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BUSINESS PLAN

2015 – 2016

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COWD BUSINESS PLAN

(2015 – 2020)

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1 EXECUTIVE SUMMARY

This Business Plan reflects the goals, targets, initiatives, activities, projects and programs that will contribute to the significant realization COWD's. Vision and living up to its Mission. The Plan is anchored on the principles of the Balanced Scorecard and gets reviewed and updated every year. The strategic goals are initiated at the topmost level of the organization's hierarchy, the Board of Directors. The 5-year targets for the respective goals are being determined by the Management (executive group). Consequently, the Management commits annual initiatives for every goal – target. It is also important to note that this Business Plan is cascaded to the lowest level of the organization and to the individual targets of every employee.

One important consideration of this Business Plan is the attention given to initiatives that address climate change resiliency and water security goals of the Water District being the water service provider of the City. Climate change resiliency is given utmost importance as this has posed huge threats to the provision of a basic need, which is water. Water security, on the other hand, is closely related to climate change resiliency such that the former could not be assured with threat from climate change left unresolved. As such, the result of the vulnerability assessment conducted plays an important role in framing the goals and the corresponding initiatives and action plans that compose this Business Plan. There are other threats that are not necessarily climate-related but contribute significantly to the vulnerability of the water supply system of COWD. One of these is the high NRW level, which poses threats to inadequacy of supply at the distribution level and inefficiency in the delivery of water services. This is not climate-related, but can be aggravated by climate change effects and adversely impacts water services and security, in general. Both climate and non – climate factors contributing to the vulnerability of the system in general are addressed in the COWD Business Plan.

Similarly, other factors like service coverage expansion plans, existing bulk water supply contract, building expansion and/or relocation, human resources development concerns and even technology advancement are given due considerations in the Business Plan. All of these are charted according to the four (4) perspectives of the Balanced Scorecard: Customer, financial, internal processes, and learning and growth perspectives. In totality, this Business Plan addresses 12 strategic goals with 92 specific initiatives and/or action plans for the year 2016. Moreover, present and future financial capabilities of the COWD including possible partnerships and cooperations are considered in this Plan.

2 COWD BACKGROUND INFORMATION

On August 1, 1973, the Cagayan de Oro City Water District (COWD) was formed as the first water district in the country. It was issued the conditional certificate of conformance (CCC) No. 001 on January 4, 1974 by the Local Water Utilities Administration (LWUA). COWD was born as a self reliant quasi-public entity with the implementation of the Provincial Water Utilities Act of 1973 or PD 198, which created the water districts nationwide. However, through a Supreme Court decision, all Water Districts in the country have been categorized as government-owned and controlled corporation (GOCC) since March 1992.

COWD started with 3,500 service connections when it took over the management of the then NAWASA or the City Waterworks System in 1973. This represented about 21% of the total City population of 117,895 during that year then. The average water production was 12,200 cubic meters per day distributed to consumers through transmission and distribution lines, 39 kilometers long. As of December 2014, the District currently serves 85,038 service connections with an average water production capacity of 160 million liters per day (MLD). This reflects that in 4 decades, COWD has grown around 24 times in service connections, and 13 times in water

production capacity. The potable water COWD serves to the public comes from twenty-seven (27) wells distributed in the six (6) well fields situated at Macasandig, Balulang, Calaanan, Bugo, Tablon and Agusan. There is one spring source located at Malasag. Since 2007, about 40 MLD of the District's total water production capacity has been supplied by a bulk water contractor. Production facilities include three (3) major booster pumping stations and eight (8) reservoirs while transmission and distribution lines extend up to 565.50 kilometers ranging from 50mm – diameter to 800mm – diameter in size. Figure 1 shows that location of the water sources of COWD within the service area.

At the moment, COWD has extended services to 6 barangays in Opol, a municipality of Misamis Oriental adjacent to Cagayan de Oro in the west side and to 1 barangay in Tagoloan, the municipality next to the City in the east side. In total, 63 of the 80 barangays of the City have been covered by COWD services. As of December 2015, the total number of service connections has reached 887,816 representing about 92% of the total estimated population of the District's service area.

Figure 1 – Map of Location of COWD Water Sources

The Cagayan De Oro City Water District (COWD) foresees the continued growth and progress of Metro Cagayan, which extends to Jasaan in the east and Laguindingan in the West. Infrastructure and the foundations to support such development must be implemented in order to provide the proper environment for growth. Most of the immediately required infrastructures are on retrofitting of existing complex areas. Part of the growth is due to expansion and economic development of the City and the neighboring municipalities. Therefore, expansion in facilities and pipeline systems will also be a part of the infrastructure requirements in the future. At the moment, there is a great need to remedy present problems and prepare for the future demands of a growing metropolis. COWD recognizes the importance of water to the daily needs of a growing population and its role in the economic development of the Metro Cagayan.

3 STATEMENT of VISION-MISSION-CORE VALUES

Major decisions and day – to – day operations of the COWD are anchored on its Vision, Mission and the core values that the organization embrace. Specifically, the following are stated accordingly:

- **VISION :**

  We provide excellent water service to the community we serve.

- **MISSION :**

  To be an outstanding water district in the country.

- **CORE VALUES :**

  We demand accountability in all our decisions.

  We are result - driven.

  We work as a team at all times.

  We have faith in One Almighty.

4 SCOPE AND LIMITATION of the BUSINESS PLAN

This Business Plan aims to achieve the following objectives:

1. To operationalize the Strategic Goals of the District, which are anchored on the Balanced Scorecard framework considering the four (4) Perspectives of the Customers, Internal Processes, Finance and Learning and Growth of Human Resources
2. To prioritize strategic initiatives relative to the attainment of the Strategic Goals
3. To identify the Financial requirements to attain Strategic Goals

The strategic goals that are included in this Plan are those that are seen implementable, most relevant and the most necessary within a period of 5 years.

5 EXTERNAL CONDITIONS

Hazards and Risks

The following hazards and risks are of important considerations in framing the initiatives and prioritizing the same given the limited resources of the District. Based on the Vulnerability Assessment that was conducted, the COWD has identified 14 major hazards.

Table 1
Identified Hazards and Risks for COWD

No.	Threat	Vulnera - bility Score	VULNERA - BILITY RANK	System - Subsystem
1	inadequate water supply due to high Non Revenue Water (NRW)	*13.50*	*1*	*water supply - distribution system*
2	inadequate revenue generation due to high Non Revenue Water (NRW)	*9.75*	*2*	*finance - revenue generation*
3	Intrusion of contaminants due to flooding for PW nos. 1,,4,7,9,14,16,19,24,25	*8.25*	*3*	*water source - production wells*
4	intrusion of domestic wastes due to increasing population density around PWs 8, 25, 27	*8.25*	*3*	*water source - production wells*
5	Vandalism of PW #8, #21 & #22 due to absence of fence	*8.25*	*3*	*water source - production wells*
6	Salt Water Intrusion	*8.25*	*3*	*water source - production wells*
7	3 PWs affected by river control project of Government	*8.25*	*3*	*water source - production wells*
8	Intrusion of contaminants thru open utility manhole and vents due to vandalism, sabotage or other possible mean of entry	*8.25*	*3*	*water supply - reservoir & storage*
9	Intrusion of contaminants during low pressure due to deteriorated pipes submerged in canals & drainages	*7.00*	*4*	*water supply - distribution system*
10	water quality issue due to tapping of service connection lines at raw water line	*7.00*	*4*	*water source - production wells*
11	Facility damage upon underground movement due to landslide, flood and/or earthquake	*7.00*	*4*	*water supply - reservoir & storage*
12	Intrusion of contaminants by vandalism thru openings in the ff PWs: 2,3,5,8,10,11,15,17,18,20,21,22,23,26,27,28,29	*5.25*	*5*	*water source - production wells*
13	water quality issue due to inadequate disinfection for PW #18,19, no chlorinating unit	*1.75*	*6*	*water source - production wells*
14	contamination due to intrusion of contaminants during conduct of repair of motors, pumps & other appurtenances.	*1.75*	*6*	*water supply - distribution system*

As shown in the table that precedes, the first 2 identified risks, while non-climate related, impacts on the water supply system can be greatly aggravated by climate change effects. For instance, given the projected increases in temperature, reduction in precipitation rates and recently becoming stronger and more frequent typhoons, inadequacy in water supply at the distribution system due to high non – Revenue Water (NRW) can become even worst. The water supply system of the District is also vulnerable to floods, exposing water sources to risk of contamination. Other human malpractices endanger the water facilities, which include vulnerability to vandalism and contamination of sources from domestic wastes.

Financing Availability

Like all other Water Districts in the country, the COWD prepares and implements budgets on an annual basis and is dependent on the revenues projected to be generated for the year. The primary source of these revenues come from the water sales and such is used to fund the requirements of the District for the year. These requirements include the operating and maintenance expenses, debt service, capital expenditures, the reserve and contingency appropriations. Huge investments are usually amortized after contracting loans from either the Local Water Utilities Administration (LWUA) or the development banks of the Government like Development Bank of the Philippines (DBP) and Land Bank of the Philippines (LBP).

At present , the COWD has a total of PhP67,972,179 borrowings from the LWUA. This amount was loaned in separate times to fund expansion projects in the past. All these projects have long been completed and operational. On the other hand, the District has an existing PhP637,270,891 loan with the DBP. The whole amount was the total of the 2 refinancing schemes for COWD's loan from LWUA. Recently, DBP approved another loan of PhP458M for the NRW Reduction Program of COWD. This is on top of the US$800,000 technical assistance grant from

the USAID BeSecure Project and the Coca-Cola Foundation. The implementation of the NRW Reduction Program, through the technical assistance of the USAID BeSecure Projected took off last November 2015 and the first phase shall end about June 2017. The next three years after 2017 will be focused on the infrastructure component of the Program. At the same time, additional loan is projected to fund the rehabilitation of the rest of the pipeline system and service connection lines and complete the NRW Reduction Program.

In addition, the District is now negotiating with the Vitens Evides International, a Dutch organization, for a Water Operator's Partnership (WOP) Program with funding from the Asian Development Bank (ADB). The said WOP shall focus on the capability building on well monitoring, sanitation and NRW management. Recently, the USAID BeSecure Project has approved the grant of the conduct of a feasibility study for a development of an alternative water source. In consequence, the COWD shall have to integrate the need for funding the implementation of the output of this feasibility study.

Water Demand Management Analysis and Sales Forecast

The consumption pattern per connection over the years show a declining trend. At the outset and from the point of view of climate change, this can be favorable. However, if we look at the trend at which the NRW also follows, it says that the declining consumption pattern may not necessarily be due to conservation efforts. Rather, such is caused by inefficient and intermittent water supply at the distribution level because of the increasing NRW. Therefore, it is possible that with improved level of service upon reduction of the NRW, the water consumption pattern per connection may also increase. This shall result to increase in water demand. The sales forecast of the COWD for the next ten years still shows a constantly increasing trend despite high NRW and decreasing consumption per connection. However, the amounts of increases could be increased if

NRW were brought down much lower and as such, more funds will be available for system improvement and expansion.

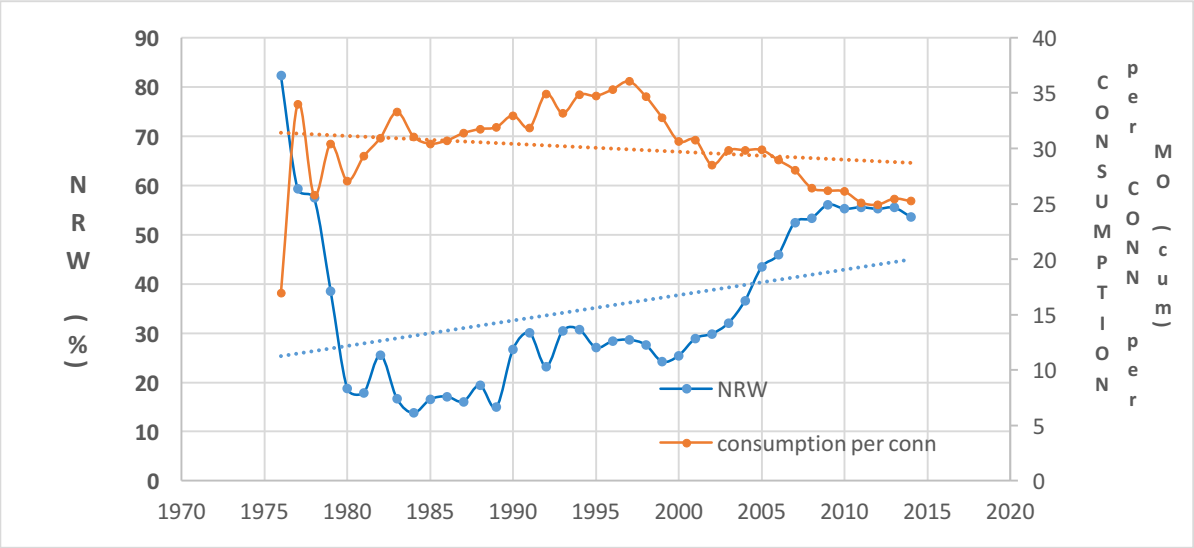

Figure 2
NRW and Average Consumption per Connection

Table 2
Sales Forecast in 6 Years

YEAR	TOTAL SALES (PhP)	YEAR	TOTAL SALES (PhP)
2015	962,861	2023	2,246,262
2016	1,018,749	2024	2,636,110
2017	1,165,524	2025	3,087,419
2018	1,214,037	2026	3,608,885
2019	1,266,283	2027	4,211,119
2020	1,446,173	2028	4,905,352
2021	1,620,308	2029	5,705,078
2022	1,910,015	2030	6,625,201

6 INTERNAL CONDITIONS

Organizational Structure and Staffing

The COWD has a total workforce complement of 561 as shown in the table (Table 3) below. Of these, 24% are contractuals on job order basis while another 23% are casual employees and some 53% are regular employees. However, the total number of positions is 492, which is less than the present total workforce including casuals and job order contractuals. Moreover, the District is now on the process of finalizing the proposed organizational structure and staffing pattern as a move to reorganization in order to address major issues like NRW and climate change as they impact on the utility. This is also pursuant to the re-categorization of all Water Districts where the COWD has been re-categorized under Category A of the 4 categories (A, B, C, D, A as highest).

Table 3
COWD Workforce Complement

Level of Position	Number of Positions	Existing Number of Staff	Percentage to TOTAL
GM, AGM & Dept Managers	10	4	1%
Division Managers	18	17	3%
Supervisors	41	18	3%
Rank & File	423	256	46%
Casuals		130	23%
Contractors per Job Order		136	24%
Total	**492**	**561**	**100%**

The figure that follows is the proposed organizational structure of the COWD, which is for approval by the Department of Budget and Management. The Department for Maintenance & NRW Management used to be Maintenance Department only. Under the new structure, this Department has created divisions and sections that will address major issues of NRW. On the

other hand, units are created under the Engineering Department to address concerns of the environment, including that of climate change and sanitation.

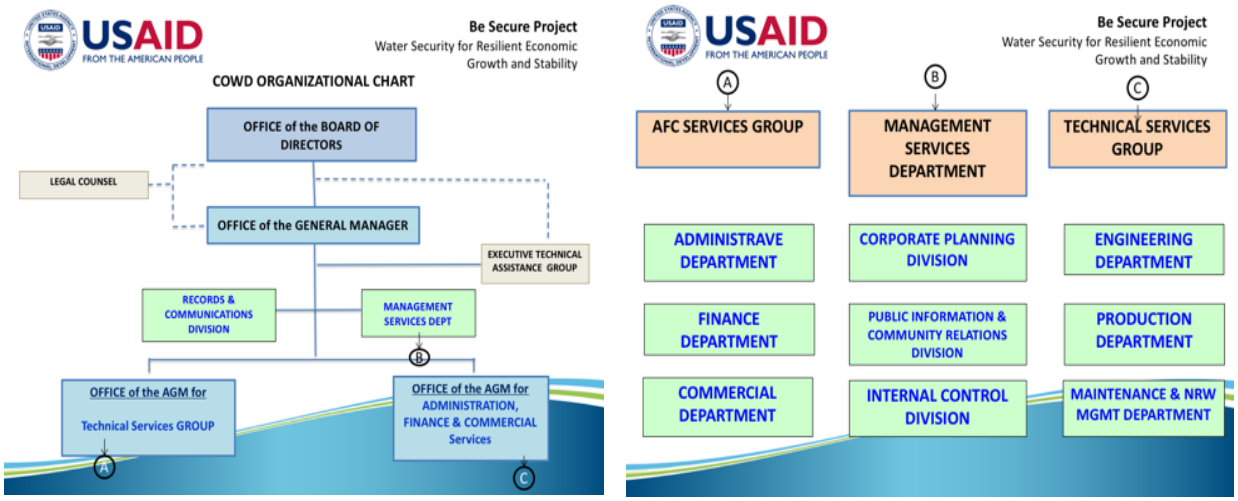

Figure 3
Proposed Organizational Structure

Challenges

Operating a public utility that is solely dependent on the water sales to fund operations and capital expenditures results in a huge financial challenge. The COWD, like all the water districts in the country, does not receive any subsidy of any form from either the National or the Local Government. Thus, the tariff policy remains a significant concern to be able to fund major investments that are necessary to improve and expand services, for instance. Other significant challenges that the COWD faces include political and legal and institutional concerns. The Board of Directors, for example, are appointed by the Local Chief Executive who is a political figure. In a number of instances, collection of payment for water consumed and interference in the implementation of water rates adjustments and in some aspects of the operations have become a concern with political figures. Other challenges are on scarcity of skilled workers and able

engineers joining the workforce and the regulations on attendance to quality training and seminars to capacitate human resources. Yet another challenge is the limitation to create positions and determine attractive salaries, which are governed and regulated by fixed rules. The table (Table 4) that follows summarizes these challenges that behoove the District.

Table 4
Challenges of COWD

Challenges	Descriptions
Staffing Capacity	Limited number of candidate engineers
Organizational	Creation of position & salaries are determined by some fixed rules
Financial	Difficulty in implementation of Water rates adjustment ; collection issues
Political	Can interfere in implementation of water rates adjustments; difficulty to collect from local government
Technical	Limited technical training. If any, price may not be allowed by government audit rules
Legal and Institutional	Present legal battle regarding bulk water supply contract

7 STRATEGIC GOALS and STRATEGIES

The District has been doing strategic planning since 2011. The strategic goals are jointly agreed by both the Policy Making – body (Board of Directors) and the Executive body (Management). The COWD strategic plan has a window of five years but gets reviewed after 3 years. For instance, the 2012 Plan had a timeframe up to 2017 but it got reviewed in 2015, thus, the new Plan is framed for the period 2015 until 2020. The District's Plan follows the Balanced Scorecard framework, where four (4) perspectives serve as guide in formulating the goals. The COWD's strategic plan contains 12 strategic goals, number 8 of which is on water safety and climate change resiliency while number 6

is to reduce NRW. The list below enumerates all 12 strategic goals under the four (4) different perspectives:

P1. CUSTOMERS PERSPECTIVE

STRATEGIC GOAL 1 : PROVIDE EXCELLENT CUSTOMER SERVICE[C1.1]

STRATEGIC GOAL 2 : DELIVER RELIABLE 24-HOUR WATER SUPPLY[C2]

P2. FINANCIAL PERSPECTIVE

STRATEGIC GOAL 3 : INCREASE COLLECTION EFFICIENCY FROM ACTIVE ACCOUNTS[F1.1]

STRATEGIC GOAL 4 : REDUCE PERCENTAGE OF INACTIVE ACCOUNTS *AGAINST* TOTAL A/R[F2.1]

STRATEGIC GOAL 5: IMPROVED ASSET/ INVENTORY UTILIZATION[F3.1]

STRATEGIC GOAL 6: REDUCE NON-REVENUE WATER (NRW)[F4.1]

P3. INTERNAL PROCESSES PERSPECTIVE

STRATEGIC GOAL 7 : STRIVE FOR OPERATIONAL EXCELLENCE[I1]

STRATEGIC GOAL 8 : ENSURE WATER SAFETY & CLIMATE CHANGE RESELIENCY[I2]

STRATEGIC GOAL 9 : CREATE VALUE ADDED PARTNERSHIPS[I3]

P4. LEARNING & GROWTH PERSPECTIVE

STRATEGIC GOAL 10 : ENSURE STRATEGIC COMPETENCIES[L1]

STRATEGIC GOAL 11 : LINK PERFORMANCE & INCENTIVES[L2]

STRATEGIC GOAL 12: ACCESS APPROPRIATE TECHNOLOGY & INFORMATION[L3]

Success of each strategic goal is indicated and measured by specific quantitative targets. To ensure attainment of these targets, the Strategic Goals are then cascaded to the various Departments for operational planning and down to the Divisions and Sections for tactical planning. The full matrix of the strategic goals vis – a – vis strategies or initiatives is attached as Annex 1.

Strategic Goals 1 and 2 top the list of goals of the District. These are aimed at satisfying the public who are the customers of the COWD. This being a public utility mandated to provide a basic need of the society, potable water services. Goal #1, which has six (6) major initiatives, sets a target of an excellent customer satisfaction rating beginning 2018. These initiatives are to be implemented by various departments, units and offices within the organization. The action plans include implementation of customer service standards by all employees of the District; implementation of good housekeeping services by the Administrative Department; for Finance Department to come up with a proposal on payment and discount scheme for service connection installation fees and prompt payment discount scheme; for the Engineering Department to develop a concept plan for new office buildings in two (2) sites; and provision of a performance monitoring board for employees and the customers to get updated of the development and progress of the District with regard its commitments.

Strategic Goal 2, which is still framed under the Customer's Perspective of the Balanced Scorecard is about provision of a 24 – hour water supply. The target is to eventually provide 24-hour water supply in all parts of the service area. This is given the fact that as of 2014, the average supply availability in the five (5) identified critical areas at the west side was only 17 hours and 15 hours for the other five (5) identified critical locations in the east side of the service area. For 2016, the target is set at 20 hour and 18 hour – availability in west and east, respectively. There are 11 initiatives committed by the various departments in order to achieve the target for this goal.

One is the development and/or commissioning of additional wells in order to add, at least, 7,000 cubic meters into the total production capacity of the District. Along with augmenting supply is the District's initiative to rehabilitate production wells.

Other initiatives to help attain the goal of 24-hour water availability is on improving pressure management at the distribution level and reducing downtime. Specifically, one is to evaluate the operations of 2 reservoirs and 2 deep wells in order to improve pressure at the distribution system (initiatives 2 and 5); the third and fourth initiatives is to upgrade the pumping facilities at Balulang Booster Station and the Macasandig Boster Station, respectively from centrifugal to modular type of pump to improve downtime during repair and maintenance works and power interruptions; The sixth priority is to implement the spare pump and motor policy for all production wells, still in order to reduce downtime during breakdowns. Other than augmenting supply, this goal will also be addressed through evaluation and redesign of the pipeline distribution to improve pressure distribution and thereby, improving supply to individual connections. Other initiatives related to improving the water pressure include restoration of isolation valves, installation of air release valves along distribution mains and interconnection of discharge lines. Replacement of turbine with submersible pumps, while an initiative that is climate related, is also intended to help improve availability of supply as downtime is reduced with submersible pumps.

The Financial Perspective has 4 strategic goals, one of which is the Reduction of the NRW to 50% from some 53%. The level of NRW at present is so high and is adversely impacting the customer service efficiency. Thus, the District considers this as a priority goal until it shall go down to at at least 35% in the next 5 to 10 years.

Under the Internal Processes Perspective, the Strategic Plan frames 2 goals: one is to strive for operational excellence and the second is focused to ensure water safety and climate change

resiliency. The success indicator for the first goal is improvement on response time to crucial customer services. On the other hand, second goal is measured in terms of the District's percentage of compliance to the Philippine National Standard for Drinking Water (PNSDW) and percentage of water surplus. In this Business Plan, the initiatives to help attain the targets of 100% compliance to PNSDW and, at least 60% excess supply from water demand include 13 priority actions. These initiatives have also been identified as relevant adaptation measures to address COWD's vulnerability against climate change.

The fourth and the most fundamental perspective is the Learning and Growth, which focuses on the training needs and capacity building of the entire workforce. Also part of this perspective is the attention given to appropriate technology and information. There are three (3) goals framed in this perspective with five (5) initiatives for the goal on human resource development program; only 1 for goal on linking performance and incentive; and seven (7) initiatives to address access to appropriate technology and information.

It is important to note that this Business Plan, to a great extent, has given focus on addressing the vulnerabilities of the District as a result of the recently conducted Vulnerability Assessment. In consequence, all adaptation options addressing every threat are made part of the strategies corresponding strategic goals. The table (Table 5) below summarizes the vulnerability assessment on COWD facilities with corresponding identified adaptation measures.

Table 5
COWD Vulnerability Assessment Matrix

No.	Threat	System-Sub-System	Adaptation Option	Strategic Goals
1	inadequate water supply due to high Non Revenue Water (NRW)	*water supply - distribution system*	• *Reduce NRW% @ Macabalan DMA* • *Manage the Twenty One (21) DMAs* • *Establish GIS*	• *Reduce Non-Revenue Water (NRW)* • *Access Appropriate Technology & Information*
2	inadequate revenue generation due to high Non Revenue Water (NRW)	*finance - revenue generation*	• *Program on Replacement of 1/2"Ø Water Meter (40,000)* • *Implement Program on Replacement of Water Meter (big meters)* • *Conduct survey and implement applicable fix cutting of service connections (based on CY 2013-2015 Inactive Accounts)* • *Post Inspection of Disconnection, Reconnection & New Connection*	• *Reduce Non-Revenue Water (NRW)*
3	Intrusion of contaminants due to flooding for PW nos. 1,,4,7,9,14,16,19,24,25	*water source - production wells*	• *Sealing of all openings* • *Conduct bacteriological test*	• *Ensure Water Safety & Climate Change Reseliency*
4	intrusion of domestic wastes due to increasing population density around PWs 8, 25, 27	*water source - production wells*	• *Septage Management (desludging)* • *Installation of Portalet*	• *Ensure Water Safety & Climate Change Reseliency*
5	Vandalism of PW #8, #21 & #22 due to absence of fence	*water source - production wells*	• *Secure Production Wells with perimeter fence*	• *Ensure Water Safety & Climate Change Reseliency*
6	Salt Water Intrusion	*water source - production wells*	• *Implement the Climate Change Adaptation Program (Focus on monitoring of water level and danger of saltwater intrusion to PWs)*	• *Ensure Water Safety & Climate Change Reseliency*
7	3 PWs affected by river control project of Government	*water source - production wells*	• *Relocate three (3) wells* • *Develop alternative water source*	• *Deliver Reliable 24-Hour Water Supply*
8	Intrusion of contaminants thru open utility manhole and vents due to vandalism, sabotage or other possible mean of entry	*water supply - reservoir & storage*	• *Secure all manholes & vents of all storage facilities* • *Assessment of all storage facilities as to security concerns (for installation of perimeter fence and or assignment of security personnel/guards)*	• *Ensure Water Safety & Climate Change Reseliency*
9	Intrusion of contaminants during low pressure due to deteriorated pipes submerged in canals & drainages	*water supply - distribution system*	• *Selective mainline rehabilitation/replacement . Maintain pressure in the system* • *Conduct Bacteriological test on all Production Wells* • *Maintain 0.30 PPM Chlorine Residual @ Macasandig Booster Pumping Station* • *Regular Information Drive on Intrusion of contaminants* • *Implement Rehabilitation of " After the Meter" existing service connections at Tabako, Puntod/Lapasan with possible intrusion of contaminants*	• *Reduce Non-Revenue Water (NRW)* • *Ensure Water Safety & Climate Change Reseliency*

No.	Threat	System-Sub-System	Adaptation Option	Strategic Goals
10	water quality issue due to tapping of service connection lines at raw water line	*water source - production wells*	• *Transfer all the tapped service connections*	• *Ensure Water Safety & Climate Change Reseliency*
11	Facility damage upon underground movement due to landslide, flood and/or earthquake	*water supply - reservoir & storage*	• *Implement rehabilitation plan on all storage facilities as to safety against calamity* • *Hardening of existing structure (control panels, roofing, windows, doors, macasandig BS & PW#1*	• *Ensure Water Safety & Climate Change Resiliency*
12	Intrusion of contaminants by vandalism thru openings in the ff PWs: 2,3,5,8,10,11,15,17,18,20,21,22,23,26,27,28,29	*water source - production wells*	• *Sealing of all openings*	• *Ensure Water Safety & Climate Change Resiliency*
13	water quality issue due to inadequate disinfection for PW #18,19, no chlorinating unit	*water source - production wells*	• *Install Chlorinating Unit*	• *Ensure Water Safety & Climate Change Resiliency*
14	contamination due to intrusion of contaminants during conduct of repair of motors, pumps & other appurtenances.	*water supply - distribution system*	• *Conduct flushing every after repair* • *SOP on repair & maintenance*	• *Ensure Water Safety & Climate Change Resiliency*

Specifically, the following areas of the system are given specially given substantial attention in this Plan: water sources and the transmission and distribution system. These two aspects of the operations and the system, in general, are key to water security and operations efficiency, which are essential to claiming and living up to the District's Mission and Vision.

Water Sources

In the Vulnerability Assessment, ranking number 3 is the water source, which covers, at least nine (9) wells due to threat in intrusion of contaminants caused by flooding. About 70% of the District's supply capacity is coming from deep well sources and the other 30% is coming from a river upstream of Cagayan de Oro and is provided by a private partner. One of the major recommendations in the recent hydrological vulnerability assessment conducted by the USAID BeSecure Project for Cagayan de Oro is the diversification of water sources. This supports the vulnerability assessment that the COWD has done on the system. The following initiatives were, are and/or will be implemented: (a) conversion from turbine pump to submersible pump; and (b) Sealing of all well openings. The conversion from use of turbine to submersible pump reduces the chances of contaminating the borehole during flooding at the same time reduces the risk of exposing the pump to damage, and therefore, interruption in supply during floods shall be significantly minimized. In 2013, six (6) wells were immediately converted with the aid of JICA. Per COWD's program, conversion is at a rate of 2 wells per year. At present, there are only 5 wells that are still using turbine pumps, which are also scheduled for replacement this year until

about 2 years more. However, all those wells within the flood zones have been replaced with submersible pumps already.

Another threat in the water sources of the COWD is the possibility of salt water intrusion. Accordingly, the District implements a close monitoring of the conductivity property and water level in wells. Unfortunately, no past records can show the conductivity measures or any indicator for salt water intrusion in these wells. There are also, at least three (3) wells that are seen to be disturbed by the river control project of the Government. One of the major considerations of the District to address disruption in services due to dislocated, damaged and/or contaminated sources is the development of an alternative water source. In 2016, COWD shall conduct a feasibility study on an alternative water source through a grant from the USAID. In addition, the District is now working on a partnership with the Vitens Evides International (VEI and the ADB primarily focused on capacity building on well monitoring and evaluation of groundwater sources as to potential and capacity to sustain supply.

Transmission & Distribution System

The District is most vulnerable at the transmission and distribution system of the pipeline network due to very high Non-Revenue Water (NRW). This has exposed the utility to inadequate water supply at the distribution level, and therefore, inefficient services to the public. The high NRW has also negatively impacted the financial health of the District. Revenue generation could be optimized with controlled NRW. To address, COWD launched the NRW Reduction Program with a grant component from the USAID-BeSecure Project and the Coca-cola Foundation on top of the District's loan with the Development Bank of the Philippines (DBP).

The distribution system is also threatened by possible intrusion of contaminants, especially during low pressure due to deteriorated physical conditions of pipes and many are submerged in canals and drainages. One of the adaptation measures is the implementation of selective mainline replacement and rehabilitation of service connections; another is the strict adherence to the National Standard for Drinking Water, and this is keeping the residual chlorine at 0.30 ppm at the distribution system

8 FIVE-YEAR FINANCIAL FORECAST

Annex 2 shows the 5-year Cash-flow projection of the District. This includes CapEx, Operating costs, debt service, tariff and revenue projections. The major investments needed to implement adaptation measures identified in the vulnerability assessment shall be funded through loans and revenue generated for each year. At the same time, the District will continue to search for partners and potential donors for possible technical assistance to implement and continue implementation of proposed and already started programs that address these goals. Primarily, funding projections are manifested in the District's cashflow projections and one major element in cashflow projections is the set of assumptions considered. In this case, the major assumptions in the cashflow projections include service connection growth rate, water production from wells, bulk water supply and from new developed sources, tariff adjustments, capital investments and other disbursements for operations.

Projections in service connection growth is based on conservative circumstances like the historical trend for the past years. A slight increase of about 600 more connections is projected in 2018 and 2019 when initial results of NRW reduction program will be first felt. The NRW, on the other hand, is projected to reduce by 2% per annum and along with it is an improvement in the service level within the existing service area. Moreover, the CapEx includes investments that will

be needed to fund all initiatives that will support the attainment of the District's strategic goals and has been projected to escalate from 10% to 30% every year. The next biggest investment will be on financing the water safety and climate resilience goals of COWD, of which one adaptation option is the development of an alternative water source. This shall result to a projected debt service of about 76% sometime in 2019. Other than the growth in the number of service connections as a major source of additional revenues, increase in water tariff is another. The projections consider tariff adjustments of about 10% every two (2) in the next five (5). In general, the financial condition of the COWD appears healthy and capable to sustain the cash requirements in the next five years. The cash end balances suggest that additional cash requirements can still be accommodated when necessary.

9 BUSINESS PLAN UPDATE PROCESS

The Business Plan must be reviewed and updated on a yearly basis in order to keep track of the unforeseen scenarios in the operations. The review and updating must involve both the policy-making body and the executive branch of the organization. The Management then has to cascade the Business Plan to every personnel of the District in order to have unity and coordination in the performance of responsibilities and duties towards the attainment of the organization's strategic goals. Currently, the District is availing of the assistance from the USAID BeSecure in developing the Emergency Response Plan in order to mitigate damages and risks that may be brought about by calamities, disasters and other emergency circumstances. Consequently, this Business Plan shall include the Emergency Response Plan of the District and the all costs and activities that shall be associated with it.