

DROUGHT RESPONSE PLAN RAROTONGA	LEVEL 1 - NORMAL	LEVEL 2 - STAGE 1 WATER WATCH "ALERT"	LEVEL 3 - STAGE 2 WATER WARNING "SAVE WATER"	LEVEL 4 - STAGE 3 WATER EMERGENCY "JUST ENOUGH"	LEVEL 5 - STAGE 4 SERVERE WATER EMERGENCY "CRITICAL"
GOAL	Normal conditions	Goals : <ul style="list-style-type: none"> Increased public awareness maintain integrity of water supply system 	Reduce: <ul style="list-style-type: none"> water use/peak demands by 20% overall weekly consumption by 10% 	Reduce: <ul style="list-style-type: none"> water use/peak demands by 50% overall weekly consumption by 25% 	Maximise water conservation Maintain water availability for daily consumption.
TRIGGERS	<p><u>Conditions:</u> Normal or near normal:</p> <ol style="list-style-type: none"> rainfall stream flow reticulation pipeline water pressure > 75% of total water storage capacity Community and residential water storage <p><u>Water Source:</u></p> <ol style="list-style-type: none"> Water Intake Stream Water Intake Gallery Private & Public Water Rainwater Tanks 	Triggers: (Any of) <ol style="list-style-type: none"> Recent period of <u>below average rainfall</u> Stream flow below 75% capacity Reticulation Pressure readings below 75% capacity Residential/Community storage below 75% Tourist storage below 75% capacity Low rainfall forecast for the next month 	Triggers: (Any of) <ol style="list-style-type: none"> Continuous below average rainfall extending from previous month Stream flow below 50% capacity Reticulation Pressure readings below 50% capacity Residential/Community water storage below 50% of capacity Tourist storage below 50% of capacity Low rainfall forecast for the next month 	Triggers: (Any of) <ol style="list-style-type: none"> Continuous below average rainfall extending from previous month Stream flow below 30% capacity Reticulation Pressure readings below 30% capacity Residential water storage are less than 30% of total capacity Tourist storage below 30% of total capacity Low rainfall forecast for the next month 	Triggers: (Any of) <ol style="list-style-type: none"> Continuous below average rainfall extending from previous month Stream flow below 30% capacity Reticulation Pressure readings below 30% capacity Residential water storage are less than 30% of total capacity Tourist storage below 30% of total capacity Low rainfall forecast for the next month Onset of water borne illnesses Requests for Water Unit to be deployed
AWARENESS ACTIONS		<p><u>Activate Public Awareness:</u> Media release:</p> <ol style="list-style-type: none"> Advise Current Water Situation Encourage water conservation Water Carting to affected areas Encourage installation of rainwater tanks Impose Water Restrictions 	<p><u>Ongoing Public Awareness:</u></p> <ol style="list-style-type: none"> Media release Advise Current Water Situation Encourage water conservation Encourage people to get rainwater tanks Water Carting services available Discourage high water usage activities Advise Public Storage management timetable Advise water restrictions 	<p><u>Ongoing Public Awareness:</u></p> <ol style="list-style-type: none"> Media release Hold Public Meetings, Encourage water conservation Encourage people to get rainwater tanks Water Carting services available Restrict high water usage activities Advise Public Storage management timetable Advise water restrictions 	<p><u>Ongoing Public Awareness:</u></p> <ol style="list-style-type: none"> Media release "Declared State of Emergency" (EMCI) Hold Public Meetings, provide updates Advise Current Water Situation Encourage water conservation Encourage people to get rainwater tanks Water Carting services available Restrict high water usage activities Advise Public Storage management timetable Advise water restrictions
MANAGEMENT ACTIONS	<p><u>Maintenance:</u></p> <ol style="list-style-type: none"> All 12 Water Intakes are maintained weekly Stream debris cleared at all times to maintain adequate stream flow Ongoing repairs of the reticulation pipeline Ongoing maintenance of Community Water Tanks & Pumps <p><u>Monitoring:</u></p> <ol style="list-style-type: none"> Reticulation Pressure readings are 	<p><u>Establish baseline information for Rarotonga Water Resource (current status)</u></p> <ol style="list-style-type: none"> Increase monitoring, reticulation pressure readings 3 times a week. Bulk meter readings once a week. Stream flow gauged every 2nd week Water Quality monitoring monthly (Public Health) Included Met. Office weather 	<p><u>Water Crisis Task Force committee formed</u></p> <p><u>Regular Monitoring</u></p> <ol style="list-style-type: none"> Daily reticulation pressure readings Bulk meter readings every 2nd day Water Quality monitoring every 2nd week Measure Water Storage Levels 	<p><u>Weekly Water Task Force meetings</u></p> <p><u>Regular Monitoring</u></p> <ol style="list-style-type: none"> Daily reticulation pressure readings Bulk meter readings every 2nd day Water Quality monitoring every 2nd week Measure Water Storage Levels 	<p>"Declared State of Emergency" Management handed over to Emergency Management Cook Islands (EMCI)</p> <p><u>Water Task Force committee work closely with EMCI</u></p> <p><u>Maintain Regular Monitoring</u></p> <p><u>Maintain Operation & Maintenance</u></p>

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	<p>monitored every 2nd day 2. Bulk meter readings are recorded every 2nd week. 3. Stream hydro stations and rain gauges are downloaded once a month 4. Water Quality monitoring every 2nd month; water intake & reticulation (Public Health)</p> <p><u>Te Mato Vai - Rarotonga Water Supply Upgrade Project (in Progress)</u></p>	<p>forecast in media release 6. Measure Water Storage Levels weekly 7. Mapping water shortage areas. 8. Collate data; rainfall, stream flow,</p> <p><u>Operation & Maintenance</u> 1. All water infrastructure are maintained and operating efficiently, 2. Urgent repairs to leaking pipes 3. Control boundary valves for even distribution of water supply</p> <p><u>Awareness</u> 1. Issue media release (Awareness Action) 2. Notify Key Stakeholders:</p> <p><u>Supplementary Supply Sources</u></p> <ul style="list-style-type: none"> • Groundwater galleries • Groundwater Boreholes • Alternative streams • TSA Stadium Storage Reservoir <p>1. Site visits assessments. 2. Identify additional support machinery, equipment and vehicle requirements e.g. mobile desalination plant, groundwater pumps, water carting trucks etc</p>	<p>weekly 5. Continue mapping water shortage areas 6. Collate all data and present to committee</p> <p><u>Operation & Maintenance</u> 1. All water infrastructure are maintained and operating 2. Urgent repairs to leaking pipes 3. Control boundary valves to distribute water supply evenly 4. Island wide inspection of stand pipes.</p> <p><u>Maintain 75% water storage level for Hospital ; Schools; Public UV Filtration Stations, maintaining water level via water carting</u></p> <p><u>Support vulnerable groups via water carting</u></p> <p><u>Supplementary Supply Source</u> 1. Request authorization to proceed with preparation of supplementary water supply 2. Site Preparation; groundwater galleries, boreholes and desalination site 3. Source/Procure necessary machinery, equipment and vehicles</p> <p><u>Maintain communication with Key Stakeholders</u></p> <p><u>Maintain Public Awareness (Awareness Actions)</u></p> <p><u>Prohibit carting water from depleting surface/groundwater source</u></p>	<p>weekly 5. Continue mapping water shortage areas 6. Collate all data and present to committee</p> <p><u>Operation & Maintenance</u> 1. All water infrastructure are maintained and operating 2. Urgent repairs to leaking pipes 3. Control boundary valves to distribute water supply evenly 4. Island wide inspection of stand pipes. 5. Terminate water connections where owner has continued to ignore warnings and waste water</p> <p><u>Maintain 50% water storage level for Hospital ; Schools; Public UV Filtration Stations, maintaining water level via water carting</u></p> <p><u>Support vulnerable groups via water carting</u></p> <p><u>Supplementary Supply Source</u> 1. Implement/Construct: • Groundwater Gallery • Groundwater Borehole - • Desalination Station 2. Commence water carting from supplementary stations e</p> <p><u>Maintain communication with Key Stakeholders</u></p> <p><u>Maintain Public Awareness (Awareness Actions)</u></p> <p><u>Prohibit carting water from depleting surface/groundwater source</u></p> <p><u>Enforce Water Restriction measures</u></p>	<p><u>Maintain 50% of water level in storage tanks</u></p> <p><u>Provide support to vulnerable groups (via water carting);</u></p> <p><u>Continue obtaining water from Supplementary Supply Source, distribute via water carting</u></p> <p><u>Install temporary communal water stations, storage in isolated</u></p> <p><u>Maintain communication with Key Stakeholders</u></p> <p><u>Maintain Public Awareness (Awareness Actions)</u></p> <p><u>Prohibit carting water from depleting surface/groundwater source</u></p> <p><u>Enforce Water Restriction measures</u></p>
REGULATION ACTIONS		<p>1. Public asked to reduce daily water use by 20% 2. Public encouraged to apply water</p>	<p>1. Public asked to reduce daily water use by 50% 2. Public encouraged to apply water</p>	<p>1. Public asked to reduce daily water use by 50% 2. Public encouraged to apply</p>	<p>1. Public will allocated 60 Ltrs? drinking water only per household per day, each household must have water</p>

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		<p>restrictions 3. Encourage alternative water source use, also adhering to water conservation measures 4. Wastage of water prohibited</p> <p><u>Restrictions:</u></p> <ul style="list-style-type: none"> • Watering gardens, lawns, playing surface only on alternative days between 6am - 10am and 6pm - 10pm • Water not to be used for Aesthetic purpose; fill or top up fountain and/or ponds • Filling of new or existing pools or spas with a capacity of 2,000Ltrs or less prohibited , except by means of hand held hose. • Filling of new or existing pool or spa with a capacity greater than 2,000 Ltrs prohibited • Water cannot be used to clean a vehicle except in the case of a vehicle for mass transportation • Water cannot be used on hard surface such as buildings (including windows), except for cleaning required as a result of an accident, fire, health hazard, safety hazard or other emergency • Water cannot be used to suppress dust unless the dust is causing or is likely to cause health or environmental hazard • Watering agricultural plantation only between 6am - 10am and 6pm - 10pm • Water use for livestock animals, only, water must not run continuous over 10hrs 	<p>restrictions 3. Encourage alternative water source use, also adhering to water conservation measures 4. Wastage of water prohibited</p> <p><u>Restrictions:</u></p> <ul style="list-style-type: none"> • Watering gardens, lawns, playing surface only on alternative days between 6am - 10am and 6pm - 10pm • Water cannot be used for Aesthetic purpose; fill or top up fountain and/or ponds • Filling of new or existing pools or spas with a capacity of 2,000Ltrs or less prohibited , except by means of hand held hose. • Filling of new or existing pool or spa with a capacity greater than 2,000 Ltrs prohibited • Water cannot be used to clean a vehicle except in the case of a vehicle for mass transportation • Water cannot be used on hard surface such as buildings (including windows), except for cleaning required as a result of an accident, fire, health hazard, safety hazard or other emergency • Water cannot be used to suppress dust unless the dust is causing or is likely to cause health or environmental hazard • Watering agricultural plantation only between 6am - 10am and 6pm - 10pm • Water use for livestock animals, only, water must not run continuous over 10hrs 	<p>water restrictions 3. Encourage alternative water source use, also adhering to water conservation measures 4. Wastage of water prohibited 5. Limit - sports, ceremonial activities and touring group</p> <p><u>Public to adhere to Water Restriction measures</u></p>	<p>storage containers 2.. Encourage alternative water source use, also adhering to water conservation measures 3. Wastage of water prohibited 4. Restrict - sports, ceremonial activities and touring group</p> <p><u>Public to adhere to Water Restriction measures</u></p>