Chapter IV- Human Induced Hazards

Human made or induced hazards are threats having elements of human intent, negligence, error and involving a failure of a system. Human induced disasters are a result of inadequately managed human induced hazards such as Technological Hazards, Environmental Hazards and Socio, Economic, Political, Security Hazards.

Technological hazards have little or no warning to precede the incident. These dangers originate from industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Some of the technological hazards which are discussed in this Manual are structure collapse, fire, vehicular related accidents, chemical spill, electrical black out/massive power failure, food poisoning and system failure.

Environmental hazards are events that pose a threat from the surrounding environment encompassing the broad spectrum of acute and chronic effects of industrial, agricultural and naturally occurring microorganisms, chemicals and radiation in our soil, water, air, food and wastes. Some environmental hazards included in this Manual are red tide and water pollution.

Socio-economic, political, security hazards are caused by criminal and human violence which pose threat to the security of a great number of people, and may be motivated by political or economic reasons. Some of these are robbery, bomb threats/explosion, kidnapping threats, civil disorder, work stoppage, theft, terrorists attack/sabotage, and suicide/death within the premises, misinformation and scandal.

In this Manual these human induced hazards are categorized as Non-Water Supply Service Hazards/Disaster. These will not only affect the provision of water supply but will potentially harm or distort the public image of the Kapatagan Water District and the goodwill that it has established, or put to risk the health and life of its employees and concessionaires.

Human Induced Disasters	Description	Potential Effects on KAPWD	Prevention Mitigation & Preparedness (what to do before?)	Response (What to do during)	Recovery & Rehabilitation (What to do after?)
1) Technological Hazards a) Structure Collapse	It is often caused by engineering failures such as under design of structural components, by corrosion attack, & by aerodynamic in structures.	 1) Injuries 2) Fatalities 3) Psychological Damage 4) Economic Consequences 5) Water Supply interruption 6) Loss of good reputation 	 Conduct inspection of the office building, pump stations & reservoirs. Conduct inspection of the ripraps on Pump Stations. Repair or rehabilitate structures to put them in good condition. Assign personnel who will always check the fire 	 1) Vacate the building, pump stations or reservoirs immediately 2) Apply first aid and in cases of injuries or fatalities bring the victims to the nearest hospital. 	 Secure the area Assess and evaluate the damaged structures through the help of experts. Report the extent of damages to authorities for proper action. KAPWDDRRMT recommends the abandonment of traction upon recommendation of authorities, if necessary.
2) Fire	Fire is the composed of three elements – heat, fuel & oxygen which when combined will result in a chemical reaction called burning. Fine consumes in the oxygen in the air		 Revisit the Emergency Response Plan of the KAPWD. Develop building evacuation plans for each of the building & pump station. Install fire extinguisher 	 1) On the alarm. 2) Advise the BFP 3) Fight the fire with readily available equipment. 4) Seek the nearest exit not blocked by the fire. 5) Close window & as you 	 Conduct inventory of personnel. Seek medical assistance for the injured if any. Coordinate with the BFP & City Engineering Office for the assessment of the damage. Conduct inventory equipment,

	 while increasing the concentration of the deadly carbon monoxide & other toxic gases in the atmosphere. Inhaling carbon monoxide can cause loss of consciousness or dead within minutes. 		 & alarm in the office building & in pump stations. 4) Maintain proper signage for fire exits. 5) Insure the building, pump stations, reservoir & other properties of the KAPWD. 6) Requests the BFP for their assistance I the conduct of fire and earthquake drills. Prone areas of the building. 	 escape from the fire scene to delay the spread of the fire. 6) Get out as safely and quickly as you can. 7) Stay away from the toxic smoke & gases. 8) Do not Panic. 9) Do Not run. 10) Shut of the main Switch. 11) Do not jump out from an upper floor. 	 fixtures & facilities. 5) Report Damage/s to authorities. 6) Stay out of fire damage office building & pump station until BFY declared it is safe to re-enter.
3) Vehicular Accident	The KAPWD has several service vehicles to be used by the technical Staff attending maintenance & installation requests, Meter reader to read meters, bill collectors to collect payments & other employees. This presents certain risk to the	 Negative impact on public image or loss of good reputation. Panic among employees & concessionaires. Possible water interruption. Injuries or fatalities if not 	 Keep the vehicle in good condition. Always check the breaks, & tires & fuel. Observe traffic rules, dive defensively & practice road courtesy. Never sleep inside the vehicle. Stay alert & prepare yourself for any 	 Bring the passengers employees out of the vehicle immediately. Apply air & bring to the nearest hospital the injured employees if necessary 	 Assess the damage of the service vehicle. Immediately repair the damage if any to avoid delay in the implementation of request.

	employees' safety.	properly managed.	emergency.		
	Potential dangers happen especially when board & alight from the service vehicles & even during transporting/driving.	5) Economic Consequences.			
4. Chemical Spill	Chemical spillage/leak may pose a threat the environment, human life and death. An individual may be considered exposed to chemicals by inhaling or by the chemical coming in contact with food, water, medicine or clothing thus making it hazardous to people. The best way to avoid chemical. Accident is to read & follow direction for use, storage & disposal of the product.	 Negative impact on public image. Loss of good reputation. Economic consequences. Delay of response time to maintenance & service requests. 	 Take proper precautions when handling chemicals. Educate employees concerned on handling chemicals. Keep safe storage of chemicals. Dispose chemicals properly. Use gloves & masks when handling chemicals. A stable environment in the office building, pump stations & 	 1) Vacate the affected area. 2) Avoid throwing water or touching the chemicals with bare hands. 3) Inform proper authorities. 4) Cover the nose with wet cloth & transfer casualty to a safer place. 5) For ingested chemical induce vomiting & give milk or starch. 6) Ensure adequate air circulation around the victim. 	 Call paramedic assistance. Bring the victim to the nearest hospital.

			reservoirs.		
			7) Provide fire & chemical		
			extinguishers in office & in the pump stations.		
5) Electrical Blackout or					
power failure	It is a short or long term loss of the	1) Caused death or	1) Make sure that there is enough fuel supply in all		
	electric power	injury if inhaled by	the pump stations.	1) Unplug all electrical	1) Check electrical outlets &
	covering a very wide	employees &		appliances.	switches.
	area.	humans.	2) Charly the corrects if		
		2) Degrade the	2) Check the gen sets if they are in good		
		environment	condition.	2) Stay put in one place to avoid	2) Transfer the pumping
				accident.	equipment from gen set to INEC
		3) Pollute the atmosphere,	3) Announce to the concessionaires of the		power immediately.
		groundwater soil	situation for them to fill	3) Record the operation time of	3) Record everything in log book
		wetland &	their drums of water for	the gen set including fuels	for future reference.
		waterways causing danger to human	future use.	consumed.	
		health & even		4) Make sure to shut off the gen	
		deaths.		set every after 8 hours (2hours	
		4) Loss of good	4) Install emergency lightning in dark places &	rest time).	
		reputations or public	on stairs.		
		image of the BWD.			
			5) Keep flashlights in		
			accessible places.		
			6) Prepare ready		
			gas/lamps, candles for		
			emergencies		

			7) Make sure that there are operators on duty when the gen sets is on.		
6) System failure	This happen when the KAPWD failed to meet the expected outcome of a water source, & thereby could not provide the requirements needed by the concessionaires.	 Total or partial disruption of water supply. Loss of goodwill with the concessionaires. 	 Conduct feasibility before starting a project. Award the project to a LWUA accredited contractor with vast experience in water system. Supervise the construction of the project following all the rules & regulations contained in the BID documents. Check the water system before the contractor will turn over. Commission the project and request for warranty. If after commissioning fails, report proper authorities. 	 Announce to the concessionaires the situation and provide measures to mitigate inconveniences. Repair the system immediately Take all precautionary measures during repair. 	 Assess the damage and report to proper authorities. Record the damage and repair which was done for future reference. Documents all the proceedings for submission to proper authorities. Announce to the public the resumption of the service.

2. Environmental Hazards 1) Water pollution	Water is polluted by substances like sewage, marine litter, oil & chemical spills, fertilizers & pesticides entering the groundwater source of the KAPWD.	 1) Total partial disruption of water supply. 2) Loss of goodwill of with the concessionaires. 	 Educate the proper disposal of wastes, human & chemical. Implement the Environment Management Plan of the KAPWD. 	 Clean up the River and surrounding areas of all water sources of the KAPWD. Boil water for consumption. Provide warnings on affected areas. Strictly monitoring the potability of water supply. 	 Seek medical assistance for water borne disease casualty. Continue monitor the potability of water supply.
2) Red tide				polability of water supply.	
	Refer to the discoloration of water bodies due to the presence of high level of "bloom" of a group algae called dinoflagellates which are toxic & responsible for paralytic shellfish poisoning.	 Pollute the water supply of the KAPWD. Cause death or injury when consumed. Employees file leave of absence due to food poisoning which may lead to water supply interruption. 	 1) Disseminate red tide information, symptoms & progressions. 2) Keep track of & warn regarding media information of fish, shellfish mollusks & crabs. 	 Monitor progression of symptoms & seek medical advice. Avoid or refrain from eating sea foods while danger exists. 	1) Seek medical advice.
3) Socio-economic, political, security hazards	Robbery is the crime		1) Tighten security		

1) Robbery	of taking or attempting to take something of value by force or by putting the victim in fear, Among the types of robbery is armed robbery involving the use of weapon.	 Panic among employees & concessionaires within the premises of the KAPWD. Affect cash flow Injury or possibly death, if not properly managed 	 measures by installing guard or CCTV at the office. 2) Employ precautionary strategies such as password. 3) Be vigilant about the safety of everyone. 4) Provide alarm connected with the PNP. 	 1) On the alarm 2) Report to proper authorities. 3) Listen to the advice of the police & other authorities. 4) Be vigilant while the robber are still inside the building. 	 Bring the victim to the hospital for medical check-up/psychological-social counseling. Support the employee in seeking justice. Assess the amount taken by the robber. Convene with proper authorities on what to do & how to solve the problem.
2) Theft	Theft is the taking another person's property without that person's permission or knowledge with the intent to deprive the rightful owner of it.	 Negative impact on public image (erosion of public trust & confidence on capability to deliver service) Negative impact on employee's morale & performance. May affect cash flow. 	 Keep safe storage of personal belongings. Install CCTV camera. Record all the properties of the KAPWD If employees are taking care of these properties provide MR. Provide warnings that unauthorized persons are not allowed to enter the premises. 	 Report to proper authorities. Listen to the advice of the Police & other authorities. Keep the evidence. Document everything. 	 Conduct physical count of the properties of the KAPWD every end of the month. Look the storage room & the pump stations. Provide sanctions.

3) Bomb Threat/Explosions.	A bomb threat is generally defined as a threat, usually verbal or written, to detonate an explosive or incendiary device to cause property damage, death or injuries, whether or not Such a device actually exist. Explosion is a violent release of energy that May cause Injury and/or damage to property.	 4) Loss of property of the District. 1) Panic among employees & concessionaires within the premises of the KAPWD. 2) Affect cash flow 3) Injury, or possibly managed to facilities water service interruption 	 Prepare a KAPWD bomb threat emergency plan. Encourage employees to be constantly aware of bomb threats and emergency plan. Provide security or CCTV camera for the protection of employees, property, facilities & materials against unauthorized entry. 	 Threat all bomb threats received as real & report immediately to authorities. Remain calm & courteous. Try to obtain as much information as possible as to the identity of the caller, the characteristic of the caller. Ask the exact Location of the pump Apply delaying tactics Report all details to the authorized persons immediately 	 Request proper authorities to search the building or pump stations, reservoir immediately & thoroughly Strictly implement security measures within the premises. Post incident stress debriefing, if necessary.
4) Terrorists Attack/Sabotage	A situation involving actual or threatened violence, which can be sudden and	1) Panic among employees and concessionaires within the premises	 1) Tighten security measures. 2) Educate employees 	1) Report to proper authorities.	1) Concentrate on survival.

	random in nature. In	of KAPWD	about the risk.		
	a workshop			2) Listen to the advice of the	2) Assess any damage.
		2) Water service		Police Officers.	
		interruption.			3) Repair or rehabilitate
					immediately.
		3) Injury, or possibly			
		death, if not properly			4) Always be vigilant.
_		managed.			
5) Work Stopp	Mass refusal of				
	employees to work	1) Negative impact	1) Conduct consultative		
	usually taking place	on public image (erosion of public's	meeting with employees		
	as a Result	trust & confidence on	on the issues	1) Implement work rotation &	1) Assess who joined the work
		capability to deliver	0) Duravida Onamatiana	multi-tasking.	stoppage.
		service)	2) Provide Operations Manual to officers &	matt tasking.	stoppage.
			employees to know their	2) Have a dialogue with the	2) Report to proper authorities.
		2) Sales drop	responsibilities & what	employees who stopped from	-,
			the KAPWD expects to do	working.	3) Document all the proceedings
		3) Slower	& act.		for future reference.
		productivity		3) Meet halfway with the	
			3) Provide seminars on	demands of the employees	
			employee's right &	concerned without sacrificing	
			privileges & Values on	service services to	
			work.	concessionaires and the KAPWD	
				as a whole.	
			4) Implement work		
			rotation for all employees	4) If no final decision has been	
			to be familiarized with all	made between the two,	
			kinds of jobs.	implement the existing policy on the KAPWD regarding the	
				situation.	
			5) Discourage employees		
			to join rally or protest that will disrupt the	5) Report to proper authorities.	
			delivery of service.		

6) Misinformation	The act of disseminating false/malicious information among concessionaires, employees or other stakeholders of the KAPWD either by somebody within the agency or a third person with the intent of destroying the public image of the KAPWD	 Negative impact on public image (erosion of public's trust & confident on capability to deliver service. Loss of good reputation Conflict among employees which may affect productivity. 	 Make the employees & concessionaires aware of the Operations Manual, Freedom of Information Manual & Citizens Charter If there is dispute among employees, investigate and if possible settle within the office. If there is issue between KAPWD & its concessionaire, investigate & settle within the office. Correct as early as possible any misinformation. Stop as soon as possible the spread of misinformation. 	 Report to proper authorities. Investigate the matter. Correct the wrong information. Settle and document every proceeding. 	 After the settlement, public apology should be done by the person who spread the wrong information through any form of media. If the image of the KAPWD was put to bad light, provide sanction to the doer or the person who spread misinformation
7) Scandal		1) Negative impact	1) Make the employees		

Refers to the behavior or widely publicized allegation or set of allegations that damages (or tries to damage) the reputation of the KAPWD, individual or creed. These may be based on true or false allegations or a mixture of both.	on public image (erosion of public's trust & confident on capability to deliver service) 2) Negative impact on employee's morale & productivity	aware of office mechanisms such as Sexual Harassment, Values on Work & Operations Manual. 2) Make the employees aware of the do's & don't as a public official.	 Report to proper authorities. Listen to the advice of the authorities. Investigate the scandal. Document every proceeding. 	 Require public apology to the doer in any form of media. Provide sanction pursuant to existing laws to the doer assistance to the victim.
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Chapter V – Alert Levels

For purpose of the declaration of crisis level, crises shall be categorized whether it is water supply service crisis or non-water supply service crisis.

5.1. Alert Levels- Water Supply Service Crisis

A water service crisis that would necessitate the activation and execution of this KAPWDDRRMP will be based on the severity of damage to its capability to supply its service area, such damage to be measured based on duration of nondelivery of service and the extent of affected area where:

Level 1 – Classified as short duration of crisis situation (less than one day) and with less than 25% of the service area affected, or that which may result to easily-managed and controlled damage or effect.

Level 2 – Classified as short duration of crisis situation (less than one day) and with 25% -69% of the service area affected, or that which may result to significant but manageable damage or effect.

Level 3 – Classified as long duration of crisis situation (more than one day) and with 25%-69% service area affected, or that which may result to significant and more complicated management of the damage or effect.

Level 4 – Classified as long duration of crisis (more than one day) and with 70%-100% of the service area affected, or that which may result to substantial and catastrophic damage or effect to the facilities.

Level 1 Short Duration (less than 1day) Less than 25% of the area affected Level 2 Short Duration (less than 1 day) 25%-69% of the service area affected Level 3 Long duration (more than 1 day) 25%-69% of the service area affected Level 4

Long duration (more than 1 day) 70%-100% of the service area affected In case of gradual onset of emergencies as in typhoons and slow-rising floods, alert levels may be declared by the KAPWDDRRMT in order to take appropriate measures and address potential effects of the phenomenon in question.

In Level 1 Crisis, information dissemination shall be confined within the affected area, including the barangay covering the area.

In Level 2 Crisis, information dissemination shall be confined within the affected area but the Early Warning Team shall immediately monitor news, blogs and other websites for inaccuracies. The Rescue and Recovery Team shall provide updated information to the Early Warning Team.

In Level 3 Crisis, information dissemination shall be confined within the affected area but the Early Warning Team shall immediately monitor news, blogs and other websites for inaccuracies. It shall also be prepared to set up media station anytime. The Rescue and Evacuation Team shall provide information to Early Warning Team on the progress of service restoration and delivery.

In Level 4 Crisis, information dissemination shall be confined within the affected area but the Early Warning Team shall immediately monitor news, blogs and other websites for inaccuracies. It shall at once develop, in coordination with the Rescue and Recovery Team, the official statement that will be relayed to the officers, employees and to the concessionaires. The Rescue and Recovery Team shall likewise provide updated information to the Early Warning Team on the progress of service restoration and delivery.

5.2. Alert Level of Non-Water Supply Service Crisis

All Non-Water Supply Service crises shall be given the following codes:

a) Code Blue – where the crisis situation is confined to a limited area. It indicates the need to stay put and "lock down" behind closed or locked doors.

b) Code Red – where the crisis situation disrupts all or a large part of the functions of the Kapatagan Water District or endangers the health and safety of its employees or its concessionaires. Code Red indicates the need for evacuation.

Chapter VI- KAPWDDRRMP Framework

The KAPWDDRRMP is aligned with the National NDRRM Plan pursuant to Republic Act

10121 otherwise known as the Philippine Disaster Risk Reduction and Management Act of

2010.

The KAPWDDRRMP serves as a road map on how disaster risk reduction and management will contribute to the attainment of sustainable development, build the adaptive capacities of communities, increase the resilience of vulnerable sectors and optimize mitigation opportunities with the end in view of promoting people's welfare and security towards gender-responsive and rights based sustainable development.

The KAPWDDRRMP just like the NDRRMP is a comprehensive, action-oriented response to international concern about the growing impacts of disasters on individuals, communities and national development.

Framework for Action priorities for action

1 Make Disaster Risk Reduction a Priority

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

2 Know the Risks and Take Action

Identify, assess, and monitor disaster risks - and enhance early warning

3 Build Understanding and Awareness

Use knowledge, innovation, and education to build a culture of safety and resilience at all levels

4 Reduce Risk

Reduce the underlying risk factors

5 Be prepared and Ready to Act

Strengthen disaster preparedness for effective response at all levels

Chapter 7 – KAPWDDRRMP Proposed Plans and Projects

The KAPWDDRRMP proposed priority plans and projects for the years 2018-2022 were formulated by the BWDDRRMT for each of the 4 pillar to wit:

1. Disaster Prevention and Mitigation

a) Review and integration of KAPWDDRRM/CCA policies in the KAPWD policies, plans and budgets.

b) To draft resolution for earthquake, flood and typhoon trust fund

c) To conduct seminars, workshops on capacity building

d) To conduct trainings on green agriculture

e) To conduct risk analysis and vulnerability assessment

f) To update hazards maps

g) To install warning and forecasting system

h) To update the KAPWDDRRM Manual

i) To designate resettlement sites and evacuation centers

j) To provide flood control measures

k) To promote the KAPWDDRRM Manual to all employees, concessionaires and other agencies.

I) To establish KAPWDDRRM/CCA database systems

2) Disaster Preparedness

a) To establish the guides/protocols for KAPWDDRRMT

b) To conduct regular and periodic drills and simulation exercises

c) To integrate KAPWDDRRM during activity of the officers and employees

d) To conduct capacity building and KAPWDDRRM Skills training

e) To establish of Emergency Response Teams at all sections

f) To install early warning systems, disaster command, and communication centers.

g) To conduct inventory of existing resources.

h) To evaluate the existing systems.

i) To continuously research on KAPWDDRRM/CCA

j) To purchase CCTV cameras

k) To purchase emergency rescue equipment

I) To stockpile commodities

m) To formulate guidelines for the preparation and distribution of relief goods.

n) To conduct blood-letting activity

o) To conduct trainings on food storage, water storage, food preservation,

seedling and planting materials.

p) Creation of KAPWDDRRMT office

q) To prepare a contingency plan

r) To strictly implement RA 10121 and CCA RA 9729

s) To draft resolution on pre-emptive evacuation

3. Disaster Response

- a) To activate Incident Command System
- b) Deployment of Rescue and Evacuation Team

c) Submission of Disaster Report to the KAPWDDRRMT Team Leader and to the General Manager

- d) To repack goods
- e) Deployment of Assessment and Needs Analysis Team

f) Relief good distribution

- g) To conduct of coordination meeting
- h) To conduct clearing operations
- i) Deployment of medical teams
- j) Establishment of first aid tents

k) Establishment of evacuation centers

- I) Pre-emptive evacuation
- m) Profiling of displaced families
- n) Assessment of factors to determine transition to recovery/rehab phase
- o) Profiling of damaged properties, equipment, machineries and facilities

4. Disaster Rehabilitation and Recovery

- a) Profiling of displaced families
- b) Profiling of damaged properties, equipment, machineries and facilities
- c) Repair and rehabilitation of damages
- d) Improvement/renovation of facilities and procurement of equipment

Noted by:

- e) Skills training for early recovery
- f) Construction and repair of major infrastructures
- g) Construction/repair/rehabilitation of the systems
- h) Rehabilitation of flood protection (riprap), canals or drainages
- i) Trainings/briefings on stress debriefing

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