to the existing sewer network. The PDPAL has also identified and prepared a program for 1000 households to be served by on-site systems following the GoI SANIMAS model. These components follow the recommendations of the city sanitation strategies prepared under ISSDP but with greater emphasis on sewerage. The consultant's scope of work has been extended to include the design and specification of the new sewer extension. A summary of the consultant's report is in Annexe 10. The evaluation of the sewer system by the consultant shows that there is significant infiltration into the sewer system resulting in dilution of sewage strength at the final outfall to the treatment plant. Sources of dilution have been identified as poorly made property connections, and manhole covers. Other sources of infiltration include tampering with manhole structures and poorly constructed pipe joints. The consultant has been retained to provide assistance with remedial measures for these problems, to prepare the design and specifications of the lateral sewers for the new connections, and to assess the capacity of the PDPAL to operate and maintain the sewerage system. The assessment of the PDPAL capacity to manage the sewer system by the MMI consultant will form the basis of a separate technical assistance to be funded under IndII, see (section 2.2.3). Preliminary assessment of the capacity of PDPAL to manage the sewer system indicates technical, financial and institutional weaknesses. However the local government executive fully supports the improvement of the sewerage system and has consistently invested capital in expanding the PDPAL assets.

²⁹ PT Mott MacDonald International

At present the PDPAL is collecting user fees from connected households based on a 25 percent surcharge of the household water bill. This level of charges covers the operating and maintenance costs of the system and provides for partial recovery of depreciation costs. The local government has draft legislation before the local parliament requiring obligatory connection to the sewer system where sewer lines have been laid. The PDPAL has a policy for concessionary connection charges to poor households. The policy provides for a connection at no charge and a of moratorium on user charges for the first six months.

2.2.2 Surakarta Sewerage System

The Surakarta sewerage system was constructed during 1995-2001 as part of the Semarang Surakarta urban development project with funding from the World Bank. The sewerage system consists of two sewerage catchments draining to two wastewater treatment plants with capacity for 84L/sec, 12 km of trunk sewer of diameter 600mm to 1300mm, and 70 km of secondary and lateral sewers of diameter 300 mm to 500 mm. The sewer system serves 10,800 connections. The PDAM is responsible for operating the sewerage system and includes a wastewater section and technical director as part of its organisation.

The WSI preparation team surveyed the Surakarta system to assess its suitability for expansion. The report of the assessment of the system is in Annexe 11. The assessment found that the conditions in Surakarta were more favourable than Banjarmasin for the construction, operation and maintenance of sewerage. Overall, the main components of the existing system are in working order although recent modifications to the activated sludge treatment plant in Semanggi have resulted in residual problems. The Semanggi WWTP was upgraded in 2008 through the addition of new activated sludge aeration tanks which have increased its capacity by 30 L/sec, equivalent to 6,000 domestic connections. The interceptor sewer and trunk sewers have capacity for a total of 25,000 connections.

The Surakarta sewer system has no pumping stations, relying entirely on gravity for collection and transport of the sewage to the wastewater treatment plants. Because the Semanggi catchment is still lightly loaded, the PDAM flush the main trunk sewer by adjusting penstocks so that water from three streams flowing through the city enters into the sewer main. The main trunk sewer with a diameter of 600 mm. increasing to 1000 mm. was built during the Dutch era as a collector outfall sewer. It combined the collection of waste with a flushing regime picking up drainage water from streams and lagoons and delivering the waste to the outfall discharge into the Begawan Solo river downstream of the city. This is done daily. Data from the analysis of raw sewage at the treatment plant intake indicates that dilution from the waste and possible infiltration has reduced the strength of the sewage. The Surakarta system is under a lower infiltration load because the ground water table is lower than Banjarmasin, and there is no tidal influence or frequent local flooding. The PDAM's operation of the activated sludge plant also does not follow normal procedure for recycling of activated sludge, resulting in low concentrations of activated sludge in the aeration tank. The consultant²⁶ engaged for Banjarmasin will also provide a design review and capacity building and training for the PDAM staff to establish correct sewer flushing protocols and appropriate treatment plant operation.

2.2.3 WSI Assistance for Sanitation and Sewerage Expansion

The WSI will assist the Banjarmasin government implement 3,600 of the proposed 15,000 connections of the Banjarmasin sewerage system expansion. It will also support the provision by the local government of on-site communal sanitation facilities for 1,500 poor households that cannot be served by the sewerage system which will follow the SANIMAS design.

WSI will assist the Surakarta local government to provide an additional 4,000 domestic connections to the existing sewer system by expanding the secondary and lateral sewer network and optimising the use of the existing network. It will also support the provision by the local government of on-site communal sanitation facilities for 1,500 poor households that cannot be served by the sewerage system which will follow the SANIMAS design.

The assistance to the local governments will be given in the form of a *Sanitation Hibah* grant to the municipal government upon successful completion of the proposed expansion. The form of the assistance will follow the same procedure as the *Water Hibah* for channelling grants to local governments. The level of the grant will be Rp. 5 million per working sewer connection [AUD 600] and Rp. 2 million for each working poor household served by an on-site system [AUD 240].

The WSI sanitation hibah component will also include technical assistance and capacity building for the Banjarmasin PDPAL and Suarakrta PDAM staff responsible for the operation of the sewerage systems, see section (2.11) for details.

2.2.4 Objectives of the WSI Sanitation Component

The objectives of the sanitation component are aligned with the goals and objectives of the overall WSI to expand access to sanitation services to the poor. In particular the Sanitation Component will assist the local government of Banjarmasin to achieve its targeted 15,000 sewerage connections, and the local government of Surakarta to achieve its targeted 6,000 connections.

Improved access to sanitation

The objectives of the WSI Sanitation Hibah component will be to support the provision of sanitation services to a total of 10,000 households in Banjarmasin and Surakarta, of which approximately 5,000 are estimated to be poor. This will be achieved through a combination of direct sewerage connections and on-site communal facilities. The direct sewer connections will be for mixed poor and non-poor households, while the communal systems will be exclusively for poor households.

Enhance Aid Effectiveness

The application and acceptance of the local government on-granting mechanism as a Gol instrument for financing of the Gol sanitation program will enhance the delivery of aid to the sanitation component by providing a viable channel for MDBs and bilateral donors to provide funds for the sector. The component also aims to signal support for demonstrated governance improvements in sanitation and direct assistance in the sector through sustainable mechanisms.

Support Gol Objectives

The component directly supports the GoI supports sanitation strategy which targets 20 percent coverage by sewer systems by the end of 2014. The inclusion of communal systems in conjunction with the sewerage system directly supports the GoI Road Map. The communal systems will later connect the sewerage system achieving lower treatment costs and greater efficiency with sanitation provision.

Delivery within Gol systems

The assistance will be delivered through existing GoI mechanisms. The local government has designed the sewer extension using their own funds and planning procedures. The implementation of the extension is co-financed by the GoI and the Banjarmasin government using

GoI budget allocation mechanisms. The WSI assistance will be channelled through the MoF budget to the municipal government, using the GoI on-granting mechanism for local government. The Banjarmasin government will sign an on-granting agreement with the MoF defining the terms of the assistance. The implementation will follow the DGHS implementation manual for on-granting to local government sanitation programs.

2.2.5 The WSI Sanitation Hibah Design

The design of the support to the local governments of Banjarmasin and Surakarta follows the general design of the *Water Hibah*; it is output based and the support goes directly to Local Government. As in the case of the *Water Hibah*, the sanitation grant requires an equity contribution from the LG to the local wastewater operating authority. The level of the grant which is given in Table (13) has been discussed and accepted by the central government. The grant is higher than the Water Hibah reflecting the higher overall cost for sewerage infrastructure. Since the Sanitation Hibah is intended to be applied to existing sewerage systems, financing arrangements for new sewer systems where the "on-granting" hibah mechanism could be applied have not been examined in any detail. This aspect will be examined under the Wastewater Master Plan component. However, the DGHS has prepared a manual for implementing sanitation grants following the *Water Hibah* mechanism that the WSI Sanitation Hibah component could be adopted by the GoI as the appropriate mechanism for channelling external funding to the GoI sanitation program.

As for the *Water Hibah* initiative, the total value of the grant to local government will be measured by the increase in service connections of the PDPAL/PDAM. There is scope within the design to fine tune the level of the grant to reflect the fiscal capacity of the local government. The Gol carries out annual fiscal mapping of all local governments and this could be used to adjust the level of the grant up or down depending on the financial strength of the particular local government. This level of detail could be applied to the scaling up of the program by Gol in subsequent years.

The procedural mechanism of the Sanitation Hibah will follow that of the water Hibah. The local governments will sign a "On-granting agreement" with the MoF which defines the terms of the grant and the target increase in coverage that is to be supported by the grant. The grant agreement will describe the implementation parameters and the area over which the increased service connections are to be implemented. Once the grant agreement is signed, the Executing Agency will conduct a baseline survey within the designated area of the proposed expansion. The sequence of implementation follows the description of the *Water Hibah* process in Section 1.2.3.

2.2.6 Poverty Targeting

The targeting of poor households in the sewerage expansion component follows the same general approach as the *Water Hibah* with a few major exceptions. First, the expansion area has already been largely defined by the design of the system expansion. Second, as sewerage systems rely on gravity flow, it is more difficult to configure the system to capture pockets of poor households. Therefore targeting poor households in the sewerage component will begin with a baseline survey to identify poor households not connected to the sewer system and that meet the criteria of poverty as defined in the on-granting agreement. The sewerage component will then aim to connect 50 percent of the identified poor households to the sewer system expansion.

However, the target households for the on-site communal systems which will be supported under this component must meet all the poverty criteria.

2.2.7 Cost Estimate of the Sanitation Hibah

The cost estimate of the proposed expansion is given in Table 13 below. This estimate has been derived separately and cross checked with the design cost estimate of the LG³⁰.

Cost estimated for Sewerage System expansion for 5000 Connection				
Sewerage System Component	Cost/Connection (Rp M.)	Cost (Rp billion)		
Sewage Treatment Plant	7	35		
Lifting Station	1	5		
Trunk sewer	3	15		
Lateral Sewer	6.4	32		
House Connection & IC	2	10		
Total	19.4	97		
WSI Hibah (grant)		25		
WSI Grant as % of average investment cost		21%		
WSI Grant as % of Incremental Cost		60%		
Cost estimated for Communal sewerage Sy	stem for 1000 Poor Household			
Communal System Component	Cost (Rp million)	Cost/Connection (Rp million)		
Pipe Collecting & IC	206	2		
Collecting Tank	146	1.5		
Total	351	3.5		
WSI Hibah (grant)	200	2		
Grant as % of investment cost		57%		

Table 13: Sanitation Hibah cost estimate

2.2.8 Environmental and Social Aspects

It is not expected there will be significant adverse environmental impacts because the treatment plant is already operating and meeting GoI environmental effluent quality standards³¹. Nevertheless, it may be necessary to recommend higher levels of treatment to reach acceptable effluent quality. Installation of the sewer network is not expected to pose an environmental risk as the network will be laid on public easements such as roads. Disruption may occur during construction but this can be mitigated. The overall environmental benefits of the sewerage system in Banjarmasin which relies on its waterways for transport, and increasingly, recreation and tourism, will outweigh any short-term disruption. Similarly, Surakarta is a densely populated city with limited alternatives for on-site sanitation. As a tourist hub it will derive significant benefits with continued development of a viable sewerage system.

³⁰ The cost estimate assumes relatively flat terrain and limited depth of excavation and therefore it represents an average cost of installation which would vary for specific cases. The lack of widely available construction cost data is a constraint on the accuracy of the estimation of the civil works component.

³¹ World Bank Implementation Completion Report 25720-ID, 24 June 2003.

2.2.9 Baseline Survey and Verification

The baseline survey and verification will follow the procedure for the *Water Hibah* and will use the same consultant.

2.2.10Awareness of Poverty and Gender Issues

Similarly, this will follow the *Water Hibah* procedure. The baseline consultant will support awareness of the poverty and gender issues by the LG/PDPAL/PDAM.

2.2.11Implementing Arrangements

As for the WSI *Water Hibah*, the Banjarmasin and Surakarta sewerage expansion will be managed through IndII to make best use of available resources to AusAID Jakarta and existing arrangements with GoI. The costs of implementing the WSI have been included in the WSI budget. The resources and budget to manage WSI will be integrated into the existing IndII contract through a suitable contract amendment. The GoA to GoI agreement for the implementation of the WSI *Water Hibah* and *Sanitation Hibah* will be incorporated into the IndII Subsidiary Arrangement through an exchange of letters with the GoI.

2.2.12Implementation of the Sanitation Component

The component for increasing the sanitation coverage of Banjarmasin city will include an expansion of the existing sewer system resulting in sewer connections to households, and provision of on-site sanitation facilities for communities of poor households. The component will be implemented using the same mechanism as the *Water Hibah* with appropriate adjustments of the level of the grant. The implementation of the *Sanitation Hibah* program will be carried out by GoI with the DGHS as the Executing Agency. The implementation will comply with existing GoI regulations for use of grant funds through the GoI budget, and the transfer of grant funds to participating sub-national governments³². Coordination and oversight of both WSI Hibah programs will be through the IndII Board and a WSI Technical Team established to review the WSI components.

Sanitation Hibah grant funds will be placed on GoI national budget and deposited into a MoF special account. The use of the funds will be subject to the provisions of a separate grant agreement and disbursement letter which will include provisions for return of unutilised funds to GoA. The funds will be channelled to participating sub-national governments following procedures defined in on-granting agreements between the MoF and the individual sub-national governments. The WSI *Sanitation Hibah* implementation procedure will follow the same procedure of the WSI *Water Hibah*: in both programs, continuity and uniformity of practice and procedures will be ensured from DGHS involvement as the executing agency.

³² Ministry of Finance Regulation 168 and 169 of 2008 on the transfer of grants between national and sub-national governments of Indonesia.

2.2.13Technical Assistance Supporting Activities

The preparation and start-up of the Banjarmasin and Surakarta sewerage component is being supported by a design review consultant that has been engaged through IndII. The design review consultant will assess the technical quality of the design and report on the potential to absorb a combination of 10,000 sewerage and on-site sanitation service connections. The consultant mobilised on 19 October 2009.

The review consultant has reported significant problems with the operation of the Banjarmasin system sue mainly to the flat terrain and the high level of groundwater. The review consultant has made recommendations for capacity building of the wastewater authority personnel, and the improvement of operations procedures. The recommendations for Surakarta are similar for capacity building but differentiated since the wastewater operations are part of the organisation of the water authority (PDAM). The emphasis on operating procedures has focused less on infiltration control and more on the operation of the activated sludge treatment plant.

The implementation of both the Banjarmasin and Surakarta Sanitation Hibah components will be supported by a dedicated consultant technical assistance to implement the capacity building component, provide oversight of the construction works to ensure compliance with the design requirements and good engineering practice, and assist with the adoption of improved operating procedures and management of the systems.

The capacity building component of the proposed assistance would focus on: (i) sewerage operations and maintenance; (ii) WWTP operation and maintenance; (iii) sewerage safety procedures; (iv) wastewater quality monitoring, analysis, and record keeping; and, (v) management systems, customer records and business operations. There may also be a case for using IndII IEG resources to fund: (a) surveys for those parts of the Banjarmasin systems for which mapping has reportedly been lost; and (b) very small investments in, for example, flow measuring flumes, laboratory equipment, and portable testing kits.

The capacity building component will also include support with development of capability for policy formulation, service pricing strategies including subsidies, tariff setting and cost recovery mechanisms.

2.2.14Implementation Schedule

The implementation schedule is shown in Annex [9]. The implementation schedule will follow the *Water Hibah* schedule detailed in Table 14, Section 2.3.6. As noted above, the Banjarmasin design review consultant been mobilised as of 19 October 2009.

2.3 WASTEWATER INVESTMENT PLANS – FIVE CITIES

At present sewerage coverage in Indonesia is limited to eleven cities³³ with varied levels of coverage; overall, coverage is less than two percent of the urban population. The Gol Sanitation Road Map aims to increase the number of cities with sewerage from eleven to sixteen by 2014. It also aims to increase the coverage of the sewerage systems in those cities to 20 percent. The WSI sanitation component proposes to prepare investment plans for wastewater in five cities as part of the Gol Sanitation Road Map objective.

³³ Jakarta, Medan, Cirebon, Bandung, Tangerang, Yogyakarta, Surakarta, Balikpapan, Banjarmasin, Denpasar, Prapat

The development of bankable sewerage investment plans is a clear priority of the Gol. It was the first choice from a menu of possible interventions in the broad sanitation sector and this priority has been reinforced throughout the WSI component identification and design process. The reason for this is the high priority the Gol has placed in closing a growing gap of sewerage infrastructure needs for high density metropolitan and large cities. The lack of adequate sewerage and wastewater treatment infrastructure in high-density urban environments has reached a stage where the national government has taken the initiative to actively seek donor support and to allocate national resources towards the construction of sewerage infrastructure.

In part this is also being driven by clearer regulatory initiatives that allow the transfer of grants to local government to assist with the financing of the sewerage backlog. It is essential that the institutional and financing mechanisms which are applied to the financing of sewerage infrastructure support and strengthen regional autonomy, engage regional governments to be the principal participants in the infrastructure expansion through ownership and commitment with financial support and technical guidance from the national government.

These issues are central to the sustainable development of sewerage infrastructure and securing the commitment of IFIs to finance the development of sewerage.

2.3.1 Selection of Local Governments

The implementation of the sewerage investment plan component will proceed after a process of screening and selection of candidate cities for preparation of the investment plans. A mandatory criterion is a commitment from the LG, endorsed by the Parliament to proceed with implementation on an agreed cost-sharing basis with the national government. This commitment would be a precursor to conditional on-granting agreements using the *PMK 168* grant mechanism. The initial screening and selection of five cities is being undertaken as a separate IndII activity that will result in a final selection of five cities from a candidate list of 17 cities.

2.3.2 Securing Local Government Commitments for Implementation

An important condition of such an agreement would be the commitment of budget funds by the LG in the year of project implementation. While this cannot be guaranteed, the selection process includes securing the written commitment of the Mayor/District Head, as well as the written commitment of the Local parliament. With this framework in place, Multilateral Development Banks (MDB's) could proceed with project preparation, appraisal and loan negotiation. More importantly, this framework could be a foundation for future AusAID funding for sewerage infrastructure in selected cities.

As part of the investment plan the LG will sign an undertaking with the national government to finance an agreed portion of the investment. The national government will meet its obligation through national budget funds or external funding from grants or loans. During preparation of the investment plans GoI will be able to engage World Bank, ADB, JICA, or other IFI's to secure loans or grants for the investments.

2.3.3 Pro-Poor and Gender Issues

In order to secure services to poor neighbourhoods in the master plans, poverty assessments of the extent and characteristics of poverty in the proposed program areas will be conducted, with

identification of constraints to poor people's participation and recommendations for improving the participation of the poor and vulnerable. Data collection will use primary qualitative and secondary quantitative data. Poor neighbourhoods will be identified and included in the investment plan maps. A range of appropriate technical options for localised service provision and later connection to the sewer line will be provided. The results of the poverty assessment and integration of services to the poor into the investment plans will be disseminated in workshops with the LG by the consultants.

2.3.4 Implementation by WSI/IndII

Unlike the other components of WSI, the sewerage investment plans will be prepared by consultants engaged under WSI using the imprest account. The GoI will be closely involved in the process for the selection of the five cities through the Inter Departmental Sanitation Team (TTPS)³⁴. The GoI will also be included in the consultant selection process where the TTPS and one representative from each LG will be given an opportunity to review consultant proposals and express their view. During the implementation process all stakeholders will be included in the progressive development of the plans and financing proposals. In particular this process will involve close consultation with GoI, the MDBs and LGs. Outline Terms of Reference for the preparation of the investment plans are included in Annexe [14]. A key component of the investment plans will be the institutional responsibilities of the national and sub-national governments and the financing arrangement. Coordination between DGHS, MoF, and BAPPENAS will be provided through the Indll Management Board. Output will include preliminary feasibility analyses of master plan components; cost estimates; financial and economic analysis; cost sharing and financing plans; commitment of LG to participate and share in the costs; and terms of reference for an environmental assessment and environmental management plans/mitigation plans with particular consideration of social issues including poverty, gender and vulnerable groups. Plans will include appropriate approaches to sewerage provision in densely populated and poorer communities. Indll will work in collaboration with MDB's to put investment plans on an implementation stream.

2.3.5 Linkage of WSI Sanitation with other AusAID WSS programs

This component links with, and complements the "Infrastructure for Growth" initiative which is supported under IndII. The preparation of the wastewater investment plans provides a project pipeline for the GoI to offer to development agencies. This component was the first choice of the DGHS, committed to implement new sewerage systems in five cities in the next five years. The investment plans are potential future AusAID interventions. The inclusion of substantial commitments by the participating LGs to co-finance and implement the proposed investments is a bankable feature of the plans. IndII proposes to disburse some Infrastructure Enhancement Grants to LGs on projects with a focus on wastewater. This will provide concentration of effort and a visible sector focus on sanitation.

2.3.6 Implementation Schedule

The preparation for this activity has already commenced under IndII with the engagement of a consultant to identify LGs and secure commitments to finance and implement the investments.

³⁴ The Tim Teknis Pembangun Sanitasi (TTPS) is the official interdepartmental committee responsible for oversight of all GOI sanitation programs

	Activity Milestone	Time Frame	Action
1	Preparation of the Component	Aug – Dec 09	IndII activity to identify candidate cities, secure funding commitment and prepare scope of works, TOR for Investment plans.
2	Select consultants	Jan – Mar 2010	By WSI through IndII imprest account
3	Consultants prepare investment plans	Apr 2010 – mar 2011	Managed by WSI

Table 14: Proposed implementation schedule

CHAPTER 3: PROPOSED MANAGEMENT ARRANGEMENTS

3.1 AMENDMENT OF INDII FACILITY SUBSIDIARY AGREEMENT

Given the very tight timeframe for WSI's implementation, the close linkage between it and the water and sanitation activities being funded by the IndII facility, and the importance attached to minimizing overhead costs, it is proposed to implement the WSI urban water and sanitation components under the umbrella provided by the ongoing IndII program. This will involve amendment of the IndII Subsidiary Arrangement and of AusAID's contract with the IndII Managing Contractor.



Figure 1: WSI Implementation Structure

3.1.1 Organisational arrangements for implementation of WSI

The present IndII management structure will be expanded and amended to align with the emerging focus of its activities on the water supply and sanitation and transport sectors, and additional resources will be provided to match the additional workload associated with overseeing and supporting the further preparation and implementation of the WSI urban water and sanitation components. A key change will involve the appointment of a Director-Watsan to be responsible for both WSI and IndII watsan activities (which already encompass technical assistance related to urban water supply, sanitation and solid waste management). It is envisaged that the Director–Watsan will be assisted by up to five national technical and administrative staff.

3.2 AMENDMENT OF SUBSIDIARY ARRANGEMENT

Envisaged amendments to the Subsidiary Arrangement have already been drafted by AusAID and discussed with MOF. These can be finalized through an exchange of letters immediately following the needed AusAID approval of the WSI funding.³⁵

3.3 ROLES AND RESPONSIBILITIES OF STAKEHOLDERS

The respective roles and responsibilities of stakeholders in the WSI *Water Hibah* and *Sanitation Hibah* programs are outlined in Table 15.

Table 15: Stakeholder responsibilities

Water Hibah	Sanitation Hibah			
Indll Board and Technical Team				
The IndII Management Board will have overall responsibility for overseeing implementation of the WSI Urban Water and Sanitation components as well as the ongoing IndII assistance program. It will be supported by a Technical Team which will focus specifically on WSI and IndII watsan activities, and which will comprise representatives of the key GOI agencies (including DGHS as executing agency for both WSI <i>Hibah</i> programs).				
Ministry of Public W	/orks (including DGHS)			
MPW is empowered under the PMK 168 & 169/2008 regulations to execute GOI's <i>Water Hibah</i> and <i>Sanitation Hibah</i> programs, including as regards verifying completion of works prior to grant disbursement. In line with this authority, MPW has prepared implementing guidelines for both programs and issued these as instructions of the Director General of Human Settlements. The WSI <i>Water and Sanitation Hibah</i> programs will largely follow these guidelines.				
DGHS has engaged with LGs and PDAMs and has conducted, in consultation with the WSI design team, a screening process to rank those LGs that have expressed interest to participate. As part of this process, DGHS has worked with LGs to define areas within their PDAM's water service zone where water service expansion will be implemented, and to set the ceiling numbers of new connections that will gualify for a grant.				
MPW through DGHS will be responsible for maintaining records needed by GOI and AusAID for monitoring and evaluating progress on the WSI <i>Water Hibah</i> and <i>Sanitation Hibah</i> programs.				
Ministry of Finance				
MoF will receive the WSI funds into a special account which will be used for making payments to LGs for verified new water and sanitation connections. It will be responsible for managing, reconciling and reporting on the use of these WSI funds, and for making applications to AusAID Jakarta for account replenishment as required.				
AusAID				

³⁵ The Director General for Debt Management has advised that bilateral grants do not need to follow the normal procedure for inclusion in the APBN State Budget (which involves approval by Parliament). Rather, only annotation of the approved budget by the MOF is required.

Water Hibah	Sanitation Hibah		
AusAID will be responsible for overall governance oversight of the WSI program on behalf of GOA. It will oversee the performance of the IndII Managing Contractor and will commission an independent review and evaluation of the WSI program's implementation.			
Indll Manag	ing Contractor		
The IndII Managing Contractor will be responsible for providing resources to assist the Gol with the timely implementation of the WSI <i>Water Hibah</i> and <i>Sanitation Hibah</i> programs, including with their further preparation and socialization, and with the conduct of baseline and independent verification surveys.			
	The IndII Managing Contractor will be responsible, in close consultation with the respective LGs, for engaging and managing the consultants who will prepare city sanitation investment plans.		
Participating L	ocal Governments		
LGs will sign On-Granting Agreements with MoF which will commit them to the timely implementation of their <i>Hibah</i> programs in accordance with specified governance conditions and prevailing regulations. They will ensure their water and sanitation utilities comply with these, and that the entities engaged to conduct baseline and verification surveys are able to perform their work effectively and obtain timely access to needed data.			
LGs must comply with the stipulated PDAM equity injection requirement prior to requesting grant disbursement.			

3.4 RISKS AND RISK MANAGEMENT – WATER SUPPLY COMPONENT

3.4.1 Lack of uptake of the Water Hibah grants

An initial assessment by DGHS indicates intrinsic demand from PDAMs and LGs is strong. At present 25 LGs have been provisionally selected to participate. The potential number of poor households that may be connected from these LGs has been estimated at 90,000 or 50 percent more than the total number of connections funded under the *Water Hibah*.

This suggests that, although the demand is reasonably assured, a lower overall interest will result in a longer commitment period and a slower start-up. This will need to be countered with more intensive socialisation and preparation activities early in the program. There is a risk that some PDAMs will lag in implementing the program, while others will be ahead of schedule. The On-granting agreements will allow for the reallocation of portions of unutilised grant.

A key factor in potential uptake is the level of the grant. The WSI *Water Hibah* grant is progressive; i.e., the first 1000 connections are reimbursed at Rp 2,000,000 per connection (AUD 250), while the remaining connections up to the agreed ceiling are reimbursed at Rp 3,000,000 (AUD 375) per connection. The scale of the grant compares with Rp 6,000,000 (AUD 750) average incremental cost to supply a new connection.

3.4.2 Limited capacity for pre-financing

The *Water Hibah* will be implemented as an output-based program and participants will need to implement an agreed water service expansion program -- measured by an increase in service connections -- which will then form the basis of the grant. Willingness to participate may be greater

than the capacity to pre-finance the initial investment. This has been mitigated by screening local governments and PDAMs to assess capacity to pre-finance will be conservatively assessed. Only those LGs and PDAMs that can safely pre-finance have been selected to participate. The agreed ceiling has been kept below the assessed capacity to pre-finance.

Finally the new *Presidential Regulation (PerPres)* on commercial lending support provides access to finance for creditworthy PDAMs to allow them to proceed with pre-financing of capital works for new connections.

3.4.3 Limited time to implement the Water Hibah over one year

A challenge associated with the WSI project duration of one and a half years is the mismatch between the GoA and GoI financial years. To implement the WSI by following conventional procedures, the GoI 2010 budget would need to have been revised in August 2009 to accommodate the planned expenditure. Although programming for GoI 2011 budget has adequate time, there is only a six months' time span to implement the program to fit within the GoA FY 2010-11. However, this is mitigated by starting the program in late GoI 2009 budget year and using PDAM available budgets for program expansion.

The initial selection of PDAMs and LGs will be based on budget funds being available in the remainder of the (GoI) FY 2009 and endorsing those programs that meet the WSI *Water Hibah* criteria. This will reduce or eliminate the need to plan for implementation in the first six months of GoI FY 2011 (the last 6 months of GoA FY 2010/11).

Should the programming not proceed as planned, the mitigating measures will involve reassigning more funds to PAMSIMAS, which has an excess absorption capacity. The original PAMSIMAS program was designed for 5,000 villages and reduced to 4,000 to fit within IDA loan resources. The gap of 1,000 villages is partly covered by the WSI PAMSIMAS component for 400 villages. Therefore, there is spare capacity to implement the program in a further 600 villages from the original design.

3.4.4 Fiduciary Risk

Fiduciary risk for the *Water Hibah* is relatively lower than for PAMSIMAS as it will be implemented as an output-based program with payments only made *after* agreed outputs have been confirmed in the field through independent verification surveys. Risks commonly associated with contracting, and construction programs are largely eliminated through the disbursement of the grant at fixed unit rates for each verified working connection delivered to the project. A key factor in reducing the residual fiduciary risk will be the conduct of the baseline surveys and the subsequent verification surveys. The reliability of the surveys will be further strengthened by the examination of PDAM customer records to cross-check the establishment of new connections. The baseline surveys will be conducted by IndII-procured consultants working with NGOs as part of the socialisation process.

The verification surveys will be conducted by an independent third party supported by WSI funding. The independent consultant will collaborate with the BPPSPAM (DGHS) to do this. BPPSPAM has been collaborating since 2002 with BPKP to produce audited reports and performance assessments of all PDAMs. These reports and assessments have been accepted by GoI, and by MoF in particular, as the standard for determining the performance and financial health of the PDAMs.

Replenishment of the *Water Hibah* special account will be subject to acceptable financial reports on the application of the grant. Where there is evidence of payments having been made not in accordance with the provisions of the special account, the on-granting agreement, or the *Water*

Hibah Project Implementation Manual (PIM), replenishment for the amount in question will be withheld until such satisfactory reporting is made available. If funds have been disbursed not in accordance with the provisions of the grant agreement, the PIM, or the special account, the funds in question will be deducted from the allocation made under the relevant on-granting agreement. The MOF will make quarterly financial management reports (FMR) to IndII on the disbursements from the special account and the status of the special account.

3.5 RISKS AND RISK MANAGEMENT - SANITATION COMPONENT

3.5.1 Uptake of Connections

A major risk with the Banjarmasin and Surakarta sanitation component is uptake by households for sanitation services. It is expected uptake of sewerage connections will be mostly medium income households while the on-site facilities will be entirely poor households. The uptake of sewer connections will depend on the connection policy of the PDPAL/PDAM which have indicated they will offer an incentive of discounted connection fees for early connection and for poor households. The LGs have draft regulations under discussion by local parliament mandating connection to the municipal sewer system for properties along the sewer alignment.

If uptake of sewerage connections remains consistently below target, it is proposed to apply a greater portion of the grant to the expansion of on-site sanitation services. Further shortfalls in uptake will need re-allocation of funds to the Sewer Investment plan component increasing the number of investment plans from 4 to 5 or 6.

3.5.2 Construction Delays

There is a risk of delays in the construction program of the sewer expansion. The identification and quantification of the construction risk will be an output of the Design Review activity which is scheduled to be completed in mid-November. The findings of the design review will assist to direct and schedule the construction activities to meet the WSI implementation schedule. Construction delays that cannot be managed will result in lower connection uptake in which case funds can be reallocated to expansion of the Bandung and Surakarta sewerage systems.

3.5.3 Available Funds

There is a small risk funds from LG and the PDPALPDAM are insufficient to implement the project. Funds have been allocated in the 2010 budget by the LGs. While rated low, if the risk is realised mitigation measures are for the PDPAL/PDAM to pre-finance part of the costs. In prior meetings and discussions with PDPAL and PDAM assurances have been given that pre-financing capacity is sufficient, coupled with disbursement of the grant in tranches.

3.5.4 Fiduciary Risk

The fiduciary risks for the *Sanitation Hibah* are essentially the same as for the *Water Hibah* as are the mitigation mechanisms.

IndII will develop a Fiduciary Risk Management Plan, and an Anti-Corruption Plan to be completed by December 2009. These plans will identify risks and constraints, and recommend mitigation, an, if necessary, response measures. These plans should be completed prior to the advance of the first tranche funds. Given the existing structures described above, these plans will identify specific issues

for the WSI *Sanitation Hibah's* attention, but will complement the existing processes, not duplicate or replace these.

Table 16: Risk Matrix

	Risk	Risk Mitigation Measure	Level of Risk after Mitigation
1	LG cannot budget for FY 2010 because of late commitment of AusAID funds	Gol uses the existing IndII SA and the IEG grant portion to enable the start of the budgeting process prior to final approval of WSI and availability of WSI funds. LGs can proceed with signing of Grant Agreements and use funds available from PDAMs. Selection of PDAMs has been made on availability of funds for initial pre-financing.	L
2	Currency risk	The general mitigation measure will be to maintain the Special Account in Rupiah, and only transfer three months funding over 4 tranches.	
3	Currency risk – A fall in the value of the dollar will reduce funding available.	A fall in the dollar and steady demand for funding of components can be mitigated by using uncommitted IndII grant funds.	
4	Currency risk – A rise in the value of the dollar will result in excess funds available.	A rise in the dollar and steady demand may be mitigated by amending the LG grant agreements for selected LG with capacity to absorb more funds. A rise in the dollar and weaker demand is mitigated by reducing transfers to the special account and applying the mitigation measures for "low demand"	L
5	Low demand from some LG or slow uptake of connections by some LG. This is the most likely risk scenario.	The uptake will be reviewed at mid-term (August – September 2010) and a reallocation of grants will be made to those LG that are capable of installing more connections [ref item 3].	М
6	Low overall demand for water connections.	This risk has been reduced by spreading the program over 25 LGs and by having approximately 50 percent spare demand. The identified demand from 25 LGs for water is 104,400 connections. Grant agreements will allocate 70,450 connections equivalent to AUD 20.7 million at an exchange rate of Rp 8,250. There is an unallocated demand of some 34,000 connections with a grant value of approximately AUD 10 million. If low demand cannot be mitigated by spare capacity funds will be reallocated to the PAMSIMAS component.	L
7	Low demand from poor households for 8connection in some LG.	The identified demand if 104,400 connections is for poor households. The program requires only 50 percent of the new connections to be for poor households. Therefore the target is approximately 35,000 poor households from an identified demand of 104,400 poor households.	L
8	Low demand for sewer connections.	Allow more funding for on-site sanitation services. Reallocate grant from Banjarmasin to Surakarta or vice versa. Allocate grant to Bandung as a back-up option.	М
9	Low demand overall for sewerage and sanitation connections.	Transfer funding to Water Hibah program.	М

	Risk	Risk Mitigation Measure	Level of Risk after Mitigation
10	Lack of funds for Pre- financing by LG	The LGs will either allocate budgets by Dec 2009, or allocate revised budgets in August – September 2010. In the latter case the PDAMs will pre-finance the works. LGs and PDAMs have been selected on the basis of funds being available. LGs/PDAMs will be able to claim the grant in tranches of 500-1000 connections to overcome cash flow problems.	L
11	Limited time to implement in one year.	Use of the PDAM and PDPAL budgets will allow carry-over into 2011 as late as March and allow verification in April. Mid-term reallocation to fast implementing local governments will reduce the risk.	М
12	Construction Delays – water and sewerage. There is risk that the contracting and construction process may be delayed reducing the achievement of the targeted connections	The selection of the <i>Water Hibah</i> LGs is made on the basis of spare delivery capacity within candidate PDAMs and which require only distribution and reticulation pipe-work to effect the new connections. For the <i>Sanitation Hibah</i> , in Banjarmasin the connections will be effected within the existing main trunk sewer network and will only require lateral sewerage for new connections.	L
13	Fiduciary risk and contractor corruption.	Both the <i>Water Hibah</i> and <i>Sanitation Hibah</i> use an output based methodology. Grant funds are disbursed after works are completed. Verification of the completed works is done by an independent consultant appointed under WSI. The grant fund is set at about 45 percent of the average cost of a new water connection and about 60 percent of a new sewerage/sanitation connection. The LG grant agreements have a mechanism for recovery of funds from LG should there be evidence of ineligible expenditure after the grant has been disbursed.	L
14	Sewerage Investment Plans – LGs do not commit to finance.	Criteria for proceeding will depend on commitment. A long list of 14 LGs is being screened and taken through a self selection process to arrive at 4 committed LGs.	L
15	There is insufficient funding by Gol to implement or no interest from Donor agencies to finance.	This component has the highest priority by Gol for implementation. World Bank, ADB, JICA, as well as AusAID and USAID have established a donor coordination group to manage and monitor the development pipeline for sanitation programs.	L

CHAPTER 4: SAFEGUARD PROVISIONS

4.1 AUSAID POLICY PRIORITIES

4.1.1 Poverty

WSI objectives to expand access to water and sanitation services – especially to the poor and to improve the health and quality of life of the poor and vulnerable reflect AusAID's concerns with reducing the incidence and severity of poverty and with increasing the accountability of state institutions.

The focus of the *Water Hibah* component is on contiguous areas of needy and un-served urban neighbourhoods with high concentrations of poor. However, these areas also contain some non-poor households which will be included in the expansion efforts of the LG/PDAM and assist in cross-subsidising poorer households and improving the financial viability of the utility to provide services to all the community. The target of poor households taking up new piped water connections for LG to obtain the Hibah is a minimum of 50 percent. The benefits of piped water connections for the poor have been shown to be numerous and include improved health, income, and prestige.³⁶

The wastewater (*Sanitation Hibah*) component is aimed at improving environmental protection with the better management and treatment of wastewater. The Banjarmasin sewerage extension design is already fixed based on technical considerations. It aims at improved environmental conditions for the city which will benefit the community overall but are expected to benefit the well being of the poor in particular, especially their health and need for expenditure on medical treatment. The scheme targets 50 percent of poor households in the coverage area to take a connection. The investment plans for four (4) cities will identify and incorporate poor neighbourhoods into their designs, ensuring services for poor communities when the plans are implemented.

Capacity building activities for LG include increasing awareness of the benefits of servicing the poor to the LG and community as a whole, and the development of practical measures to enable the poor to participate. Participation of poor households in activities will be monitored.

4.1.2 Gender Equality

Gender equality is a key priority for AusAID. AusAID policy recognises that attention to gender equality enables better targeting of initiatives and increased development effectiveness and sustainability.

Under the WSI, much of the community focused activities will be implemented under PAMSIMAS, which is the third iteration of WSLIC 1 and 2. WSLIC experience has pointed to the importance of ensuring gender responsiveness at all levels of the program, from government and consultants employed to the community processes and capacity building levels. In light of these experiences, and lessons learned about the pitfalls of neglecting gender equality in its activities, PAMSIMAS has integrated gender equality measures throughout its planned activities and developed a comprehensive *Gender Action Plan*. The WSI support to PAMSIMAS will incorporate these gender equality measures.

The baseline surveys and subsequent audit surveys of the *Water Hibah* program and sewerage extension program will identify whether women-headed households are participating equally in the

 $^{^{\}rm 36}\,$ The World Bank, 2006, Indonesia Enabling Water Utilities to Serve the Urban Poor

activity, in order to inform better efforts to include them. Discussions will be held at all levels of government, but especially LG/PDAM, to encourage support for gender initiatives. Institutional capacity building of LG will include gender awareness and gender responsiveness where possible. LG will be encouraged to give equal opportunity for male and female government officers to participate in capacity building and for women and men in the community to access information. LG will also be encouraged to consult with women's organisations in determining connection fees.

The time and energy spent by women collecting and carrying water will be reduced following piped water connection releasing greater time for other activities, including income earning. Children who often assist in water collection will also benefit and the harmful effects of carrying heavy buckets of water on developing bodies will be reduced. Women will also benefit from improved environmental sanitation in their neighbourhoods. Time spent caring for children, the elderly and others who fall ill with water-borne diseases will be reduced. The amount of the household budget spent on obtaining medical treatment will also be reduced.

4.1.3 Disability inclusive approaches:

The proposed extension of water and sewerage services to households is expected to benefit people with disabilities by providing greater access to these services throughout the household. This is consistent with AusAID's *Development for All* principles and will likely be verified through data collected from both the baseline survey and the post-connection verification. Moreover in discussions with the Indonesian Government on *Water Hibah*, WSI will encourage local government consultation with people with disabilities and disabled people's organisations during the entire project cycle, especially the design phase. WSI will promote this process by including people with disabilities in IndII's socialisation program aimed at building community awareness of the scheme. As part of its continuing M&E role and responsibilities, IndII will assess whether people with disabilities participate in community discussions on water and sanitation, and if their needs are considered in the design and maintenance of water and sanitation facilities.

4.1.4 Environmental safeguards

A review of the environmental risks of implementing the *Water Hibah*, PAMSIMAS, and the wastewater component using the current AusAID Environmental Management Guidelines reveal that only the sewerage expansions may have any significant environmental risks. However these risks can be mitigated by appropriate measures. A summary of proposed safeguards follows:

Water Hibah: The works constructed under the *Water Hibah* program will be implemented by the LG PDAMs and in some cases by the LG Dinas Public Works. These implementing agencies are obliged to follow the prevailing GoI requirements for environmental safeguards. One of the criteria for selection of local governments and PDAMs to participate in the *Water Hibah* program is that they have adequate capacity in the headwork installations so that there is no requirement to implement new intake facilities (the only element of the expansion with any potential significant environmental impact). The remaining construction activities are limited to expansion of the distribution system which will lay pipe networks in municipal roads. No land acquisition or relocation is anticipated.

Sanitation Hibah: The wastewater (sewerage systems) program covers investment studies and expansion of the Banjarmasin and Surakarta sewer network. The investment studies will include an initial environmental safeguard assessment as part of the output. The proposed extension of the sewer systems will include a review of potential environmental impacts. For Banjarmasin, for example, these will focus on the treatment capacity of the existing installations, and the appropriate effluent quality for discharge to the city's waterways. This may require a design upgrading of the

treatment plants. The design review of the sewer system will focus on: the alignment of the sewer mains; the proposed depth of the sewer mains as a construction safety risk; the location of pumping stations in terms of noise and odour pollution; and the construction schedule in terms of disruption to public activity and traffic flow. The design review will make appropriate recommendations on mitigating measures for environmental issues that are identified with a potential risk.

CHAPTER 5: MONITORING AND EVALUATION FRAMEWORK

5.1 WSI MEF OVERVIEW

Following peer review comments on the WSI Design Summary and Implementation Document (DSID), it was recommended to build a comprehensive Monitoring and Evaluation Framework (MEF) that outlined expected key outcomes and indicators and deliverables and demonstrated a clear linkage to the existing IndII MEF.

5.2 PROPOSED APPROACH AND METHODOLOGY FOR WSI M&E

5.2.1 Outline and Definitions

The proposed approach for Monitoring and Evaluation (M&E) for WSI is based on simple and clear methodologies that generate tangible results and information in a relatively short time period. The WSI MEF correlates with the broader IndII MEF and looks at broader aspects of governance, capacity and partnerships (particularly with PDAMS and LGs), in line with improvements in access to water and sanitation infrastructure.

Annexe 7 outlines the performance framework recommended for WSI and the various levels of M&E proposed. WSI M&E is focused at the outcome level for each activity component, yet recognises the primary output-based nature of a majority of activities (*Water Hibah* and *Sanitation Hibah*). Therefore key output indicators are included in the performance framework. A key feature of the WSI is measuring improvements in access, particularly in light of improvements in governance and capacity at the PDAM and LG level.

To clarify definitions - Access³⁷ is defined as the percentage of the population using "improved" water supply services. This implies the availability of at least 20 liters per person per day from an "improved" source, within one kilometre of the user's dwelling. "Improved" water sources are - household connection/ public standpipe/ borehole/ protected dug well/ protected spring/ rainwater collection.

Access to adequate sanitation *is the percentage of the population using "improved" sanitation*, when "improved sanitation" means: connection to a public sewer, connection to a septic system, pour-flush latrine, simple pit latrine, or ventilated improved pit latrine. Excreta disposal systems are considered adequate if they are private, and separate human excreta from human beings.

5.2.2 Methodology

The approach for M&E across all components will be consistent and focus on two levels – on-going outcomes monitoring and results (primary) and independent impact assessments (secondary). Refer to the Performance Framework in Annexe 7.

The primary monitoring will be the responsibility of the WSI team under the guidance of the Technical Director (TD). In the first instance a baseline study will need to be completed for the *Water Hibah* and *Sanitation Hibah* components. The World Bank has already completed the baseline study for the PAMSIMAS component. A draft baseline ToR is provided as Annexe 5

³⁷ Definitions for access are sourced from the World Bank and are consistent with current global definitions for monitoring progress towards Millennium Development GoAls (MDGs) proposed by the WHO and UNICEF.

The baseline study will be basic, due the number of households to be covered and will include the following suggested questions:

- Do you currently have a functioning water connection to your household?
- How many people live in your household? Is the household headed by a male/female?
- If connected would you be willing to pay money to maintain a connection? If so, how much?

The baseline study is to be completed by an external consulting group. The consultant(s) will develop the baseline methodology further and discuss selection and implementation processes with the TD.

5.2.3 Primary Reporting

Reporting for each component will utilise the formats provided under IndII and will occur monthly. A six-monthly report will consolidate information and analysis on achievements to date.

Verification processes are a critical element for WSI, as payments under *Water Hibah* and *Sanitation Hibah* are dependent upon the verification of functioning water and sanitation systems.

The verification approach has been prepared and will be finalised as part of the design approval process, and the establishment of contracts with PDAMs and LGs. Monitoring of the verification process will be undertaken by LGs with capacity support provided to PDAMS and LGs to help in improving verification systems into the longer term.

For PAMSIMAS, there is reliance upon the World Bank to provide reports on progress and impacts. It is proposed to have a WSI representative participate on any impact/evaluation study conducted by the World Bank. The World Bank will provide reports for PAMSIMAS every six months – provisionally in April and October of each year.

5.2.4 Secondary Monitoring

For secondary monitoring, the work will be undertaken by an external M&E specialist. A draft ToR for mid-term and end of program evaluations is included at Annexe 6.

The central questions for the activity evaluation is the extent to which communities participating in the activity achieve better access to water and sanitation facilities and promote improved hygiene behaviours. Another key question is to assess the efficiency and effectiveness of the PDAMs and LGs in distributing grants and verifying connections to support households.

Apart from a desk review of existing reports and interviews with key stakeholders, it is proposed that the impact studies contain a series of 'case studies'. This will involve using baseline information and to measure and gauge impacts on households of improved water and sanitation facilities and also to measure improvements in the capacity and governance mechanisms of PDAMS and LGs.

The independent team will need to develop the case study methodology and appropriate performance questions as part of the process.

The following table provides an indicative timeframe for the completion of key monitoring steps and impact studies at the mid point and completion of WSI:

Table 17: Indicative framework - monitoring

Key M&E Milestone	Format	Time
Monthly Reporting	Indll Monthly Report Format	End of each calendar month
Six-Monthly Reporting	Indll Six-Monthly Report Format	April 2010, October 2010, April 2011
WB PAMSIMAS six-monthly reports	World Bank reporting format	April 2010 and October 2010
Mid-Term Review	Consultant to design	
Activity Completion Report	Indll format	
Case Study Reports	To be determined	

The overarching responsibility for M&E rests with the WSI TD. Support will also be provided as required through the IndII M&E Specialist. Section 5.2.6 below provides more detail around the management arrangement for WSI as they relate to M&E.

5.2.5 Reporting and Impact Studies

Reporting for WSI will use the existing reporting formats proposed under the broader IndII MEF.

Given the strategic importance and complexity of the activity, WSI will complete a monthly report. The monthly reporting process will feed into the six-monthly report that will provide more detail around the progress of the program and information relating to the achievement of key outputs and outcomes.

For PAMSIMAS, WSI will be reliant upon the World Bank to provide six-monthly reports (April and October each year). Information from these reports will be drawn out to satisfy WSI reporting requirements and to inform the Steering Committee and IndII Technical Team.

A case study approach is proposed for key elements of the WSI to assess the effectiveness and efficiency of activity components and the impacts improved water and sanitation facilities have had upon households.

The case study approach will form part of the impact study to be undertaken at the mid-point of the achievements of the activity, with a particular emphasis on outcomes. The criteria will incorporate DAC considerations (efficiency, effectiveness, relevance etc). A proposed ToR is included as Annexe 6.

5.2.6 WSI M&E Management Arrangements

Overall management arrangements for WSI have been detailed in the broader DSID. For M&E, the WSI TD will assume responsibility for the compilation and preparation of all reports as well as supervising mid-term reviews and the activity completion report.

The WSI TD reports to the IndII Facility Director and will keep that person apprised of WSI progress and achievement against outcomes. Information and data derived from WSI reports will feed into the broader reporting framework for IndII. WSI (like IndII) will have technical team to advise on technical issues related to the activity. Information will filter through the Technical Team (and also the IndII technical team) to the Steering Committee. Briefing reports will be prepared for Management Board meetings, which are to occur every three months. The WSI will coordinate and liaise with the WB for the PAMSIMAS component every six months formally, when reporting missions have been completed. Informal meetings are also scheduled as required between the WSI TD and World Bank representatives.

In line with the overall program management M&E, WSI will be assessed in terms of its management processes and outcomes. This will be measured by the IndII M&E specialist as part of the overarching program management/ whole of Facility M&E. This will occur annually and lesson learned fed back in to the management process.

ANNEXES

NOTE:

ANNEXE 1: HIBAH IMPLEMENTATION MANUAL

and

ANNEXE 2: FORMAT OF ON-GRANTING AGREEMENT

are in Bahasa Indonesian, and have been issued separately

ANNEXE 3: LIST OF LOCAL GOVERNMENTS SELECTED FOR THE WATER HIBAH

	BUDGET ALLOCATION for WATER HIBAH				
NO	Local Government	Number of House Connection	Budget Allocation (Rp million)		
1	KAB. SERANG	3,000	7,000		
2	KAB. BOYOLALI	1,000	2,000		
3	KOTA MALANG	6,250	19,000		
4	KAB. KLATEN	3,000	7,000		
5	KAB. CIAMIS	3,000	7,000		
6	KOTA PEKALONGAN	3,000	7,000		
7	KAB. BANGKALAN	1,700	3,400		
8	KAB. WONOSOBO	1,400	2,800		
9	KAB. BOGOR	4,000	10,000		
10	KOTA BOGOR	4,000	10,000		
11	KAB. WONOGIRI	2,000	4,000		
12	KAB. LOMBOK TIMUR	500	1,000		
13	KAB. TASIKMALAYA	3,000	7,000		
14	KAB. CILACAP	2,500	5,500		
15	KOTA TEGAL	3,000	7,000		
16	KAB. BANJAR	3,000	7,000		
17	KAB SIDOARJO	5,000	14,000		
18	KOTA PALEMBANG	5,000	14,000		
19	KAB. PANDEGLANG	1,500	3,000		
20	KAB. BANYUMAS	3,000	7,000		
21	KAB. KUNINGAN	3,000	7,000		
22	KAB. KARAWANG	3,000	7,000		
23	KOTA PALANGKARAYA	1,500	3,000		
24	KAB. KUDUS	3,000	7,000		
25	KAB. JOMBANG	1,100	2,200		
	TOTAL PRIORITAS	70,450	170,900		

ANNEXE 4: WATER HIBAH FUND CHANNELLING

Implementation mechanism and flow of funds

The full procedure and process will be included in the *Water Hibah Implementation Manual* and *Water Hibah* design document. However the features of the proposed mechanism are:

- (a) The GoA and GoI will formalise agreement to implement the WSI under an amendment to the Indll *Subsidiary Arrangement*.
- (b) The funds allocated to the PAMSIMAS, Wastewater and *Water Hibah* components will be onbudget, the PAMSIMAS and Wastewater funds under the DGHS budget and the *Water Hibah* funds on the MoF budget ancillary account.
- (c) The MoF establishes a special account in BI, appoints an authorised signatory and notifies GoA. After conditions relevant to the effectiveness of the WSI grant are met, the GoA will make an initial deposit to the special account.
- (d) Following socialisation to LG/PDAMs regarding governance, pro poor focus and gender/vulnerable group issues, the MoF signs on-granting agreements with selected local governments that specify the amount of the grant committed to the local government, the agreed number of connections, the area to be developed and any other relevant implementation conditions.
- (e) IndII conducts baseline surveys for the local governments that have signed on-granting agreements.
- (f) The local government pre-finances the PDAM wholly or in part for the expansion program.
- (g) The socialisation consultant will work with the LG to develop and implement a socialisation strategy to promote the new connections to communities ensuring that poor neighbourhoods, women and other vulnerable groups are provided with the information.
- (h) The PDAM implements the programmed expansion through private contractors, and effects new connections.
- (i) Three months after completion of the expansion, IndII conducts a verification survey through an independent agency. The verified new connections will form the basis of the grant.
- (j) The local government submits a request for payment to DGHS. The DGHS cross-checks the payment request with the verification survey. DGHS submits a payment authorisation to MoF supported by the results of the verification survey and copies the authorization to IndII.
- (k) The MoF signatory to the special account makes the payment and copies the payment details to IndII. The MoF requests a replenishment of the special account to GoA. IndII verifies that expenditure has met the conditions of the subsidiary arrangement and the rules of the special account and approves the replenishment.
- (I) Upon receipt of verification of expenditure and a quarterly call for funds, AusAID Post will organise payment of the replenishment into the special account.



Figure 2: Fund flow and implementation process for Water Hibah

ANNEXE 5: OUTLINE TERMS OF REFERENCE BASELINE SURVEY

Introduction

The Government of Australia (GoA) announced the Water and Sanitation Initiative (WSI) in December 2008. The activity fits under the broader Indonesia Infrastructure Initiative (IndII). The approved funding allocation was AUD 300 million; of which AUD 100 million is to be channelled through multilateral and other development partners and AUD 200 million to be allocated to bilateral country programs, including AUD 60.5 million for Indonesia. The bilateral funds are to be expended during the period 1 July 2009 - 30 June 2011. The allocation for Indonesia will be applied to the following WSI program components:

- Pilot the implementation of the output-based grant scheme (*Water Hibah*) as an incentive for Local Government's (LGs) to accelerate provision of new Perusahaan Daerah Air Minum (PDAM) water connections. The proposed allocation of AUD 20 million is expected to support delivery of around 60,000 functioning water connections within two years.
- Extend the Third Water Supply and Sanitation for Low Income Communities Program (PAMSIMAS) improved water and sanitation program which currently covers 4,000 villages; the proposed allocation of AUD 22.5 million will enable extension to an additional 400 villages, including socialisation and capacity building. The component is to be implemented and managed as part of a broader World Bank program.
- Support efforts to expand piped sewerage services in major cities. The proposed allocation of AUD 10 million will fund preparation of investment plans for sewerage systems in four cities and construction of 10,000 new connections for the existing Banjarmasin and Surakarta sewer systems.
- Support further improvements in sector governance; the proposed allocation of AUD 5 million will fund civil society initiatives aimed at reducing gender and poverty barriers to accessing improved services.
- A further AUD 3 million has been allocated to finance direct program management costs, monitoring and evaluation and verification costs.

Monitoring and Evaluation (M&E) is a key element of IndII overall and an important part of the approach is to establish a sound baseline to measure the achievements and more importantly the development impacts of transport infrastructure improvements.

Baseline Study Purpose

The purpose of the proposal is to undertake a basic baseline of sample households where WSI is implementing the *Water Hibah* and Wastewater activities.

The proposed deliverables include a baseline report and relevant impact statements against which future analysis and reviews can be measured.

This proposal details the approach and methodology to be used in the study, the management arrangements between WSI and the Consultant and a breakdown of costs to complete the assignment.

This paper seeks approval in principle to proceed with negotiations and for the baseline study to occur.

WSI Baseline Methodology

The proposed methodology is to break tasks down into specific steps including a planning and design phase and baseline study.

Planning and Design Phase

- Task 1: Project Direction and Coordination
- Task 2: Develop a Study Design for the collection of the baseline data for *Water Hibah* and Wastewater
- Task 3: Prepare standard forms and questionnaires for the collection of data (see suggested questions in WSI MEF)
- Task 4; Identify and appoint the Research Assistants in preparation for data collection
- Task 5: Train Research Assistants
- Task 6: Finalise the Inception Report

The Baseline Study Phase

- Task 7: Collect and establish the baseline data for both the *Water Hibah* and Wastewater components
- Task 8: Review all data collected by the research assistants
- Task 9: Finalize the selection of households for detailed data collection
- Task 10: Define Indicators and methodologies and questions to be used

Management Arrangements

The consultant will report to the WSI TD on all aspects of the study and maintain communication on progress and issues.

A brief inception report will be prepared by the consultant in addition to a final report detailing the methodology used, analysis of the data collected as well as all raw data and copies of data collection tools.

Proposed Budget

To be determined.
ANNEXE 6: TERMS OF REFERENCE FOR MID-TERM AND ACTIVITY COMPLETION REVIEWS

Project name:

Water and Sanitation Initiative (WSI) funded under the Indonesia Infrastructure Initiative (IndII) – an AusAID funded program.

Background: The Government of Australia (GoA) announced the Water and Sanitation Initiative (WSI) in December 2008. Its core objectives are to:

- Expand access to water supply and sanitation services, particularly for the poor, women, and children in schools;
- Make water and sanitation services more sustainable by supporting sector reform and capacity building;
- Improve the health and quality of life of the poor and vulnerable by increasing their understanding of good hygiene practices, as well as by expanding their access to water supply and sanitation services; and
- Enhancing aid effectiveness and complementing other agencies activities.

The approved funding for WSI is AUD 300 million, of which AUD 100 million will be channeled through multilateral development agencies and AUD 200 million to bilateral country programs, including Indonesia. Bilateral programs are expected to be completed by end-June 2011.

It is proposed that the expanded WSI funding of AUD 60.5 million be used to:

- pilot the implementation of the output-based grant scheme (Water Hibah) for encouraging LGs to accelerate provision of new PDAM water connections; the proposed allocation of AUD 20 million is expected to support delivery of around 60,000 functioning water connections within two years;
- extend the PAMSIMAS improved water and sanitation program which currently covers 4,000 villages; the proposed allocation of AUD 22.5 million will enable extension to an additional 400 villages, including socialisation and capacity building;
- support efforts to expand piped sewerage services in major cities; the proposed allocation of AUD 10 million will fund preparation of investment plans for sewerage systems in four cities and construction of 10,000 new connections for the existing Banjarmasin system;
- support further improvements in sector governance; the proposed allocation of AUD 5 million will fund civil society initiatives aimed at reducing gender and poverty barriers to accessing improved services.

A further AUD 3 million has been allocated to finance direct program management costs, monitoring and evaluation and verification costs.

To maximise synergies and management efficiency and minimise coordination problems, the WSI program is managed through the existing IndII structure. This has been accomplished through amendment of the current IndII *Subsidiary Arrangement*.

WSI Summary

Urban piped water (AUD 20 million)	<i>Water Hibah</i> : 60,000 households served with piped water 360,000 beneficiaries.
Urban sanitation (AUD 10 million)	Technical Assistance : Preparation of wastewater investment plans for 4 cities (AUD 5 million).
	Banjarmasin Sewerage extension : 10,000 new connections / 90,000 beneficiaries (AUD 5 million)
Improved rural water (AUD 12 million)	PAMSIMAS: 550,000 persons with access to improved water services
Improved rural sanitation	PAMSIMAS: +/- 800,000 persons with access to improved sanitation
(AUD 10.5 million)	Support with socialisation in new villages.
Sector governance reform (AUD 5 million)	Civil society component
Program management (AUD 3 million)	Includes IndII MC incremental costs

Objectives of the projects:

Insert activity objectives once finalized

Objective and Scope of the evaluation exercise:

The overall objective of the evaluation is to assess project implementation and delivery of the goals and objectives. In specific terms, the evaluation mission is intended to cover the following:

- Evaluation of the achievement of objectives were the objectives of the program met? Were the objectives relevant to the program?
- Was value for money achieved given the size and scope of the program?
- Has capacity been strengthened in PDAMs and LGs to continue implementation and management?
- Was the approach appropriate for an program of this kind (i.e., approach to delivering infrastructure and services)
- Compilation of useful lessons learned and good practice;
- Assessment of constraints, if any, which may have affected the program' implementation and how these were, or could be, addressed in future programs;
- What follow up has occurred as a result of these programs?
- What impact has the program had on improving access for women, people with disabilities and also on the environment as a whole.
- Highlight other significant issues and concerns of relevance to the life cycle of the Program.

This evaluation will be a lesson learning and forward-looking exercise. The emphasis on learning lessons speaks to the concept of understanding of what has, and what has not, worked as a guide for future projects.

Evaluation references and Resources

- Design Summary and Implementation Document (DSID);
- Monthly progress reports and six-monthly reports;
- IndII reports and World Bank reports and impact studies
- WSI Project Design Document

Duties

The consultant evaluator will perform the following duties:

- Comprehensive desk review and document analysis (of the documents mentioned above);
- Design of evaluation methodology and tools including a case study methodology;
- In situ discussions with projects personnel;
- In situ consultations with projects' beneficiaries and stakeholders.
- Analysis of collected information and validation of first draft report with the WSI Technical Director

Outputs

The Evaluator is expected to produce a report of the evaluation incorporating any received recommendations. The report shall include:

- Information responding to the evaluation objectives (mentioned above);
- Lessons learnt from the projects' experience;
- Recommendations for future similar initiatives;
- The report will indicate the methodology used for the evaluation and include a list of people consulted and a summary of questionnaires and interviews.

Duration

The contract duration will be

Qualifications:

- The consultant must have experience conducting evaluation processes;
- The consultant must be very familiar with water and sanitation initiatives and in particular governance and capacity building aspects of WATSAN activities
- The consultant must have knowledge and experience with the use of case study methodologies as a tool for development, education, information dissemination and in efforts to influence attitudes and behaviour around the sensitive issues;
- The consultant should have sound base knowledge of project design and project implementation processes;
- The consultant should have relevant experience in community based development WATSAN projects.

Reporting procedure/Supervision

The consultant will be supervised and report to the Technical Director, WSI, Jakarta Indonesia.

Components	Outcomes	Primary Outcome Indicators	Primary Output Indicators	Responsible Person	Primary Monitoring Methods	Comments & Findings	Secondary monitoring Methods
1. Water Hibah	 Increased investment by LG's in water supply infrastructure Improvements in service delivery mechanisms 	 25 PDAMS have expanded investment in water infrastructure and service coverage to target households 	 400,000 people provided access to safe drinking water 65,000 new consumers are paying a cost recovery tariff All activity inputs delivered through Gol systems and processes. 	WSI Technical Director PDAM Representatives	Baseline Study Site verification visits PDAM report??		Satisfaction survey with selected households Case study method for a random sample of households.
2. PAMSIMAS	 Increased access to safe water facilities in target communities Improved health and hygiene practices 	 400 villages connected to water facilities % reduction is water borne sickness 	 550,000 people provided with access to safe drinking water 800,000 people provided with access to basic sanitation 200,000 people including school children demonstrating good hygiene practices All activity inputs delivered through Gol systems and processes. 	WSI Technical Director WB Representatives	WB Baseline study and data WB six-monthly reports		WB reports and impact studies
3. Waste Water Master Plans, and Sanitation Hibah	 Increased access to sewerage and sanitation facilities in target communities Gol programs and budgets for wastewater investment in four medium sized cities. 	 PD PAL implements a sewerage expansion program to connect 10,000 households Wastewater investment programs are accepted for implementation 	 10,000 households connected to the Banjarmasin sewerage system Connections implemented according to agreed investment programs. Agreements established to implement wastewater investment programs by LGs Completed investment programs 	WSI Technical Director Banjarmasin local government	Baseline Study Site verification visits		Satisfaction survey with selected households Case study method for a random sample of households.

Components	Outcomes	Primary Outcome Indicators	Primary Output Indicators	Responsible Person	Primary Monitoring Methods	Comments & Findings	Secondary monitoring Methods
4. Civil Society	To be provided by AusAID						
5. Crosscutting themes	- Cross cutting themes (gender, environment, disability) mainstreamed across WSI activities	 Increased access to water and sanitation facilities for women, children and people living with disabilities Environmental impacts minimised through effective planning and consultation 	 women and people with disabilities consulted regarding water and sanitation infrastructure environmental management plans prepared for all water and sanitation activities. 	WSI Technical Director	Monthly reports		Case studies with selected households.
6. WSI Activity Management	 WSI managed efficiently and effectively 	 Activity deliverables met – on time and within budget Demonstrated linkages to IndII MEF 	 Regular review of implementation and management plans Incorporation of lessons learned into activity planning 	WSI Technical Director IndII M&E Specialist	Review of monthly and six-monthly activity reports		Case study of entire activity in terms of contribution to broader IndII framework. Part of broader IndII M&E work

ANNEXE 8: WATER HIBAH IMPLEMENTATION SCHEDULE

	ws	/SI - GRANT IMPLEMENTATION SCHEDULE for WATER SUPPLY																																			
				FISCAL YEAR 2009/2010 FISCAL YEAR 2010/2011																																	
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ANNEXE 9: SANITATION HIBAH IMPLEMENTATION SCHEDULE

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ANNEXE 10: ASSESSMENT OF BANJARMASIN SEWERAGE

EXTRACT

Banjarmasin Wastewater Expansion- Mott MacDonald -Executive Summary

This document (extract only)) presents Mott MacDonald's final report on Banjarmasin wastewater expansion project independent assessment and includes:

- summary of interim report,
- estimated network system idle capacity for additional load,
- estimated treatment plant idle capacity for additional load,
- potential locations for new connections,
- on-site sanitation model of Banjarmasin City;
- estimated number of households for communal on-site sanitation system;
- potential locations for communal on-site sanitation system;
- assessment of Wastewater Treatment Plant (WWTP) expansion and improvement;
- assessment of construction plan;
- assessment of environmental documents;
- propose mitigation plan; and
- progress report.

This Executive Summary presents the key findings and issues.

Three wastewater treatment plants serve the connected population of Banjarmasin; Hasan Basri (HKSN), Pekapuran Raya and Lambung Mangkurat. Each treatment plant and the sewer network that serves it has been considered separately against each of the project drivers identified in the scope of works.

Mott MacDonald's review found the quality of records, documents and data to be variable in both quality and reliability, with similar variation in procedures and practices for data collection. Mott MacDonald has set out several recommendations to verify and validate key information to enable accurate evaluation of performance in the existing systems and to enable more efficient capital investment planning and operations. Key issues and recommendations include:

Visual inspections, evaluation of historical water quality data and anecdotal evidence indicate significant infiltrations issues within all three catchments and uncertainty on actual wastewater flows and loads. Mott MacDonald has initiated 3 (three) infiltration test to roughly verify the infiltration rate based on direct measurement. It is well noted that the result will not be able to provide a high confidence data but at least provide rough description of actual condition. It was recorded that high infiltration rate occur in the pipe network of Pekapuran and HKSN. Mott MacDonald recommends that flow surveying be implemented to enable actual flows and infiltration to be quantified and considered in capital investment planning and operations. Mott MacDonald also recommends a systematic network review to identify causes of infiltration and possible costed mitigation measures to improve use of the existing sewer network.

Records of major sections of the existing network have been lost. Mott MacDonald recommends that surveys of the network be carried out to provide complete records. This data will enable network modelling to reliably determine pipe capacity and will also be of value for subsequent network maintenance and integrating future capital investment.

Mott MacDonald has also identified that households within the catchment have a low awareness of sanitation issues which has potential to delay the Project and impair its sustainability, thus severely limiting the programme effectiveness. Mott MacDonald recommends that awareness raisin campaigns be planned and implemented to confirm actual willingness by the community to connect and pay for the wastewater services and to increase connection rates.

HKSN is located in the north of the catchment and has a treatment capacity of 2,100m³/day and currently serves an estimated 425 households. The treatment plant is currently undergoing expansion works to increase the capacity to 5,100m³/day. Mott MacDonald estimates that once the expansion work is complete the treatment plant will have capacity to treat flows from approximately 2,614 additional properties. Mott MacDonald's preliminary evaluation indicates that there is idle capacity in the sewer network sufficient to accommodate 2,508 additional household connections. Mott MacDonald's evaluation indicates that no section of this sewer network is currently operating at full capacity, therefore new connections can be made in all areas served by this sewer network. The areas with greatest idle capacity are JI. Abdi Persada (679 new connections), and JI. AMD (533 new connections)

Pekapuran is located in the west of the collection area and has a treatment capacity of 2,500m3/day. The treatment plant serves an estimated 2,056 connections out of a total of 3,779 existing potential connections in the collection area based on Mott MacDonald's evaluation of GIS map data. Mott MacDonald's preliminary evaluation indicates that there is idle capacity in the sewer network sufficient to accommodate an additional 1,723 connections in this collection area. Although the pumping station at the treatment plant has capacity for around 1,163 additional connections, Mott MacDonald's evaluation found the treatment plant to be already operating at full capacity. Therefore, treatment plant capacity is the limiting factor to expansion of Pekapuran sewerage system.

Lambung Mangkurat is located in the centre of the city and has a treatment capacity of 500m3/day. The treatment plant is currently serving 1,298 connections which is 100 percent coverage of the current collection area. Mott MacDonald's preliminary evaluation indicates that wastewater volumetric discharge into the treatment plant is greater than the capacity of the plant.

Mott MacDonald has used GIS mapping to visually present estimated locations of existing connections and possible locations for new connections in each of the three catchments. The location of existing sewer mains and network and planned new sewer mains and network is also mapped. The maps show that in HSKN there is potential for 2508 additional connections, in Pekapuran there is potential for 1733 additional connections and in Lambung Mangkurat there is potential for 360 additional connections. After the new connections, we will have 100 percent service coverage for Lambung Mangkurat and Pekapuran Raya. Pipe capacity will be 100percent utlized with no further capacity using the existing main pipe.

Communal on-site sanitation as another solution for wastewater management has become subject of assessment by Mott MacDonald in the following phase. It was identified that there are 3 (three) type of communal system implemented in Banjarmasin city: Communal septic tank, collective temporary storage (imhoff model), and public toilet (MCK). Mott MacDonald has 5 (five) prioritize area for communal system in Banjarmasin based on previous assessment done by Indonesia Sanitation Sector Development Project (ISSDP). Based on "sanitation walk" activities done together with the head of Kelurahan and PDPAL of Banjarmasin City,Mott MacDonald has identified number of potential households for communal on-site sanitation. The total number of 9,024 households are subjects to communal on-site sanitation development, which consist of 7,206 HH for collective temporary collection facilities; 1,055 HH for communal septic tank; and 763 HH for public toilet (MCK).

In regard with the environmental documents, Mott MacDonald has assessed the existing environmental documents prepared by PDPAL. It has been summarized that to comply with the requirements to have DPPLs PD-PAL have to date prepared environmental documents (UKL / UPL) for the Pekapuran and Lambung Mangkurat sites. No environmental documents have been prepared for HKSN. The UKL and UPL documents have not been evaluated by BLH Banjarmasin. A review of the UKL and UPL has identified that the documents are incomplete. The requirements for these documents are outlined in Annex 1 (A.1. Decree of State Minister for the Environment No. 12 / MenLH / 3 / 1994 on General Guidelines for Environmental Management Procedures and Environmental Monitoring Procedures Article D).The deadline to produce DPPL for operational sites such as the WWTP was 25 September 2009, as described in A.6 above. It is recommended that the documentation is completed as soon as possible to make the sites compliant with the regulations.

The HKSN area of services is greater than 500ha in accordance with A.4 above PD-PAL are required to produce ANDAL. If construction is greater than 30 percent complete the ANDAL should be completed as soon as possible.

This report is based upon findings from Mott MacDonald's rapid appraisal in the first 10 days work. Mott MacDonald's work is proceeding to the next phase, with Draft Final Report scheduled for submission on 09 November 2009.



ANNEXE 11: SURAKARTA SEWERAGE SYSTEM ASSESSMENT BY INDII

In 2008, the population of Surakarta is 556.054 within 4.404 Ha urbanised area. The contribution to wastewater is 89 percent from households, 7 percent from small industries, and 4 percent from hospitals and factories. Surakarta has an existing sewage system with 10 percent service coverage. The system was built in 1995-2001 under the Semarang Surakarta Urban Development Program (SSUDP). The sewerage system includes:

Subject	Total	Year
- WWTP Semanggi 30 L /s	1 unit	1999 / 2000
Expansion of Aeration Tank cap.30 l/s	1 unit	2008
- IPAL Mojosongo 24 lt /second	1 unit	1997 / 1998
- Interceptor (600 mm s/d 1.300 mm)	12.km	1997 - 1999
- Lateral and secondary pipes	70 km	1998 / 1999
(150 mm s/d 500 mm)		2004-2009
- Property Connections	10.800 Units	1997 - 2008



Service area's

WWTP Mojosongo								
Perumnas Mojosongo	:3.000 conn.							
Kel. Mojosongo	: 734 conn.							
Kel. Nusukan	:681 conn.							
Kel. Kadipiro	:125 conn.							

Kel. Mangkubumen	:350 conn.	Kel. Punggawan	: 25 conn.
Kel. Ketelan	: 88 conn.	Kel. Keprabon	: 62 conn.
Kel. Timuran	: 26 conn.	Kel. Kampung Baru	: 87 conn.
Kel. Manahan	: 1 conn.	Kel. Pajang	:433 conn.
Kel. Sondakan	:616 conn.	Kel. Laweyan	: 27 conn.
Kel. Bumi	:237 conn.	Kel. Tipes	:461 conn.
Kel. Kemlayan	: 22 conn.	Kel. Kratonan	: 269 conn.
Kel. Serengan	:631 conn.	Kel. Danukusuman	: 497 conn.
Kel. Joyosuran	:539 conn.	Kel. Penumping	:118 conn.
Kel. Sriwedari	:120 conn.	Kel. Jayengan	: 150 conn.
Kel. Panularan	:677 conn.	Kel. Kauman	: 106 conn.
Kel. Kedung Lumbu	:133 conn.	Kel. Pasar Kliwon	: 56 conn.
Kel. Baluwarti	:121 conn.	Kel. Semanggi	: 334 conn.

WWTP Semanggi

The operation of the wastewater system is under the responsibility of the city water company (PDAM). The PDAM has expanded the existing system by extending the sewerage system to cover a new service area within the city and installed an additional Aeration Tank treatment unit for Semangi WWTP. The local government now wishes to expand the system further to allow for 6,000 additional property connections. Expansion of the system will be done in stages and financed by the local government, the PDAM, and also funding from the central government. The first stage will utilize the spare capacity of the WWTP Semanggi treatment plant and existing trunk sewerage system. The initial stage will extend the reticulation sewerage to connect an additional 3,000 properties at Semanggi Service Area by early 2011. This initial stage is the scope of work that is proposed to receive funding support from the WSI program. The scope of work of the assignment is to review the quality and readiness of the local government prepared design for funding support by AusAID. Schematic Drawing of Banjarmasin Wastewater Management

Propose Service Area Expansion

The local government now wishes to expand the system further to allow for 6,000 additional property connections. Expansion of the system will be done in stages and financed by the local government, the PDAM, and also funding from the central government. The first stage will utilize the spare capacity of the WWTP Semanggi treatment plant and existing trunk sewerage system. The initial stage will extend the reticulation sewerage to connect an additional 3,000 properties at Semanggi Service Area by early 2011. This initial stage is the scope of work that is proposed to receive funding support from the WSI program.

Semanggi Service Area

The Semanggi service area is catered by the Semanggi Wastewater Treatment Plant (WWTP) with acurrent total capacity of 60 l/s. The Semanggi WWTP wasr expansion from 30 l/s to 60 l/s in Fiscal year 2008. Treatment process additional with Aeration Tank Figure ... indicate the service area and the location of the WWTP Semanggi service area covers area s :

Kel. Mangkubumen	: 350 conn.	Kel. Punggawan	: 25 conn.
Kel. Ketelan	: 88 conn.	Kel. Keprabon	: 62 conn.
Kel. Timuran	: 26 conn.	Kel. Kampung Baru	: 87 conn.
Kel. Manahan	: 1 conn.	Kel. Pajang	: 433 conn.
Kel. Sondakan	:616 conn.	Kel. Laweyan	: 27 conn.
Kel. Bumi	: 237 conn.	Kel. Tipes	:461 conn.
Kel. Kemlayan	: 22 conn.	Kel. Kratonan	: 269 conn.
Kel. Serengan	:631 conn.	el. Danukusuman	: 497 conn.
Kel. Joyosuran	:539 conn.	Kel. Penumping	:118 conn.
Kel. Sriwedari	:120 conn.	Kel. Jayengan	: 150 conn.
Kel. Panularan	:677 conn.	Kel. Kauman	: 106 conn.
Kel. Kedung Lumbu	:133 conn.	Kel. Pasar Kliwon	: 56 conn.
Kel. Baluwarti	: 121 conn.	Kel. Semanggi	: 334 conn.

Capacity of Installed Main Pipe

The current load on the wastewater network has been calculated to assess the possibility of additional connections. The schematic drawing of the network system is presented in Figure....

Length of Main pipe and Interceptor Pipe is 17 km. Diameter trunk Mains are 300 mm-600 mm, diameter of the interceptor is 600 mm-1300 mm. Main pipe and Interceptor pipe can serve 25.000 connections (PDAM Data).

Capacity of Existing Wastewater Treatment Plant

The WWTP comprises a bar screen, an grid chamber, equalization tank, influent pumping station, aeration, sedimentation, Sludge pump and Sludge Drying Bed. Location WWTP shown as Figure

The original capacity of the WWTP Semanggi was 30 l/s. It was subsequently upgraded by adding additional aeration tanks to a capacity of 60 L/s. Under its present capacity it can treat waste from 12,000 property connections.

Wastewater Quality and Effluent Standards

The wastewater quality is not monitored daily. Laboratory report of wastewater quality is also not available. From the site visit, it was observed that WWTP designer had adopted a Aearation Tank .

The WWTP staff confirmed that treated wastewater of WWTP is of good quality without any odour

issues. The final effluent is discharged into Pemulung River through an open channel. Analysis of the effluent quality from the Semanggi WTTP (Data from PDAM) :

Analysis on March 2009	Inlet	: BOD 100 mg/l,TSS 60.5 mg/l, pH 7.9
	Outlet	: BOD 21 mg/l, TSS 23.0 mg/l, pH 8,20
Analysis on April 2009	Inlet	: BOD 92 mg/l,TSS 78.5 mg/l, pH 7.5
	Outlet	: BOD 29,96 mg/l, TSS 28 mg/l, pH 7,52

Conclution:

- 1. WWTP Semanggi has idle capacity of 30 lps equivalent to 6000 connections
- 2. Main Trunk and Interceptor flowing capacity for 25 000 connections
- 3. Readines to install new connection around 4000 unit include lateral pipe diameter 150mm and 200 mm (shown on figure ..)



ANNEXE 12: SCOPE OF INDII CITY-LEVEL WASTEWATER PLANNING ACTIVITY

General

Urban sanitation conditions have always been very poor in Indonesia cities, attributable to a range of causes, not least of which have been rapid urbanisation, inappropriate technical solutions, poor governance and low institutional and organisational capacity in the sector. On-going decentralization and a growing commitment from rejuvenated governments now offer an opportunity to turn around the lives of millions of city-dwellers through targeted interventions in sanitation management in the large cities targeted under this activity.

The cities to which services will be provided are: (TBN)

Each of these cities has been selected through a process designed to ensure it is committed to improving wastewater management services within its jurisdiction. They also meet other prioritisation criteria applied to begin providing a "pipeline" of committed regional governments in the future and improve harmonisation of donor and GoI programs.

The scope of work for the services within the jurisdiction of each city covers developing:

- a Master Plan
- Feasibility Study(s) and
- Institutional interventions that will improve the management of wastewater.

The work will be documented so as to enable competent parties in the future to appraise proposals and construct the designs without reference to the originators of the designs. Planning will target domestic wastewater inventions, although the Master Plan should consider the impact of current and planned storm water and solid waste infrastructure and management systems on domestic waste management plans. Safe disposal of industrial waste should also be considered, but unless explicitly required by the participating regional government, its management should become a matter regulated by it, but for which treatment services are not provided.

There is no restriction on the type (and number) of interventions; they should however be appropriate for the physical, cultural, economic, environmental and institutional conditions prevailing at each location. The following range will be considered:

- (1) Behavioural change programs, such as public awareness, hand-washing campaigns, advocacy and other communication activities;
- (2) Upgrading of individual and shared latrine/ toilet facilities and new provisions for existing and developing private dwellings, with on-site treatment of waste;
- (3) Upgrading and provision of community ablution facilities for existing and developing individual dwellings, with on-site treatment, including use of environmental enhancements such as production of biogas as a bi-product and recycling of water (the so-called "SANIMAS" option);
- (4) Public ablution facilities for public places (schools, markets, waste dumps etc) with on-site treatment;
- (5) Septage (human waste) collection (e.g. through various forms of vacuum tanks) with dedicated treatment and / or quality regulation of private service providers of such services;
- (6) Improvement of existing and development of new septage (sludge) treatment facilities;
- (7) Piped sewerage systems and off-site wastewater treatment facilities to all the above;
- (8) Capture, storage and dissemination of data, information and knowledge on sanitation services and facilities; and

(9) Policy, institutional and organisation development improvements, including establishing micro-credit programs development of cooperative arrangements, developing and enforcing regulations or providing other incentives to effect better sanitation practices.

While there is no restriction on the type (and number) of interventions, the high population density and exceptionally limited living space in many cities suggests that off-site treatment and sewerage networks will be a common solution.

The scope of the work does not include support to central agencies for program management, detailed design or implementation of certain capacity building interventions nor program monitoring and evaluation activities. The Consultant is expected however to provide ad-hoc support as requested for these related activities, which will be undertaken by others.

Objectives

Overall, this planning phase should (i) create an improved enabling environment in the participating city (ii) build a participative culture and institutional capacity among key local agencies (iii) identify, select and design environmentally friendly, sustainable and cost-effective technical solutions (iv) describe the policy, institutional and organizational improvements that will be required to sustain improved wastewater management, in the first instance through implementation of the feasible interventions for which DEDs have been prepared.

The specific objective is to provide a Master Plan (MP), Feasibility Studies (FSs) and institutional interventions which will enable the city to begin implementation of wastewater service improvements.

Master Planning

The Master Plan will describe agreed interventions, including physical investments anticipated over a planning horizon of 20 years. Major investments over its four 5-year periods will also be described. It will incorporate the strategies outlined in the "City Sanitation Strategy" (CSS), where such a Strategy has already been prepared³⁸, or it should include a section describing the strategy(ies) developed as part of the master planning process.

The master planning process will be designed to ensure that a list of prioritized, widely acceptable and affordable investments are sufficiently well identified to enable feasibility studies to be undertaken on select immediate priorities. The process shall also help build capacity of local agencies to manage better the sanitation issues in their jurisdiction, including use of the Master Plan (and subsequent updates) to coordinate the activities of a disparate group of stakeholders in the sector.

Where a CSS exists, the planning process shall incorporate a critical review of the Strategy with respect to its quality, which will be assessed in four broad areas:

(1) Description of the current situation and identification of critical issues and success factors, incorporating a "performance audit" of sanitation conditions in the city and an analysis of the

³⁸ Strategies have been prepared for at least 9 cities in Indonesia using an approach and methodology developed by the Indonesian Sanitation Sector Development Project (2005-2009). The process is described in the WSP Field Note of April 2009 titled "Urban Sanitation in Indonesia: Planning for Progress", and subsequent guidelines published by ISSDP and the Government.

institutional arrangements that have delivered the current performance and which will influence future performance.

- (2) An analysis of where the city wishes to be at the planning horizon and the intervening 5-year intervals, giving particular attention to the vision of the city contained in the various formal planning documents required by the GoI, mission and mandates of the relevant regional government agencies, clarity of strategic objectives and of performance targets.
- (3) The feasibility of the specific objectives the city has set with respect to achieving their strategic objectives the feasibility not only includes indicators of achievement of the objectives, such as geographical areas served, coverage of population under various systems and overall investment and O&M costs, but also the underlying factors of capacity, such as planned improvements to policy review and change procedures, sector governance and organisational structure, customer orientation, planning and budgeting procedures, O&M, financial management, human resources management and information systems.
- (4) How success will be sustained, which covers arrangements in place or planned for monitoring of performance, performance evaluation and the incentives and disincentives to undertake or develop these functions.

Most important are indications of regional government "ownership" of the Strategy and the quality of the strategies it contains. It is expected the intended strategy will generally be one of "strategic incrementalism", where improved services generates demand for further improvements and a dedicated revenue stream to help finance it.

With respect to "ownership", the planning process will elicit broad participation from key groups of stakeholders by including relevant groups and by being timely, with provision of appropriate specific information tailored to the needs of each group. The Consultant will help establish a Working Group / Committee (a *Pokja Sanitasi*) in cities that have not established one under efforts of the national Technical Team for Sanitation Development (the *TTPS*) or other central program, and support its development over the contract period. This Committee will provide suggestions to the Consultant, review work of the Consultant and endorse requests for major approvals, such as that for agreement to the final master plan, that will be will be required of the Head of Region (Walikota / Bupati) and the Regional Council (DPRD).

Where a CSS does not exist, the planning process will be designed to deliver a Master Plan which includes the above mentioned four broad areas. Where a CSS does exist, the Master Plan will build on the strategies in it, wherever they can be discerned.

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

- (1) Cover the entire geographic area of the jurisdiction and describe a range of intended interventions based on current and projected population, geographical and environmental conditions, socio-economic factors and demands of the intended beneficiaries.
- (2) "Service Areas" will be identified (and potentially "gazetted"), sanitation problems enumerated in each, along with a description of the possible solutions, ranging from improved on-site treatment through to conventional sewerage systems treating waste off-site.
- (3) Demand for and affordability of various levels of service will be considered, along with a range of technologies that could be developed to satisfy these demands.
- (4) In this way a set of "price-quality" improvements in services will be developed that benefit all segments of the community and which are likely to be sustainable.
- (5) Sustainability will be assessed particularly on the ability and willingness of the regional government, and especially the community to, in the long term, pay for the improved services.

(6) Broad account shall also be taken of the long-term costs and benefits of various configurations, such as on-site versus off-site collection and treatment options.

A set of preliminary behavioural change, technical and capacity development options will also be presented to and considered by the Pokja, along with approximate capital and operating expenditure requirements, possible sources of funding and the strategies for successful implementation.

Mandatory among the set shall be sanitation behavioural change interventions as well those for capacity building.

Upon approval in principle of a set of interventions by the appropriate committee of the DPRD and the mayor, the consultant will produce a final Master Plan document, which will then be adopted by a regional law (a *Perda*) and relevant aspects incorporated into the regional government's five (the *RJPMD*) and one year plans (the *RKT*) and budgets, ready for more detailed study of feasibility.

Feasibility Studies

General

Feasibility studies will be conducted on select interventions programmed for the first 5-year period. The selection of interventions will be based on its estimated amount of investment, the feasible alternatives and the potential impacts of the selected intervention.

The feasibility study phase will include four inter-related activities:

- classic (technical) feasibility study work where a specific choice is made of the best intervention be it technological or institutional
- screening and analysis related to environmental impacts
- land related matters, such as acquisition for public purposes and resettlement of communities where it cannot be avoided; and
- development of a capacity building plan.

Standards, procedures and criteria regulated by the Government of Indonesia will provide the basis for such studies. Where standards, procedures and criteria are absent or considered by the consultant to be inappropriate, the Consultant will highlight the fact and suggest actions, the preferred one of which is to help strengthen the Indonesia government underlying systems and procedures.

Feasibility studies shall aim to demonstrate to within reasonable certainty that the proposed intervention delivers more benefits than costs (technological, economic, sociological and environmental) compared with alternatives, and that the costs and benefits are fairly distributed across the community and in time.

Technical Studies

For each feasibility study, the following process (not necessarily conducted linearly) will be considered:

- 1. The specific rationale and objectives of the intervention will be re-confirmed with the Pokja.
- 2. Further surveys will be undertake as needed; these may be technical or socio-economic in nature including; existing infrastructure condition, topographic, soils and hydraulic surveys (especially if it will

help DED) as well as demand (contingent valuation) surveys of the community, and perceptions of employees and stakeholders.

- 3. Demand analysis and forecasting, capacity assessment of exiting facilities and establishment of the gap between future demand and existing facilities after their optimization.
- 4. Identification of technical alternatives to fill the gap, including an assessment of the environmental impact of the leading alternatives.
- 5. Conduct of an institutional assessment, which will include in its objectives the identification of possible cost recovery and subsidy mechanisms, but will also cover in more specificity the four areas of the MP; i.e. critical performance issues and institutional/organizational obstacles, how future arrangements could relieve these bottlenecks, the role of institutions in achieving specific objectives and in sustaining, or governing, the sector.
- 6. Perform a least-cost analysis (with economic prices) and selection of preferred option.
- 7. Conduct economic and financial benefit-cost analyses to check that economic and financial internal rates of return comply with criteria determined by the government.
- 8. Estimate total project benefits and their incidence within different segments of beneficiaries.
- 9. Complete further financial analysis and development of plans to sustain the investment, preferably through user-pay mechanisms.

Environmental Studies

For each environmental screening, the initial objective shall be to determine if there will be a significant impact from the proposed investment, based on criteria already established under Indonesian law. Where it is determined that there is potential for a significant impact, an Environmental Impact Analysis (AMDAL) shall be prepared for the regional government, which will seek a permit/licence through the provincial or local AMDAL commission. Where no AMDAL is required, the screening shall determine whether management (*UKL*) and/or monitoring (*UPL*) plans are needed. Further work, as necessary, shall be undertaken in the DED phase.

Land Matters

Any land acquisition requirements shall be identified at this stage following procedures regulated by the Indonesian Presidential Regulation covering the matter. Cadastral plans, and if needed, a detailed resettlement plan, may be required for significant land acquisitions.

Capacity Development Plans

The Consultant will work closely with the Secreatariat of the participating regional government and agencies to develop capacity. This will be done through helping the regional government and their operator(s) prepare plans for improving institutional and organizational performance, without which the sustainability of the sanitation investment is at risk. These plans should be divided into:

- interventions the operators(s) of the infrastructure are able to initiate and manage (perhaps called a FOPIP or "Financial and Operations Improvement Action Plan"); and
- those that must be initiated and managed by the core of regional government but which strongly influence incentives of the operator (perhaps called the LIDAP or "Local Institutional Development Action Plan").

The LIDAP is considered particularly important because it is likely to provide a better enabling environment, clearer objectives for the operating agencies, as well as improved accountabilities and incentives as roles are differentiated and more checks and balances introduced into government.

Documenting and Processing the FS

All of this study phase will be documented in a FS Report for each city covering each of the interventions to a standard acceptable to national authorities.

Complementary investments expected in capacity development at the institutional, organization and/or individual level do not require such rigorous study and justification; nevertheless some attempt should be made to justify all investments in term of benefits and costs, even if all are not quantifiable.

The FS shall describe specifically the arrangements for implementing the investments, for updating the MP and for program governance arrangements that are deemed essential to development of sustained improvements in service delivery.

The study results will be presented to regional and national authorities. City authorities will signify in writing their approval of the results of the feasibility study in general and of each proposed investment. The Detailed Engineering Design (DED) phase may then proceed for each intervention.

Detailed Engineering Design

The Detailed Engineering Design phase is to provide cost-effective designs oriented to meeting the performance standards established in the MP, the FS and in the industry norms, standards, procedures and criteria. Design should be performance oriented as much as possible, i.e. desired performance standards should be stated and constructors required to produce and implement designs that achieve these standards, after which appropriate payment will be made. Larger works may consider more strongly incentivized schema, such as design, build and operate.

Each design should be sufficiently documented to allow competent constructors / implementers of the works to implement the design without further reference to the designer.

Design is expected to proceed through the following stages (not necessarily sequentially):

- 1. *Mapping*: Gathering of maps, aerial photos and other secondary information to enable production of base maps and ultimately production of a site map for each of the selected investments.
- 2. *Survey and Investigation*: Collection of primary information and production of contextual information for the design; which includes:
 - a. Inspection of existing infrastructure, which will include select on-site sanitation facilities and all offsite facilities, as well as drainage, road reserves, sources of pollution and of any other pertinent locations. The results will be recorded in a "Field Inventory Report".
 - b. Installation of benchmarks, then initiation of (i) soil, receiving body and wastewater quality investigations as needed, resulting in appropriate Technical Report(s) and (ii) topographic survey measuring local features, resulting in production of plans (and sectional drawings if needed) and a Report on Measurement and Benchmarks.
 - c. Collection of technical standards, procedures and criteria and development and adoption of a "Design Criteria Report".
- 3. *Design Activities*: Perform technical calculations to determine processes and sizing of components, layout of units with respect to other services and to one-another. These designs will incorporate:

- a. the results of primary and secondary information gathering activities;
- b. information on community preferences gathered through socio-economic surveys, focus group discussions, advice from the Pokja, responsible local authority, national agencies etc
- c. the results of environmental impact studies and land acquisition/ resettlements plans prepared under the FS phase;
- d. the capacity development plans; and
- e. will be described in outline in a design memorandum, to which will be appended the most important calculations.
- 4. DED documention: Each design will be documented in:
 - a. a set of engineering drawings (including site plans, longitudinal and cross sections for civil works, standard design details and construction notes);
 - b. a bill of quantities, with quantities and estimated contract price against each item, thus forming an "Engineer's Estimate" for the implementation of the design;
 - c. technical specification of the works, if necessary split better standard and particular specifications; and
 - d. tender documents, based on GoI standards and regulations, and including the un-priced bill of quantities and various forms require by the GoI procedures.

Particular attention is directed to providing complete documentation of standards, procedures and criteria applicable to sewerage, as these will be used by others to begin developing and improving Indonesian standards for sewerage.

In parallel to the above, further environmental work on plans for management (*UKL*) and for monitoring (*UPL*) will be undertaken if necessary. This may include (i) preparation of UKL/UPL for processing by regional government as part of the process needed to gain a license/permit, or (ii) production of a technical guideline, standard operating procedures (SOP) or technical specifications related to these documents to be produced by the constructor/supplier.

The DED work includes providing the regional government advice on a range of miscellaneous issues, including contract strategies and packaging (international, local etc), interpretation of performance standards, agreements related to channeling of funds to regional governments, and support in coordination with central agencies. The work does not include assistance in the tendering, negotiation, contacting, implementing or commissioning phase (which may be awarded under competitive conditions through a separate contract).