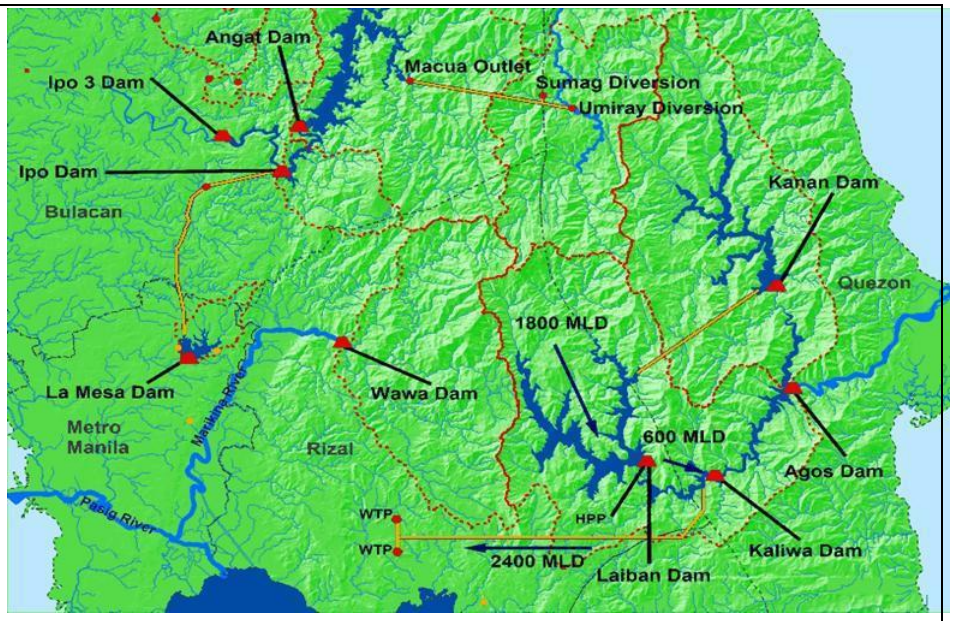
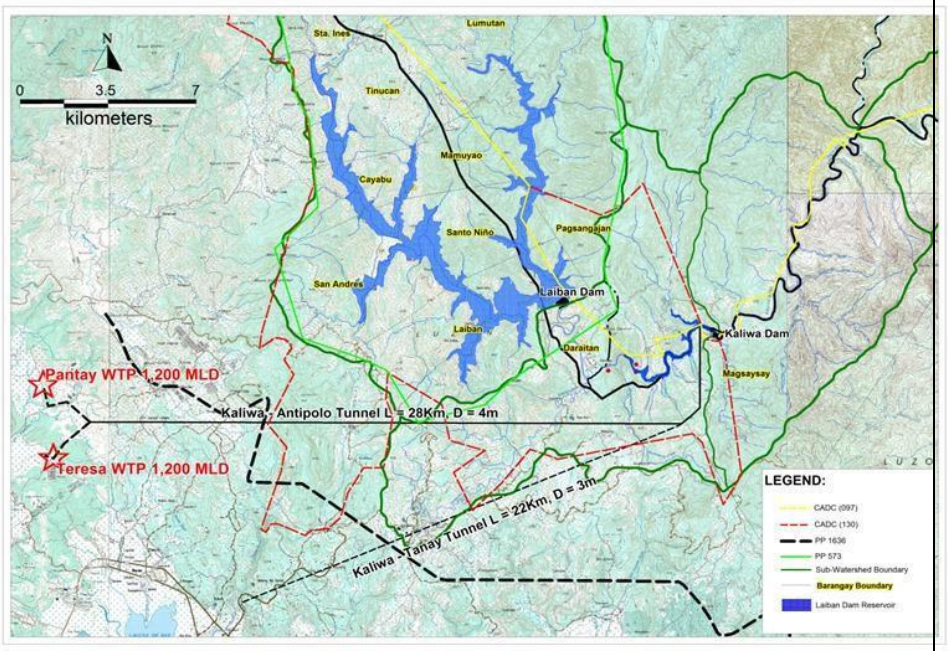
EXECUTIVE SUMMARY FOR THE PUBLIC (ESP)
New Centennial Water Source (NCWS) - Kaliwa Dam Project

Report Objective		This Separate Report on the New Centennial Water Source (NCWS) - Kaliwa Dam Project ("Project") aims to provide clear-cut information and references on this particular component. It may be noted that the Feasibility Study is based on the integrated two-dam system (i.e, Laiban-Kaliwa Dams). As affirmed by MWSS, the agency's Water Security Roadmap includes the construction of the Laiban Dam within 5-10 years from the commissioning of the Kaliwa Dam.
1	**GENERAL INFORMATION**	
1.1	Project Name	New Centennial Water Source (NCWS) - Kaliwa Dam Project ("Project")
1.2	PPP Scheme	Build-and-Transfer (BT) scheme with amortization payment [under Republic Act (RA) No. 6957, as amended by RA No. 7718, otherwise known as the Build-Operate-and-Transfer Law] MWSS conveyed to the NEDA Investment Coordination Committee (ICC) Cabinet Committee that MWSS "intends to conduct a second round of market sounding to confirm the market's appetite for the BT (amortization payment) scheme." A week prior to January 20, 2014 NEDA ICC-CC endorsement for approval of the Project, the Project's Transaction Advisor with participation from the PPP Center conducted the second round of market sounding. The feedback acquired from banks (i.e, ING Bank and BPI), equity investors (MacQuarie Capital), and contractors (i.e., AC Infrastructure), was that there is no major difference between BT and BLT (although, AC Infra noted that BT might be a more transparent and relatively straightforward structure). With these results, MWSS nonetheless requested to maintain this flexibility on the project structure with Build-Lease-Transfer scheme as a possible alternative. This request was approved by the NEDA ICC-CC during its 20 January 2014, which was subsequently incorporated in the NEDA Board Approval last 29 May 2014.
1.3	Project Location	The Project covers portions of the municipalities of Tanay, Antipolo, and Teresa of Rizal Province, and Gen. Nakar and Infanta of Quezon Province.

		 The map below shows the geographic location of the Project: 
1.4	Implementing Agency	MWSS (co-implemented with DPWH)
2	**PROJECT BACKGROUND: KALIWA DAM**	
	Originally, the Project was proposed as a bulk water supply scheme based on an integrated two-dam system with conveyance / transmission system to be implemented through a PPP scheme that involves the financing, design, construction, operation and maintenance of the following facilities: a. Laiban Dam and its appurtenant facilities; b. Laiban Hydro-electric Power Plant and its appurtenant facilities;	

c. Kaliwa Dam, its intake facilities and other appurtenant facilities;
d. 27.7-kilometer Water Conveyance Tunnels; and
e. Transmission pipelines.

On 4 October 2013, the Project was deliberated during the Joint NEDA Investment Coordination Committee (ICC) Technical Board (TB) and Cabinet Committee (CC) Meeting. The basis of deliberation was the Project Evaluation Report of the NEDA ICC Secretariat, which recommended that MWSS undertakes first the implementation of Kaliwa Dam using its internal funds or through Official Development Assistance (ODA) Loans to address the short-term water supply need, instead of pursuing the two-dam system under a Build-Operate-Transfer (BOT) Arrangement. The endorsement for approval of the Project was deferred because of several policy and implementation issues that were deemed necessary to be addressed a priori.

On 24 October 2013, MWSS, heeding the recommendation of the NEDA ICC Secretariat, resubmitted the Project, this time using National Government (NG) financing and the technical scope limited only to the construction of the 600 MLD Kaliwa Dam and 2,400 MLD Water Conveyance Tunnel.

MWSS also clarified to the NEDA ICC that the proposed Project is a phased implementation of the Kaliwa – Laiban Dam integrated system, in order to integrate its Water Infrastructure Roadmap.

The revised NG-funded Project was presented during the 27 November 2013 NEDA ICC-TB meeting, who decided to elevate the project to the NEDA ICC-CC for policy decision especially as regards the project financing now proposed to be through NG funds. Relative to this, MWSS was instructed to provide the NEDA ICC-CC a tariff impact analysis and to justify and assert its decision to shift from the originally proposed PPP scheme to NG financing.

In preparation for the 16 December 2013 NEDA ICC-CC Meeting, MWSS finalized the scope and re-submitted the Project under the Build-Transfer (BT) with amortization scheme whose technical scope includes only the 600 MLD Kaliwa Dam and the 2,400 MLD Water Conveyance Tunnel. It may be noted that the 2,400 MLD configuration of the water conveyance tunnel is basically in anticipation of the implementation of the 1,800 MLD Laiban Dam in the next 5-10 years after the commissioning of the Kaliwa Dam, which is consonance with the Feasibility Study of the Project.

The Project, involving only Kaliwa Dam as a BT with amortization PPP project was deliberated on 16 December 2013. However, the NEDA ICC-CC deferred its decision on the Project, following the implementation of changes in the NEDA ICC appraisal of PPP projects. Relative to this, MWSS was instructed to firm up the details of the Project's PPP structure, particularly its payment scheme, in preparation for the presentation of the Project to the NEDA ICC-CC focusing on PPP Projects.

It may also be noted that on May 20, 2014, the Office of the Government Corporate Counsel (OGCC) issued its Opinion, which resolved that MWSS may legally allow the Concessionaires to undertake the operation and maintenance of the Project once constructed. With this, and taking into consideration as well the results of the January 2014 market sounding, it was decided that what will be reflected in the presentation for the 10 June 2014 Investors' Conference would be the BT with amortization option, which has been adopted since its NEDA ICC-CC approval.

	The resulting Project was finally endorsed for approval by the NEDA ICC-CC on 20 January 2014. The Project was thereafter approved for implementation by the NEDA Board on 29 May 2014. The Project is now referred to as the NCWS Kaliwa Dam Project, which is aimed at the realization of the 600 MLD Kaliwa Dam, along with its intake and other appurtenant facilities and a 27.7-kilometer Water Conveyance Tunnel with a capacity of 2400 MLD. These facilities are designed in anticipation of the future construction of the Laiban Dam, which will increase the intake capacity from an envisaged 600 MLD to at most 2,400 MLD. Based on the preceding discussion on Kaliwa Dam, it should be taken into consideration that the technical feasibility of the Kaliwa Dam as a stand-alone dam system has not been separately studied. The Feasibility Study Report recommended the simultaneous implementation of the two dams. It is pointed out that the non-timely realization of the Laiban Dam may impair the Kaliwa Dam's functionality / capacity (e.g. due to sedimentation). Therefore, it is important to note that the construction of Laiban Dam within 10 years from the completion of Kaliwa Dam is crucial for Kaliwa Dam's functionality.	
3	**PROJECT DESCRIPTION: KALIWA DAM**	
3.1	Project Objectives	The main purpose of the Project is to ensure water security. In addition, the Project aims to increase the raw water supply to meet future potable water demand of Metro Manila and reduce dependence on the Angat Dam.
3.2	Sectoral and Regional Program Context	The Project is aligned with the 2011-2016 Philippine Development Plan (PDP). Under the infrastructure development program of the PDP, development of sustainable new water sources as one of its strategies in order to support the growing demand and to secure water supply and economic activity of the growth centers like Metro Manila. The Project will also indirectly promote the creation of a more effective system of forest or watershed management. A watershed management plan has been prepared in line with the PDP goal of sustainable conservation, protection, and rehabilitation of critical watersheds.

<table>
<tr><td>3.3</td><td>Scope</td><td>The Project involves the financing, design, and construction of the following infrastructure facilities:

a. 600 million liters per day (MLD) Kaliwa Dam, intake facilities and other appurtenant facilities; and

b. Water Conveyance Tunnel with a capacity of 2,400 MLD and estimated length of 27.7 km.

The construction of the water conveyance tunnel will start at the water intake at Kaliwa Dam and will end at the designated off-take point at the end of the conveyance tunnel. The capacity of the water conveyance tunnel is 2,400 MLD, as it is in anticipation of the future construction of the 1,800 MLD Laiban Dam.

The construction of the Water Treatment Plants (WTPs) and the connecting transmission pipes to the off-take point at the end of the Water Conveyance Tunnel, will be undertaken by the MWSS Concessionaires, (i.e., Manila Water Company, Inc. and Maynilad Water Services, Inc.). Likewise, the operation and maintenance of the Project will be undertaken by the said Concessionaires. A separate Memorandum of Agreement will be executed between MWSS and these Concessionaires.</td></tr>
<tr><td>3.4</td><td>Costs and Financing</td><td>The Project's total cost is estimated at PhP18.504 Billion, 80% of which is local component (PhP15.0 Billion) while 20% is foreign exchange cost (PhP3.5 Billion). The breakdown is as follows:

<table>
<tr><th colspan="2">Component</th><th>Cost
(PhP Billion)</th></tr>
<tr><td>1.</td><td>Development Costs</td><td>0.100</td></tr>
<tr><td>2.</td><td>Cost of Project Financing</td><td>3.731</td></tr>
<tr><td>3.</td><td>Construction Costs</td><td></td></tr>
<tr><td></td><td>Kaliwa Dam</td><td>4.031</td></tr>
<tr><td></td><td>Conveyance Structure</td><td>8.209</td></tr>
<tr><td>4.</td><td>Land Acquisition & Resettlement Costs</td><td>1.969</td></tr>
<tr><td>5.</td><td>Investment Phasing Costs</td><td>0.464</td></tr>
<tr><td></td><td>Total</td><td>18.504</td></tr>
</table>

The Project Cost approved by the NEDA Board was PhP 18.72 Billion. From this, the initial resettlement and right-of-way cost was PhP 2.18 Billion. Now, it is only estimated at PhP 1.969 Billion, as shown in the table above. The difference is due to the exclusion of the resettlement and right-of-way costs for the construction of the Water Treatment Plants, which as previously mentioned will now be financed by MWSS' Concessionaires.

Hence, the Project's estimated total cost of PhP 18.504 Billion will be wholly financed by the private sector, wherein a 75:25 debt to equity ratio is assumed for private financing following the conduct of 2 rounds of market sounding.</td></tr>
</table>

<table>
<tr><td></td><td></td><td>It should be noted that the cost of project financing that was assumed does not take into account any default risk of MWSS on its contractual obligations (i.e., amortization payments). The inclusion of default risk in the cost of project financing may lead to higher interest rates imposed by banks due to the added risk.</td></tr>
<tr><td>3.5</td><td>Effectivity / Concession Period</td><td>The BT Agreement will take effect on its Signing Date, which is expected to be executed by 2015.

Meanwhile, the Concession Period is twenty-five (25) years, reckoned from the date of Final Acceptance of the Kaliwa Dam and Water Conveyance Tunnel, which is expected to be in 2021. The Final Acceptance Date is defined as the end of a one year testing and commissioning period, reckoned from the end of construction date.</td></tr>
<tr><td>3.6</td><td>Procurement Schedule</td><td><table>
<tr><th>Activities</th><th>Target Date</th></tr>
<tr><td>Publication of Invitation to Pre-qualify Bid</td><td>02, 07, 13 Oct 2014</td></tr>
<tr><td>Submission of Pre-qualification Documents</td><td>15 January 2015</td></tr>
<tr><td>Issuance of Notice to Pre-qualified Bidders</td><td>25 days after submission of PQ Documents</td></tr>
<tr><td>Bid Submission Deadline</td><td>90-120 days after issuance of Notice of Pre-qualified Bidders</td></tr>
<tr><td>Issuance of Notice of Award</td><td></td></tr>
<tr><td>Compliance with Post-Award Requirements and Contract Signing</td><td></td></tr>
<tr><td>Financial Close and DED</td><td></td></tr>
</table></td></tr>
<tr><td>3.7</td><td>Implementation Schedule</td><td><table>
<tr><th>Project Component</th><th>Start of Construction (Month/Year)</th><th>Target Date for Completion of Construction (Month/Year)</th></tr>
<tr><td>Kaliwa Dam</td><td>April 2015</td><td>July 2018</td></tr>
<tr><td>Conveyance Tunnel</td><td>April 2015</td><td>July 2020</td></tr>
</table></td></tr>
<tr><td>3.8</td><td>Estimated Economic Life of the Project</td><td><table>
<tr><td>Dam works, conveyance structure, civil engineering</td><td>50 to 100 years</td></tr>
<tr><td>Electro-Mechanical works</td><td>15 years</td></tr>
</table></td></tr>
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<table>
<tr><td>3.9</td><td>Reference Technical Specifications</td><td>Based on the Feasibility Study for the Project, a reference conceptual design was developed in which the Kaliwa Dam has a height of at least 62 meters above bedrock foundation. The Kaliwa Dam will contain a reservoir with a gross volume of 57 Mm^3 at a Full Supply Level (FSL) of 160 m+. The minimum operating level (MOL) is 135 m+. At the FSL, Barangay Daraitan should not be inundated. The Kaliwa Dam is capable of discharging 600 MLD.

If combined with 1,800 MLD from the Laiban Dam, once it is constructed, the Dam System is envisaged to be able to discharge 2,400 MLD. Hence, the corresponding dimensioning of the Water Conveyance Tunnel.

The water conveyance tunnel is 27.7 km long and will be constructed underground. It will connect the water intake at Kaliwa Dam to the off-take point at the end, where the Concessionaires will connect the pipeline and WTPs.</td></tr>
<tr><td>3.10</td><td>Market Analysis</td><td><u>Demand Projection</u>
The project will be developed to meet additional and future water demand. The water supply-demand projections for the Project is summarized below:

<table>
<tr><th>Year</th><th>Water Demand (MLD)</th><th>Existing Supply (MLD)</th><th>Surplus/Deficit (MLD)</th></tr>
<tr><td>2013</td><td>3,264</td><td>4,132</td><td>868</td></tr>
<tr><td>2020</td><td>3,892</td><td>4,132</td><td>240</td></tr>
<tr><td>2025</td><td>4,322</td><td>4,132</td><td>-190</td></tr>
<tr><td>2030</td><td>4,947</td><td>4,132</td><td>-815</td></tr>
<tr><td>2035</td><td>5,628</td><td>4,132</td><td>-1,496</td></tr>
<tr><td>2037</td><td>5,896</td><td>4,132</td><td>-1,764</td></tr>
</table>

It can be gleaned from the table above that the existing water supply will not be sufficient to satisfy the water demand of Metro Manila before 2025.</td></tr>
<tr><td>3.11</td><td>Social Analysis</td><td>The construction of the Project will affect the following number of households:

<table>
<tr><th>Barangay</th><th>Number of Affected Households</th></tr>
<tr><td>Daraitan</td><td>1,041 (may be inundated and with risk of flooding in case of dam break)</td></tr>
<tr><td>Magsaysay</td><td>191</td></tr>
<tr><td>Pagsangahan</td><td>233</td></tr>
<tr><td>Total</td><td>1,465</td></tr>
</table>

Out of 1,465 affected households, an estimate of 424 households in Barangay Magsaysay and Pagsangahan will be affected by changes in resource access and utilization, land use, social and community networks</td></tr>
</table>

		and other policy changes. An additional 1,041 households in Barangay Daraitan will be at risk of flooding and other effects of possible dam failure or dam break. The Project will also indirectly impact 56 indigenous people (IP) households and will place around 284 IP households at risk of flooding and other effects of possible dam failure or dam break. The total land acquisition and resettlement cost for the Project is estimated at PhP1.969 Billion. This cost includes replacement cost for affected structures, payment for land loss, agricultural tree and crop losses, timber tree losses, and livelihood losses. Other major social impacts include (a) loss of public infrastructure, facilities, and services; (b) disruption in existing government systems; (c) changes in social networks and community integrity; and (d) loss of natural landmarks identified as ecotourism sites. Mitigating measures have been established as identified in the Land Acquisition and Resettlement Program, Social Safeguards Action Plan, Gender Action Plan and Indigenous Peoples Plan. These measures cover key issues per project phases from procurement, detailed engineering design, construction and operation and maintenance stage. The original total land acquisition and resettlement cost of PhP 2.18 Billion is the capped ROW and resettlement cost as per NEDA approval. The implementation of land acquisition and resettlement shall be undertaken by MWSS and any risk on cost overruns and delays in the land acquisition and resettlement activities shall be borne by MWSS.
3.12	Environmental Analysis	The development of the Project is classified as an Environmentally Critical Project (ECP) located in Environmental Critical Areas. The Kaliwa Dam features a holding capacity of 57 MCM and has an inundated area of 113 hectares. It is within the National and Wildlife Sanctuary (NPWS) under Presidential Proclamation No. 1636. Dams are considered ECP if the reservoir capacity exceeds 20 MCM or the inundation area cover more than 25 hectares. Construction works are expected to result in temporary, short-term and reversible environmental impacts, while the completion and full operations of the dam configurations themselves entail permanent and irreversible changes in the ecology of the area. Permanent impacts include loss of precious ecological values due to flooding of agricultural/forest areas, and wild lands and wildlife habitats. Mitigating measures have been established as identified in the Environmental Impact Assessment (EIA). These measures will be established in the form of additional structures and safeguards equipment, best engineering and management practices, capacity building and policy interventions, and vegetative rehabilitation of Kaliwa Dam and appurtenances.

		To date, the application for Environmental Impact Statement (EIS) for the Project is currently under review by the DENR-EMB.
3.13	Value for Money (VfM) Analysis	In the original Feasibility Study with integrated two-dam system, the VfM analysis indicates substantial savings can be made by tendering an integrated two-dam system under a PPP scheme as it generates the most Value for Money, presumably through the projected increase of hydropower potential with the Laiban Dam component. Separate VfM analyses were conducted for (1) Laiban Dam only; (2) Kaliwa Dam only; and (3) Integrated Dam System. In these 3 analyses, life-cycle optimization through scope optimization and efficient risk allocation are assumed to result in lower construction costs, but higher maintenance costs, which is in line with international experience. Many of the value drivers that typically explain differences between the traditional and PPP procurement approaches are applicable for the dam projects. These value drivers include – output specifications, risk allocation, integration of components, performance-based revenues, private financing, competitive pressure, and transaction cost and time. The VfM analysis assumed a **13.2%** construction efficiency. These are based on information from international experiences. The table below shows the assumptions used in conducting the VfM analysis.

	LS	KS	DS
Construction costs: fixed price contract	0.0%	0.0%	0.0%
Construction costs: more efficient tendering	-13.2%	-13.2%	-13.2%
Operation and maintenance costs	+13.5%	+13.5%	+13.5%
Net margin electricity generation	+5.0%	n.a.	+20.0%
Water revenue optimization	0.0%	0.0%	0.0%
Contract tender and management cost	2.5%	2.5%	2.5%
Tender time	+3 month	+3 months	+3 months
Corporate income tax	neutralize	neutralized	neutralized
Financing costs			

The VfM analysis for Kaliwa Dam showed that a BT-amortization for a 25 year amortization period resulted to lower net public sector contributions (in NPV terms) of about PhP 10.61 Billion. The details are as follows:

Parameter	Traditional Procurement (Public Sector Comparator)	PPP Procurement BT (amortization payment) (with 13.2% construction efficiency)
CapEx (with resettlement costs)	PhP 14.43 Billion	PhP 12.52 Billion
NPV of Public Contribution (@ 6% discount rate)	PhP 12.21 Billion	PhP 13.2 Billion

		Note: The indicated capital expenditure for the purpose of the calculations is inclusive of to the right of way cost for the WTPs which will have to be deducted.
4	**PROJECT REVENUE**	
4.1	The Project's revenues solely come from the payment of amortization by the MWSS. The annual amortization covers the Proponent's construction cost, project financing, and the estimated return on investment. Following the NEDA Board approval, a payment mechanism is proposed to be implemented through the imposition of a **Water Security Charge,** which will be charged to the customers and collected through the MWSS' Concessionaires. The nature of the proposed WSC charge is that it is matched to the period's amortization payment divided by the actual water consumption of the period leading up to the point of billing. Hence, there should be no volume or demand risk given that the reckoning of the WSC happens at the end of every period when actual volume has already been determined. As per NEDA approval, the National Government, through MWSS, will bear the collection risk since this is the only source of revenues allocated to match the amortization payments due to the private proponent; hence, an interruption to these collections will disrupt MWSS' ability to pay the amortization payments for Project. As already mentioned this risk is not reflected in the financing costs assumed in the shadow bid model. The proposed WSC was analyzed by the Transaction Advisor, in discussion with the MWSS Regulatory Office (RO), which made its own estimation of the WSC calculation. The Transaction Advisor has provided a model run for the estimation of the WSC that annualized the amortization, accounted for the use of actual water volume, and included VAT charged to MWSS by BT Contractor. The calculation was estimated based on a 25 years + 2-year pre-completion buffer scenario with no indexation as the contractor is not exposed to life-cycle costs during its BT Contract. In addition, the calculation included a scenario with 7.35% collection fee to the concessionaires for the transfer of collection risk. This resulted to a WSC of P1.07 per . The Water Security Charge is intended to appear as a separate line item in the water bill of the consumers of the Concessionaires. For this purpose, MWSS plans to enter into a Memorandum of Agreement with the Concessionaires wherein the latter will act as collecting agents for the proposed Water Security Charge. The collected WSC will then be deposited by the Concessionaires in a dedicated account. It is important to note that MWSS also has no control over the collection efficiencies of the Concessionaires. Further, a number of mechanisms are proposed in the Project to respond to collection shortfalls, to ensure that amortization payments are made on time and in full: a. MWSS will start collecting the Water Security Charge in 2018, two years before the projected completion and the start of the amortization payments for the Project. The Water Security Charge collected during this two-year period will be accumulated in the dedicated account and should function as a buffer to meet any collection shortfalls or amortization payments which will become due. The exact mechanism for this buffer and legal basis for its anticipatory imposition is still unresolved.	

	b. In the event that the buffer is depleted, it is assumed that MWSS will take on short-term financing to generate funds to make payments on time and in full. MWSS's ability to borrow is constrained by the debt ceilings set in its charter. As of 30 September 2013, their foreign debt amounted to P9.84 billion out of a cap of P26.98 billion, and domestic debt of P2.15 billion out of P3.0 billion. c. The Water Security Charge adjustment will feature a mechanism to recover deficits due to collection inefficiencies and regulatory issues, and related financing costs, from period to period. d. Further, the Department of Finance will extend a Performance Undertaking (PU) to the private proponent which will cover all regulatory risks. However, the DOF is still in the process of finalizing the terms of such performance undertaking. Given this, it is unclear yet whether this PU will effectively preserve the BT Contractor from any contract-related default by MWSS. As of date, the payment mechanism for the project has yet to be finalized and reconciled with the financial model. There are two payment mechanisms that are being considered: a) A pass through feature with a weighted average tariff impact of PhP1.11 where tariff starts at PhP1.74 and decreases over time; and b) A fixed amortization payment akin to a concession fee payment using a 7.61% ADR with an effective impact to tariff of Php 0.95.	
5	**GOVERNMENT EXPOSURE**	
5.1	Right of Way and Resettlement Costs	MWSS has to secure Right of Way and prepare for the Resettlement. The Project Proponent is expected to finance the cost of this up to a specified maximum as well as to support MWSS in the execution of the resettlement. MWSS is currently discussing with DPWH the latter's participation in the project should right of way and resettlement costs exceed the specified maximum.
6	**BID PROCESS**	
6.1	Bid Process	Two-stage Bidding [under Republic Act (RA) No. 6957, as amended by RA No. 7718, otherwise known as the Build-Operate-and-Transfer Law]
6.2	Bid parameter for selection	Lowest fixed annual amortization payment. Based on NEDA Board project approval, MWSS reserves its right to reject any or all bids that fall(s) above the public sector comparator ceiling estimate. As mentioned above, the public sector comparator is the cost of investment capital and the social component at PhP 14.43 Billion, which is equivalent to an NPV value of PhP 12.21 Billion.

7	PROJECT VIABILITY ANALYSIS	
7.1	Economic Analysis	It is important to note that since Laiban Dam would still eventually be undertaken within 5-10 years after the commissioning of the Kaliwa Dam, the Economic IRR calculations would still be relevant for the project. The Social Cost-Benefit Analysis (SCBA) that was conducted on the integrated dam system resulted to sound indicators of economic viability. The Economic IRR of 21.4% exceeds the 15% social discount rate hurdle set by NEDA. The resulting Economic NPV of P41, 448 million likewise indicate that the net benefits of the Project over the 100-year project horizon (note that for WTPs and hydropower components, EUL is only 50 years) have positive values viewed in present terms. Moreover, the Benefit-Cost Ratio (BCR) indicates that economic benefits can offset the economic costs at 1.10. The full Project SCBA results point to the soundness of the proposed investment.

Indicators	Integrated Dam	Components		
		Dams + Conveyance	Hydro Power	WTPs
EIRR	21%	20%	28%	17%
ENPV	41,448	17,151.47	1,418.06	4,243
BCR	1.96	1.631	41.10	1.29
SDCR	15%	15%	15%	15%

The evaluation reveals that the dams and necessary conveyance structure component has good viability indicators, meaning, the benefits that are directly attributed to this sub-project are well in excess of the economic costs over the 100-Economic Useful Life (EUL). The water supply that will be guaranteed by the Project will have very significant welfare impact to Metro Manila residents. Also, the hydropower component shows very robust business sense and is a good addition to the dams and conveyance. Moreover, the WTPs, will contribute to the whole Project by ensuring that the water to be distributed to the households are safe for consumption.

The base case Project evaluation from an economic viewpoint, which considers different stakeholder perspectives, concludes that the NCWS Project is an undertaking that will result to important societal benefits and should be pursued and supported by the Government.

Like, an independent SCBA for the Kaliwa Dam component resulted to positive economic benefits, with the following indicators:

Economic Indicators for Kaliwa Dam	
EIRR	16.8%
ENPV	PhP 4,370 Million
BCR	1.165
SDR	15%

The benefits considered for the Project are the following: water security, incremental water consumption, reduction in water-related morbidity,

		avoided water-related morbidity, prevented income loss due to illness, savings of purchases of commercially-available drinking water, substitute irrigation water from Angat, fisheries benefits.
7.2	Financial Analysis	The Cash Flows to the private proponent consist of fixed annual amortization payments to pay for the cost of construction and financing of the Kaliwa Dam and Conveyance Tunnel. The operation and maintenance of the facilities is not part of the Project as MWSS proposes that these will be undertaken by Manila Water and Maynilad (Concessionaires). Since the proposed bid parameter for the Project will be the lowest fixed amortization payment, a ceiling was set at P1,820,526,971 per year. This implies a post-tax Project Internal Rate of Return (IRR) of 10.0%, assuming the private proponent is unable to deliver any construction efficiencies. Should the winning bid exceed this amount, than the government would no longer be getting good value for money through the PPP modality and should pursue the Project through the traditional procurement method. *Note: The lowest amortization payment ceiling is not yet final as a portion of the total project cost contains components of the WTPs that will have to be deducted. At the same time it assumes risk optimized financing where no risk of MWSS defaulting on its contractual obligations is assumed.*
8	**RISK ALLOCATION**	
8.1	The main risks borne by the private proponent in the Project are those associated with the construction of the Kaliwa Dam and Conveyance Tunnel. The Project does not currently include mechanisms for the NG to bear construction risk, and no further flexibility for construction risk transfer to NG is sought. The risk allocation matrix, which is deemed fair and ensures that the private proponent completes the works efficiently.	

Risk Factor Category	Specific Risk	Responsible Party		Remarks
		Government[1]	Private Sector	
Pre-Construction Phase				
Right of Way[2]	Land acquisition and delivery of Right of Way (dam, conveyance tunnel, and designated off-take point)	MWSS	Proponent	The acquisition and clearing of ROW is a joint undertaking. MWSS shall secure legal title and deliver ROW to the Proponent as required to undertake the project. The Proponent is expected to finance the cost (up

[1] Generally, recourse between the parties, if any, will be contained in the BT Contract that will be released to pre-qualified bidders.

[2] The acquisition and clearing of ROW shall be jointly undertaken, with MWSS taking the lead and the cost (up to a specified maximum amount) to be financed by the Proponent. The ROW acquisition will be implemented pursuant to Republic Act No. 8974. Should there be any deviations from the reference alignment by virtue of the
Proponent's technical proposal, all costs for the acquisition of right-of-way shall be borne by the Proponent.

						to a specified maximum amount) of the ROW acquisition. The ROW acquisition will be implemented pursuant to Republic Act No. 8974. Should there be any deviations from the reference alignment by virtue of the Proponent's technical proposal, all costs for the acquisition of right-of-way exceeding the abovementioned maximum amount to be financed by the Proponent, shall be borne by himself.
		Resettlement[3]	Resettlement of affected households within Project timelines	MWSS	Proponent	The resettlement of affected households shall be jointly undertaken. The resettlement will be implemented in accordance with Philippine laws. MWSS will secure legal title to effectuate resettlements. The Proponent has to finance the related resettlement costs (up to a specified maximum amount) and will implement the resettlement in accordance with the resettlement plan (a.o. communications and actual resettlements). The risk of project delay due to resettlement issues will be shared to a certain extent.
		Pre-Construction	Securing approvals for Pre-Construction Works		Proponent	

[3] The resettlement of affected household shall be jointly undertaken, with MWSS taking the lead and the cost to be financed by the Proponent. The resettlement will be implemented in accordance with Philippine laws.

		Works	Conducting Pre-Construction Works		Proponent	
		Permits and Approvals	Securing Environmental Compliance Certificate		Proponent	
			Securing NCIP Certificate of Precondition and Free and Prior Informed Consent		Proponent	
			Securing temporary water permit for diversion of water (during construction of the Kaliwa Dam)	MWSS		
			Securing Water Permit for the Kaliwa Dam	MWSS		
			Securing other National Government Permits		Proponent	
			Securing Local Government Permits		Proponent	
			Revocation/ Non-renewal of Permits		Proponent	
		Design Risk	Delay in submission of Project Design		Proponent	
			Risk of Design not being fit for purpose		Proponent	
			Design is inconsistent with MPSS		Proponent	
		Financing Risk	Securing the necessary financing for the Project within the timetable		Proponent	
		Construction Phase				
		Construction Risks	Construction of the various project components within timeline		Proponent	
			Construction costs overrun		Proponent	
			Construction defects		Proponent	
			Construction works not consistent with approved design		Proponent	
		Risks Common in all Project Phases				
		Insurance	Insurance must be secured to cover property, industrial and third party liability risks		Proponent	
		Material Adverse Government Action	Change in, or introduction of new law; change in interpretation of the same that is binding upon a party.	MWSS	Proponent	The Concession Agreement is to provide for protection of the Private Proponent's returns in the event that there is a Material Adverse Government Action in form of change in law or imposition of additional taxes. If a Change in Law results in a decrease in cash flow by a stipulated amount and Private Proponent has taken reasonable

						mitigation steps, the Private Proponent may be eligible for compensation.
		Force Majeure	Manifestation of other force majeure events affecting the Project	MWSS	Proponent	The party adversely impacted by the force majeure event shall be responsible for taking such actions as may be reasonably necessary to mitigate the adverse effects of the Force Majeure Event acting in accordance with Prudent Industry Practice. In case the adverse effects thereof could not be so mitigated, the Party invoking a Force Majeure Event may be excused from performance of those obligations which are affected by the occurrence of the force majeure event.
		Turn-Over Phase				
		Maintenance and Repair	Failure to repair and refurbish prior to turn-over		Proponent	
		Taxes and costs of turn-over	Failure to pay transfer taxes		Proponent	
		Defects and Deficiencies	Project defects within a certain period from turn-over		Proponent	